

I. Introduction:

The Maine Department of Administrative and Financial Services (“DAFS”), Bureau of General Services (“BGS”), wishes to procure engineering services to conduct a study reviewing statewide waste disposal capacity. The study will evaluate traditional as well as new and innovative technologies to support waste infrastructure development including recycling components and renewable energy generation.

This Study is being requested to solicit information on the best approaches for waste infrastructure development to be paired with landfill capacity to meet Maine’s future solid waste disposal needs and recycling goals detailed in the [Maine Materials Management Plan: 2024 State Waste Management and Recycling Plan Update and 2022 Waste Generation and Disposal Capacity Report](#).

Maine’s only operational state-owned landfill is anticipated to reach capacity in 2028, or in 2040 if a proposed expansion application is approved by the Maine Department of Environmental Protection (“DEP”). 38 M.R.S. § 1310-X prohibits the DEP from approving an application for a new privately owned commercial solid waste disposal facility which includes both commercial landfills and incinerators. 38 M.R.S. § 2156-A requires BGS, in consultation with the DEP, to “plan for the development of facilities sufficient to meet anticipated unmet needs for municipal solid waste and special waste identified in the state plan and any revisions to the plan and to serve all geographic areas of the State.” Most active landfills in Maine will reach capacity within the next 15 – 20 years, and two licensed solid waste facilities (one processing facility¹ and one incinerator) have been idle for years, leaving the State with limited options for solid waste disposal.

BGS is seeking information from solid waste management industry representatives and facility developers on the sustainable management of special wastes and municipal solid waste bypass to include waste infrastructure development to help address Maine’s solid waste management challenges with the primary goal to manage solid waste consistent with Maine’s solid waste management hierarchy and to reduce the amount of solid waste being sent to a future State-owned landfill to preserve the life of the landfill to the greatest extent practical.

BGS is seeking information regarding new and innovative systems, technologies, and processes to reduce the reliance on landfill capacity.

¹ The Hampden waste processing facility which is managed by Municipal WasteHub is anticipated to begin operations during the second quarter of 2026. While this facility ramps up and increases the volume of waste it accepts for processing, waste disposal facilities are still necessary.

Waste reduction systems include, but are not limited to:

- Anaerobic Digestion
- Waste to Energy Incineration
- Gasification Systems
- Material Recovery Facilities
- Construction and Demolition Debris Processing
- Wastewater Treatment Plant Sludge Drying

The information, tables, and figures included in this RFI were collected from a series of studies separately conducted by the DEP and BGS.

DEP and BGS Reports include:

[Maine Materials Management Plan: 2024 State Waste Management and Recycling Plan Update and 2022 Waste Generation and Disposal Capacity Report](#)

[Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024](#)

[Maine Statewide Waste Characterization Study](#)

[Study for Evaluating Availability of Traditional and Alternative Bulking Agents Originating within the State of Maine](#)

II. Background:

A. State Statutes

There are several state statutes currently governing the various roles and responsibilities of the DEP and BGS in managing Maine's solid waste.

38 M.R.S. § 2152-A defines the purpose of State-owned solid waste disposal facilities to ensure that adequate disposal capacity is available for the disposal of solid waste generated within the State through the development of new disposal capacity for anticipated state disposal capacity needs and the operation of existing facilities to address current state disposal capacity needs.

38 M.R.S. § 2122 requires the DEP to prepare a Statewide Waste Management and Recycling Plan ("Plan") every five years. This includes an analysis of, and a plan for, the management, reduction, and recycling of solid waste for Maine.

Based on an analysis of current waste management practices in Maine and guided by Maine's Solid Waste Management and Food Recovery Hierarchies, this 5-year update includes strategies and actions focused on:

1. Increasing waste reduction, food rescue, goods repair (electronics, clothing, furniture, etc.), and reuse initiatives;
2. Continued focus on increasing the diversion of organics from disposal;
3. Diverting materials from landfill disposal;
4. Exploring potential pathways to broaden the economic feasibility and appeal of materials recovery such as green jobs training programs or small business opportunities not yet widely developed in Maine; and
5. Evaluating strategic needs for expansion of waste disposal capacity (landfilling and incineration) and waste processing technologies.

The Plan highlights key challenges with meeting Maine's statutory solid waste disposal reduction and diversion goals and suggests areas of potential exploration and action to determine their suitability for implementation in Maine. Such action will require investments in additional waste management and recycling infrastructure.

To best manage Maine's waste disposal capacity concerns the DEP continues to plan for enhanced waste reduction and diversion programs as well as evaluating key infrastructure needs for waste disposal.

Maine also has several relevant statutes addressing recycling and waste diversion.

Maine Statute establishes a Solid Waste Management Hierarchy to be used as a guiding principle in decision-making for the management of solid waste.

38 M.R.S. § 2101 sets forth an integrated approach to solid waste management with waste reduction as the highest priority, followed by reuse, recycling, composting, waste processing to reduce waste volume including waste-to-energy, and landfilling as the management option of last resort.

38 M.R.S. § 2101-B, the Food Recovery Hierarchy, provides additional guidance on the management of food waste within the context of the Solid Waste Management Hierarchy. It prioritizes reducing surplus food generation at the source, donating surplus food to feed hungry people, diverting food scraps for use as animal feed, composting of food scraps and diversion to waste utilization technologies to create fuels and recover energy, and finally, incineration or land disposal.

Additionally, Maine's laws have established specific recycling and waste reduction goals including:

38 M.R.S. § 2132(1), A goal to recycle or compost 50% of the Municipal Solid Waste (MSW) tonnage generated each year within the State by January 1, 2021.

38 M.R.S. § 2132(1-B), A goal to reduce the statewide per capita disposal rate of MSW tonnage to 0.55 tons disposed per capita by January 1, 2019, and to further reduce the statewide per capita disposal rate by an additional every 5 years thereafter. This incremental goal of reducing waste by 5% every 5 years provides a mechanism to measure progress at the municipal level.

It is important to clarify that composting, anaerobic digestion, and any waste reduction, reuse, or recovery of materials to prevent them from requiring use of waste disposal facilities is considered a municipal diversion effort

B. Current State Waste Disposal and Recycling Totals²

Solid waste in Maine is generated by residential, commercial, institutional, and industrial entities, and categorized based on characteristics as well as how the material was generated. These categories include MSW, construction and demolition debris (“CDD”), woody brush and land clearing debris, special waste (“SPW”), and universal waste. Various types of waste exist within each of these categories. This report primarily addresses waste generated by households and businesses, as the generation, recycling rates, and disposal of these waste materials are the focus of **38 M.R.S. § 2124-A**. The term “municipal solid waste” is defined in **06-096 C.M.R. Ch. 400, § 1(NNNN)** as “[. . .] solid waste emanating from household and normal commercial sources [...]” Maine has historically included CDD as a subset of MSW since it fits the criteria included in the definition of MSW.

Although CDD is considered a subset of MSW, it is generally handled as a separate waste stream and transported, processed, and disposed of separately from MSW. There are several facilities across Maine that accept loads of mixed CDD for processing which involves the separation or grinding of materials for recovery. Recovered marketable materials, such as scrap metal or wood chips, are then sent for recycling. Once the readily salable materials are removed, the processing residue is typically ground up into smaller “fines” and used as alternative daily cover (“ADC”) at landfills or for shaping and grading within those landfills. In addition to the larger landfills that accept MSW and CDD for disposal, several municipalities operate their own smaller CDD-only landfills.

² More information from this section can be found on pages 2-4 in the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

In 2023, a total of 2,087,318 tons of MSW and CDD were managed in Maine, with 498,166 tons diverted from disposal and the remainder sent to landfills or incinerators, for a combined MSW and CDD recycling rate of 25.53%.

In 2024, a total of 2,082,167 tons of MSW and CDD were managed, with 520,329 tons of that material diverted from disposal and the rest disposed, for a combined recycling rate of 26.84%. Approximately 910,708 tons of MSW were disposed in 2023, with 925,448 tons disposed in 2024. Maine's per capita MSW disposal rate in 2023 was approximately 0.65 tons per person (1,305 pounds), increasing slightly to approximately 0.66 tons per person in 2024 (1,317 pounds). Maine's estimated MSW recycling rate (excluding CDD) was 35.36% in 2023, increasing slightly to 35.99% in 2024.

Maine is still far from reaching its waste diversion and recycling goals that are set out in **38 M.R.S. § 2132**, as shown in **Table B-1**.

Table B-1 MSW and CDD Figure Disposition During 2024³

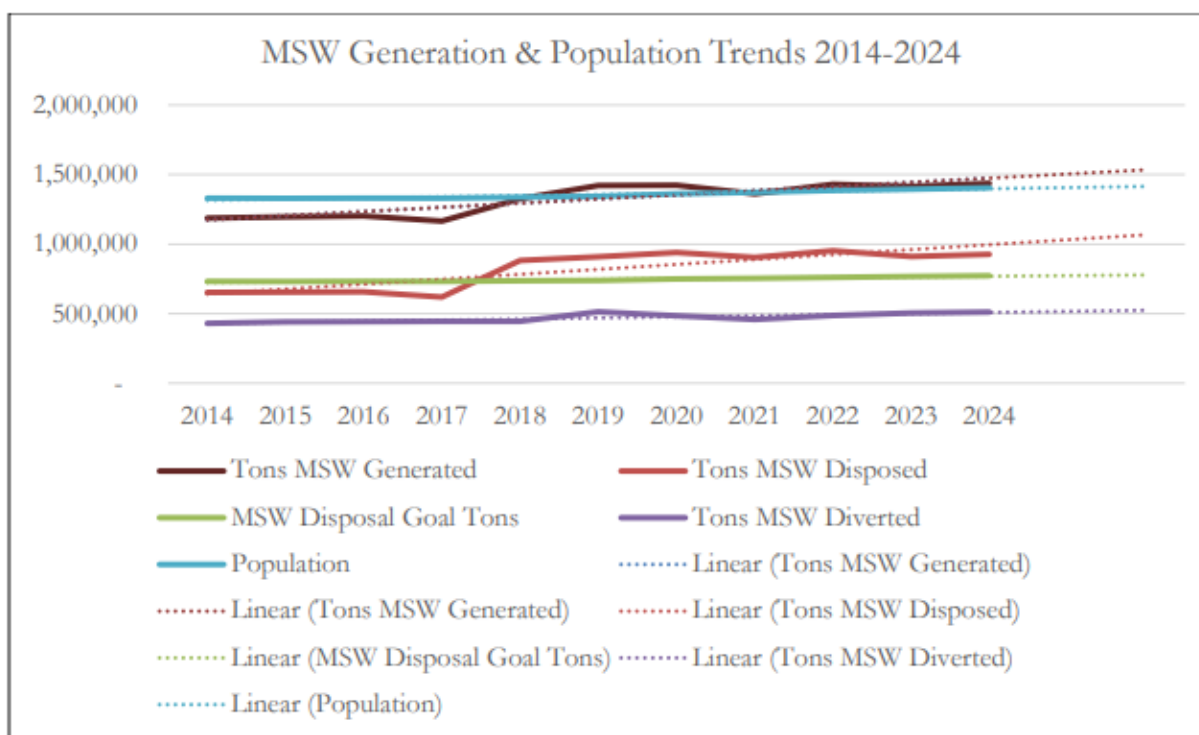
Maine MSW Disposition	2024 Tons
Maine MSW landfilled in state	596,355
Maine MSW disposed via waste-to-energy	293,018
Maine MSW disposed of out-of-state	36,075
Subtotal Maine MSW (exclusive of CDD) Disposed	925,448
Paper, cardboard; plastic, metal, and glass containers; textiles; and stewardship program materials recycled	210,248
Other MSW recycled (white goods, ferrous and non-ferrous scrap metal, and vehicle batteries)	256,837
Estimates for MSW reused (textiles, household goods, etc.)	15,330
Reported food rescue	3,770
Reported animal feed diversion of food scraps	6,358
Reported MSW composted (yard waste and food scraps; food processing waste; backyard composting and < 60 yds ³ /month not included)	12,816
Anaerobic digestion (source separated organics, not including industrial commercial waste such as deicer, slurries, manufacturing waste, etc.)	14,969
Subtotal Maine MSW reused, rescued, recycled & composted	520,329
Total Maine MSW (exclusive of CDD)	1,445,776
Maine's MSW Recycling Rate (exclusive of CDD)	35.99%
Maine CDD disposition	2024 Tons
Mixed CDD disposed of in state	489,391
Mixed CDD disposed of out of-state	10,733
Processed CDD sent to a landfill for daily cover, shaping, and grading	97,779
Processed CDD used as fill outside of a landfill	9,246
CDD exported for recycling (scrap metal and wood sent for manufacturing uses)	20,088
CDD exported to out-of-state CDD processing facilities	8,692
Processed CDD beneficially used as fuel	461
Subtotal Maine CDD Recycled (non-landfill uses) & Beneficially Used as Fuel	38,487
Total CDD Generated	636,391
Maine's CDD Recycling Rate (all non-landfill uses)	6.05%
Total MSW & CDD generated	2,082,167
Total MSW & CDD disposed (includes materials used in landfill for cover, shaping, and grading)	1,523,351
Total MSW, CDD, and organics recycled and composted (including wood waste used as fuel chips)	558,816
Maine's Combined MSW, CDD & Organics Recycling Rate	26.84%

³ Table B-1 can be found titled Table 27 - Maine's MSW Management and Recycling Rate for Calendar Year 2024 on page 28 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

The changed economics of recycling have caused many municipalities in Maine to consider curtailing or eliminating their programs. Some communities have faced steep increases in costs for recycling services from private sector companies. When these costs are greater than the cost of disposal some opt to suspend recycling services, at least until recycling is less costly than disposal.

The amount of MSW and Construction and Demolition Debris (“CDD”) Maine generates annually has increased, the amount of waste material Maine is landfilling has increased, and the rates of recycling and waste diversion have remained, at best, stagnant (see **Figure B-2**) in some areas of the state and has decreased in others. Additionally, Maine has lost capacity in regard to waste-to-energy options due to the idling of one of its three waste-to-energy incinerators. If the facility is not successfully restarted, the permanent loss of that facility would further limit disposal options in Maine.

Figure B-2 Waste Management and Population Trends 2014-2024⁴



⁴ Figure B-2 can be found titled Figure 7 MSW Generation, Management, and Population Trends from 2014-2024. On page 9 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

There are eight landfills that are licensed and currently operating that accept MSW or “MSW bypass”. MSW bypass is defined as MSW originally destined for a facility but diverted due to temporary operational issues (i.e., during maintenance or upgrade activities).

It should be noted that of the eight landfills, JRL and Crossroads Landfill, receive the majority of MSW in Maine. JRL accepts approximately 52% and Crossroads Landfill accepts approximately 27% of the total amount of MSW landfilled in Maine. Additionally, Crossroads Landfill, as a privately owned and operated commercial landfill, can and does accept waste from out of state, whereas JRL is not authorized to accept out-of-state waste as a state-owned facility. The total amount of waste managed at Maine’s small landfills for 2024 is shown in **Table B-3**. The amount of material disposed of in these landfills since 2018 has grown by 34.28%

Table B-3 Total Amount of Material Disposed at Small MSW Landfills⁵

Landfill	MSW Tons	CDD Tons	SPW Tons	Misc. Waste Tons	Total Tons Waste	Cover Tons	Total Tons (Including Cover)
AWS-Presque Isle (Temporarily Closed in Aug 2023)	-	-	-	-	-	-	-
AWS-TCRSL (“Tri Community”) (Fort Fairfield)	34,589	9,509	3,237	874	48,209	15,829	64,038
Bath	4,640	699	381	-	5,720	11,929	17,649
Dolby (E. Millinocket)	-	-	36	-	36	-	36
Hartland	-	30,224	14,383	-	44,607	3,869	48,476
Hatch Hill (Augusta)	45,752	10,584	157	-	56,493	-	56,493
Lewiston	-	361	-	-	361	13,948	14,309
Mid-Coast (Rockport)	-	1,497	-	-	1,497	280	1,777
TOTAL	84,981	52,874	18,193	874	156,922	45,855	202,777

As shown in **Figure B-4** below, MSW comprises the majority of waste generated in Maine, followed by CDD, with other materials making up a smaller proportion of the overall waste managed. Also illustrated in the figure is the amount of material that landfill owners received for cover material and other uses by the landfill, which may include a wide variety of permitted materials, including CDD, processing residues from CDD, and other special wastes.

⁵ Table B – 3 can be found titled Table 21 – Small MSW Landfills Disposal - Calendar Year 2024 on page 22 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

Figure B-4 Maine Wastes Disposed in 2023 and 2024⁶

Year	MSW Tons	CDD Tons	SPW Tons	Other Tons	Total Tons Landfilled as Waste	Cover, Shaping, Grading Tons	Total Tons to Landfill (Including Cover)
2023	563,964	544,176	183,033	2,742	1,293,915	174,932	1,468,846
2024	597,976	489,391	198,910	2,495	1,288,771	171,828	1,460,599

Maine’s waste-to-energy facilities accepted a little over 300,000 tons of waste in years 2023 and 2024. Due to temporary closure, the Eagle Point Energy Center (“EPEC”) incinerator, formerly known as PERC, accepted limited amounts of waste in 2023 and did not accept any waste in 2024. The total amount of waste accepted by Maine’s three waste-to-energy facilities in 2023 and 2024 is shown in **Table B-5**, and their respective annual licensed capacity in **Table B-6**. Future capacity of these facilities is expected to remain stable, as currently licensed and constructed. As can be seen when comparing the charts, the two currently operating waste-to-energy facilities are operating at levels near their licensed capacity.

The Eagle Point Energy Center (“EPEC”) is licensed to accept up to 300,000 tons of MSW; however, operations are not expected to start prior to Spring 2027, and operations in 2027 are likely to only be partial using just one of its two boilers. EPEC is currently under contract to manage 200,000 tons of MSW for its 44 member communities.. EPEC is not designed to manage biosolids.

⁶ Figure B-4 can be found titled Table 13 – Total Landfilled Material in Tons - Calendar Years 2023 & 2024 on page 17 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

Table B-5 Solid Wastes Managed by Maine's Waste-to-Energy Facilities by Origin**2023⁷**

Facility	Maine MSW	Recycling Residue	Other Waste	Total Maine Tons	Imported Waste	Total Tons
ecomaine	182,462	4,070	5,452	191,984	1,270	193,254
Maine WTE/MMWAC	107,596	-	-	107,596	-	107,596
EPEC/PERC	14,674	-	2,545	17,219	352	17,571
Totals	304,732	4,070	7,997	316,799	1,622	318,421

2024

Facility	Maine MSW	Recycling Residue	Other Waste	Total Maine Tons	Imported Waste	Total Tons
ecomaine	181,410	3,752	9,320	194,483	1,258	195,741
Maine WTE/MMWAC	107,855	-	-	107,855	-	107,855
EPEC/PERC	-	-	-	-	-	-
Totals	289,265	3,752	9,320	302,338	1,258	303,597

Table B-6 Available Licensed MSW Disposal Capacity at Maine's Waste-to-Energy Facilities⁸

Waste-to-Energy Facilities	Annual capacity (tons/year)	2025 (tons/year)	2030 (tons/year)	2035 (tons/year)
MMWAC – Auburn	70,000	70,000	70,000	70,000
ecomaine – Portland	170,000	170,000	170,000	170,000
EPEC - Orrington	300,000	300,000	300,000	300,000
Total Waste-to- Energy Facility capacity in tons	540,000	540,000	540,000	540,000

Commercial-scale CDD processing facilities often accept mixed CDD from nearby states including Massachusetts and New Hampshire. CDD processors remove recyclable components like scrap metal and clean wood from the mixed CDD to export for recycling.

⁷ Found on page 23 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

⁸⁸ Table B-6 can be found titled Table – 24 Available Licensed MSW Disposal Capacity at Maine's Waste-to-Energy Facilities on page 24 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

Two of Maine's largest CDD processing facilities are: ReSource Waste Services of Lewiston LLC ("ReSource") in Lewiston and WIN Waste Innovations of Northern New England Inc. ("WIN Waste") in Eliot.

Each of these facilities recovers a percentage of material for reuse and sends the non-recoverable portion to a landfill for final disposal or use as an alternate daily cover.

Solid waste processing facilities (including CDD processing facilities) that generate residue requiring disposal are required under the provisions of **38 M.R.S. § 1310-N(5-A)(B)(2)** to recycle or process into fuel for combustion all waste accepted at the facility to the maximum extent practicable, but in no case less than 50%. Historically, Maine law defines "recycling" to include the use of residue at a solid waste landfill "for daily cover, frost protection or other operational or engineering related purpose, including [. . .] landfill shaping or grading [. . .]" for the purposes of licensing compliance.

Recent amendments to this statute placed a cap on the percentage of processing residue that facilities will be able to "count" towards the 50% minimum recycling rate. Under the revised statute, "[...] at least 50% of the waste that a solid waste processing facility characterizes as recycled under this subparagraph must have been reused or recycled by the facility through methods other than placement of the waste in a solid waste landfill [...]." While processors can still include some landfill material use towards their recycling goals, at least 25% of their recycling must occur outside of a landfill, through uses like plastic-to-plastic recycling, reuse, recovery of metals, material substitutes in construction, or boiler fuel substitutes.

It is worth noting that the recent amendment does not currently apply to ReSource due to a statutory exemption for, "a solid waste processing facility that was in operation during calendar year 2018, that accepts exclusively construction and demolition debris and that accepted more than 200,000 tons of such debris in calendar year 2018," a description that applies only to ReSource. Rather, ReSource is required to gradually increase the total percentage of material recovered via pathways other than placement in a landfill from 2026 through 2030, at which time they will also be required to meet the same 50% minimum recycling rate as all other facilities.

Another important amendment impacting processing facilities is a change to the definition of "Waste generated within the State" at **38 M.R.S. § 1303-C(40-A)** which was amended in 2021:

Beginning February 1, 2023, notwithstanding paragraphs B, C and E, if the total weight of the residue generated in a calendar year by an incineration facility, recycling facility or solid

waste processing facility that is disposed of or otherwise placed in a solid waste landfill in that calendar year exceeds the total weight of the solid waste initially generated within the State that was incinerated or processed by that facility in that calendar year, any such excess residue generated by that facility is not considered waste generated within the State.

Table B-7 details the total tons of waste processed in Maine by ReSource and WIN Waste.

Table B-7 Waste Processed in Maine⁹

	Tons from Maine	Imported Tons	Total Tons	Percent from Maine	Percent Imported
ReSource	57,757	94,440	152,197	38%	62%
WIN Waste	16,586	43,010	59,596	28%	72%
Total	74,343	137,450	211,793	35%	65%

The residues or waste materials produced by the processing facilities and disposed of/or utilized by the landfills located in Maine include mixed CDD residuals, CDD fines, bulky waste, and auto shredder residue. It is important to note that both CDD fines and auto-shredder residue are used by landfills as alternate daily cover (“ADC”) and replace the need for placement of a clean soil product over the waste each day. The breakdown of residues produced are provided in **Table B-8** below. Based on acceptance rates and residuals quantities in 2023, processing facilities diverted 53.6% of materials from landfills with 46.4%, or 159,691 tons of residuals sent to landfills for use as daily cover and bulking waste.

⁹ Table B-7 can be found titled Table 5 – Incoming Materials to CDD Processors - Calendar Year 2024 on page 12 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

Table B-8 Processing Facility Residuals Handled by Maine Landfills in 2023¹⁰

Facility Name	Mixed CDD (T)	Aggregate (T)	Clean Lumber / Yard Debris (T)	Ferrous Metals (T)
WIN Waste Innovations – Aggregate Recycling Corp	20,658	-	326	-
Grimmel Industries	-	-	-	11,793
Resource Waste Services of Lewiston	78,532	41,245	-	-
Richard Carrier Trucking	-	-	-	-
Jeffrey A Simpson, Inc	26,046	1,749	-	-
Total Tonnage	104,578	42,994	326	11,793

ReSource, Maine’s largest CDD processor, in 2024, sent approximately 97,181 tons of construction processing fines (35,909 tons processing fines, 61,272 tons construction fines) or 58% of all processed material to JRL for daily cover, shaping, and grading or stabilization while 46,868 tons or 28% was sent to JRL as residue for disposal, with 3,552 tons or 2% sent to the WM landfill in Norridgewock. While ReSource shipped 144,049 tons of material to the JRL landfill in 2024, only 46,868 tons of that was classified as CDD processing residue for disposal. The facility accepted 57,757 tons from within Maine during 2024, which exceeds the 46,868 tons of residue sent to JRL for disposal.

In Hampden, a MSW processing facility owned by the Municipal WasteHub and Municipal Waste Solutions, LLC has been designed with an overall waste handling capacity of 180,000 tons. It is licensed to receive MSW from its 115 member communities, sort for recycling, and process waste with the final stage using anaerobic digestion for paper and organic waste. This facility is currently under contract to manage 100,000 tons of MSW. The current schedule for operation is set to begin during the second quarter of 2026 with operation of the Material Recovery Facility (“MRF”). The anaerobic digester will come online after ramping up of the MRF’s operations to ensure the design is compatible, streamlined, and allows for seamless operation.

There are currently only a few proposed facilities in the state of Maine that would directly manage and/or process biosolids. One of the facilities is a proposed facility, and one is

¹⁰ Table B-8 can be found titled Table 7. Processing Facility Residuals Handled by Maine Landfills on page 22 of the TRC Waste Bulking Study Report the Study for Evaluating Availability of Traditional and Alternative Bulking Agents Originating within the State of Maine

anticipated to begin operations during the second quarter of 2026. Absent these facilities Maine's options for managing biosolids includes disposal at one of Maine's landfills licensed to accept Special Waste or transported across state lines to a disposal facility out of state.

The facility that is anticipated to begin operations during the second quarter is the Waste Management Biosolids Processing Facility in Norridgewock. This technology is a sludge dryer which is co-located in Norridgewock with Crossroads Landfill. The dryer is designed to handle approximately 200 tons/day of biosolids. This process will minimize the need to bulk materials for placement in the landfill. This facility was licensed by the DEP in 2024 and is proposed to operational in the second quarter of 2026. As a complementary process, the Crossroads landfill is already operating a Foam Fractionation system to treat PFAS in the landfill's leachate. This was also licensed in 2024 and began operating in late 2025.

The other proposed facility is a waste processing facility to be located in Sanford, by Aries Clean Technologies, to address a portion of the biosolids disposal needs for Maine. The facility is designed with a daily capacity of 400 tons. A license application has been submitted to the Department and is currently under review.

Maine's idled incinerator and soon to be operating waste processing facilities may result in a slight volume reduction of waste requiring landfill space once the facilities become operational. For example:

- The Municipal WasteHub facility's permits require a recycling rate of 50%. This includes materials to be utilized by a landfill for daily cover. Based on this condition, and early discussions with the facility, early assumptions indicate that approximately 50,000 tons of waste residues will be sent to a landfill during early operations. This is likely to decline in volume as the facility ramps up its operations.
- The currently idled EPEC incineration facility once operational will also reduce the volume of waste needing final disposition within a landfill. Incineration typically yields an 85% volume reduction so with a currently contracted waste acceptance of 200,000 tons, we estimate 30,000 tons of ash will need to be placed within a landfill.
- The Biosolids Processing Facility in Norridgewock will dewater the biosolids material prior to disposal within the landfill reducing approximately 200 tons/day or 73,000 tons/year (at 365 days) to approximately 50 tons/day or just over 18,000 tons/year.

Waste management facilities in Maine are evolving with some of the processing and recycling facilities currently relying on materials originating from outside of the state for their operations. New facilities are due to become operational within the next few years with the capacity to help divert up to 300,000 tons of MSW and up to 250,000 tons of biosolids from Maine’s landfills. Despite these advances many of these facilities are not yet operational, and even once they are, they will not remove Maine’s reliance on landfill disposal or assist in meeting the goals of Maine’s solid waste management hierarchy. Therefore, Maine is looking for a combination of both new technologies to reduce overall waste volume as well as additional landfill capacity to manage residuals that are generated from these waste management technologies. Maine will always need landfill space, however the amount of that space needed for decades to come could be reduced if more and better waste management technologies are in place and fully operational.

Table B- 9 describes the quantities of waste that were disposed of within Maine landfills in 2023 and 2024.

Table B- 9 Total Waste Disposal in Maine Residential Waste and CDD Landfills¹¹

Year	MSW Tons	CDD Tons	SPW Tons	Other Tons	Total Tons Landfilled as Waste	Cover, Shaping, Grading Tons	Total Tons to Landfill (Including Cover)
2023	563,964	544,176	183,033	2,742	1,293,915	174,932	1,468,846
2024	597,976	489,391	198,910	2,495	1,288,771	171,828	1,460,599

C. Statewide Waste Characterization

DEP retained MSW Consultants to perform the State’s first waste characterization study (“WCS”) in 2024 to provide a waste analysis and establish a baseline snapshot of the disposed waste within Maine. Additionally, a survey of Maine households was completed to understand how food scraps are managed in the residential sector.

While there are many forms of solid waste, this study focused on the following waste types:

- Municipal solid waste (“MSW”), which includes routinely generated trash or garbage from residential and institutional/commercial/industrial (“ICI”) establishments;
- Mixed construction and demolition debris (“CDD”), from construction, remodeling and demolition of structures; and

¹¹ Table B- 9 can be found titled Table 13 – Total Landfilled Material in Tons - Calendar Years 2023 & 2024 on page 17 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

- Oversized bulky waste (“OBW”), which refers to a combination of large pieces of CDD, bulky items and waste processing residues reported at one of the State’s landfills.

Table C-1 shows the 2023 reported disposal tonnages of Maine-generated solid waste. As shown, in 2023 Maine disposed of 1.3 million tons of MSW, Mixed CDD and OBW. This table only includes Maine-generated tons disposed of in-state; it excludes solid waste that may have been exported for disposal outside of Maine or imported from out-of-state generators.

Table C-1 Reported Disposal Tonnage of Maine Wastes (2023)¹²

Disposal Facility	MSW Tons	Mixed CDD Tons	OBW Tons ^[2]	Total Tons
Landfills	567,178	451,965	78,673	1,097,816
WTE	223,764			223,764
Total ^[3]	790,942	451,965	78,673	1,321,580

^[1] 2023 tonnage data was used for this WCS as the most recently completed available reporting year.

^[2] Juniper Ridge Landfill specifically reports this tonnage as “CDD/MSW Processing Residue – OBW.”

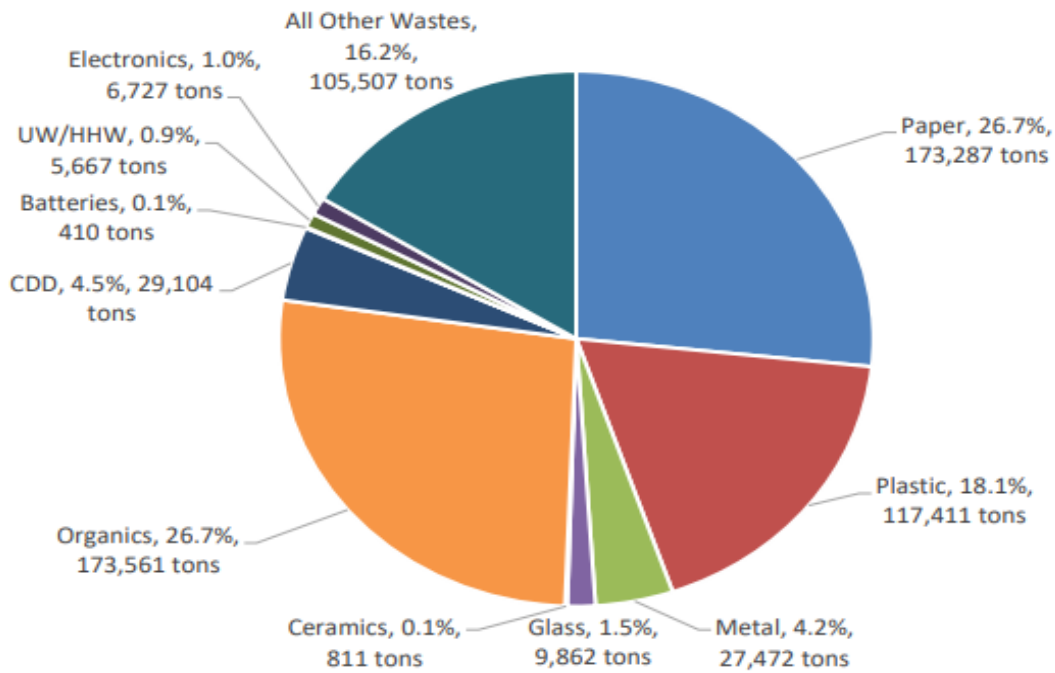
^[3] Totals may differ slightly due to rounding.

MSW

Figure C-2 presents the statewide aggregate results by material group for the disposed MSW stream. The paper and organics material groups are the largest contributors to the combined residential and ICI MSW stream. More detailed results are provided in Section 2 of this report, including a breakdown of residential and industrial, commercial, and institutional (ICI) results from the WCS.

¹² Table C-1 can be found titled Table 1-1 Reported Disposal Tonnage of Maine Wastes (2023) on page 1 – 3 of the Maine Statewide Waste Characterization Study

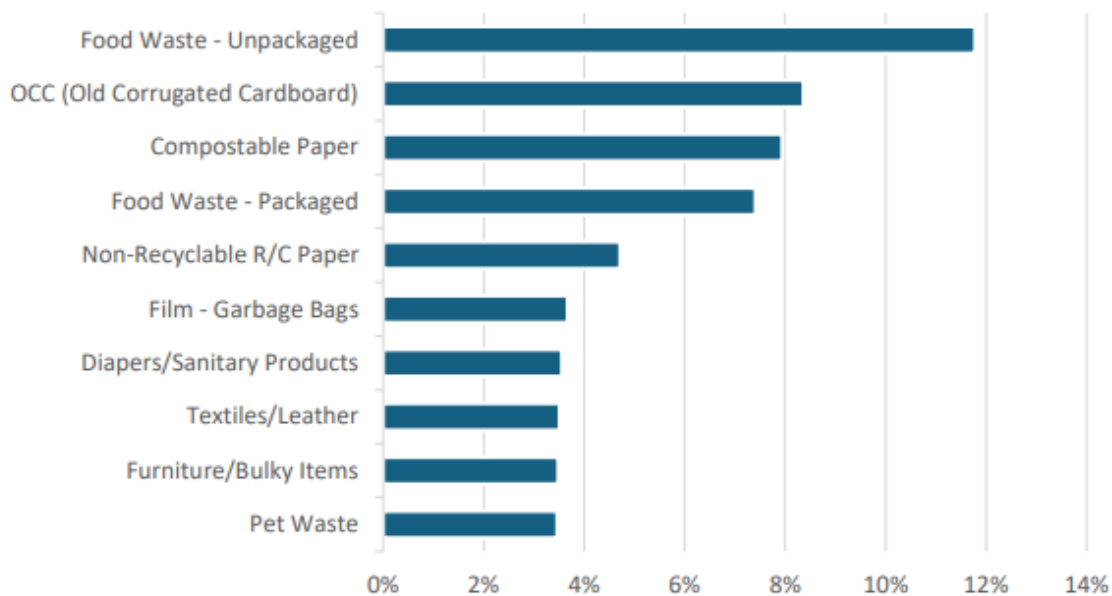
Figure C-2 Aggregate Disposed MSW Composition by Material Group¹³



The top ten most commonly disposed material categories in the aggregate MSW stream are shown in **Table C-3**. Organics categories, including unpackaged and packaged food waste and compostable paper, make up three of the top four most prevalent disposed material categories. Cardboard is also in the top four disposed material categories, with the remaining top ten material categories being difficult-to-recycle or difficult-to-compost materials. Another prevalent material was non-recyclable remainder/composite paper, which is typically comprised of paper-based items coated or combined with other materials like plastic, metal and foil, or glues.

¹³ Figure C-2 can be found titled Figure E-1 Aggregate Disposed MSW Composition by Material Group on page E – 2 of the Maine Statewide Waste Characterization Study

Table C-3 Most Prevalent Material Categories, by Weight, in Aggregate Disposed MSW¹⁴



CDD/Bulky Waste

The WCS also captured visual surveys of CDD/Bulky Waste at landfills, transfer stations and WTE facilities receiving direct haul CDD/Bulky Waste loads. **Figure C-4** shows the major constituents of the CDD/Bulky Waste Stream. As shown, wood, shingles, and bulky items were prevalent in this material stream.

¹⁴ Table C-3 can be found titled Figure E-2 Most Prevalent Material Categories, by Weight, in Aggregate Disposed MSW on page E – 3 of the Maine Statewide Waste Characterization Study

Figure C-4 Composition of CDD/Bulky Waste¹⁵

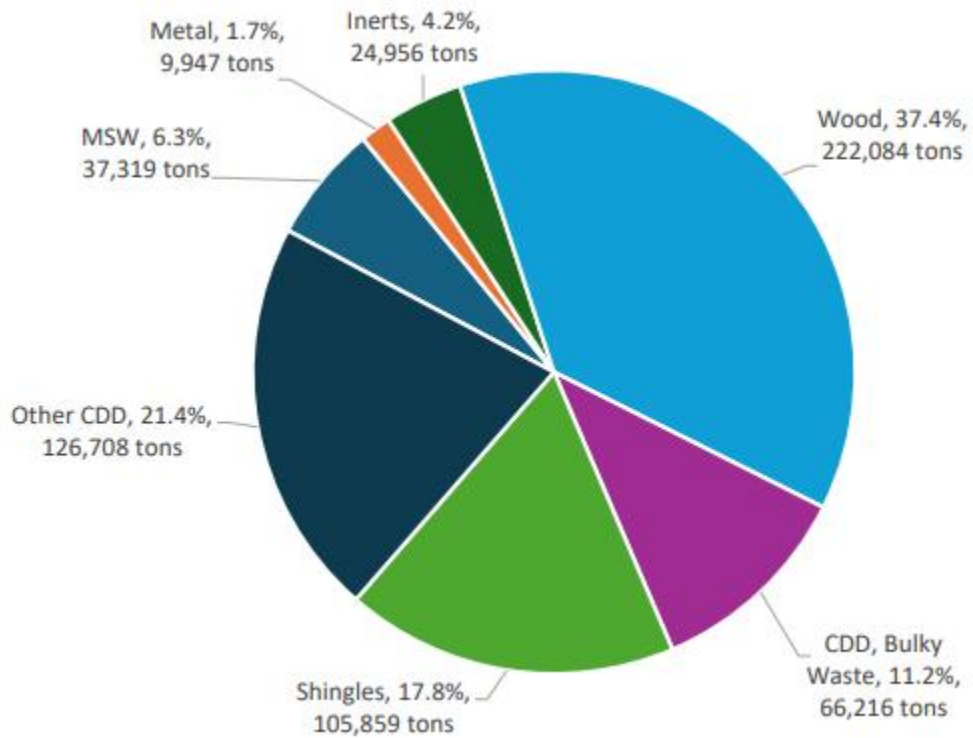
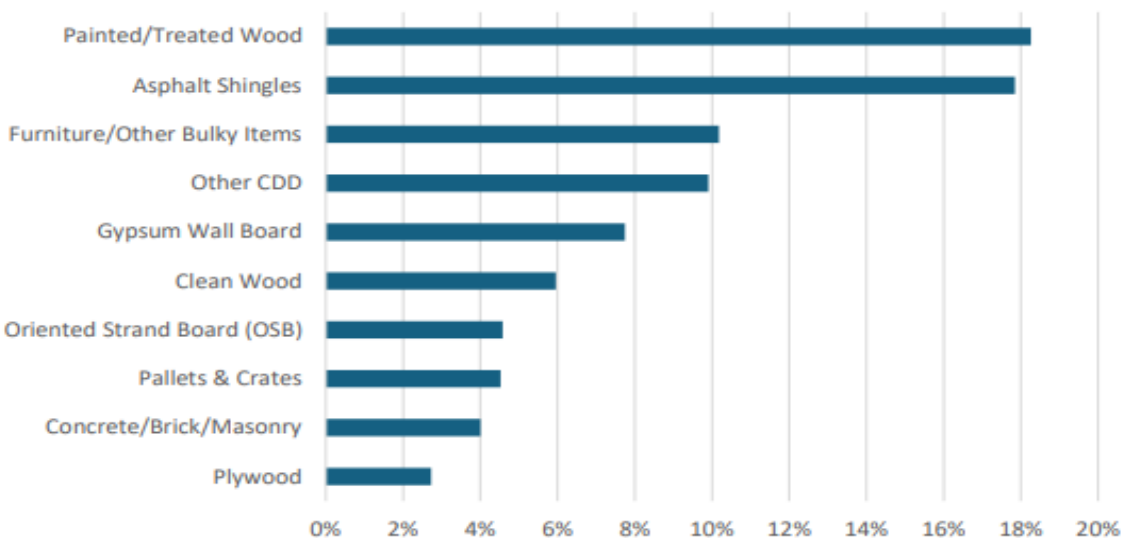


Table C-5 shows the top ten most commonly disposed material categories in the CDD/Bulky Waste stream. Painted/treated wood and asphalt shingles are the two most prevalent material categories in the CDD/Bulky Waste stream.

¹⁵ Figure C-4 can be found titled Figure E-5 Composition of CDD/Bulky Waste on page E – 5 of the Maine Statewide Waste Characterization Study

Table C-5 Most Prevalent Material Categories, by Weight, in Disposed CDD/Bulky Waste¹⁶



DISPOSITION OF RESIDENTIAL FOOD SCRAPS

As part of the WCS, project partners including the University of New Hampshire (“UNH”) Survey Center and DSM Environmental Services (“DSM”), conducted a representative survey of Maine households to inquire about the disposition of food scraps. This research relied on a representative panel of Maine households recruited and vetted by UNH to answer questions about outlets for food scraps other than disposing in the trash. Key takeaways from this research include the following:

- 44 percent of Maine residents do not actively divert food waste, instead they either put it in their trash or down their garbage disposals.
- 56 percent of Maine residents divert at least some portion of their food waste in at least one way. Examples of diversion methods for food scrap disposal include backyard composting, feeding pets, putting them in the woods, feeding farm animals, delivering them to drop-off programs or collection sites, and subscribing to curbside collection.
- Based on survey responses, it was calculated that households that apply these food scrap management strategies divert an average of 12.4 pounds of food scraps per week.

¹⁶ Table C-5 can be found titled Figure E-6 Most Prevalent Material Categories, by Weight, in Disposed CDD/Bulky Waste on page E – 5 of the Maine Statewide Waste Characterization Study

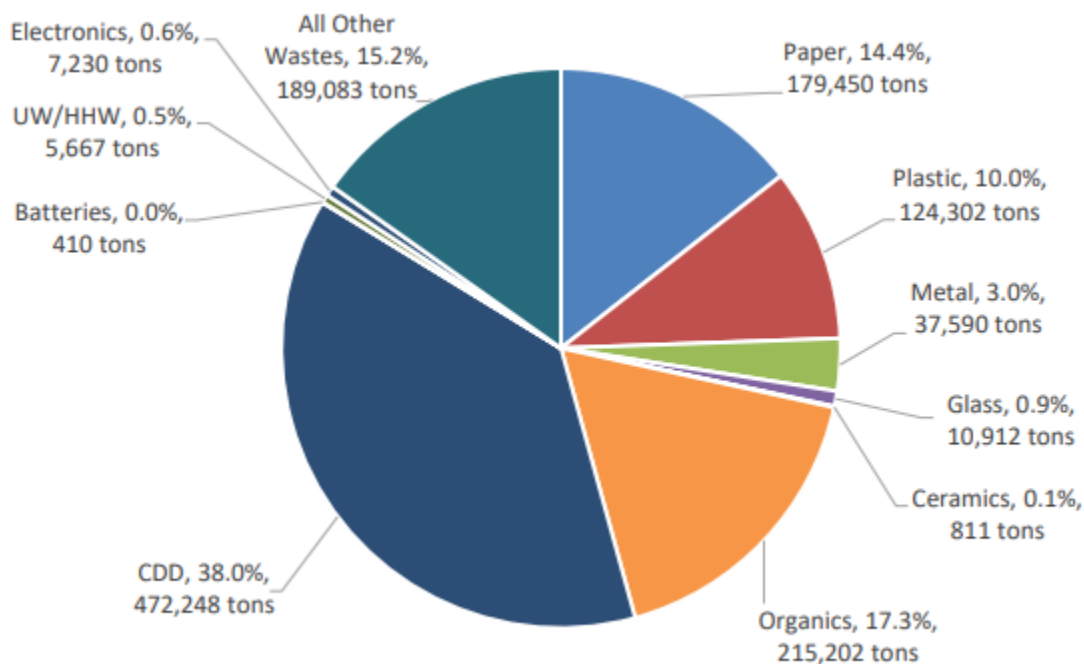
- Based on a rough estimate of capture rates for the various food waste diversion methods, it is calculated that almost 50,600 tons of food wastes are diverted in Maine annually. This is estimated to represent roughly 47 percent of the food wastes generated in the residential sector.

- The estimated food waste diversion is likely positively biased, which is to say that respondents are more likely to over-report their diversion activities than to under-report due to the social pressure to favor environmentally responsible behavior.

OTHER WCS FINDINGS

Figure C-6 shows the combined composition of MSW and Mixed CDD by material group. As can be seen in the figure, most of the State’s waste is comprised of the CDD, organics, and paper material groups.

Figure C-6 Composition of Disposed MSE and Mixed CDD by Material Group¹⁷



D. State-owned Landfill

¹⁷ Figure C-6 can be found titled Figure E-7 Composition of Disposed MSW and Mixed CDD by Material Group on page E – 7 of the Maine Statewide Waste Characterization Study

Maine acquired the Juniper Ridge Landfill (“JRL”) pursuant to Resolve 2003 chapter 93 Resolve To authorize the State To Purchase a Landfill in the City of Old Town and is operating the landfill through an Operating Services Agreement (“OSA”) with NEWSME Landfill Operations, LLC (“NEWSME”), a wholly owned subsidiary of Casella Waste Systems, Inc. JRL is estimated to reach capacity in 2028, or in 2040 only if an expansion is approved by the DEP, leaving the State of Maine with uncertainty and likely limited waste disposal capacity. Increases in space for disposing of Maine’s waste are necessary and must include expanded landfill space, fully operational incineration and waste processing facilities, and new technologies to treat waste streams to either reduce volume or prevent the need for landfilling.

The primary waste streams include MSW, CDD, Special Waste (“SPW”) and Wastewater Treatment Plant (“WWTP”)/Industrial Sludges see **Table D-10** for Wastes Accepted by Ton in 2024 and Percent of Totals.

Table D-10 Wastes Accepted at Juniper Ridge Landfill by Percent of the Total Accepted¹⁸

Solid Waste Types (including ADC)	Total (tons)	% Total
Bypass MSW	300,835	35%
CDD/MSW Processing Residue - OBW (Disposed of in the Original 2004 Permitted Footprint)	5,286	1%
CDD/MSW Processing Residue - OBW (Disposed of in the Expansion Permitted Footprint)	41,808	5%
CDD Processing Residue - Fines	36,169	4%
Mixed CDD	311,698	36%
Recycled/Reused Wood from CDD	301	0%
Residue/Trash from Single Stream	5,958	1%
Construction Fines (ADC, shaping, grading)	61,300	7%
Subtotal	763,355	89%
Special Waste Types	Total (tons)	% Total
Burn Pile Ash and/or Hot Loads Area Ash	596	0%
Burnt Structure Debris/Ash	435	0%
Catch Basin Grit & Street Sweeping	598	0%
Coal, Oil & Multi-fuel Boiler Ash	34	0%
Contaminated Soil & Debris	13,831	2%
Dredged Spoils	1,243	0%
Industrial (Miscellaneous)	136	0%
Industrial WWTP Sludge	220	0%
Leather Scraps	51	0%
MSW Incinerator Ash	158	0%
Municipal WWTP/POTW Sludge	63,054	7%
Non-Friable Asbestos	6,727	1%
Non-Hazardous Chemical Related	1,215	0%
Oil Spill Debris	3,424	0%
Polyethylene & Cellulose Trimmings	101	0%
Sandblast Grit	176	0%
Spoiled Foods	75	0%
Sulfur Scrubbing Residues	668	0%

¹⁸ Table D-10 can be found titled Table 17 – JRL Waste Accepted - Calendar Year 2024 on page 20 of the 2026 Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2023 & 2024

Water/Air Filtration Media	30	0%
WWTP Grit Screenings	718	0%
Subtotal	93,490	11%
Grand Total	856,845	100%

The discovery of PFAS in municipal WWTP sludges and other sludge-derived products that were banned from land application in Maine have resulted in JRL as the primary location for disposition of this material. This has had a significant impact in recent years on JRL's remaining capacity. Beginning in August 2022, most municipal WWTP sludge generated in Maine was disposed of at JRL. The physical nature of sludge makes landfill disposal challenging and can affect both the short-term and long-term stability of a landfill. Stabilizing materials like oversized bulky wastes need to be mixed with sludge, adding an additional volume of material for disposal and taking up additional valuable landfill space.

E. Biosolids Management

In 2024, BGS contracted with TRC Companies, Inc. ("TRC") to complete the Study for Evaluating Availability of Traditional and Alternative Bulking Agents Originating within the State of Maine, which had the following objectives:

- 1. Evaluate the type/quantity of bulking agents needed to safely dispose of the Wastewater Treatment Plant ("WWTP") biosolids produced in the State within solid waste landfills in Maine; and
- 2. Evaluate whether sufficient and consistent amounts of bulking agent originating in Maine are available to support continued acceptance of the current levels of municipal biosolids and other wet wastes at the Juniper Ridge Landfill and other solid waste landfills in Maine after July 1, 2025.

The study summarized the results of, and included a review of, the types and quantities of waste managed within the state, collection of waste samples for physical characterization, and performance of a geotechnical assessment to provide recommendations for proper waste placement practices including determining potential ratios of bulking wastes necessary to adequately stabilize biosolids within a landfill setting under various placement practices. Additionally, the study included a review and update of the state's landfill capacity.

The most critical disposal capacity in Maine currently revolves around the need to dispose of biosolids. **Table E-11** presents the capacities for the landfills that currently handle the majority of the biosolids as of 2023. Based on current disposal rates, JRL and the Hartland Landfill managed 93% of the state's biosolids in 2023. Both of these facilities will be out of their currently permitted capacities within 6 years. Hartland Landfill has no plans to

develop additional capacity. This will direct an additional 11.7% toward JRL and/or Crossroads Landfill. The final column in the table provides an estimated remaining capacity that represents an annual waste increase of 3% per year to account for economic and population growth through the state with wastes from JRL and Hartland Landfill directed to Crossroads Landfill after 5 years without additional capacity at JRL and all of Maine’s waste directed to AWS and Bath after 8.5 years with no additional capacity available at Crossroads Landfill.

A growth rate of 3% was selected based on Maine’s historic data as presented in the DEP’s 2024 Material Management Plan and 2022 Capacity Report, historical waste acceptance rates at JRL, Waste Bulking Study Report February 2025 national trends in waste production, and to reflect potential short-term disposal needs for PFAS impacted waste materials. While the average waste production rate from 2018 to 2022 in Maine was calculated as 1.3%, the increase from 2018-2019 was 3.9% and from 2019-2020 was 5.5%. Additionally waste acceptance rates at JRL from 2015-2022 increased by an average of 5.8% per year. Waste production rates increased worldwide during the COVID pandemic with a report issued by the National Institute of Health showing wastes increasing in Ontario, Canada by 15% and 13.3% in New York City. While Maine’s rate increase was not that dramatic, there was an overall increase observed. Additionally, in Maine, there was an increase in landfilled waste in recent years due to the biosolids land application ban. While biosolids are the first PFAS waste to be redirected to the landfills. We will also likely see an increase in contaminated soil and construction debris from projects funded by the National Infrastructure Bill. For these reasons, TRC selected a slightly higher annual growth rate than the calculated annual average.

Table E-11 Remaining Capacities of Landfills in Maine Accepting Biosolids in 2023¹⁹

¹⁹ Table E-11 can be found titled Table 10: Remaining Capacities of Landfills in Maine Accepting Biosolids on page 38 of the TRC Waste Bulking Study Report the Study for Evaluating Availability of Traditional and Alternative Bulking Agents Originating within the State of Maine

Facility Name	Biosolids (tons)	% of State's Biosolids	Remaining Capacity (CY)	Remaining Operational Life (at current rate)	Remaining Operational Life (assuming 3% increase per year)
Aroostook Waste Solutions	959	1.2	2,555,784	43 years	9.5 yrs
City of Bath Landfill	1,290	1.6	293,650	22 years	9.5 yrs
Hartland Landfill	9,528	11.7	295,700	6 years	5.5 yrs
Juniper Ridge	66,176	81.4	5,356,397	5 years	5 years
Crossroads Landfill - Norridgewock	-	-	7,277,267	14 years	8.5 yrs
Sanford Sewage District	3,324	4.1	0	0 yrs	
Totals	81,277	-	-	-	-

F. Future Impacts to Disposal Capacity

Over the next 3-5 years, the estimated 3% increase in waste generation year-over-year may cause a 15% increase in waste production. When compounded with the possible closure of Maine's state-owned landfill (JRL) in 2028, which is currently taking most of Maine's MSW and sludge wastes, a significant strain will be placed on the state's other landfills until such time as alternative measures will be available to manage Maine's wastes.

To be clear, during the next 5-10 years, without an approved expansion at JRL, it is projected that waste production will increase by approximately 15-30% and Maine will consume all of its landfill space. This means that Maine's waste will need to be shipped out of state at cost to Maine's municipalities and residents. While this may prove to be a temporary solution, it is not a viable long-term solution because other states are looking to limit the land application of biosolids due to PFAS, which will create more competition for placing these types of waste in landfills, and because waste generation is increasing nationally. At this time, some New England states are already shipping their wastes to Ohio for landfill disposal as there is limited available landfill space throughout New England.

Currently, there are significant gaps in Maine's Eastern Maine region for managing MSW. While the Municipal WasteHub materials recovery facility is slated to begin operations during the second quarter of 2026, uncertainties remain with regard to operating timeframes of the idled EPEC incinerator. As both of these facilities begin to ramp up their operations, some of the concerns about where to place MSW, SPW and residual wastes in the region should ease, however concerns will not completely go away without additional

long-term planning. JRL will likely continue to be the recipient of MSW bypass, SPW, and incinerator and waste processing facility residues.

To extend operating time to Maine's existing landfills including JRL, it is important not just to evaluate landfill expansions, but also to consider how to bring new or licensed but non-operating facilities online more quickly. This is a critical need as it currently takes several years from the beginning of the licensing process to the end when construction and operation are allowed to take place. Long-term disposal capacity is a significant and valid concern. If considerable reduction in the amount of material going to landfills is not achieved, or unless new technology and infrastructure is brought online in multiple locations in Maine, a sizeable portion of Maine's landfill capacity will be gone soon. Costs related to hauling MSW, CDD, recycling material, salvageable material, compostable food waste, and other waste streams will likely be passed on to Maine residents and communities.

Maine's legislature has made it clear that the concept of filling its state-owned landfills with waste generated out of state is not the optimal path forward for Maine. The flip side to this is Maine sending its Maine-generated waste to other states' landfills because Maine has run out of room to place its own waste. As Maine grapples with the philosophical and ethical considerations of sending waste out of state to landfills, while refusing to accept waste crossing into its borders, the legislature has requested that the State seek information about how to plan for waste management in Maine into decades to come.

The State is seeking information from developers interested in pursuing waste infrastructure projects, to further inform policy and decision-makers in Maine of the types of technologies, siting requirements, and financing needs necessary to make Maine an attractive place to locate their facilities. Facilities could include anaerobic digestors, recycling facilities, materials recovery facilities, or other new and innovative types of waste processing technologies. These systems are intended to help the State meet its waste diversion and recycling goals outlined in statute by reducing the volume of waste that must go to a landfill. The State is particularly interested in what is necessary to make Maine a viable option for locating its facilities within its borders, whether it is financial incentives, policy directives, or optimal available siting locations.

As Maine evaluates adding new infrastructure and enhancing existing waste diversion programs, it is important to consider locating facilities near areas where waste material is generated, utilizing regionalization, and implementing mechanisms for transferring waste material to make hauling more efficient and cost effective. Maine is looking for a market readjustment to incentivize more sustainable materials management of its wastes to maximize long-term disposal capacity and increase efficiency in our management of

materials so that in the long term it is cost-effective to divert waste from landfills while maintaining and using precious landfill space wisely.

III. Information Requested:

Site Characteristics and Facility Details

1. What type of solid waste management technology do you recommend developing in Maine?
2. Please describe in detail the technology proposed, and potential capacity and throughput in tons per day and tons per year. Please describe how the operation is consistent with the State's solid waste management hierarchy and recycling goals.
3. What site characteristics are needed for the operation?
 - a. Acreage needs
 - b. Utility connection availability needs and facility usage requirements including, power, water, sewer, and gas
 - c. Access needs including transportation modes and proximity requirements
 - d. Additional financing needed or required?
4. What are the input and output requirements to make development feasible?
 - a. Inputs
 - i. What type of feedstock is required for the facility?
 - ii. Are there any specific characteristics needed to make the feedstock viable or processing limitations (e.g., food scraps must be source separated)?
 - iii. What are the tonnage/volume needs to make the facility viable? Provide a range or a minimum if applicable.
 - iv. Can you provide tip fee estimates?
 - b. Outputs
 - i. What are the outputs of your process (e.g., electricity, renewable natural gas, compost, baled material, residue, residual, etc.)?
 - ii. What minimum revenues or revenue guarantees are needed for these outputs?
5. What are the environmental attributes associated with the facility?
 - a. Air emissions, and mitigation thereof
 - b. Discharges, including where discharges will occur and mitigation of discharges
 - c. Waste material or residuals and description of disposition of such materials
 - d. Beneficial uses
 - e. Other

6. Please describe how the project will minimize environmental and health impacts of waste management, including minimizing greenhouse gases.

Community Benefits and Environmental Justice

7. Please describe community benefits that would be provided as part of the project, including job creation and workforce training opportunities.
8. Please describe how the siting and operation of the facility would ensure environmental justice for the community in which the facility is proposed in accordance with 38 MRS 1310-AA (E).

Developer Experience

9. Please describe the project team's background and experience developing waste infrastructure projects, including the proposed technology, and your track record for successful development and/or operation. Please provide information on applications of the proposed technology and demonstrate how widespread it is and how the technology has been proven through other development projects.