The New Jersey Department of Environmental Protection

Draft Food Waste Reduction Plan (Pending Public Input)

Executive Summary

P.L. 2017, c. 136 (S3027) was signed into law on July 21, 2017 and established a goal of reducing the amount of food waste generated annually in the State by 50 percent of the amount generated in 2017, by the year 2030. To achieve this goal, the New Jersey Department of Environmental Protection (NJDEP), in consultation with the New Jersey Department of Agriculture, was tasked with developing and implementing a food waste reduction plan to achieve the legislative goal.

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.

To achieve the goals of P.L. 2017, c. 136, NJDEP initially recommends legislation to create a permanent Food Waste Reduction Council tasked with implementing a final food waste reduction plan and developing future actions towards sustainable and achievable food waste reduction. Also, the draft Plan includes a baseline estimate of food waste in 2017 and suggests developing additional metrics.

Short term actions, such as partnering with organizations that have been active in food waste reduction and creating educational materials, are outlined in the draft Plan and work towards raising awareness of the issue. Long term actions, such as implementing food waste audits, are also described in this draft Plan, and are based on additional research and measuring food waste generation and loss.

NJDEP is seeking input from interested parties to finalize this plan. The purpose of this draft is to provide background, structure, and context, as well as suggest general concepts with which to solicit interested party and public input. At the end of the document, there is a list of questions that may be used in part to guide the discussion at future public hearings.

The New Jersey Department of Environmental Protection

Draft Food Waste Reduction Plan (Pending Public Input)
to implement P.L. 2017(Act), c. 136 to reduce food waste in New Jersey by 50% by 2030

Introduction and Background

Legislation

P.L. 2017, c. 136 (S3027) was signed into law on July 21, 2017 and established a goal of reducing the amount of food waste generated annually in the State by 50 percent of the amount generated in 2017, by the year 2030. To achieve this goal, the New Jersey Department of Environmental Protection (NJDEP), in consultation with the New Jersey Department of Agriculture, was tasked with:

- Developing and commencing implementation of a plan within one year after the effective date of the Act to achieve the 50 percent reduction goal

- Holding at least three public hearings during the development of the Plan to seek public input

- Consulting and coordinating with other governmental entities, private, nonprofit, or charitable associations, organizations, or businesses, such as those in the agricultural, grocery, restaurant, food manufacturer, food supply, food bank, food pantry, and healthcare sectors of the food industry, in developing and implementing the Plan

- Making recommendations for any administrative or legislative action deemed necessary to further progress toward achieving the State food waste reduction goal

- Transmitting the Plan to the Legislature in accordance with P.L.1991, c.164 and to the chairpersons of the Senate Environmental Committee, the Senate Economic Growth Committee, the Assembly Environment and Solid Waste Committee, the Assembly Agricultural and Natural Resources Committee, or their successors[1]

Proposed Legislative Actions

This draft Plan is proposing the following legislative actions, further explained Section VII:

1. 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).

2. Modify existing Recycling Enhancement Act research funds at N.J.S.A. 13:1E-96b.(5) dedicated to providing grants to institutions of higher education for recycling demonstration, research or education, including professional training, to annually dedicate

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[1] P.L. 2017, c. 136 p. 1

50% of such research funds to support the work of the proposed New Jersey Food Waste Reduction Council.

NJDEP anticipates and welcomes receiving and considering additional legislative or regulatory suggestions during the public hearing/comment process following release of this draft Plan.

Structure of the Plan

This draft Plan focuses on actions that can be taken to fulfill the obligations and goals set forth in P.L. 2017, c. 136 including:

- Providing information regarding the state of food loss and current and future food reduction efforts

- Reducing the actual amount of food waste generated but identifying actions to minimize food loss throughout the food supply chain

- Recommending for comment initial measures to begin to reduce food loss

- Creating a Food Waste Reduction Council to continue the effort beyond the measures identified in this draft plan

To focus on the content of the matter, this draft Plan does not include graphics, highlights, or illustrations which will be incorporated into a final version.

The Plan is organized into nine sections as follows:
  I.   The Food Waste Issue
  II.   Dispelling Misconceptions
  III.   Plan Development Process
  IV.   Scope and Purpose
  V.   Definition and Quantification of Food Waste
  VI.   Food Reduction Plan Development Principles
  VII.   Short Term Actions
  VIII. Long Term Strategies
  IX.   Sector by Sector Identification and Analysis

Section I. The Food Waste Issue

The Issue with Food Waste

Food waste management, including the reduction of food loss, is an important and timely issue in the New Jersey and across the nation. Due to the prevalence of wasted food and its consequences, it is crucial that New Jersey address this issue by planning and implementing measures to reduce the wasting of food.

In P.L. 2017, c. 136, the NJ Legislature declared wasted food to be a major issue. Approximately 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.[2] Nationally, less than one-third of the food Americans throw out would be enough to feed the 42 million Americans that face food insecurity.[3] Although New Jersey is one of the wealthiest states in the country,[4] nearly 11% of the population is food insecure, and 15% of children under 18 are food insecure.[5]

In September 2015, the United Nations adopted Sustainable Development Goal 12.3, which established a target to halve food waste and reduce food loss by 2030[6]. In 2014, the G7 countries committed to facilitate the exchange of best practices and resources in reducing food waste as part of the G7 Alliance on Resource Efficiency's focus on circular economies.[7]

Nationally, the Natural Resources Defense Council (NRDC) estimates 40 percent of food produced in the U.S. is not eaten.[8]

Producing food from farm to table utilizes[9] (estimates vary):

- Over 16 percent of the total U.S. energy budget;

- Over 50 percent of U.S. land; and

- Up to 67 percent of freshwater consumed in the United States.

Furthermore:

- Americans are throwing away over $218 billion of food each year.[10]

- Food waste is responsible for at least 2.6 percent of U.S. greenhouse gas emissions[11] and large amounts of fertilizers are expended in the process.[12]

- Most of the uneaten food is disposed in landfills, contributing to 11% of U.S. methane emissions from organic matter.[13]

Many organizations, including the NRDC and ReFED, along with the states of California, Oregon, and Massachusetts, as well as the United States Environmental Protection Agency (EPA), have recognized the importance of food waste management and developed strategies and tools to address the issue. The NJDEP has been greatly assisted by these organizations in developing the draft Plan.

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[2] Ibid

[3] NRDC 2017 p. 4 *Wasted: How America is losing up to 40 percent of its food from farm to fork to landfill*

[4] https://www.usnews.com/news/best-states/slideshows/10-wealthiest-states-in-america

[5] Feed America, p.32 *Map The Meal Gap 2017*

[6] https://sustainabledevelopment.un.org/sdg12

[7] https://obamawhitehouse.archives.gov/the-press-office/2015/06/08/annex-g-7-leaders-declaration

[8] NRDC p. 4 *Wasted: How America is losing up to 40 percent of its food from farm to fork to landfill*

[9] Ibid p. 5

[10] Ibid p. 10

[11] Ibid p. 5

[12] http://www.oregon.gov/deq/mm/food/Pages/foodwastestrategy.aspx

[13] NRDC 2017 p. 13 *Wasted: How America is losing up to 40 percent of its food from farm to fork to landfill*

Food Waste or Wasted Food?

In this draft Plan, the term "wasted food" will be used interchangeably with "food waste" to highlight the issue of the failure to utilize or consume food versus simply identifying food that has been discarded for recycling or disposal. We believe the term wasted food better focuses attention on the issue of food loss as the discarding of a valuable and costly resource, rather than management of a resource at the end of its life cycle.

The EPA's Food Recovery Hierarchy

The EPA's Food Recovery Hierarchy suggests that strategies to combat the problem of the wasting of food should first focus on reducing the volume of surplus food generated. Secondly, any edible surplus food should be redirected to people and then to animals. After taking steps to reduce the amount of excess food generated, a less preferable option to manage a surplus of food is to recycle food waste into a beneficial product such as compost or biogas. The least favorable option is to dispose of food waste in a landfill or incinerator.

The draft Plan adopts principals and goals based on EPA's Food Recovery Hierarchy. EPA's hierarchy below details the preferred options in the of managing food as a resource.[14]

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[14] https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy
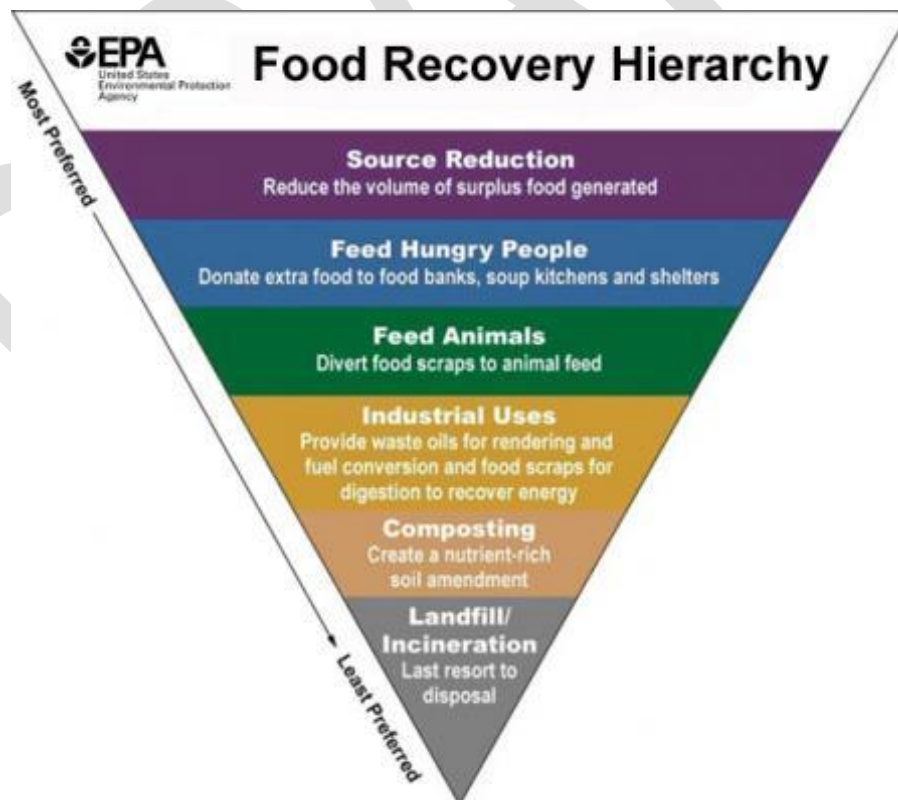
Section II. Dispelling Misconceptions

Food Donation

1. "Feed Hungry People" is the second tier of EPA's Food Recovery Hierarchy. While Americans dispose of millions of tons of food, the U.S. Department of Agriculture estimates that approximately 12 percent of American households (about 41 million people) did not have reliable access to a sufficient quantity of affordable, nutritious food in 2017.[15] In many cases, the food disposed in our nation's landfills is wholesome, edible food.

2. A common misunderstanding is that donating food beyond its originally intended use is prohibited or confers significant liability on the donor when in fact there exists in New Jersey significant protections for donors in the form of:

   - The federal Bill Emerson Good Samaritan Food Donation Act,[16] signed October 1, 1996, which protects donors from liability should the product donated in good faith later harm the recipient. The act covers individuals, businesses, nonprofit organizations, officers of businesses and nonprofits and gleaners. Donors that act with gross negligence or intentional misconduct are not covered by this act.[17]

   - In 1982, New Jersey enacted its own "Food Bank Good Samaritan Act" (N.J.S.A. 24:4A-1 to 24:4A-5). This Act contains the same protections that a donor or food bank enjoys under the federal Act; however, the New Jersey Act provides greater protections to an owner of agricultural food. Such owners cannot be liable for damages in any civil action or subject to criminal prosecution resulting from the consumption of the food gleaned or donated. Like the federal Act, the New Jersey Act only provides such liability protection so long as the damages are not caused by gross negligence, recklessness, or knowing misconduct.

The New Jersey Department of Health has a role to educate and inform the public about these protections to remove liability as a perceived barrier to donating food.

Date Labels

The date label terms (e.g., "sell by," "best by," "use by") used by the food manufacturing and processing industry to label their products are not related to food safety or a health-based expiration date. Confusion over the meaning of these terms/dates contributes to the premature and unnecessary discarding of food.

Section III. Plan Development Process

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[15] https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics/
[16] https://www.gpo.gov/fdsys/pkg/PLAW-104publ210/pdf/PLAW-104publ210.pdf
[17] https://www.chlpi.org/wp-content/uploads/2013/12/Emerson-Act-Legal-Fact-Sheet.pdf

As the first step in developing a draft Plan, the NJDEP researched the current landscape surrounding the issue of wasted food and food loss throughout the nation and internationally by:

- NJDEP meeting informally with representatives of New Jersey Department of Agriculture, New Jersey trade associations, academia, businesses and other entities across the food production chain, to understand each group's processes and begin the conversation of identifying where food is lost and how can reduce wasted food

- Communicating with other States that are actively addressing food waste reduction and the United States Environmental Protection Agency (EPA).[18] NJDEP acknowledges appreciates their time and assistance in this matter.

- Participating in webinars focusing on food waste reduction outreach and education

- Researching information from various organizations involved in food production and food waste reduction[19]

NJDEP informally engaged a broad range of interested individuals and organizations in the food loss, food waste/food production arena through phone calls, website reviews, email, and informal informational meetings. Through this process NJDEP communicated with at least 47 individuals representing approximately 30 organizations and all seven sectors identified prior to developing this draft Plan.
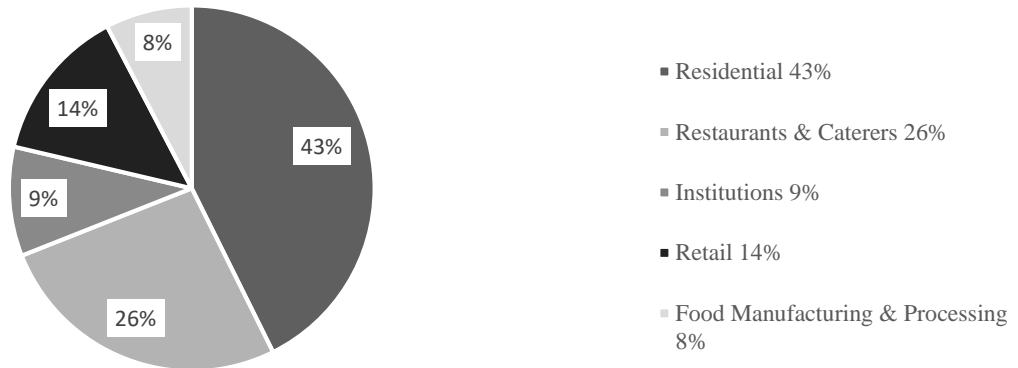
Food Waste Generating Sectors

Based on surveys conducted by NRDC,[20] the following food waste generating sectors were identified, as well as their estimated portion of the total amount of food waste generated.

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[18] NJDEP phone calls with Vermont, Connecticut, Massachusetts, California, Oregon , and the United States Environmental Protection Agency

[19] Such as ReFED, Natural Resources Defense Council, Harvard Food Law and Policy Clinic, and Sustainable Jersey

[20] Estimating quantities and types of food waste at the city level. NRDC October 2017

Estimated Food Waste Generated By Sector.
Data in chart is the average of surveys conducted in Denver, Nashville, and New York City by NRDC

- Residential 43%
- Restaurants & Caterers 26%
- Institutions 9%
- Retail 14%
- Food Manufacturing & Processing 8%

Due to lack of available data for New Jersey, NJDEP will utilize NRDC's data above for planning purposes until New Jersey-specific information is obtained through further research.

The following sectors have been identified and are subject to change as more information is obtained:

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

The following topics were discussed at DEP's informational meetings with interested parties within each sector (where applicable):

- How is the food in a particular sector produced?

- How is food lost or become waste?

- What are the real or perceived barriers to reducing the amount of wasted food?

- What potential solutions/actions are there to reduce food loss in the near, and long term?

- Where is more research, information, or data needed for each sector?

Based on findings from the informal stakeholder meetings, NJDEP adopted a structure to categorize and organize information and strategies to reduce food waste and identify the major sectors in New Jersey where food waste and food loss occurs.

As noted above, P.L. 2017 c.136 requires NJDEP to conduct three public hearings to solicit comments on the draft Plan which will be conducted after this draft Plan has been released for public review. NJDEP anticipates conducting a public hearing in each region of the state (north, south, and central).

Section IV. Definition and Quantification of Food Waste

For the purpose of this draft Plan, food waste or wasted food is any food that is grown or produced for human consumption but ultimately is not eaten by humans or animals. Such waste can result from food loss in/by farming, transportation, manufacturing/processing operations, restaurants and caterers, retail/food services, institutions, and consumer/residential sources.

Food Waste Generated: **Quantifying Food Waste**

P.L. 2017, c. 136 requires NJDEP to determine the amount of wasted food generated in New Jersey in 2017. This amount will be used as a baseline to compare future food waste generated amounts and to quantify food loss reduction.

The quantification of food loss on a statewide scale is a universal problem that NJDEP and others are exploring but have not developed a single method to capture how much food is loss. The draft Plan suggests possible future steps for New Jersey to quantify and track food waste and food loss.

It is understood that losses occur throughout the supply chain, but until a better system exists to quantify the amount of wasted food, NJDEP proposes the approach outlined below.

Based on currently available data, the 2017 baseline sum of food waste generated is the amount of food waste disposed in landfills or by combustion plus the amount of food waste recycled. NJDEP is aware that this baseline number underestimates the actual food waste generated, as it does not include:

- Residential backyard composting

- Food waste disposed as a liquid poured down the drain

- Food waste disposed via tilling into agricultural fields

- Unreported shrinkage from retail, restaurant, or other consumer-facing entities

Until there is reliable data to quantify food waste from the above-mentioned sources, NJDEP will continue to exclude them from the calculation of total food waste generated.

NJDEP does not have data on the actual weight of food waste disposed in New Jersey. However, in 2013, Mercer County performed a waste audit to determine the amount of food waste in the

Municipal Solid Waste (MSW)[21] stream bound for disposal. Over the course of a year, food waste was separated and weighed at their transfer station facility in Ewing, New Jersey and it was determined that 24.8% of the MSW stream bound for disposal consisted of food waste by weight.[22]

Food waste percentages reported by states surrounding New Jersey include:

> Connecticut (2014): 22.3%[23]
> Delaware (2016): 21.1%[24]
> Pennsylvania: No figures found
> New York City (2017): 21%[25]

Using an average of the above-mentioned percentages (including Mercer County), NJDEP initially and broadly estimates that approximately 22% of the MSW stream in New Jersey is food waste.

NJDEP defines MSW generated as MSW disposed (in landfill or incinerator) plus MSW recycled. To estimate the baseline of food waste generated in 2017, NJDEP combined the estimated weight of food waste disposed with the weight of food waste recycled.

Therefore:

- Using data reported by solid waste facilities, the total amount of MSW disposed in New Jersey in 2017 was 5.8 million tons.

- As identified above, it is estimated that 22% of MSW disposed in either a landfill or incinerator in New Jersey is food waste. Therefore, an estimated 1.3 million tons of food waste was disposed of in 2017 in New Jersey. (22% of 5.8 million tons disposed)

- Total weight of food waste recycled as reported by municipal tonnage recycling reports for 2017 was 161,218 tons.

- Thus, total food waste generated in New Jersey in 2017:

> 1.3 million tons of food waste disposed
>
> +   161,218 tons MSW food waste recycled
>
> = 1.46 million tons food waste generated in New Jersey in 2017

According to the United States Census Bureau, 9.006 million people resided in New Jersey in 2017. This equates to roughly 325 lbs. of food waste (1.46 million tons food waste/9.006 million residents x 2,000 lbs.) generated per person per year in New Jersey.

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[21] MSW is residential, commercial, and institutional solid waste generated within a community, N.J.A.C. 7:26-1.4 Definition of Municipal Solid Waste (MSW)
[22] 2015 Mercer County Improvement Authority Solid Waste and Recycling Quantification and Characterization Study
[23] http://www.ct.gov/deep/Lib/deep/reduce_reuse_recycle/Data/Average_state_msw_statistics_FY2014.pdf
[24] http://dswa.com/wp-content/uploads/2017/02/Final-Report-DSWA-Waste-Characterization-FY-2016-January-2017.pdf
[25] https://dsny.cityofnewyork.us/wp-content/uploads/2018/04/2017-Waste-Characterization-Study.pdf p. 11

Further, as an average, every person in New Jersey wasted a little less than 1 pound of food per day in 2017.

Other potential metrics

In addition to the above described method of estimating food waste generation, other metrics on a sector by sector basis as potential indicators of food loss may be explored, each with its own limitations, including:

- Estimating the weight of food donations or food loss, food discarded, or food not purchased
- Using retail food data to estimate weight of food "left behind" at the store
- Using an Energy Star[26]-inspired benchmark system:

  Entities in each sector of the food chain can measure food waste generated which can be compared to a benchmark system similar to Energy Star. The benchmark system shows the average generation numbers by sector based on a food waste estimation guide developed by RecyclingWorks[27] in Massachusetts. With the help of a benchmark, various entities can determine their success in reducing food loss relative to sector peers.

Section V. Purpose

This draft Plan is intended to achieve the following:

1. Provide baseline information, format, and status of food reduction efforts to inform a robust and productive public hearing process to receive additional input and produce a draft Plan.
2. Receive input regarding actions to raise awareness regarding all aspects of the wasting of food in New Jersey including but not limited to its scope, causes, and solutions, as well as its economic and environmental implications.
3. Receive and incorporate additional input, recommendations, suggestions from a broad and diverse group of interested parties and stakeholders towards a final Plan to reduce food waste.
4. Propose initial legislative and/or regulatory actions to accomplish the goals of the legislation.
5. Identify for comment possible short term actions and goals consistent with available resources, identified in Section VII.
6. Propose the creation of an organization to continue the food waste reduction effort

These goals can be accomplished by:

a. Providing information on existing resources and tools to those motivated to reduce food loss.

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[26] https://www.energystar.gov/
[27] https://recyclingworksma.com/food-waste-estimation-guide/

b. Identifying how consumer behavior can result in food loss and recommending educational strategies.

c. Creating and promoting a statewide wasted food and food loss reduction website as a single repository for information, tools, and contacts.

d. Researching where (and why) losses occur throughout the supply chain and developing solutions, such as recurring State-wide waste composition audits by expanding existing recycling research funding to include food waste reduction. The audits can include determining the type of food waste, sources of food waste, and the quantity of food waste present in New Jersey's solid waste stream.

e. Proposing legislation to create and charge a permanent New Jersey Food Waste Reduction Council to continue food waste reduction planning and execution, under the direction of the New Jersey State Department of Health in consultation with the NJDEP and other executive branch agencies such as the Department of Education, and Department of Community Affairs. Specifically, subject to public input, the Council may:

    i. Create, align, and energize future actions and research, to collect specific data to be used for developing future actions

    ii. Create a structure for data collection, analysis, and reporting of wasted food and food losses

    iii. Propose legislative, regulatory, and administrative actions

    iv. Consider promotional mechanisms previously used in the recycling movement such as awards, contests, school programs, and Executive Orders

    v. Provide up-to-date information on food waste reduction efforts, techniques, and management practices both nationally and internationally.

Section VI. Proposed Food Reduction Plan Development Principles

1. Prioritize attention and actions in sectors of highest potential benefit (i.e., those areas with the largest potential for decrease in food waste or loss).

2. Promote existing and available information, processes, tools, and awareness opportunities.

Many organizations involved in food waste reduction have created resources that can be implemented across the spectrum of food supply chain sectors to reduce food waste. The Plan will promote these already created resources. For example, EPA created a Food Recovery Challenge which highlights demonstrated and emerging practices of food waste reduction. These practices encourage generators in the private and public sector to more sustainably manage food waste generation.[28] This includes identifying and promoting within each sector the specific benefits to reduce food waste, such as the cost savings to consumers and reduced waste disposal bills for institutions. Other strategies and actions are identified as appropriate in the respective sector's tool kit in Section IX below. NJDEP will also encourage, where

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[28] https://www.epa.gov/sustainable-management-food/food-recovery-challenge-frc

applicable, the implementation of guidelines and policies developed or proposed for New Jersey such as guidelines to reduce food waste in K-12 schools.[29]

3. **Apply web-based technology, including social media, to identify and provide information and opportunity for those:**

    a. **Already pursuing food waste reduction;**

    b. **Wanting to reduce food loss but needing to know where/how to start;**

    c. **Needing to understand the tangible, economic, environmental, societal benefits of reducing food waste in order to start reducing wasted food.**

NJDEP believes that developing and promoting a website which identifies food waste reduction practices will be a useful tool to reach the 50% reduction goal. As NJDEP and others seek to raise awareness of food waste reduction issues it would be efficient to point all interested parties to one central clearinghouse website as a first step in becoming involved in food waste reduction. Developing such a website, and updating it as food waste reduction science advances, will be one of NJDEP's priorities.

4. **Identify and provide a platform for food reduction champions in each sector to inform and motivate their peers of principles and practices of 'how they do it' in their sector.**

In each supply chain sector there exists varied information and attention to food waste reduction. Most sectors have one or more entities who have recognized the benefits of food reduction and have developed varying degrees of practices to achieve food waste reduction. Also, each sector varies in its constituents' organization, communication, and connection with its various members. NJDEP sees value in identifying ways for those already engaged in food waste reduction to have a platform to encourage their colleagues by sharing their experience and describing the benefits derived from reducing food loss.

5. **Promote the use of waste tracking, analytics, and metrics.**

This principle would allow, for instance, restaurants and food service companies to track losses throughout the various stages of food preparation and service. Once analyzed, the data can be used to modify operations to reduce food waste. By encouraging restaurants, institutions, and other food service companies to gather data on food practices and associated losses, this information could drive operational practices, educate staff, and drive food waste reduction public policy.

Section VII. Potential Short Term Actions Including Proposed Legislation

These actions are intended to be implemented based on available resources. Many of these actions would likely be completed by or improved upon by a New Jersey Food Waste Reduction Council, if authorized.

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[29] For example, P.L.2017, c. 210 guidelines to reduce food waste in K-12 schools and disseminating information about laws concerning food donations.

1. 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).

   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:

   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:

      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.

v. Support other legislation, efforts at food waste reduction.

2. Modify existing Recycling Enhancement Act research funds at N.J.S.A. 13:1E-96b.(5) dedicated to providing grants to institutions of higher education for recycling demonstration, research or education, including professional training, to annually dedicate 50% of such research funds to support the work of the proposed New Jersey Food Waste Reduction Council.

3. **Raise Awareness**

Using communication channels (e.g., press releases) established by NJDEP, county and municipal governments, trade organizations, charities, non-profits, NGOs, etc., NJDEP intends to raise the awareness of the issues surrounding food waste. This action would highlight the environmental, financial, and societal impacts of wasted food and the benefits of reducing the same.

- Specifically, NJDEP will develop press releases, flyers, podcasts, mailers, and posters highlighting food waste issues, such as how much is lost, where it is lost, and what are sources of information to help reduce loss, including the financial incentives.

- NJDEP will create a listserv and publish a newsletter highlighting successful wasted food reduction programs and the individuals/organizations that implemented the programs. Additional newsletter items will be developed as the implementation of the Plan progresses.

- NJDEP will collaborate with organizations like EPA, NRDC[30], ReFED, WasteWise, Sustainable Jersey, other states, to share educational material and to raise awareness.

- Awareness efforts will also must seek to educate New Jersey consumers regarding the date labeling of food and to dispel misconceptions regarding the use of date labels.

4. **Create a website and/or app**

NJDEP will create a statewide one-stop, clearinghouse website concerning food waste and wasted food issues in New Jersey. NJDEP will promote the website via press releases, social media, and collaboration with our partners (e.g., county and municipal governments, NGOs). The website will be designed to present concise, easy-to-understand, practical information. The website will be updated to include new information as it becomes available, and will contain, at a minimum, the following information:

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[30] Such as Save The Food Campaign

- Contact information for those with a role/interest in reducing the amount of wasted food

- Suggestions for consumers to reduce the amount of wasted food

- Links to resources provided by NJDEP and other state agencies

- Links to research by various organizations (NRDC, EPA, Harvard, ReFED, etc.)

- A list of where all food banks, soup kitchens, or other organizations that solicit food donations are located. The list will also include contact information, operating hours, and what type of items are accepted.

- A link to the EPA Excess Food Opportunities Map. This interactive map identifies and displays facility-specific information about potential generators and recipients of excess food in the industrial, commercial, and institutional sectors and provides estimates of excess food by generator type.[31]

- The ability to match donators of excess food with those who can use that food, especially those who operate on a smaller and localized scale

- The rules and laws that apply to food donation

- Issues surrounding date labeling and a description of what message date labels convey

- All available toolkits in one easy-to-find location

5. **Work with already established organizations or certification programs**

NJDEP will partner with organizations that have been active in food loss reduction, to discuss lessons learned and strategies for effective education and awareness.

NJDEP will partner with NGOs and other organizations to recognize food waste as a problem and identify entities and promote/implement steps to reduce food loss. For example:

- NGOs, such as Sustainable Jersey, could encourage food waste reduction by awarding municipalities points toward higher recognition if they implement source reduction food waste programs or create education and outreach programs.

- Sustainable Jersey and other NGOs could create a program that facilitates municipal or local food donations.

- Sustainable Jersey for Schools could encourage schools to adopt the guidelines created in response to P.L 2017 c. 210.

- Trade associations, such as NJ Food Council or NJ Food Processors Association, can actively disseminate this Plan and encourage the implementation and adaptation of the toolkits among their members.

- In consultation with Department of Health, food waste and food loss reduction methods and techniques could be incorporated into the New Jersey Food Manager's Sanitation Certification program or other suitable program.

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[31] https://www.epa.gov/sustainable-management-food/excess-food-opportunities-map

6. **Encourage County involvement through the County Solid Waste Management Planning Process**

NJDEP may require New Jersey counties to update their County Solid Waste Management Plans to include food waste reduction as an integral part of their county's effort to manage solid waste.

7. **Inform the public about date labels**

In anticipation of federal and state date labeling initiatives and legislation, educate consumers regarding current date labeling practices. This will allow consumers to make informed choices about when food should be discarded for health reasons.

8. **Propose the issuance of an Executive Order addressing food waste and food loss.**

An Executive Order is needed to direct all agencies to consider food waste and to develop workplans including strategies and recommendations for food waste reduction.

9. **Review how recycling was initially promoted in New Jersey in the 1990's**

Review methods NJDEP utilized in the past to promote recycling and composting, including educational programs in schools, identifying successful food waste reduction people/programs, essays, poetry contests, etc. These successful programs will be highlighted in the newsletter to raise awareness, spread emerging practices, and encourage stakeholders to actively pursue and implement food waste reduction programs. The newsletter will be distributed through the listserv.

Section VIII. Long-term Strategies and Actions

Below are potential long-term actions, anticipated to assist in achieving the legislated goal of 50% food waste reduction by 2030. These actions are deemed long-term as they are based on research, surveying, and measuring of food waste generation and will require resources beyond what are currently available. The Department seeks additional long-term strategies and actions to consider as part of the public hearing process.

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.

3. **Work with state universities and colleges**

State universities can be a tremendous resource in the implementation of this Plan. The universities can support NJDEP in collecting and analyzing data, building websites and applications, conducting waste audits and measurements, and creating and conducting food waste surveys.

NJDEP intends to use the portion of the REA Disposal Tax dedicated to higher education and research to support research into the following areas:

- Conduct food waste audits of state-owned buildings
- Create food surveys that can be used in food composition studies
- Organize a marketing campaign including, creating promotional materials and graphics and identifying distribution channels.
- Develop and expand websites and applications
- Analyze available data on food losses and waste
- Work with students studying behavioral science to research consumer behavior in New Jersey

4. **Organize conferences or information sharing events or communication within and between sectors**

In some sectors there is a dearth of ongoing information sharing opportunities and/or communication within specific sectors. A conference or information sharing event or opportunity can result in:

- Connecting individuals within a sector
- Greater knowledge of what other members in a sector are doing to address the issue of food waste
- Sharing or exchanging of knowledge, resources, and tools specific to that sector
- When a sector-specific issue arises, resources, tools, and knowledge can be pooled together to seek a solution

NJDEP will:

- Identify sector leaders willing to educate or organize other members in their sector
- Organize, promote, and, if necessary, host the event
- Disseminate conference presentations and contact information of attendees

5. **Encourage and promote the use of a standardized measuring system to quantify food waste**

To facilitate tracking and measurement of wasted food, NJDEP will encourage generators to follow one set of waste accounting and reporting standards. By employing a statewide measuring and reporting standard, NJDEP will be able to track the effectiveness of the Plan and allow generators to compare its generation to peers in the same sector.

Section IX. Sector by Sector Identification and Analysis

The initial sector-by-sector identification, analysis, and suggested toolkits is intended to identify and develop frameworks and tools to:

- Support those who are already motivated and acting on reducing wasted food
- Provide education, tools, and information to those who would like to reduce wasted food but lack knowledge or access to processes or guidance
- Raise awareness of the benefits of reducing wasted food and overcome real or perceived barriers from those needing persuading to reduce their loss of food

An important part of the Plan is to identify where in the supply chain from farm to table food loss is occurring.

Below are the sectors that NJDEP has identified as the main areas where wasted food occurs. For each sector, the current situation is described below, along with possible reasons for wasted food. In addition to describing the sector, a brief toolkit is presented. The toolkit represents actions that an organization, entity, or individual can take to reduce wasted food generation. The identified sectors are:

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

The below sector-by-sector format/structure is intended, when completed, to identify the current situation, information or knowledge gaps, and opportunities to reduce food loss. Where applicable, toolkits or access to specific practical information about reducing wasted food are presented and, if implemented, could lead to food waste reduction in a particular sector.

NJDEP will continue to update the content of the subsequent section, as additional research is conducted and stakeholder meetings and public hearings are held.

1. Consumers/Residential

This is the largest sector in New Jersey and consists of private households and individuals. According to the "estimated food waste generated by sector" chart in Section III, this sector could account for about 43% of wasted food generated in the State.

- Current Situation

    The following 10 overarching guidance points should be distributed to every household in New Jersey:

    1. Inventory your refrigerator before shopping.
    2. Plan purchases to only buy what you plan to eat – avoid bulk buying unless you will eat it.
    3. Enjoy planned and regular left-over nights to clean out refrigerator
    4. Freeze surplus food right away and keep a list and date of what is in your freezer.
    5. Date labels are an indicator of food quality, not food safety; therefore, food that is past the "sell by date" is often edible. Taste and smell it.
    6. Keep track of what and how much you throw away and buy/prepare less of what ends up in your garbage. You discard more than you might think
    7. Donate excess food to local food pantries. You are protected by Good Samaritan laws.
    8. Studies show that 68% of food discarded in residential settings is potentially edible.
    9. The average household wastes 3.5 pounds of food per week, with fruit, vegetables, and leftovers the most common items.
    10. Discarded food costs the average family of four $1,500-1,800 annually.

    Consumers are the largest food waste generating group and are part of all sectors. Although a sector might focus on institutions, the individuals who populate that sector are also consumers. The cultural practices and sensitivities of individuals and subsequent marketing strategies to sell to them drive much of the behavior leading to wasted food such as:

    o Up to 55% of food purchases are unplanned, which leads to impulse buying and excessive purchasing (encouraged by marketers) which leads to food spoilage.[32]

    o Many consumers are tempted to bulk-purchase items in quantities that will never be consumed.

    o Consumers want their produce to be free of defects and blemishes and institutions want to present fully stocked shelves of perfect quality food. As consumers become willing to purchase "ugly" fruit for instance, less perfectly edible food will be needlessly wasted.

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[32] ReFED Report 2016 p. 14

- Gaps

  Lack of standardized and clear date labeling leads to disposal of edible food. Consumers mistakenly believe that all date labels are connected to food safety whereas date labels are more commonly a means for producers and manufacturers to indicate prime condition of the item for sale purposes.

- Barriers

  NJDEP and other state agencies do not have the authority to regulate what consumers buy or how they consume it. The only way NJDEP can influence consumer behavior is through education and raising awareness of food loss. State agencies should lead initiatives dedicated to increasing awareness of food waste and the opportunities consumers have in reducing food waste.

  Indifference and apathy are difficult obstacles to overcome. Surveys show that consumers are aware of the importance of food waste reduction, but do not recognize their role in solving the problem.[33]

- Opportunities

  Although this is the hardest group to influence, consumers are in all sectors and their behavior can be changed with awareness, education, etc.

Consumer/Residential Toolkit

- Purchasing

  Highlight the financial savings that result by purchasing less food and better managing food purchased by meal planning.

  On average, a household of four spends $1,500-1,800 per year on food that is never eaten[34] and by stressing that fact, education might affect consumption behavior.

  Individuals are also encouraged to better plan purchases with the help of lists and better storage of produce, as identified by EPA.[35]

- Tracking

  In a toolkit developed by EPA, consumers are encouraged to voluntarily track their food waste. Consumers may underestimate how much food they waste, and many are not aware of the tools that can help track the waste generation. The food waste reduction council can

[33] ReFED Report 2016 p. 31
[34] NRDC; https://www.nrdc.org/resources/wasted-how-america-losing-40-percent-its-food-farm-fork-landfill
[35] https://www.epa.gov/recycle/reducing-wasted-food-home

encourage tracking by disseminating waste track apps or other tools to the public which can lead to consumers purchase less food through better planning.[36]

- Waste Management or Donating Surplus Food

  Inform the public of donation opportunities and its legal protections. As previously mentioned, there are misconceptions about what laws and rules apply to food donations. By educating the public about liability protection, food donations may become a more frequent occurrence. Donations are considered a preferred solution instead of disposing unwanted food. Additional tools need to be developed to facilitate connections between donors and recipients.

  Encourage residents with surplus homegrown produce to donate to local food pantries, soup kitchens, or neighbors.

  As a last resort, consumers should be encouraged, where applicable, to compost food scraps at the household level instead of disposing in the municipal solid waste stream.

2. Institutions

This sector consists of hospitals, schools, prisons, government buildings, and military bases, where food service tends to be in dining-hall style setting with self-serve style buffets.

- Current Situation

  Institutions generate a large amount of food waste due to the nature of the operations. Many institutions serve food in dining hall settings with self-serve counters. This can lead to customers taking more food than they can eat or taking food that they might not like. The buffet-style service often includes several dishes available to fit dietary or allergy restrictions and to avoid running out of food.

- Gaps

  It is NJDEP's understanding that there is an information gap among groups within this sector. Institutions do not exchange ideas, processes, or methods on a regular basis. Regularly occurring conferences focusing on food waste reduction in this sector would be beneficial.

- Barriers

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[36] https://www.epa.gov/sites/production/files/2016-02/documents/get_smart_ftgtw_2_1_2016_pubnumberadded_508.pdf

One of the most significant barriers in this sector is that food that has been served to customers in a buffet-style setting prevents it from being donated. Prepared food that has not been served can be considered for donation; however, Harvard Law School Food Law and Policy Clinic's Food Safety Regulations & Guidance for Food Donations[37] suggests that cooked food must be kept a certain temperature, which makes it harder to store, transport, and serve donated leftovers. In addition, a high percentage of staff turnover can prevent efficient training and education of food waste reducing techniques.

- Opportunities

Institutions can achieve food waste reduction by simply eliminating trays. In tray-less dining, the customer is unable to load up a tray, which reduces the risk of taking too much food which is left uneaten.

By promoting cost savings, NJDEP can encourage this sector to implement food waste reducing processes and policies.

Institution Toolkit:

- Purchasing

This part of the toolkit could target individuals that purchase food for institutions. The toolkit should emphasize buying local and seasonal produce and the importance of building an agreement with farmers to buy "ugly" produce. Further, the toolkit could encourage procurement of sustainably sourced products that use sustainable and recyclable packaging.

- Tracking

With many already established tracking methods, institutions are encouraged to track waste generation in their facilities. Tracking can be done by weighing food scraps post-consumer over a period of time. Institutions are also encouraged to track scraps left over from food prep (e.g., how much of the broccoli stem is left after the florets have been removed).[38]

- Waste Management

Similar to the consumer sector, institutions are encouraged to pursue methods of disposal other the regular municipal waste stream. Some institutions are working with farmers who take the food scraps and use it as animal feed.[39]

Where applicable and suitable, food should be donated. An important part of education is to inform this sector of donation opportunities and the legal protections that apply to

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[37] https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/safe-food-handling/safe-minimum-internal-temperature-chart/ct_index
[38] *ReFED: A Roadmap to Reduce U.S. Food Waste by 20 Percent* (2016) p.32
[39] *ReFED: A Roadmap to Reduce U.S. Food Waste by 20 Percent* (2016) p.66

donations. As previously mentioned, there are misconceptions about what laws and rules apply to food donations. By educating institutions about liability protection, food donations may become a more frequent occurrence and considered a preferred solution instead of merely disposing of surplus food. Additional tools need to be developed to facilitate connection between donors and recipients.[40]

3. Donations

This sector consists of organizations that are receiving food donations, such as food banks and soup kitchens.

- Current Situation

  It is NJDEP's understanding that there is not a lack of food donations for the bigger food banks and soup kitchens. These organizations usually have close relationships with grocery store chains or manufacturers who donate unsaleable goods. The issue is capacity restrictions, i.e., the inability to properly store the donations. Another issue is the lack of efficient communication between donors and recipients. Currently, there are no statewide systems that allow suppliers with surplus food to easily connect with those needing or wanting it in a timely manner.

- Gaps
  There is a gap between the amount of surplus food available for donations and the storage capacity of recipients. NJDEP could have a role in promoting already-established networks of donors and recipients to grow their reach.

- Barriers

  As previously mentioned, there is an information barrier between suppliers and recipients. The NJDEP could have a role in overcoming that barrier by acting as a clearinghouse or centralized information central.

Donation Toolkit:

- Tracking

  Organizations are encouraged to track the waste to streamline operations and processes.

4. Retail

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[40] *ReFED: A Roadmap to Reduce U.S. Food Waste by 20 Percent* (2016) p.44-48

This sector covers retail businesses.

- Current Situation

  Customers expect fully stocked shelves, year-round availability, and only perfect food items. Date labeling forces stores to discard edible and safe food too early without the opportunity to sell the product at a discount. Grocers tend to not have an "ugly produce" section with discounted produce. Stores do not have capacity to hold food for donation for a long time, which means items will be discarded unless they are picked up or donated the same day. Many stores offer salad and hot food bars which cannot be donated at the end of the day due to health department restrictions. Obsolete demand and supply forecasting technologies prevent efficient and timely inventory management.

- Gaps

  There is an information gap between stores that donate and recipients. Donation matching software could reduce that gap.

- Barriers

  Due to the nature of this sector in which stores are required to have fully-stocked shelves and year-round availability, there will be surplus food generated. Capacity restrictions prevent storage of donation items unless it can be picked up daily. Another restriction is the availability of donation transportation.

- Opportunities

  Consumer education campaigns can be a helpful tool to raise awareness of "ugly" produce, seasonal availability, packaging, and date labels.

Retail Toolkit:

- Purchasing

  Improved inventory management and enhanced demand forecasting can help minimize over-stocking of products.[41]

- Tracking

  Real-time data about the quantity and quality of inventory on hand and of incoming orders can result in price adjustments of items about to expire. Additionally, using sensors to collect data on product freshness during transit can enable food with shorter-than-expected shelf life to be re-routed during transit to closer distribution centers or stores.[42]

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[41] ReFED Retail Guide 2018 p.15
[42] ReFED Retail Guide 2018 p.16

- Waste Management

As previously mentioned, disposal of surplus food is the least desirable solution. If over-stocking is unavoidable and "ugly" produce is not purchased by the customer, those items should be donated. Ideally, a store should establish connections with local food pantries, soup kitchens, or food banks to ensure timely and efficient deliveries. This can also enable donation of time-sensitive products since the items can be routed directly to the recipient without the use of a distribution center.[43]

5. Production/Manufacturing

Even though manufacturers only represent approximately 2% of 63 million tons of food wasted by weight, a staggering $2 billion of loss is attributed to this sector.[44] According to the Bureau of Labor Statistics, food manufacturing "transforms livestock and agricultural products into products for intermediate or final consumption."[45] In other words, a manufacturing process is implemented which creates a marketable product out of different components/ingredients. Despite the use of automated processes, quality testing, and strict processing standards, there is still food waste generated.

- Current Situation

Quite a few factors contribute to food waste generation in the manufacturing sector. Modifications/errors in production, labeling discrepancies, and waste created throughout manufacturing are common sources of food waste. Although the operations are usually highly maintained and automated, efforts to prevent or divert waste would still be beneficial.

- Opportunities

Food waste generated within the manufacturing process can be prevented or diverted by modifying "sell/use by" labeling, addressing inefficiencies during production, and as a last resort, donation or energy conversion of waste products.[44] Amending the language of date labels would greatly reduce the confusion surrounding food spoilage. Standardizing these labels at the manufacturing level would assist in prevention of food waste at the retail level.

Optimize production of goods within day-to-day operations. Staff can identify portions of the operation which generate unnecessary food waste and thus develop any prevention mechanisms to reduce or eliminate said waste. This prevention mechanism would also train workers and management to track and properly report food waste generation, which can be used for future analysis.

Prevention mechanisms can be supported with the diversion of unavoidable loss. Such diversions include food donation and anaerobic digestion/compost for energy production.

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[43] ReFED Retail Guide 2018 p.19
[44] *ReFED: A Roadmap to Reduce U.S. Food Waste by 20 Percent* (2016)
[45] *Food Manufacturing: NAICS 311* https://www.bls.gov/iag/tgs/iag311.htm

Manufacturers can locate local food banks willing to participate in a contractual agreement of food donation over a regular schedule. This initiative would ideally provide unsaleable food to those in need and reduce the likelihood of food disposal. Inedible scraps, such as peels or rinds, can be used in an anaerobic digestion/compost alternative to produce energy/organic material as opposed to waste. Manufacturers can contact producers and provide livestock with feed.

- Barriers

According to the 2016 FWRA Food Waste Survey, several barriers exist which impede food waste prevention and diversion. One common solution that is associated with manufacturing is the donation of any unsaleable food. Despite this, regulatory constraints and liability concerns rank as the top two barriers for food donation.[46] In conjunction, food safety concerns and transportation constraints further limit a manufacturer's participation in food donation. However, the Federal Bill Emerson Good Samaritan Food Donation Act addresses these concerns and serves as a protection for the food donor against civil and criminal liability.[47] To combat misunderstandings between perception and actual regulation, more education for both manufacturers and food banks is beneficial. Even if food banks can accept diverted products, the issue of food turnover and inconsistent supply/demand in these pantries could result in product disposal.

Attempts to recycle food waste in the manufacturing sector are also met with barriers. Insufficient recycling options and transportation constraints of waste are common concerns among food manufacturers. While education can address the concern of insufficient recycling options, any financial burden would be a disincentive.

Finally, standardization of date labeling is challenging as no federal standards have been adopted. For this reason, immediate change is unlikely and a continued misunderstanding about date labeling will persist. Until legislation is passed nationwide, the gap between manufactured goods and consumer interpretation of quality will remain.

Production/Manufacturing Toolkit:

- Tracking

A key prevention mechanism involves accurate food waste documentation. The 2016 ReFED report suggests line optimization, which identifies portions of the manufacturing process which could be less wasteful while maintaining efficiency in product development. These encourage manufacturers to analyze existing practices and accurately calculate food waste among each portion of production, which attributes to a better overall measurement. Plus, manufacturers would be incentivized to implement processes which could potentially optimize production and save product/money. If the itemized waste cannot be prevented,

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[46] *Food Waste Reduction Alliance: Analysis of U.S. Food Waste Among Food Manufacturers, Retailers, and Restaurants* (2016)

[47] *https://www.feedingamerica.org/about-us/partners/become-a-product-partner/food-partners*

manufacturers can then develop a diversion plan, which would continue to be tracked in overall records.

- Waste Management

According to the Food Waste Reduction Alliance 2016 report, the manufacturing sector was responsible for diverting 10.5 billion pounds of food waste away from landfill disposal in 2016. The most popular option, which attributed to approximately 60% of diverted food waste, involved land application. Ranking at approximately 35% of diverted food waste, the second popular option included animal feed.

Other possibilities included food donation, bio-based/bio chemical disposal, co-digestion/anaerobic digestion, composting/aerobic processing, incineration/combustion, or other unspecified choices. However, when broken down by manufacturer size, large and medium sized manufacturers greatly preferred diverting food waste to animal feed, while small manufacturers diverted 90% of its food waste to land application.[46] Despite the switch in preferences among different sized manufacturers, it can be concluded that land application and animal feed are substantially more favorable options.

6. Restaurants, Caterers, and Food Services

- Current Situation

Due to food safety standards restricting donation of cooked food, this sector is the second largest producer of wasted food. Most restaurants tend to order what is needed with little or no surplus uncooked food items.

- Gaps:

This sector is very fragmented with many small businesses. This makes it hard to coordinate statewide reduction efforts or to promote "one-size-fits-all" toolkits.

- Barriers:

Turnover of restaurants and staff makes it hard to build up institutional knowledge and implement long-term reduction efforts. Additionally, in cases where restaurants do not own their building, the landlord has power over waste reduction efforts like amount of available space for containers and choice of haulers.[48]

Restaurant, Caterer, and Food Services Toolkit

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[48] *ReFED:* Restaurant Guide 2018 p.4

- Purchasing:

  By designing menus with wasted food reduction in mind, such as reducing the number of ingredients and repurposing food prep trim and overproduction, restaurants can reduce inventory costs.[49]

  Restaurants can also introduce multiple portion choices and/or smaller plates as well as working closely with suppliers to be able to adjust pack sizes and order quantities. This would also keep inventory low to ensure minimal unconsumed food.[50]

- Tracking:

  As identified in the institution sector, tracking waste with the help of audits is a tremendous tool to measure and subsequently reduce food waste. By first establishing a baseline, changes in processes can be compared to analyze their effectiveness. The tracking can be done by a hands-on audit which is repeated regularly.[51]

- Waste Management:

  For uncooked surplus food, it is recommended that a restaurant builds a relationship with local recipients and/or users. A local relationship enables a restaurant to timely and efficiently donate surplus products to those in need. A fully developed food policy program would also inform and allow a business to apply federal tax deductions when donating to qualified nonprofits organizations.[52]

7. Government

For local governments seeking to develop and implement food waste reduction policies, Harvard Food Law and Policy Clinic has developed a toolkit for localities.[53] Many of the ideas are already referenced in this plan, but some are more easily adopted on a municipal level, for example food waste reduction in K-12 schools.

P.L. 2017, c. 136 Interaction with Other Food Waste Legislation

While NJDEP has prepared this draft Plan pursuant to P.L. 2017, c. 136, it should be noted that other legislation now exists regarding food waste reduction in New Jersey, identified below with potential interaction with P.L. 2017, c. 136.

P.L. 2019 c.92 (A4705) – Department of Human Services Food Waste Task Force

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[49] *ReFED:* Restaurant Guide 2018 p.10
[50] *ReFED:* Restaurant Guide 2018 p.11-12
[51] *ReFED:* Restaurant Guide 2018 p.13
[52] *ReFED:* Restaurant Guide 2018 p.19
[53] Harvard Food Law and Policy Clinic: *Keeping food out of the landfill: policy ideas for states and localities.* October 2016. https://www.chlpi.org/wp-content/uploads/2013/12/Food-Waste-Toolkit_Oct-2016_smaller.pdf

P.L. 2019 c.92 (A4705) was signed into law on May 9, 2019 requiring the New Jersey Department of Human Services to establish the New Jersey Food Waste Task Force (Task Force) to make identify and examine and report recommendations concerning food waste reduction in New Jersey.

Both P.L. 2017, c. 136 and P.L. 2019 c.92 seek to reduce the amount of food wasted in New Jersey, but do so by addressing different aspects of the cause of food being wasted. The Task Force pursuant to P.L. 2019 c.92 is charged with identifying and examining factors that lead to food waste in the State, and identifying strategies, policies, legislative, executive actions to: increase food donations; provide consumers with education on food storage; lower unreasonably high cosmetic standards for fruit and vegetables; cease or significantly reduce the rejection of imperfect-looking food; build Statewide systems to distribute surplus edible food to charities; eliminate unnecessary State statutes or regulations that contribute to food waste; and modify "best by' food labels. P.L. 2017, c. 136 directs NJDEP to determine ways to reduce the volume of food produced that is ultimately wasted to achieve the 50% reduction goal by 2030 by actively implementing strategies that reduce food waste generation by various sectors involved in producing, distributing, preparing and consuming food in New Jersey. This focus on source reduction is consistent with the United States Environmental Protection Agency's Food Recovery Hierarchy as identified on Section 1 Page 5 herein and provides benefits inherent in not producing food that's ultimately wasted as discussed in Section 1 pages 4 and 5 herein. As such, the work of the Task Force is anticipated to be complimentary to the work outlined in this Plan.

The following additional legislative actions further support New Jersey's goal of food waste reduction and should be promoted and supported by the below proposed New Jersey Food Waste Reduction Council if created.

A4701 (P.L. 2019, c.54) was signed into law on March 18, 2019. It requires Department of Human Services to create and maintain an online portal to facilitate collaboration of surplus food donations among nonprofit organizations, gleaners and food retailers.

A4707 (P.L. 219 c. 93) was signed into law on May 9, 2019. It requires Department of Agriculture to create a public awareness campaign to educate the general public on food waste prevention by raising awareness regarding reducing wasteful shopping and the meaning of date label definitions.

AJR 174 (P.L. 2019, JR-7) was approved May 9, 2019. The joint resolution urges large food retailers in the State to reduce food waste by upgrading inventory systems; to collaborate with farmers to reduce agricultural food waste; to educate consumers on the issues and management of food waste.

AJR 172 (P.L. 2019, JR-6) was approved May 9, 2019 promoting the annual "Food Waste Prevention Day", which falls on Thursday of third week of September.

Conclusion and next steps

As food loss awareness and food waste reduction is a growing and evolving field, the information, strategies, motivations, and mechanisms behind its measurement and reduction will also continue

to grow and evolve. The intent of a final Plan will be to incorporate food waste reduction awareness, principles, and tools into a strategy that will benefit evolving and changing businesses and cultures, meet new challenges and opportunities, as well as address unforeseen circumstances surrounding wasting food. Each food supply sector contains unique opportunities to improve food waste management and reduce loss.

To successfully fulfill the goals of P.L. 2017, c. 136, NJDEP encourages legislation to create a food waste reduction council that will be tasked with implementing this plan and developing future actions intended to set New Jersey on a path towards greatly reduced food waste generation.

By reaching the 50 percent food waste reduction goal, New Jersey will gain environmental, economic and societal benefits associated with a reduction of food waste. The preferred strategy to accomplish this goal is to avoid the generation of excess or wasted food. Once this has been achieved, a preferable end of life disposition in composting, anaerobic digestion, or recycling is preferred to avoid landfilling.

NJDEP offers this draft Plan and below list of questions as a starting point for interested party review and comment and to provide structure and context to the public hearings in development of a final Plan to fulfill the goals of P.L. 2017, c. 136.

- Pending public input and comments, does this draft Plan provide enough initial structure, direction, and follow up to fulfill the obligations set forth in P.L. 2017 c. 136?
- What potential topics/sectors are missing from this initial draft?
- Are there other Food Reduction Plan Development Principles that should be included?
- Is the proposed Food Waste Reduction Council needed to achieve the goals of the legislation?
- Which agency should oversee/administer the proposed Council? Which agencies should be represented? How should the Council function? How should it be funded?
- What additional legislative, regulatory, or administrative actions are necessary to further progress toward achieving the state food waste reduction goal?
- What non-legislative/regulatory actions should NJDEP or the implementing agency undertake?
- What is the role of each agencies in meeting the goals of P.L. 2017 c. 136?