



**THE NEW JERSEY CLIMATE
CHANGE ALLIANCE**
ORGANICS WORKGROUP

**SUSTAINABLE ORGANIC MATERIAL
MANAGEMENT PLAN**
AUGUST 2021

RUTGERS
THE STATE UNIVERSITY
OF NEW JERSEY

NJ Climate Change Alliance



August 19, 2021

Dear Reader:

History has shown us time and again that we can do great things when we work together. The climate crisis confronting our State, Nation and World presents a call to action of unprecedented proportion, our plan of attack, sustainable living. In our fight, every action toward mitigation or adaptation counts toward our common goal to preserve, protect and enhance our environment and natural systems for generations to come. Volunteerism and unifying common vision are among our strongest assets. In this spirit, the New Jersey Climate Change Alliance (NJCCA) was formed in 2011 as an independent and voluntary coalition dedicated to informing short and long-term climate change strategies and outlining policy options for New Jersey. Over the past 10 years, some 62 organizations have come together in common cause.

In 2020, amid the challenges of the Global Pandemic, we organized an Organics Workgroup under the umbrella of the NJCCA to perform a Statewide gap analysis toward developing an initial “Sustainable Organics Material Management Plan” for New Jersey. We have brought together some 80 organizations and conducted a “lightning-fast stakeholder process” from April 1st to June 3rd, 2021. Our focus, reducing wasted food, feeding those in need and driving organics away from landfills which nationally account for some 15% of human-related methane gas emissions.

Through these discussions, which engaged State, county and local government officials, academics, business and industry leaders, statewide associations, non-profit organizations, environmental groups, farmers, food rescue organizations and consultants, we have identified 70 “opportunities for action” which are presented in the pages that follow. We offer our most sincere thanks to those who gave their most valuable time to contribute to this body of work. Our work proves, once again, that we can make a difference simply through coming together as a concerned community toward a common goal.

While we hope you find our work to be informative, it has clearly just begun! Framing a plan of action is a critical first step, but the rubber hits the road through action and implementation. It is now time to collectively roll up our sleeves and get to the real work of effecting positive change.

Sincerely,

Valerie Montecalvo

Valerie Montecalvo, President & CEO
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EXECUTIVE SUMMARY

The Climate Crisis: Arguably, Global Climate Change represents one of, if not the greatest challenge society has ever faced! Rising seas, temperature rise, chronic flooding and devastating storms are the most prominent and commonly recognized implications of the climate crisis. However, collateral impacts to agricultural production, water supply shortages, exacerbated public health effects, ecological impacts from invasive species, human migration and geo-political conflict are all critical components we must anticipate and plan for to the extent possible.

New Jersey unquestionably represents one of the most vulnerable locations in the country if not the world. We are small, ranking 47th among States in total area at 8,722 square miles, and yet 1st in population density at 1,210 people per square mile. Our small, but densely populated State also represents one of the most affluent places on the planet. We rank second nationally in median family income at \$81,740 per year, while the United States represents the most affluent industrialized nation on earth. As a coastal State, our 130 miles of stunning beaches stretch nearly continuously from Sandy Hook to Cape May Point. As such, tourism represents a critical element of the State's economy with a record setting pre-Pandemic year in 2019 with some 116 million visitors who spent \$46.6 billion, most notably vacationing along the sand-swept beaches at the famous "Jersey Shore."

But what does the future hold 10, 20, 30, 50 years from now? In a single lifetime, our scientists tell us that sea level is likely to rise, regardless of our ability to achieve significant emission reductions, by 1.1 feet by 2030, 2.1 feet by 2050 and 5.1 feet by 2100. Ironically, perhaps insult to injury, due to somewhat unique geologic factors, over development and significant groundwater withdrawal in Southern New Jersey, our State is also sinking! Taken together, sea level rise in New Jersey is nearly twice the century-scale global average. It is not a question of "if," but rather "when" sunny-day flooding becomes a daily event, beach replenishment results in diminishing marginal returns and building castles in the sand at the Shore with our kids becomes merely a memory – a sad reality we must collectively face.

So, what can we do to address this unprecedented and conceptually overwhelming threat? Should we bury our heads in the sand and take the easy road, chalking up our current condition to fate – or rather view the climate crisis as a call to action, an obligation to future generations to do what we can to stem the tide through sustainable living and management practices? The only responsible answer is the latter, which leads us to the purpose of the body of work we are about to present. Collectively it is a time to harken back to the 50-year old slogan or theme which evolved from the free-thinking and socially conscious 60's – let's "Think Globally and Act Locally."

ACKNOWLEDGEMENTS

This Plan has been created as a voluntary effort by the members of the Organics Workgroup of the New Jersey Climate Change Alliance. The noted “opportunities for action” were identified through collaborative stakeholder discussion and represent consensus positions of the Workgroup members. Sincere appreciation is offered to all Workgroup members who took their valuable time to contribute to this body of work toward advancing effective change in sustainable organic material management in the State of New Jersey. Special thanks to the Steering Committee members for their guidance and leadership.

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ORGANICS WORKGROUP STAKEHOLDER PROCESS

The New Jersey Climate Change Alliance Organics Workgroup was created in August 2020 as a voluntary effort of stakeholder organizations with a common goal of outlining a Statewide “Sustainable Organic Material Management Plan” (SOMMP) for New Jersey. Shortly thereafter, the NJDEP released its “Global Warming Response Act 80 x 50 Report” in October 2020 which included a chapter dedicated to Waste and Agriculture. The timing of this release allowed the Workgroup to consider and expand upon the recommended actions identified by the State. Between April 1 and June 3, 2021 six 2-hour stakeholder discussions were held. To prepare for these discussions and to identify issues of concern, Workgroup members completed a fillable PDF survey questionnaire before the end of March and were asked to address four basic issues:

- a) Briefly describe the issue in need of being addressed that is “broken” in this Focus Area?
- b) List the barriers that inhibit the development of solutions to this problem.
- c) Recommend a solution(s) and steps needed to "fix" this problem?
- d) In comparison to other needs in this Focus Area, in your opinion is this issue high, medium or low priority?

Through this process, member input collectively resulted in 70 specific recommendations submitted prior to the scheduled focus group discussions. As a 100% voluntary activity, the entire “lightning-fast gap analysis” process was conducted with the utmost respect for the valuable time of our stakeholders. All the recommendations are outlined within the Action Plan. Further, each stakeholder session was documented through “After Action Summary Reports” which are provided in Appendix 1 of this Action Plan.

As with any stakeholder process, each recommendation has importance and is meaningful to the discussion of sustainable organic material management. However, some degree of basic prioritization must be presented toward the most significant aspect of the effort, plan implementation. The following are the 17 core “opportunities for action” from the Workgroup process. They are not presented in priority order, but rather as the place to start to prepare for a more sustainable future.



17 CORE OPPORTUNITIES FOR ACTION

CORE OPPORTUNITY 1 FOOD EQUITY

On September 18, 2020, Governor Phil Murphy signed into law the most sweeping Environmental Justice Law in the United States. The bill, for the first time, clearly defines the term overburdened community. In applying this definition, there are approximately 310 municipalities with populations totaling about 4.5 million people that have overburdened communities within their municipalities. The bill requires the NJDEP to evaluate the environmental and public health impacts of certain types of facilities on overburdened communities when reviewing specific types of permit applications. Under the law, New Jersey is also the first state in the nation to require mandatory permit denials if an environmental justice analysis determines a new facility will have a disproportionately negative impact on overburdened communities. Beyond Environmental Justice, significant attention has been placed nationally and at the State level on “social determinants of health.” The Centers For Disease Control defines social determinants of health as “conditions in the places where people live, learn, work, and play that affect a wide range of health risks and outcomes” in five key areas: healthcare access and quality; education access and quality; social and community context; economic stability; and neighborhood and built environment. This latter area includes the availability of healthy foods.

Opportunity for Action: The NJDEP is in the process of developing rules necessary to implement our Environmental Justice law adopted as S232/A2212. The Department has also created an Office of Environmental Justice, created a Deputy Commissioner level leadership position for Environmental Justice & Equity, established an extraordinarily comprehensive EJ website and has sought to align all DEP programs with Governor Murphy’s Executive Order 23, which is applicable to all State Agencies as well. The same opportunity exists to align all State agency actions and programs to address social determinants of health, including food insecurity. This topic should be a top priority of the New Jersey Food Task Force created under A4705/S3232, when members are named. Healthcare providers across New Jersey are also placing significant focus on wellness and community benefit. Through State leadership, a coalition of public, private, non-profit and grass-roots organizations can be developed to

coordinate efforts and advance food equity in New Jersey. Consistent with S232/A2212, regulated Class C food waste recycling facilities accepting over 100 tons per day of material also should not result in disproportionate environmental and public health impacts to overburdened communities.

CORE OPPORTUNITY 2 **ORGANICS EDUCATION**

New Jersey has had mandatory recycling in place for the past 34 years, no one is exempt at the residential, commercial, institutional and industrial level. What we have learned these many years is that ongoing public education is vital to success; the process of public education never ends. In June 2020, the State Board of Education approved revisions to add climate change to seven New Jersey School Learning Standards: social studies, science, visual and performing arts, health and physical education, world languages, computer science and design thinking and career readiness, life literacies, and key skills. In doing so, New Jersey became the first in the country to infuse climate change in the curriculum at every grade level. The mandate takes effect with the 2022 school year. This development would appear to provide a perfect opportunity to develop a food waste reduction and recycling module for inclusion in the climate change curriculum.

Opportunity for Action: The Organics Workgroup will form an “Education Committee” and seek to work with appropriate State Agencies and officials to assist in developing an “Organics Module” for the core climate change curriculum and to further evaluate the effective delivery of organic material management education across each of the Sectors identified in the NJDEP’s Food Waste Reduction Plan. The Committee will also work to provide access to information/guidance as to how to manage composting in schools as well as possible funding to purchase composting infrastructure.

CORE OPPORTUNITY 3 **CENTRAL GOVERNANCE IN FOOD RESCUE**

The food rescue network of food banks, pantries, soup kitchens, faith-based organizations, farmers and grass-roots non-profits is vibrant and effective in the distribution of food to those in need. However, there is no form of centralized governance in place to help coordinate food distribution and to perform gap analysis of underserved areas and populations. This is particularly important given the State’s essential focus on environmental, health and food security equity. The State Legislature realized this need and passed A4705/S3232 which called for the creation of a New Jersey Food Waste Task Force under the leadership of the State Department of Human Services. The scope of work and membership outlined within this legislation to address food waste reduction represents an excellent start toward some form of unifying governance in food rescue. However, two-years have passed since the Governor signed this bill into law and no members of the Task Force have been named. We note that recent legislation adopted in June 2021 and signed into law by the Governor, would create a new senior level “Office of Food Insecurity Advocate” with a sweeping charge which would represent a coordinating body toward food rescue governance. Notwithstanding this important legislation, an external advisory body is still necessary.

Opportunity for Action: It is essential for the Food Waste Task Force to be named and the Organics Workgroup will respectfully ask State officials to do so as soon as possible. Without question COVID-

19 was understandably responsible for a significant portion of the delay. However, now is the time to revisit the formation of this important body. It must also be stressed that the Task Force is a temporary body which is to prepare a report on its findings for submission to the Governor and Legislature within one-year of formation and to then disband. As part of their work, the Task Force should also consider the formation of a permanent governance structure to operate in an advisory, not regulatory manner. Existing food redistribution organizations must remain free of onerous government oversight to maintain the critically important and highly successful services they provide. “Governance” should represent a way to unify and strengthen our diverse network of food donation organizations. Serious consideration should also be given to the creation of a “Food Waste Policy Council” with broad stakeholder involvement which includes the grass roots community engaged in food distribution. Toward this end, existing organizations like the New Jersey Food Democracy Collaborative should be evaluated toward serving this Statewide purpose. (Appendix 2 provides an overview of four models of centralized governance in food rescue.)

CORE OPPORTUNITY 4

FOOD RESCUE TRANSPORTATION AND EQUIPMENT ASSISTANCE

Food rescue transportation was clearly represented by involved Workgroup organizations as a major problem and barrier to more effective service delivery. The larger food banks have transportation infrastructure including larger tractor trailers, box trucks, vans and some refrigerated trucks. However, most smaller rescue organizations are nearly totally without transportation resources. As a result, food donation pick-up is severely limited and drop-off is the norm. Pick-up is often performed, if at all, by volunteers using their personal vehicles. Thus, it is not practical for most rescue organizations to go to larger stores to pick up larger quantities of food since pallets will not fit into personal vehicles. Due to the nature of volunteerism, drivers regularly come and go making reliability another major problem. Transportation also is vastly different regionally. Some counties have centralized transportation through organizations like “Table to Table” which services food distribution needs in Bergen, Essex, Hudson and Passaic Counties, most do not. The lack of refrigerated box trucks or commercial sized on-site refrigerators also limits the scope of food collected to primarily non-perishable products. Finally, basic equipment like fork lifts, hydraulic jacks and truck lift gates are few and far between and limit the maximization of valuable space for food storage in rescue organization warehouses and hinder food pick-up and delivery, primarily in urban areas with congested streets.

Opportunity for Action: Members of the Organics Workgroup will perform a search of how transportation and equipment has been addressed most effectively elsewhere in sister states. How transportation, refrigeration and equipment was funded will also be reviewed. It is possible that this issue could represent a critically important, yet relatively inexpensive element in the expansion of the scope of food rescue activities in New Jersey. Depending on the findings of our research, this area may be one to address further with the New Jersey Legislature, particularly with respect to small grant funding opportunities.

CORE OPPORTUNITY 5

FOOD RESCUE APP DEVELOPMENT

During the Pandemic, it quickly became clear that the basic provision of food on the table reached a state of urgency in Bergen County. County Commissioner Tracy Zur moved quickly to create the “Bergen County Food Security Task Force.” The Task Force worked with the Community Food Bank of New Jersey and “Table to Table” to better connect food suppliers to the network of food pantries and nonprofit agencies located across the County. Along the way, Table to Table became aware of an “app” called “412 Food Rescue.” 412 Food Rescue works with food retailers, wholesalers, restaurants, caterers, universities and other food providers to rescue unsellable but perfectly good food and getting it to nonprofit organizations that serve those who are experiencing food insecurity. Their app mobilizes volunteers by alerting them when a food is available to rescue. Volunteers use cars, bikes, and sometimes their own two feet to move food from donors to nonprofit partners. Unrelated, but of great interest, the NJDEP invested in another app several years ago to enhance recycling and reduce contamination in the recycling stream through the use of “Recycle Coach.” Recycle Coach is an online platform purchased by the NJDEP and offered for use by all 565 New Jersey towns and 21 counties. The app makes recycling information clear and accessible to every resident in the State from your computer, Smartphone, digital assistant, or participating government websites. Via this platform, you can access your recycling/trash pick-up schedules, a ‘What Goes Where’ tool where you can search for how to recycle specific items and a tool where you can communicate directly with your municipality to make them aware of missed pick-ups, pot holes, ask your waste/recycling questions, etc.

Opportunity for Action: The State (NJDEP, Food Waste Task Force when named, or other agency) should investigate the potential of investing in the 412 Food Rescue app, other available food rescue apps or working with the Recycle Coach vendor to see if an enhancement is possible to address food rescue. Such use of computer and Smartphone technology clearly has enormous potential to better connect food donors, transporters (like Table to Table) and the Statewide network of food banks, pantries and soup kitchens in real time. We believe this opportunity to be of the lowest potential cost with the highest possible enhancement of food rescue coordination across New Jersey.

CORE OPPORTUNITY 6

ON-SITE MANAGEMENT OF FOOD WASTE IN SCHOOLS

On-site management options to compost food waste are significant and some are in use in New Jersey schools. Sustainable Jersey for Schools spotlights the In-Vessel composter system (Rocket) used for many years in Chatham High School. Automated composting systems also exist at Kean University, which received the 2013 NJ DEP Recycling Award for its food recovery and on-campus composting initiative, where 300 tons of food have been composted to date; Princeton University, where 91 tons of food has been composted to date; and Union County Vocational Technical School (all FOR Solutions), Montclair State, Bergen County Community College, Raritan Valley Community College and Ramapo College (EcoRich). Under current NJDEP regulations, a school can operate a composting system without needing a Class C Recycling Center Approval. However, the school can only take material generated from the host school. Similar to the community gardens issue raised later in this discussion, taking material from other schools within the school district or regionally results in the operation being considered a “commercial facility” requiring a very onerous Class C approval and payment of prohibitively expensive registration and compliance monitoring fees which are prohibitive.

Opportunity for Action: An exemption at N.J.A.C. 7:26-1.7 to allow regional management of food waste between schools is needed. Members of the Organics Workgroup offer to work with the DEP DSHW and County governments to craft exemption language to allow inter-school transport to take place. On-site management of food waste (as well as the development of school gardens) can also be made actionable through the Sustainable Jersey Program. In round numbers, New Jersey has 2,500 k-12 public schools and nearly 600 school districts. As of June 2021, 1,021 of these schools are registered and participating in Sustainable Jersey for Schools. Members of the Organics Workgroup, including Sustainable Jersey, will work with the Department to revise or craft new actions to advance on-site management of food waste in schools.

CORE OPPORTUNITY 7

EXPAND THE USE OF SHARE TABLES IN SCHOOLS

Share tables are gaining popularity across the country to offer nutritious food to students while reducing food waste. Share Tables are tables in student common eating areas where students can take their unwanted pre-packaged non-perishable foods and leave the items for other students to eat. As stated earlier, New Jersey has 2,500 k-12 public schools and nearly 600 school districts. This universe is substantially larger when private and charter schools are added in. New Jersey also has nearly 70 institutions of higher learning including public colleges and universities (11), private colleges and universities (14), community colleges (18), for profit institutions (9) and religious institutions (15). As such, strong advocacy for share tables can be an important element toward addressing food insecurity while reducing food waste. However, once you weave in health and safety considerations, school administrators want very clear written guidance. There is a USDA memo on share tables which outlines what the USDA allows for what they refer to as “redistribution.” Practitioners serving on the Organics Workgroup have suggested that this guidance is ambiguous and actually impedes share table use. It was also suggested that there should be three levels to the share table concept: 1. Leaving food on a table for other students to eat; 2. Allowing students to take food remaining at the end of the day home for consumption; 3. Taking whatever food not reclaimed to a food rescue organization for redistribution.

Opportunity for Action: In several States, share table legislation has been adopted or proposed to remove ambiguity and provide prospective donation indemnification. Model states were identified as Texas, Colorado, Nebraska and Oklahoma. Members of the Organics Workgroup would like to work with appropriate leadership in the education community, such as the State Department of Education, Office of the Secretary of Higher Education, Schools Boards Association and New Jersey Education Association to research model legislation developed in other States. Workgroup members also offer to use our future Education Committee to help draft a legislative proposal to present to leadership in the State Senate and Assembly.

CORE OPPORTUNITY 8 COMMUNITY GARDEN EXEMPTIONS

Under existing DEP regulations, the use of community gardens is limited to on-site composting of garden generated organic matter. Community gardens can be utilized so much more effectively. Regulatory reform in this critical area is needed as community gardens can be a very significant vehicle toward reducing food waste going to landfills, expanded composting and soil enrichment while providing an important social networking platform within communities, particularly in urban areas. Exemptions are needed to allow appropriate food waste from surrounding neighborhoods to be brought to these gardens for composting without traditional DEP regulation and the prohibitively expensive permitting and compliance monitoring fees that would be applicable as a “commercial composting facility.” It is acknowledged that the DSHW has worked very cooperatively to address such exemptions stemming from a Petition for Rulemaking submitted to the Department. However, after over two years of effort, no reform actions have been implemented.

Opportunity for Action: It is recommended that the DEP quickly authorize the Administrative Consent Order approach it has considered to allow community gardens to operate in an expanded capacity. Disagreements between programs regarding policy direction appear to have stalled efforts to move forward. If internal program disagreements exist between involved Divisions/Bureaus (such as Solid & Hazardous Waste, Air, Water, Stormwater, Land Use, Compliance & Enforcement, etc.) they need to be resolved amicably and quickly in the best interests of effective program coordination. Members of the Organics Workgroup, and particularly the New Jersey Composting Council, would be pleased to also help draft proposed rule revision language for the Department’s consideration to replace the more temporary ACO approach with appropriate exemptions.

CORE OPPORTUNITY 9 BROADER REGULATORY REFORM

DEP, in its October 2020 Global Warming Response Act 80 x 50 Report recognized the need for regulatory reform. Table 5.4 on page 103 had a near-term recommendation to: “*Create guidelines/recommendations for county siting and streamlined state planning and permitting of food waste recycling facilities.*” Beyond the above referenced community gardens exemption, Organics Workgroup members strongly advocate additional regulatory reforms to streamline and support the grown of sustainable organic material management. In this regard, we stress a full understanding and support for essential environmental and public health standards to be maintained. Streamlined process, and reasonable, clear and predictable requirements are the goal. Reforms should embrace additional exemptions via certifications, general permits, and modifications to larger-scale facility permitting requirements for aerobic, anaerobic and co-digestion facilities.

Opportunity for Action: The Workgroup advocates the following hierarchy to simplify and streamline the regulatory requirements for small-scale systems. Workgroup members offer to draft language for each of the below areas toward assisting the Department in the exhaustive rulemaking process required by the New Jersey Administrative Procedures Act:

- Outright exemptions for small scale operations, such as the community gardens noted earlier and composting activities on farms. Here it must be noted that the DEP has completed a stakeholder process and is proposing exemptions for small scale composting with input from many of the New Jersey Compost Council working group members. The work having been largely completed this process must be given a priority status in moving forward quickly.
- Reexamination of potential reforms to the Department’s Planning Rules found at N.J.A.C. 7:26 – 6 and more specifically:
 - 7:26-6.10 Modifications to district solid waste management plans; plan amendments, and
 - 7:26-6.11 Administrative actions concerning a district solid waste management plan
 - In this discussion it was acknowledged that the administrative action vehicle represents an existing streamlined process for county planning that works. A broader scale of composting operations should be considered for inclusion under 7:26-6.11;
- Section 7:26-1.7 “Exemption from SWF permitting” was also recognized as an existing provision that works related for exempting research, development and demonstration (RD & D) projects. This may be a provision to further evaluate for expanding the scope of what fits as an RD&D project and for a streamlined process to go from an RD&D approval to a full permit;
- Consideration of a “General Permit” or “Permit-By-Rule” approach for non-exempt, but small composting projects such as smaller windrow composting operations.

With respect to larger, regional facilities, a number of general recommendations for addressing regulatory reform were made by the Workgroup as follows:

- It was suggested that New Jersey should look at what other States with disposal ban legislation have done regarding regulatory reform. Both the process used and end-results toward streamlining are important;
- A very strong consensus is that NJDEP regulatory programs are not sufficiently connected at present regarding permit application review. All applicable DEP programs involved in both rulemaking and permit application review need to be well coordinated as part of an integrated review process;
- DEP should work with industry experts and New Jersey’s outstanding academic institutions to collaborate on regulatory reform to uphold the application of sound science in permitting, which is essential, while streamlining the bureaucratic red tape;
- Finally, it appears essential for DEP to undertake a large-scale organics infrastructure development stakeholder process as soon as possible in light of the impending October 2021 implementation date for A2371/S865. It appears essential to have the regulated community engaged to share their experiences with DEP and their various permitting divisions toward administering meaningful changes to existing regulatory requirements.

For each of these recommendations, members of the Organics Workgroup might be of great assistance to the DEP to undertake the work required to make meaningful changes in the regulatory process. This opportunity will be further discussed with the Department for their consideration.

CORE OPPORTUNITY 10

INTERAGENCY AND INTERDEPARTMENTAL COORDINATION

State Agencies have an extremely difficult job. With ever shrinking resources and nothing ever removed from their plate, they are constantly under the public microscope regarding their actions. With this clear understanding in mind and fully appreciated, a very strong consensus within the Organics Workgroup is that NJDEP regulatory programs are not sufficiently connected at present regarding permit application review. This pertains, in particular, to the Air Permitting, Solid and Hazardous Waste, Water NJPDES permitting, stormwater management and Land Use Regulation Programs. For progress to be made on needed regulatory reform, it is essential that interdepartmental agencies are well coordinated during the rule development, proposal and adoption process. This same logic applies with respect to the administration of a well-integrated permit application review process. This same logic also pertains to interagency coordination between the administrative agencies of State government, namely DEP, DOA, Health, Human Services and the Board of Public Utilities. In this regard, Governor Murphy's Executive Order No. 89, among other things, creates an Interagency Council on Climate Resilience, comprised of 16 state agencies to develop short- and long-term action plans that will promote the long-term mitigation, adaptation, and resilience of New Jersey's economy, communities, infrastructure, and natural resources. This Council is critical in terms of a coordinated approach to the implementation of climate mitigation and adaptation strategies outlined in the recently proposed "Climate Resilience Strategy."

Opportunity for Action: Organics Workgroup members will coordinate with appropriate DEP officials regarding needed regulatory reforms, primarily in the realm of small-scale facility exemptions from regulation. During this process, a request will be made to use the "DEP One-Stop" concept, regularly administered for more complex permit applications by the Office of Permitting and Project Navigation, to bring multiple DEP programs to the rule development table to iron out relevant issues at the beginning of the process. At the broader State Agency level, a request will be made to the DEP to share the work of the Organics Workgroup with the Interagency Council on Climate Resilience to help coordination between relevant State agencies. By sharing this Action Plan down the respective chains of command within involved State agencies, it is hoped that effective interagency coordination can be enhanced in future collaborative efforts in regulatory reform and project review.

CORE OPPORTUNITY 11

A NEW ROUND OF COUNTY PLANNING

Since the late 1970's, the 21 county governments in New Jersey and the New Jersey Meadowlands Commission have had primary responsibility for solid waste and recycling planning, subject to State level DEP review and approval. As a result, each county has a long-established "master plan" for solid waste and recycling. From time to time through the years, the counties have been asked by the State to update these master plans to reflect new information and to strive toward more sustainable materials management. We recommend that the DEP should work with counties to develop "organics updates" to their plans. We note that in May of 2021 A5479 was introduced and passed by the Assembly Environment and Solid Waste Committee which would require each solid waste management district or county in the State to develop and implement a strategy for reducing, by the year 2030, the amount of food waste generated annually in the district by at least 50 percent.

Opportunity for Action: Members of the Organics Workgroup would like to work with the DEP Division of Solid & Hazardous Waste (DSHW) and County officials to structure “guidance” on Recycling Plan updates to address organics management. In light of human resource concerns by both the State and Counties, we recommend a less onerous regulatory approach for this process to avoid the procedurally cumbersome and extremely time consuming “Plan Amendment” process outlined in the New Jersey Solid Waste Management Act and DEP Regulations. We recommend an Administrative Action approach as outlined in the DEP’s Solid Waste Planning Rules found at N.J.A.C. 7:26-6.11. We note for reference that in April 2019 the DEP DSHW forwarded guidance to all County plan implementation agencies regarding future public notice requirements toward compliance with Governor Murphy’s Executive Order 23 on Environmental Justice. We advocate for a similar less onerous procedural approach with organics to engage our critically important counties cooperatively and in as non-regulatory a fashion as possible toward updating their recycling master plans in a timely fashion.

CORE OPPORTUNITY 12

WASTEWATER UTILITY ENGAGEMENT

There was clear consensus from discussion that it would be worthwhile for the State DEP to evaluate opportunities for the co-digestion of biosolids and source separated food waste at New Jersey wastewater treatment plants (WWTP’s) that have operational digester equipment and available capacity. Input is needed from the DEP to assess which WWTP’s utilize digesters, have excess processing capacity and might be willing to entertain a contractual relationship with a supplier of macerated liquid food waste. One model already exists where the Rahway Valley Sewerage Authority accepts liquified food waste from a Waste Management Inc. Class C food waste recycling facility in Elizabeth. It is important toward future management of food waste and compliance with the State’s disposal ban legislation which becomes effective in October 2021 to evaluate the potential to dovetail WWTP operations as an asset in food waste management. This is particularly relevant due to the highly favorable economics in utilizing existing WWTP digester equipment to help manage food waste and create renewable energy. Maximizing existing, capitalized (paid for) infrastructure makes great sense when compared to the significant cost of financing and building new food waste processing facilities.

Opportunity for Action: We recommend that the DEP work with the Association of New Jersey Environmental Authorities, individual WWTP utilities and industry experts to evaluate co-digestion feasibility. We further recommend that this be done in a cooperative, non-regulatory fashion with the State sharing all relevant information from the RVSA/Waste Management Inc. experience. If helpful, members of the Organics Workgroup would also volunteer to help assess other successful applications of co-digestion in other States across the country.

CORE OPPORTUNITY 13

21ST CENTURY LANDFILLS

There are 12 “Class I” operating landfills in New Jersey that accept municipal solid waste. Each represents a “modern landfill” which is defined, in nearly all cases, as double composite lined with active leachate collection and detection, groundwater monitoring and active methane gas extraction. The Organics Workgroup discussed the possibility of modifying operations at existing landfills to transform them from “disposal facilities” to regional materials separation and recovery and organics management

facilities. Can we stop landfilling organics, which results in the generation of significant quantities of methane gas which is very difficult to collect, and use these regional sites to compost organic material and generate/collect gas through controlled digesters? The logic here is similar to the discussion immediately above regarding making best use of existing WWTP digester capacity through co-digestion of source separated food waste and biosolids. Landfills are heavily regulated, fully permitted by all DEP regulatory programs and already accept most of the food waste generated in New Jersey which is co-mingled in as part of the “Type 10” municipal waste stream. Since the landfills already represent regional operations, can they be modified to better manage organic material?

Opportunity for Action: The NJDEP should engage County and Utility Authority officials to evaluate modified operations toward more advanced management of organic material. Options in this regard have been framed by the Organics Workgroup within the Large-Scale Organics Recycling Infrastructure after action report (see question and answer item 3 in Appendix A, pages 73 -77). We recommend this as a logical exercise to evaluate the efficiencies of using existing, 21st Century regional facilities in a more sustainable manner to compost, as opposed to landfill, organic material. Similar to the discussion above related to a new round of County planning, we feel this should be an informal and cooperative discussion and not a mandate. Counties have historically been given “primacy” as the lead managers of solid waste and recycling for their constituent municipalities. This respect should be maintained.

CORE OPPORTUNITY 14

END PRODUCT MARKET DEVELOPMENT

A critical aspect of sustainable organic material management is stimulating markets for end product compost and the energy produced from high-technology systems. This is also critical toward broader environmental soil enrichment goals. The New Jersey Legislature clearly understood the significance of market development in passing A2371/S865. Sections 4 and 5 of this Bill are of great significance. Section 4 calls for the creation of 12-member “Food Waste Recycling Market Development Council” which is directed to prepare a report within 18 months after creation to be submitted to the Governor and Legislature. Among other things, the Council is to:

- Investigate the feasibility of providing preferences for products or energy produced from food recycling facilities, food waste composting facilities, and anaerobic and aerobic digestion facilities;
- Identify ways to stimulate the use in public projects of compost or soil amendment products derived from these facilities;
- Provide recommendations on changes needed to State laws or rules or regulations to stimulate the market for products and energy produced from food recycling facilities.

Section 5 provides that “every State department or agency that engages in landscaping or construction activities on State land, or for State projects or facilities, shall use, where technically feasible, environmentally sound, and competitively priced, compost, mulch, or other soil amendments produced from municipal solid waste, food waste, sludge, yard waste, clean wood waste, or other organic materials that the supplier has certified comply with applicable project standards and specifications.” Section 5 goes on to define a 10% - 15% “price preference” for the use of environmentally sound organic material

at the discretion of the Director of the Division of Purchase and Property in the Department of the Treasury.

Opportunity for Action: First and foremost, members of the Food Waste Recycling Market Development Council must be named as soon as possible to get their critical work underway. Secondly, procurement is centrally coordinated through the State Department of the Treasury. It is critically important that the interagency loop is closed such that Treasury begins to develop purchasing specifications as A2371/S865 provides an essential administrative framework and clear directive for the purchase of sustainably manufactured compost products. Thirdly, while not required under law, it is requested that the Governor and administrative agencies “advocate” for similar sustainable procurement of compost products as outlined in Section 5 of A2371/S865 by County and Municipal governments as well as the long list of State and County Authorities which are “in but not of” instrumentalities of State government. Here once again, education and outreach to these public bodies is essential. Finally, it is also possible to exert greater influence on private markets through incentives for the purchase of more sustainable soil amendments. Such opportunities coupled with education and outreach materials targeted to private sector purchasers of organic products should be explored.

CORE OPPORTUNITY 15

LOCATIONAL METRICS ON ANIMAL MANURE GENERATION

New Jersey has some 9,900 farms with approximately 750,000 acres of land in farm operation. The livestock inventory provides that in 2020 there were approximately 8,600 cows raised for beef, 4,400 cows producing milk and 7,500 hogs. 2017 Census data indicates that there are approximately 11,000 goats on 1,000 farms, 23,374 horses across 2,754 farms, 1,631,775 egg laying chickens across 1,986 farms, and 25,331 meat chickens across 175 farms. Statistics on potential manure generation and farm-specific management practices appear unavailable at this time. This is understandable as a significant amount of manure generated on farms is used on the farm for crop fertilization. Further, manure generation and on-site/off-site management is highly variable over time. While reported metrics are not available, it does appear that estimates can be generated. Manure management is regulated by the State Department of Agriculture through its Chapter 91 Animal Waste Management Regulations found at N.J.A.C. 2:91. These regulations provide conversion tables to enable farmers to estimate the amount of manure generated by animal type. It is clear that a significant quantity of animal manure is generated in New Jersey, some going directly to on-site beneficial use toward soil enrichment, some not. Logical consideration of regional management of manure requires better locational metrics on generation and final use/disposal.

Opportunity for Action: Members of the Organics Workgroup offer to work with the Department of Agriculture, SADC, the Rutgers Agriculture Experiment Station and the Farm Bureau toward assembling a basic inventory of manure management across the State toward future regional management of animal manure.

CORE OPPORTUNITY 16

DEVELOP REGIONAL MANURE MANAGEMENT FACILITY(IES)

The locational metrics recommendation cited above is a step one toward seriously assessing the development of a regional manure management facility(ies) for New Jersey. The decentralized nature of New Jersey farms and, unlike midwestern states, relatively small size of farming operations makes regional manure management a most logical opportunity to evaluate. Regional management could provide an important outlet for the beneficial use of manure for energy production where on-site use for soil enrichment is not feasible.

Opportunity for Action: In 2012 the NJDA pursued the development of a regional manure management facility through a grant opportunity with a local non-profit. The effort was abandoned due to the landowner's decision to preserve the farm after plans were drawn up for a potential facility that may have been constrained by program deed restrictions. This effort should be reevaluated cooperatively between NJDA, SADC, NJDEP and the Rutgers Agricultural Experiment Station toward ensuring proper facility siting, the use of best available composting technology, streamlined regulation and economic and financing considerations. Industry experts from the NJ Composting Council should also be involved to provide technical assistance.

CORE OPPORTUNITY 17

FINANCIAL INCENTIVES

In each Workgroup stakeholder discussion a common need for financial incentives was stressed as critically important. This is no easy discussion, especially coming on the heels of the previously unimaginable economic impacts of COVID-19 upon the State, National and International economy. However, to achieve many of the stated goals of the DEP in its 80 x 50 Report and those articulated above by the Organics Workgroup, money, business tax incentives, low to zero interest loans and other financial incentives are clearly needed.

Opportunity for Action: It is first prudent to evaluate existing incentive programs to see if and where financial support for sustainable organic material management can be identified. Workgroup members noted that it appears that small-scale compost projects do not qualify for anything. You have to be generating energy to qualify for available incentives. The job creation numbers for eligibility are also too high for a composting facility to qualify. However, it is worthwhile to perform outreach to these various existing State resources, which members of the Organics Workgroup are willing to undertake, to gauge any potential for applicability to the composting industry:

- The Board of Public Utilities has significant incentive programs under their Clean Energy Program. However, this appears limited to “biomass to energy” projects which have historically been underrepresented in New Jersey.
- The New Jersey Economic Development Authority (EDA) has a long history of supporting businesses of all sizes to grow and invest in New Jersey. EDA offers a broad portfolio of economic development tools such as: jobs-based tax credits, real estate and development tax credits, community development programs, main street technical assistance, innovation economy

programs, clean energy programs, and low-interest business financing (including bonds, loan participations, loan guarantees and variable/fixed-rate loans).

- The State also offers a business portal through its website for “Business.NJ.Gov.” The Governor’s Office also maintains links to grants offered through the various administrative agencies of State Government;
- A final and potentially very important option for funding was discussed in the form of the Regional Greenhouse Gas Initiative or RGGI. The annual RGGI auction apparently brings in revenue approaching \$80 million. NJDEP rules governing the funding program are found at N.J.A.C. 7:27D, “Global Warming Solutions Fund.” Section N.J.A.C. 7:27D-2.3 outlines “eligible projects and programs.” Most appropriately, the majority of the RGGI funding is allocated to the EDA and BPU for the administration of renewable energy programs and combined heat and power. However, section 7:27D-2.3 (a) 3 allocates up to 10% of the fund to go to the DEP for distribution to local governments for projects that represent a measurable reduction in greenhouse gas emissions. It appears compost projects might qualify under this session of the rules. However, the State Agency “strategic funding plan” would have to identify composting as eligible which has not been done historically.

All the above mechanisms need to be explored further. It is obvious there currently are no clear incentives available for small-scale composting projects. It would also be productive to canvas other State programs to see if good models like the Philadelphia Business Tax Credit program can be identified. A model program to review is the City of Philadelphia Sustainable Business Tax Credit Program. The Sustainable Business Tax Credit is offered to companies whose business practices support environmental and human well-being. Both opportunities through existing financial incentive programs and new programs shown to be effective in other States and localities must be reviewed and considered, potentially through legislative enactment.

INTRODUCTION: A CASE FOR SUSTAINABLE MATERIALS MANAGEMENT

Sustainable Materials Management (SMM) is an approach to serving human needs by using/reusing resources productively and sustainably throughout their life cycles, generally minimizing the amount of materials involved and all associated environmental impacts. According to the United Nations Environment Programme (UNEP), “Humans are consuming resources and producing waste at a greater scale than ever before and per capita consumption levels are projected to increase with continued development.” As a specific material subset, 1.3 billion tons of food produced for human consumption in the world is wasted every year. If a quarter of food lost or wasted globally could be saved, roughly 870 million people could be fed. Nationally, less than one-third of the food Americans throw out would be enough to feed the 42 million Americans that face food insecurity. Although New Jersey is one of the wealthiest states in the country, and arguably the world, nearly 11% of our population is food insecure, and 15% of children under 18.

According to NJDEP in their October 2020 Global Warming Response Act 80 x 50 Report, waste management is the largest source of non-energy greenhouse gas (GHG) emissions in New Jersey. Municipal solid waste (MSW) is responsible for 82% of the total GHG emissions from the waste management sector. This includes GHG emissions from MSW processed and landfilled in New Jersey and the emissions from MSW landfilled out-of- state. Approximately 30% of the MSW generated is composed of containers and packaging-related materials and another 25% of food and other organic material wastes.

As an integral part of our fight against climate change, we must adopt sustainable material management strategies and practices down to the homeowner level and throughout all facets of the commercial, institutional and industrial sectors of the State. We need to identify practical solutions and programs to reduce waste generation, increase recycling of the full range of curbside commodities, develop integrated food donation programs within regions, towns, neighborhoods and schools and sustainable construction and demolition practices and recovery/reuse programs.

The New Jersey Climate Change Alliance Organics Workgroup was created in 2020 as a voluntary effort of stakeholder organizations with a common goal of outlining a Statewide “Sustainable Organic Material Management Plan.” As time is of the essence in attacking the climate crises, a “lightning gap analysis” was performed through a three-month stakeholder process, the results of which are presented below as an initial step in assembling a cohesive “organics community” to forge a new pathway to a more sustainable future.

The New Jersey Climate Change Alliance is a network of diverse organizations that share the goal of advancing science-informed climate change strategies at the state and local levels in New Jersey, both

with regard to adapting to changing climate conditions and addressing the emissions that cause climate change.

Alliance participants include representatives of public, private and non-governmental New Jersey organizations from sectors including transportation, emergency managements, business, energy, engineering, farming, insurance, environment, health, community planning, Environmental Justice, natural resource management, and others. The Alliance does not work to influence political outcomes or specific pieces of legislation; rather, the work of the Alliance serves to integrate science with evidence and diverse points of view through the voices of Alliance participants for the purpose of informing short and long-term climate change strategies and outlining policy options for New Jersey.

Alliance participants accept three underlying principles that include a commitment to:

- Non-partisan, science and evidence-based climate strategies.
- Climate change strategies that promote economic growth, equity, improved health outcomes, natural solutions, and sustainable communities; and
- Thoughtful, respectful and meaningful dialogue among participants as demonstrated by the Alliance’s organizational communication practices.

Since its inception in 2011, the Alliance’s work has involved:

- Leading demonstration projects that can be replicated throughout New Jersey;
- Identifying evidence-based state and local policy options relevant for New Jersey;
- Conducting outreach and education to state and local officials, communities, leaders, and the general public;
- Linking natural and social scientists, engineers, and other experts to decision-makers, communities, and leaders to inform policy and practice;
- Developing tools and guidance to inform planning and decision-making in the public, private, and non-governmental sectors; and
- Creating a forum that engages a diverse set of perspectives to advance evidence-based climate strategies and policy in New Jersey.

In addition to Alliance-wide initiatives, the New Jersey Climate Change Alliance hosts a set of topic-specific workgroups. Each workgroup is chaired or co-chaired by Alliance participants and may include Alliance participants as well as subject matter experts that are not participants in the Alliance. Establishment of new workgroups and completion of workgroups are authorized by the Alliance Steering Committee as is public release of workgroup products. An Alliance participant may suggest establishment of a new workgroup to the Steering Committee at any time.

As of January 2021, Alliance work is being advanced through six-member driven workgroups engaged in the areas of:

- Long-term Statewide Planning for Climate Change
- Natural and Working Lands
- Offshore Wind Ecological Monitoring

- Public Health
- Transportation
- Sustainable Organic Materials Management

The Alliance website, developed and maintained by Rutgers University, can be found here: <https://njadapt.rutgers.edu/> Alliance leadership and Steering Committee members can be found here: <https://njadapt.rutgers.edu/people/alliance-chairpersons-and-steering-committee>. A full listing of the 62 engaged Alliance organizations and members can be found here: <https://njadapt.rutgers.edu/people/alliance-participants>.

An “Organics Workgroup” visioning White Paper and workgroup proposal were prepared in August, 2020 and approved by the Alliance Steering Committee in September.

The stated purpose was to conduct a holistic review of current organic material management practices to focus on:

- Food Waste Reduction and Donation
- Food Waste Management in Schools
- Community Scale Composting (backyard composting, community gardens, municipal and private windrow composting)
- Large-scale Organics Recycling Infrastructure (aerobic, anaerobic and co-digestion technology development)
- Sustainable Animal Manure Management

The “outcome” of the workgroup initiative is to produce a sustainable organics material management plan for the State of New Jersey. Most simplistically, subject matter experts in the five above referenced focus areas were asked a fundamental question - “what are the barriers to sustainable organic material management and how do we fix them?” Through months of outreach, some 80 subject matter experts from a wide array of public and private sector organizations, including State, county and local government officials, academics, business and industry leaders, statewide associations, non-profit organizations and consultants were contacted and agreed to participate in the effort. A “Steering Committee” was formed with representatives of the Bayshore Family of Companies, who organized and led the effort, along with representatives from the NJ Climate Change Alliance, NJ Composting Council, Association of New Jersey Recyclers, Sustainable Jersey, the NJ Department of Environmental Protection and Center for Eco-Technology.

To begin the process, a “fillable PDF” representing an initial focus area worksheet or survey was distributed to all Workgroup participants which asked them to identify their area(s) of interest, barriers to sustainable organic material management and recommended solutions to effect positive change. Input was requested prior to conducting an initial set of 5 “stakeholder focus area zoom sessions” scheduled in April and May of 2021. A sixth the final stakeholder discussion revisiting Statewide food donation was held on June 3rd. For each stakeholder session, the fillable PDF survey responses were used to form the basis of each stakeholder session agenda.

Along the way, the input from the Organics Workgroup participants was used to build a “Sustainable Organic Material Management Plan.” When completed, the Plan will be forwarded to the Governor’s Office, leadership of the Senate Environment and Energy Committee, Assembly Environment and Solid Waste Committee, the NJDEP, NJ Department of Agriculture, NJ Department of Human Services, the NJ Department of Health & Senior Services, the NJ Department of Education, the Board of Public Utilities, Statewide Associations involved with food management and other organizations that can further engage in plan implementation. With the blueprint contained in the plan, it is hoped and anticipated that Workgroup member organizations will further collaborate in plan implementation efforts which are beyond the mission of the NJ Climate Change Alliance.

WHERE DOES NEW JERSEY STAND TODAY?

While behind in addressing food waste management, New Jersey is rapidly catching up to our sister cities and states. Significant legislation is now in place along with excellent baseline work completed by the NJDEP to set the table for the development of a comprehensive master plan or implementation plan to pursue sustainable organic material management. Briefly:

- In July 2017 the New Jersey Food Waste Reduction Act (S3027) was passed which established a Statewide goal of reducing food waste by 50% by 2030. The Act also charged NJDEP with developing a detailed implementation plan.

Link to S3027:

https://www.njleg.state.nj.us/2016/Bills/AL17/136_.PDF

- In May of 2019 Governor Phil Murphy signed into law a package of 10 bills he termed "first step measures" toward reducing the number of hungry and food insecure people in New Jersey, as follows:
 - A4702 "Hunger-Free Campus Act" which requires the Secretary of Higher Education to establish grant program to address food insecurity among students enrolled in public institutions of higher education; appropriated \$1 million.
 - A4704 directed the Department of Agriculture to establish a food desert produce pilot program.
 - A4708 established the position of Farm Liaison in the Department of Agriculture.
 - A4703 required the State’s Chief Technology Officer to establish an "Anti-Hunger Link" for all State websites, providing information on emergency food services.
 - A4705 established the New Jersey Food Waste Task Force to make recommendations concerning food waste in New Jersey.
 - A4707 directed the Department of Agriculture to establish a public awareness campaign for food waste.
 - AJR172 designated the Thursday of the third week of September of each year as "Food Waste Prevention Day" in New Jersey.
 - AJR60 designated November of each year as "Food Pantry Donation Month" in New Jersey.
 - AJR174 which urges large food retailers in the State to reduce food waste.
 - AJR175 which urges the State Chief Innovation Officer to prioritize enhancement of NJOneApp to include all State anti-hunger programs.

- In August of 2019 NJDEP released its Draft Food Waste Reduction Plan and conducted three regional public hearings to take comment. The Department has embraced a “sector based approach” to gear food waste reduction toward feeding hungry people. The Plan is currently being finalized and the draft can be found at: https://www.nj.gov/dep/dshw/food-waste/food_waste_plan_draft.pdf
- In November 2019, the Departments of Environmental Protection, Agriculture, Education, Health and the Office of the Secretary of Higher Education released two excellent “School Food Waste Guidelines” – a K – 12 Edition and Higher Education Edition. These “how to guides” address both food waste reduction and recovery as well as food waste recycling.

<https://www.nj.gov/dep/seeds/sfwg/docs/K-12.pdf>

<https://www.nj.gov/dep/seeds/sfwg/docs/HighEd.pdf>

- In early 2020 NJDEP created a dedicated Food Waste website through its Division of Solid & Hazardous Waste. This link provides comprehensive guidance on food waste reduction and recycling in the residential, business, education, manufacturing and retail sectors and can be found at: <https://www.nj.gov/dep/dshw/food-waste>
- In April 2020 Governor Murphy signed into law New Jersey’s version of Statewide disposal ban legislation in the form of A2371/S865. This law will require large generators of food waste (52 tons per year or 1 ton per week) to source separate and compost or otherwise recycle their food waste, provided there is a facility located within 25 road miles and the cost is less than what they currently pay for disposal. It is estimated that a significant number of large generators will be covered under the law including supermarkets, restaurants, food processors, food manufacturers, hospitals, prisons, nursing homes, hotels/motels, resorts/casinos and colleges and universities. The bill becomes effective in October of 2021 and also creates a Market Development Council and imposes procurement or purchasing requirements of compost product by State agencies. A copy of A2371/S865 can be found at: https://www.njleg.state.nj.us/2020/Bills/S1000/865_R1.PDF
- On October 15, 2020, then NJDEP Commissioner Catherine McCabe released “New Jersey’s Global Warming Response Act 80 x 50 Report” which evaluates statewide progress and identifies pathways to reducing statewide emissions by 80% by 2050. The full report can be found here: <https://www.nj.gov/dep/climatechange/docs/nj-gwra-80x50-report-2020.pdf>. Chapter 5 of this report focuses on emissions reductions needed in the “Waste and Agriculture” sector. Further, Table 5.4. provides recommendations for achieving emissions reductions from the waste and wastewater management sector, many of which will be advanced through the efforts of the Organics Workgroup.

ORGANICS AND CLIMATE CHANGE

In October 2020, the NJDEP released its “Global Warming Response Act 80 x 50 Report.” This important work evaluates New Jersey’s progress in addressing the climate threat and outlines pathways to reduce

emissions by 80% by the year 2050. The State's GHG emissions inventory outlines the usual sectors of concern:

- Transportation (42%)
- Residential & Commercial Heating & Cooling (26%)
- Electric Generation (19%)
- Industry (7%)
- Waste and Agriculture (5%)
- Halogenated Gases (5%)
- Natural Gas Transmission (3%)

Chapter 5 of the 80 x 50 Report specifically addresses the Waste and Agricultural Sector. "In 2018, the state's waste management and agricultural sectors collectively emitted 5.7 million metric tons (MMT) CO₂e contributing to New Jersey's net GHG emissions of 97.0 MMT CO₂e or 6% (NJDEP, 2019a). Waste management is the largest source of non-energy GHG emissions in the state at 5.3 MMT CO₂e, while emissions from agriculture are 0.4 MMT CO₂e. Municipal Solid Waste (MSW) is responsible for 82% of the total GHG emissions from the waste management sector. This includes GHG emissions from MSW processed and landfilled in New Jersey and the emissions from MSW landfilled out-of-state. Emissions from waste water treatment and agricultural sources contribute 7% each and industrial wastewater processing is responsible for 4% of the waste sector's total emissions."

According to USEPA, nationally municipal waste landfills are the third-largest source of human-related methane emissions in the United States, accounting for approximately 15.1 percent of these emissions in 2018. While landfilled food does emit methane, many landfills capture this gas and use it as an energy source. Lifecycle analysis studies have shown that the larger issue is the amount of greenhouse gases that are released during the production, processing, transport, and refrigeration of wasted food. For context, this consequence is even larger than methane emitted at landfills. (For more information regarding GHG emissions lifecycle analysis of the food supply chain please see and cut and paste the following links to access two excellent studies performed in the United Kingdom:

<https://pubmed.ncbi.nlm.nih.gov/29606533/> and [https://www.mdpi.com/2071-1050/12/9/3504.](https://www.mdpi.com/2071-1050/12/9/3504))

Nearly a quarter of what is disposed of in landfills is food waste. Food waste reduction and recycling represent a significant climate mitigation strategy to reduce organic waste by diverting edible food to those in need, creating renewable energy and producing compost to replenish depleted soils, thus increasing their ability to draw down and store carbon.

Waste composition studies in New Jersey and other states clearly show that the largest component of what is left in municipal waste after nearly 35 years of mandatory recycling is organic food waste. The NJDEP broadly estimates that 22% of the municipal waste stream is made up of food. National statistics compiled by the Natural Resources Defense Council (NRDC) regarding food waste estimate that 40% of all food produced in the United States goes to waste. At the State level, available statistics are equally alarming. While New Jersey is one of the wealthiest states in the country, ranking second in median family income, nearly 11% of our population is food insecure, and 15% of children under 18 are food

insecure – a dire situation already exacerbated by COVID 19. NJDEP further reports in its 2019 Draft Food Waste Reduction Plan the following estimates:

Producing food from farm to table utilizes:

- Over 16% of the total U.S. energy budget;
- Over 50% of U.S. land; and
- Up to 67% of freshwater consumed in the United States;

Given this enormous utilization of resources it is shocking to note that:

- Americans are throwing away over \$218 billion of food each year;
- Food waste is responsible for at least 2.6 percent of U.S. greenhouse gas emissions and large amounts of fertilizers are expended in the process;
- Most of the uneaten food is disposed of in landfills, contributing to 15% of U.S. methane emissions from organic matter.

Our sister states in the Northeast are considerably ahead of New Jersey in having engaged in comprehensive food waste recycling efforts through the passage of “disposal ban legislation” dating back to 2012 in Vermont, 2013 Connecticut and 2014 Massachusetts and Rhode Island and 2019 New York State. The Cities of New York and Philadelphia also have ongoing food waste recycling programs. Food waste reduction has also been embraced as an important public policy initiative in these States/cities.

SUSTAINABLE ORGANIC MATERIAL MANAGEMENT PLAN FOCUS AREAS & OPPORTUNITIES FOR ACTION TO EFFECT POSITIVE CHANGE

The following narrative and tables summarize the work of the Organics Workgroup. For each of the five above-referenced focus areas we have sought to list specific recommendations, suggested responsibility for implementation and general timeframe of importance. Timeframe recommendations can be loosely defined for public policy purposes as short-term (action to be initiated within the next year), mid-term (action to be initiated within the next two years) and long-term (action to be initiated in greater than 2 years.) These recommendations are viewed as a “work in progress” subject to regular reevaluation and updating. It is hoped that the actions within each Focus Area will be prioritized and advanced/implemented by member organizations that participated in the Organics Workgroup and that we collaborate as a cohesive “Organics Community” committed to the cause of promoting long-term climate mitigation and adaptation strategies.

Focus Area 1: Strengthen and expand the network of food redistribution efforts in New Jersey toward reducing food insecurity, especially among the poor and minority populations. Identify actions needed toward achievement of the Statewide goal of reducing food waste by 50% by 2030 as established by P.L. 2017, c. 136 (S3027) signed into law on July 21, 2017.

How and why. Nationally, the Natural Resources Defense Council (NRDC) estimates 40 percent of food produced in the U.S. is not eaten. The wasting of food is not only costly to consumers, it has negative environmental impacts due to the enormous use of natural resources expended in getting food from seed to table. Large amounts of greenhouse gases are emitted in the farming, transporting, manufacturing, and disposing of food that is wasted. To produce food that is never consumed causes the useless expenditure of cropland, water, fertilizer, pesticides, labor, and energy.

While behind our Northeastern State neighbors in addressing food waste management, New Jersey is rapidly catching up to our sister cities and states. Significant legislation is now in place along with excellent baseline work completed by the NJDEP to set the table for the development of a comprehensive implementation plan to pursue sustainable organic material management. Toward this end, in July 2017 the New Jersey Food Waste Reduction Act (S3027) was passed which established a Statewide goal of reducing food waste by 50% by 2030. The Act also charged NJDEP with developing a detailed food waste reduction plan which was completed in draft form in August, 2019. In May of 2019 Governor Phil Murphy signed into law a package of 10 bills he termed "first step measures" toward reducing the number of hungry and food insecure people in New Jersey. Among these was A4705 which established the New Jersey Food Waste Task Force as an interagency body of State Government to make recommendations concerning food waste management in New Jersey. In November 2019, the Departments of Environmental Protection, Agriculture, Education, Health and the Office of the Secretary of Higher Education released two excellent “School Food Waste Guidelines” – a K – 12 Edition and Higher Education Edition. These “how to guides” address both food waste reduction and recovery as well as food waste recycling in schools.

Climate change considerations are also highly relevant when considering food waste redistribution. On October 15, 2020, DEP released its “Global Warming Response Act 80 x 50 Report” which assesses the State’s progress while identifying pathways to achieve an 80% reduction in GHG emissions by the year 2050. Chapter 5 of this important work is dedicated to GHG emission reductions from the Waste and Agriculture sector. According to USEPA, municipal waste landfills are the third-largest source of human-related methane emissions in the United States, accounting for approximately 15.1 percent of these emissions in 2018. Nearly a quarter of what is disposed of in landfills is food waste. Food waste reduction through redistribution and recycling represent a significant climate mitigation strategy to reduce organic waste by diverting edible food to those in need, creating renewable energy and producing compost to replenish depleted soils, thus increasing their ability to draw down and store carbon.

In calculating climate impact in New Jersey, Page 95 of the DEP’s 80 x 50 Report concludes that: “In 2018, the state’s waste management and agricultural sectors collectively emitted 5.7 million metric tons (MMT) CO₂e contributing to New Jersey’s net GHG emissions of 97.0 MMT CO₂e or 6% (NJDEP, 2019a). Waste management is the largest source of non-energy GHG emissions in the state at 5.3 MMT CO₂e, while emissions from agriculture are 0.4 MMT CO₂e.”

Further, page 103 of the 80 x 50 Report provides, in Table 5.4 “recommendations for achieving emissions reductions from waste and wastewater management.” Many of these recommendations address more sustainable food management in terms of donation and consumption as well as expanded opportunities for composting to drive material away from landfills.

Members of the Organics Workgroup were asked to identify what “barriers” exist to food donation and redistribution and to recommend actions to make existing and future programs more effective and sustainable. The Workgroup also engaged in stakeholder discussions in April of 2021 to identify what entities would be responsible for addressing these recommendations and in what timeframe in terms of priority. The following table summarizes the recommendations of the Organics Workgroup members who engaged in the “Food Waste Reduction and Donation” discussions.

TABLE 1.0: FOOD WASTE REDUCTION AND DONATION RECOMMENDATIONS

	Action	Suggested Responsibility	Timeframe
1.	Simplify the food donation reporting system for tax purposes. A formal system should be brokered between the Feeding America food banks and the direct food providers across the state to ensure that places with the capacity to do their own pickups can do so and reduce the miles food must travel to donors.	Food Waste Task Force, Involved State Agencies and existing Food Bank Network	Short-Term
2.	Convene the New Jersey Food Waste Task Force as required under P.L. 2019 c.92 (A4705) signed into law on May 9, 2019. It is critical to launch the Task Force as a central, interagency policy group with private sector representation to drive State programs.	Governor’s Office, Department of Human Services	Short-Term,

3.	Formally adopt the NJDEP's Food Waste Reduction Plan toward achievement of the 50% reduction goal by 2030 as established by P.L. 2017, c. 136 (S3027)	NJDEP	Short-Term
4.	Widen efforts of organizations such as Table to Table and others who focus on food rescue will reduce food waste by providing transportation services from grocery stores and large entities to food pantries and food banks.	Legislature, Food Waste Task Force, Involved State Agencies, Private Sector	Short-Term
5.	Develop and implement a targeted statewide education campaign to dispel misconceptions regarding the applicability of expiration dates stamped on food products, as well as concerns for prospective liability when donating food despite the existence of "Good Samaritan Laws" at the State and Federal level. https://www.feedingamerica.org/about-us/partners/become-a-product-partner/food-partners . Design information sessions for corporate, retail, and non-profit leadership in addition to food banks and food pantries.	Governor's Office, NJ Food Waste Task Force, Organics Workgroup, County and Municipal Recycling Coordinators, applicable professional associations statewide.	Short-Term
6.	Design and implement a general statewide and local public education campaign for adults in multiple languages on a) how much food waste costs consumers/their wallets; b) its expense to taxpayers (% that food waste contributes to solid waste removal cost); c.) food storage and preservation BMPs. Education of food-serving industries (eg. hospitality, restaurants) and institutions with cafeterias/food courts about optimal portion sizing (cost vs. consumer value vs. nutrition); quantifying food waste's contribution to their solid waste removal expenses; potential savings to operational costs by reducing food waste in-house and/or participating in local food redistribution programs.	NJ Food Waste Task Force, NJDEP, NJDOA, Ag Extension, County and Municipal Recycling Coordinators, applicable professional associations statewide, such as NJ Food Council, NJ Climate Change Alliance, Restaurant Association, RU Cooperative Extension, ANJR, NJ Composting Council, Sustainable Jersey, etc.	Short-Term
7.	Conduct stakeholder surveys, particularly in urban areas, to understand the effectiveness and limitations of food redistribution systems. Inventory service providers and clients and develop action lists to improve programs.	Involved State Agencies, Organics Workgroup Education Committee, Local Non-Profit Organizations	Short-Term
8.	Work with municipalities to encourage operating a food bank, food pantry or soup kitchen within a designated municipal facility; or partner in a meaningful way with a county, faith-based institution, or community organization that provides food assistance.	League of Municipalities, Sustainable Jersey	Short-Term

	Publicly promote a list of food banks, food pantries, and soup kitchens within the nearby region, in coordination with community faith-based and nonprofit organizations, as well as key staff or stakeholders who coordinate services for vulnerable populations. Where possible, provide delivery service and/or transportation for residents to get to local pantries, whether run by the municipality, or county or community partners.		
9.	Develop a Statewide “food asset inventory and map” to provide an interactive reference source of generators of excess food, regional and local distribution centers and transportation providers. Of critical importance to have dedicated resources to update the inventory regularly to ensure the accuracy of the information.	Stockton University, Food Democracy Collaborative, Rutgers University and the Center for Eco Technology in Cooperation with NJDEP	Short to Mid-Term
10.	Utilizing available tools like the EPA Excess Food Opportunities Map, New Jersey inventories and eventual New Jersey food asset map, to perform a Statewide and Regional “gap analysis” toward developing needed new or expanded local food rescue infrastructure.	Stockton University, Food Democracy Collaborative, Rutgers University, Food Waste Force, State Agencies	Mid-Term
11.	Create a legislatively authorized New Jersey Food Waste Reduction Council (Council) under the direction of the New Jersey State Department of Health, in consultation with the NJDEP as called for in the Draft NJDEP Food Waste Reduction Plan, August 2019.	Legislature	Mid-Term (if necessary)
12.	Develop targeted outreach on cooking education. Need chefs, nutritionists, other food-related specialists to a) help translate between culinary cultural norms and locally available foods/ingredients as well as to encourage food pantry clients to cook across cultures; b) develop nutritionally dense meals using simple ingredients; c) preserve produce that may be received 'on the verge' for circulation by food banks, food pantries, and social service agencies.	Involved State Agencies, Organics Workgroup Education Committee	Mid-Term
13.	Work in concert with Farmers, corporate food waste growers and food co-ops to manage the collection, donation and redistribution of “ugly food” commonly wasted due to unconventional appearance.	Farmers, commercial growers, NJ Dept. of Agriculture, Ag Experiment Station, Food Democracy Collaborative	Mid-Term

14.	Engage statewide and regional healthcare networks to assess their role in performing or coordinating “community benefit” services within municipalities and neighborhoods.	Governor’s Office, Food Task Force, State Agencies, senior officials in leading healthcare institutions (Robert Wood Johnson/Barnabas Health, Virtua, Hackensack Meridian, Capital Health, etc.	Mid-Term
15.	Perform a literature search to identify funding mechanisms to support food rescue initiatives used in other States and localities across the country. Evaluate options and pursue establishment of feasible programs.	Food Waste Task Force, State Agencies, State Legislature, Organics Workgroup	Mid-Term
16.	Enhance coordination among food rescue organizations, Health Inspectors, transportation providers, etc. Consider the “Certified Recycling Professional” model used for Municipal Recycling Coordinators. Design written outreach materials, educational webinars, participant inventories, etc.	Legislature, Food Waste Task Force, CEHA, Rutgers Short-Course Program	Long-Term
17.	Develop and institutionalized funding source toward conducting recurring statewide solid waste audits or composition studies.	Food Waste Task Force, NJDEP, other State Agencies	Long-Term
18.	Research best practices for food packaging and develop guidance on proper management (recycling, light-weighting, compostables, biodegradables) for distribution to supermarkets, restaurants, convenience stores, etc.	Food Task Force, State Agencies, Manufacturers	Long-Term

Focus Area 2: Design and implement programs for sustainable food waste management in schools centered on enhancing “Share Tables” opportunities, off-site redistribution of food, on-site community/school gardens and on-site or off-site composting.

How and why. Food Waste Management in Schools represents another critical sector and challenge in sustainable organic material programs. Here, both food waste reduction/donation strategies and the provision for on-site or off-site composting need attention and regulatory reform. In round numbers, New Jersey has 2,500 k-12 public schools and nearly 600 school districts. This universe is substantially larger when parochial and charter schools are added in. New Jersey also has nearly 70 institutions of higher learning including public colleges and universities (11), private colleges and universities (14), community colleges (18), for profit institutions (9) and religious institutions (15). Enormous amounts of unopened and untouched food and beverages are thrown out daily in schools, particularly from government assistance programs which are so important to the provision of nutritional choices for students. Significant confusion exists surrounding the safety rules and regulations and potential liabilities associated with food donation. “Share Tables” programs exist, but are far from prevalent in New Jersey Schools. Schools often worry about donating or reusing food that is thrown out by students due to liability issues. Each school needs to get clearance from the local department of health regarding their food safety practices, however the state does not provide any guidance or regulations on what is expected of schools related to food donation practices. On-site and off-site composting options are available to schools, but

very few actually use them as most food waste ends up in landfills where it decomposes and creates methane gas, thus contributing to GHG emissions. DEP regulatory provisions regarding composting also serve as barriers to on-site management and the shared use of composting infrastructure between schools.

Regarding donation, the challenge is figuring out how unopened and untouched food can be collected and either redistributed within the school or donated to off-site food rescue organizations? Should a “Share Tables” campaign be developed that prioritizes redistributing food among students first, students' families second, and the community at large third? How can we identify funding options and incentives and put in place effective regulatory reforms such that, where possible, schools with a cafeteria have manual or mechanical equipment to compost food waste? From a regulatory standpoint, an in-vessel composter can be used in a specific school without needing a DEP approval. However, all the regulatory bells and whistles go off should a school take food waste from another school in the same district – it becomes a “commercial facility.” Outstanding K-12 and Higher Education food waste guidance documents were developed and released in 2019 collaboratively by the State Departments of Environmental Protection, Agriculture, Health, Education and the Office of the Secretary of Higher Education. These “how to guides” address both food waste reduction and recovery as well as food waste recycling in schools. However, have these materials been put to broad use within New Jersey schools? Are more targeted educational materials needed and how can they best be put into effect? Do we need sustainable material management curricula to be developed along with other required climate change educational materials for distribution and use in schools? Funding programs are always an issue of concern, but some do exist, like the Sustainable Jersey For Schools small grants assistance program funded through donations from PSEG, the New Jersey Education Association and the Gardinier Environmental Fund. What other funding mechanisms exist to promote sustainable organic material management in schools?

Members of the Organics Workgroup were asked to identify what “barriers” exist to food waste management in schools and to recommend actions to make existing and future programs more effective and sustainable. The Workgroup also engaged in stakeholder discussions in April of 2021 to identify what entities would be responsible for addressing these recommendations and in what timeframe in terms of priority. The following table summarizes the recommendations of the Organics Workgroup members who engaged in the “Food Waste Management in Schools” discussions.

TABLE 2.0: FOOD WASTE MANAGEMENT IN SCHOOLS RECOMMENDATIONS

	Actions	Suggested Responsibility	Timeframe
1.	Design an outreach program to make all schools aware of the “New Jersey School Food Waste Guidelines” for Higher Education, November 2019 Edition	State Agencies, Office of the Secretary of Higher Education, NJ Association of State Colleges & Universities, County and Municipal Recycling Coordinators, Sustainable Jersey for Schools, Non-Profit Associations	Short-Term
2.	Assemble spotlight case studies of the costs and benefits of automated composting systems in New Jersey at Kean University, Princeton,	State Agencies in Cooperation with Equipment Vendors	Short-Term

	Montclair State, Raritan Valley Community College, Bergen County Community College, Ramapo College		
3.	Draft a White Paper summarizing Federal and State laws, rules and regulations affecting food waste recovery in schools. Highlight “Share Tables” and off-site redistribution opportunities.	State Agencies, NJEA, School Boards Association, Sustainable Jersey	Short-Term
4.	Develop Statewide inventory of food waste haulers/transporters and end market composting facilities for use by school officials for off-site management.	NJDEP, County Solid Waste or Recycling Coordinators	Short-Term
5.	Perform a literature search to identify funding sources for food waste recovery in schools. Evaluate options and pursue establishment of feasible programs. Potential sources include Sustainable Jersey For Schools (Gardinier, PSEG and NJEA grants), Hipp Foundation for Excellence, PRIDE Grants, NJDOE Grants	NJDOE, School Boards Association, NJEA, NJASCU	Short-Term
6.	Design and launch a Statewide education awareness campaign on the need for and benefits of sustainable organic material management in schools, enlist champions within each school as primary environmental coordinator.	State Agencies, NJEA, School Boards Association	Mid-Term
7.	Create K – 12 curriculum and lesson plans to integrate organic material management within required climate change education materials. Curriculum focus on Share Tables opportunities, food systems, nutrition, and healthy food relationships.	Specific Academia, NJEA, Schools Boards Association, State Agencies	Mid-Term
8.	Create “Standard Operating Procedures” for school food service that are reinforced, as needed, by State law or guidance to address liability concerns with food donation. Implement school-to-school mentoring to accelerate participation and set-up.	NJ Legislature, State Agencies in cooperation with public health officials and the NJ Association of County & City Health Officials, Sustainable Jersey	Mid-Long Term
9.	Develop a State-wide surplus database of refrigeration and food-handling equipment for schools to access to promote off-site redistribution of excess food.	State Agencies, NJEA, Schools Boards Association, Food Democracy Collaborative	Mid-Term
10.	Design and implement food waste reduction, collection and redistribution programs in all schools with particular focus on untouched/uneaten food provided to students through government assistance programs.	NJEA, School Boards Association, Sustainable Jersey for Schools, School Administrators and Custodial Staff	Mid-Term
11.	Advocate on-site composting of food waste generated by individual schools and between	NJDEP, NJEA, School Boards Association, County and	Mid-Term

<p>schools in the same school district. Remove existing regulatory barriers that prevent regional management of food waste in schools through exemptions within the NJDEP’s Solid & Hazardous Waste Regulatory Code.</p>	<p>Municipal Recycling Coordinators, Rutgers Cooperative Extension, Sustainable Jersey for Schools, School Administrators and Custodial Staff</p>	
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Focus Area 3: Advance Community Scale Composting across New Jersey through public education and regulatory reform to maximize and incentivize backyard composting, community gardens, and municipal and private sector windrow composting.

How and why. NJDEP community-scale composting infrastructure is limited with very few permitted Class C composting facilities operating across the entire State, about 40 total as of February 2021, nearly half only accept leaves and grass from a single municipality and virtually none that accept food waste. Where hundreds of municipal windrow composting facilities used to operate, very few remain. Only two larger commercial food waste composting facilities are operational while generation estimates show the need for many more. Backyard Composting has been a waste reduction strategy in New Jersey’s Statewide Solid Waste Management Plan for nearly 40 years. However, experience with recycling education has proven the need for regular messaging. Renewed efforts to advocate backyard composting are needed. Similarly, community gardens are a wonderful resource to grow healthy produce in urban or suburban areas and for composting appropriate “greens and browns” to create compost soil amendment needed for soil health and sustainable crop growth. Currently, suitable small-scale facility exemptions and/or streamlined regulatory provisions are not sufficient. Mandated fees alone are totally unworkable, prohibitively expensive.

The NJDEP’s Global Warming Response Act “80 x 50” Report (October 2020) recognizes the need for driving organic material away from landfills where methane gas is produced and toward more sustainable management through composting: *“Community composting programs that allow residents to drop off food waste at no or low cost at a local composting sites should also be incentivized. Neighborhood composting programs promote a culture of environmental awareness among residents and have the potential to keep many tons of organic waste out of the waste stream. The City of Philadelphia is implementing a community composting program in 2020 which could serve as guidance for these programs in New Jersey. Proper siting and permitting that addresses environmental impacts must be designed into approved sites. The DEP is currently investigating solid waste rules to facilitate community composting programs.”* DEP further provides specific recommendations related to community composting as follows:

- Create guidelines/recommendations for county siting and streamlined state planning and permitting of food waste recycling facilities.
- Create incentives to site organic waste recycling, composting or anaerobic digestion operations.
- Adopt a community composting rule to streamline the approval process across the DEP.
- Educate residents about the environmental, financial and societal issues of wasted food.

Going forward the organics community should work through County and Municipal Recycling Coordinators, ANJR, the Rutgers Cooperative Extension Service, NJDEP and other State agencies and

programs like Sustainable Jersey to bring backyard composting education full throttle to make it commonplace all across the State where this practice is feasible and makes sense. DEP needs to develop General Permits, Permit-By-Rule, simple registration and certification provisions or outright permit exemptions needed to foster an explosion of new Community Gardens. Reexamination is also needed of Class C Recycling Center regulatory requirements which are so stringent that new facility development is being thwarted as opposed to encouraged. Interagency coordination is critical within the DEP so that, in particular, the Solid & Hazardous Waste, Air and Stormwater Management programs work together in timely and efficient regulatory review. Finally, incentives are needed through government that recognize sustainable “green” management practices and serve to reward efforts that correspond with stated public policy goals.

Members of the Organics Workgroup were asked to identify what “barriers” exist to community-scale composting efforts and to recommend actions to make existing and future programs more effective and sustainable. The Workgroup also engaged in stakeholder discussions in April of 2021 to identify what entities would be responsible for addressing these recommendations and in what timeframe in terms of priority. Table 3.0 summarizes the recommendations of the Organics Workgroup members who engaged in the “Community-Scale Composting” discussions.

TABLE 3.0 COMMUNITY SCALE COMPOSTING RECOMMENDATIONS

	Actions	Suggested Responsibility	Timeframe
1.	Develop a Statewide generator study to determine what large quantity generators are subject to A2371/S865 to enable targeted outreach regarding roles, responsibilities and obligations when the disposal ban becomes effective in October 2021	Climate Change Alliance in concert with NJDEP	Short-Term
2.	Revisit and expand Backyard Composting education and outreach programs across each county and municipality.	County and Municipal Governments, Rutgers Cooperative Extension Service	Short-Term
3.	Develop Community Gardens across the full range of urban, suburban and rural municipalities to promote healthy eating, composting of garden and residential food scraps and to promote neighborhood interaction. Remove existing regulatory barriers to exempt community gardens from NJDEP’s Solid & Hazardous Waste Regulatory Code.	NJDEP, NJ Composting Council, Rutgers Cooperative Extension Service, Sustainable Jersey, ANJR, Municipal Governments and Neighborhood Leaders	Short-Term
4.	Forster interactive relationships between NJDEP permitting staff and applications toward a “metric of success” objective, i.e. iterative cooperation toward permit approval	NJDEP with applicants	Short-Term
5.	Create a Statewide Database of all exempt compost facilities	NJDEP	Short-Term

6.	Encourage the use of Farmers markets as a drop off location for food scraps and source of educational materials for composting	NJDOA under Farm To Table Program	Short-Term
7.	Develop general guidance materials on composting and proper facility siting to help advance facility development and avoid NIMBY issues	NJDEP, NJDOA, Food Waste Task Force, County and Municipal Governments	Short Term
8.	Plan for end use of the compost/encourage end use: fill the Market Development Council positions outlined in A2371	Food Waste Task Force, Department of Treasury, NJDOT, NJDEP, NJDOA, Market Development Council	Short-Term
9.	Encourage county governments to update their existing Recycling Master Plans to incorporate a dedicated component dealing with food waste.	NJDEP	Mid-Term
10.	Evaluate existing regulatory criteria for the operation of outdoor windrow composting facilities remove permitting barriers which thwart facility development and develop a tiered permitting structure.	NJDEP	Mid-Term
11.	Create General Permits for Air and stormwater for compost sites in line with Class C Recycling Center approvals	NJDEP	Mid-Term
12.	Develop a permit-by-rule or simpler “registration” program for ALL small composters below a specified monthly or annual volume with an easy to administer “certification” by the applicant under 7:26A-1.4 Activities exempt from general or limited approval	NJDEP	Mid-Term
13.	Develop clearer rules for farmers who would like to compost food waste and prepare outreach and education materials targeted to farmers on composting	NJDEP, NJDOA, Ag Extension Specialists	Mid-Term
14.	Avoid technology based requirements in regulations – focus on volumetric and performance based standards	NJDEP	Long-Term
15.	Create direct business incentives for composters and generators who engage in sustainable organics management such as Philadelphia’s “Sustainable Business Tax Credit Program (see: https://www.phila.gov/services/payments-assistance-taxes/tax-credits/sustainable-business-tax-credit/)	Legislature, Treasury Department, Division of Taxation	Long-Term

Focus Area 4: Implement A2371/S865 to further develop New Jersey’s large-scale organics recycling infrastructure and processing capacity through the use of aerobic, anaerobic and co-digestion technology at existing and new facilities.

How and why. In April 2020 Governor Murphy signed into law New Jersey’s version of Statewide disposal ban legislation in the form of A2371/S865. This law will require large generators of food waste (52 tons per year or 1 ton per week) to source separate and compost or otherwise recycle their food waste, provided there is a composting facility located within 25 road miles and the cost is less than what generators currently pay for disposal. The bill becomes effective in October of 2021 and also creates a Food Waste Market Development Council and imposes procurement or purchasing requirements for compost products purchased by State agencies.

Large-scale food waste digestion facilities exist in New Jersey, but only two are currently in operation. Trenton Renewables operates an NJDEP permitted 450 ton per day (TPD) anaerobic digestion facility for source separated food waste on Duck Island in Trenton. The facility opened in late 2019. Waste Management Inc. (WMI) opened a 500 TPD Class C processing facility in Elizabeth in 2018. In an unprecedented arrangement, WMI operates a macerator (or very large blender) to convert food waste to a liquid slurry. This slurry is then pumped into tanker trucks and is transported to the Rahway Valley Sewerage Authority wastewater treatment plant where it is injected into an existing, capitalized digester. Here the digester capacity is better used to generate and capture renewable natural gas which is cleaned and fed into pipelines for use. It is also anticipated that biosolids (sludge) quality will improve with the addition of the food waste which will enhance opportunities for beneficial use management applications. Overall, the DEP in its Draft Food Waste Reduction Plan of August 2019 estimated that 1.46 million tons of food waste was generated in 2017 (latest information available). Only 161,218 tons were recycled in 2017 (an 11% recycling rate). The two above mentioned existing commercial food waste processing facilities have roughly 230,000 tons per year of maximum capacity. This leaves a shortfall of over 1 million tons per year that must be addressed through food waste reduction and additional small-scale and large-scale capacity development for New Jersey to achieve its organic material management goals. Beyond food waste reduction and community composting opportunities, the challenge becomes how can we utilize the enactment of New Jersey’s disposal ban legislation through A2371/S865 to design a campaign to attract the best available technology vendors to seriously consider developing large scale facilities in New Jersey? How can we coordinate with NJDEP and the large public utility wastewater treatment plants to assess whether the co-digestion model can be expanded elsewhere in the State or Region? Co-digestion can represent a “win-win” proposition where efficient source separated food waste processing through maceration/blending can be matched with existing, capitalized environmental infrastructure (wastewater treatment plant digesters) to recycle food and create renewable natural gas.

Members of the Organics Workgroup were asked to identify what “barriers” exist to large-scale organics recycling infrastructure development and to recommend actions to make existing and future programs more effective and sustainable. The Workgroup also engaged in stakeholder discussions on April 29, 2021 to identify what entities would be responsible for addressing these recommendations and in what timeframe in terms of priority. Table 4.0 summarizes the recommendations of the Organics Workgroup members who engaged in the “Large-Scale Organic Recycling Infrastructure” development discussions.

TABLE 4.0 LARGE-SCALE ORGANICS RECYCLING INFRASTRUCTURE RECOMMENDATIONS:

	Actions	Suggested Responsibility	Timeframe
1.	Develop a Statewide generator study to determine what large quantity generators are subject to A2371/S865 to enable targeted outreach regarding roles, responsibilities and obligations when the disposal ban becomes effective in October 2021	Climate Change Alliance in Cooperation with NJDEP	Short-Term
2.	Require county governments to update their existing Recycling Master Plans to incorporate a dedicated component dealing with food waste. Place emphasis on the potential for developing large-scale regional composting operations at the existing 12 state-of-the-art landfills currently in operation	NJDEP working in cooperation with the 21 counties	Short-Term
3.	Require regional wastewater authorities to assess the feasibility of using existing secondary digester capacity to process source separated and pulped food waste using the Rahway Valley Sewerage Commission as a model.	NJDEP working in cooperation with NJ regional authorities	Short-Term
4.	Create guidelines/recommendations for county siting and streamlined state planning and permitting of large-scale food waste recycling facilities. Priority should be given to regional facility siting to reduce transportation costs and to complement efficient organics collection.	NJDEP (as recommended in the October 2020 Global Warming Response Act 80 x 50 Report	Short-Term
5.	Reach out to other States to find out how they regulate large-scale composting facilities and to identify, in particular, regulatory provisions and programs that have been used to facilitate new facility development. What barriers did they have to overcome and how did they accomplish it? Focus should be on Northeastern States that have had disposal ban legislation in place much longer than New Jersey (Massachusetts, Connecticut, Vermont and Rhode Island)	Organics Workgroup, NJDEP, Composting Council, ANJR	Short-Term
6.	DEP needs to reassess and coordinate its regulations for solid waste/air/water and insure coordinated policy that guides the regulatory process. If the goal is to establish food waste composting/recycling facilities, then the rules across all three areas need to be in sync so that one area does not impede the other.	NJDEP	Short-Term
7.	Change the focus of organics management to restore vitality to the soil, reduce compaction of	NJDEP, Counties, NJCC, composting industry	Short Term

	the soil, increase the water-holding capacity of the soil, and sequester carbon. Change the messaging of the issue to soil health and sequestration. Need applying a Carbon Assessment to identify projects that provide the most possible carbon reduction.		
8.	Develop an incentive program specifically for small scale organic waste (biomass) to electricity facilities.	NJBPU in Cooperation with NJDEP, ANJR & Composting Council	Short Term
9.	Review existing and need for new financial and regulatory incentives to site large-scale organic waste recycling, composting or anaerobic digestion operations.	State agencies with NJDEP lead, New Jersey Legislature as needed	Mid-Term
10.	Further develop State collection infrastructure and create value for end products such as renewable natural gas and soil amendment products such that organics composting is cheaper than disposal.	Legislature, State agencies, associations, composting industry	Mid-Term
11.	Work with industry to define material acceptance and testing criteria to help ensure proper large-scale facility operation and to build public confidence in automated technology solutions.	DEP in concert with the NJCC, ANJR and broader composting industry	Mid-Term
12.	Landfills should be encouraged to investigate how they can recycle food waste and other organic material. They can host standalone anaerobic digesters to receive "source separated food waste". Instead of burying the organics mixed with other waste as they do currently, they should evaluate opportunities for converting source separated organics into clean renewable natural gas and clean digestate that can serve as feedstock for composting.	DEP in concert with county governments and authorities which run existing landfills	Mid-Term
13.	Perform a technology assessment of best available large-scale food waste composting technologies.	NJDEP with participation by outside associations	Mid-Term
14.	Solicit the development, perhaps through a State RFQ/RFP process, for pilot projects using different technologies to be located across the State	NJDEP in cooperation with the private sector	Mid-Term
15.	Amend the Electric Discount and Energy Competition Act (EDECA) at NJSA 48:3-87d to establish organic waste (biomass) renewable natural gas (RNG) as a Class I renewable energy source	State Legislature in Cooperation with BPU	Mid-Term
16.	Develop standards for the use of renewable natural gas (RNG) for injection into existing natural gas pipelines	NJBPU	Mid-Term

17.	Develop legislative amendments to local contracting statutes administered by NJDCA and NJBPU to merge procurement specifications into a single bid for organics collection by municipalities. Launch needed education programs for the revised bid specifications that link to the Renewable Government Energy Aggregation Program	Legislature, DCA, BPU, DEP, League of Municipalities, Sustainable Jersey	Long-Term
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Focus Area 5: Perform an assessment of current Statewide animal manure management practices to assemble metrics on the amount, type and location of generation across New Jersey. Identify barriers to more sustainable management practices and recommend system improvements. Review opportunities for regional composting operations with energy recovery.

How and why. Animal manure is a valuable resource if handled responsibly but a source of serious challenges and public health concerns if managed inappropriately. The USDA provides information, by State on agricultural operations through its National Agricultural Statistics Service. Information for New Jersey is provided by the New Jersey Field Office of the USDA. These 2020 statistics show that New Jersey has some 9,900 farms with approximately 750,000 acres of land in farm operation. The livestock inventory provides that in 2020 there were approximately 8,600 cows raised for beef, 4,400 cows producing milk and 7,500 hogs. 2017 Census data indicates that there are approximately 11,000 goats on 1,000 farms, 23,374 horses across 2,754 farms, 1,631,775 egg laying chicken across 1,986 farms, and 25,331 meat chickens across 175 farms. Statistics on potential manure generation and farm-specific management practices appear unavailable.

The NJDEP Global Warming Response Act 80 x 50 Report Chapter 5 addresses “Waste and Agriculture” and provides some assessment of GHG emission impacts from animal manure as a minor source. *Agricultural practices contribute a small amount (less than 0.5%) to New Jersey’s GHG emissions. Enteric fermentation or digestion of food in ruminant animals such as cattle, and animal wastes are the leading sources of methane from agricultural activities. Animal manure management accounted for 7% of the total agricultural subsector emissions. Manure management contributes to methane and nitrous oxide emissions in varying amounts depending upon how it is processed (USEPA, 2020c). However, the aggregate agricultural emissions of 0.4 MMT CO₂e in 2018 is not a large contributor to New Jersey’s GHG inventory.*

The 80 x 50 report goes on to state that, as part of Best Management Practices for nutrient management of the soil, the NJ Department of Agriculture recommends composting of manure, leaves and crop residue. This helps to conserve nutrients produced on the farms and reduces the application of commercial fertilizer. NJDA works in partnership with the USDA Natural Resources Conservation Service, Rutgers Cooperative Extension, and the Soil Conservation Districts to provide technical and financial assistance for the installation of conservation practices including, among other guidance, animal waste storage and composting and nutrient management planning. Further, NJDEP requires farmers conducting onsite composting at volumes greater than 5,000 cubic yards per year to take the on-farm composting certification course every three years to maintain certification.

Can we assemble a comprehensive inventory of existing livestock/hog/horse/chicken operations in New Jersey to build baseline information on manure generation? Assessment of existing best management practices for manure is needed to understand the current management status. We should assess the need for expanded education and outreach materials to the generator community. We should also evaluate opportunities for more sustainable regional management of animal manure across the generating community.

Members of the Organics Workgroup were asked to identify what “barriers” exist to sustainable animal manure management and to recommend actions to make existing and future programs more effective and sustainable. The Workgroup also engaged in stakeholder discussions on May 6, 2021 to identify what entities would be responsible for addressing these recommendations and in what timeframe in terms of priority. The following table summarizes the recommendations of the Organics Workgroup members who engaged in the “Sustainable Animal Manure Management” discussions. It should be noted that recommendations contained in the DEP Global Warming Response Act 80 x 50 Report were also included within this table.

TABLE 5.0 SUSTAINABLE ANIMAL MANURE MANAGEMENT RECOMMENDATIONS:

	Actions	Suggested Responsibility	Timeframe
1.	Prepare a baseline inventory of animal manure generators and existing modes of management using available electronic resources.	NJ Dept. of Agriculture, Ag Experiment Station, Farm Bureau, NRDC, Organics Workgroup	Short-Term
2.	Review existing best management practices for manure management as applied to the different sectors of generation between horse farms, pig farms, livestock operations, chicken farms, zoos and amusement parks, racing establishments, etc.	NJ Dept of Agriculture, Ag Experiment Station, Farm Bureau, NJDEP	Short-Term
3.	Engage a cross-section of generators to determine existing challenges in manure management.	NJ Dept. of Agriculture and Organics Workgroup, NRCS regional working groups, North Jersey Resource Conservation & Development, NJ Water Supply Authority	Short-Term
4.	Engage the broader generator community and identify opportunities for linking supply and demand toward appropriate beneficial use of manure (this should include the scientific, regulatory, product suppliers and end-users' communities).	NJ Dept. of Agriculture, NJDEP, Organics Workgroup	Short-Term
5.	Expand education and outreach materials to distribute throughout the manure generator community. Guidance needs to convey regulatory requirements as well as clear best management practices.	NJ Dept. of Agriculture, Farm Bureau, Rutgers Ag Extension, county governments, local and regional non-profit organizations	Short-Term

6..	Increase outreach efforts to enroll farmers in the USDA's Environmental Quality Incentives Program (EQIP) ¹⁷ , the Conservation Reserve Enhancement Program (CREP) ¹⁸ and the utilization of precision agriculture.	NJ Dept. of Agriculture, NJDEP	Short-Term
7.	(i) promote research and monitoring efforts to quantify the environmental and economic impacts of improperly managed animal wastes; (ii) focus efforts to highlight the benefits of properly-managed wastes (economic, environmental); (iii) identify solutions that will work at all scales (iv) advocate for practical, cost-efficient BMPs that are environmentally-sustainable.	NJDEP, NJ Dept. of Agriculture, Farm Bureau, Organics Workgroup, Rutgers	Mid-Term
8.	Support the development of Regional Composting Facilities that function free of off-site odors for Equine Manure and incentives for smaller on and off farm composting facilities.	NJDEP, NJ Dept. of Agriculture, Farm Bureau, Board of Public Utilities	Mid-Term
9.	Create incentives for use of animal manure and food waste in WWT facilities.	NJDEP, NJ Dept. of Agriculture	Long-Term
10.	Review existing funding sources to advance sustainable manure management and identify gaps where funding is needed. Review legislation in other States to identify potential models for additional funding in New Jersey.	NJDEP, NJ Dept. of Agriculture, Organics Workgroup	Long-Term

APPENDIX A: AFTER ACTION REPORTS

Introduction: Immediately after each of the six referenced stakeholder meetings, an “after action report” (similar to meeting minutes) was produced to summarize and memorialize the discussion. Beyond recording what transpired, an attempt was made to further research the subject matter of each discussion question and to provide additional information and relevant internet links. A further attempt was made to insert “hyperlinks” for direct access to source information. In some cases it will be necessary to copy and paste the referenced link into your browser for access. Draft after action reports were circulated to the entire Organics Workgroup after each session and prior to the next scheduled stakeholder discussion for review and comment. The following represent the final after action reports for each of the six stakeholder discussions, which include edits made following stakeholder review.

AFTER ACTION REPORT 1.0 FOOD WASTE REDUCTION AND DONATION Stakeholder Discussion of April 1, 2021

On April 1, 2021, the Organics Workgroup held its first “stakeholder focus group discussion” on the topic of “Food Waste Reduction and Donation.” To prepare for the discussion and to identify issues of concern, Workgroup members were sent a fillable PDF survey questionnaire on February 16, 2021 and asked to address four basic issues.

- Briefly describe the issue in need of being addressed that is “broken” in this Focus Area?
- List the barriers that inhibit the development of solutions to this problem.
- Recommend a solution(s) and steps needed to "fix" this problem?
- In comparison to other needs in this Focus Area, in your opinion is this issue high, medium or low priority?

Through this process, member input resulted in 18 recommendations submitted prior to the scheduled focus group discussion as follows:

1. Develop a Statewide Food Asset Inventory and GIS Map
2. Utilize GIS Mapping Tool Toward “Infrastructure Gap Analysis”
3. Name and Convene Food Waste Task Force
4. Create a Legislative Food Waste Reduction Council
5. Formally Adopt NJDEP Food Waste Reduction Plan
6. Enhance Coordination Among Food Rescue Organizations
7. Improve/Expand Transportation Infrastructure: Table to Table
8. Education Campaign to Dispel Misconceptions
9. Statewide Education on How Food Redistribution Works/Benefits
10. Targeted Outreach/Education on Cooking/Nutrition

11. Stakeholder Surveys of Service Providers & Clients To ID Actions
12. Conduct Recurring Waste Audits and Composition Studies
13. Enhance Donation of “Ugly Food” to Clients
14. Encourage Municipal Engagement in Food Redistribution
15. Perform Literature Search of Food Redistribution Funding Sources
16. Engage Public Health Networks to Link to Community Benefit
17. Develop Best Practices for Food Packaging & Guidance
18. Simplify Food Reporting System for Tax Purposes With Feeding America

From these recommendations, Workgroup coordinators prepared seven core questions which served as the agenda for the stakeholder focus group discussion. These questions are listed below and after each any follow-up activities have been listed to chronical the next steps identified during discussions. Collectively, this summary represents the “After Action Report” stemming from the food reduction and donation focus group.

1. Several recommendations addressed “central governance” across State Agencies and at least 4 structures were nominated. What structure is best?

Four different central governance models were identified through the survey process and were discussed. It was agreed that more background on each would be disseminated to Workgroup members. The four models include:

1. New Jersey Food Waste Task Force established pursuant to A4705 adopted in May of 2019
2. Food Waste Recycling Market Development Council Required Pursuant to A2371/S865 Adopted in April 2020
3. New Jersey Food Waste Reduction Council recommended by NJDEP in their Draft Food Waste Reduction Plan released August of 2019
4. Food Policy Councils that have been created across the United States that include participants representing all five sectors of the food system (production, consumption, processing, distribution and waste recycling).

Following the April 1 focus group discussion, Appendix B was created which provided background information on all four models. It should be pointed out that the New Jersey Food Waste Task Force and Food Waste Recycling Market Development Council have already been created through acts of the Legislature. However, as of April 2021, membership has not been named for either. A Statewide Food Waste Reduction Council or Food Policy Council would require future Legislative enactment.

It was pointed out during discussions that the Food Waste Task Force was created as a temporary governmental body to review statewide food waste management issues while the proposed Food Waste Reduction Council would be an ongoing body of State government. Once again, please refer to Appendix 3 for more information on each of these central governance body models.

2. A number of recommendations called for Statewide and more targeted education and outreach. How best to proceed and who should lead this effort?

From discussion a strong consensus exists regarding the need for education to dispel misconceptions regarding prospective liability in food donation and date labels, explain how food rescue operations work and generally to raise awareness of food insecurity. However, there was an equally strong consensus that education needs to be targeted to individual “sectors.”

Below are the sectors that NJDEP has identified within its’ Draft Food Waste Reduction Plan (August of 2019) as the main areas where wasted food occurs:

1. Consumer/Residential
2. Institutions
3. Donations
4. Retail
5. Production/Manufacturing
6. Restaurants, Caterers and Food Services
7. Government at all levels

Central messaging by sector was identified as the key to effective education and outreach and Workgroup participants also strongly asserted that New Jersey does not need to reinvent the wheel. ***It was recommended that a sub-group be created to review available messaging and to outline an action plan.*** Delivery of food waste reduction and donation messaging can also be accomplished through the existing network of governmental and non-profit organizations, including, among others:

- Sustainable Jersey
- New Jersey League of Municipalities
- Association of Counties
- County and Municipal Recycling Coordinators
- Association of New Jersey Recyclers
- New Jersey Composting Council
- The Food Democracy Collaborative
- Association of New Jersey Environmental Commissions
- Faith Based Organizations at the grassroots level

During discussion, targeted educational materials were also identified as needed with respect to food safety rules and regulations at the Federal and State level to establish a benchmark of what can and can’t be done under existing law. Funding for education was also identified as an important barrier that must be addressed. Finally, a very novel approach was brought up of potentially integrating food recovery information within the existing “Recycle Coach” program and ap. NJDEP has provided all New Jersey municipalities with an opportunity to use Recycle Coach free of charge. This very logical and potentially powerful option that should be further explored.

3. How important are our system metrics? How best to improve our data on excess food generators and factors, food rescue organizations, capacity? Would enhanced excess food asset inventory and GIS mapping advance the cause?

There was general support for improved inventory work, enhanced mapping tools and sharpening wasted food calculation metrics by sector. However, a caution was raised on the difficulties of keeping information current and up to date.

The national benchmark in this area is USEPA's "Excess Food Opportunities Map" which can be found here: <https://www.epa.gov/sustainable-management-food/excess-food-opportunities-map>. While EPA has completed an extraordinary tool for all 50 states, available information within the opportunities map is limited and altogether misses certain components of the food system.

While there can be no question that updates to data are critical to make the inventory/mapping an accurate tool in "real time," arguments have been made to support this activity as a broad planning tool. There would appear to be substantial benefit in identifying all engaged parties involved in food redistribution and management and enhancing the EPA Excess Food Opportunities Map as outlined in NJDEP's Draft Food Waste Reduction Plan. Arguably, the food system inventory could become the physical "telephone book" to identify the massive scope of excess food generators, distributors (food banks, pantries and soup kitchens), transporters (like Table to Table) and Composters (municipal, outdoor windrow, aerobic, anaerobic and co-digestion facilities). With the benefit of a Statewide inventory, it may be possible to utilize existing administrative structures like county recycling plans to better engage food system participants and to connect the dots between what can be argued is a disconnected world at present.

This topic was left without an identified next step. It was noted that a grant application regarding inventory and GIS mapping work was submitted under the NJDEP Recycling Enhancement Act Higher Education Research Grant Program. Decisions regarding 2021 funding are anticipated on or before June 1, 2021.

4. How can we enhance and expand transportation services for food redistribution across the State?

Food rescue transportation was clearly represented by involved organizations as a major problem and barrier to more effective service delivery. In particular, transportation is definitely an issue for the food pantries. Larger pantries have their own trucks. Some of the medium scale pantries have vans, but most food banks are using personal vehicles for pick-ups and delivery. It's not practical for them to go to larger stores to pick up larger quantities of food since pallets will not fit into personal vehicles. Volunteer drivers come and go as well making reliability a major problem.

Transportation also is vastly different regionally. It was mentioned that some counties have centralized transportation through organizations like "Table to Table." From their website, "*Table to Table is a community-based food rescue program that collects prepared and perishable food that would otherwise be wasted and delivers it to organizations serving the hungry in the Bergen, Essex, Hudson, and Passaic counties of New Jersey.*" While servicing among the most populous counties in New Jersey, Table to Table only covers 4 of the 21 counties in the State.

One suggestion made was that New Jersey municipalities may be able to play an important role in food recovery and transportation. Under the soon to be released “Public Health Gold Star Program” in Sustainable Jersey, an action has been developed entitled “*Community Food Bank, Food Pantry & Soup Kitchen Action.*” Under this action, a municipality must either directly operate a food bank, food pantry or soup kitchen within a designated municipal facility; or partner in a meaningful way with a county, faith-based institution, or community organization that provides food assistance. Additional Sustainable Jersey “points” will be awarded to towns providing delivery service and/or transportation for residents to get to local pantries, whether run by the municipality, or county or community partners.

At the conclusion of this portion of discussion it was agreed that another separate workgroup will be created to further explore the transportation issue. Clearly organizations like Table to Table and the Community Food Bank of New Jersey need to be engaged in this discussion. Volunteers will be sought to engage in this food rescue transportation workgroup.

5. How can we Enhance Coordination Among Food Rescue Organizations and develop a more cohesive and engaged “Organics Community” in New Jersey?

As a generic observation, there appear to be two diverse and disconnected sets of participants in organic material management in New Jersey. One is a universe historically focused on “food waste” and regulated by the New Jersey Department of Environmental Protection. This universe would include those involved with regulated composting activities, county and municipal governments, non-profit associations like the Association of New Jersey Recyclers, New Jersey Composting Council, ANJEC and other environmental groups across the State. The other set of participants are those historically engaged in “food rescue” and redistribution activities and more closely aligned with the New Jersey Departments of Agriculture and Health from a food safety regulatory perspective. These organizations include food banks, food pantries, soup kitchens, faith-based groups engaged in food redistribution, farmers and farm markets, County Agricultural Agents, transporters like Table to Table and numerous grass roots organizations, many of which work in the larger urban centers of the State. The core question is how can “the divide” between these organizations be forged while developing a more cohesive “Organics Community” in the State.

One suggestion offered was to work within an existing, voluntary network. Efforts have been underway for nearly a year by the “Food Democracy Collaborative” (FDC) to bring diverse parties engaged in food rescue together which may represent an existing network to build on and expand. The FDC was created under Stockton University’s School of Natural Sciences and Mathematics with the following description: “*The NJ Food Democracy Collaborative is an initiative focused on fostering resilience and equity in the state’s food and agriculture system through collaboration and a focus on partnerships, policy, and program optimization.*” and the following vision: “*The NJ FDC envisions a broad, connected, grassroots network that democratically transforms the state’s food and agriculture system to be resilient, regenerative, equitable, and anti-racist.*”

Expansion of the existing FDC would appear necessary to bring in the universe of participants historically engaged in “food waste” under the umbrella of this “food rescue” focused organization. This certainly represents a feasible and promising prospect. The other recommendation links back to the issue of “centralized governance” covered earlier and potential to create a “New Jersey Food Policy Council” that includes participants representing all five sectors of the food system (production, consumption,

processing, distribution and waste recycling/composting). Once again, the Johns Hopkins University Center For a Livable Future has done extensive work in reviewing existing Food Councils across the United States. A helpful link was shared in the chat box during discussions to a Johns Hopkins publication entitled: “State of the Research: An Annotated Bibliography of Existing, Emerging, and Needed Research on Food Policy Groups” which can be found through the following link: https://assets.jhsph.edu/clf/mod_clfResource/doc/Main-FPN%20Annotated%20Bibliography-2020_final.pdf

6. Who should be responsible for general work tasks like interviews of service providers and clients, recurring waste audits and composition analysis?

Under this topic it was stressed that “data reliability” is a major concern at present, especially with respect to excess food generation. NJDEP’s Draft Food Waste Reduction Plan addresses this issue multiple times due to its importance for advancing plan implementation toward achieving the State’s 50% reduction of food waste goal by 2030. The Plan includes two specific recommendations as follows:

1. Implement recurring statewide waste composition audits. As noted above, nearly 40% of all food produced is never consumed. However, in New Jersey, there is little or no information about the composition of the food waste in the MSW stream or a reliable percentage. By implementing systematic and recurring waste audits, NJDEP will be able to track not only the composition of wasted food in the MSW stream but also what percentage of the wasted food is classified as inedible or edible. NJDEP will need to identify additional resources to develop this tracking system. With this information, NJDEP will get a better understanding where in the supply chain the waste occurs and will allow for more efficient approaches to reducing wasted food.

2. Research food waste and food loss among consumers

While the food waste composition audit will identify if wasted food is edible or inedible, the audit will not explain the reason why the waste is generated. As such, NJDEP proposes that in-depth studies, using food waste diaries and in-depth interviews, be conducted on the consumer level to identify why food waste is generated.

To address this need for more reliable data and lack of available funding/resources to perform this work, DEP recommended that this task be addressed in the creation of a New Jersey Food Waste Council as outlined previously and summarized in Appendix 3. DEP further recommended working with New Jersey colleges and universities on necessary research and tapping the existing and dedicated “Recycling Enhancement Act” funding for institutions of higher education to advance this work.

7. Available funding is always a limitation. Are there models we can look at toward a stable source of funding? What sources are currently available?

No stable source of funding models were identified. However, during discussion, three existing funding sources were identified as follows:

- ***Recycling Enhancement Act Higher Education Research Grants:*** This legislation, passed by the New Jersey Legislature in 2008, reestablished a source of funding for recycling in New Jersey through

a \$3.00 per ton tax on solid waste accepted for disposal or transfer at in-state solid waste facilities. Solid waste being transported out of state, either directly or by railroad, is also subject to the new recycling tax. Pursuant to N.J.S.A. 13:1E-96(b)(5) Not more than 5% of the estimated annual balance of the fund shall be used by the Department to provide grants to institutions of higher education for recycling demonstration, research or education, including professional training. Approximately \$1M of grant funding has been allocated to this opportunity. The DEP has established a competitive grant application process for use of these monies through an annual solicitation of interest. Background on the 2020 grant application process can be found here:

<https://www.nj.gov/dep/grantandloanprograms/swrea-higher-ed.htm>.

- ***Sustainable Jersey Grants Program:*** Both the Sustainable Jersey Municipal and Schools Programs offer small assistance grants to towns and schools. This year the PSEG Foundation is contributing \$200,000 to support another cycle of the Sustainable Jersey Grants Program. With this contribution, the PSEG Foundation has provided \$2.5 million dollars in funding to support local sustainability initiatives in municipalities and schools across the state. In addition to donations from PSEG, additional funding is provided from the Gardiner Environmental Fund and the New Jersey Education Association (NJEA). Multiple food related projects have been funded under this program including both municipal and schools community gardens and other food waste recycling/composting activities. For this year, the following grants will be awarded:

The municipal program funding cycle will award:

- Four (4) \$20,000 project grants
- Eight (8) \$10,000 project grants
- Twenty (20) \$2,000 project or green team support grants

The schools funding cycle will award:

- Four (4) \$10,000 project grants
- Thirty (30) \$2,000 project or green team support grants

A link to the Sustainable Jersey Municipal Grants Website can be found here:

<https://www.sustainablejersey.com/grants/pseg-cycle/>

A link to the Sustainable Jersey For Schools Grants Website can be found here:

<https://www.sustainablejersseyschools.com/grants/>

- ***Recycling Tonnage Grants Public Information and Education Funds:*** Under the Recycling Enhancement Act, the historic “Recycling Tonnage Grants Program” was restored. The fund generates in the range of \$22 - \$24 million per year. The statutory disbursement formula is as follows:

- 60% to recycling tonnage grants to municipalities and counties;
- 25% to counties for solid waste and recycling planning;
- 5% to counties for public information and recycling education;
- 5% to research grants for institutions of higher education;
- 5% to the DEP for recycling program administration.

From focus group discussion the general consensus was that county public information and recycling education monies could be used for food waste reduction and recycling activities. This is subject to confirmation through the NJDEP.

8. Open Discussion:

We closed our 2-hour stakeholder focus group discussion by opening the floor to any other suggestions from the group. Some summary points are as follows:

- It was mentioned that there appears to be some movement toward formal government appointments at this time (April 2021) to both the Food Waste Task Force and Food Waste Market Development Council summarized in Appendix 3. This is very welcomed news;
- Some creative and holistic work is being done in sustainable agriculture, food rescue and composting in Monmouth County through the Monmouth Conservation Foundation, “Lunch Break” and other organizations. More to come as a potential model to replicate across the State.
- Similarly, a sustainable and holistic program exists in Somerset County as part of a State Correctional Facility that may present a model to review;

Guidance was also recommended with respect to food packaging for smart consumer choices to purchase products with minimal packaging, recycled content and for recyclability. It was also recommended that any packaging review also take into consideration “food safety” concerns which may impact sustainability goals.

AFTER ACTION REPORT 2.0 FOOD WASTE MANAGEMENT IN SCHOOLS Stakeholder Discussion of April 8, 2021

On April 8, 2021, the Organics Workgroup held its second “stakeholder focus group discussion” on the topic of “Food Waste Management in Schools.” To prepare for the discussion and to identify issues of concern, Workgroup members were sent a fillable PDF survey questionnaire on February 16, 2021 and asked to address four basic issues.

- Briefly describe the issue in need of being addressed that is “broken” in this Focus Area?
- List the barriers that inhibit the development of solutions to this problem.
- Recommend a solution(s) and steps needed to "fix" this problem?
- In comparison to other needs in this Focus Area, in your opinion is this issue high, medium or low priority?

Through this process, member input resulted in 14 recommendations submitted prior to the scheduled focus group discussion as follows:

1. Outreach on “NJ School Food Waste Guidelines” for K – 12 schools
2. Outreach on “NJ School Food Waste Guidelines: for Higher Education

3. Targeted educational materials for Cafeteria Managers, Faculty, Students
4. Spotlight case studies for K – 12 success stories
5. Cost/Benefit case studies for mechanized composting, colleges/universities
6. Broad Statewide education program in line with Climate Education
7. Create food management curriculum for K – 12 schools
8. “White Paper” on Federal & State Food Safety laws, rules and regulations
9. “Standard Operating Procedures” for food service reinforced by State law
10. Design/implement food reduction, collection, redistribution programs
11. State-wide surplus database of refrigeration and food-handling equipment for schools to access and promote off-site redistribution
12. Remove barriers to regional management of food waste in schools
13. Statewide inventory of food waste haulers/transporters & end markets
14. Literature search to identify funding sources for food waste recovery

From these recommendations, Workgroup coordinators prepared nine core questions which served as the agenda for the stakeholder focus group discussion. These questions are listed below and after each any follow-up activities have been listed to chronical the next steps identified during discussions. Collectively, this summary represents the “After Action Report” stemming from the food waste management in schools focus group.

1. State Government created excellent “Food Waste Guidelines” in 2019. Do schools know about them – how can we spread the good word?

From discussion it was clear that NJDEP has broadly disseminated the Food Waste Guidelines. Excellent coordination also took place with the Sustainable Jersey for Schools Program which, in concert with DEP, made presentations to the New Jersey School Building and Grounds Association and NJEA for custodial and grounds staff. DEP has developed a dedicated website which can be found here:

<https://www.nj.gov/dep/dshw/food-waste/>

The Department is also holding a number of food related webinars in Spring 2021. The K – 12 Food Waste Guidelines can be found here:

<https://www.nj.gov/dep/seeds/sfwg/docs/K-12.pdf> and the Higher Education Guidelines here:

<https://www.nj.gov/dep/seeds/sfwg/docs/HighEd.pdf>. Going forward it was recommended that education and outreach efforts be undertaken through existing associations, some of which have already held information sessions on food waste management in schools. These include the Sustainable Jersey Municipal Program and Regional HUBS, the Association of New Jersey Recyclers, the NJ Composting Council and ANJEC.

2. A number of recommendations called for additional targeted education and outreach and a broader campaign on food recovery/management. Who should lead this effort?

A number of NJDEP funded Recycling Enhancement Act research grants were discussed which will address food waste management in both K – 12 schools and in higher education. These projects at Kean University and The College of New Jersey are summarized on the NJDEP website as follows:

Kean University

An Institutional Wide Educational Campaign and Research to Promote Food Waste Recycling and Composting.

- The New Jersey Composting Council will lead a waste audit to measure quantity of waste types generated on campus and compile data to understand trends.
- Three waste audits will be performed to analyze effectiveness of an educational campaign & measure food waste and recycling landfill diversion.

The College of New Jersey

Sustainable and Scalable Food Waste Solutions for Schools.

- Conduct research on best practices and develop a model for K-12 food waste diversion.
- Conduct three pilot studies at three separate public K-12 schools to test the model.
- Develop new and upgraded SJ food waste actions and conduct outreach and technical assistance to K-12 schools.

Also related to institutions of higher education, Rutgers University Dining Services has an outstanding “Sustainable Dining Services” webpage which can be found here as a spotlight case study for other institutions to learn from:

<http://food.rutgers.edu/2020sustainability/>

For the past 32 years the Rutgers program essentially sent nothing to landfill disposal. This is particularly impressive since Rutgers has a combined all-campus student population of over 70,000 students and total population of nearly 95,000 when faculty and staff are included.

3. Do we need specific “organic material management curriculum” to be developed as part of required climate change education? How to get this done?

In June 2020, the State Board of Education approved revisions to add climate change to seven standards: social studies, science, visual and performing arts, health and physical education, world languages, computer science and design thinking and career readiness, life literacies, and key skills. In doing so, New Jersey became the first in the country to infuse climate change in the curriculum at every grade level. The mandate takes effect with the 2021-22 school year. This development would appear to provide a perfect opportunity to develop a food waste reduction and recycling module into whatever curriculum is developed.

In discussion it was learned that Rutgers received a small grant from USEPA two-years ago to work on food and healthy choices education in the Paterson elementary school system. Rutgers applied for additional funding in the 2020 grant cycle of the Recycling Enhancement Act Research Program for funding to build off of this work to expand it to more schools and additional age groups. Sustainable Jersey for Schools also has the opportunity to add education lesson plans into their Action Resources sections related to food management. SJ for Schools now has 1,000 New Jersey public schools participating in the program and has a significant base to provide outreach tools.

It was also noted that, from experience, education gets integrated into school curriculum in two ways. The first is a State mandate, which we have with the climate change requirement. The other is more

“from the bottom up” in identifying a “school champion” for environmental education. Without a champion and support from the school administration, it is impossible to get new curriculum developed and used.

An “Education Committee” is being formed as part of the Organics Workgroup stemming from the April 1 discussion on food waste reduction and donation. The topic of developing a food waste reduction and composting module as part of the required climate change curriculum will be further explored and developed. The group will also discuss how “school champions” can be further developed .

4. Significant options exist for on-site management of food waste through both manual and mechanized composting systems? Should we develop guidance – who should do this?

On-site management options to compost food waste are significant and some are in use in New Jersey schools. Sustainable Jersey for Schools spotlights the Rocket Composter used for many years in Chatham High School. Automated compost systems also exist at Kean University, which received the 2013 NJ DEP Recycling Award for its food recovery and on-campus composting initiative, where 300 tons of food have been composted to date; Princeton University, where 91 tons of food has been composted to date; and Union County Vocational Technical School (all FOR Solutions), Montclair State, Bergen County Community College, Raritan Valley Community College and Ramapo College (EcoRich). Kean University, Princeton, Montclair State, Bergen County Community College and Ramapo College. Concern was expressed that there’s a lot of confusion on management at school sites, running afoul of NJDEP regulations, how to manage food waste so you don’t attract pests or create a hazard for the school or surrounding community. Once again, guidance and education was referenced as the key to expanding on-site management of food waste in schools. One excellent source of information was referenced. The Massachusetts commercial organics waste ban, which applies to all businesses and institutions disposing of one ton or more of food waste per week, took effect on October 1, 2014. New Jersey’s similar disposal ban legislation takes effect in October of 2021. “RecyclingWorks Massachusetts” prepared a document entitled “On-Site Systems for Managing Food Waste” which was revised in December 2018. This handy reference tool provides a menu of equipment vendors, models, system capacities, energy use specifications and price. This document can be found here:

[“On-Site Systems for Managing Food Waste,”](#)

Significant discussion also centered on markets for compost material. Unless a school also has a “school garden” that can use the on-site generated compost, off-site markets must be available. It was pointed out that under the April 2020 Food Waste Recycling legislation (A2371/S865) a Food Waste Recycling Market Development Council is to be named by the Governor. This is the body that should help identify end-product markets. It was further pointed out that Section 5. of A2371/S865 requires State government agencies to purchase sustainably generated compost products and with a 10 – 15% price preference. More Specifically,

“Every State department or agency that engages in landscaping or construction activities on State land, or for State projects or facilities, shall use, where technically feasible, environmentally sound, and competitively priced, compost, mulch, or other soil amendments produced from municipal solid waste, food waste, sludge, yard waste, clean wood waste, or other organic materials that the supplier has certified

comply with applicable project standards and specifications. Such compost, mulch, or soil amendments shall be used in place of chemical fertilizers or soil amendments.”

A link to A2371/S865 can be found here and please reference Section 5 for additional information regarding State Agency procurement requirements:

https://www.njleg.state.nj.us/2020/Bills/S1000/865_R1.PDF

5. Do we need a “Food Safety Requirements White Paper?” Who prepares this?

As part of the April 1 focus group discussion of Food Waste Reduction and Donation, targeted educational materials were also identified as needed with respect to food safety rules and regulations at the Federal and State level to establish a benchmark of what can and can’t be done under existing law. This summary work will be on the agenda for the future Education Subcommittee of the Organics Workgroup. No additional discussion ensued on this point.

6. Half the States have policy documents around “share tables use” & donation/reuse regulation. NJ does not. Can we create Standard Operating Procedures reinforced by State law?

A very substantive discussion took place regarding “share tables” and what is needed to make these common-place in all New Jersey Schools. In practice it is clear that you can share food that is unopened and not touched by kids, with relatively logical criteria like refrigeration in some cases, depending on the type of food. However, once you weave in health and safety considerations, school administrators want very clear written guidance. There is a USDA memo on share tables which outlines what the USDA allows for what they refer to as “redistribution.” The USDA Food and Nutrition Service website and guidance can be found here:

<https://www.fns.usda.gov/cn/use-share-tables-child-nutrition-programs> .

There is also support for share tables from the EPA, but that’s it. Some states have taken steps for outlining share tables criteria to make sure they are safe and take into consideration important factors like food allergies. The COVID pandemic has directly impacted the advancement of share tables as many schools remain closed and within those that are open, there is significant fear of food recovery and sharing for public health reasons. Concern was also expressed that the USDA guidance document is not clear and creates confusion.

A “School Food Waste Reduction Toolkit” was also produced by Rutgers, Middlesex County, the Middlesex County Improvement Authority, MCFOODS, Feeding Middlesex County and Elijah’s Promise. The document can be found here and pages 5 – 9 address share tables: <https://njaes.rutgers.edu/school-food-waste/food-waste-summit-toolkit.pdf>

A School Food Waste Reduction Summit organized around the Toolkit was also held in July of 2019 and the program Power Point slides can be found here: <https://njaes.rutgers.edu/school-food-waste/food-waste-summit-slides.pdf>.

As a bottom line conclusion to this discussion, having clear guidance is the second-best thing short of mandating share tables in every school.

In terms of enabling legislation and mandates, in January 2018, Texas adopted a bill that allows schools to distribute unused, non-perishable food any way they see fit. Colorado, Nebraska and Oklahoma were reported to have some of the best models. A very interesting research study was conducted and paper released in October of 2019 with the title “*Characterizing and Assessing the Quality of State K–12 Share Table Policies as a Potential Mechanism to Reduce Food Waste and Promote Food Security.*” Under this study, state-level share table policies and resources were collected from March to June, 2018 from the State Department of Education Child Nutrition Office Web sites and/or staff communication across 50 states and Washington, DC. The study can be found here: <https://pubmed.ncbi.nlm.nih.gov/31929043/> .

The discussion concluded with a suggestion of having the Education Subcommittee of the Organics Workgroup attempt to draft New Jersey share table legislative language and to meet with Senate and Assembly leadership toward advancing this goal.

7. How to assemble inventories of surplus refrigeration/food handling equipment, food waste transporters and end markets for composting?

Inventories are an important repository for food waste generators at all levels, including schools. No one on the call was able to speak to inventories of surplus refrigeration/food handling equipment. However, focus group participants did identify a number of inventories that are currently in place which can be cross referenced or otherwise including in a stand alone guidance document. These include:

- NJDEP maintains a listing of Class B and Class C Recycling Centers in the State which serve as end-markets for organic material. This list can be found here: <https://www.state.nj.us/dep/dshw/rrtp/classcfbc.html>
- Sustainable Jersey in both the Municipal and Schools programs includes all prior small assistance grants recipients and project types on their websites. From this information SJ can compile a list of all Community and School Gardens that received funding. This may represent an initial inventory of such gardens.

Municipal Program Grants:

<https://www.sustainablejersey.com/grants/previous-recipients-projects/>

Schools Program Grants:

<https://www.sustainablejersseyschools.com/grants/previous-recipients-projects/>

- Equipment vendors like Tidy Planet (Rocket Composters) and ForSolutions (food waste digestion systems at Kean and Princeton Universities and others), have inventories of all system installations at schools in New Jersey.
- Between NJDEP and County Recycling Coordinators, it should be possible to develop a listing of food waste transporters in the State like Organic Diversion, Central Jersey Waste and Waste Management, Inc.

Beyond this available information, discussion also identified the need for inventories of operational pig farms accepting food waste, food related demonstration projects across the State and available courses on composting that can be offered to teachers and students.

8. Should “regional management” of food waste between schools be allowed/encouraged?

Under current NJDEP regulations, a school can operate a composting system, including a self-contained automated system like a rocket composter, without needing a Class C Recycling Center Approval. However, the school can only take material generated from the host school. Taking material from other schools within the school district or regionally results in the operation being considered a “commercial facility” requiring a very onerous Class C approval and payment of extortionate registration and compliance monitoring fees which are prohibitive. General consensus was quickly achieved that some form of exemption or regulatory reform is needed to remove this barrier to more regionalized operation of small-scale composting systems. While NJDEP has been very receptive to certain new regulatory exemptions under 7:26-1.7 “Exemption from SWF permitting,” this area was not believed to be one of them.

It was offered that Massachusetts, Rhode Island, Connecticut, Vermont and New York State all have organics disposal ban legislation very similar to New Jersey’s established through A2371/S865. Information related to regional management within schools will be reviewed through outreach to these States. There is clear consensus that Organics Workgroup members can assist NJDEP in drafting an appropriate exemption for regional “common control” of organics within school systems and particularly between elementary, middle and high schools within the same municipality.

9. Available funding is always a limitation. What sources are currently available?

New and more stable sources of funding would require State or Federal Legislation. Beyond this, a creative concept was brought up of a “utility assessment.” Most counties in New Jersey have an established utilities authority, improvement authority or pollution control financing authority. The idea was floated of enabling legislation to allow a small portion of service fees be dedicated to food waste management and potentially food management in schools.

Historically solid waste management and recycling responsibilities were delegated to the 50 States. However, more recent issues surrounding the near collapse of international markets for recycled products has resulted in a flurry of proposed Federal Legislation. One significant bill dealing with restoring recycling infrastructure and with plastics called “Save Our Seas 2.0” was signed into law in December 2020. Six other bills remain pending, some of which could potentially be available for food waste management. Here is a short listing of these bills for reference and progress will be monitored as they are debated in Congress to evaluate potential funding sources for food waste management in the future:

- **Save Our Seas 2.0:** International Bill to Combat Marine Debris and Restore Recycling Infrastructure – Total Pot \$325 Million – Signed into law December 2020
- **RECOVER Act:** \$500 Million in Matching Funds to States & Towns to Improve Recycling Infrastructure
- **RECYCLE Act:** \$75 Million in Grants for Recycling Education

- **Break Free From Plastic Pollution:** Very comprehensive bill – National Bottle Bill, National Extended Producer Responsibility provisions and National Recycled Content Standards
- **Plastic Waste Reduction/Recycling Act:** \$483 Million for Waste Reduction Technology & Recycling Infrastructure
- **Zero Waste Act:** \$250 Million in EPA Grants for Zero Waste Initiatives, Organics Infrastructure Focus & e-Waste
- **CLEAN Future Act:** Omnibus & Massive “Climate Leadership and Environmental Action for our Nation’s Future Act” which clearly has dedicated funding for food waste infrastructure

As part of the Food Waste Reduction and Donation focus group discussion of April 1, funding was also understandably referenced as a significant barrier to sustainable organic material management. In the after action report from this session, three existing funding sources were identified which are once again referenced below as they are a potential source of funds for food waste management in schools:

- **Recycling Enhancement Act Higher Education Research Grants:** This legislation, passed by the New Jersey Legislature in 2008, reestablished a source of funding for recycling in New Jersey through a \$3.00 per ton tax on solid waste accepted for disposal or transfer at in-state solid waste facilities. Solid waste being transported out of state, either directly or by railroad, is also subject to the new recycling tax. Pursuant to N.J.S.A. 13:1E-96(b)(5) Not more than 5% of the estimated annual balance of the fund shall be used by the Department to provide grants to institutions of higher education for recycling demonstration, research or education, including professional training. Approximately \$1M of grant funding has been allocated to this opportunity. The DEP has established a competitive grant application process for use of these monies through an annual solicitation of interest. Background on the 2020 grant application process can be found here:
<https://www.nj.gov/dep/grantandloanprograms/swrea-higher-ed.htm>.
- **Sustainable Jersey Grants Program:** Both the Sustainable Jersey Municipal and Schools Programs offer small assistance grants to towns and schools. This year the PSEG Foundation is contributing \$200,000 to support another cycle of the Sustainable Jersey Grants Program. With this contribution, the PSEG Foundation has provided \$2.5 million dollars in funding to support local sustainability initiatives in municipalities and schools across the state. In addition to donations from PSEG, additional funding is provided from the Gardinier Environmental Fund and the New Jersey Education Association (NJEA). Multiple food related projects have been funded under this program including both municipal and schools community gardens and other food waste recycling/composting activities. For this year, the following grants will be awarded:

The municipal program funding cycle will award:

- Four (4) \$20,000 project grants
- Eight (8) \$10,000 project grants
- Twenty (20) \$2,000 project or green team support grants

The schools funding cycle will award:

- Four (4) \$10,000 project grants
- Thirty (30) \$2,000 project or green team support grants

A link to the Sustainable Jersey Municipal Grants Website can be found here:

<https://www.sustainablejersey.com/grants/pseg-cycle/>

A link to the Sustainable Jersey For Schools Grants Website can be found here:

<https://www.sustainablejerseyschools.com/grants/>

- ***Recycling Tonnage Grants Public Information and Education Funds:*** Under the Recycling Enhancement Act, the historic “Recycling Tonnage Grants Program” was restored. The fund generates in the range of \$22 - \$24 million per year. The statutory disbursement formula is as follows:
 - 60% to recycling tonnage grants to municipalities and counties;
 - 25% to counties for solid waste and recycling planning;
 - 5% to counties for public information and recycling education;
 - 5% to research grants for institutions of higher education;
 - 5% to the DEP for recycling program administration.

From focus group discussion the general consensus was that county public information and recycling education monies could be used for food waste reduction and recycling activities. This is subject to confirmation through the NJDEP.

AFTER ACTION REPORT 3.0 COMMUNITY SCALE COMPOSTING Stakeholder Discussion of April 15, 2021

On April 15, 2021, the Organics Workgroup held its third “stakeholder focus group discussion” on the topic of “Community Scale Composting.” To prepare for the discussion and to identify issues of concern, Workgroup members were sent a fillable PDF survey questionnaire on February 16, 2021 and asked to address four basic issues.

- a) Briefly describe the issue in need of being addressed that is “broken” in this Focus Area?
- b) List the barriers that inhibit the development of solutions to this problem.
- c) Recommend a solution(s) and steps needed to "fix" this problem?
- d) In comparison to other needs in this Focus Area, in your opinion is this issue high, medium or low priority?

Through this process, member input resulted in 15 recommendations submitted prior to the scheduled focus group discussion as follows:

1. Develop Statewide Generator Study to Implement A2371/S865
2. Revisit and expand Backyard Composting education & outreach programs
3. Remove existing regulatory barriers to exempt community gardens
4. Foster interagency coordination and instill “metrics of success”
5. Create a Statewide Database of all exempt compost facilities
6. Encourage the use of Farmers markets as a drop off location
7. Develop general guidance materials on composting & facility siting
8. Develop end markets for compost and name the Market Development Council members

9. Engage Counties in another round of planning for organics
10. Reexamine Class C permitting standards to remove barriers
11. Create General Permits for Air and Stormwater management
12. Establish Business incentive programs like the Tax Credits program in Philadelphia
13. Create “Registration & Certification program” for small-scale composting
14. Enhance and simplify composting on farms – provide outreach materials
15. Maintain performance based and volumetric standards as opposed to technology based requirements

From these recommendations, Workgroup coordinators prepared eight core questions which served as the agenda for the stakeholder focus group discussion. These questions are listed below along with a short summary of the discussion. Any follow-up activities have been listed to chronological the next steps identified during discussions. Collectively, this summary represents the “After Action Report” stemming from the community scale composting focus group.

1. What do we need to do to advance composting education (backyard composting, cut-it-and-leave it, community gardens, targeted materials for farmers and farm markets, benefits of soil enrichment)?

From discussion it is clear that a great deal of composting education is already taking place, particularly regarding backyard composting through the State’s network of County and Municipal Recycling Coordinators. Reference was also made to the “Rutgers Master Gardener Program” run out of the New Jersey Agricultural Experiment Station Cooperative Extension Services. The link to this excellent program and the entire network and the “Master Gardeners Association of New Jersey” can be found here:

<https://njaes.rutgers.edu/master-gardeners/> .

There is also a “Junior Master Gardeners Program” that is linked to 4-H Clubs: <http://nj4h.rutgers.edu/>

The NJDEP Division of Solid & Hazardous Waste website also features “how to” educational materials on backyard composting which can be found here:

<https://www.state.nj.us/dep/dshw/recycling/educationandlinks.html> and featuring the following resource links:

“Backyard Composting (Yard waste and Food waste)” – Learn the basics of composting at home.

- <http://njaes.rutgers.edu/pubs/fs811/>
- https://www.nrdc.org/stories/composting-way-easier-you-think?gclid=CO6H8_Oi9dQCFYeFswodZgoBdQ
- https://www.state.nj.us/dep/dshw/recycling/backyard_leafcomp_article.pdf
- <https://www.epa.gov/recycle/composting-home>

Another model is the sustainable STEM challenge in Jersey City schools where the theme is sustainability and students can choose a project to work on over the school year and composting is a popular topic. There is also a statewide STEM challenge where students come up with entrepreneurial projects with over 1,000 schools participating. Some of the schools are working on food waste and composting.

Rutgers has a composting club and “Ecoventure Program” where students will create commercials that are used locally. They write their own scripts and are kids appealing to other kids.

At the municipal scale, the New Jersey Composting Council (NJCC) offers a course through its NJ Organics Recycling Foundation entitled “Climate Change Mitigation Through Local Food Waste Composting” which can be found here:

<https://njorganicsrecyclingfoundation.org/municipal-composting> .

They also offer a course on “Compost Sales and Marketing” to address finding markets for finished compost. This course is run primarily as a benefit NJCC members as a 2-hour introductory workshop. There is also an expanded version for those who need more. You can find all NJCC courses on their website.

<https://njcomposting.com/njcc-courses> .

As a concluding statement stemming from the education discussion, it appears that sufficient resources are available. However, additional cross organization coordination and linkages to State agencies was recommended going forward. More specifically, it was recommended that NJDEP officially recognize the various courses put together by the NJCC. Further, there may be better connectivity between courses offered by Rutgers through their Short Course Program with tools developed by the NJCC. Finally, better coordination through presentations, webinars and seminars between organizations such as the NJCC, ANJR, Sustainable Jersey, ANJEC and perhaps the food rescue community was identified as highly desirable.

2. What is the status of Community Garden exemptions? Can we exempt neighborhood homeowner generated organics going to a Community Garden? What else is needed?

Under existing law, exemptions from needing to obtain a “Class C Recycling Center Approval” (essentially a DEP permit) are found at N.J.A.C. 7:26A-1.4 “Activities exempt from general or limited approval.” There really are no exemptions provided for community gardens beyond the ability to compost the materials generated on site from gardening activities. Several years ago a “Petition For Rulemaking” was submitted by a non-profit organization toward expanding the scope of small-scale community garden exemptions. Discussions have been ongoing cooperatively between NJDEP and the composting community toward framing such exemptions.

The Department went as far as drafting some exemptions and also creating a potential option of utilizing an “Administrative Consent Order” as a vehicle to allow expanded operations at community gardens. In particular, it would be productive and efficient to allow neighborhood residents in the surrounding community garden area to bring home-generated food scraps to the same compost bins located at the garden. Proper guidance would be needed as to what can and can’t be brought to the compost bins. During discussions it was also offered that community gardens could also be used as “drop-off locations” for organics for material processing in micro-bins and other composting infrastructure developed on site.

Many locations across the country allow this, most notably an ambitious community garden program developed by the City of Philadelphia and their Office of Sustainability. Their progressive and

comprehensive “Composting in Philadelphia” link can be found here: <https://cleanphl.org/composting/> which highlights the City’s “Community Compost Network” summarized as follows:

“Community composting happens when neighbors bring together their food and yard waste to make new soil locally in their neighborhoods. Community composting can serve residents typically for free or low cost, and this community-based effort fosters a culture of environmental and social well being in the city. The City of Philadelphia’s Greenworks Sustainability Plan and Zero Waste and Litter Action Plan call for expanded opportunities for residents to compost organic waste. To support Philadelphia residents in becoming more aware and engaged in local composting efforts, the City of Philadelphia is developing a Community Compost Network.

The Network will include urban agriculture/community garden/recreation/school sites throughout the city, where community-scale composting systems are being installed in winter-spring of 2020.”

Despite significant time and attention toward developing expanded community garden exemptions by the DEP, nothing has even gotten to the rule proposal phase after 3 years of effort. There was very strong consensus by Organics Workgroup participants that this must change. In fact, DEP’s Global Warming Response Act 80 x 50 Report (Table 5.4, page 103) specifically calls for “*Adopting a community-composting rule to streamline the approval process across the DEP.*” This is critically needed as it appears that there are differing opinions between different Divisions and Bureaus within the DEP which has prevented progress. One key recommendation of the Organics Workgroup will be to pursue regulatory reforms in this critical area as community gardens can be a very significant vehicle toward reducing food waste going to landfills, expanded composting and soil enrichment while providing an important social networking platform within communities, particularly in urban areas.

One idea discussed was to use, conceptually, the vehicle of “DEP One Stop” offered under the Division of Permitting and Project Navigation <https://www.nj.gov/dep/pcer/> to hold an inter-program meeting to hammer out an exemption approach. This would include representatives from the Division of Solid & Hazardous Waste as the lead agency along with the water, air, land use and compliance & enforcement programs. If needed, participation from senior level managers will be requested to settle disputes between programs quickly so reforms can move forward as soon as possible.

3. How can we address review of the Class C regulatory requirements and in what timeframe? Can outside parties assist in this process by drafting proposed rule-reform language?

There is no question that the existing DEP county planning and Class C Approval requirements are onerous and deter the development of expanded recycling infrastructure desperately needed to achieve the Department’s own public policy goals as set forth in Chapter 5, Waste and Agriculture, of the Global Warming Response Act 80 x 50 report. In this regard, the DEP’s own recommendations call for such coordination to streamline the regulatory process. Table 5.2 on page 103 specifically recommends the need to “*Create guidelines/recommendations for county siting and streamlined state planning and permitting of food waste recycling facilities.*”

There was directional agreement within the Organics Workgroup that the following hierarchy makes sense for the Department to consider and to do so expeditiously due to the exhaustive regulatory process and associated timeframes required under the Administrative Procedures Act for new or modified rules. At the same time, there was also agreement that environmental impacts must also be carefully considered as part of any regulatory reform efforts. In this regard, the NJDEP's Science Advisory Board released a report on April 22, 2020 on "Outdoor Food Waste Composting" which will help guide DEP in its reform effort considerations. This excellent report can be found for additional, substantive technical background here:

https://www.nj.gov/dep/sab/sab_food_composting.pdf

A regulatory reform hierarchy for the Department to consider includes the following:

- Outright exemptions for small scale operations, such as community gardens and composting activities on farms;
- Reexamination of potential reforms to the Department's Planning Rules found at N.J.A.C. 7:26 – 6 and more specifically:

7:26-6.10 Modifications to district solid waste management plans; plan amendments, and

7:26-6.11 Administrative actions concerning a district solid waste management plan

In this discussion it was acknowledged that the administrative action vehicle represents a streamlined process for county planning that works. A broader scale of composting operations should be considered for inclusion under 7:26-6.11;

- Section 7:26-1.7 "Exemption from SWF permitting" was also recognized as an existing provision that works related for exempting research, development and demonstration (RD & D) projects. This may be a provision to further evaluate for expanding the scope of what fits as an RD&D project and for a streamlined process to go from an RD&D approval to a full permit;
- Consideration of a "General Permit" or "Permit-By-Rule" approach for non-exempt, but small composting projects such as smaller windrow composting operations.

The NJCC has performed an important investigation of small-scale composting exemption criteria in other States. They maintain an Excel spreadsheet that summarizes existing exemptions in Connecticut, Maryland, Maine, Massachusetts, New York, North Carolina and Vermont. The important point, there is a large body of existing regulatory criteria in sister states that can be used to craft New Jersey exemptions without "reinventing the wheel." An initiative to create similar regulatory reforms will also be included as a primary recommendation to the DEP with an offer for the Organics Workgroup to draft a package of reforms for the Department's consideration.

4. How can we coordinate regulatory requirements across DEP programs (Air, Stormwater, Land Use, S&H Waste) and between State agencies?

Interagency coordination within DEP is essential to create an atmosphere where proposed new composting infrastructure can be processed expeditiously both for the benefit of applications (time and expense) and to achieve the Department's own goals to foster expansion of composting infrastructure.

Expanded use of “DEP One Stop” offered under the Division of Permitting and Project Navigation <https://www.nj.gov/dep/pcer/> would help foster interagency coordination. Perhaps some form of “Administrative Order” related to composting should be considered to align the regulatory process.

A recent use of the Administrative Order vehicle came with the issuance of Governor Phil Murphy’s Executive Order No. 100 on Protecting Against Climate Change Issued on January 27, 2020. Simultaneously, then DEP Commissioner Catherine McCabe issued Administrative Order 2020-01 which provided that DEP would:

- Prepare a state of climate report due by June 30, 2020 on needed regulatory measures
- Propose reformed regulations within 12 months or by June 30, 2021 and adopt those regulations (in most areas) in 2 years
- Align all grants, loans, contracts, planning and outreach messaging with the new regulations, including a stakeholder engagement process
- Conduct stakeholder engagement sessions on February 21 and 25 on air emissions and March 2 on land use
- Land use: integrate climate change considerations, such as sea level rise, including encouraging energy efficient buildings and green infrastructure, re-vegetating riparian areas, avoiding flood prone areas, and restoring inundated wetlands
- Air emissions: establish a monitoring and reporting program to identify all significant sources of greenhouse gas emissions, including carbon dioxide, methane and other climate pollutants; monitor the progress of emissions reductions to reach the state’s target of 80 percent below 2006 emission levels by 2050, as required under New Jersey’s Global Warming Response Act and adopt new regulations under the Air Pollution Control Act to reduce carbon dioxide emissions and air pollution. <https://www.nj.gov/dep/njpact/docs/dep-ao-2020-01.pdf>
- NJ PACT Fact Sheet: <https://www.nj.gov/dep/njpact/docs/njpact-summary.pdf>

Could the Department use such a vehicle to create a unified approach to the review of composting applications? This will be proposed as an option to the Department.

5. Can we make better use of our farms and farmers markets to advance composting and education?

Following discussion, it appears that New Jersey Farms and Farm Markets are currently underutilized as a resource in sustainable organic material management. Similar to the earlier discussion of community gardens, farmers may compost material generated on site, but are considered a “commercial facility” if they bring any off-site generated material to their farm. This is another topic worthy of further discussion with the DEP toward expanded exemption provisions or general permits.

Apparently “gleaning” of food at the end of Farm Market days for transport and donation to food rescue organizations is productive and should be encouraged through outreach and education. Another suggestion was to have Farm Markets serve as “drop-off” locations. Farm Market patrons should be allowed to bring food waste to the Farm Market when shopping and the farmer(s) allowed to bring collected material back to their farms for composting. This is another worthwhile suggestion that should be further explored.

Another outlet for food recovery was discussed of feeding livestock. This is another opportunity worthy of further development and understanding. Metrics would be extremely helpful of how many livestock operations exist in New Jersey, their locations and willingness of livestock farmers to accept off-site generated food for feeding. Representatives of the New Jersey Department of Agriculture clarified that approval is needed for such feeding. NJDA has a short, concise and descriptive brochure they circulate that summarizes these requirements as follows:

Source Separated Food Waste includes:

- Food processing by-products or residuals
- Vegetative waste produce trimmings, over ripe produce generated by super markets, produce brokers and produce distributors
- Off spec food products
- Food Product over-runs

A Livestock Producer may feed Source Separated Food Waste with approval from the New Jersey Department of Agriculture

Agriculture (NJDA).

Source Separated Food Waste fed to livestock in New Jersey as approved by the NJDA is exempt from NJDEP Solid Waste Regulations.

Approval Process

- Livestock Producers will complete an application for approval
- NJDA approval may consider factors such as the percent of food waste in the daily ration, time of delivery, storage and feeding practices, and overall housekeeping protocols.
- Commercial feed stuffs and commodities that are registered with the NJDA's Feed Regulatory Program being distributed as a commercial feed do not need approval.
- Farms do not need approval to feed their own produce to livestock.

A License is required from NJDA Division of Animal Health for all Garbage-feeding hog farm operations. This is separate and apart from food waste approval. "Garbage" for hogs includes post-consumer putrescible animal and vegetable wastes including cafeteria plate waste.

The Organics Workgroup will coordinate further with the NJDA toward better understanding and assisting, if possible, in better utilization of feeding food waste to livestock.

6. Is the State creating guidelines and recommendations for county siting and streamlined state planning and permitting? What is the status?

This topic has already been addressed through the answers to questions 2, 3 and 4 above.

7. How do we expand/enhance markets for end product compost in NJ and Regionally?

A critical aspect of sustainable organic material management is stimulating markets for end product compost. This is also critical toward broader environmental soil enrichments goals. The New Jersey Legislature clearly understood the significance of market development in the passage of A2371/S865, the Food Waste Recycling Act which was Signed into law by Governor on April 14, 2020. Sections 4 and 5 of this bill are of great significance. Section 4 calls for the creation of 12-member “Food Waste Recycling Market Development Council” which is directed to prepare a report within 18 months after creation to be submitted to the Governor and Legislature. Among other things, the Council is to:

- Investigate the feasibility of providing preferences for products or energy produced from food recycling facilities, food waste composting facilities, and anaerobic and aerobic digestion facilities;
- How to stimulate the use in public projects of compost or soil amendment products derived from these facilities;
- Provide recommendations on changes needed to State laws or rules or regulations to stimulate the market for products and energy produced from food recycling facilities.

Based on input from the NJDEP, recommendations regarding Governor appointments to the Food Waste Recycling Market Development Council” are in process at this time. Section 5 provides that *“every State department or agency that engages in landscaping or construction activities on State land, or for State projects or facilities, shall use, where technically feasible, environmentally sound, and competitively priced, compost, mulch, or other soil amendments produced from municipal solid waste, food waste, sludge, yard waste, clean wood waste, or other organic materials that the supplier has certified comply with applicable project standards and specifications.”* Section 5 goes on to define a 10% - 15% “price preference” for the use of environmentally sound organic material at the discretion of the Director of the Division of Purchase and Property in the Department of the Treasury.

As a conclusion, A2371/S865 provides an essential administrative framework and clear directive for the purchase of sustainably manufactured compost products. However, it was stressed in discussion that there needs to be internal State government education to ensure the Department of Treasury is administering this program. Another important thought is to see if the Governor or administrative agencies would “advocate” for similar sustainable procurement by County and Municipal governments as well as the long list of State and County Authorities which are “in but not of” instrumentalities of State government. Here once again, education and outreach to these public bodies is essential, as is training. As discussed at length under question 1 above, The NJCC offers a course on “Compost Sales and Marketing” to address finding markets for finished compost. It was suggested that such training would be well suited for organizations like the Public Works Association of New Jersey, whose website can be found here: <http://pwanj.com/>

The above will constitute additional recommendations moving forward of the Organics Workgroup. Due to the importance of the administrative structure of A2371/S865, Sections 4 and 5 are provided in their entirety here:

4. (New section)

- a. There is established in the Department of Environmental Protection a Food Waste Recycling Market Development Council, which shall consist of 12 members. The members shall include the Commissioner of Environmental Protection, the President of the Board of Public Utilities, the Commissioner of Transportation, the Secretary of Agriculture, the State Treasurer, and the Attorney General, or their designees, who shall serve ex officio; and six citizens of the State appointed by the Governor. Of the appointed members: two shall be actively engaged in the composting industry, of whom one shall be a representative of the National Waste and Recycling Association and one shall be a representative of the National Biosolids Partnership or equivalent entities; two shall be actively engaged in the recycling or solid waste collection industry, of whom one shall be a representative of the Association of New Jersey Recyclers or equivalent entities; and two shall represent the general public. The Commissioner of Environmental Protection shall appoint the chairperson and the vice-chairperson of the council from the citizen members.
- b. Members of the council shall serve without compensation, but shall be reimbursed for expenses incurred in attending meetings and performing their duties to the extent funds are available therefor.
- c. Within 18 months after the date of enactment of this act, the Food Waste Recycling Market Development Council shall prepare a report on the existing markets for any products and energy produced from food recycling facilities, food waste composting facilities, and anaerobic and aerobic digestion facilities that accept food waste material. The council shall investigate the feasibility of providing preferences for products or energy produced from food recycling facilities, food waste composting facilities, and anaerobic and aerobic digestion facilities in the State procurement process, including how to stimulate the use in public projects of compost or soil amendment products derived from these facilities. The council shall provide recommendations on changes needed to State laws or rules or regulations to stimulate the market for products and energy produced from food recycling facilities, food waste composting facilities, and anaerobic and aerobic digestion facilities that accept food waste material. The report shall be transmitted to the Governor and, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature.

5. (New section)

- a. Every State department or agency that engages in landscaping or construction activities on State land, or for State projects or facilities, shall use, where technically feasible, environmentally sound, and competitively priced, compost, mulch, or other soil amendments produced from municipal solid waste, food waste, sludge, yard waste, clean wood waste, or other organic materials that the supplier has certified comply with applicable project standards and specifications. Such compost, mulch, or soil amendments shall be used in place of chemical fertilizers or soil amendments.
- b. In purchasing compost, mulch, or other soil amendments for use by the various departments or agencies of State government, the Director of the Division of Purchase and Property in the Department of the Treasury, whenever the price is competitive and the quality satisfactory for the purpose intended, shall make contracts available for compost, mulch, or other soil amendments produced from municipal solid waste, food waste, sludge, yard waste, clean wood waste, or other organic materials.

- c. As used in this section: “Competitive” or “competitively priced” means a price of no more than 10% above the price of products which are manufactured or produced from virgin materials; except that the Director of the Division of Purchase and Property, upon consultation with the Department of Environmental Protection, may make contracts available for compost, mulch, or other soil amendments produced from municipal solid waste, food waste, sludge, yard waste, clean wood waste, or other organic materials at a price no more than 15% above the price of products manufactured or produced from virgin materials whenever the director determines that a 15% price differential is in the best interest of the State.

8. Can we develop a package of “business incentives” like tax credits to bring to the New Jersey Legislature for consideration? How significant is this – who drafts it?

The government procurement of sustainably manufactured compost products required under A2371/S865 are very important, but so much more can be done to enhance the economics of composting. Business incentive programs are clearly needed. Several options were discussed.

The Board of Public Utilities has significant incentive programs under their Clean Energy Program, which can be found here:

<https://www.njcleanenergy.com/commercial-industrial/home/home> .

However, this appears limited to “biomass to energy” projects which have historically been underrepresented in New Jersey. Historic “Biopower Solicitations and Feasibility Studies” can be found here:

<https://www.njcleanenergy.com/reipapps>

The New Jersey Economic Development Authority (EDA) has a long history of supporting businesses of all sizes to grow and invest in New Jersey. EDA offers a broad portfolio of economic development tools such as: jobs-based tax credits, real estate and development tax credits, community development programs, main street technical assistance, innovation economy programs, clean energy programs, and low-interest business financing (including bonds, loan participations, loan guarantees and variable/fixed-rate loans). EDA’s Financing and Incentives webpage can be found here: <https://www.njeda.com/financing-and-incentives/>

The State also offers a business portal through its website for “Business.NJ.Gov” at <https://business.nj.gov/> .

The Governor’s Office also maintains links to grants offered through the various administrative agencies of State Government which can be found here:

<https://www.nj.gov/nj/gov/njgov/grants.html>

Several Workgroup members discussed looking into these various programs with no real success. It appears that small-scale compost projects do not qualify for anything. You have to be generating energy to qualify for available incentives. The job creation numbers are also too high for a composting facility to qualify. However, it is worthwhile to perform outreach to these various existing resources to gauge any potential for applicability to the composting industry.

A model program to review is the City of Philadelphia Sustainable Business Tax Credit Program which can be found here:

<https://www.phila.gov/services/payments-assistance-taxes/tax-credits/sustainable-business-tax-credit/> . The Sustainable Business Tax Credit is offered to companies whose business practices support environmental and human well-being.

A final and potentially very important option for funding was discussed in the form of the Regional Greenhouse Gas Initiative or RGGI. The annual RGGI auction apparently brings in revenue approaching \$80 million. NJDEP rules governing the funding program are found at N.J.A.C. 7: 27D, “Global Warming Solutions Fund.” https://nj.gov/dep/rules/rules/njac7_27d.pdf

Section N.J.A.C. 7:27D-2.3 outlines “eligible projects and programs.” Most appropriately, the majority of the RGGI funding is allocated to the EDA and BPU for the administration of renewable energy programs and combined heat and power. However, section 7:27D-2.3 (a) 3 allocates up to 10% of the fund to go to the DEP for distribution to local governments for projects that represent a measurable reduction in greenhouse gas emissions. It appears compost projects might qualify under this session of the rules. However, the State Agency “strategic funding plan” would have to identify composting as eligible which has not been done historically.

All the above mechanisms need to be explored further. It is obvious there currently are no clear incentives available for small-scale composting projects. It would also be productive to canvas other State programs to see if good models like the Philadelphia Business Tax Credit program can be identified.

AFTER ACTION REPORT 4.0

LARGE-SCALE ORGANICS RECYCLING INFRASTRUCTURE

Stakeholder Discussion of April 29, 2021

On April 29, 2021, the Organics Workgroup held its fourth “stakeholder focus group discussion” on the topic of “Large-Scale Organics Recycling Infrastructure.” To prepare for the discussion and to identify issues of concern, Workgroup members were sent a fillable PDF survey questionnaire on February 16, 2021 and asked to address four basic issues.

1. Briefly describe the issue in need of being addressed that is “broken” in this Focus Area?
2. List the barriers that inhibit the development of solutions to this problem.
3. Recommend a solution(s) and steps needed to "fix" this problem?
4. In comparison to other needs in this Focus Area, in your opinion is this issue high, medium or low priority?

Through this process, member input resulted in 14 recommendations submitted prior to the scheduled focus group discussion as follows:

1. Develop a Statewide generator study to determine who is subject to A2371/S865;
2. Require counties to update County Recycling Plans to address organics;
3. Require regional wastewater authorities to assess the feasibility of co-digestion;

4. Create guidelines for facility siting and streamlined planning and permitting;
5. Assess what sister New England States did to streamline regulatory processes;
6. Review existing and needed financial and regulatory incentives for projects;
7. Align DEP regulatory programs so they are in sync (waste, air, water, stormwater);
8. Change education messaging to soil enrichment and carbon sequestration;
9. Develop organics collection infrastructure and value for end products;
10. Define material acceptance and testing criteria to help build public confidence;
11. Encourage landfills to transform their operations for the 21st century needs;
12. Perform a “technology assessment” of what projects have been effective;
13. Authorize or even solicit a range of pilot projects for different technologies;
14. Develop legislative amendments to merge DCA and BPU procurement specifications for organics collection to link to the Renewable Government Energy Aggregation Program

From these recommendations, Workgroup coordinators prepared nine core questions which served as the agenda for the stakeholder focus group discussion. These questions are listed below along with a short summary of the discussion. Any follow-up activities have been listed to chronical the next steps identified during discussions. Collectively, this summary represents the “After Action Report” stemming from the large-scale organics recycling infrastructure development focus group discussion.

1. Should DEP work with all Wastewater Authorities to assess the feasibility of co-digestion? Can this be incentivized?

There was clear consensus from discussion that it would be worthwhile to evaluate opportunities for the co-digestion of biosolids and source separated food waste at New Jersey wastewater treatment plants (WWTP’s) that have operational secondary digester equipment and available capacity. New Jersey does have one operational project where Waste Management Inc. uses their CORE organics recycling technology

<https://mediaroom.wm.com/core-organics-recycling-technology-that-turns-food-waste-into-energy> to process source separated food waste in a macerator located in the City of Elizabeth. After screening and maceration, pulped liquid food waste is pumped into tanker trucks and delivered to the Rahway Valley Sewerage Authority and injected into their wastewater digester to maximize gas generation from this existing, capitalized operation.

While this 450 ton per day Waste Management project has been in operation for several years now, Workgroup members were curious about operational effectiveness, biosolids end-product quality and the DEP’s assessment of this use of WWTP digester capacity. It was reported that the Joint Meeting of Essex and Union Counties treatment plant is also accepting some form of food waste and possibly “fats, oils and grease” material. Positive experience was also discussed at facilities in Massachusetts and, in particular, the “Greater Lawrence Sanitary District. (GLSD)” The following is an excellent article which summarizes the co-digestion project used at the GLSD to process food waste within their existing wastewater digester:

<https://glsd.org/wp-content/uploads/2020/10/GLSD-Featured-in-NEWEA-Journal-Fall-2020-1.pdf>

General discussion also took place regarding the production of “bio-char” from wastewater treatment operations which could have positive applications as a product in agriculture. More specifically, in

October of 2019 the Linden Roselle Sewerage Authority broke ground on the Aries Linden Biosolids Gasification Facility which will process 430 tons of biosolids daily into clean renewable energy. The system will reduce the volume of biosolids from 430 tons per day to 22 tons of beneficial biochar. The biochar will be beneficially used as a substitute for fly ash in concrete. A summary article on this project can be found here:

<https://www.tapinto.net/towns/linden/sections/green/articles/aries-clean-energy-breaks-ground-in-linden> .

Use of biochar in agriculture has shown encouraging results in mitigating soil pollution and decreasing soil acidity. An interesting paper on agricultural applications of biochar can from researchers in India can be found here:

https://www.researchgate.net/publication/346006710_Biochar_Preparation_Properties_and_Applications_in_Sustainable_Agriculture#:~:text=Use%20of%20biochar%20in%20agriculture%20has%20shown%20encouraging,such%20as%20higher%20porosity%2C%20alkalinity%20and%20nutrient%20contents.

Additional input is needed from the DEP as well as an assessment of which WWTP's utilize secondary digesters, have excess processing capacity and might be willing to entertain a contractual relationship with a supplier of macerated liquid food waste. This topic will be a primary recommendation of the Organics Workgroup to further evaluate this potential to dovetail WWTP operations as an asset in food waste management, particularly due to the highly favorable economics in utilizing existing equipment to help manage food waste and create renewable energy.

As part of the stakeholder process, two informative studies were recommended for further review. They are: "Food Waste Co-Digestion at Water Resource Recovery Facilities: A Business Case Analysis" published by The Water Research Foundation which can be found here:

<https://www.waterrf.org/resource/food-waste-co-digestion-water-resource-recovery-facilities-business-case-analysis> . The second is

"Successful Business Strategies For Codigestion At WRRFs" published in BioCycle Magazine, December 2019, which can be found here:

<https://www.biocycle.net/successful-business-strategies-codigestion-wrrfs/>

2. Should DEP and counties update County Recycling Plans to address Organics – can the organics community help?

Since the late 1970's, the 21 county governments in New Jersey have had primary responsibility for solid waste and recycling planning, subject to State level DEP review and approval. As a result, each county has a long-established "master plan" for solid waste and recycling. From time to time through the years, the counties have been asked by the State to update these master plans to reflect new information and to strive toward more sustainable materials management. It was suggested during earlier Organics Workgroup discussions and in this discussion on large-scale infrastructure that the DEP should require counties to develop "organics updates" to their plans. This suggestion is likely to be one of the core recommendations of the Organics Workgroup. The topic was put-forward in the large-scale facility development discussion with specific reference to the potential to "reinvent" landfill operations as further discussed immediately below under question 3.

3. How can we bring the 12 existing state-of-the-art landfills into 21st century operations as regional facilities for organics?

There are 12 “Class I” operating landfills in New Jersey that accept municipal solid waste. Each represents a “modern landfill” which is defined as double composite lined with active leachate collection and detection, groundwater monitoring and active methane gas extraction. A listing of these facilities can be found on the DEP Division of Solid & Hazardous Waste website here: <https://www.state.nj.us/dep/dshw/lrm/aocslf.htm> and a location map found here: <https://www.state.nj.us/dep/dshw/lrm/ocslfmap.htm> . According to USEPA, municipal waste landfills are the third-largest source of human-related methane emissions in the United States, accounting for approximately 15.1 percent of these emissions in 2018. Nearly a quarter of what is disposed of in landfills is food waste. For most of the discussion of the Organics Workgroup, strategies were discussed to drive material away from landfills and disposal in general. Today’s discussion reviewed the reverse potential for modifying operations at existing landfills to transform them from “disposal facilities” to regional materials separation and recovery and organics management facilities.

The logic here is similar to the discussion under question 1 above related to making best use of existing WWTP digester capacity through co-digestion of source separated food waste and biosolids. Landfills are heavily regulated, fully permitted by all DEP regulatory programs and already accept most of the food waste generated in New Jersey which is co-mingled in as part of the “Type 10” municipal waste stream. Since the landfills already represent regional operations, can they be modified to better manage organic material? A number of options exist:

Apparently at some landfills in California, “depackaging equipment” has been installed to process incoming mixed solid waste to recover materials and separate the organics which then are directed to on-site composting technologies and mainly in-vessel or enclosed systems. A very interesting July 2019 article on depackaging from BioCycle Magazine can be found here: <https://www.biocycle.net/food-waste-depackaging-systems/>

A second option is creating a separate landfill cell to operate as an anaerobic digester right within the landfill for the management of source separated organic material. Such an operation has been in place for decades in Yolo County, California. Here is a dated, yet substantive article from the California Department of Resources Recycling and Recovery (CalRecycle) on this project: <https://www.yolocounty.org/home/showdocument?id=31492> with the title “Landfill-Based Anaerobic Digester-Compost Pilot Project at Yolo County Central Landfill.” The Executive Summary of this 2010 report aptly summarizes the utility of evaluating such an option:

“In California and the U.S., there is a need for a cost-effective anaerobic digestion technology that would produce renewable energy and marketable compost. Such a system could be constructed at a landfill site in order to take advantage of the existing infrastructure. Locating such a facility at an existing landfill reduces the need to purchase additional land; reduces permitting time and costs; reduces organic waste transport costs; reduces the need for additional infrastructure for gas collection and leachate storage and handling; reduces energy use; increases renewable energy production; and reduces odor and gas emissions from composting operation. A digestion technology should achieve these benefits at cost lower than the well-documented high cost of the European vessel-based systems.”

The goal of this project was to construct a pilot-scale project to demonstrate these benefits and determine if such a technology could be an appropriate technology for the treatment of organic waste in California. Over the past 15 years, Yolo County has been conducting similar research for treatment of mixed MSW (2-5). The landfill bioreactor technology has successfully been implemented for full-scale landfill cells at the Yolo County Central Landfill (4). This has inspired many other private and public landfill owners and operators to implement similar projects worldwide. The landfill-based anaerobic digester-compost pilot project (digester cell) presented here is based on the technology that has been developed at the Yolo County Central Landfill, as part of a full-scale demonstration project.”

A third on-site management option is represented by the Burlington County Resource Recovery Complex. In May of 1998, the County commenced operation of a biosolids composting facility. The facility utilizes an in-vessel agitated bin system where dewatered biosolids (waste from water treatment facility processes) are mixed with amendment, such as wood chips from the Complex bulky waste recycling center, and undergo biological decomposition to produce a stable compost product, which is then sold to commercial markets. While this facility composts biosolids only, the question becomes can co-digestion technology for biosolids and either source separated or repackaged food waste be developed at existing landfills?

It is probable that a DEP required update of existing county solid waste and recycling plans will be a fundamental recommendation of the Organics Workgroup due to the sheer environmental and economic benefit of regional co-location of material separation and process. Of course, as suggested during other focus group discussions, the county review would address all facets of more sustainable organics management, including food waste reduction, education, backyard composting, organics management in schools, etc. It was also stressed that the State should not “mandate” operational changes at landfills, but rather ask for case-by-case assessment of potential opportunities, leaving appropriate discretion to counties based on their individual circumstances. There is no question that there is no “one size fits all” solution to organic material management.

4. *How as a community can we work with DEP to bring about needed regulatory reform – what exactly do we need?*

The DEP regulatory requirements for Class C recycling center composting and co-composting facilities, including large-scale recycling infrastructure, can be found at N.J.A.C. 7:26A-3.1, general requirements and 7:26A-3.18 additional application requirements for general approval to operate a recycling center for the receipt, storage, processing or transfer of Class C recyclable materials. Subchapter 4 and specifically 7:26A-4.5 outlines additional design and operational requirements for recycling centers that receive, store, process or transfer Class C recyclable materials. These requirements can be found in the DEP Recycling Rules here:

<https://www.state.nj.us/dep/dshw/resource/CURRENT/WEB%20PDFS/26A.pdf>

In earlier Organics Workgroup discussions on Community Composting systems, there was directional agreement that the following hierarchy to simplify and streamline the regulatory requirements for small-scale systems makes sense for the Department to consider and to do so expeditiously due to the exhaustive

regulatory process and associated timeframes required under the Administrative Procedures Act for new or modified rules:

- Outright exemptions for small scale operations, such as community gardens and composting activities on farms;
- Reexamination of potential reforms to the Department’s Planning Rules found at N.J.A.C. 7:26 – 6 and more specifically:
 - 7:26-6.10 Modifications to district solid waste management plans; plan amendments, and
 - 7:26-6.11 Administrative actions concerning a district solid waste management plan

In this discussion it was acknowledged that the administrative action vehicle represents an existing streamlined process for county planning that works. A broader scale of composting operations should be considered for inclusion under 7:26-6.11;

- Section 7:26-1.7 “Exemption from SWF permitting” was also recognized as an existing provision that works related for exempting research, development and demonstration (RD & D) projects. This may be a provision to further evaluate for expanding the scope of what fits as an RD&D project and for a streamlined process to go from an RD&D approval to a full permit;
- Consideration of a “General Permit” or “Permit-By-Rule” approach for non-exempt, but small composting projects such as smaller windrow composting operations.

It was also offered in this context that the NJDEP’s Science Advisory Board released a report on April 22, 2020 on “Outdoor Food Waste Composting” which will help guide DEP in its reform effort considerations. This excellent report can be found for additional, substantive technical background here: https://www.nj.gov/dep/sab/sab_food_composting.pdf

For the discussion of large-scale organics recycling infrastructure, we are referring to highly technical and complex aerobic, anaerobic and co-digestion systems. The regulatory requirements for these systems are extraordinarily detailed, as they must be, due to both the normally larger scale and potential environmental impact of these systems. The operational track record of higher technology systems in New Jersey is poor. Numerous facilities were constructed and operated in the part only to fail and close due to many factors, most notably problems with front-end screening of feedstock, the highly variable nature of incoming food waste feedstock, odor problems and difficulties with year-round marketing of end product.

Today, as referenced previously, only two large scale facilities are in operation. Trenton Renewables operates an NJDEP permitted 450 ton per day (TPD) in-vessel anaerobic digestion facility for source separated food waste on Duck Island in Trenton. The facility opened in late 2019. Waste Management Inc. (WMI) opened a 500 TPD Class C co-digestion processing facility in Elizabeth in 2018 in conjunction with the Rahway Valley Sewerage Authority wastewater treatment plant. Two smaller (less than 2 tons per day) in-vessel systems are operational at Kean and Princeton Universities.

In April 2020 Governor Murphy signed into law New Jersey’s version of Statewide disposal ban legislation in the form of A2371/S865. This law will require large generators of food waste (52 tons per

year or 1 ton per week) to source separate and compost or otherwise recycle their food waste, provided there is a composting facility located within 25 road miles and the cost is less than what generators currently pay for disposal. The bill becomes effective in October of 2021 and also creates a Food Waste Market Development Council and imposes procurement or purchasing requirements for compost products purchased by State agencies. A key objective of this legislation supported by the New Jersey recycling and composting community was to help stimulate the development of additional large-scale organics recycling infrastructure with a guaranteed supply of feedstock assured through the landfill/incineration disposal ban.

DEP, in its October 2020 Global Warming Response Act 80 x 50 Report recognized the need for regulatory reform. Table 5.4 on page 103 had a near-term recommendation to:

Create guidelines/recommendations for county siting and streamlined state planning and permitting of food waste recycling facilities. During our Workgroup focus area discussion, a number of general recommendations for addressing regulatory reform were made as follows:

- **Let's not reinvent the wheel:** It was suggested that New Jersey should look at what other States with disposal ban legislation have done regarding regulatory reform. Both the process used and end-results toward streamlining are important. During discussion it was learned that the Center For Eco-Technology has been working with the Natural Resources Defense Council (NRDC) to develop a policy inventory of about 11 states and that policy inventory includes climate action goals and also permitting reforms. The timeline for inventory release is late Spring/early Summer 2021. This assessment will provide an excellent base for NJDEP to work from;
- **Interagency coordination is essential:** A very strong consensus is that NJDEP regulatory programs are not sufficiently connected at present regarding permit application review. In particular, the Air Permitting Program often appears disconnected with the Division of Solid and Hazardous Waste. Water NJPDES permitting, stormwater management and Land Use Regulation also need to be well coordinated as part of an integrated application review process. It was reported that the State of Massachusetts was particularly successful in bringing different Mass DEP programs together to tackle streamlined permitting;
- **Regulatory Agency and academic collaboration:** Another suggestion was to have DEP work with New Jersey's outstanding academic institutions to collaborate on regulatory reform to uphold the application of sound science in permitting, which is essential, while streamlining the bureaucratic red tape;
- **Dedicated stakeholder process:** Finally, it appears essential for DEP to undertake a large-scale organics infrastructure development stakeholder process as soon as possible in light of the impending October 2021 implementation date for A2371/S865. It appears essential to have the regulated community engaged to share their experiences with DEP and their various permitting divisions toward administering meaningful changes to existing regulatory requirements.

For each of these recommendations, members of the Organics Workgroup might be of great assistance to the DEP to undertake the work required to make meaningful changes in the regulatory process. This opportunity will be further discussed with the Department for their consideration.

5. What can we learn from our New England State Landfill Bans?

Most discussion pertaining to other State programs took place in the context of regulatory reform as outlined above in response to question 4. However, as a general statement, a great deal can be learned from other New England states in particular. ANJR's original legislative proposal which eventually was enacted as A2371/S865 was closely modeled after the Connecticut 22a-226e – P.A. 13-285 disposal ban passed in 2013, which became effective in 2014. Perhaps the best State to coordinate with and learn from is Massachusetts where their commercial food waste ban took effect via MassDEP regulation on July 1, 2014. The Massachusetts population of 7 million approaches that of New Jersey near 9 million. The state with the most ambitious food waste program is Vermont. Under their Vermont Act 148, the covered generator phase-in schedule by statute has now reached residential curbside and ratcheted down as follows:

- July 1, 2014: Generation of 104 Tons Per Year;
- July 1, 2015: Generation of 52 Tons Per Year;
- July 1, 2016: Generation of 26 Tons Per Year;
- July 1, 2017: Generation of 18 Tons Per Year;
- July 1, 2020: Expands to ALL Generators (including households).

It must be recognized that Vermont's population is about 627,000 which is equal to or less than 5 New Jersey Counties individually (Bergen, Middlesex, Essex, Monmouth and Ocean). Vermont also has a high concentration of dairy farms and on site anaerobic digestion capacity already in place for manure as a potentially available infrastructure. Rhode Island's disposal ban was also passed in 2014 and became effective for large quantity generators on January 1, 2016.

Finally, New York State's Food Donation and Food Scrap Recycling Act was passed in April 2019, almost exactly one-year before New Jersey's A2371/S865. Apparently New York State is at a very similar ban implementation phase as New Jersey at this time.

As a recommendation, it appears most prudent for NJDEP to develop a close working relationship with MassDEP to learn from their food waste disposal ban experiences.

6. How do we incentivize new facility development – tax incentives, low interest financing, is the RGGI Global Warming Solutions Fund a potential option?

Ranking right next to the priority for regulatory reform with respect to the implementation of A2371/S865 is the issue of creating incentives for new facility development. Clearly, the A2371/S865 legislation facially provides significant incentives:

- Large food waste generators (52 tons per year) must use a compost facility provided it is located 25 road miles away or less and the cost is less than that currently paid for landfill or incineration disposal. This provision provides a “waste flow” of guaranteed feedstock to operational facilities. This is enormously important to the banking community in terms of risk associated with new facility development and financing;

- Section 3 of A2371/S865 authorizes a \$0.50 per ton minimum host community benefit to towns as an incentive for facility siting;
- Section 5 provides important market development incentives in the form of State government procurement requirements for environmentally sound, and competitively priced, compost, mulch, or other soil amendments produced from food waste composting, including a 10% price preference for such products, with discretion to the State Department of Treasury to go up to a 15% price preference;
- Finally, A2371/S865 amended the definition of “Class I renewable energy” to include electric energy produced from methane gas from a composting or anaerobic or aerobic digestion facility that converts food waste or other organic waste to energy.

These provisions represent powerful incentives which should not be overlooked.

DEP in its Global Warming Response Act 80 x 50 Report recognizes the need for additional incentives. Another near-term recommendation found in Table 5.4 on page 103 of the Report is to *Create incentives to site organic waste recycling, composting or anaerobic digestion operations*. Beyond the provisions in the new law outlined above, most available incentives appear related to “renewable energy” generated through biomass projects using either aerobic or anaerobic digestion (or other) technology. During discussion it was highly recommended that the Organics Workgroup, in concert with the NJDEP, should meet with the Board of Public Utilities to discuss financial incentives. Monies collected by the Board from regulated utilities can be used to support renewable energy sources. Apparently in the past, BPU used to operate an Energy Resiliency Bank with funding from HUD. This might still be an avenue available for facility funding. The New Jersey Economic Development Authority (EDA) is also setting up a “Green Bank” and should be approached regarding the eligibility of biomass to energy projects from food waste processing.

A review of incentive programs in other States should also be undertaken to identify models that might be appropriate for New Jersey through coordination with the State Legislature and involved State agencies. One example is with incentives through utility companies processing food waste and creating energy in Connecticut. Connecticut operates a Green Bank that provides some funding mechanisms. A link to the Connecticut Green Bank can be found here:

<https://www.ctgreenbank.com>

Massachusetts has a Clean Energy Center providing incentive programs which can be found here:

<https://www.masscec.com> .

A great example was highlighted earlier under question 1 with the “Greater Lawrence Sanitary District. (GLSD)” co-digestion project, once again summarized here: <https://glsd.org/wp-content/uploads/2020/10/GLSD-Featured-in-NEWEA-Journal-Fall-2020-1.pdf>

Additionally, as also discussed in the Community Composting after action report, does RGGI represent an opportunity to support biomass to energy project development? The annual RGGI auction apparently brings in revenue approaching \$80 million. NJDEP rules governing the funding program are found at N.J.A.C. 7: 27D, “Global Warming Solutions Fund.”

https://nj.gov/dep/rules/rules/njac7_27d.pdf Section N.J.A.C. 7:27D-2.3 outlines “eligible projects and programs.” The majority of the RGGI funding is allocated to the EDA and BPU for the administration of renewable energy programs and combined heat and power. Could biomass to energy projects for food waste be considered if included as eligible within the State Agency “strategic funding plan?” California appears to be using funding sources similar to RGGI for this purpose. The Department of Resources Recycling and Recovery (CalRecycle) administers an Organics Grant Program pursuant to Public Resource Code section 42999. The purpose of this competitive grant program is to lower overall greenhouse gas emissions by expanding existing capacity or establishing new facilities in California to reduce the amount of California-generated green materials, food materials, and/or Alternative Daily Cover being sent to landfills. As just one example, here is a link to the “Notice of Funds Available: Organics Grant Program (FY 2017-2018).”
<https://www.calrecycle.ca.gov/climate/grantsloans/organics/fy201718> .

As noted, \$33,611,491 was made available for organics projects in this single year. A link to the California Organics Grant Program website can be found here:
<https://www.calrecycle.ca.gov/climate/grantsloans/organics>

One final recommendation was made during stakeholder discussion regarding the existing disbursement of monies under the NJDEP’s Recycling Enhancement Act found at N.J.S.A 13:1E-96b(5). At present under the referenced statute, incentive funding is only made available by the DEP to “institutions of higher education.” It was recommended that the statute be amended to broaden eligibility to K-12 schools as well. Doing so could provide significant opportunities to expand food recovery and composting in New Jersey while increasing educational opportunities. This is a matter that should be further evaluated by the NJDEP as well as relevant non-profit organizations such as the Association of New Jersey Recyclers and New Jersey Compost Council.

7. What can be done to improve organics collection infrastructure?

It should be mentioned at the onset that companies transporting exclusively source separated materials destined for recycling are exempt from the registration and licensing requirements of Subchapter 3 of the DEP’s solid & hazardous waste regulations found at N.J.A.C. 7:26-3. This is a significant incentive as annual vehicle registration and fees are not required and recycling companies, with limited exception, are not required to undergo the State’s detailed A-901 disclosure statement background check and licensing requirements. Notwithstanding this, like supply and demand in basic economics, there is a limited supply of source separated food waste being generated at present in New Jersey and, therefore, limited demand to entice transporters to be engaged in this activity. There are some larger firms that are reasonably active in source separated food waste hauling and primarily from commercial accounts at grocery stores, restaurants, food manufacturers and food processors. These include Organic Diversion, Waste Management Inc. and Central Jersey Waste & Recycling, among others.

There has been growing interest in homeowner curbside subscription services through “micro-haulers” who are currently operating programs in primarily Northern New Jersey with examples in Hoboken, Edgewater and Jersey City. One way to increase material supply to create more demand for transportation services in the waste/recycling hauling industry might be through an expansion of what might be termed a “municipal convenience center model.” Under the DEP’s solid & hazardous waste rules at N.J.A.C.

7:26-1.4 “Definitions,” a convenience center is “*a site where one or more containers are located for temporary storage of solid waste and/or recyclable materials brought to the site by persons transporting only their own household solid waste and/or recyclable materials in passenger automobiles bearing general registration plates.*” A convenience center does not require either County plan inclusion or a DEP permit of any kind to operate. Under such a model, a town can hypothetically allow, for example, drop-off of source separated food waste at a municipal DPW yard or other municipal property on weekends. Drop-off would be monitored to ensure that only source separated food waste is being deposited in dumpster containers. Hauling of dumpsters would be scheduled early the following week to avoid odor, insect and vector nuisances. The New Jersey Organics Recycling Foundation, sister organization to the New Jersey Composting Council, is working with various municipalities in northern New Jersey to help develop such drop-off programs through the use of convenience centers. Their website can be found here: <https://njorganicsrecyclingfoundation.org/municipal-composting> .

There is no question that New Jersey has a healthy abundance of waste/recycling transportation infrastructure available to engage in the source separated food waste business. Currently, the situation represents a feedstock generation supply and transportation demand disconnect that can easily be rectified once source separation programs are expanded across the State. DEP regulatory reforms discussed earlier will also result in expanded facility development which will stimulate the supply of source separated food waste and increase the number of available transporters. During discussions it was noted that even micro-haulers operating in North Jersey to service subscription programs must transport material to Rockland County, New York for composting due to the lack of available composting infrastructure in New Jersey.

8. How important are bidding laws at the municipal level from DCA with respect to organics collection?

This is an area which needs further review which could enhance a New Jersey sustainable organics management platform. One area of procurement discussed in the Workgroup session would require a relatively small legislative change to authorize municipalities to dovetail organic material collection at the same time they purchase renewable energy. A theoretical example could involve the existing Trenton Renewables biomass to energy facility and any nearby Mercer County municipality, town X. Town X could prepare a municipal bid specification for organics collection services requiring use of Trenton Renewables while simultaneously procuring renewable energy generated from Trenton Renewables through an energy aggregation platform. This would result in providing supply of feedstock to an existing food waste recycling facility while also supporting energy demand by purchasing the renewable energy it produces.

One strong suggestion stemming from the discussion was to schedule a meeting with the Board of Public Utilities to discuss this type of created energy procurement, as well as the expansion of funding incentive programs as outlined above under question 6. It also will be necessary to discuss this and potentially other procurement reforms with the Department of Community Services and, eventually, leadership within the New Jersey Legislature.

9. *Should “pilot projects” be developed and solicited by the State?*

Question 4 above reviews options for regulatory reform. As part of this discussion it was noted that the existing structure related to “Research, Development and Demonstration” (RD&D) projects has already been streamlined under the DEP’s Solid & Hazardous Waste rules. This is a combination of satisfying county planning requirements through the streamlined Administrative Action process found at N.J.A.C. 7:26-6.11 and complying with the relatively straightforward RD&D requirements found in N.J.A.C. 7:26-1.7 “Exemption from SWF permitting.” With this in mind, the Workgroup discussion question centered on whether “pilot projects” authorized under this streamlined approach would provide needed “proof of concept” demonstration of higher technology aerobic and anaerobic digestion systems. This would both provide DEP with a rationale for streamlining the regulatory process and give a higher level of confidence to the public given the poor historical track record of such systems in New Jersey.

Both sides of this question, pro and con, were discussed. On the pro side, many felt that demonstration projects are needed, particular for technologies not previously permitted in New Jersey, for proof of concept of the ability of these systems to meet environmental standards. Two procedural options were offered. Under one, the State DEP would lead an RFP process and oversee expeditious and coordinated permit review to bring pilot projects into operation quickly. NJDEP, USEPA, the Army Corps of Engineers and DOT’s Maritime Resources Program did such a pilot demonstration RFP in the 2005/2006 range to review best available technology for land-based dredge material processing for beneficial use. In that case they sought and obtained three pilot demonstration projects implemented by private sector companies to review “soil washing,” “incineration” and “light-weight aggregate” processing technologies. The other option was simply to have industry associations and other stakeholders collaborate to frame needed pilot projects. An example was given of work performed by ANJR representing the recycling community collaborating with Rutgers for technical support in addressing industry concern with DEP stormwater management requirements. This collaboration resulted in a set of best management practices which eventually were accepted by the Department.

On the con side of this discussion, an example was given regarding the use of the streamlined RD&D approach outlined above in Atlantic County to demonstrate a solid waste gasification technology. After significant time (years of permit review process), the lack of coordination between DEP media programs resulted in the project being abandoned. In this case, the Division of Solid & Hazardous Waste expeditiously approved the demonstration, but the Air Permitting Program was indecisive, requiring ever expanded testing protocols of the private sector vendor. Eventually, the vendor abandoned the effort as the cost of testing far exceeded any commercial value to running the relatively small demonstration project.

Moving forward, this topic deserves discussion with the NJDEP. If they feel pilot projects would be beneficial toward developing large-scale organics recycling infrastructure, stakeholders can collaborate with the Department to structure a streamlined process. Two factors seem critical. First, DEP media programs need to all be at the table to ensure the identification of clear regulatory requirements at the very beginning of the process. No one is interested in bypassing regulations needed for proper operations and for upholding public health and safety or complying with needed environmental standards. What is desired is “regulatory certainty” in the process so that interested vendors know the rules before they decide to engage in the permitting process. The second critical element appears to be an ability to expand

the pilot to a commercial scale through an equally expedited regulatory process. Logically, pilot scale operations will not yield sufficient economic return to justify the application, construction and operations & maintenance costs unless a successful pilot can lead to expanded operations. Many higher technology systems are designed for modular construction and would lend themselves to such a scaling structure. A smaller (theoretically 100 ton per day) module can be constructed for purposes of the demonstration and proof of concept, but expansion (to theoretically 300 tons per day) would be anticipated and somehow recognized in the RD&D review and permitting process after proof of concept is satisfied. It can not be overstated that financing institutions (banks) are understandably risk adverse and are the key player in project development. Unless a clear pathway to profitable commercial scale operations can be established, any pilot demonstration strategy is likely to fail.

10. How can we use material acceptance and testing criteria to help build public confidence in the use of end-product compost?

Discussion here centered on end product (compost) quality being only as good as the quality of incoming feedstock material (food waste) with concern expressed over feedstock contamination and heavy metals. Experience at New Jersey high-technology food waste composting facilities has shown that feedstock contamination is a major problem. Front-end screening technology is critical to remove plastic, glass, ceramics (plates) utensils and other contaminants before material processing. In the case of co-digestion, concern was expressed over biosolids testing prior to beneficial use. It was stressed that compliance with end product testing requirements is critical to building public confidence in the beneficial land application and use of biosolids, particularly on agricultural lands used for production. Certifying the end use product by stringent testing (both chemical analysis and toxicity testing) is critical to building public confidence that the material is safe and we are not creating another potential waste stream.

It was suggested during discussion that relevant stakeholders engaged or potentially affected by the land application of end-product materials derived from co-digested food and biosolids should be involved and have a voice. A highly relevant reference source was provided which can be found here: <https://archives.joe.org/joe/2003february/a1.php> (Krogmann, U. and Gibson, V.: Integrating Development of Extension Materials and Formative Informal Evaluation: Land Application of Sewage Sludge as a Case Example. *J. of Extension*, 2003, 41(1). Among the conclusions stated from this study summarizes the need for stakeholder engagement and please access the above link for more information:

“The integration of Extension material development and formative informal evaluations tries to address the needs of the target audience. In our case, the outreach materials were designed to address RCE agents' and farmers' concerns such as long-term soil productivity, plant growth, and liability. They do not address the concerns of other groups, such as sewage sludge generators, and may be objectionable to them. Our overall goal was to provide balanced information to RCE agents so that they can help farmers make more informed decisions.”

AFTER ACTION REPORT 5.0
SUSTAINABLE ANIMAL MANURE MANAGEMENT
Stakeholder Discussion of May 6, 2021

On May 6, 2021, the Organics Workgroup held its fifth “stakeholder focus group discussion” on the topic of “Sustainable Animal Manure Management.” To prepare for the discussion and to identify issues of concern, Workgroup members were sent a fillable PDF survey questionnaire on February 16, 2021 and asked to address four basic issues.

1. Briefly describe the issue in need of being addressed that is “broken” in this Focus Area?
2. List the barriers that inhibit the development of solutions to this problem.
3. Recommend a solution(s) and steps needed to "fix" this problem?
4. In comparison to other needs in this Focus Area, in your opinion is this issue high, medium or low priority?

Through this process, member input resulted in 10 recommendations submitted prior to the scheduled focus group discussion as follows:

1. *Prepare baseline inventory of manure generators and existing modes of best management practices;*
2. *Review existing BMP’s for manure by animal type (horses, cows, pigs, etc.);*
3. *Engage generators to determine existing challenges in manure management;*
4. *Identify opportunities for linking generator supply and fertilizer demand toward appropriate beneficial use of manure;*
5. *Expand education and outreach materials for the generator community;*
6. *Enroll farmers in the USDA’s EQIP 17, the CREP 18 and the utilization of precision agriculture programs;*
7. *Quantify the environmental and economic impacts of improper management; highlight the benefits of proper management and advocate for cost-efficient and environmentally sustainable BMP’s;*
8. *Support development of regional composting operations for equine manure;*
9. *Create incentives for use of animal manure and food waste in WWT facilities;*
10. *Review existing funding sources to advance sustainable manure management and identify funding gaps. Review legislation in other States to identify potential models for additional funding in New Jersey.*

From these recommendations, Workgroup coordinators prepared nine core questions which served as the agenda for the stakeholder focus group discussion. These questions are listed below along with a short summary of the discussion. Any follow-up activities have been listed to chronical the next steps identified during discussions. Collectively, this summary represents the “After Action Report” stemming from the Sustainable Animal Manure Management focus group discussion.

1. Can we/should we try to generate locational metrics on generators and uses of manure Statewide – horses only?

There was general consensus that baseline inventories of farm locations and mapping for all farm animals (not just horses) would be useful toward the goal of better evaluating the feasibility of regional manure management options in the future. The USDA provides information, by State on agricultural operations through its National Agricultural Statistics Service. Information for New Jersey is provided by the New Jersey Field Office of the USDA. These 2020 statistics show that New Jersey has some 9,900 farms with approximately 750,000 acres of land in farm operation. The livestock inventory provides that in 2020 there were approximately 8,600 cows raised for beef, 4,400 cows producing milk and 7,500 hogs. 2017 Census data indicates that there are approximately 11,000 goats on 1,000 farms, 23,374 horses across 2,754 farms, 1,631,775 egg laying chicken across 1,986 farms, and 25,331 meat chickens across 175 farms.

Statistics on potential manure generation and farm-specific management practices appear unavailable at this time. This is understandable as a significant amount of manure generated on farms is used on the farm for crop fertilization. Further, manure generation and on-site/off-site management is highly variable over time. While reported metrics are not available, it does appear that estimates can be generated. Manure management is regulated by the State Department of Agriculture through its Chapter 91 Animal Waste Management Regulations found at N.J.A.C. 2:91. These regulations can be found here: <https://www.nj.gov/agriculture/divisions/anr/pdf/animalwastemanagementrule.pdf>

Under the rule definition of “Animal unit (AU)” a conversion chart is provided for determining the animal units on the farm. This chart or table was created by the Midwest Plan Service – MWPS-18, 2000 by the American Society of Agricultural Engineers. This conversion table is extremely useful as it provides conversion factors for the number of animals per farm and probable manure generation in tons per year by animal unit. Conversion factors are provided by animal type including dairy cows, beef cows, swine, sheep, poultry and horse. Taken together, the above cited animal inventory statistics from the USDA coupled with the American Society of Agricultural Engineers conversion chart will enable estimates of manure generation both regionally and Statewide.

Workgroup participants on our zoom call also referenced some available GIS farm location data through the Farmland Assessment Program that might be extremely useful toward creating a rough baseline inventory of manure generation for future planning purposes. We will also reference the Rutgers Office of Research Analytics to find what data and making information they may have available. Finally, in July of 2015 the New Jersey Agricultural Experiment Station published its excellent “Assessment of Biomass Energy Potential in New Jersey” with funding from the State Board of Public Utilities. This document provides Statewide metrics across the entire sphere of biomass sources, including manure. Statewide manure generation may be provided here and, while somewhat dated, may provide some initial baseline numbers. This report can be found here: https://bioenergy.rutgers.edu/biomass-energy-potential/BIOMASS_ASSESSMENT_2.0_2015.pdf

Going forward, the Organics Workgroup will work with the State Department of Agriculture, the Agricultural Extension community and Rutgers University toward further pursuing the creation of a manure generation inventory. The purpose once again is to have baseline locational information to help

assess the feasibility of developing regional composting facilities and to assist in siting decisions based on the centroid(s) of generation. It is hoped that such an inventory will also be useful to farmers toward the beneficial use of manure by providing a rudimentary inventory of “generators” and potential “users” of this valuable resource.

2. What is the status of existing BMP’s by animal type?

Once again, Chapter 91 Animal Waste Management Regulations (AWMRs) found at N.J.A.C. 2:91 guides the Best Management Practices (BMP’s) process in the State along with a BMP manual developed by the NJ Department of Agriculture. Subchapter 3 of the AWMRs specifically addresses animal waste management requirements and BMP’s. General requirements applicable to all farm operations are provided in 2:91-3.3 followed by more specific requirements based on the number of animal units on the farm. Farms with 1 – 7 animals must comply with the general requirements and are encouraged, but not mandated to develop a site specific “Animal Waste Management Plan” (AWMP). Under 2:91-3.4, farms with 8 – 299 animal units must prepare a “self-certified AWMP based on the NJDA BMP manual.” Subchapter 2:91-3.5 applies to farms with greater than 299 animal units and has an additional requirement for the development of a “high-density AWMP” meeting the standards set forth within the New Jersey Field Office Technical Guide (NJ-FOTG), which is the USDA/Natural Resource Conservation Service (NRCS) technical guidance tailored for New Jersey. These larger farms must also prepare a “Comprehensive Nutrient Management Plan” (CNMP) to ensure that both production and natural resource goals are achieved on the farm.

The BMP regulations and self-certification process provided in Chapter 91 would aptly be characterized as “general permits” where all requirements are specified in the regulations as opposed to conditions specified in an individual farm permit. Enforcement provisions are provided in Subchapter 2:91-4.1 with penalties of up to \$1,000 per violation applicable for violations of AWMP, high-density AWMP and/or CNMP requirements. Regular compliance inspections of farms related to manure management do not take place. However, inspections are conducted to investigate alleged violations. The Appendices to the Chapter 91 rules provide the specific BMP’s for water quality protection. The BMP’s are organized in six sections which address:

1. Erosion and sediment control
2. Nutrient management
3. Pest and pesticide management
4. Livestock barnyard, manure and waste management
5. Livestock grazing management
6. Irrigation management

Taken together, these BMPs represent nationally based and enforceable guidance from the USDA/NRCS and tailored for New Jersey. They are clearly comprehensive and address all of the above natural resource management issues of concern, with specific reference to livestock barnyard manure and waste management. Chapter 91 is set to sunset on August 25, 2023 by which point the NJDOA will readopt them without change or propose and adopt updated rules.

3. Who needs to be engaged from the farm community to better identify challenges farmers face in manure management?

It is clear that farmer representation on the Organics Workgroup was limited simply based on lack of knowledge of who should be at the table. From Workgroup stakeholder discussion, a number of valuable contacts were identified toward future engagement to obtain more first-hand input on barriers to sustainable manure management. They include the:

- Northeast Organic Farming Association of New Jersey: <https://nofanj.org>
- New Jersey Equine Advisory Board: <https://www.esdcta.org/home/resources/njeab/what-is-the-nj-equine-advisory-board>
- New Jersey Horse Council: <http://www.njhorsecouncil.com>
- New Jersey 4-H: <http://nj4h.rutgers.edu>

Another critical missing participant was recognized as “carters” or manure collector-haulers. There are very few and only one specific reference was given for a New Jersey solid waste hauling company, Freehold Cartage: <https://www.freeholdcartage.com> . Here it was pointed out that we have a supply and demand problem. There does not appear to be a steady supply of manure for collector/haulers to be engaged with. As such, with limited demand, few of the transporters in the State advertise for the provision of these services. At the same time, New Jersey is home to many hundreds of registered and licensed solid waste hauling companies. Should greater demand be identified for hauling services, it would appear that void could easily be addressed by existing companies located across the State. In this regard, the National Waste & Recycling Association, which represents solid waste and recycling haulers across the State, could be of great assistance.

4. Are existing education and outreach materials for generators sufficient, what is missing?

General consensus expressed was that there is significant education and outreach material available to farmers related to manure management. First and foremost, the Chapter 91 Animal Waste Management Regulations (AWMRs) found at N.J.A.C. 2:91 which guides the Best Management Practices (BMP’s) process in the State along with a BMP manual developed by the NJ Department of Agriculture represent very clear and helpful documents. Beyond this, the New Jersey Agricultural Experiment Station out of Rutgers generates significant resources available to the farm community. One example cited is the “On Farm Food Safety” link on their website which can be found here:

<https://onfarmfoodsafety.rutgers.edu> .

A significant list of “animal agriculture” publications can be found here:

<https://njaes.rutgers.edu/pubs/category.php?cat=2>

A full listing of publications available through the Ag Experiment Station can be found here:

<https://njaes.rutgers.edu/pubs/>

At the National level the USDA NRCS provides free publications as part of its “Distribution Center” which can be found here:

<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/home/?cid=stelprdb1045532> .

The USDA “Animal and Plant Health Inspection Service” also provides fact sheets and publications which can be found here:

<https://www.aphis.usda.gov/aphis/newsroom/publications>

Simple fact sheets are also available on such topics as horse manure management and the NJDOA’s one-page document summarizing the rules surrounding feeding excess food to animals outlined in the Community Scale Composting after action report (response to question 5). Ag Experiment Station animal agriculture fact sheets and bulletins can be found here:

<https://njaes.rutgers.edu/pubs/subcategory.php?cat=2&sub=1001>

It was also stressed that farmers are extraordinarily busy professionals and are perhaps best served with on-farm technical assistance, as provided by such non-profit organizations as the North Jersey Resource Conservation & Development Council. The New Jersey Composting Council is working on Aerated Static Pile training and looking to partner with NJDOA and NJDEP to bring that education to the farmers. Other wide-ranging training opportunities are available through the Rutgers Ag Cooperative Extension Service and can be found here: <http://www.cpe.rutgers.edu> .

5. Do we know if farmers are taking advantage of the USDA’s EQIP 17, CREP 18 and precision agriculture programs?

This specific recommendation was identified by the NJDEP on page 102 of its October 2020 Global Warming Response Act 80 x 50 Report as follows: *“Expanded educational and outreach efforts to the agricultural community about climate friendly agricultural practices should be prioritized. To enhance these efforts NJDA should amplify its outreach efforts to enroll farmers in the USDA’s Environmental Quality Incentives Program (EQIP)17, the Conservation Reserve Enhancement Program (CREP)18 and the utilization of precision agriculture. Farmers would benefit from technical assistance with the application processes and implementation. Moreover, the DEP and NJDA should work to identify opportunities to connect farmers with facilities that can beneficially reuse agricultural waste.”*

The first reference above is to the USDA Natural Resources Conservation Service (NRCS) Environmental Quality Incentive Program which can be found here:

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/>

A short summary of this program is as follows:

“The Environmental Quality Incentives Program (EQIP) provides financial and technical assistance to agricultural producers to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, increased soil health and reduced soil erosion and sedimentation, improved or created wildlife habitat, and mitigation against drought and increasing weather volatility. This voluntary conservation programs helps producers make conservation work for them. Together, NRCS and producers invest in solutions that conserve natural resources for the future while also improving agricultural operations. Through EQIP, NRCS provides agricultural producers with financial resources and one-on-one help to plan and implement improvements, or what NRCS calls conservation practices. Using these practices can lead to cleaner water and air, healthier soil and better wildlife habitat, all while improving agricultural operations. Through EQIP, you can voluntarily implement conservation practices, and NRCS co-invests in these practices with you.”

The second reference above pertains to the Conservation Reserve Enhancement Program (CREP)18 which is a USDA Farm Service Agency Program which can be found here:

<https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-enhancement/index> .

A short summary of this program is the following:

“The Conservation Reserve Enhancement Program (CREP) is a part of the Conservation Reserve Program (CRP) the country's largest private-land conservation program. Administered by the Farm Service Agency (FSA), CREP targets specific State or nationally significant conservation concerns, and federal funds are supplemented with non-federal funds to address those concerns. In exchange for removing environmentally sensitive land from production and establishing permanent resource conserving plant species, farmers and ranchers are paid an annual rental rate along with other federal and non-federal incentives as applicable per each CREP agreement. Participation is voluntary, and the contract period is typically 10-15 years.”

During discussion it was learned that this recommendation came from joint recognition for the need of precision agricultural practices between DEP, NJDOA and the State Agricultural Development Committee (SADC). It appears that small and mid-sized farm operations lack necessary equipment to employ precision agriculture. As is often the case, funding is also a significant barrier as is the “red tape” and paperwork associated with applying for available funding. Non-profit organizations like the North Jersey Resource Conservation and Development Council (NJRC&D) work with farmers to provide technical and financial assistance to complete paperwork and to purchase necessary equipment to practice precision agriculture in the application of manure.

<https://www.northjerseyrcd.org> .

One additional financial assistance model noted in discussion was the Pennsylvania tax credit “Resource Enhancement & Protection Program” (REPP) which can be found here:

https://www.agriculture.pa.gov/Plants_Land_Water/StateConservationCommission/REAP/Pages/default.aspx#:~:text=The%20program%20is%20administered%20by%20the%20State%20Conservation,to%200%24250%2C000%20per%20operation%20in%20a%207-year%20time-frame.

A brief summary of the program is as follows:

“Through the Resource Enhancement and Protection (REAP) Program, farmers, landowner, and businesses earn tax credits for implementing "Best Management Practices" (BMPs) that will enhance farm production and protect natural resources. REAP is a first-come, first-served program – no rankings. The program is administered by the State Conservation Commission (Commission) and the tax credits are awarded by the Pennsylvania Department of Revenue. Eligible applicants receive between 50% and 75% of project cost in the form of State tax credits for up to \$250,000 per operation in a 7-year time-frame. The tax credits can be used incrementally (as needed) for up to 15 years to pay PA state income tax. Farmers and landowners can elect to sell the tax credits after 1 year. Farmers can work with

a sponsor that will help to finance the BMP project. The sponsor reimburses the farmer/landowner for the project installation costs and the sponsor receives the tax credits.”

Going forward, creation of such a New Jersey Program as REAP may be a worthwhile recommendation to bring forward to the State Legislature.

6. What resources exist to quantify improper and proper management practices from an environmental & economic perspective?

As discussed primarily under the response to question 2 above regarding BMP’s, the Chapter 91 Animal Waste Management Regulations (AWMRs) found at N.J.A.C. 2:91 guides the Best Management Practices (BMP’s) process in the State along with a BMP manual developed by the NJ Department of Agriculture. Subchapter 3 of the AWMRs specifically address animal waste management requirements and BMP’s. These documents articulate how manure must be handled on farms. The question at hand relates more to documents which address the environmental impact of improper manure management, as well as documents which highlight the benefits of proper management.

A scan of available open source on-line resources provides some very substantive information in this regard. Just a small offering includes the following fact sheets and papers:

- A Rutgers Cooperative Extension Service fact sheet on the environmental impacts and benefits of horse manure can be found here: https://esc.rutgers.edu/fact_sheet/horses-and-manure/
- The University of Nebraska Institute of Agriculture & Natural Resources “Manure and the Environment” webpage found here: <https://water.unl.edu/category/animal-manure-management/manure-and-environment>
- The Ohio State College of Food, Agriculture and Environmental Sciences offers the following publication entitled: “Reducing the Environmental Impact of Cows' Waste” which can be found here: <https://cfaes.osu.edu/news/articles/reducing-the-environmental-impact-cows-waste>
- The LSU Ag Center published a short paper entitled “Managing Horse Manure for Environmental Benefits” which can be found here: https://www.lsuagcenter.com/portals/our_offices/departments/biological-ag-engineering/extension/agriculture_and_environment/managing-horse-manure-for-environmental-benefits
- The “Livestock and Poultry Environmental Learning Community” provides an interesting summary on the environmental benefits of manure management and can be found here: <https://lpehc.org/environmental-benefits-of-manure-application>
- A technical paper from Elsevier entitled “Environmental impacts of manure management based on life cycle assessment approach” can be found here: <https://www.sciencedirect.com/science/article/abs/pii/S0959652620316231?via%3Dihub>

7. Can we/should we develop regional manure composting facilities?

This is perhaps the most relevant question toward proactively addressing sustainable animal manure management in the State of New Jersey. There was general consensus that regional management should

be seriously evaluated. Regulatory barriers were quickly identified and it was suggested that streamlined regulatory reform will be needed to make regional management feasible. Significant discussion on this aspect of sustainable manure management followed and additional follow-up is clearly warranted.

It is first important to outline what farmers can do on their property with respect to manure and other feedstock composting. An important exemption is provided from DEP Division of Solid & Hazardous Waste Class C approval found at N.J.A.C. 7:26A-1.4 (a) 23, which can be found here:

<https://www.state.nj.us/dep/dshw/resource/CURRENT/WEB%20PDFS/26A.pdf> . A fair summary of these provisions is: *“A farmer is exempt from Class C DEP approval and can compost farm-generated or off-site generated dry livestock manure mixed with other suitable feedstocks provided the annual amount is less than 10,000 cubic yards on less than 5 acres of land where low level windrow composting is practiced with 50 foot buffers and where any other necessary permits are obtained. Farmers are permitted to sell compost materials generated from their operations.”* During discussion there was confusion as to whether on-site generated compost can be sold by farmers. Outreach will be made to the DEP DSHW to ensure that the above summary interpretation is accurate. Clearly this exemption is important to allow for manure and other farm generated composting to take place without imposing regulatory barriers. It is appropriate to review exemptions from other States to evaluate whether the 10,000 cubic yard limitation is appropriate or overly restrictive.

There is no question that larger, regional manure composting projects will need to obtain a DEP Class C approval under current regulations. Further, any siting considerations for a regional site(s) will be driven by locational metrics as discussed in the response to question 1 above. Logically, any facility(ies) sited would be as close as possible to the centroid of manure generation to reduce transportation costs. During discussion, some important information worthy of additional study was shared:

- In the past the NJDOA attempted to site and develop a regional manure composting facility. Much can be learned from understanding what happened during this attempt. Documents generated by NJDOA may also be most helpful should a decision be made to once again pursue regional composting facility development;
- Model regional anaerobic digestion projects in other States were discussed. In the Western United States such facilities have been developed for large dairy cow operations for 500 cows or more. New York State may provide a particularly good model as it was reported that many dairy farms operate anaerobic digesters for manure and some also take food waste. Contacts were recommended within the New York State Department of Environmental Conservation for reference. Massachusetts was also referenced as a good State to contact regarding manure digesters and the regulatory process used to permit them. Finally, it was reported that a company called EcoRich has a project to provide an EcoRich Elite II Composter/Digester to a large Zoo in California. A custom-built ER-3000 (circa 1,500-liter capacity unit) will process up to 3,000 lbs. of manure and bedding (hay from animal pens), and a small portion of food waste from visitor centers, into a soil amendment. The process uses fresh air, heat, and a heat-tolerant microbe to digest organic material in-vessel and reduce it by approximately 85% of its original volume where the 3,000 lbs. will become about 450 lbs. of finished product. This project is scheduled for operation in Summer 2021 and represents another interesting model to monitor and further evaluate;
- Honey Brook Organic Farm

<http://honeybrookorganicfarm.com> was discussed as an interesting model for smaller-scale, low-tech (bucket loader and manure spreader) regional composting. It was suggested that County Park Departments may be appropriate for regional management. However, important barriers were identified where composting operations can't take place on State Agricultural Preservation or Green Acres funded properties. Further, it was suggested that some states have small operation permit exemptions that amount to a "registration" where general conditions are adopted in regulatory form and an applicant simply signs and submits a "certification" to the regulatory agency. This model does already exist in the State's Recycling Regulations found here and specifically at N.J.A.C. 7:26A-1.4 (b) 5.: <https://www.state.nj.us/dep/dshw/resource/CURRENT/WEB%20PDFS/26A.pdf> ;

- The Rutgers Eco-Complex performed assessment work with Fulper Farms <https://fulperfarms.com> in Lambertville, Hunterdon County where 100 head of dairy cows receive daily industrial cheese whey from Johanna Farms in Flemington. The Rutgers assessment looked at what kind of digester would be appropriate to process both food waste and manure. Information on this assessment will be pursued as a reference in this report.
- Approximately 10-years ago, a mobile digester housed within a large shipping container was operated to process horse manure across portions of Central Monmouth County. Unfortunately, the heavy concentration of animal bedding rendered operations and gas generation ineffective. Such mobile digester technology would appear highly desirable based on the decentralized generation of animal manure. Contacts perhaps nationally through USDA, the National Biosolids Partnership and the Mid-Atlantic Biosolids Association is appropriate to assess whether the state-of-the-art in such mobile digestion technology has advanced over the past 10 years;

8. Can we/should we advocate for use of WWTP's for manure and food waste management?

Interestingly there was not a great deal of knowledge on processing animal manure at wastewater treatment plants. Limited studies available apparently have not been particularly encouraging since the addition of manure has not generated high quality digester gas when compared to other feedstocks like fats, oils and grease or bakery waste. Practical logistics, and in particular transportation, were also identified as barriers as manure is not easy to transport and process.

Despite limited knowledge, several strong recommendations were made:

- One point of contact referenced is the Mid-Atlantic Biosolids Association which can be found here: <https://www.mabiosolids.org> .
- A second reference is the North East Biosolids & Residuals Association which can be found here: <https://www.nebiosolids.org/related-organizations> .
- A National resource that should be contacted is the USDA which operates many working groups through their network of Agricultural Experiment Stations with a focus on animal waste management programs. We should seek a point of contact at USDA in this regard to help evaluate if and where animal manure is successfully being co-digested at wastewater treatment plants anywhere in the country;
- Trenton Renewables began operations in late 2019 utilizing anaerobic digestion to process source separated food waste to produce compost, organic fertilizer and renewable biogas. Contact should be made with company officials to discuss the feasibility of accepting animal manure for co-digestion. The Trenton Renewables website can be found here:

https://trentonrenewables.com/?gclid=CjwKCAjwnPOEBhA0EiwA609RefHGgRL6K7wHiDMHIA28y2yXOkCMutgbJN21rRPB36MuhYiqkUdaDxoC7S8QAvD_BwE

- Finally, as referenced in the after action report from the Large-Scale Organics Recycling Infrastructure Workgroup session, Burlington County has operated a biosolids composting facility since 1998. The facility utilizes an in-vessel agitated bin system where dewatered biosolids (waste from water treatment facility processes) are mixed with amendment, such as wood chips from the Complex bulky waste recycling center, and undergo biological decomposition to produce a stable compost product, which is then sold to commercial markets. Burlington County officials should be contacted to ask if they had ever considered or experimented with co-digesting animal manure from farms located across the county.

9. *Are there any financial incentive programs for farmers? Are there other State financing models we should seek to emulate?*

Once again, DEP recognized the need for financial incentives in its Table 5.4. recommendations for achieving emissions reductions from waste and wastewater management on page 103 of the Global Warming Response Act 80 x 50 report: “*Create incentives for use of animal manure and food waste in WWT facilities.*” As discussed earlier in this summary, financing is clearly a significant barrier for farms in the practice of precision agriculture and predominately for the purchase of necessary equipment. Any form of regional composting facility would also require significant funding from either public or private sector sources or both. Should regional manure management be viewed as needed in the State, funding will represent the critical path.

Some limited funding sources were identified previously in this afteraction summary in response to question 5 and above, namely:

- USDA Natural Resources Conservation Service (NRCS) Environmental Quality Incentive Program which can be found here: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/>
- Conservation Reserve Enhancement Program (CREP)18 which is a USDA Farm Service Agency Program which can be found here: <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-enhancement/index>
- The USDA NRCS Program also maintains a financial assistance web link on their National website here: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial>
- The North Jersey Resource Conservation and Development Council (NJRC&D) works with farmers to provide technical and financial assistance to complete paperwork and to purchase necessary equipment to practice precision agriculture in the application of manure. <https://www.northjerseyrcd.org> .
- A model for tax incentives was identified in Pennsylvania for potential recommendation to the New Jersey Legislature with their “Resource Enhancement & Protection Program” (REPP) which can be found here: https://www.agriculture.pa.gov/Plants_Land_Water/StateConservationCommission/REAP/Pages/default.aspx#:~:text=The%20program%20is%20administered%20by%20the%20State%20Conservation,to%20%24250%2C000%20per%20operation%20in%20a%207-year%20time-frame.

While of limited potential, other potential funding sources were identified in the after action report summary under the Community Scale Composting discussion, particularly where renewable biogas is generated from manure processing, as follows:

- The Board of Public Utilities has significant incentive programs under their Clean Energy Program, which can be found here: <https://www.njcleanenergy.com/commercial-industrial/home/home> . However, this appears limited to “biomass to energy” projects which have historically been underrepresented in New Jersey.
- The New Jersey Economic Development Authority (EDA) has a long history of supporting businesses of all sizes to grow and invest in New Jersey. EDA offers a broad portfolio of economic development tools such as: jobs-based tax credits, real estate and development tax credits, community development programs, main street technical assistance, innovation economy programs, clean energy programs, and low-interest business financing (including bonds, loan participations, loan guarantees and variable/fixed-rate loans). EDA’s Financing and Incentives webpage can be found here: <https://www.njeda.com/financing-and-incentives/>

The State also offers a business portal through its website for “Business.NJ.Gov” at <https://business.nj.gov/>. The Governor’s Office also maintains links to grants offered through the various administrative agencies of State Government which can be found

Four models of different “central governance” were discussed during the Food Waste Reduction and

AFTER ACTION REPORT 6.0

FOOD WASTE REDUCTION AND DONATION

Stakeholder Discussion of June 3, 2021

On June 3, 2021, the Organics Workgroup held its final “stakeholder focus group discussion” on the topic of “Food Waste Reduction and Donation.” This was a “Round 2” discussion stemming from the first on food waste reduction and donation held on April 1st. During that discussion we discovered that we would benefit by having broader representation from the food rescue community and reached out to many additional organizations to see the guidance and input. In total, we invited the following organizations to participate in our June 3 discussion, many of whom did participate:

- Food Democracy Collaborative
- Fulfill Monmouth & Ocean
- Lunch Break
- MCFOODS
- Table to Table
- NJ Community Food Bank
- Food Bank of South Jersey
- MEND Hunger Relief Network
- New Jersey Food Council
- The Urban Agriculture Cooperative (Newark)
- LocalShare Foodshed Alliance

- Rolling Harvest Food Rescue
- Roots to Prevention (Camden)

We focused our round 2 session on transportation, equipment, and labor barriers to food donation which were highlighted in our discussions back on April 1st and, beforehand, circulated the following questions for consideration:

1. *What is the current status of transportation infrastructure in your organization? Is food “drop-off” the primary mode of service or is “pick-up” also significant?*
2. *Would expanded transportation resources make a major difference in your delivery of food redistribution services?*
3. *Would refrigeration substantially expand food delivery services with refrigerated box trucks and on-site commercial refrigerators?*
4. *Does it make sense to try to utilize existing commercial refrigeration owned by others (for instance government or academic institutions)?*
5. *Does equipment represent a significant barrier to on-site warehouse management? Would forklifts make an important difference? Other equipment needed?*
6. *What is the status of your workforce – organization employees v. volunteers?*
7. *How do you currently engage volunteers – do you have enough – is reliability an issue? Are there untapped resources out there, ie. retired persons, student organizations, interns?*
8. *What else should we consider to assist in food redistribution – models we should consider?*

This second discussion was less structured than those held previously and more free-flowing. Important observations shared include the following:

- **Bergen County & Table to Table Transportation Model:** During the Pandemic, it quickly became clear that the basic provision of food on the table reached a state of urgency in Bergen County. County Commissioner Tracy Zur moved quickly to create the “Bergen County Food Security Task Force.” The Task Force worked with the Community Food Bank of New Jersey and “Table to Table” to better connect food suppliers to the network of food rescue organizations located across the County. As discussed earlier, Table to Table also represents a unique organization dealing primarily with supplying transportation services within the most populous area in Northern New Jersey including Bergen, Essex, Hudson and Passaic Counties. Table to Table has been in existence for 22 years, has a fleet of vehicles including 7 refrigerated box trucks, employs paid drivers and picks up excess food from some 200 donors which they deliver to some 250 partner food rescue agencies from YMCA’s to local homeless shelters. Direct engagement and leadership from Bergen County was also extremely important. With County leadership, refrigeration was provided to 24 food pantries across the County during the Pandemic which greatly enhanced food distribution services. NJDEP, other State agencies and the New Jersey Food Waste Task Force, when named, should look to the Bergen County experience as a model to replicate across the State.
- **412 Food Rescue App:** During the Pandemic, representatives of Table to Table reported that they began using the “412 Food Rescue Ap.” Their website can be found here: <https://412foodrescue.org/> . From their website: *“412 Food Rescue implements a solution by working with food retailers, wholesalers, restaurants, caterers, universities and other food providers to rescue unsellable but perfectly good food and getting it to nonprofit organizations that serve those who are experiencing food insecurity. Our mobile app mobilizes volunteers by alerting*

them when a food is available to rescue. Volunteers (we call them Food Rescue Heroes, because they really are our heroes!) use cars, bikes, and sometimes their own two feet to move food from our donors to our nonprofit partners. This simple process minimizes logistical challenges presented to food donors to consistently move food, allowing them to reduce waste management costs while maximizing their impact on surrounding communities and the environment. Likewise, our solution creates capacity for many nonprofits that do not always have the resources to recover food that may benefit those they serve.”

Unrelated, but of great interest, the NJDEP invested in another app several years ago to enhance recycling and reduce contamination in the recycling stream through the use of “Recycle Coach.” Recycle Coach is an online platform purchased by the NJDEP and offered for use by all 565 New Jersey towns and 21 counties. The app makes recycling information clear and accessible to every resident in the State from your computer, Smartphone, digital assistant, or participating government websites. Via this platform, you can access your recycling/trash pick-up schedules, a ‘What Goes Where’ tool where you can search for how to recycle specific items and a tool where you can communicate directly with your municipality to make them aware of missed pick-ups, pot holes, ask your waste/recycling questions, etc.

As a clear Organics Workgroup opportunity for action, the State (NJDEP, Food Waste Task Force when named, or other agency) should investigate the potential of investing in the 412 Food Rescue app, some other existing food rescue app (apparently several are in use today) or working with the Recycle Coach vendor to see if an enhancement is possible to address food rescue. Such use of computer and Smartphone technology clearly has enormous potential to better connect food donors, transporters (like Table to Table) and the Statewide network of food banks, pantries and soup kitchens in real time. We believe this opportunity to be of the lowest potential cost with the highest possible enhancement of food rescue coordination across New Jersey.

- **Need for Refrigeration:** From discussion, it appears the larger food banks in New Jersey have some degree of refrigeration capability at their warehouse operations and through their refrigerated box trucks. However, on-site refrigeration is a limitation even at some food banks and most food pantries, as a primary source of food redistribution, have virtually none. This appears to be a significant gap worth further exploration. This is no easy task as many pantries are housed in older buildings, often churches, where even electrical wiring is a challenge in supporting a refrigerator. It was clear that further research into on-site and transportation refrigeration is warranted. This issue would appear to lend itself to small grant financial assistance programs such as those provided by the New Jersey Board of Public Utilities through their Clean Energy Program targeted at advancing the use of energy efficient appliances.
- **Warehouse and Truck Equipment:** Forklifts and pallet jacks were discussed as being essential to efficient operations. There is clearly a shortage of this equipment. Many facilities have none at all and what they have has no redundancy. Once a piece of lift equipment goes down, they must do without until repairs can be made. Electric pallet jacks on vehicles are extremely important toward efficient excess food pick-up and delivery, particularly in urban areas where street congestion is a serious issue. As with refrigeration, a small grant assistance program made available to food rescue providers would be enormously helpful toward both maximizing excess food storage in food bank warehouses and for efficient delivery services with trucks equipped with electric lift gates.
- **Volunteer Labor:** Volunteer labor is a backbone to food rescue organizations. The Pandemic represented an unprecedented set of circumstances affecting the volunteer labor force. For some periods of time, volunteer labor to help in warehouse operations and in food deliveries was

completely suspended. Agency food redistribution partners had to rely on pick-up from food banks to supply pantries and soup kitchens. On the other hand, when COVID-19 numbers declined, there was a spike in volunteer labor as many were temporarily out of work. At present, with jobs and offices reopening, a labor shortage is becoming evident. Many options were discussed toward expanding and building a robust volunteer labor force for food delivery services:

- Corporate engagement was highlighted as a growing opportunity. Most corporations today have corporate responsibility, sustainability and climate change goals and established performance metrics. Across the State private companies have supported “Adopt A Highway” programs to help fund litter abatement programs. Perhaps a similar initiative can be launched Statewide or at a county or municipal level to engage private companies to adopt a food service provider?
- Business Associations may also be a vehicle to systematically enlist volunteers. These would include State and local Chambers of Commerce, the New Jersey Business & Industry Association, Commerce & Industry Association of New Jersey and others.
- Service organizations have served in this capacity historically, but should again be listed such as Kiwanis Clubs, Rotary Clubs, Elks, Knights of Columbus, the Masons and Shriners, etc.
- School programs were highlighted as a reasonably untapped pool of volunteer labor for food delivery from high schools and colleges;
- Seniors and the retired citizen pool was also highlighted and perhaps can be engaged more systematically through organizations like AARP;
- Junior service organizations like the Girl Scouts, Boy Scouts and 4-H Clubs were referenced.

As with many other issues discussed by the Organics Workgroup, it would be useful to review models used in other States to address the systematic creation of pools of volunteers to carry out essential food rescue services.

- **Connection Between Food Rescue and Healthcare:** Hospital systems have been getting more and more engaged in community benefit outreach activities which include direct food delivery services, education on nutrition and meal planning and other services. Such systems as Virtua, Robert Wood Johnson/Barnabas Health and Hackensack Meridian Health are expanding programs to reach neighborhoods with these services. This critical link between healthcare and food needs to be further explored and expanded. This is an area where the State Food Waste Task Force, once named, or Department of Health could lead an effort to bring hospital leadership to the table to further discuss community benefit programs and how they can link to addressing food insecurity and better nutrition. Perhaps the New Jersey Hospital Association would be the appropriate organization to work through in this regard.
- **Long-Term Care Facilities:** In prior stakeholder discussions the Workgroup did not address the needs of long-term care facilities across the State. During this session a chef at a long-term care facility joined the discussion. It was learned that some segment of the nursing home population is on liquid diets. It would be extremely helpful to food service providers to have access to “just in time” fruits and vegetables in particular that could be blended to meet the needs of these clients. The concept of broader use of the 412 Food Rescue or other available app to link donors with food providers like long-term care facilities would appear very useful to meet this need and to avoid wasted food.

APPENDIX B: GOVERNANCE MODELS

Four models of “central governance” were reviewed as part of the April 1, 2021 stakeholder discussion of food waste reduction and donation. Background on each follows in summarizing the:

1. New Jersey Food Waste Task Force established pursuant to A4705 adopted in May of 2019
2. Food Waste Recycling Market Development Council Required Pursuant to A2371/S865 Adopted in April 2020
3. New Jersey Food Waste Reduction Council recommended by NJDEP in their Draft Food Waste Reduction Plan released August of 2019
4. Food Policy Councils have also been created across the United States.

1. New Jersey Food Waste Task Force Established Pursuant to A4705 Adopted in May 2019

https://www.njleg.state.nj.us/2018/Bills/A5000/4705_R2.PDF

AN ACT establishing the New Jersey Food Waste Task Force.

BE IT ENACTED by the Senate and General Assembly of the State 3 of New Jersey:

1. a. There is established in the Department of Human Services the New Jersey Food Waste Task Force, which shall be responsible for identifying and examining the factors that lead to food waste in the State, and identifying strategies, policies, and legislative and executive actions that may be used to:

- (1) prevent food waste;
- (2) increase food donations;
- (3) provide consumers with education on food storage;
- (4) lower unreasonably high cosmetic standards for fruit and vegetables;
- (5) cease or significantly reduce the rejection of even marginally imperfect-looking food;
- (6) build Statewide systems to distribute surplus edible food to charities;
- (7) eliminate unnecessary State statutes or regulations that contribute to food waste; and
- (8) modify “best by” food labels, consistent with uniform national standards, to inform consumers the latest possible date food can be safely consumed.

The work undertaken by the task force shall supplement and be consistent with existing efforts and commitments to reduce food waste, including food donation efforts, composting efforts, date labeling efforts, and effective inventory management practices, which have been, or are being, undertaken at the national level pursuant to a uniform, nationwide model.

b. The task force shall consist of fourteen members, Six members, or their designees, shall serve ex officio as follows: the Commissioner of Human Services, the Secretary of Agriculture, the Commissioner of Environmental Protection, the President of the Community Food Bank of New Jersey, the Director of Hunger Free New Jersey, and the President of the New Jersey Food Council. Eight public members shall be appointed as follows: (1) one representative each from four major food retailers, two of whom shall be appointed by the Governor, one of whom shall be appointed by the President of the Senate, and one of whom shall be appointed by the Speaker of the General Assembly; four private citizens with relevant

expertise in food waste issues or food management practices, two of whom shall be appointed by the Governor, one of whom shall be appointed by the President of the Senate, and one of whom shall be appointed by the Speaker of the General Assembly.

- c. Vacancies in the membership of the task force shall be filled as provided for the original appointments.
- d. The task force shall organize as soon as practicable following the appointment of its members and shall select a chairperson from among its membership. The chairperson shall appoint a secretary who need not be a member of the task force.
- e. Members of the task force shall serve without compensation, but shall be reimbursed for necessary expenses incurred in the performance of their duties as members of the task force, within the limits of funds appropriated or otherwise made available to the task force for its purposes.
- f. The task force shall be entitled to call to its assistance and avail itself of the services of the employees of any State, county, or municipal department, board, bureau, commission, or agency as it may require and as may be available to it for its purposes.
- g. The Department of Human Services shall provide staff support to the task force.
- h. No later than one year after organization, the task force shall submit to the Governor, and to the Legislature pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), a report of its findings and recommendations for legislative, executive, or other action as may be appropriate to reduce food waste in this State. The task 34 force shall expire upon submission of its report.

2. Food Waste Recycling Market Development Council Required Pursuant to A2371/S865 Adopted in April 2020

- 4. (New section) a. There is established in the Department of Environmental Protection a Food Waste Recycling Market Development Council, which shall consist of 12 members. The members shall include the Commissioner of Environmental Protection, the President of the Board of Public Utilities, the Commissioner of Transportation, the Secretary of Agriculture, the State Treasurer, and the Attorney General, or their designees, who shall serve ex officio; and six citizens of the State appointed by the Governor. Of the appointed members: two shall be actively engaged in the composting industry, of whom one shall be a representative of the National Waste and Recycling Association and one shall be a representative of the National Biosolids Partnership or equivalent entities; two shall be actively engaged in the recycling or solid waste collection industry, of whom one shall be a representative of the Association of New Jersey Recyclers or equivalent entities; and two shall represent the general public. The Commissioner of Environmental Protection shall appoint the chairperson and the vice-chairperson of the council from the citizen members.
- b. Members of the council shall serve without compensation, but shall be reimbursed for expenses incurred in attending meetings and performing their duties to the extent funds are available therefor.

c. Within 18 months after the date of enactment of this act, the Food Waste Recycling Market Development Council shall prepare a report on the existing markets for any products and energy produced from food recycling facilities, food waste composting facilities, and anaerobic and aerobic digestion facilities that accept food waste material. The council shall investigate the feasibility of providing preferences for products or energy produced from food recycling facilities, food waste composting facilities, and anaerobic and aerobic digestion facilities in the State procurement process, including how to stimulate the use in public projects of compost or soil amendment products derived from these facilities. The council shall provide recommendations on changes needed to State laws or rules or regulations to stimulate the market for products and energy produced from food recycling facilities, food waste composting facilities, and anaerobic and aerobic digestion facilities that accept food waste material. The report shall be transmitted to the Governor and, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature.

3. New Jersey Food Waste Reduction Council recommended by NJDEP in their Draft Food Waste Reduction Plan released August of 2019:

A legislatively authorized New Jersey Food Waste Reduction Council (Council) under the direction of the New Jersey State Department of Health, in consultation with the NJDEP (no expiration).

- a. Plan and implement action items identified herein that were not implementable due to time or resource restraints
- b. Propose future legislative and regulatory actions
- c. Coordinate research to better understand food loss and how to quantify it
- d. Coordinate data collection and conduct measurement studies
- e. Implement an ongoing robust public awareness campaign targeting all sectors but specifically to educate the residents of New Jersey regarding food waste
- f. Initiate communication and updates on the issue of wasted food and food loss through newsletters, state government websites, and social media
- g. Connect and encourage individuals to harness existing communication, technology, and social platforms for linking users with producers, givers with receivers, food banks and distributors with available donations, etc.
- h. Convene interested parties to assess progress and exchange ideas of best management practices and opportunities
- i. Coordinate with institutions of higher education to pool resources to conduct research
- j. Develop and disseminate existing guidelines and toolkits
- k. Advocate for actions that provide resources and funding for food waste reduction efforts, including but not limited to:

At present there is no State office or public agency responsible for promoting, coordinating, or pursuing ongoing actions toward food waste reduction efforts in New Jersey. As a result, public and private food waste reduction efforts are developed in isolation, leading to missed opportunities. A council would provide higher level leadership, continuity in food waste reduction activities, a role that single organizations, entities, businesses and residents alone would find difficult to fill.

The Council would be an entity consisting of members from the Executive Branch and other levels of government, industry, NGOs, trade associations, and other appropriate organizations, and would be funded by a portion of the funds generated by the Recycling Enhancement Act.

A New Jersey Food Waste Reduction Council may:

- i. Supporting small organizations and entities to invest in cold-chain infrastructure (refrigeration during transportation and storage)
- ii. Enabling soup kitchens, food pantries, and other food rescue entities to develop websites or other communication methods to solicit donations
- iii. Supporting gleaning activities through the Gleaning Support Program administered through the New Jersey Department of Agriculture
- iv. Taking an active role in disseminating and encouraging not-for-profit organizations to seek available grants administered by the New Jersey Economic Development Agency.

4. Centralized New Jersey Statewide Food Waste Policy Council

A Food Policy Council (FPC) consists of a group of representatives and stakeholders from many sectors of the food system. Ideally, the councils include participants representing all five sectors of the food system (production, consumption, processing, distribution and waste recycling). An FPC looks not only at the mechanics of how food systems work, but also food system resilience, food justice and food sovereignty issues. FPC's are generally also associated with more grassroots organizational engagement.

The Johns Hopkins Center for a Livable Future has been very engaged in studying the scope and effectiveness of FPC's. Their comprehensive website can be found here along with a descriptive summary of "Food and Climate: What Food Policy Councils Can Do"

<https://clf.jhsph.edu/stories/food-and-climate-what-food-policy-councils-can-do>