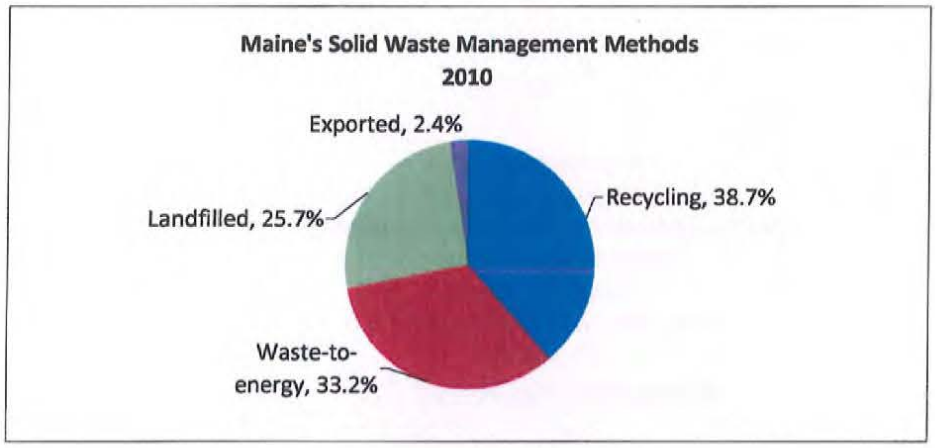
Solid Waste Generation & Disposal Capacity Report

For Calendar Year 2010



Prepared by the Maine State Planning Office

for the

Joint Standing Committee on the

Environment and Natural Resources

of the 125th Legislature

January 2012

Acknowledgements

This report is prepared by the State Planning Office in accordance with 38 MRSA §2124-A.

Calculations are based on data provided by municipalities, commercial recycling brokers, and public and private disposal facilities. We would like to thank the hundreds of municipal officials and private sector waste management and recycling companies who helped with supplying data. Without them, the State Planning Office could not produce this report.

Data from calendar year 2010 are the most current and complete data available for this report.

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Executive Summary

This report is submitted to the Joint Standing Committee on Natural Resources pursuant to 38 MRSA §2124-A. It provides an overview of Maine's municipal solid waste generation, recycling, combustion, and landfill activities for 2010, in order to:

1) determine the impact of these activities on available solid waste disposal capacity,
2) identify planned and consumed capacity at disposal facilities, and
3) project the lifespan of capacity.

The report also determines the state's recycling rate.

The State Planning Office prepares this capacity report annually, which allows policymakers to scrutinize progress and effectiveness of Maine's solid waste policies against the most current numbers and projections.

Key Findings

Municipal solid waste generated in Maine continued to decrease but at less than half the rate of decline of the previous year.

Maine residents and businesses generated less waste for a second consecutive year. Total waste generation decreased by 3% from 1,777,498 tons in 2009 to 1,722,160 tons in 2010.

Municipal solid waste generation is largely tied to a combination of the strength of the economy, our consumption of goods and economic development activities.

Maine recycling tonnage declines but the rate holds steady.

Recycling tonnage declined by 22,466 tons in 2010, reflecting a similar decline in solid waste generation rates, yielding a state recycling rate of 38.7%, slightly down from the 38.8% determined for 2009.

Maine's statewide recycling rate is calculated by dividing the total amount of municipal solid waste recycled (including composting) by the total amount generated. Thus, the rate is driven by the amount of waste recycled and the amount of solid waste produced.

Maine imports of MSW rise slightly to fuel its waste-to-energy facilities.

In 2010, Maine imported 285,276 tons of municipal solid waste that was destined for the four waste-to-energy facilities. This tonnage was slightly above the 284,596 tons imported in 2009 that were delivered to the waste-to-energy facilities, to meet the tonnage requirements needed for their energy contracts.

Maine's disposal facilities have varying remaining useful life spans, but overall, the State has sufficient statewide disposal capacity until 2020.

Maine will need approximately 22.8 million cubic yards of landfill capacity over the next 20 years, at disposal rates experienced in 2010. The State currently has 17.4 million cubic yards of licensed capacity.

As shown in Table 2 in Section IV., Existing Disposal and Processing Capacity, Maine has capacity in the various public-owned landfills and the commercial landfill together to provide for the disposal of the total wastes generated through 2020. However, not all facilities, as currently licensed, will have capacity to accept wastes for disposal through that time period. The closure of Pine Tree Landfill in Hampden, in 2009, resulted in the diverting of Maine generated acceptable solid wastes that historically went to the Pine Tree Landfill to the Juniper Ridge Landfill, located in Old Town.

Maine's disposal capacity supply and demand has had no measurable effect on disposal pricing in 2010.

State law directs the Office to look the impact of disposal capacity on tipping fees with an eye to monitoring collusion or other forms of monopolistic, oppressive practices.

In 2010, the Office found no significant changes in disposal prices being charged in Maine by the public or private sector.

Maine's solid waste industry is diverse and competitive.

The law also asks the Office to analyze the ownership of the collection, recycling, hauling, and disposal sectors of Maine's solid waste industry for undue consolidation and the potential for unfavorable impacts on competition. The Office examines these industry sections to look for conditions that might create either a lack of service or a monopolistic situation.

Maine's solid waste industry is a mix of public and private investments and services that handles the approximately 4,500 tons of materials that are generated each day (including recyclables).

By the Numbers

This section provides an overview of Maine's municipal solid waste (in tons) in 2009 compared to 2010.

Management of Maine's Municipal Solid Waste

Maine in-state generated solid waste	**2009**	**2010**
Total Municipal Solid Waste Generation	1,777,498	1,722,160
Recycled/Reused	687,781	665,315
Combusted	352,633	340,139
Landfilled	693,931	675,790
Exported	43,153	40,916

Recycling in Maine

Maine in-state recyclables	**2009**	**2010**
Municipal/Public Efforts	255,097	234,797
Commercial/Business Efforts	432,684	430,518
Total Tons Recycled	**687,781**	**665,315**
% of MSW Recycled	**38.8%**	**38.7%**

Processing for Combustion at Waste-to-Energy Facilities

Combined in-state and out-of-state tonnage	**2009**	**2010**
Combusted	522,653	509,855
By-pass	36,160	31,866
FEPR	118,864	123,773
Metal	22,285	21,771
Ash	174,900	169,676
Total MSW Delivered to WTE	**874,862**	**856,941**

Disposal Facility Receipts of Out-of-State Generated MSW

Out-of-state wastes (MSW & CDD only)	**2009**	**2010**
MSW – Maine Energy	175,962	185,960
MSW – PERC	92,010	87,338
MSW – ecomaine	16,514	11,869
MSW – Mid Maine Waste Action Corp.	110	111
MSW Landfilled – commercial landfills	0	0
CDD Landfilled – Pine Tree	279,118	0
CDD Landfilled – Crossroads	10,631	0
Total MSW & CDD Imported	**574,345**	**285,278**

Landfill Disposal

Combined in-state MSW and non-special waste processing residues	**2009**	**2010**
Juniper Ridge	365,287	417,342
Municipal Landfills	149,149	118,211
Municipal CDD Landfills	Insufficient data	Insufficient data
2 Commercial Landfills (In 2010, only one remained)	302,019	140,237
Total Landfilled	**816,455**	**675,790**

I. Introduction

Maine law requires the State Planning Office to report annually to the Legislature on the State's recycling rate and disposal capacity needs. The full statutory language appears in Appendix B.

The report includes a projection of the solid waste disposal needs of Maine for the next 3, 5,10, and 20 years. The report also analyzes how the fill rate at each solid waste landfill could affect the expected lifespan of that landfill. In addition, the report assesses supracompetitive pricing and its possible implications as well as a review of consolidation within the solid waste industry sectors.

This capacity report provides policymakers with the information to plan for and make decisions about future capacity investment. Maine law requires that the Legislature be notified with recommendations for developing new disposal capacity when there are six years of capacity remaining. This report provides the basis for those recommendations. The report also assists policymakers with understanding progress toward our waste reduction and recycling goals and its impact on disposal capacity.

Methodology

Data from calendar year 2010 are the most current, complete data available for this report. The data used from this report comes from a variety of sources:

- recycling and waste disposal data submitted by local and regional recycling programs to SPO and Department of Environmental Protection;
- solid waste disposal data from the public and private disposal facilities' annual license reports to DEP; and
- commercial recycling data from industry.

The Office combines the tonnages of waste processed and disposed, as well as that recycled, composted, and reused, to create a reliable estimate of the total municipal solid waste generation in Maine.

To estimate recycling, the Office combines municipal, commercial and private recycling tonnages and adjusts the figures to eliminate duplicate counting of recyclables. The calculation is not a precise measurement. Some data are incomplete, particularly for composting and reuse efforts. The Office estimates that the overall rate is accurate to within two (2) percentage points.

To estimate landfill capacity, the Office accepts landfill capacity estimates from each of the public and private facilities, calculates the amount of waste being disposed at each facility, projects the amount of waste expected to be disposed over time and mathematically calculates the projected life span of each facility and a statewide total.

Lastly, state economic indicators are examined as an alternative to historical data to project future waste amounts. SPO economists found a strong correlation between Maine retail sales and waste generation.

Additional assumptions used in making these projections:

- Recycling tonnages increase as waste generation increases to maintain a 38.7% recycling rate;
- Exported waste remain at their decade median;
- Continued operation of and reliance on the four waste-to-energy facilities, at the existing mix of tonnages (out-of-state waste, processed residues, etc); and
- No significant change in municipally-operated landfills.

Projections and assumptions would change should significant closures or start-ups of waste processing or disposal facilities be seen, major swings occur in market conditions for recyclables, or policy changes to increase public and private recycling are adopted.

This report focuses on municipal solid waste (MSW) as defined by Maine law. MSW comprises household, baggable waste, and construction demolition debris, including such items as furniture, tires, and metal.

The report does include some sludge and ash tonnages considered 'special wastes', since the disposal of those wastes at landfills impacts the disposal capacity remaining at the disposal facility, one of the matrics this Office tracks. Special wastes are generated by other than housholds or typical businesses and, due to their quantity or chemical or physical properties, require particular handling. They include primarily ashes, sludges, and some processing wastes. This report provides details on those special wastes, which are residues of managing municipal solid waste, primarily incinerator ash. Industrial wastes are not included in this report. Industrial wastes are not part of the waste managed by municipalities.

The Report and the State Plan

In addition to this disposal capacity report, the State Planning Office prepares the state waste management and recycling plan every five years. The state plan contains data on capacity needs. The capacity report updates those numbers annually. A key to achieving Maine's statutory waste management goals is having the data available to short-term course corrections (consistent with the state plan) when and where they are indicated by the findings in the capacity report.

II. Municipal Solid Waste Generation

A. Methodology

Municipal Solid Waste

Municipal solid waste (MSW) is waste typically generated by households and businesses and managed by municipalities. It includes household garbage and other waste including recoverable materials such as cardboard, newsprint, office and mixed papers, food waste, plastics, glass, metals, and textiles, appliances, furniture, tires, wood waste, and yard waste as well as construction and demolition debris.

Construction or Demolition Debris (CDD) are the wastes generated by building, remodeling and destruction activities and may include such wastes as wood and wood products, concrete and brick, gypsum board, shingles, and other common components of buildings. Maine includes CDD in its definition of MSW.

Waste Generation Calculation

The State Planning Office uses three pieces of data to determine the statewide generation of municipal solid waste:

1. data provided by municipalities in their annual solid waste reports to the State Planning Office;
2. data provided by public and private disposal facilities in their annual license reports to the Maine Department of Environmental Protection; and
3. data provided by commercial recyclers and end-users in a voluntary survey.

The Office combines the tonnage of waste processed and disposed, as well as that recycled, composted, and reused, to create an estimate of the total municipal solid waste generation in Maine.

B. Statewide Municipal Solid Waste Generation

Maine residents and visitors generated 1,722,160 tons of municipal solid waste in 2010. Waste generation is a function of population growth, lifestyles, economic activity, and manufacturing and production practices. The continued drop in solid waste generation rates reflects the economic downturn that began in 2008.

III. Recycling

A. Statewide Recycling Rate

Maine recycled 38.7% of its municipal solid waste in 2010, down slightly from its 2009 recycling rate of 38.8%.

Recycling Rate Calculation

The statewide recycling rate is calculated by dividing the total amount of MSW recycled (including composting and reuse) by the total amount of MSW generated.

This calculation is not a precise measurement. Some data are incomplete, particularly for composting and reuse efforts. Adjustments are made to eliminate duplicate counting of recyclables. However, the Office estimates that the overall result is accurate to within two (2) percentage points.

Recycling Trends

Figure 1 shows the tons of waste disposed compared to the tons recycled.

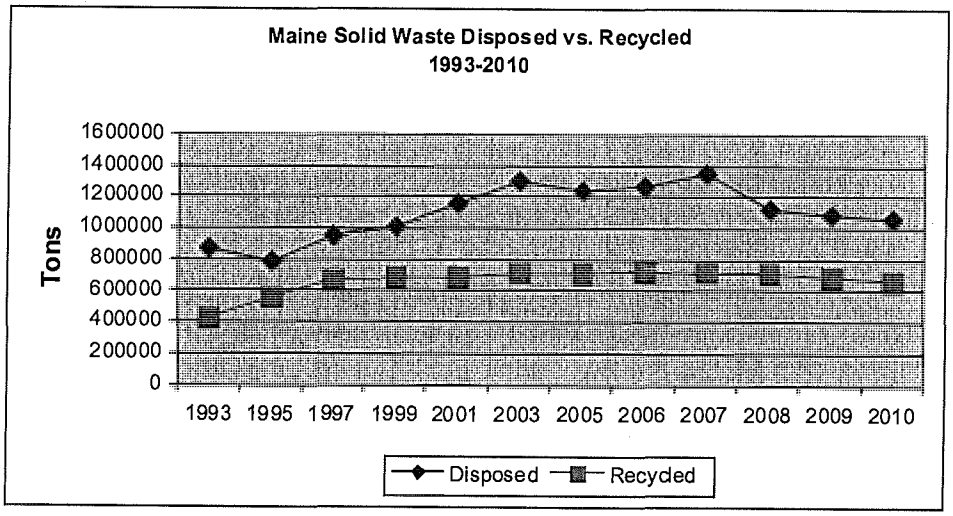

Figure 1: Maine Solid Waste Disposed vs. Recycling, 1993-2010
Source: State Planning Office

Applying the EPA Definition of Municipal Solid Waste

The state recycling rate is also calculated using the U. S. Environmental Protection Agency's definition for MSW. Figure 2 shows the two methodologies for calculating the state's recycling rate. While Maine does not use this definition, it is useful in measuring the rate of CDD generation and recycling and their impact on the recycling rate.

Figure 2: Maine Statewide Recycling Rate - with and without CDD - 2010				
Maine Definition (*CDD included*)			EPA Definition (*CDD not included*)	
MSW (including CDD) generated	1,722,160		MSW w/o CDD generated	1,371,882
MSW with CDD recycled	665,315		MSW w/o CDD recycled	608,416
Recycling Rate	38.7%		Recycling Rate	44.3%

Figure 2: Maine Statewide Recycling Rate, with and without CDD - 2010
Source: State Planning Office

B. Type and Amount of Materials Recycled

Maine recycles a wide variety of materials with the highest tonnages in fiber products and metal. Refer to Table 1 (following) for recyclable categories and tonnages for 2010 and 2009.

TABLE 1 - RECYCLING TOTALS - 2010 and 2009		
Materials:	**2010**	**2009**
high grade paper	17,730	23,762
corrugated cardboard	77,812	79,455
newspaper	7,780	9,402
magazines	893	1,064
mixed paper	7,662	7,548
other paper	14,645	11,328
commingled fibers	5,332	3,495
Total paper	**131,854**	**136,054**
Single Stream	41,254	30,200
Co-mingled containers	3,606	14,367
Totals	**44,860**	**44,567**
clear glass	6,101	7,693
brown glass	10,438	13,335
green glass	4,638	4,813
all other glass	2,374	
Total glass	**23,551**	**25,841**
white goods	93,621	92,886
aluminum	4,420	4,359
tin cans	1,313	1,452
non ferrous	23,674	25,921
other metal scrap	64,164	72,287
Total Metal	**187,192**	**196,905**
HDPE	7,560	8,130
PET	4,382	5463
LDPE film	1,186	1058
Other	2,866	1986
Total Plastic	**15,994**	**16,637**
wood waste	117,234	119,813
leaves	21,210	22,671
food waste	1,658	1,113
Total Organic	**140,102**	**143,597**
tires	27,448	28,490
CDD, other wastes	56,899	67,021
Mercury-added/UW	8,443	3,248
Total Hard to Manage	**92,790**	**98,759**
Textiles/Reuse	**18,282**	**16,026**
Other nonbulky MSW	**10,690**	**9,395**
TOTAL TONS RECYCLED:	**665,315**	**687,781**

C. Progress Toward Achieving State Goals

Maine's Recycling and Waste Reduction Goals

Recycling

In 1989, the Maine Legislature established a goal to recycle 50% of the state's municipal solid waste annually. In 2010, Maine achieved a 41.2% recycling rate. Maine's recycling rate has been fairly steady for five years (see Figure 3).

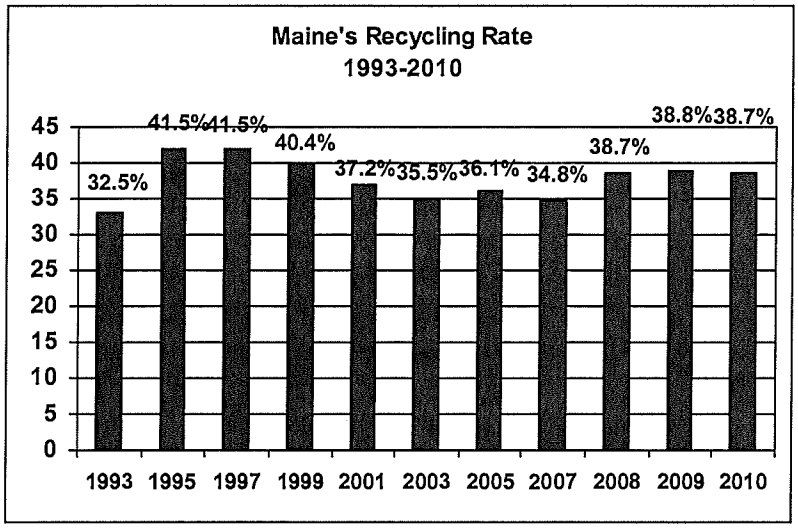

Figure 3: Maine's Recycling Rate, 1993-2010
Source: State Planning Office

While the legislated date to achieve the goal (January 1, 2009) has passed, state efforts remain committed to reaching the 50% goal in light of the value of reducing overall solid waste management costs, the positive impact on the environment, and a lessening of the need for additional solid waste disposal capacity.

Individual municipal and regional recycling programs are not required to achieve a 50% recycling rate; but they are required to demonstrate progress towards the goal.

IV. Existing Disposal and Processing Capacity

In 2010, Maine's solid waste disposal facilities included: one state-owned landfill, one commercial landfill, ten municipally-operated landfills, about 20 municipal construction and demolition debris (CDD) landfills, and four waste-to-energy facilities. Several processing facilities/operations were available for managing construction and demolition debris.

A. Landfills

Landfills receive a variety of wastes. That variety differs among the facilities, depending upon what their licensing approval allows. Included in that variety of wastes is: raw garbage; construction and demolition debris; residues and ash from waste to energy facilities; contaminated soils; sludges; ash from bio-mass operations; and other special wastes. This report focuses on municipal solid waste, including construction and demolition debris, as well as the residues from the processing of those wastes. However, in reviewing landfill capacity, the tonnages of the various cover materials that are utilized and the other special wastes that are accepted by the landfills do consume capacity. For that reason, those wastes and their impact on landfill capacity are included in this report.

The closure of Pine Tree Landfill in Hampden, in 2009, resulted in the diverting of Maine generated acceptable solid wastes that formerly went to the Pine Tree Landfill to the Juniper Ridge Landfill, located in Old Town.

The following chart provides details on each of the landfills, the types and tonnages of materials received at each, and remaining disposal capacity, as reported to the State Planning Office or the Department of Environmental Protection.

TABLE 2 - ACTIVE LANDFILLS, WASTE TYPES, TONNAGES AND REMAINING CAPACITIES - 2010 DATA

	2010 MSW	2010 CDD	2010 Special Wastes	Other		2010 Waste Fill Rate (tons)	2010 Fill Rate - Waste & Cover (tons)	2010 - Cubic yards of capacity consumed (est.)	2010 Remaining Capacity Cubic Yards (est.)	Remaining Life in Years at current fill rate
Bath landfill	8,256	1,432	487	18,300 cy of cover materials		10,175	28,475	38,340	298,800	8
Brunswick	4,178		1	500 cy street sweep; 5,930 cy cover		4,179	10,608	9,322	349,678	20
Greenville [1]	1,824			2289 cyds of cover materials		1,824	4,113	4,113	closing in 2011	1
Hatch Hill	22,752		625	37,470 cyds of cover mat's - Expansion II & III		23,377	60,847	60,847	1,131,814	19
Presque Isle	9,050	1,383	1,036	725 tons of wood ash; 5,000 cyd of cover mat's		12,194	17,194	25,009	280,137	11
Tri-Community	23,294	1,731	1,039	9,377 tons of contaminated soil as cover		26,064	35,441	34,775	1,746,420	50
ecomaine			47,066	excavated 3,912 tons MSW for combustion		47,066		47,066	1,099,817	23
Lewiston	0	828	18,023	(17,740 tons were ash from MMWAC), 4.3 tons of wood fines for cover		18,851	18,855	16,614	1,731,316	40
Crossroads	70,500	69,737	42,742	75,397 tons of ADC. (59,793 tons of ADC and special wastes from Out of State).		208,938	284,335	295,909	3,907,064	13
Juniper Ridge	40,419 [2]	145,488	212,214	125,250 tons FEPR/RDF, 96,520 tons of Bulky Wastes and 88,307 tons of ADC materials		619,891	708,198	547,895	6,565,719	10
Mid Coast Solid Waste Corp.		6,691				6,691	6,691	13,382	62,300	5
Rockland		36,792	932			37,724	37,724	48,000	283,000	6
Total Tons Landfilled:	139,854	264,082	324,165			1,016,974	1,212,481	1,141,272	17,456,065	

[1] - facility closing in 2011

[2] - 31,628 tons used in construction of cell 6

Municipal CDD Disposal Facilities

There are approximately 20 municipal land disposal facilities that accept locally-generated construction and demolition debris, inert fill, brush, and trees. These operations furnish a 'short-transport' option for the disposal of these wastes. Complete data was not available to determine the level of service and tonnages of waste accepted at these facilities for 2010.

The remaining capacity at individual CDD facilities varies, but conversations reflect that landfill space exists for an overall capacity for another 10-12 years. The majority of these facilities are small operations, with an operating area of less than six acres, which serve an immediate area's need for disposal of waste wood, construction or demolition debris, inert fill and similar wastes. These facilities are of local importance, providing a 'nearby' disposal option for these wastes, often at low or no cost.

Finding acceptable alternatives to land disposal for CDD continues to pose problems in Maine's rural areas. These materials cannot be recycled or reused without investment in equipment, labor, and sufficient land area to aggregate and process them. Markets for processed CDD do exist, but given the often small scale that most Maine towns operate on, with low volume and dispersed facilities, rural operations do not often produce the economics needed for sustainable recycling efforts.

B. Waste-To-Energy Facilities

In 2010, 35.4% of Maine's municipal solid waste was sent to a waste-to-energy (WTE) facility. Maine's WTE facilities received a total of 856,941tons of MSW, a decrease of 17,921 tons from 2009. The following tables (Table 3 and Table 4) provide an overview of the four facilities and the management of the wastes delivered.

TABLE 3 - SUMMARY OF MAINE'S FOUR WASTE TO ENERGY FACILITIES - 2010											
YEAR	FACILITY	MUNICIPAL TONS OF WASTE RECEIVED	COMMERCIAL TONS OF WASTE RECEIVED	SPOT MARKET WASTE TONS	OTHER TONS OF WASTE RECEIVED	TOTAL TONS OF WASTES RECEIVED	BYPASS TONS*	FRONT END PROCESS RESIDUE TONS*	METALS RECOVR'D TONS	ASH TONS*	COMBUSTED TONS
2010	Maine Energy	56,852.99	216,657.36		2,419.57	284,718.16	16,684.18	60,791.44	7,126.89	47,942.95	152,172.70
2010	ecomaine	63,442.00	65,988.00	44,853.00	5,181.00	179,464.00	104.00	N/A	2,420.00	47,066.00	129,874.00
2010	Mid ME Waste Action Corp	37,998.08	14,414.35	19,342.22	9,308.54	81,063.19	13,089.76	N/A	1,847.35	17,749.62	48,376.46
2010	PERC	200,221.38	99,774.58	11,699.57		311,695.53	1,988.00	62,982.00	10,377.00	56,917.00	179,431.53
TOTALS		**358,514.45**	**396,834.29**	**75,894.79**	**16,909.11**	**856,940.88**	**31,865.94**	**123,773.44**	**21,771.24**	**169,675.6**	**509,854.69**
						% of total	*3.72%*	*14.44%*	*2.54%*	*19.80%*	*59.50%*

* Definitions for these residue streams are found on page 18

Table 4 (following) shows the breakdown of source of the wastes received by each Waste-To-Energy facility:

Facility		In-state tons	Out of State tons	Total Tons
ecomaine		162,950	16,514	179,464
Maine Energy		98,758	185,960	284,718
Mid Maine Waste Action Corp		80,953	110	81,063
PERC		219,686	92,010	311,696
Totals		***562,347***	***294,594***	***856,941***

Table 4 – Source of MSW for Waste to Energy Facilities

Waste to Energy facilities combust municipal solid waste to generate electricity. That process generates residues that require disposal in a landfill but the volume of waste requiring disposal is greatly reduced, by as much as ninety percent and total weight by two-thirds, reducing the need for landfill capacity, as compared with landfilling of unprocessed municipal solid waste. The four Waste to Energy facilities produce a combined capacity of approximately 62 megawatts of electricity.

To produce the electrical generation contracted for, waste-to-energy facilities need to operate at maximum capacities. The seasonal nature of waste generation causes tonnage overage problems during the summer months and the need to "attract" additional tonnage during the winter months. Facilities bypass waste when they reach their daily operating capacity and import waste to make up for shortfalls.

WTE Residues

The waste-to-energy facilities produce several streams of materials and residues: by-pass waste, front-end process residue (FEPR), and ash. These residues, which require disposal in landfills, comprise approximately one-third of the waste processed by these facilities. The metals are recovered for recycling.

- *Bypass Waste:* Bypass waste is that portion of the municipal solid waste stream intended for delivery to and incineration at a waste-to-energy facility, but diverted because the facility could not accept it. Solid waste is bypassed if there are operational interruptions or facility shutdowns or if the facility reaches its operational capacity and cannot accept waste that it is contractually obligated to receive. The bypass waste is typically delivered to a landfill for disposal. This category also includes waste that cannot be processed by the facility due to size or composition.

- *Front-end Process Residue:* Maine Energy Recovery Company (MERC) and Penobscot Energy Recovery Company (PERC) use a refuse derived fuel technology and generate front-end process residue as a by-product of their operations. These facilities dispose of the front-end process residue at landfills. Front-end process residue (FEPR) is removed prior to incineration, and may include ferrous metals, glass, grit, and fine organic matter. Mid-Maine Waste Action Corporation (MMWAC) and *ecomaine* use a 'mass burn' technology and do not produce FEPR.

- *Waste-to-Energy Facility Ash:* Ash is a by-product of combustion, classified as a special waste, and is landfilled. The ash from MERC and PERC is disposed of at the Juniper Ridge Landfill. The ash from MMWAC is disposed of at the City of Lewiston's landfill and *ecomaine's* ash is buried at the *ecomaine* landfill.

CDD Processors

Maine has two large-scale commercial CDD processors: KTI Biofuels in Lewiston and the CPRC Group in Scarborough.

KTI Biofuels is a stationary operation. It accepts clean wood products and construction or demolition debris for processing for use as biomass fuel. In 2010, it received 198,164 tons of clean wood and CDD, of which 21,435 tons were generated in-state.

CPRC operates from its Scarborough facility, accepting multiple types of materials and shipping out a variety of finished products, as well as offering mobile or 'on-site' services. In 2010, it accepted 29,495 tons of various CDD and other products, of which approximately 24,772 tons were from in-state sources.

There are also several commercial wood chippers that move from site to site and are used to manage brush and clean CDD wood at municipal facilities.

C. Imported/Exported Municipal Solid Waste

Movement of solid waste across state lines is protected under federal interstate commerce laws from state and local restriction, except in the case of a state-owned facility. Municipal solid waste is considered a commodity and is subject to fluctuations accruing to supply and demand at the regional and national level. Refer to Figure 4.

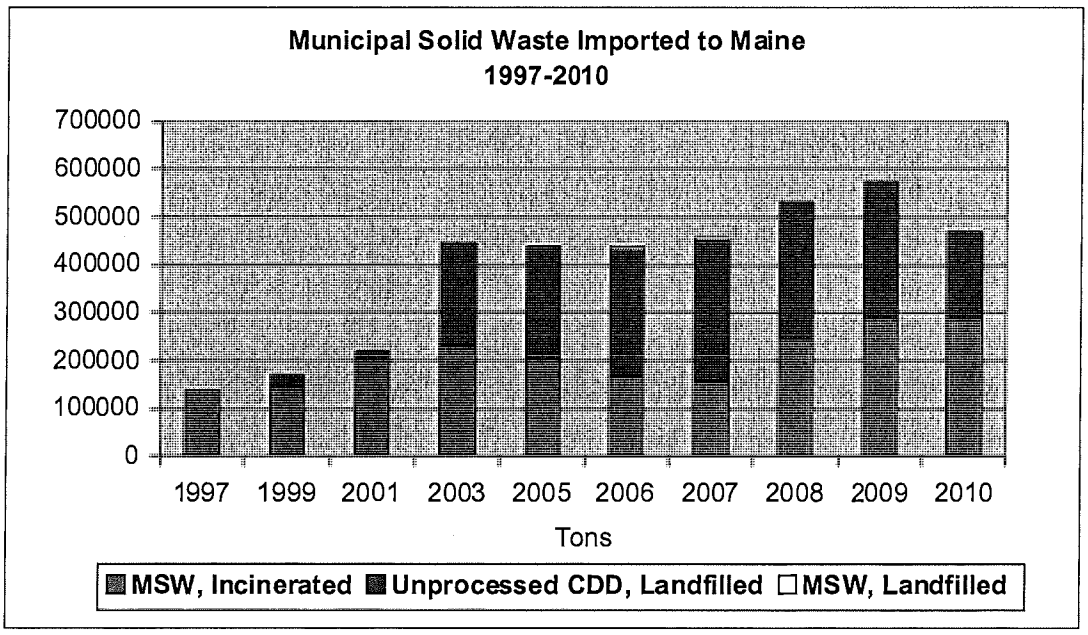

Figure 4: Municipal Solid Waste Imported to Maine, 1997-2010
Source: State Planning Office

In 2010, 467,725 tons of municipal solid wastes, including construction or demolition wastes, were imported to Maine for processing or disposal. This is a decrease from the 574,345 tons of construction or demolition debris and municipal solid waste that were imported to Maine in 2009. Zero tons of MSW were imported for landfilling in 2010. The continued decrease in Maine- generated MSW caused the waste-to-energy facilities to continue their demand for and receipt of out of state generated MSW. Exports of municipal solid waste in 2010 were 40,916 tons, a decrease from 2009 when 43,153 tons were exported for disposal.

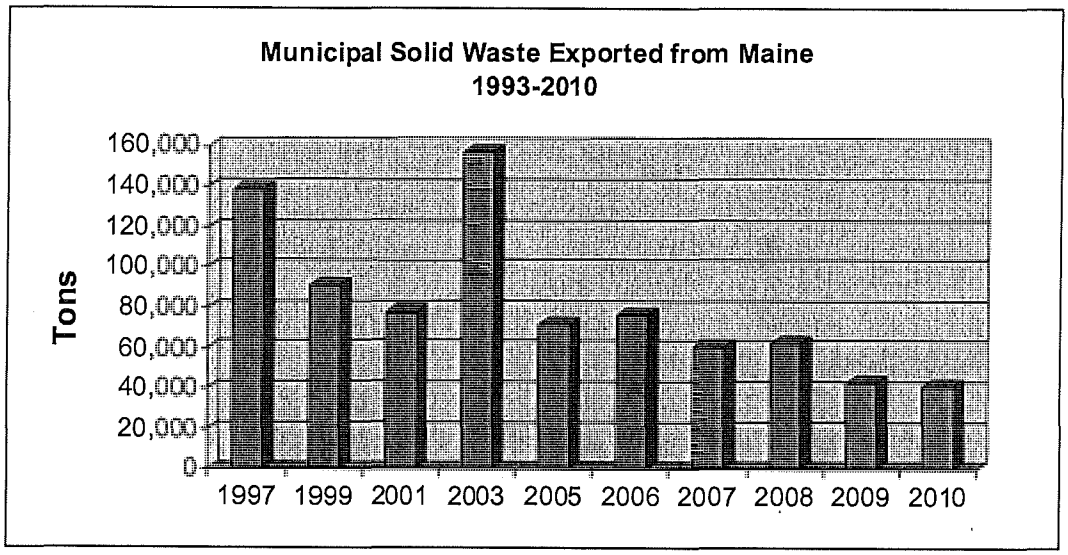

Figure 5: Municipal Solid Waste Exported from Maine
Source: State Planning Office

V. Projected Waste Processing and Disposal Needs and Capacity

Maine will require an estimated 22.6 to 25.7 million cubic yards of landfill capacity over the next 20 years to properly manage the municipal solid waste that is directly landfilled, along with the residues generated by the four waste-to-energy facilities and other processing facilities that also require landfilling of residues. The following table illustrates projections of anticipated disposal capacity in Maine, at current fill rates with no adjustment in projections of tonnages of waste being generated requiring disposal.

Disposal Capacity in Maine[1]

		3 Years	5 Years	10 Years	20 Years
WTE Facility Capacity	2010 Capacity – currently available (tons/year)	2013 Capacity – projected remaining (tons/year)	2015 Capacity – projected remaining (tons/year)	2020 Capacity – projected remaining (tons/year)	2030 Capacity – projected remaining (tons/year)
MMWAC - Auburn	70,000	70,000	70,000	70,000	70,000
ecomaine - Portland	170,000	170,000	170,000	170,000	170,000
Maine Energy - Biddeford	310,000	310,000	310,000	310,000	310,000
PERC - Orrington	304,000	304,000	304,000	304,000[6]	304,000
Total	**854,000**	**854,000**	**854,000**	**854,000**	**854,000**
Landfill Disposal Capacity at current fill rate	2010 Licensed Capacity – end of year (cubic yards)	2013 Licensed Capacity – end of year (cubic yards)	2015 Licensed Capacity – end of year (cubic yards)	2020 Licensed Capacity – end of year (cubic yards)	2030 Licensed Capacity – end of year (cubic yards)
State Landfills (2):					
Carpenter Ridge – T 2 R 8	Undeveloped	Undeveloped	Undeveloped	Undeveloped	Undeveloped
Juniper Ridge – Old Town	6,565,719	4,060,719	2,390,719	0	0
Juniper Ridge – Old Town (expansion being sought)	Unlicensed	Unlicensed	Unlicensed	Unlicensed	Unlicensed
Municipal Disposal Sites (10)					
8 - Municipal wastefills	3,806,409	3,289,191	2,944,379	2,082,349	1,220,319
2 - Municipal – 'ash'	2,831,133	2,640,093	2,512,733	2,194,333	1,875,933
Commercial landfills (2)					
Crossroads - Norridgewock	3,907,064	3,019,337	2,427,519	947,974	0
Pine Tree - Hampden	0	0	0	0	0
Total	17,110,325	13,009,340	10,275,350	4,276,682	3,096,252

Source: State Planning Office

[1] This table projects the continued operation of the four waste-to-energy facilities.

Factors that can impact Capacity Projections

There are a number of factors that will influence the Office's projections, some known, some unknown.

Changes in Policy, Law or Regulation

Landfilling is the least desirable option under the Maine solid waste management hierarchy. As policy, all other solid waste management options should be considered and exercised to the greatest extent possible prior to landfilling of wastes, and thus the hierarchy can affect fill rates generally. Any changes to the hierarchy or to any of the laws and regulations governing the faciltities or the waste streams they manage, such as disposal bans and or mandatory recycling or enforcement of the hierarchy, have the potential to effect capacity projections.

Economy and Demographics

Traditionally, the Office has based its projections on historical waste generation rate trends. We now look at other ways to project generation. SPO economists found a strong positive correlation between waste generation and retail sales.

The Office recognizes its assumptions will vary from actual generation. It is possible that actual increases will be softened or eliminated by improved recycling and waste reduction efforts, or an uncertain economy. However, given the long time frame for the development of disposal capacity, SPO strives to maintain a conservative approach in order to anticipate that time lag, and reduce the possibility of a capacity shortage crisis.

Authority and Control

Although in its annual capacity assessment SPO counts the available capacity at all landfills, commercial, state owned and public, *this is an assumption*, as the *actual rate at which Maine landfills accept waste is under the control of their individual owners.* Landfills receive different amounts of waste from year to year based on the varying levels of residential and business activity occuring within their wasteshed. Economic conditions, the level of competition from other facilities, management decisions, and methods can reduce or accelerate the rate of consumption.

Compaction Rates

Landfills attempt to achieve a one-to-one ratio of compaction where one ton of waste received consumes one cubic yard of disposal space. Not all waste streams allow for this compaction to occur, and not all landfills can attain this rate, however.

Settling Rates

Landfills settle over time due to decomposition of organic materials, influenced by on compaction rates and the types of materials received. Over time, consumed capacity may again be available for future use due to settling.

Improvements in Landfill Technology

There are ongoing improvements to the efficiency in operations of all landfills across the state in such areas as leachate and gas management, compaction, slope ratios and the engineering of slopes, and the application of different types and systems of daily and intermediate cover. All of these affect the ratio between the amount of wastes received and the consumption of cubic yardsof landfill space.

Current Issues Which Could Affect Capacity Needs

Recycling

Recycling will continue to divert significant tonnages from disposal. If the recycling efforts can be increased, and the expected overall waste generation rates remain as predicted, the required disposal capacity to handle the state's solid wastes will be reduced. Indeed, an active recycling program that achieves the State's 50% recycling goal could reduce Maine's landfill capacity needs by 25% over the next 20 years.

Expansions and Closures

The disposal capacity available at landfills, either current or projected, reflect past planning efforts of local government, commercial investments and state policy implementation. In looking ahead at future capacity needs, the Department of Environmental Protection, through its 'Public Benefit Determination' process, will continue to monitor needed capacity and approve additional capacity when it believes warranted and justified.

The 2009 closure of Pine Tree Landfill has impacted Maine's current solid waste management system, in that approximately 125,000 to 150,000 tons of *in-state* generated special wastes and construction and demolition debris waste that were annually disposed of at that landfill are being diverted to the Juniper Ridge Landfill.

Out-of-state Waste

The waste-to-energy facilities that currently take out of state wastes will continue to rely upon that source to fulfill their boiler needs and power contracts. However, at least one facility is planning for changes to its operation before the end of the decade, which could have an impact on both demand for out of state waste and the disposal associated with its processing.

VI. Disposal Prices

A. Disposal Fees

Disposal expenses comprise collecting, transporting, and tipping waste. Disposal fees or tipping fees are a key driver of municipal disposal costs. Current disposal fees range from $40 to $135[2] per ton at Maine's landfills and waste-to-energy facilities and have stabilized, allowing predictability for municipal budgeting and long-term planning.

Tipping fees at the four waste-to-energy facilities are fairly consistent and reflect the commitment of the municipalities who either own the facility or have long-term contracts for disposal services.

The State, in its operating agreement with Casella Waste Systems, established a ceiling for tipping fees that sets an upper limit on how much can be charged for wastes delivered to the Juniper Ridge Landfill. It is anticipated that this will act as a check on pricing for the disposal of similar materials at other solid waste facilities.

Energy Revenues

Tipping fees at waste-to-energy facilities are influenced by revenues received from the sale of the electricity they generate. The revenues reduce the facility's operating expenses, yielding a reduction in the tip fee charged for solid waste. Should electricity sales revenue drop, tipping fees may increase. Conversely, should the electricity sales value increase, the possibility exists that lower tipping fees, or maintaining current fees, would occur.

B. Supracompetitive Prices

Supracompetitive, as applied to '*prices,*' means prices that are higher than they would be in a normally functioning, competitive market, usually as a result of overconcentration, collusion, or some form of monopolistic, oppressive practice. State law requires the State Planning Office to determine whether changes in available landfill capacity have generated, or have the potential to generate, supracompetitive prices and make recommendations for legislative or regulatory changes as necessary.

Disposal capacity at Maine landfills is sufficient to meet current needs. At the time of this report, the disposal capacity situation does not appear to have generated supracompetitive disposal fees, because disposal prices have not experienced any significant changes for the last three years.

The Office maintains a firm awareness of its responsibility to stay attuned to the possibility of supracompetitive pricing.

[2] This does not reflect spot market prices.

VII. Analysis of Consolidation within the Solid Waste Industry

The law also asks the Office to analyze the ownership of the collection, recycling, hauling, and disposal sectors of Maine's solid waste industry for undue consolidation and the potential for unfavorable impacts on competition. The Office examines these industry sections to look for conditions that might create either a lack of service or a monopolistic situation.

Maine's solid waste industry is a mix of public and private investments and services that handles 5,000 tons of materials each day (including recyclables). We believe that Maine's interrelated system of collection, recycling, hauling, and disposal currently serves Maine's solid waste management needs fairly and effectively.

Disposal Facilities

During 2010, there was no change in ownership or operation of the disposal facilities, whether waste-to-energy facilities or landfills.

Collection Services

During 2010, the Office found no substantial change in the ownership or operation of the many collection companies servicing residents, businesses, and municipalities. In several areas of the state renewed competion for accounts and increased levels of service appeared, offering additional or new possible service options. Several companies began to offer single stream or expanded materials acceptable for recycling, for example, and to compete for municipal recyclables by establishing or expanding their own recycling operations..

Recycling Services

During 2010, increased awareness of the 'single sort', 'single stream', 'Zero Sort ®', recycling collection service continued. This service permits residents to place all of their recyclables into a single container for collection. From this single container the recyclables are collected, delivered to a processing facility, and sorted there and then marketed. *ecomaine*, located in Portland, established a single sort recycling program in 2007 and has actively worked to expand municipal participation in that program since. Their 21 municipal 'owner members' are either participating or modifying their current recycling programs to permit their residents to receive the single sort option. Additional communities, either as associate members or contract communities, participate in the program as well.

FCR Goodman, a division of Casella Waste Systems, expanded the number of municipalities they provide with their 'Zero Sort ®' recycling opportunities. The collected

recyclables are consolidated and shipped to the company's processing facilities in Charlestown, Massachusetts.

Hauling Services

In 2010, there was no substantial change in either the number of companies providing waste hauling services nor in the number of facilities requiring these trucking services. The majority of municipally operated transfer stations use private haulers while a few continue to use their own hauling equipment and staff.

Appendices

A. Legislative Reference

Title 38: WATERS AND NAVIGATION
Chapter 24: SOLID WASTE MANAGEMENT AND RECYCLING
Subchapter 2: SOLID WASTE PLANNING

§2124-A. Solid waste generation and disposal capacity report

By January 1, 2008 and annually thereafter, the office shall submit a report to the joint standing committee of the Legislature having jurisdiction over natural resources matters, the Governor and the department setting forth information on statewide generation of solid waste, statewide recycling rates and available disposal capacity for solid waste.

The report submitted under this section must include an analysis of how changes in available disposal capacity have affected or are likely to affect disposal prices. When the office determines that a decline in available landfill capacity has generated or has the potential to generate supracompetitive prices, the office shall include this finding in its report and shall include recommendations for legislative or regulatory changes as necessary.

Beginning on January 1, 2009 and every odd-numbered year thereafter, the report submitted under this section must include an analysis of how the rate of fill at each solid waste landfill has affected the expected lifespan of that solid waste landfill. The January 2009 report must also include an analysis of the solid waste disposal needs of the State as of January 1, 2009 for the next 3, 5 and 10 years.

Beginning on January 1, 2010 and every even-numbered year thereafter, the report submitted under this section must include an analysis of consolidation of ownership in the disposal, collection, recycling and hauling of solid waste.

The joint standing committee of the Legislature having jurisdiction over solid waste matters may report out legislation related to the report submitted pursuant to this section.