



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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2018 Solid Waste Data Update

October 2020

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Goals and Methodology Summary

In the *2030 Solid Waste Master Plan*, MassDEP has established goals to reduce waste disposal from 5,660,000 tons in 2018 to 4,020,000 tons by 2030, a reduction of 1,640,000 tons on an annual basis. Table 1 summarizes the methodology for the disposal reduction calculation in future years.

Table 1 Methodology Summary		
Waste Reduction Rates		Equation
Disposal Tonnage	=	In State Disposal (Landfill & Municipal Waste Combustor) + Export for Disposal – Import for Disposal
Disposal Tonnage Reduction	=	2018 Disposal Tons – Current Year Disposal Tons
% Disposal Reduction	=	$\frac{2018 \text{ Disposal Tons} - \text{Current Year Disposal Tons}}{2018 \text{ Disposal Tons}}$

Progress in Meeting Current Disposal Reduction Milestone

Total disposal in 2018 was 5,660,000 tons, a decrease of 890,000 tons, or 14 percent, from 2008.

Solid Waste Management Overview

Table 2 highlights how solid waste disposal changed from 2017 to 2018, measured in tonnage and percent change. From 2017 to 2018, total disposal decreased by 1 percent. Of the total waste that required disposal, 4.5 million tons were disposed in-state, of which 1.3 million tons were land filled and 3.2 million tons were combusted. Massachusetts exported 1.8 million tons for disposal and imported 630,000 tons, and thus was a net exporter of about 1,190,000 tons of waste requiring disposal. See Table 5 for a more detailed picture of disposal import and export data by state.

		2017	2018	Tons Change	% Change
Disposal (Incl. Net Exports)		5,720,000	5,660,000	(60,000)	-1.0%
In-State Disposal		4,490,000	4,470,000	(20,000)	-0.4%
	Landfill	1,310,000	1,270,000	(40,000)	-3.1%
	MSW	1,140,000	1,190,000	50,000	4.4%
	C&D	70,000	-	(70,000)	-100.0%
	Other	110,000	70,000	(40,000)	-36.4%
	Combustion	3,180,000	3,200,000	20,000	0.6%
	MSW	3,140,000	3,180,000	40,000	1.3%
	Non-MSW	30,000	20,000	(10,000)	-33.3%
Net Exports		1,230,000	1,190,000	(40,000)	-3.3%
	Exports	1,790,000	1,820,000	30,000	1.7%
	MSW	820,000	750,000	(70,000)	-8.5%
	Non-MSW	970,000	1,070,000	100,000	10.3%
	Imports	570,000	630,000	60,000	10.5%
	MSW	540,000	610,000	70,000	13.0%
	Non-MSW	20,000	20,000	0	0.0%

Note: % Change is calculated based on the rounded amounts in this table.
Percentages may not add exactly to 100% due to rounding.

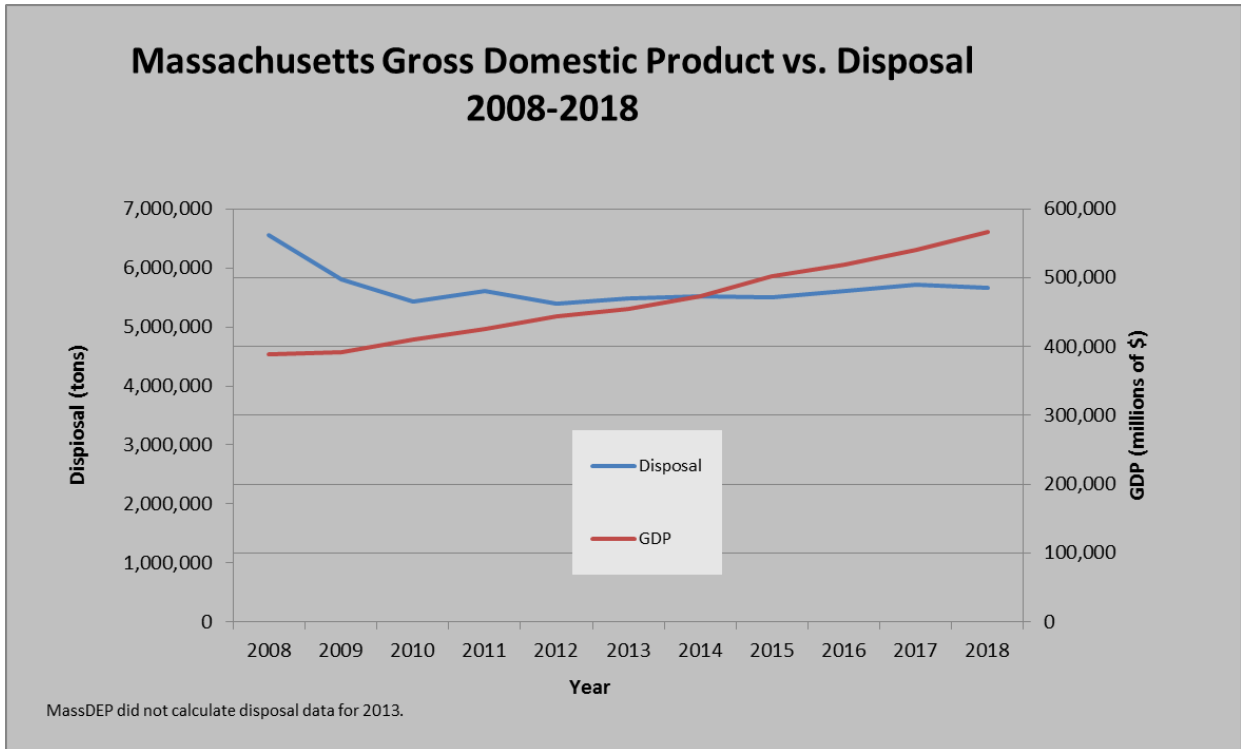
Table 3 presents solid waste disposal data from 2010-2018, excluding 2013, when MassDEP did not publish statewide solid waste data. Tables 3 and 4 also show the Master Plan baseline year of 2008 for comparison purposes. Table 4 shows how MSW and non-MSW disposal changed from 2008 through 2018. Total MSW disposal decreased by 40,000 tons from 2017-2018, and total non-MSW disposal increased by 20,000 tons.

		2008	2010	2011	2012	2014	2015	2016	2017	2018
Disposal		6,550,000	5,430,000	5,610,000	5,400,000	5,520,000	5,510,000	5,610,000	5,720,000	5,660,000
	Landfill	1,740,000	1,560,000	1,650,000	1,700,000	1,560,000	1,380,000	1,330,000	1,310,000	1,270,000
	MSW	1,560,000	1,280,000	1,390,000	1,380,000	1,380,000	1,260,000	1,170,000	1,140,000	1,190,000
	C&D	130,000	120,000	70,000	100,000	50,000	50,000	70,000	70,000	0
	Other	50,000	170,000	190,000	220,000	130,000	70,000	90,000	110,000	70,000
	Combustion	3,230,000	3,180,000	3,260,000	3,210,000	3,270,000	3,250,000	3,190,000	3,180,000	3,200,000
	MSW	3,210,000	3,170,000	3,250,000	3,210,000	3,260,000	3,250,000	3,170,000	3,140,000	3,180,000
	Non-MSW	10,000	10,000	10,000	0	0	10,000	20,000	30,000	20,000
	Net Exports	1,580,000	690,000	700,000	490,000	690,000	880,000	1,090,000	1,230,000	1,190,000
	Exports	1,850,000	1,270,000	1,340,000	1,050,000	1,190,000	1,380,000	1,560,000	1,790,000	1,820,000
	MSW	840,000	690,000	630,000	510,000	460,000	620,000	680,000	820,000	750,000
	Non-MSW	1,010,000	580,000	710,000	540,000	730,000	760,000	880,000	970,000	1,070,000
	Imports	270,000	580,000	640,000	560,000	490,000	500,000	460,000	570,000	630,000
	MSW	240,000	440,000	390,000	420,000	460,000	460,000	420,000	540,000	610,000
	Non-MSW	30,000	140,000	240,000	150,000	40,000	50,000	40,000	20,000	20,000

Table 4 MSW and NON MSW Disposal 2008-2018

	2008	2010	2011	2012	2014	2015	2016	2017	2018	% change vs 2008	% change vs 2017
Total Disposal (Tons)	6,540,000	5,440,000	5,620,000	5,390,000	5,510,000	5,510,000	5,620,000	5,720,000	5,650,000	-0.14	-0.01
MSW	5,370,000	4,700,000	4,880,000	4,680,000	4,640,000	4,670,000	4,600,000	4,560,000	4,510,000	-0.16	-0.01
Non-MSW	1,170,000	740,000	740,000	710,000	870,000	840,000	1,020,000	1,160,000	1,140,000	-0.03	-0.02

Comparing Disposal Trends to State Economic Trends



The chart above gives a visual representation of Massachusetts waste disposal totals from 2008-2018 in the context of the state’s Gross Domestic Product (GDP) over the same time frame, measured in millions of current dollars.

While GDP has grown by 46 percent from 2008-2018, disposal decreased by 14 percent during that same period. From 2017 to 2018, GDP increased by 5 percent and disposal decreased by 1 percent. Note that the 2013 disposal data in this chart is estimated based on averaging 2012 and 2014 disposal.

	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	% change vs. 2008	% change vs. 2017
GDP (millions of dollars)	388,583	409,763	425,593	444,330	454,346	473,454	502,678	519,741	540,949	567,255	46%	5%
Total Disposal (tons)	6,550,000	5,430,000	5,610,000	5,400,000	5,480,000	5,520,000	5,510,000	5,610,000	5,720,000	5,660,000	-14%	-1%

Disposal Import/Export Data for 2017-2018

Table 5 shows MSW and C&D data exported and imported for disposal by state. The export and import data for Massachusetts was collected from annual facility reports (AFR) submitted to MassDEP and from direct correspondence with other states. In some instances, the export data provided in the AFR differed from that reported from other states. In order to calculate the most inclusive estimate of export, the higher number from the two sources was used. For example, if an AFR reported that Massachusetts sent Connecticut 10,000 tons of MSW, and Connecticut reported receiving 29,000 tons of MSW from Massachusetts, 29,000 tons of export was used.

Table 5 Disposal Import/Export Data by State (tons): 2017-2018

MSW Exported				C&D Exported			
State	2017	2018		State	2017	2018	
CT	37,638	1,857		CT	13,443	0	
ME	46,800	40,762		ME	8,864	20,647	
NH	398,872	388,499		NH	891	108,147	
NY	148,271	164,743		NY	184,746	77,037	
OH	189,201	140,229		OH	360,744	556,091	
RI	-	-		RI	1,579	11,474	
VA		15,966		TOTAL	570,267	773,396	
VT	3,219	-					
TOTAL	824,001	752,056					
MSW Imported				C&D Imported			
State	2017	2018		State	2017	2018	
CT	85,134	93,516		CT	195	596	
ME	6,830	52		ME	75	79	
NH	220,429	290,444		NH	9,391	6,219	
NY	18,802	33,970		NY	1	1	
RI	210,642	191,336		RI	4,783	643	
VT	1,466	2,012		VT	5	0	
TOTAL	543,303	611,330		TOTAL	14,450	7,538	

Management of Ash from Municipal Waste Combustors

Table 6 shows the Massachusetts landfills accepting municipal waste combustion (MWC) ash and their anticipated lifespan according to current permit conditions. Table 6A shows the amount of ash generated by individual MWCs and where it was disposed, as well as the amount of metal recovered from each.

Landfill	Projected Closure Year
Bondi Island*	2023
Carver Marion Wareham	2020
Ward Hill Neck	2021
Peabody	2025
Wheelabrator Saugus	2022
Wheelabrator Shrewsbury	2028

*Permit application in-house that would provide an additional 7-8 years.

Combustion Facility	Ash Disposed (tons)	Disposal Facilities	Pre-Combustion Metal Recovery (tons)	Post-Combustion Metal Recovery (tons)
Haverhill	147,127	Ward Hill, Haverhill	100	13,943
Millbury	117,687	Shrewsbury	75	9,070
North Andover	101,247	Shrewsbury	-	7,226
Pittsfield	4,821	Bondi's Island, Springfield	-	2,068
Saugus	122,762	Saugus, Shrewsbury	-	6,204
SEMASS	185,875	Bourne, Carver/Marion/Wareham	26,786	10,935
Springfield	37,901	Bondi's Island, Springfield	98	5,371
Totals	717,420		27,059	54,817

Table 7: Summary of Rail Transfer Facilities						
Facility Name	Region	Town	Current Status	Tons/Day	Tons/Year	Waste
Champion City Recovery	SERO	Brockton	Operating	1,000	286,000	C&D
Devens Recycling Center	CERO	Devens	Operating	1,500	390,000	MSW, C&D
Lenox Valley Waste Transfer Facility	WERO	Lenoxdale	Operating	198	53,262	MSW, C&D
New England Waste Disposal	SERO	Taunton	Operating	940	244,400	MSW, C&D
Tri-County Recycling	WERO	Ware	Operating	750	195,000	C&D
Trojan Recycling	SERO	Brockton	Operating	500	140,400	MSW, C&D
Upper Cape Regional Transfer Station	SERO	Falmouth	Operating	286	74,360	MSW, C&D
Western Recycling	WERO	Wilbraham	Operating	645	167,700	MSW, C&D
Yarmouth-Barnstable Regional Rail Transfer Station	SERO	Yarmouth	Operating	530	137,800	MSW
TLA Holbrook	SERO	Holbrook	Permit under review	1,000	260,000	MSW
Casella	WERO	Holyoke	Permitted	1,250	382,500	MSW, C&D
Howard Transfer Station	NERO	Roxbury	Permitted	-	-	-
Parallel Products of New England	SERO	New Bedford	Seeking approval	1,500	390,000	MSW, C&D
Wood Recycling, Inc.	NERO	Peabody	Permitted	-	-	-
Covanta SEMASS	SERO	Wareham	Seeking approval			MSW
United Materials	CERO	Leominster	Seeking approval	1,000	300,000	MSW, C&D

Management of Leominster						
McNamara Transfer Station	WERO	Springfield	Under construction	699	181,740	MSW, C&D
Totals				10,099	2,721,422	

Rail Transfer Capacity

Table 7 illustrates the growing trend of increased rail disposal capacity in Massachusetts, included the current permit status, tons accepted, and types of waste accepted.

Waste Management Capacity Projections

The disposal capacity projections in Table 8 reflect either actual permitted capacity, approved capacity contingent on receiving permits, or capacity based on facility contract commitments. However, some landfills may take in less than their permitted tonnage in a particular year. In these cases, capacity for a particular landfill may last beyond the date shown in these projections. In other cases, a landfill may choose to accept a different material than MSW, such as municipal waste combustion ash, so that a portion of this permitted capacity may not be available for MSW. MassDEP attempts to take these factors into account by projecting only the percent of potential landfill capacity that is actually used for MSW and C&D disposal. The combustion capacity is shown as level based on permit limits, although this actual amount managed will always be somewhat lower than these limits.

Table 8: Projected Disposal Capacity 2018-2030 (Tons Per Year)

Municipality	Permitted Capacity	End of current permitted capacity	Lifetime of LF	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Active Landfills															
Boume	30,000	2021	2024	30,000	30,000	30,000	219,000	219,000	219,000	0	0	0	0	0	0
Carver	101,125	2020	2020	101,125	101,125	0	0	0	0	0	0	0	0	0	0
Dartmouth	115,000	2024	2026	115,000	115,000	115,000	115,000	115,000	115,000	115,000	115,000	0	0	0	0
Middleborough	60,000	2020	2031	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
Nantucket	26,000	2029	2029	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000	0
Taunton	120,120	2019	2020	120,120	120,120	0	0	0	0	0	0	0	0	0	0
Westminster	390,000	2024	2024	390,000	390,000	390,000	390,000	390,000	390,000	0	0	0	0	0	0
Municipal Waste Combustors															
Agawam	131,400			131,400	131,400	131,400	131,400	131,400	131,400	131,400	131,400	131,400	131,400	131,400	131,400
Haverhill	602,250			602,250	602,250	602,250	602,250	602,250	602,250	602,250	602,250	602,250	602,250	602,250	602,250
Millbury	529,575			529,575	529,575	529,575	529,575	529,575	529,575	529,575	529,575	529,575	529,575	529,575	529,575
North Andover	460,500			460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500
Pittsfield	84,000			84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000
Rochester	1,250,000			1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Saugus	460,500			460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500	460,500
	4,360,470	3,518,225													
TOTAL PERMITTED COMBUSTION CAPACITY	3,518,225			3,518,225	3,518,225	3,518,225	3,518,225	3,518,225	3,518,225	3,518,225	3,518,225	3,518,225	3,518,225	3,518,225	3,518,225
ADJUSTED TOTAL COMBUSTION CAPACITY*				3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000
TOTAL PERMITTED CAPACITY				4,360,470	4,024,225	3,964,225	3,934,225	3,934,225	3,934,225	3,544,225	3,544,225	3,544,225	3,544,225	3,544,225	3,518,225
TOTAL POTENTIAL CAPACITY				4,032,245	4,032,245	3,811,000	4,000,000	4,000,000	4,000,000	3,391,000	3,391,000	3,276,000	3,276,000	3,276,000	3,250,000
KEY:															
Permitted Capacity	Number without shading														
Potential Additional Cap.	Number with shading														
ESTIMATED TOTAL POTENTIAL AVAILABLE CAPACITY				4,032,245	4,032,245	3,811,000	4,000,000	4,000,000	4,000,000	3,391,000	3,391,000	3,276,000	3,276,000	3,276,000	3,250,000
100% of potential for LFs and 91 % of potential for combustion															
Actual combustion varies per year, has never reached capacity															
Total Potential Landfill Capacity				842,245	842,245	621,000	810,000	810,000	810,000	201,000	201,000	86,000	86,000	86,000	60,000

Table 9: Waste Management Capacity Projections: 2019-2030													
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Disposal (baseline)	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000	5,660,000
Total Disposal (reduced)	5,660,000	5,501,520	5,347,477	5,197,748	5,052,211	4,910,749	4,773,248	4,639,597	4,509,689	4,383,417	4,260,682	4,141,383	4,025,424
Combustion Capacity	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000	3,190,000
Potential LF Capacity	1,270,000	842,245	842,245	621,000	810,000	810,000	810,000	201,000	201,000	86,000	86,000	86,000	60,000
In-state Disposal Capacity	4,460,000	4,032,245	4,032,245	3,811,000	4,000,000	4,000,000	4,000,000	3,391,000	3,391,000	3,276,000	3,276,000	3,276,000	3,250,000
Net Disposal Export (baseline disposal)	1,190,000	1,627,755	1,627,755	1,849,000	1,660,000	1,660,000	1,660,000	2,269,000	2,269,000	2,384,000	2,384,000	2,384,000	2,410,000
disposal)	1,190,000	1,469,275	1,315,232	1,386,748	1,052,211	910,749	773,248	1,248,597	1,118,689	1,107,417	984,682	865,383	775,424
Assumptions for Annual Percent Change:													
Baseline Disposal Tonnage		0.0%											
Decreased Disposal Tonnage/year		2.8%											
2018 data shows actual figures.													