Solid Waste Generation & Disposal Capacity Report

For Calendar Year 2007

Prepared by the Maine State Planning Office

for the

Joint Standing Committee on Natural Resources of the 124th Legislature

January 2009

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 for their help with supplying data. Without them, the State Planning Office could not produce this report.

Data from calendar year 2007 are the most current, complete data available for this report.

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Executive Summary

Solid waste generation in Maine increased from 2006 to 2007, from 1,989,266 tons to 2,066,448 tons. Recycling efforts of both public and private programs continued but were unable to maintain the 2006 recycling rate of 36.2 percent, with it slipping to 34.8 percent, due to the increase in the tonnage of waste generated. The state has unused, permitted disposal capacity that will meet Mainers' needs until at least 2015, with potentially permittable capacity for another 15 to 20 years beyond that.

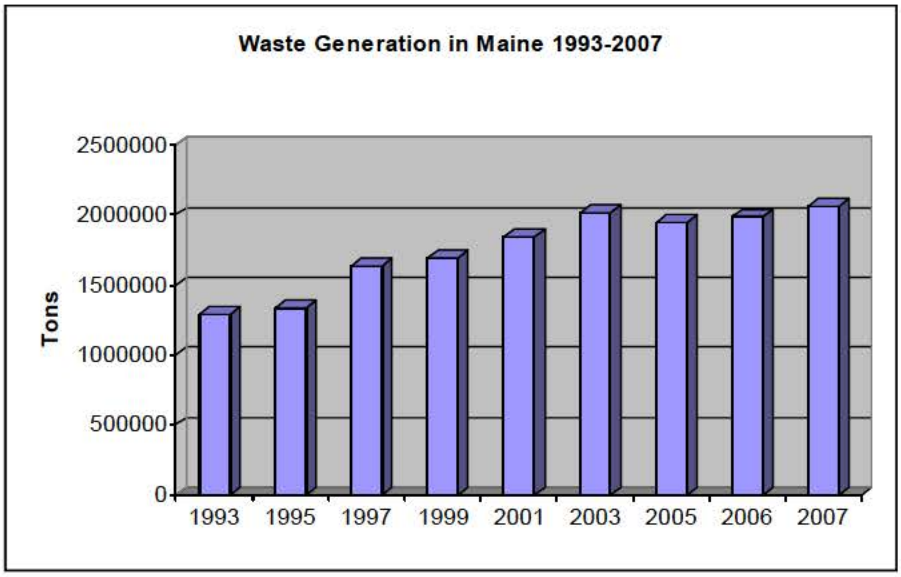
This report provides an overview of Maine's municipal solid waste generation, recycling, combustion, and landfill activities for 2007, in order to:

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 assesses progress towards achieving the state's 50% recycling goal.

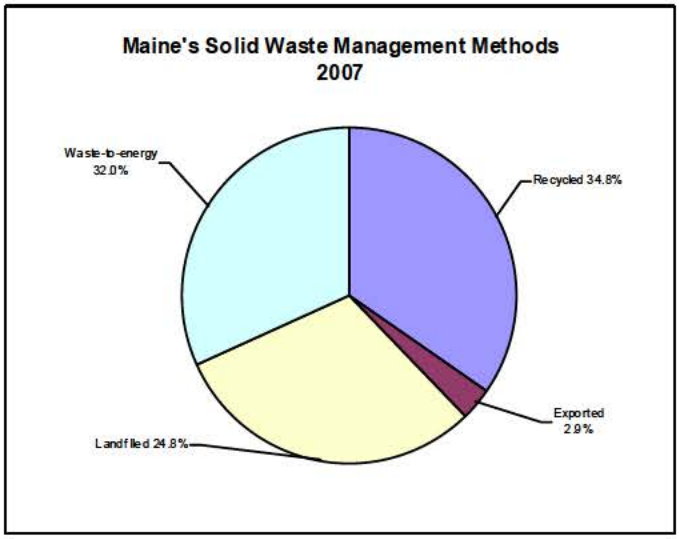
KEY FINDING: Municipal Solid Waste generated in Maine increased.

Residents and businesses in Maine generated 2,066,448 tons of waste in 2007, a three (3) percent increase over waste generation experienced in 2006. This increase varies from recent year's solid waste generation, where it has been fairly stable.



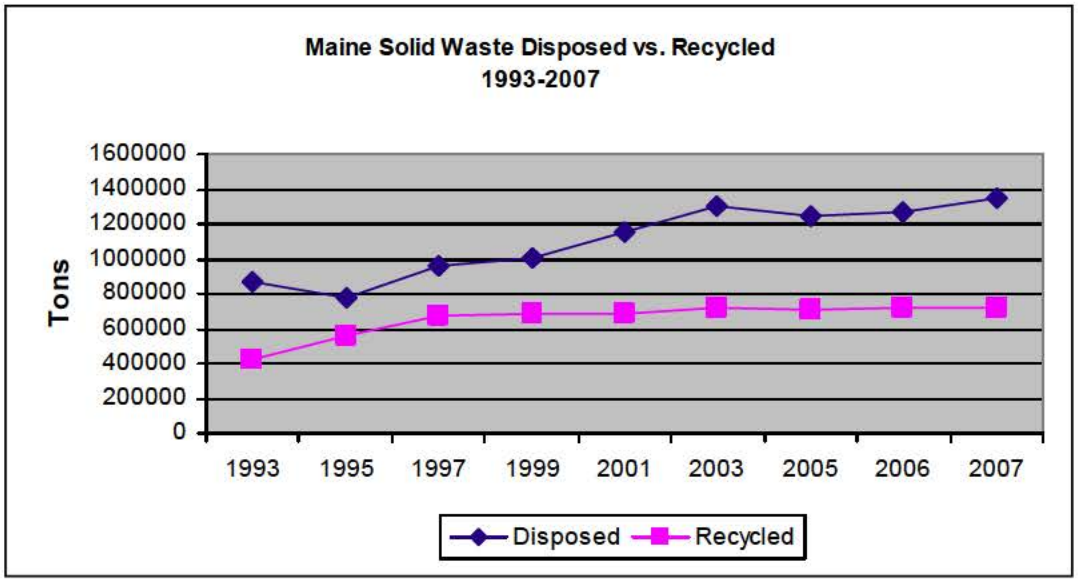
KEY FINDING: Management of municipal solid waste.

32% of Maine's total municipal solid waste tonnage was delivered to the four waste-to-energy facilities, recycling managed 34.8%, and both activities reduced the volume of waste requiring landfilling. The tonnage of raw municipal solid waste being directly landfilled was 24.8% of the total, (total tonnage landfilled, including processing residues, was 30.3%) and 2.9% of the state's municipal solid waste was exported.



KEY FINDING: Mainers' continue to recycle more each year, but recycling has not kept pace with the growth in the amount of waste we generate.

Maine has had a 13-year trend of growth in both solid waste generated and recycling efforts, though that has flattened in the past few years. However, in 2007, solid waste generation increased 3% from 2006, which when coupled with a slight decrease in recycled tonnage, depressed the state's recycling rate from 36.2% to 34.8%.



By

the Numbers (tons)

Municipal Solid Waste Management in Maine

	2006	2007
Waste Generation - Total	1,989,266	2,066,448
Recycled/Reused	720,410	718,613
Combusted	504,078	503,226
Landfilled	688,798	879,731*
Exported	75,980	60,491
Imported	437,037	456,580

*****(includes bypass and residues from waste to energy facilities)

Recycling in Maine

	2006	2007
Municipal/Public Efforts	227,767	201,358
Commercial/Business Efforts	492,643	517,643
Total Tons Recycled	**720,410**	**718,613**
% of MSW Recycled	**36.2%**	**34.8%**

Processing for Combustion at Waste-to-Energy Facilities

	2006	2007
Delivered MSW tonnage	867,606	826,292
By-pass	36,183	27,014
FEPR	122,512	110,016
Metal	22,044	22,032
Combusted	504,078	503,226
Ash	169,000	164,003

Out-of-state Generated Municipal Solid Waste

	2006	2007
MSW – Maine Energy	136,472	117,320
MSW – PERC	29,323	37,148
MSW Landfilled – commercial landfills	7,547	8,576
CDD Landfilled – Pine Tree	259,310	290,493
CDD Landfilled – Crossroads	4,385	3,043
Total Imported	**437,037**	**456,580**

Landfill Disposal (Instate Generated Municipal Solid Waste & Residues from Processing Municipal Solid Waste)

	2006	2007
Juniper Ridge	290,435	309,950
9 Municipal Landfills	124,615	142,143
Municipal CDD Landfills	27,446	(est.) 28,000
2 Commercial Landfills	246,302	399,638
Total Landfilled	**688,798**	**879,731**

*Disposal Capacity in Maine**

W-T-E Facility Capacity	2007 Capacity – currently available (tons/year)	2010 Capacity – projected remaining (tons/year)	2012 Capacity – projected remaining (tons/year)	2017 Capacity – projected remaining (tons/year)	2027 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	304,000
Total	**854,000**	**854,000**	**854,000**	**854,000**	**854,000**
Landfill, Disposal Capacity	2007 Licensed Capacity – end of year (cubic yards)	2010 Licensed Capacity – end of year (cubic yards)	2012 Licensed Capacity – end of year (cubic yards)	2017 Licensed Capacity – end of year (cubic yards)	2027 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	8,462,000	6,200,000	4,100,000	0	0
Juniper Ridge – Old Town (expansion)	Unlicensed	Unlicensed	Unlicensed	20,500,000	8,100,000
Municipal Landfills (9)					
7 - Municipal landfills	2,416,700	1,900,000	1,600,000	2,500,000	1,200,000
2 - Municipal - ash	1,184,450	1,000,000	880,000	580,000	0
Commercial landfills (2)					
Crossroads - Norridgewock	3,900,000	2,500,000	1,850,000	160,000	0
Pine Tree - Hampden	1,000,000	0	0	0	0
Total	**16,963,153**	**11,600,000**	**8,430,000**	**23,740,000**	**9,300,000**

* This table does presume continued operation of the four waste-to-energy facilities. It does include planned expansions of the Presque Isle, Tri-Community and Juniper Ridge Landfills but the permitted capacity may vary from these projections, since that new capacity is dependent upon receiving the necessary environmental approvals.

I. Introduction

Maine law requires the State Planning Office to report annually to the Legislature on the state's recycling rate and the available and projected disposal capacity and how that capacity affects disposal prices. The full statutory language appears in Appendix A.

To accomplish this, the State Planning Office calculates the volume and tonnage of waste generated by Mainers, the amount of recycling, and how and where waste is disposed. It compares the disposal capacity needed with the available capacity, taking into account planned, new capacity and consumed, lost capacity. It also identifies the impact that recycling has on capacity and identifies potential recycling and disposal capacity issues for specific regions around the state. Additionally, the report provides insight on how disposal capacity impacts disposal fees.

How policymakers can use this report

The capacity report provides policymakers with the information needed 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 is six years of capacity remaining. In addition to the currently operating state-owned landfill known as Juniper Ridge, located in Old Town, the state also owns a permitted, 'greenfield' site known as Carpenter Ridge in Township T2 R8. This report provides the basis for recommendations for developing new landfill capacity when needed.

The report also assists policymakers with understanding the progress toward our waste reduction and recycling goals and their impact on disposal capacity.

Planning for solid waste management

This report provides an analysis of disposal capacity. The data contained within this report is used to support the development of the state's five-year *Waste Management & Recycling Plan*. The plan takes a broader view of waste management activities in Maine including analyzing how we manage waste, offering policy perspectives on solid waste management, and presenting scenarios on possible options for future management needs.

About this report

The State Planning Office updates this report each year in order to provide the most current data and information to policymakers, which, in turn, will help them respond more quickly to changing waste management needs for Maine citizens.

The report includes an analysis of the solid waste disposal needs of the State for the next 3, 5,10, and 20 years. The report also analyzes how the fill rate at each solid waste

landfill has affected the expected lifespan of that landfill, as required by statute. In addition, the report assesses supracompetitive pricing and its possible implications.

Data for the calculations in this report are provided by municipalities, commercial recycling brokers, and public and private disposal facilities. Supporting information was also used from the soon to be released '*Recycling Economic Information Study*', completed through the Northeast Recycling Council for five northeastern states, with Maine being one of those states. Data from calendar year 2007 are the most current, complete data available for this report.

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

Though this report focuses on municipal solid waste, it does include some sludge and ash tonnages considered 'special wastes.' Special wastes are generated by other than typical housholds or businesses and due to their quantity or chemical or physical properties require particular handling. They include primarily ashes, sludges, and industrial process wastes. These wastes are landfilled at facilities specifically designed and licensed for their disposal. This report looks at only those special wastes which are residues of managing municipal solid waste, primarily incinerator ash. In projecting the remaining disposal capacity at the state owned landfill, all of the waste streams being delivered are considered.

Industrial wastes are also not included in this report. Industrial wastes are not part of the waste managed by municipalities. These wastes are typically managed by the generator and disposed at generator-owned facilities or out-of-state.

Appendix B provides definitions for terms and acronyms used in this report.

II. Municipal Solid Waste Generation

The amount of municipal solid waste (MSW) generated by Mainers is the starting point for the calculations and projections in this report. It provides the basis for determining the statewide recycling rate as well as all the projections that follow.

A. Methodology

Municipal Solid Waste

This report considers only municipal solid waste and its residues (primarily ash from waste-to-energy facilities). MSW is waste typically generated by households and businesses and managed by municipalities. It includes household garbage and other non-bulky waste (corrugated cardboard, newsprint, office and mixed papers, food waste, plastics, glass, metals, and textiles) as well as bulky waste (construction and demolition debris, appliances, furniture, tires, wood waste, and yard waste).

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 which is recycled, composted, and reused, to create a reliable estimate of waste generation in Maine.

B. Statewide Municipal Solid Waste Generation

Maine residents and visitors generated 2,066,448 tons of municipal solid waste in 2007, up from 1,989,266 tons in 2006. Waste generation is a function of population growth, lifestyles, economic activity, and manufacturing and production practices.

As shown in Figure 1, over the recent past, waste generation growth had leveled. In 2007, though, the total waste generated grew by 77,182 tons, a 3% increase. This increase can be attributed to the amount of unprocessed wastes delivered to landfills.

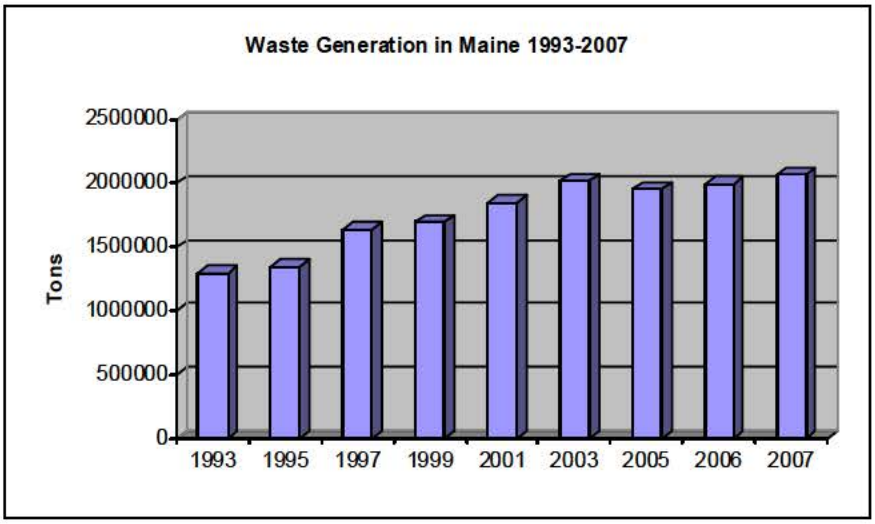


Figure 1: Maine Waste Generation, 1993-2007
Source: State Planning Office

C. Per Person Waste Generation

Municipal waste generation, when calculated on a 'per person' basis, shows that each Maine resident generates approximately 3,200 pounds of MSW a year, or about 8.8 pounds of waste per person per day.[1] Maine's per person generation is higher than the 2007 national average of 4.6 pounds per person reported by the U.S. Environmental Protection Agency.

One obvious reason why Maine's per person number is higher than the national average is that Maine includes both bulky waste and construction and demolition debris (CDD) in its definition of MSW, which the U.S. EPA does not. If we exclude CDD from our numbers, the Maine per-person rate drops to about 7.5 pounds per day. The bulky waste fraction of the municipal solid waste stream is not tracked by all handling or receiving facilities so the extent of bulky waste remaining in the MSW is unknown.

Anther explanation for the higher weight per person is the high success in capturing commercially generated solid waste tonnages, as well as the additional impact of visitors on solid waste generation.

Note: in the State of New Hampshire, their 'per person' solid waste generation calculation for 2007 was 6.9 pounds. Conversations with their agency staff yield similar conclusions about the actual composition of waste and tracking of its generation.

[1] Based on an estimated 2007 Maine population of 1,315,398

III. Recycling

The Maine Legislature set a 50% recycling goal for the state.

A. Statewide Recycling Rate

Recycling Rate Calculation

The recycling rate is derived by using recycling data in conjunction with disposal and generation data according to the following formula:

$$\text{Recycling Rate} = \frac{\text{(MSW recycled)}}{\text{(MSW generated)}} * 100$$

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

Maine recycled 34.8% of its municipal solid waste in 2007, a decrease from the 2006 recycling rate of 36.2 %, due to the increase in overall waste generated coupled with a slight decrease in tons of material recycled.

Approximately thirty percent of Maine's reported recyclables are handled by municipal recycling programs. The balance of recycling efforts statewide is the result of business-generated recyclables, handled by private sector waste management companies.

The rapid rise in recycling rates during the first half of the 1990s was due to a concentrated effort by private sector, local public programs, and the state acting in partnership, with recycling having not only a priority statutory identity, but state level presence and support. During this time, the state invested $12.5 million in local grants for recycling collection and processing equipment, provided for statewide public education, and conducted hundreds of training workshops for local officials. Since that time, state funding has not been available and local programs compete with other municipal services for their share of property tax dollars.

However, at the same time, there has been an upward trend in municipal solid waste being generated. Figure 2 shows the tons of waste disposed compared to the tons recycled. The growth in waste generation prevents the recycling rate from increasing despite greater tonnages being recycled.

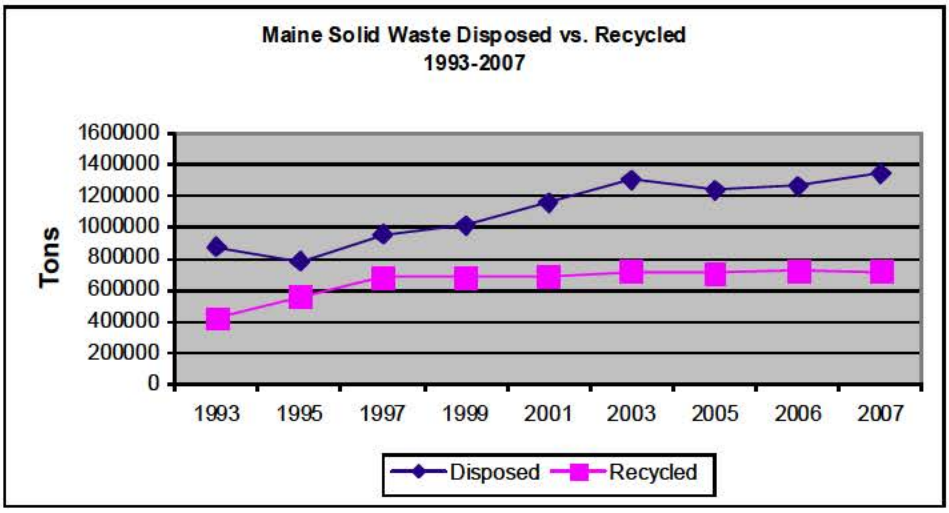


Figure 2: Maine Solid Waste Disposed vs. Recycling, 1993-2007
Source: State Planning Office

Two overarching reasons why recycling rates have not kept pace with increases in solid waste generation:

- First, recycling has not advanced aggressively into other components of the waste stream that are growing, such as organics management (through composting) and construction and demolition debris;
- Secondly, even though markets for traditional recycling commodities have grown throughout the first half of this decade, many municipal programs have not been able to adjust their programs to increase recycling efforts.

EPA Definition of Municipal Solid Waste

The state recycling rate is also calculated using the U. S. Environmental Protection Agency's definition for MSW, which is primarily 'baggable waste'. Determining the 2007 statewide recycling rate with EPA's definition, Maine's statewide recycling rate becomes 39.6%. Table A shows the two methodologies for calculating the state's recycling rate and Figure 3 shows a comparative trend line.

Table A: Maine Statewide Recycling with and without CDD - 2007				
Maine Definition (*CDD included*)			EPA Definition (*CDD not included*)	
MSW with CDD generated	2,066,448		MSW w/o CDD generated	1,748,958
MSW with CDD recycled	718,613		MSW w/o CDD recycled	692,987
Recycling Rate	34.8%*		Recycling Rate	39.6%*

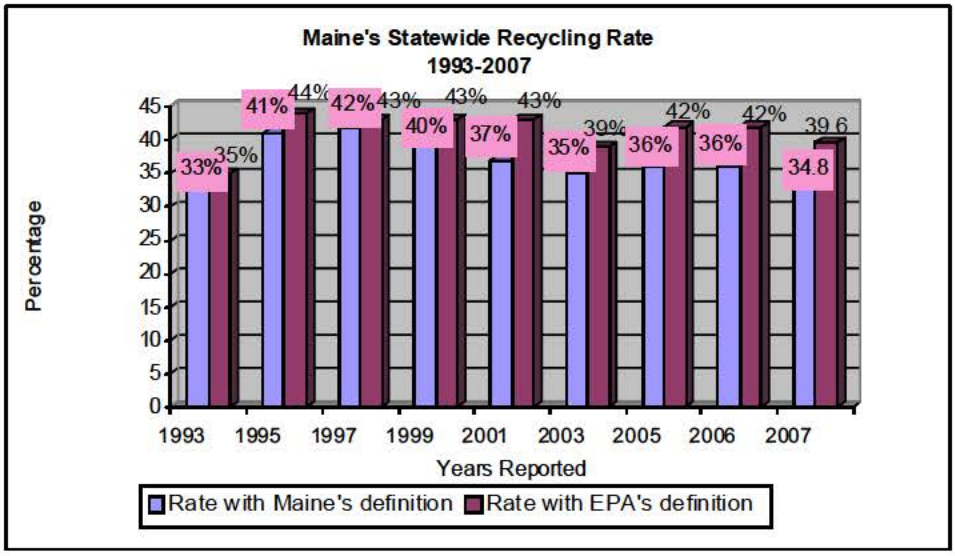


Figure 3: State Recycling Rate with and without CDD included
Source: State Planning Office

B. Type and Amount of Materials Recycled

Maine recycles a wide variety of materials with the biggest recovery rates in glass, metal, and paper. See Appendix C for a table depicting recyclable categories and tonnages from 1997 to 2007.

C. Municipal Recycling Programs

Maine cities and towns by law are responsible for providing for municipal solid waste disposal. As a result, Maine municipalities have designed and implemented various solid waste management facilities over the years, including the construction and operation of approximately 240 transfer stations, over 300 public recycling programs, and over 70 composting facilities.

Individual municipalities and regions are not required to achieve a 50% recycling rate; but they are required to demonstrate progress towards the goal. Recycling progress varies from community to community, but overall, programs removed 201,358 tons from the state's waste stream that would otherwise need disposal.

D. Progress Toward Achieving State Goals

MSW Management and the Hierarchy

Maine's solid waste policy is to plan for and implement an integrated solid waste program based on a management hierarchy. The hierarchy guides public decisions regarding investments in, and the permitting of, solid waste management facilities. 38 MRSA §2101, establishes the management priorities within the hierarchy in priority order as follows:

1. *Reduction, including both the amount and toxicity of waste;*
2. *Reuse (use of a product in same form as the original use);*
3. *Recycling (reprocessing of waste and creation of a new, usable material);*
4. *Composting of biodegradable waste;*
5. *Volume Reduction (waste processing that reduces the volume of waste requiring disposal, including incineration for-energy recovery); and*
6. *Land disposal.*

Maine's Recycling and Waste Reduction Goals

In 1989, the Maine Legislature established a goal to recycle 50% of the state's municipal solid waste annually. The legislated date to achieve the goal is January 1, 2009. The 2007 state recycling rate is 34.8%, fifteen percentage points short of the goal. The state remains committed to reaching the 50% goal in light of its value on reducing overall solid waste management costs, the positive impact on the environment, and a lessening of the need for additional solid waste disposal facilities.

The state waste reduction goal challenges Mainers to reduce waste generation by 5% every two years. As waste generation continues to climb in Maine, we have not achieved this goal. However, we are seeing a modest trend in waste reduction from decreases in the weight of consumer goods, for example when products get smaller, are made of more lightweight materials, or use lighter weight packaging.

Achieving our Recycling Goal and Beyond

There are a number of efforts on the horizon to help Maine reach its 50% recycling goal, including organics recovery and composting, improved collection efforts, and a revitalized statewide public awareness campaign.

Perhaps the most significant has been the move to adopt ‘single stream’ or ‘single sort’ recycling collection strategies, which has been implemented in the Greater Portland area as well as in approximately a dozen other communities. ‘Single stream’ or ‘single sort’ simply means collecting co-mingled recyclables and sorting them at a central processing facility. This collection method makes it easier for residents to recycle, reduces collection time, labor and transportation costs while increasing the volumes of materials collected.

As successful as these programs may be, nevertheless, these improvements require significant capital investment, which can be challenging to achieve at the current time.

In 2005, a state policy review task force called for Maine to move beyond a 50% recycling goal. Recycling is increasingly critical as a foundation for sustainable production. We need to maximize use of waste and minimize its consumption of landfill capacity. It’s time to view waste, not as a disposable, but as a resource.

IV. Existing and Planned Processing and Disposal Capacity

In 2007, Maine's solid waste disposal facilities included: one state-owned landfill, two commercial landfills, nine municipally-operated landfills, an estimated 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.

Assumption: Capacity figures provided for the state-owned landfill assume that operations achieve a ratio of 1.0 tons of waste per cubic yard of landfill space. At the commercial landfills, the assumption is that operations also achieve a one-to-one ratio of tons-to-cubic yards in landfill compaction.

A. Landfills

Landfills receive a variety of wastes, and that variety differs among the facilities, depending upon what their approval allows for acceptable wastes. Included in that variety of wastes are: 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, but in reviewing landfill capacity, the tonnages of the other special wastes that are accepted by the landfills do consume capacity, and for that reason, those wastes and their impact on landfill capacity is included in this report.

State-owned Landfill[2]

In 2007, the state-owned landfill in Old Town, known as Juniper Ridge, received a total of 472,600 tons of in-state generated waste, of which 151,073 tons were municipal solid waste and CDD and another 158,877 tons were residues from processing or incineration of MSW. The balance of the waste buried at the landfill included various types of sludges, contaminated soils and approved wastes from other in-state commercial and industrial generators (non-msw wastes).

[2] In addition to the Juniper Ridge Landfill, the State Planning Office owns 1500 acres of land in T2 R8 (near Lincoln), upon which a special waste landfill was permitted in the mid 1990s. Known as Carpenter Ridge, it has a landfill design for about two million cubic yards of waste. It was acquired by the former Maine Waste Management Agency and has been held by the state for disposal capacity when it is needed.

Assessment of Facility

Available disposal capacity remaining at Juniper Ridge at the end of 2007 was approximately 8,462,000 cubic yards, which translates into space for approximately 7.15 million tons of solid waste. At projected fill rates[3], the present licensed capacity should provide 11 - 12 years of disposal capacity for the state. Starting in 2009/2010, however, with the closure of the Pine Tree Landfill and the initiation of processing at the planned construction/demolition processing facility in Westbrook (as permitted by Casella Waste Systems, Inc.) an expected additional 300,000 tons of wastes will be delivered to the Juniper Ridge Landfill for disposal. With the addition of these wastes, the consumption of the space at the landfill is expected to change, from approximately one ton of waste per cubic yard of space to 0.8 tons of waste per cubic yard. This change impacts the planned life of the landfill, leaving approximately 9 -10 years of remaining capacity, as of the end of 2007.

In late 2006, the State Planning Office proposed an expansion at Juniper Ridge to provide an additional 22.5 million cubic yards of disposal capacity. As of the date of this report, the application for the expansion has not been submitted to the Maine Department of Environmental Protection. We expect this approval process to take at least 3 to 4 years. If approved as proposed, the expansion would provide an additional 18-20 years of capacity extending the life of Juniper Ridge to at least 2035.

Commercial Landfills

Maine has two commercial landfills grandfathered under the 1989 Solid Waste Management Act that banned the development of new commercial disposal facilities. Having the commercial landfills has provided competition and disposal options for municipal solid waste, construction and demolition debris, and special wastes. The two commercial landfills are:

- Crossroads Landfill, located in Norridgewock, owned by Waste Management, Inc.
- Pine Tree Landfill, located in Hampden, owned by Casella Waste Services, Inc.

The Crossroads Landfill is permitted to take special waste, municipal solid waste, and construction and demolition debris. It provides recycling and disposal services on a contract basis for municipalities and businesses. It currently serves 30+ Maine communities in Western Maine. In 2007, the landfill accepted 336,854 tons of solid waste. Of that tonnage, 182,525 tons were Maine generated municipal solid waste and CDD and 19,922 tons of residues from the processing of MSW. The balance of wastes included Maine generated special wastes (59,974 tons), and CDD and special wastes generated outside of Maine (74,433 tons).

[3] The State Planning Office projects that wastes delivered to Juniper Ridge will average 550,000 tons per year, but will increase to 850,000 tons per year starting in 2010, with wastes diverted from the planned closure of the Pine Tree Landfill in 2009, and from additional residues and wastes generated from CDD processing operations within the state.

The Pine Tree Landfill is permitted to take special waste, by-pass municipal solid waste, and construction and demolition debris. In 2007, the Pine Tree Landfill accepted 557,793 tons of solid waste. Of that tonnage, 39,058 tons were Maine generated municipal solid waste, CDD and 158,133 tons of residues from its processing. The balance of wastes included Maine generated special wastes (35,971 tons) and MSW by-pass, CDD and special wastes generated outside of Maine (324,631 tons). Through an agreement reached among the Town of Hampden, Maine Department of Environmental Protection and the landfill's owner, the landfill will cease accepting solid waste by the end of December 2009.

Assessment of Facilities

The total disposal capacity currently licensed at these two commercial landfills is approximately 5.0 million cubic yards. The majority of this capacity is at the Crossroads Landfill, with an estimated 3.9 million cubic yards of capacity remaining at the end of 2007. Table B shows estimated remaining disposal capacity at the commercial landfills.

Table B: Capacity at Maine's Commercial Landfills – end of 2007

	2007 Fill Rate (tons)	Remaining Capacity (Cubic Yards)	Remaining Capacity (tons)	Estimate in years of life remaining based on 2007 fill rates
Crossroads Landfill	336,854	3,900,000	3,900,000	10-12 years
Pine Tree Landfill	557,793	1,000,000	970,000	< 2 years
Total	894,647	4,900,000	4,870,000	

Municipally Operated Landfills

In 2007, 107,248 tons of solid wastes and 59,100 tons of ash were disposed at nine municipally-operated landfills. Table C provides information on each individual landfill, including fill rates and estimated available remaining capacity.

Table C: Municipal Landfill Tonnages – 2007				
	2007 Fill Rate (tons)	**Remaining Capacity Cubic Yards (est.)**	**Remaining Capacity (tons)**	**Years of life remaining based on 2007 fill rates at .65 tons/yard[4]**
MSW Landfills:				
Bath	23,552	422,000	274,300	11 years
Brunswick	4,850	140,000	91,400	19 years
Greenville	600	56,000	36,500	60 years
Hatch Hill (Augusta)	25,961	937,000	609,000	20 years
Presque Isle*	20,140	149,900	85,800	4 years
Tri-Community (Fort Fairfield)*	31,145	703,800	457,500	18 years
CFWF (West Forks)	1000 (est.)	8,000	5,000	<1 year
Total Tons:	**107,248[5]**			
Total Remaining Capacity (est.)		**2,416,700**	**1,559,500**	
	2007 Fill Rate (tons)	**Remaining Capacity Cubic Yards (est.)**	**Remaining Capacity (tons)**	**Years of life remaining based on 2007 fill rates at 1 ton/yard**
Ash Landfills:				
ecomaine	40,320	915,700	915,700	20-30 years
Lewiston	18,780	268,750	268,750	12 years
Total Tons:	**59,100**			
Total Remaining Capacity (est.)		**1,184,450**	**1,184,450**	

* *Both the Presque Isle and Tri-Community landfills are currently seeking additional disposal capacity that would provide up to 50 years additional capacity at each facility.*

Assessment of Facilities

Among the seven municipally-operated MSW landfills, there is approximately 2.4 million cubic yards of remaining available capacity that can accept approximately 1.56 million tons of municipal solid waste. This capacity is sufficient to carry those communities for 10 to 14 years (on average), with growth in solid waste of 4 percent a year.

The actual remaining life varies for each landfill, resulting in 'unevenness' of municipal capacity across the state. This variation, as to when a particular community or region may exhaust their current disposal capacity, is independent and possibly irrespective of

[4] Different ton-cubic yard conversion rates are used for different facilities. Household, baggable waste at municipal landfills typically converts at 0.65 tons per cubic yard. Ash is heavier than municipal solid waste, so SPO uses a 1:1 conversion rate with one ton equalling one cubic yard. Commercial landfills, with heavier equipment for compaction and more varied waste streams, also typically achieve a 1:1 conversion rate.

[5] 83,043 tons were municipal solid waste or construction demolition debris. The balance was other wastes, including special wastes.

any possible statewide disposal capacity concern, but will be of significant concern to those regions (see Section V.B on Regional Disposal Issues).

Bath and Brunswick are two of the state's oldest secure landfills. Brunswick serves only its own residents and a portion of its businesses. Both communities adopt programs to extend the life of their landfills, such as 'pay-as-you-throw' (PAYT) and single stream recycling collection. The Hatch Hill Landfill in Augusta serves eight communities and was recently expanded. A study on expanding recycling options within these communities was just released.

Together, the Presque Isle and Tri-Community (Fort Fairfield) landfills serve nearly 50 communities in Aroostook County. Both are currently seeking expansions that will provide capacity to serve those communities for upwards of fifty years.

The Caratunk, Forks, and West Forks landfill was closed in 2008, ending that facility's use.

As part of an arrangement with the Mid Maine Waste Action Corporation, the City of Lewiston brings its waste to the MMWAC incinerator in Auburn. MMWAC, in exchange, disposes its incinerator ash at the Lewiston landfill. In addition, the Lewiston Landfill accepts CDD and other wastes.

Municipal CDD Disposal Facilities

There are approximately 20 municipal disposal facilities that accept locally-generated construction and demolition debris**,** inert fill, brush, and trees. Local facilities furnish a 'short-transport' option for the management of these wastes. An estimated 28,000 tons of materials were buried at these sites during 2007; in 2006, these facilities accepted 27,466 tons. Typically, scales are not available at these facilities so a conversion factor of 400 pounds per cubic yard of delivered waste has been used to estimate tonnage.

Assessment of Facilities

The remaining capacity at individual CDD facilities varies, but numbers indicate that landfill space exists for an overall capacity for another 10-12 years. A number of these facilities will be full before then, creating 'pockets' where CDD disposal options will need to be reconsidered. Four of the facilities have an estimated six years or less of capacity at current fill rates and licensed footprints. One site, Marion Township in Washington County, is currently exploring developing a replacement disposal site.

CDD disposal capacity and management continue to be problematic. These materials are unacceptable at waste-to-energy facilities and cannot be recycled or reused without investment in equipment, labor, and sufficient land area to aggregate and process them. Markets for processed CDD and bulky wastes do exist but, on the small scale that most Maine towns operate, are limited. Communities' low volume and dispersed facilities do not often produce the economics needed for sustainable recycling markets.

Maine has several commercial CDD processors, KTI Biofuels in Lewiston; Commcercial Paving and Recycling (CPRC) in Scarborough; Plan-it Recycling in Gorham. KTI is a fixed operation. It accepts only clean wood products (from in-state and out-of-state) for processing for use as biomass fuel. CPRC used to provide mobile services but now operates strictly from its Scarborough facility, hauling in material and shipping out the finished product. Plan-It Recycling also operates from a fixed location. Casella Waste Systems has permitted a CDD processing operation that would accept up to one thousand tons of CDD per day in Westbrook and anticipates building that facility in 2009. There are also several commercial wood chippers that move from site to site to manage smaller brush piles. Additional commercial CDD processing capacity may be permitted in Maine in 2007-8, which would provide an outlet for Maine-generated CDD.

B. Waste-To-Energy Facilities

In 2007, 32% of Maine's municipal solid waste was sent to a waste-to-energy (W-T-E) facility. Maine's W-T-E facilities received 826,291, tons of MSW, a decrease of 867,606 tons of MSW in 2006, as shown in Figure 7. Of this 2007 tonnage, 671,823 tons were generated in-state and 154,468 tons were imported, both a decrease from 2006 tonnages. Table D shows the processing capacity of the four waste-to-energy facilities:

Table D: Maine W-T-E Capacity

Waste-To-Energy Facility	Annual processing capacity (tons/year)	Tonnage received in 2007
ecomaine	170,000	157,637
Maine Energy (ME)	310,000	280,210
Mid Maine Waste Action Corporation (MMWAC)	70,000	92,696
Penobscot Energy Recovery Corporation (PERC)	304,000	295,749
Total of W-T-E Facilities	854,000	826,292

The facilities provide both a product from combustion as well as a reduction of the MSW tonnage requiring disposal, thus reducing the need for landfill capacity. They produce a combined capacity of approximately 62 megawatts a day of electricity and reduce the volume of waste requiring landfilling by about two-thirds.

The four waste-to-energy facilities, while combusting MSW and producing electrical power, also produce several streams of materials and residues: by-pass waste, front-end process residue, and ash. These residues, which require disposal in landfills, comprise approximately one-third of the waste processed by these facilities (Figure 4).

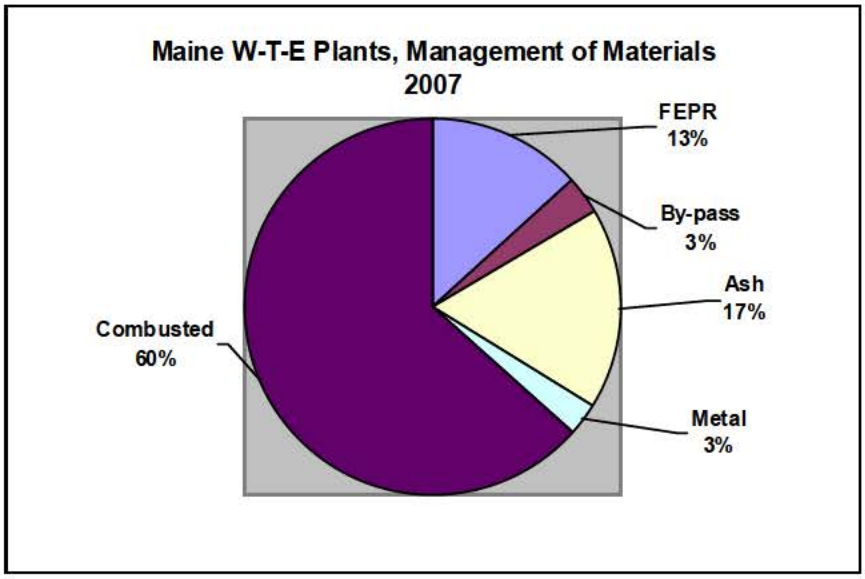


Figure 4: Maine W-T-E Plants, Management of Materials
Source: Facility Annual Reports, State Planning Office

By-pass Waste

By-pass 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 'by-passed' if there are operational interruptions or facility shut-downs or if the facility reaches its operational capacity and cannot accept waste that it is contractually-obligated to receive. The by-pass waste is typically delivered to a landfill for disposal.

Front-end Process Residue

Front-end process residue (FEPR) is removed prior to incineration, and may include ferrous metals, glass, grit, and fine organic matter. While metals are recycled, most FEPR is landfilled. In the past, FEPR was used in conjunction with landfill closure programs, but this is no longer a viable outlet. The FEPR waste stream has a strong, negative impact on landfill capacity, since alternatives to landfilling it do not readily exist. While some composting of FEPR has been done, the resulting product typically contains contaminants that restrict its use to limited landfill cover applications only.

Maine Energy (ME) 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. 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 incineration, is classified as a special waste, and is landfilled. The ash from ME and PERC was buried at the commercial landfills and Juniper Ridge. The ash from MMWAC was buried at the City of Lewiston's landfill and e*comaine's ash* was buried at their landfill.

Assessment of Facilities

Three of these facilities are at their 20th year of operation. The plants' maintenance programs, along with upgrades, have kept these facilities functioning well, and should continue to do so for the foreseeable future. Facility upgrades occur in response to environmental regulations, primarily aimed at air emissions reductions. All of the Maine W-T-E facilities perform at or better than their license requirements.

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.

C. Imported/Exported Municipal Solid Waste

Movement of solid waste across state lines is protected under interstate commerce laws. Municipal solid waste is considered a commodity and is subject to fluctuations accruing to supply and demand at the regional and national level.

In 2007, 456,580 tons of municipal solid wastes were imported to Maine, while exports totaled 60,491 tons. The amount of MSW imported to Maine is relatively stabile. Exports of waste to New Hampshire and New Brunswick landfills fluctuates but appears to be declining, as shown in Figures 5 and 6.

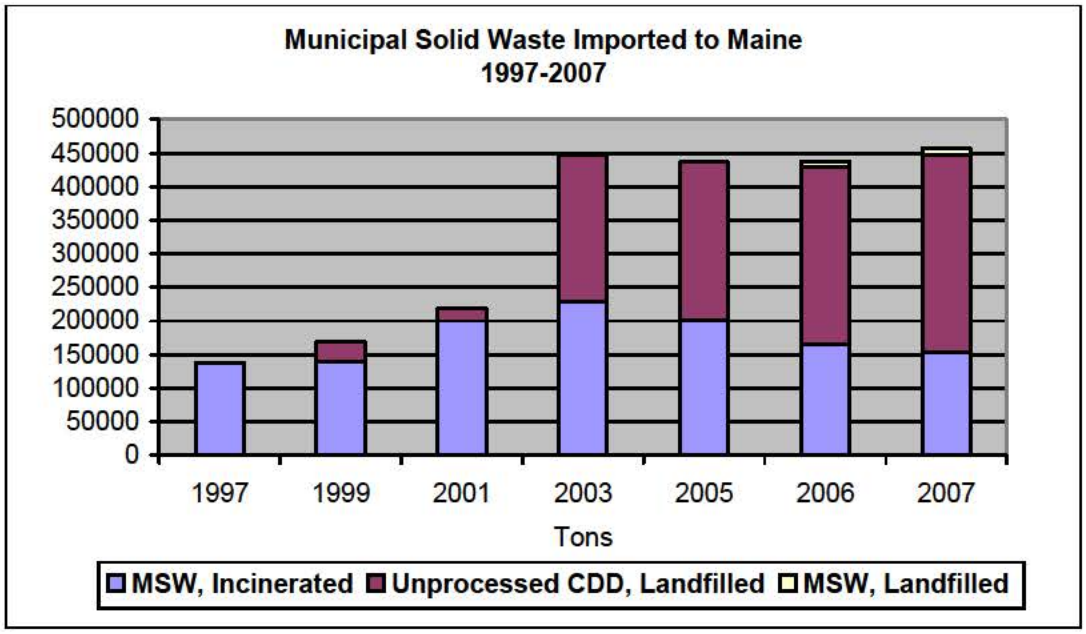


Figure 5: Municipal Solid Waste Imported to Maine, 1997-2007
Source: State Planning Office

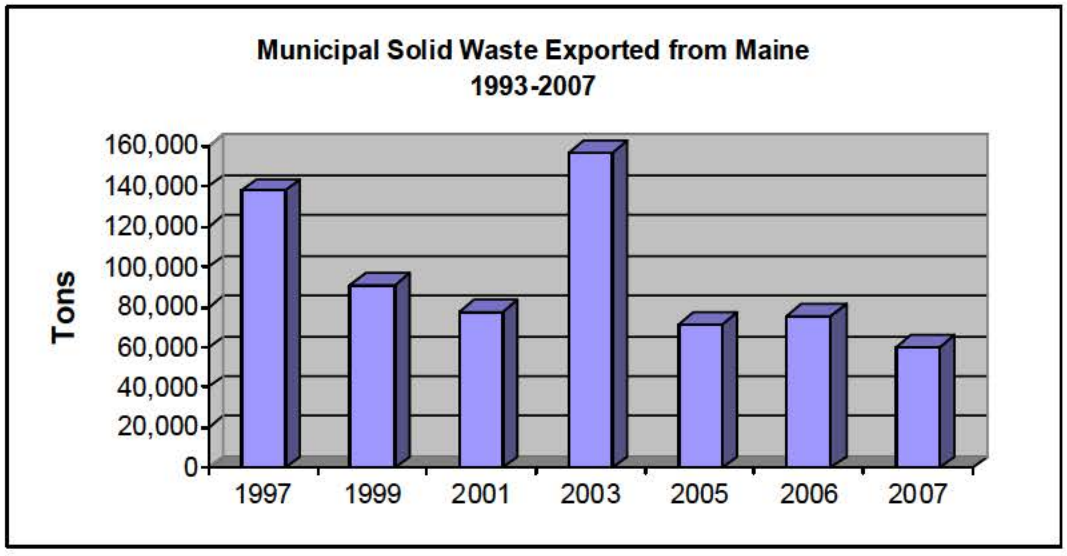


Figure 6: Municipal Solid Waste Exported from Maine
Source: State Planning Office

D. Recycling Capacity

Maine has recycled over 700,000 tons per year during recent years; approximately a third of which is handled by municipal recycling programs. There are approximately 300 local recycling programs relying upon about 145 processing operations, with a dozen of those being major municipal recycling processing centers.

Recycling consists of two operations: collection and processing. Collection can be done by the municipality or a private hauler by curbside pick-up or self-transported by residents to a collection center. Small collection centers provide short-term storage with some minimal processing (i.e. crushing glass) to reduce volumes. From there materials are moved to processing centers or sometimes, depending on the material, directly to end users.

Processing centers consist of building capacity to house storage and processing operations, equipment such as paper and plastic balers, glass crushers, and forklifts, and office space. They process material to meet market specifications and amass sufficient quantities to move directly to markets.

Assessment of Facilities

Today, Maine recycling operations have the ability to process current tonnages, as well as modest increases.

There have been significant, recent (within the last five years) improvements in processing capacity in the following regional programs: Bangor, Pittsfield, Skowhegan, Rockland, Camden, Coastal Recycling, and Lincoln County. In 2007, *ecomaine,* Maine's largest recycling region serving its 21- owner-municipalities in Cumberland County*,* completed a $3.8 million upgrade to its materials recovery facility in Portland and is offering processing of 'single sort' recycling collection services to expand its recycling efforts. Similarly, FCR Goodman Recycling, through Pine Tree Waste services, offers 'single stream' recycling collection services to many of its municipal clients, and transports the comingled recyclables to a processing facility in Massachusetts.

The State Planning Office recently conducted extensive interviews with regional recycling managers and operators around the state and concluded that there is capacity to process an additional 20,000 tons of recycled materials with the existing infrastructure. Almost all of Maine's municipal recycling physical plant was put in place in 1990-93 and is approaching 20 years of use.

V. Projected Waste Processing and Disposal Needs and Capacity

Based on our projections, Maine will require approximately 34 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. Over this same time, we project there will be 39 million cubic yards of capacity. Maine has sufficient capacity to meet its needs for the next 20 years.

A. Statewide Disposal Capacity

Capacity Needed

Disposal capacity is a factor of need versus availability. Maine generated just over two million tons of waste in 2007. Assuming a 4% annual increase, we will generate over 4.6 million tons in 2027. With a 34.8% recycling rate, 1.6 million tons per year will be recycled, 0.86 million tons will be sent to a W-T-E facility, and leaving 2.4 million tons will require landfilling.[5] That landfilled waste includes unprocessed solid waste, residues from waste to energy facilities and processing operations, and special wastes such as ash.

By 2027, total tons needing disposal are projected to increase to 3 million tons. Of that, 2.4 million tons, or over 2.5 million cubic yards of wastes, will need to be landfilled per year. Figure 7 shows Maine's projected capacity needs over the next 20 years.

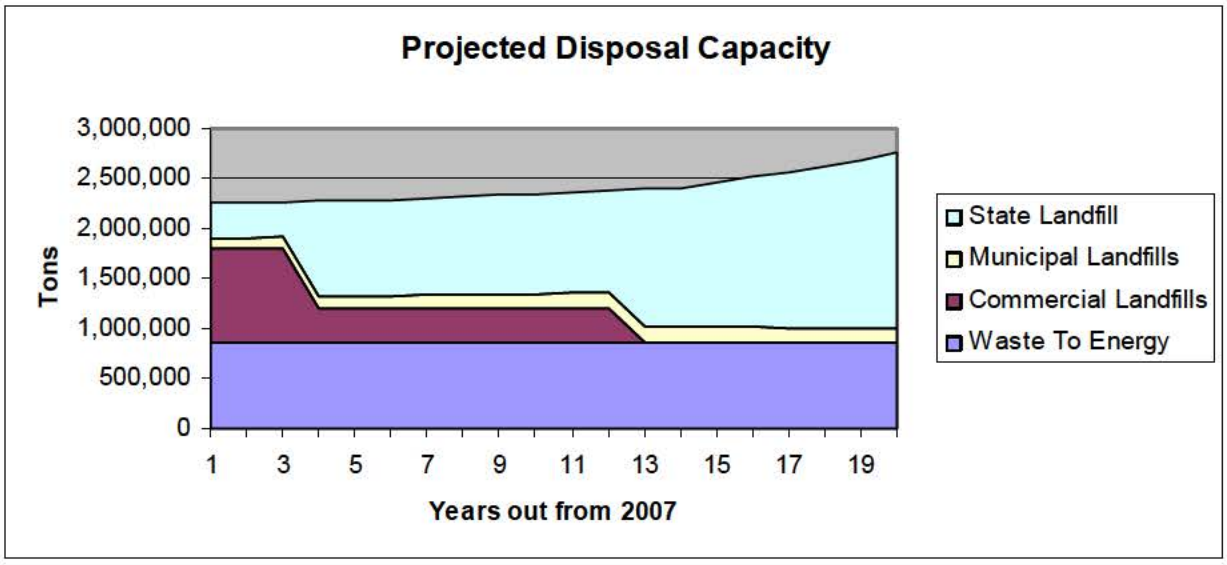


Figure 7: Maine Projected Capacity Needs in Tons, 2007 – 2027
Source: State Planning Office

[5] Including out-of-state waste

Specifically, this report is to address projected disposal capacity needs at four points in time: 3 years, 5 years, 10 years, and 20 years out from the date of this report. In projecting those needs, we presume recycling efforts are unchanged from today and that activities and demands reflect the projected changes described before. With those caveats, it is estimated that: in 3 years the disposal capacity needed will be 1.5 million cubic yards; in 5 years, the disposal capacity needed will be 1.7 million cubic yards; and in 10 years, the disposal capacity needed will be 2 million cubic yards.

To handle this projected tonnage over the next 20 years, Maine will need approximately 34 million cubic yards of landfill capacity, based on the following assumptions:

- continued growth in MSW generation at 4% per year (with no waste reduction assumptions built in and recycling at 34.8%). This four percent increase is conservative and it is possible that actual increases may be softened or eliminated by improved recycling and waste reduction efforts, or an uncertain economy. However, given that development of disposal capacity is not a quick or easy process, having adequate capacity anticipates that time lag and reduces the possibility of a shortage of capacity.
- recycling tonnages increase as waste generation increases to maintain a 34.8% recycling rate[6]
- imports decrease as capacity at W-T-E facilities is replaced by Maine MSW as generation increases and landfills close
- exports remain at 2007 levels

Projected Capacity Available

The projection of solid waste disposal capacity is based on these parameters:

- continued operation of and reliance upon the four W-T-E facilities
- no significant change in municipally-operated landfills
- closing Pine Tree Landfill
- Crossroads Landfill ceasing operations around 2017
- a license amendment and expansion permit for Juniper Ridge is approved
- additional capacity is approved for the Presque Isle and Tri-Community landfills

Currently, we estimate that Maine has about 17 million cubic yards of disposal capacity for municipal solid waste and the residues from processing operations and waste to energy facilities, as follows:

- 2.4 million cubic yards in municipal landfills (1.9 million tons)
- 1.2 million cubic yards in municipal landfills (1.2 million tons of ash)
- 0.85 million cubic yards in municipal CDD landfills (170,000 tons)
- 4.9 million cubic yards in commercial disposal facilities (4.7 million tons)
- 8.5 million cubic yards in Juniper Ridge Landfill (7.4 million tons)

[6] Note that even to maintain a 34% recycling rate will require that Maine increase the tons recycled from 700,000 to 1.4 million tons over the next 20 years.

The amount of available disposal capacity will be affected by both increases and decreases in capacity as follows:

Projected Consumed Capacity

The planned closure of Pine Tree Landfill in 2009 will have an impact on Maine's current solid waste management system, in that approximately 150,000 tons of *in-state* generated special wastes and construction and demolition debris waste that was annually disposed of at that landfill will be diverted to the Juniper Ridge Landfill. In addition, the residues from the processing of construction/demolition debris at Casella Waste System's planned processing facility in Westbrook will also be directed to Juniper Ridge, an additional 150,000 to 200,000 tons expected. The planned closure responds to state policy adopted in 1989 that sought to restrict additional private sector development of disposal capacity.

Projected Planned Capacity

The State Planning Office is seeking an additional 22.5 million cubic yards (18 million tons with a compaction rate of 0.8 tons per cubic yard of landfill space) of disposal capacity at the state-owned Juniper Ridge Landfill. The effort to permit the proposed capacity expansion at Juniper Ridge is currently underway and is planned to be submitted to the Department of Environmental Protection in early 2009. That review is expected to take several years and if approved and permitted will provide disposal capacity to the state for an additional 15 to 20 years beyond its current life.

Additionally, the Presque Isle and Tri-Community landfills are seeking approvals to expand their disposal capacity to extend their useful lives for up to another fifty years.

Impact of Recycling on Disposal

Recycling will continue to divert significant tonnages from disposal. The State Planning Office estimates that over 20 years, recycling will divert 20 million tons (cumulatively) from disposal at today's recycling rate of 34.8%. 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 waste will be reduced.

Out-of-state Waste

The types and amount of out-of-state waste will likely shift in response to changes in Maine's waste generation and management systems.

The waste-to-energy facilities that currently take out-of-state waste will continue to rely upon it to fulfill their boiler needs and power contracts. However, the State Planning Office anticipates that as Maine-generated solid waste tonnages needing disposal increase, waste-to-energy facilities' need for imported municipal solid waste will decrease. The state's remaining commercial landfill (after 2009) may continue to accept unprocessed CDD from out-of-state.

For purposes of this report, we estimate a 4% annual reduction in MSW imported and decreases in unprocessed CDD to a nominal amount by 2015, or an estimated 4 million cubic yards (cumulative) over 20 years.

Biomass Fuel

This report does not address processed green wood or construction and demolition debris imported into state for use as biomass fuel. This material is used in industrial boilers in Maine. Ash from its incineration has been managed by the industrial owner and until recently has not impacted capacity at the state public or commercial landfills.

Nevertheless, with uncertain oil prices and continuing tax incentives for green energy, interest in biomass fuel is growing. Anticipated development of construction and demolition debris processing facilities in Maine, in response to demand for biomass fuel recovery as well as recovery of other components of that waste stream, will rely upon out-of-state generated debris for at least part of their operation.

The residues from these processing facilities would be disposed of at landfills within the state. The ash from the combustion of the CDD fuel wood could be disposed of at any of the state's licensed special waste landfills, including the state-owned Juniper Ridge Landfill, with a corresponding affect on the lifespan of those facilities. This continues to be an issue that warrants watching.

Projected Disposal Capacity, Available vs. Needed

Based on the above analysis, Maine will have an estimated 39 million cubic yards of landfill capacity over the next 20 years, meeting our need for nearly 34 million tons as shown in Table E.

Table E: Projected Disposal Capacity Available vs. Needed 2007-2027

Landfill Capacity Available (cubic yards)			Capacity Needed (tons)	
Municipal Landfills	2,416,700		Total waste generated	65,000,000
Municipal CDD Landfills	850,000		Imported Waste	4,000,000
Commercial	4,900,000		Recycled	(22,000,000)
Juniper Ridge	8,462,000		Exported	(1,200,000)
Juniper Ridge expansion*	22,500,000		Diverted to, combusted at W-T-E	(12,000,000)
Total Landfill Capacity Available:	**39,128,700**		**Total Landfill Capacity Needed:**	**33,800,000**

** projected capacity, not yet approved*

Table E: Projected Disposal Capacity Available vs. Needed, 2007-2027
Source: State Planning Office

While Maine has sufficient landfill capacity to meet its needs, we must not become complacent. Siting new disposal capacity is a costly and highly volatile undertaking. Maine should do all that it can to make the existing capacity last beyond the next two decades. This will require state and local investment in waste reduction and recycling.

Another factor to consider in projecting total needed disposal capacity is the location of that capacity. The number and actual location of disposal facilities influences competition of type, quality and cost of solid waste services. As the number of disposal options decreases, this issue warrants consideration.

B. Regional Capacity Issues

Regionally, Maine is divided into "waste sheds" with waste feeding into regional disposal facilities as shown in Figure 12. Some waste sheds are geographically large like PERC (170+ communities) and the Crossroads landfill (30+ communities), some receive municipal solid waste from a single community or a small region, such as the two landfills on the mid-coast in Brunswick and Bath.

While this report typically looks at statewide disposal capacity, the State Planning Office has identified some regional or local areas where disposal capacity is uneven or in flux.

Aroostook County

The Presque Isle Landfill is currently seeking approval for an expansion. The expansion, if approved, will extend their capacity for another 50 years. The Tri-Community Landfill in Fort Fairfield also is seeking a landfill expansion at this time which will serve those communities for another possible 50 years. These efforts will require significant local resources but should not disrupt the solid waste capacity in the region.

Washington County

The Marion Regional CDD Landfill in Marion Township is reaching capacity and is expected to close in the near future. A new construction and demolition debris landfill for that region was being planned but now that project's fate is uncertain.

York County

In 2006, local officials undertook an effort to purchase and close the Maine Energy W-T-E facility. This facility, which serves about 36 communities in York County, is located in downtown Biddeford. Proposals were put to the voters in Biddeford and Saco to raise the money to buy the facility, but were turned down.

The loss of disposal capacity in Southern Maine would disrupt Maine's waste management system, but it would not precipitate a crisis. The loss could be absorbed through a combination of aggressive waste reduction and recycling efforts by communities in the service area, transporting waste to other instate and out-of-state disposal facilities[7], and, with a possible license amendment to Juniper Ridge to accept "bagged" or household MSW, transporting waste there.[8] The state, municipalities, and the private sector would need to work in partnership to find the best solution for the long term.[9]

C. Recycling Capacity

To achieve a 50% recycling goal would require municipal and private sector recycling programs to handle 300,000 tons more of material based on what we generate today. This number will grow each year to match projected increases in waste generation.[10]

[7] The cost-benefit of transporting wastes long distances would have to be considered.
[8] Any change in the type of waste accepted at Juniper Ridge would require approval from the Maine Department of Environmental Protection.
[9] Another consideration for this region is the contract renewal for electrical generation payments. A lower price could increase tip fees and impact volumes at waste to energy facilities.
[10] Based on an assumed 4% annual growth in municipal solid waste generation

Over the next 20 years, simply to maintain the state's current 34.8% recycling rate will require public and private programs to double their recycling handling abilities. As waste generation increases, the volume of recyclable materials at a 34.8% rate will increase from 700,000 tons in 2007 to over 2 million tons in 2027.

To achieve a 50% recycling goal by 2009 and hold it for the next twenty years would require the capture and processing of nearly 30 million tons from the waste stream over that period (increasing from 718,613 tons in 2007, to 1.1 million tons in 2009 and over 2 million tons by 2027).

Currently, municipalities do not have the capacity to handle these kinds of new volumes; neither the physical (buildings and equipment) nor human (staffing) capacity. Municipal recycling programs currently handle, on average, 90,000 tons of 'traditional' recycled materials per year. As discussed earlier, they have additional capacity for another roughly 20,000 tons annually.[11]

The private sector can likely handle additional tonnages or be in a position to respond with capital investment needs to grow their tonnages if the economics warrant it.

There are also concerns over where this volume would come from. Higher yields and participation rates can be stimulated with public awareness programs, incentives such as pay as you throw, and technological advances including single sort. Many communities are responding with these kinds of efforts, but greater effort is needed to generate the tonnage to achieve a 50% recycling goal.

It will take significant infrastructure capital investment by both the public and private waste management sectors to achieve our 50% recycling goal. Maine should begin to prepare now to build the infrastructure needed to manage an increase in recycling.

[11] This does not include the recent *ecomaine* recycling processing operation expansion which can by itself accept an additional 15,000 tons a year of recyclable material.

VI. Disposal Prices

A. Disposal Fees

The cost of managing solid waste is one of the biggest portions of municipal budgets. 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 $40.00 to $158.00[12] per ton at Maine's landfills and incinerators 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 tip 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 electrical sales revenue drop, tip fees may increase. Conversely, should the electrical sales increase, the possibility exists lower or maintain tip fees being charged.

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, nor does it appear to have the potential to generate supracompetitive disposal fees. In looking ahead, however, at that point when disposal capacity exists with fewer facilities than today, it is possible that prices will become supracompetitive. Where the actual date and timing of this is not known, it is critical that the Office maintain a firm awareness of this possibility and keeps the Governor and Legislature informed.

[12] This does not reflect spot market prices.

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.

B. Definitions and Acronyms

The following definitions are provided to assist the reader in reviewing this document:

Broker's Survey – *a biennial survey conducted of private sector recycling brokers and end-users to determine level and effort related to management of commercial recyclables.*

Bulky Wastes – *these are solid wastes that do not typically fit into a 30 gallon trash container, and may include such items as wood, large metal appliances and construction materials.*

Construction/Demolition Debris (CDD) – *these are the wastes generated by building, remodeling and/or destruction activities and may include such wastes as wood and wood products, concrete and brick, gypsum board, shingles and other common components of buildings.*

Front-end Process Residue (FEPR) – *residual of municipal solid waste resulting from the processing of solid waste processing prior to incineration or landfilling, and includes, but is not limited to, ferrous metals, glass, grit and fine organic matter.*

Household Hazardous Wastes (HHW) – *items generated by households that are corrosive, toxic, ignitable, or reactive, and as such are hazardous to humans and/or the environment if disposed of improperly.*

Incinerator Ash – *this is the residue from the combustion of municipal solid waste at waste-to-energy facilities. It may also contain fly ash from the facility's operation and is designated as a 'special waste'.*

Municipal Solid Waste Annual Reports – *these are the reports submitted to the State Planning Office by municipalities, as required through 38 MRSA § 2133. These reports convey their efforts related to municipal solid waste management and provide detail on the tonnage of solid wastes they have overseen and a description of the various solid waste management practices utilized.*

Municipal Solid Waste (MSW) – *solid waste emanating from household and normal commercial activities.*

Special waste – *wastes that generated by other than domestic and typical commercial establishments that exist in such an unusual quantity or in such a chemical or physical state that require special handling, transportation and disposal procedures.*

Supracompetitive *when 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.*

Universal Wastes – *a category of wastes that including: PCB containing lighting ballasts; Cathode Ray Tube (CRT) containing devices; fluorescent lamps; other lamps containing hazardous wastes; and, mercury-added devices from commercial sources.*

Waste-to-energy facilities (W-T-E) – *incinerators which receive municipal solid waste, and through combustion, recover energy and convert it into electricity, while reducing the volume of waste requiring disposal.*

The following acronyms are provided to assist the reader in reviewing this document:

CDD – *means Construction/Demolition Debris, wastes generated by building, remodeling and/or destruction activities and may include such wastes as wood and wood products, concrete and brick, gypsum board, shingles and other common components of buildings.*

CRT – *means 'Cathode Ray Tube', the projection device located in certain computer monitors and television sets*

DEP – *means the Maine Department of Environmental Protection*

EPA – *means the United States Environmental Protection Agency*

FEPR – *means Front-End Process Residue, residual of municipal solid waste resulting from the processing of solid waste processing prior to incineration or landfilling, and includes, but is not limited to, ferrous metals, glass, grit and fine organic matter.*

MSW – *means Municipal Solid Waste, solid waste emanating from household and normal commercial activities.*

PCB – *refers to Polychlorinated Biphenyls, a class of chlorinated aromatic hydrocarbons*

SPO – *means the Maine State Planning Office*

W -T- E – *means waste-to-energy facilities, incinerators which receive municipal solid waste, and through combustion, recover energy and convert it into electricity, while reducing the volume of waste requiring disposal.*

C. Maine Recycled Materials, 1997-2007

Materials:	2007	2005	2003	2001	1999	1997
high grade paper	72,846	72,965	3,951	43,125	11,570	31,470
corrugated cardboard	117,324	117,144	88,166	202,129	198,442	214,536
newspaper	26,453	32,300	33,442	32,069	42,612	44,710
magazines	8,532	8,723	1,881	13,259	6,104	3,702
mixed paper	11,131	5,226	13,919	14,766	12,860	12,207
other paper	7,668	8,900	3,166	27,376	12,671	6,465
other grades	42,210	36,805	132,475			
Total paper	286,164	282,063	277,000	332,724	284,259	313,090
clear glass	10,656	11,058	6,334	11,706	8,324	10,590
brown glass	23,544	24,377	11,270	12,200	12,545	7,060
green glass	11,878	12,622	3,142	6,700	26,167	11,767
all other glass	3,442	3,598	21,672	620	440	1,734
Total glass	49,520	51,655	42,418	31,226	47,476	31,151
white goods	82,493	78,401	68,125	115,219	142,640	122,895
aluminum	2,454	2,163	2,109	6,100	1,862	1,332
tin cans	1,989	1,089	3,154	9,754	18,833	10,693
non ferrous	25,655	23,213	18,847	22,491	18,652	21,572
other (various materials)	72434	68,432	68,984			
Total Metal	185,025	173,298	161,219	153,564	181,987	156,492
HDPE	8,530	9,377	3,420	2,274	4,410	4,160
PET	5,277	4,766	8,725	9,042	6,521	6,021
LDPE film	576	526	711	4		
polystyrene		8	0	554	6	6
Other	798	631	531	1,917	1,211	1,042
Total Plastic	15,181	15,308	13,387	13,791	12,148	11,229
wood waste	86,544	93,582	92,154	40,443	41,103	38,402
leaves	29,448	29,938	33,376	26,340	27,421	24,528
food waste	214	142	2,623	23,744	24,582	23,240
Total Organic	116,206	123,662	128,153	90,527	93,106	86,170
tires	30,545	30,374	35,467	19,621	32,530	30,559
CDD, other wastes	25,626	23,425	49,714	38,848	39,469	44,209
Mercury-added/UW	848	487	327	242		
Total Hard to Manage	57,019	54,286	85,508	58,711	71,999	74,768
Textiles	2,196	1,724	2,260	3,827	6,023	1,726
Other nonbulky MSW	7,302	6,935	7,638	3,445	2,740	5,252
TOTAL TONS RECYCLED:	**718,613**	**708,931**	**717,583**	**687,815**	**699,738**	**679,878**