Solid Waste Generation & Disposal Capacity Report

For Calendar Year 2006

Prepared by the Maine State Planning Office

for the

Joint Standing Committee on Natural Resources of the 123rd Legislature

August 2008

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 2006 are the most current, complete data available for this report.

Thanks to State Planning Office staff for the preparation of this report: Jody Harris, George MacDonald and Sam Morris.

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August 2008

Printed under Appropriation #014 07B 1655 008208

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Executive Summary

After 12 years of increasing generation, waste tonnages in Maine have leveled off. Recycling efforts remain consistent, keeping the recycling rate steady. The state has unused, permitted disposal capacity that will meet Mainers' needs until at least 2020, with potentially permittable capacity for another 15 to 20 years beyond that.

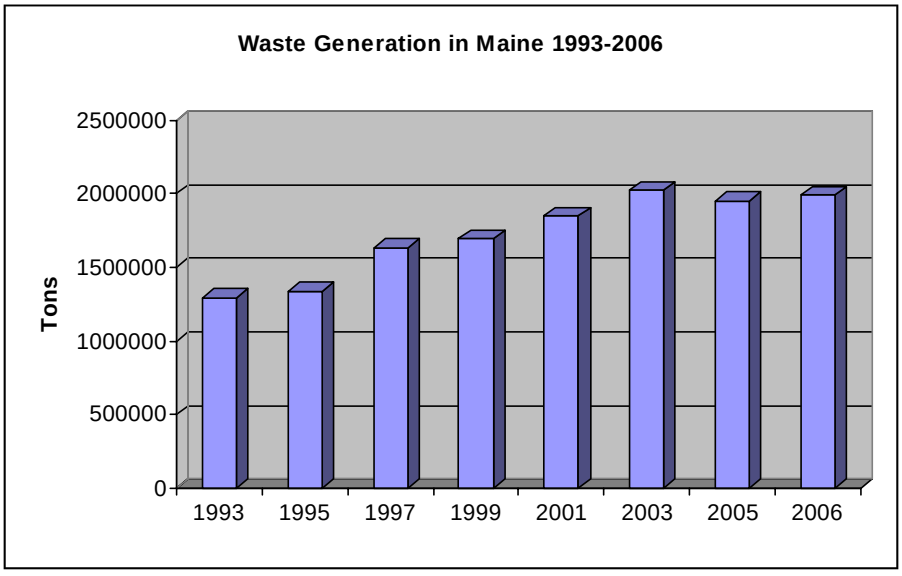
This report provides an overview of Maine's municipal solid waste generation, recycling, combustion, and landfill activities for 2006, in order to:

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.

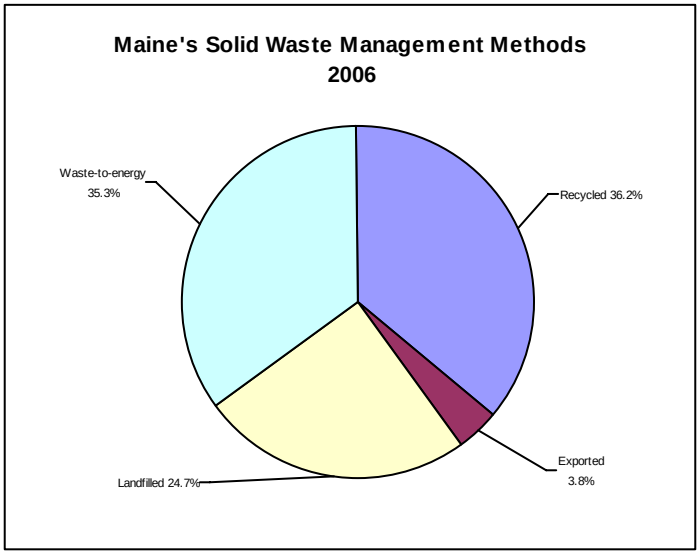
KEY FINDING: Waste tons generated by Mainers appears to be slowing.

Mainers generated 1.99 million tons of waste in 2006. Unlike the 55 percent increase in waste generation experienced between 1993 and 2003, over the last several years waste generation rates have stablized. Changes in manufacturing and societal habits and livestyles are largely responsible for this levelling. Manufacturers increasingly substitute lighter weight materials (plastics) in products and packaging, having a noticable impact on the waste stream composition. A modern lifestyle that communicates electronically and dines out frequently, as well as slow population growth and smaller families, also contributes to this trend. However, the use of disposable materials and consumable products continues to increase. While the weight of our waste is declining, the volume will likely increase.



KEY FINDING: Maine landfills only a fraction of its municipal solid waste.

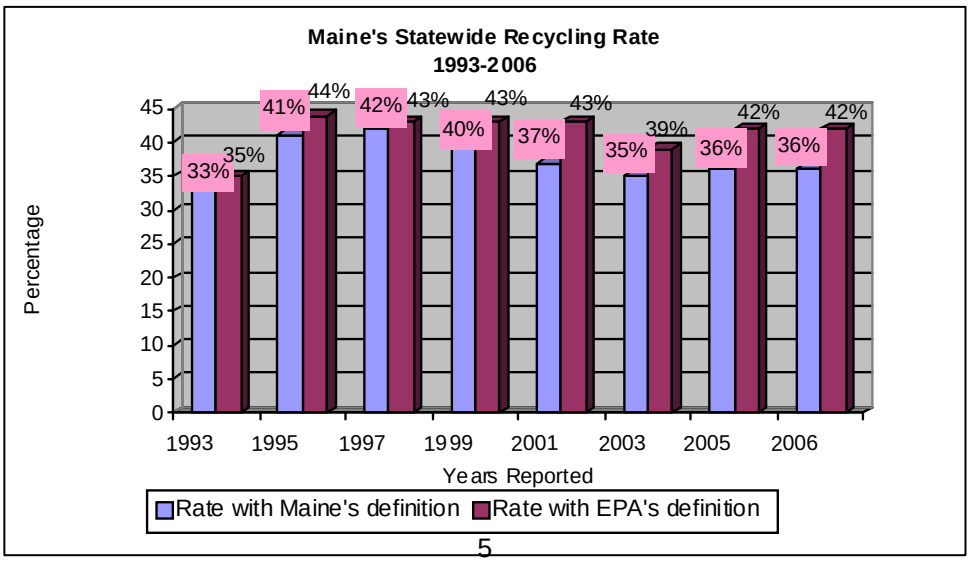
Only one-quarter (24.7%)% of the solid waste generated by Maine households and businesses is directly landfilled. Just over a third (35.3%) is delivered to waste-to-energy plants and 36.2% is recycled, both reducing the volume of waste needing to be landfilled.



KEY FINDING: Maine's recycling rate is steady and strong.

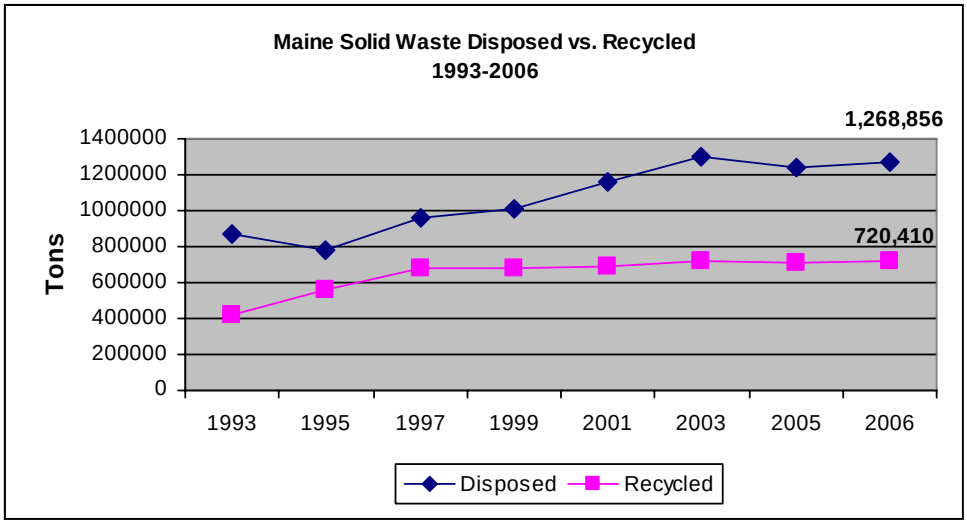
Maine's current statewide recycling rate is 36.2%. Recycling has held steady for a decade.

Maine's statutory definition for municipal solid waste (MSW) includes bulky waste and construction and demolition debris. However, the U.S. Environmental Protection Agency does not count these materials as part of MSW nationally. For comparison, we can compute the state recycling rate exclusive of these materials at 42%. Using either calculation, Maine's recycling rate is strong.



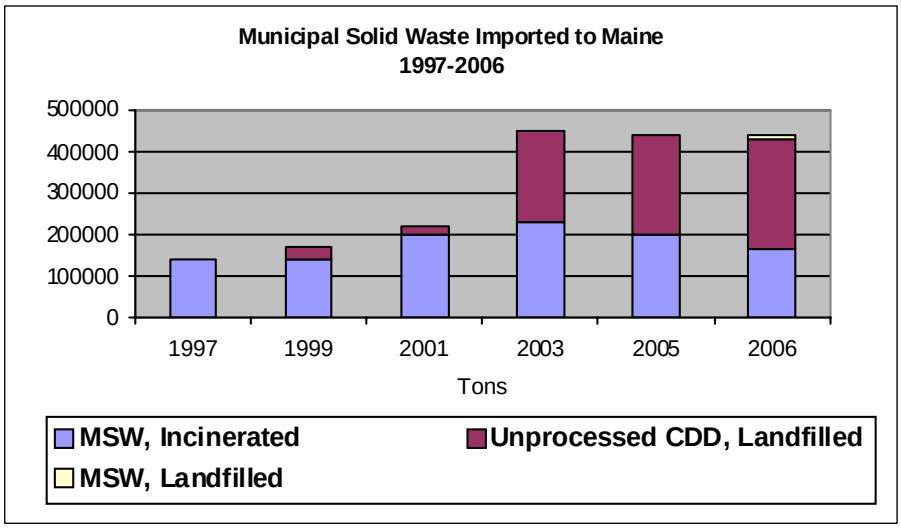
KEY FINDING: Mainers' continue to recycle more each year, but recycling has not kept pace with the growth in the amount of waste we generate.

Maine has a 13-year trend of increased recycling (in tons). Over the same time, municipal solid waste generated has exceeded recycling growth; preventing the state recycling rate from increasing.



KEY FINDING: Imports of out-of-state waste support Maine's solid waste management system.

While disposal facilities in Maine added 24% (471,642 tons) to the in-state generated waste stream from out-of-state waste sources in 2006, 40% of that additional tonnage kept the state's waste-to-energy plants operating economically and maintained tipping fees. It also fueled energy production in Maine.

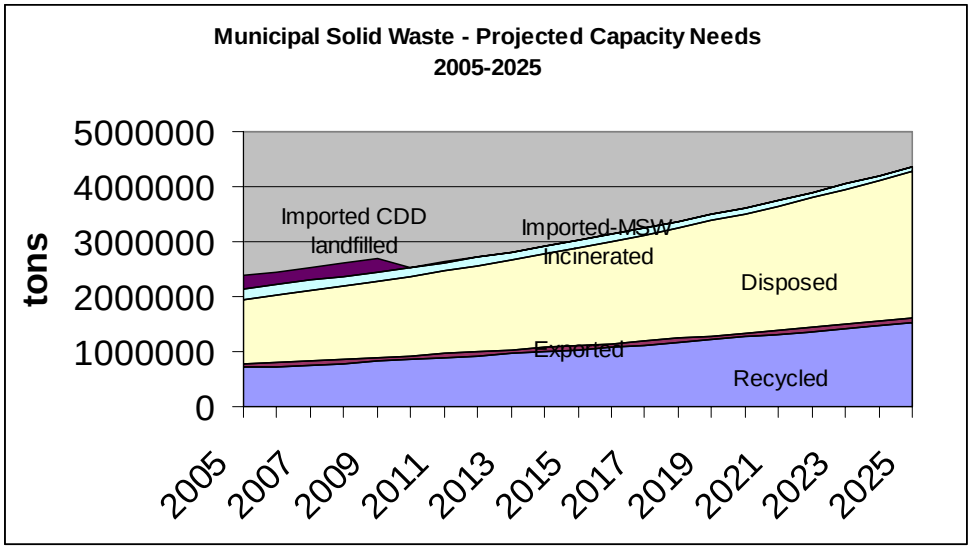


KEY FINDING:

Maine has sufficient disposal capacity for more than 20 years at projected generation and fill rates.

Disposal capacity is a factor of need versus availability. Based on projections, Maine will require approximately 32 million cubic yards of landfill capacity over the next 20 years to properly manage the municipal solid waste that is landfilled, along with the residues generated by waste-to-energy facilities and other processing facilities.

Over this same time, we project that there will be 42 million cubic yards of capacity available, including proposed new capacity development. While Maine has sufficient existing disposal capacity for its municipal solid waste stream, we must remain active in adopting and implementing practices to reduce our reliance on disposal. Siting new disposal facilities is a costly and potentially difficult undertaking. Disposal of municipal solid waste in landfills is the lowest priority in the waste management hierarchy.



By the Numbers (tons)

Waste Management in Maine

	2005	2006
Waste Generation - Total	1,949,644	1,989,266
Recycled/Reused	708,931	720,410
Combusted	532,813	504,078
Landfilled	636,521	688,798
Exported	71,379	75,980
Imported	436,412	471,642

Recycling in Maine

	2005	2006
Municipal/Public Efforts	236,577	227,767
Business Efforts	472,354	492,643
Total Tons Recycled	**708,931**	**720,410**
% of MSW	**36.4%**	**36.2%**

Recycling Capture Rates for Select Materials

	2005	2006
Paper	282,063	286,055
Plastic	15,308	15,646
Construction & Demolition Debris	23,425	24,831
Organics	123,662	124,889

Processing for Combustion at Waste-to-Energy Facilities

	2005	2006
Delivered MSW tonnage	879,473	867,606
By-pass	33,080	36,183
FEPR	128,050	122,512
Metal	24,421	22,044
Combusted	520,789	504,078
Ash	173,133	169,000

Out-of-state Wastes

	2005	2006
MSW Incinerated – Maine Energy	146,590	136,472
MSW Incinerated – PERC	53,810	29,323
MSW Incinerated – RWS/ecomaine	538	0
MSW Landfilled – commercial landfills	0	7,547
CDD Landfilled – Pine Tree	233,600	259,310
CDD Landfilled – Crossroads	1,874	4,385
Total Imported	**436,412**	**437,037**

Landfill Disposal (Instate Generated Wastes)

	2005	2006
Juniper Ridge	252,314	290,435
9 Municipal Landfills	141,018	124,615
Municipal CDD Landfills	34,839	27,446
2 Commercial Landfills	428,741	246,302
Total Landfilled	**856,912**	**688,798**

Disposal Capacity in Maine

W-T-E Facilities, Capacity:	2006 Capacity (tons per year)	2030 Capacity, Projected (Remaining) (tons per year)
MMWAC, Auburn	70,000	70,000
ecomaine, Portland	170,000	170,000
Maine Energy, Biddeford	310,000	310,000
PERC, Orrington	304,000	304,000
Total	854,000	854,000
Landfills, Disposal Capacity:	**2006 Licensed Capacity (cubic yards)**	**2030 Projected Licensed, Capacity (cubic yards)**
2 State Landfills:		
Carpenter Ridge	Undeveloped	2,000,000
Juniper Ridge	9,000,000	0
Juniper Ridge Expansion	Unlicensed	14,500,000
7 Municipal Landfills	2,540,000	202,000
2 Municipal Ash Landfills	1,260,000	0
2 Commercial Landfills:		
Crossroads, Norridgewock	4,400,000	0
Pine Tree, Hampden	1,500,000	0
Total:	22,230,000	16,702,000

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 four years of capacity remaining. The state owns a permitted, 'greenfield' site known as Carpenter Ridge in Township T2 R8 for this purpose. This report provides the basis for the 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 develop 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 First Regular Session of the 123rd Legislature changed the reporting frequency of the disposal capacity report from biannually to annually. The State Planning Office now updates this report each year in order to provide more current data and information to policymakers, which, in turn, will help them respond more quickly to changing waste management needs for Maine citizens.

Data for the calculations in this report are provided by municipalities, commercial recycling brokers, and public and private disposal facilities. Data from calendar year 2006 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 amount of waste processed and disposed and the tonnage 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 1,989,266 tons of municipal solid waste in 2006, up slightly from 1,949,644 tons in 2005. Waste generation is a function of population growth, lifestyles, economic activity, and manufacturing and production practices.

Between 1993 and 2003, municipal solid waste generation in Maine increased over 55%. While we can attribute some of this growth to increased economic activity, we also recognize that improved data collection plays a part. During this period, for each successive reporting year, the office was able to capture more precise waste generation numbers. However, as can be seen in Figure 1, over the last four years, waste generation has leveled. Again, improved accuracy in data plays a part. Nevertheless, a fundamental change in the waste stream is occurring; a change that impacts waste tonnages.

Products and product packaging today are increasingly made from lighter weight materials. This saves on both manufacturing and transportation costs. Shifting from glass to plastic packaging, downsizing packaging, and switching from metal to plastic product components are occurring across industries. For example,

- Newspapers are smaller and lighter weight;
- Aluminum and plastic containers are being manufactured with less material;
- Glass is disappearing from supermarket shelves; and
- Computer components are often now made of plastic rather than metal.

These changes impact waste stream composition. Plastic, which used to be 7% of the waste stream, now comprises 12-13%, displacing glass and metal. Where 24 aluminum cans used to weigh a pound, now there are 34 cans to a pound. Newspaper is now a smaller percent of the waste stream by weight.

Changes in society also contribute to decreasing the weight of what we dispose. Smaller families, reading their morning newspaper on-line, and eating more restaurant meals, generate less waste. A trend of growing-your-own or buying fresh, local produce may also reduce organic food waste in places.

At the same time, we continue to see increases in disposable, single-use, convenience packaging. Today's on-the-move lifestyle takes advantage of ready-made meals, but also of higher food hygiene standards. Everything from plastic utensils and beverage cups to throw-away floor mops to disposable underwear and socks for travelling represents a growing share of household waste, particularly if you consider its volume. Disposable products and packaging, while increasing in amount also appear to weigh less, a contributing factor to Maine's slowing waste generation tonnages.

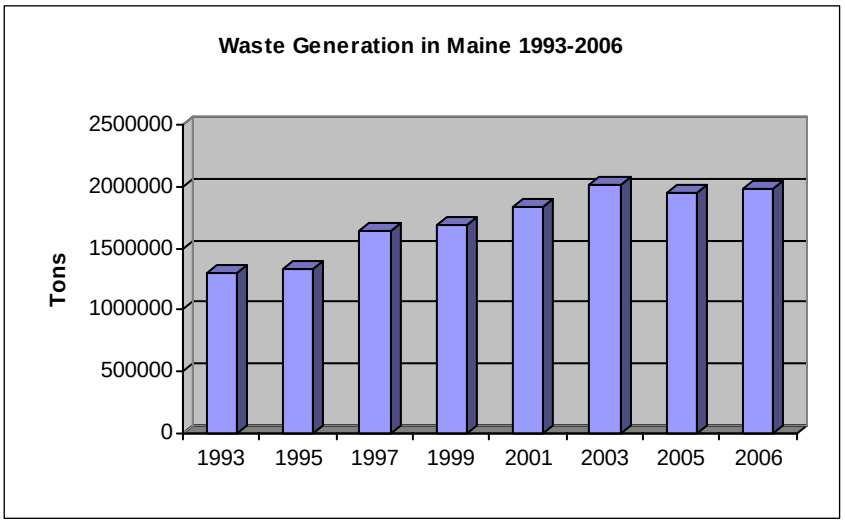


Figure 1: Maine Waste Generation, 1993-2006
Source: State Planning Office

C. Per Person Waste Generation

Municipal waste generation, when calculated on a 'per person' basis, shows that each Maine resident generates approximately 3,000 pounds of MSW a year, or about 8.3 pounds of waste per person per day.[1] Maine's per person generation is higher than the 2006 national average of 4.6 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 these wastes from our numbers, the Maine per-person rate drops to 5.94 pounds per day.

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.

[1] Based on an estimated 2006 Maine population of 1,314,910, US Census

III. Recycling

The Maine Legislature set a 50% recycling goal for the state. The goal provides a benchmark by which to measure progress and success of state and local recycling programs.

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, as when material moves from an in-state broker to an in-state end-user. However, the State Planning Office estimates that the overall result is accurate to within two (2) percentage points.

Recycling Trends

Maine recycled 36.2% of its municipal solid waste in 2006. This reflects a slight decrease from the 2005 recycling rate of 36.4 % but remains above the recycling rate of 35.5% experienced in 2003.

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

Maine's recycling rate grew rapidly in the first ten years following the enactment of the Maine Solid Waste Management Act – from an estimated 17% in 1987 to 42% in 1997. It has since leveled off, but remained relatively steady each year. Figure 2 shows the state's recycling rate over time.

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.

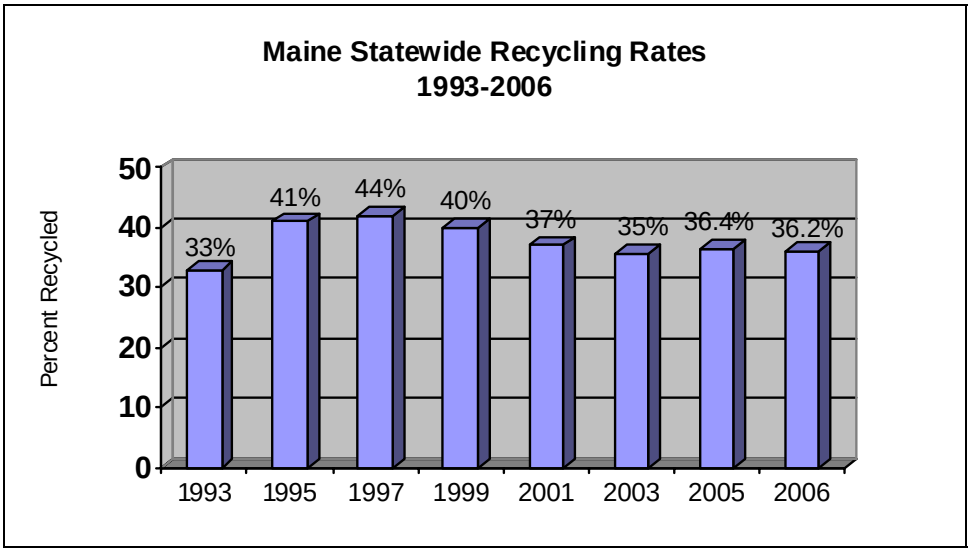


Figure 2: Maine Recycling Rates, 1993-2006
Source: State Planning Office

However, at the same time, there has been an upward trend in municipal solid waste being generated. Figure 3 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.

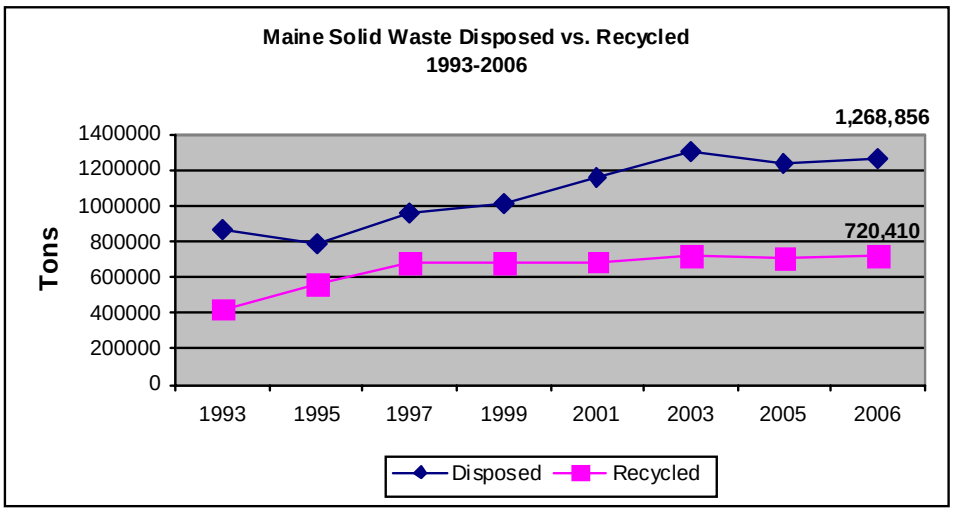


Figure 3: Maine Solid Waste Disposed vs. Recycling, 1993-2006
Source: State Planning Office

There are three broad reasons why recycling rates are falling behind generation rates:

- First, recycling has not advanced aggressively into other components of the waste stream that are growing, such as the organic fraction and construction and demolition debris;
- Secondly, even though markets for traditional recycling commodities have grown throughout the first half of this decade with strong revenues and encouraging price signals, municipal programs have not sought to follow their lead and increase recycling efforts. This is primarily due to yearly budget constraints that prevent investment to take advantage of market opportunities;
- Thirdly, municipal programs typically view recycling as an "add-on" to their garbage collection program and may lack confidence in recycling as an integral part of their solid waste management system.

EPA Definition

We also compute the state recycling rate using the U. S. Environmental Protection Agency's definition for MSW. When the 2006 statewide recycling rate for Maine is calculated using the EPA guide-lines, our statewide recycling rate becomes 41.6%. Table A shows the two methodologies for calculating the state's recycling rate and Figure 4 shows a comparative trend line.

Table A: Maine Statewide Recycling with and without CDD - 2006

Maine Definition (*CDD included*)			EPA Definition (*CDD not included*)	
MSW with CDD generated	1,989,266		MSW w/o CDD generated	1,648,095
MSW with CDD recycled	720,410		MSW w/o CDD recycled	685,506
Recycling Rate	36.2%*		Recycling Rate	41.6%*

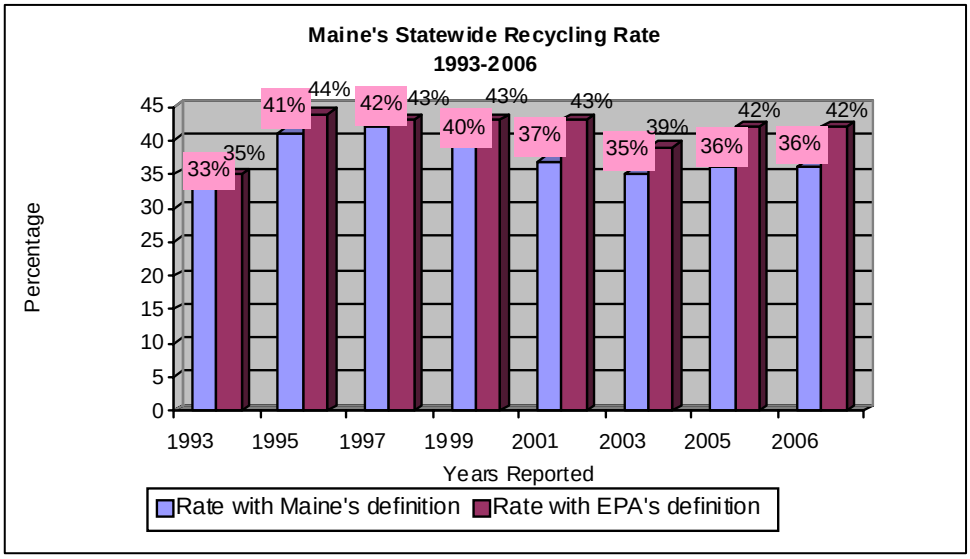


Figure 4: State Recycling Rate with and without CDD included
Source: State Planning Office

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 1999 to 2006.

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 227,767 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 2006 state recycling rate is 36.2%, fourteen 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 is the move to single stream recycling, 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 method of collection serves to cut costs of collection by reducing labor and transportation and to increase the volumes of materials collected by making it easier for residents to recycle.

Nevertheless, these kinds of improvements require significant capital investment. For recycling to succeed, it will need to be viewed, not as a waste management tool, but as a business operation –making investments to produce revenue.

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 2006, Maine's solid waste disposal facilities included: one state-owned landfill, two commercial landfills, nine municipally-operated landfills, 23 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 0.85 tons of waste per cubic yard of landfill space. At the commercial landfills, the assumption is that operations achieve a one-to-one ratio of tons-to-cubic yards in landfill compaction.

A. Landfills

State-owned Landfill[2]

In 2006, the state owned landfill in Old Town, known as Juniper Ridge, received a total of 472,510 tons of waste, of which 290,435 tons were municipal solid waste or the residues from its processing and incineration. The balance of the waste buried at the landfill included wastes from the former Georgia Pacific papermill in Old Town and other in-state commercial and industrial generators (non-msw wastes).

Assessment of Facility

Available disposal capacity remaining at Juniper Ridge at the end of 2006 was approximately 9 million cubic yards, which translates into space for approximately 7.65 million tons of solid waste. At projected fill rates[3], the present licensed capacity should provide 9 - 11 years of disposal capacity for the state.

In late 2006, the State Planning Office proposed an expansion at Juniper Ridge to add an additional 22.5 million cubic yards of disposal capacity. If approved, the expansion would provide an additional 15-20 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

[2] 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.

[3] The State Planning Office projects that wastes delivered to Juniper Ridge will average 500,000 tons per year in the short-term, but will increase with the planned closure of the Pine Tree Landfill in 2009, and increase further as waste generation grows and other landfills close in the next 20 years.

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 provides recycling and disposal services on a contract basis for municipalities and businesses. It currently serves 30+ Maine communities in Western Maine. In 2006, the Crossroads Landfill received a total of 391,887 tons of solid waste. Of that total tonnage, which included out of state generated waste, 233,214 tons were characterized as special wastes. The balance, 158,673 tons, was generated in Maine and included MSW and CDD.

Pine Tree Landfill, located in Hampden, is permitted to take special waste, by-pass, and construction and demolition debris. In 2006, the Pine Tree Landfill received a total of 386,168 tons of solid waste. Of that tonnage, 102,858 tons were special waste and included out of state generated wastes. The balance, 283,310 tons was MSW, residues and CDD, and included out of state generated wastes.

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 4.3 million cubic yards of capacity remaining at the end of 2006. Table B shows estimated remaining disposal capacity at the commercial landfills.

Table B: Capacity at Maine's Commercial Landfills – end of 2006

	2006 Fill Rate (tons)	Remaining Capacity (Cubic Yards)	Remaining Capacity (tons)	Estimate in years of life remaining based on 2006 fill rates
Crossroads Landfill	391,887	4,300,000	4,300,000	11-13 years
Pine Tree Landfill	386,168	1,000,000	1,000,000	2 years
Total	778,055	5,300,000	5,300,000	

In 2006, Casella Waste Systems sought permission to increase its disposal capacity at the Pine Tree Landfill in Hampden by 2.5 million cubic yards. But, through a series of negotiations with the Maine Department of Environmental Protection and the Town of Hampden, only partial approval of the request was given, with the owner agreeing to cease accepting solid waste and close the landfill by December 2009.

Municipal MSW Landfills

In 2006, 83,395 tons of municipal solid waste and 41,220 tons of ash were disposed at nine municipally-operated landfills broken down as shown by Figure 5.

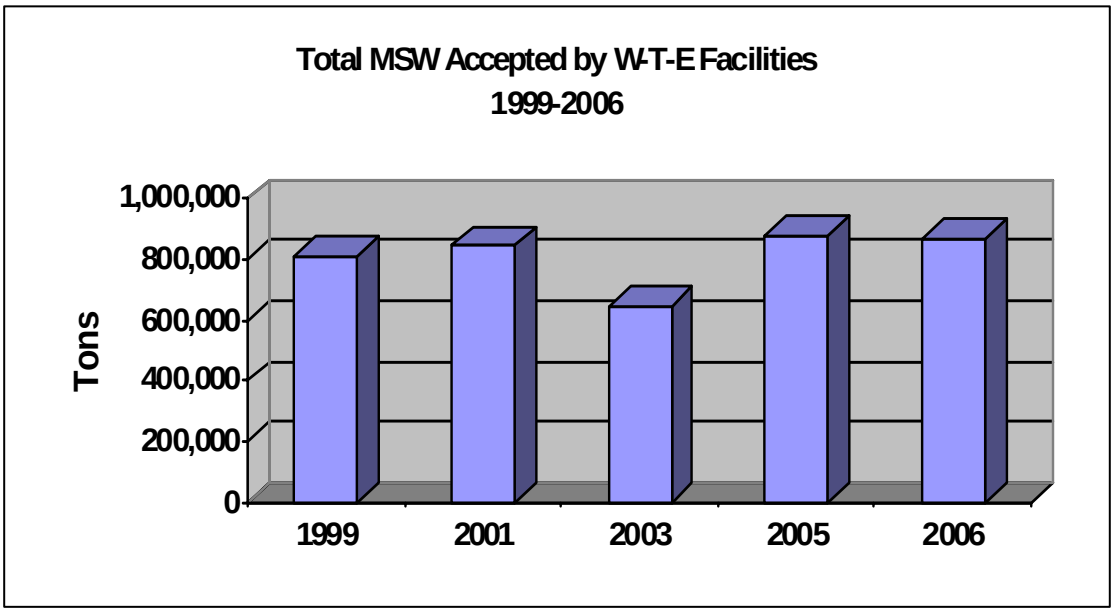


Figure 5: Wastes Accepted at Maine Municipal Landfills by type, 2006
Source: State Planning Office

Table C provides information on each individual municipally-operated landfill, including fill rates and estimated available remaining capacity.

Table C: Municipal Landfill Tonnages – 2006				
	2006 Fill Rate (tons)	**Remaining Capacity Cubic Yards (est.)**	**Remaining Capacity (tons)**	**Years of life remaining based on 2006 fill rates at .65 tons/yard[4]**
MSW Landfills:				
Bath	7,844	455,000	298,350	38 years
Brunswick	3,204	148,000	96,246	30 years
Greenville	600	57,000	37,100	61 years
Hatch Hill (Augusta)	31,147	966,000	627,953	20 years
Presque Isle	10,973	189,800	116,400	10.6 years
Tri-Community (Fort Fairfield)	28,127	751,700	488,600	18.4 years
CFWF (West Forks)	1,500	11,700	6,900	4.4 years
Total Tons:	**83,395**			
Total Remaining Capacity (est.)		**2,579,200**	**1,671,549**	
	2005 Fill Rate (tons)	**Remaining Capacity Cubic Yards (est.)**	**Remaining Capacity (tons)**	**Years of life remaining based on 2005 fill rates at 1 ton/yard**
Ash Landfills:				
ecomaine	22,764	977,200	977,200	20-30 years
Lewiston	18,456	311,500	311,500	17 years
Total Tons:	**41,220**			
Total Remaining Capacity (est.)		**1,288,700**	**1,288,700**	

Assessment of Facilities

Among the seven municipally-operated MSW landfills, there is just over 2.5 million cubic yards of remaining available capacity that can accept 1.6 million tons of municipal solid waste. This capacity is sufficient to carry those communities for 15 years (on average), supposing a relatively flat growth in the volume of municipal solid waste requiring disposal.

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

[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, also typically achieve a 1:1 conversion rate.

Bath and Brunswick are two of the state's oldest secure landfills. Brunswick serves only its own residents and businesses. Both communities are adopting 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. None of these facilities is expected to expand beyond their current footprint.

Together, the Presque Isle and Tri-Community (Fort Fairfield) landfills serve nearly 50 communities in Aroostook County. Both are currently seeking expansions that will serve those communities for two more decades.

To extend the life of their landfill, the City of Lewiston brings its waste to the MMWAC incinerator in Auburn. MMWAC in exchange disposes its incinerator ash at the Lewiston landfill.

Municipal CDD Disposal Facilities

There were 17 municipal disposal facilities that in 2006 reported accepting locally-generated construction and demolition debris (CDD), inert fill, brush, and trees. Local facilities furnish a 'short-transport' option for the management of these wastes. A total of 27,446 tons of materials were buried at these sites during 2006; this is a decrease from the 34,839 tons landfilled in 2005, as shown in Figure 6.

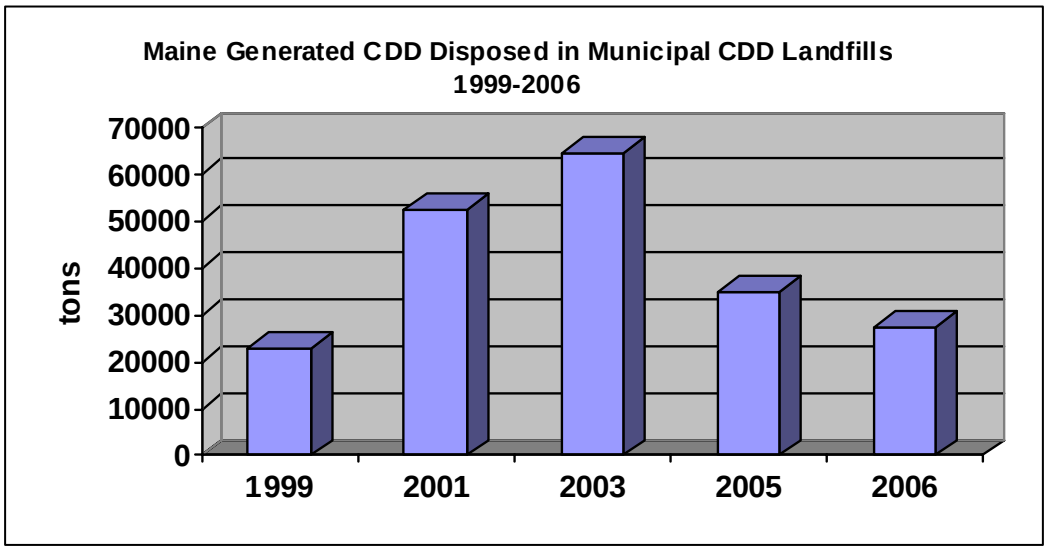


Figure 6: Maine CDD Disposed in Municipal CDD Landfills, 1999-2006
Source: State Planning Office

Assessment of Facilities

The remaining capacity at individual CDD facilities varies, although statewide numbers indicate a remaining 750,000 cubic yards of landfill space exist 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, located in Marion Township in Washington County, is expected to be full in 2-3 years and the owners of that facility are currently pursuing development of 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. 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 2006, 34.8% of Maine's municipal solid waste was sent to a waste-to-energy (W-T-E) facility. Maine's W-T-E facilities received 867,606, tons of MSW, down from 879,473 tons of MSW in 2005 as shown in Figure 7. Of this, 701,811 tons (a slight increase over 2005) were generated in-state and 165,795 tons were imported.

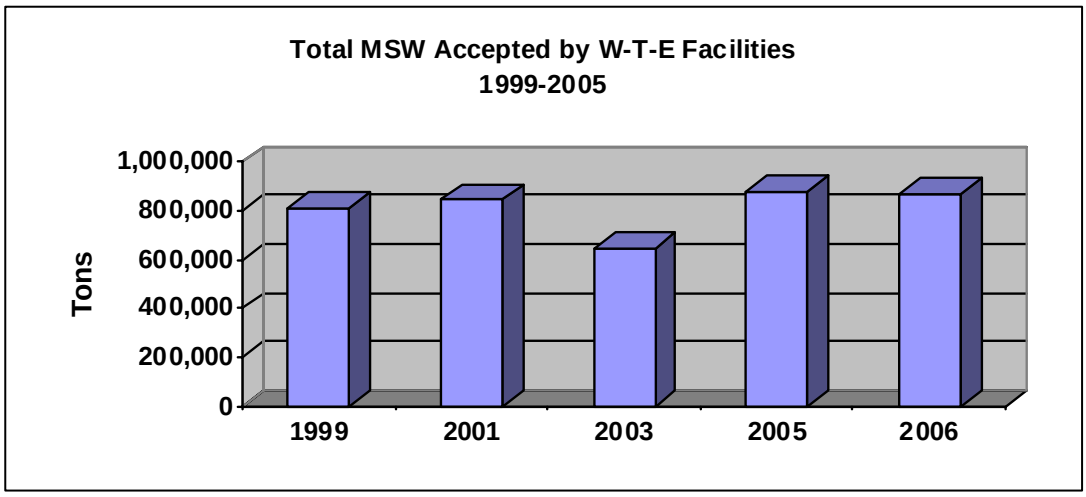


Figure 7: MSW Accepted by W-T-E Facilities, 1999-2006
Source: Facility License Reports, Maine DEP

Table D shows the processing capacity of the four waste-to-energy facilities:

Table D: Maine W-T-E Capacity		
Waste-To-Energy Facility	Daily processing capacity (tons/day)	Annual processing capacity (tons/year)
ecomaine	550	170,000
Maine Energy (ME)	950	310,000
Mid Maine Waste Action Corporation (MMWAC)	200	70,000
Penobscot Energy Recovery Corporation (PERC)	1,050	304,000
Total of W-T-E Facilities	2,750	854,000

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 waste-to-energy facilities (see Figure 8).

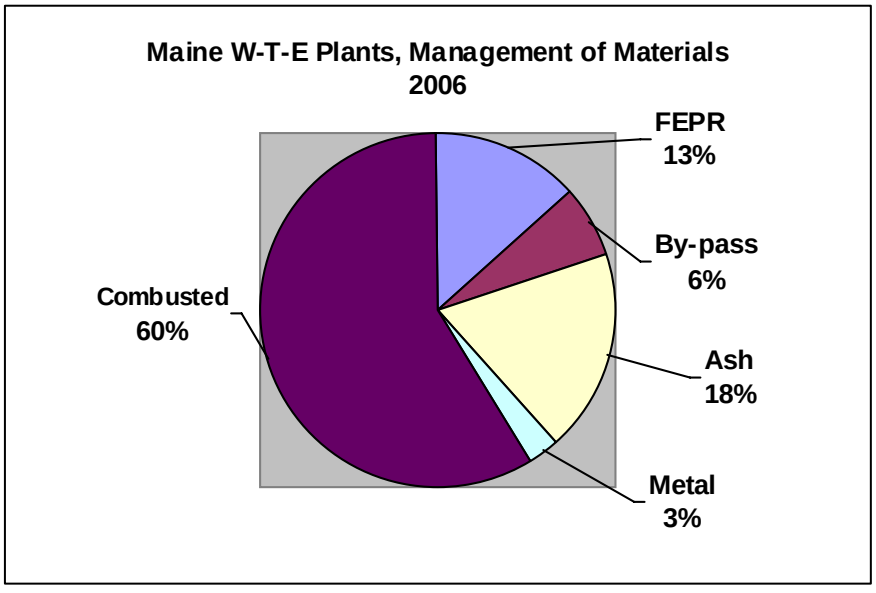


Figure 8: Maine W-T-E Plants, Management of Materials
Source: Facility License Reports, Maine DEP

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 the Pine Tree Landfill, though a portion was delivered to other disposal facilities. 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 and is landfilled. The ash from ME and PERC is buried at the commercial landfills and Juniper Ridge. The ash from MMWAC is buried at the City of Lewiston's landfill. In 2006, ash from *ecomaine* was buried in their own landfill, with the balance delivered to the Pine Tree and Juniper Ridge landfills.

Assessment of Facilities

Three of these facilities are at or close to 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 (see Section IV.C on Imported/Exported Municipal Solid Waste).

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.

During 2006, 437,037 tons of municipal solid wastes were imported to Maine, while exports totaled 75,980 tons. The amount of MSW imported to Maine is stabilizing while the amount exported[5] fluctuates as shown in Figures 9 and 10.

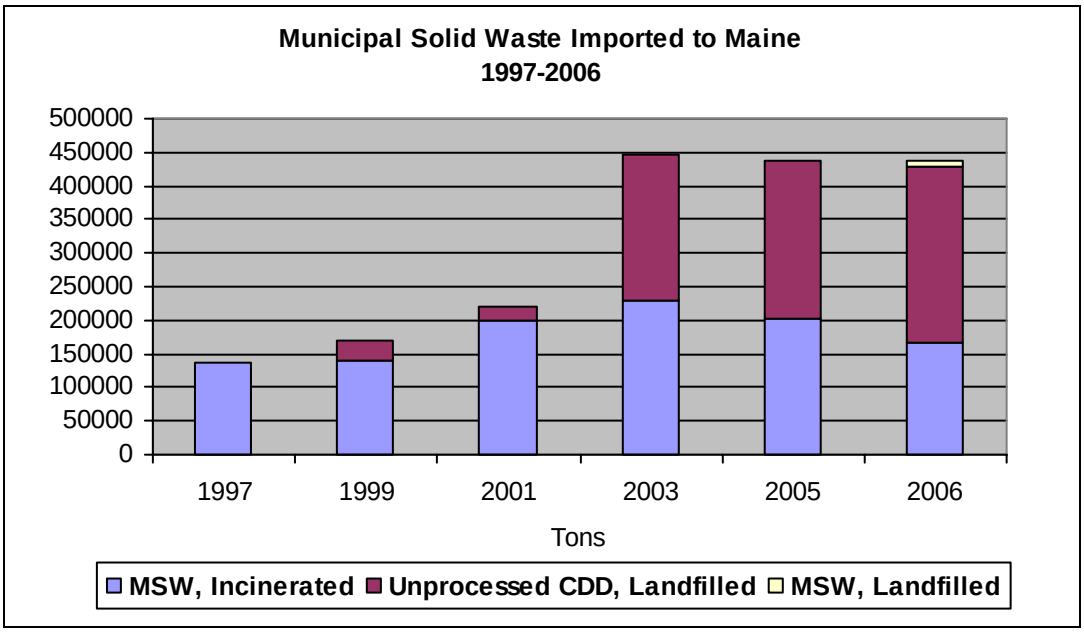


Figure 9: Municipal Solid Waste Imported to Maine, 1997-2006
Source: State Planning Office

[5] Exported waste was delivered to landfills in New Hampshire and New Brunswick for disposal.

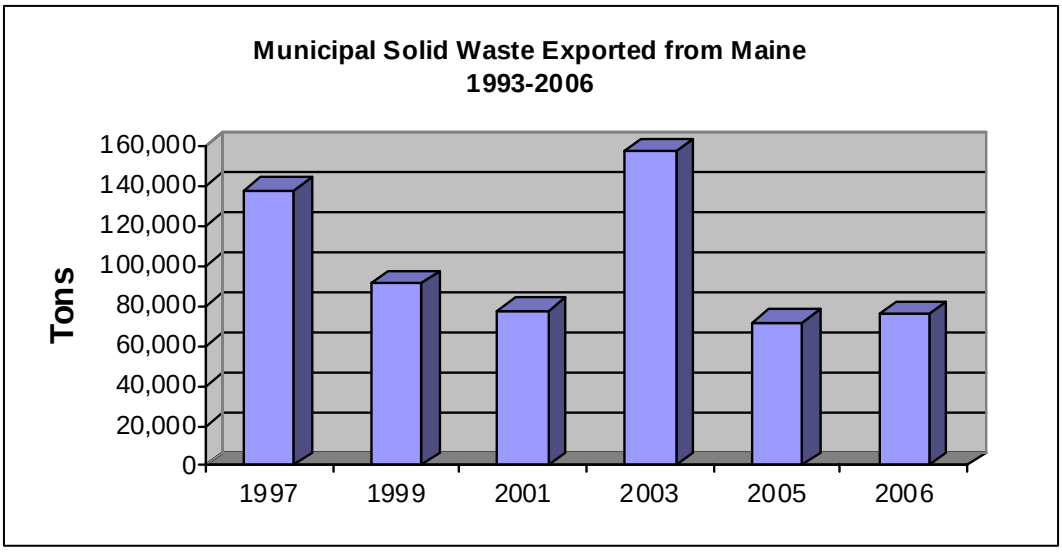


Figure 10: Municipal Solid Waste Exported from Maine
Source: State Planning Office

For imported waste in 2006, about 40% was municipal solid waste that was incinerated and 60% was construction and demolition debris that was landfilled.

Two of the waste-to-energy facilities in Maine (ME and PERC) received 165,195 tons of out-of-state generated MSW**.** Approximately 82% of this tonnage (136,472 tons) was delivered to ME and the remaining 18% (29,323 tons) delivered to PERC. Another 7,547 tons of out-of-state generated MSW was delivered to commercial landfills. Of the 263,695 tons of imported CDD disposed in Maine, 259,310 tons were landfilled at the Pine Tree Landfill and 4,385 tons were buried at the Crossroads Landfill (see Table E).

Table E: Waste Imported to Maine, by Facility
(in tons)

	2005	**2006**
MSW Incinerated – Maine Energy	146,590	136,472
MSW Incinerated – PERC	53,810	29,323
MSW Incinerated – RWS/ecomaine	538	0
MSW Landfilled – commercial landfills	0	7,547
CDD Landfilled – Pine Tree	233,600	259,310
CDD Landfilled – Crossroads	1874	4,385
Total Imported	436,412	437,037

D. Recycling Capacity

Maine recycles over 700,000 tons per year; 33% of which (approximately 227,000 tons) is handled by municipal recycling programs. There are 300 local recycling programs and a dozen 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. Currently, *ecomaine,* Maine's largest recycling region serving its 21- owner-municipalities in Cumberland County*,* has undergone a $3.8 million upgrade to its materials recovery facility in Portland. This investment will help *ecomaine* institute 'single sort' collection in order to expand its recycling from 25,000 to 40,000 tons a year.

The State Planning Office conducted extensive interviews with over 20 regional recycling managers and operators around the state in the summer of 2005 and concluded that there is capacity to process an additional 20,000 (20%) 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 32 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 42 million cubic yards of capacity. Maine has sufficient capacity to meet its needs for the next 20 years and beyond.

A. Statewide Disposal Capacity

Capacity Needed

Disposal capacity is a factor of need versus availability. Maine generated almost two million tons of waste in 2006. Assuming a 4% annual increase, we will generate over 4 million tons in 2025. 1.7 million tons per year is landfilled or sent to a W-T-E facility in Maine.[6] Of that 750,000 tons are landfilled within the state, including unprocessed solid waste, residues from waste to energy facilities, and special wastes such as ash.

By 2025, our total tons needing disposal are projected to increase to 2.8 million tons. Of that, 1.8 million tons or 2 million cubic yards will need to be landfilled per year. Figure 11 shows Maine's projected capacity needs over the next 20 years.

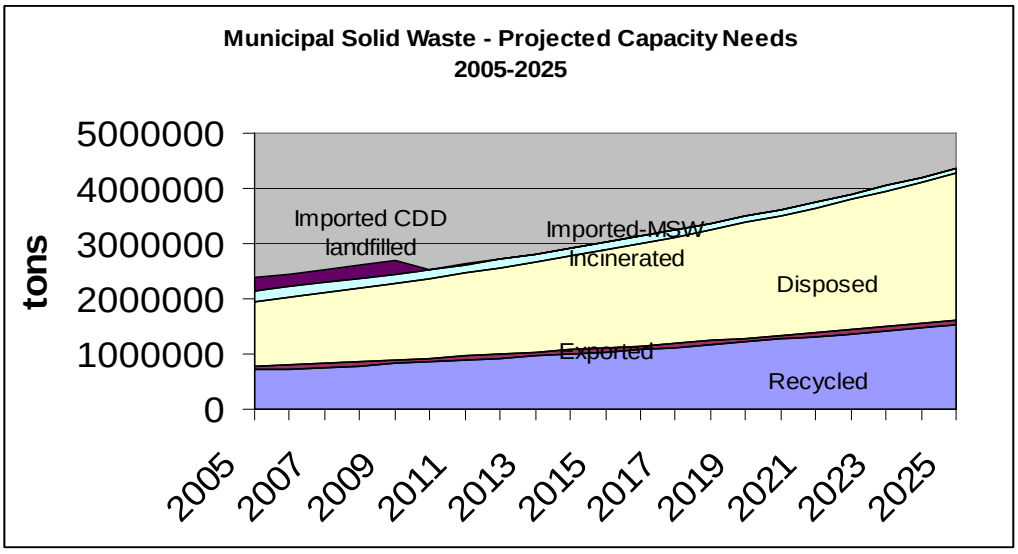


Figure 11: Maine Projected Capacity Needs in Tons, 2005 – 2025
Source: State Planning Office

[6] Including out-of-state waste

To handle this projected tonnage over the next 20 years, Maine will need 32 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)
- recycling tonnages increase as waste generation increases to maintain a 36% recycling rate[7]
- imports decrease as capacity at W-T-E facilities is replaced by Maine MSW as generation increases and landfills close
- exports remain at 2006 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
- a license amendment and expansion permit for Juniper Ridge is approved

Currently, we estimate that Maine has 19.15 million cubic yards of disposal capacity for municipal solid waste and the residues from waste to energy facilities, as follows:

- 2.7 million cubic yards in municipal landfills (1.8 million tons)
- 1.3 million cubic yards in municipal landfills (1.3 million tons of ash)
- 0.85 million cubic yards in municipal CDD landfills (550,000 tons)
- 5.3 million cubic yards in commercial disposal facilities (5.3 million tons)
- 9 million cubic yards in Juniper Ridge Landfill (9.0 million tons)

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 is not expected to have a significant impact on Maine's current solid waste management system. The planned closure responds to state policy adopted in 1989 that sought to restrict additional private sector development of disposal capacity.

Its closure will, however, shift *in-state* special wastes and construction and demolition debris to Juniper Ridge.

[7] Note that even to maintain a 36% recycling rate will require that Maine double the tons recycled from 700,000 to 1.5 million tons over 20 years.

Projected Planned Capacity
The State Planning Office is seeking an additional 22.5 million cubic yards (22.5 million tons) 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 over its current life.

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 22 million tons (cumulatively) from disposal at today's 36% rate.

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 commercial landfills will continue to accept unprocessed CDD from out-of-state for economic reasons. But as those facilities fill up and close, imported waste will drop.

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 (cumulatively) 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 higher oil prices and 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 42 million cubic yards of landfill capacity over the next 20 years, more than meeting our need for nearly 32 million cubic yards as shown in Table F.

Table F: Projected Disposal Capacity Available vs. Needed[8] 2006-2026

Landfill Capacity Available (cubic yards)			**Capacity Needed (tons)**	
Municipal Landfills	2,700,000		Total Maine waste disposed	62,000,000
Municipal CDD Landfills	850,000		Imported Waste	4,000,000
Commercial	6,700,000		Recycled	(22,000,000)
Juniper Ridge	9,500,000		Exported	(1,500,000)
Juniper Ridge expansion	22,500,000		Diverted to W-T-E	(11,000,000)
Total Landfill Capacity Available:	**42,250,000**		**Total Landfill Capacity Needed:**	**31,500,000**

Table E: Projected Disposal Capacity Available vs. Needed, 2006-2026
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.

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.

[8] Assumes a 1:1 conversion ration between tons and cubic yards

Aroostook County

While the Presque Isle Landfill has another decade of life at its existing facility, the city is already beginning to plan for the future. It is currently seeking approval for an expansion. The expansion, if approved, will extend their capacity for another 20 years. The Tri-Community Landfill in Fort Fairfield also is seeking a landfill expansion at this time which will serve those communities for another 15-20 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 2008-9. A new construction and demolition debris landfill for that region is in the planning stages, although the extent of the potential sources and volumes of the waste have yet to be finalized.

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[9], and, with a possible license amendment to Juniper Ridge to accept "bagged" or household MWS, transporting waste there.[10] The state, municipalities, and the private sector would need to work in partnership to find the best solution for the long term.[11]

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.[12]

Over the next 20 years, simply to maintain the state's current 36% recycling rate will require public and private programs to double their recycling handling abilities. As waste

[9] The cost-benefit of transporting wastes long distances would have to be considered.

[10] Any change in the type of waste accepted at Juniper Ridge would require approval from the Maine Department of Environmental Protection.

[11] Another consideration for this region is the contract renewal for electrical generation payments. A lower price could increase tip fees and impact volumes at the ME facility.

[12] Based on an assumed 4% annual growth in municipal solid waste generation

generation increases, the volume of recyclable materials at a 36% rate will increase from 700,000 tons in 2005 to 1.5 million tons in 2025.

To achieve a 50% recycling goal by 2009 and hold it, we would mean processing 30 million tons from the waste stream over the 20-year period as shown in Figure 13 (increasing from 700,000 tons in 2005, to 1 million tons in 2009 and 2.1 million tons by 2025).

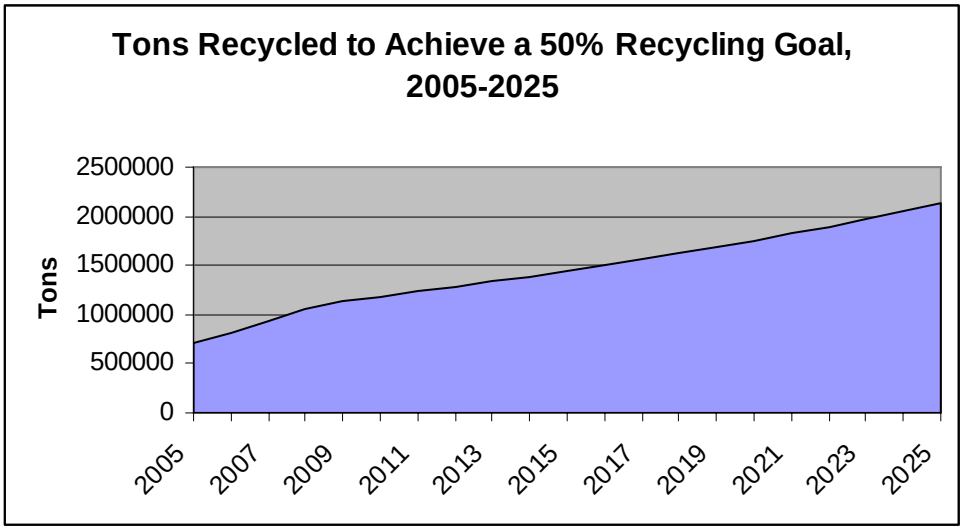


Figure 13: Tons Recycled to Achieve a 50% Recycling Goal
Source: State Planning Office

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 recycled materials per year. As discussed earlier, they have additional capacity for another roughly 20,000 tons annually.[13]

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.

[13] This does not include the ecomaine recycling collection and processing expansion that is predicted to add 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[14] per ton at Maine's landfills and incinerators and have stabilized allowing predictability for municipal budgeting and long-term planning.

Tip fees at the four waste-to-energy facilities are stable and reflect the commitment of the municipalities who either own the facility or have long-term contracts for disposal services. A number of regional landfill facilities (Bath, Augusta, *ecomaine*) recently implemented price increases that should hold for the foreseeable future.

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 largely determined by revenues 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.

Maine Energy's electrical contract is up for renewal in 2008. A lower price for electrical generation could impact not only tip fees but also reduce volumes at that facility.

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.

[14] 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 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.

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, 1999-2006

Materials:	2006	2005	2003	2001	1999
high grade paper	73,695	72,965	3,951	43,125	11,570
corrugated cardboard	119,487	117,144	88,166	202,129	198,442
newspaper	32,623	32,300	33,442	32,069	42,612
magazines	8,810	8,723	1,881	13,259	6,104
mixed paper	5,278	5,226	13,919	14,766	12,860
other paper	8,989	8,900	3,166	27,376	12,671
other grade not specified	37,173	36,805	132,475		
Total paper	286,055	282,063	277,000	332,724	284,259
clear glass	11,169	11,058	6,334	11,706	8,324
brown glass	24,621	24,377	11,270	12,200	12,545
green glass	12,748	12,622	3,142	6,700	26,167
all other glass	3,634	3,598	21,672	620	440
Total glass	52,172	51,655	42,418	31,226	47,476
white goods	80,753	78,401	68,125	115,219	142,640
aluminum	2,185	2,163	2,109	6,100	1,862
tin cans	1,100	1,089	3,154	9,754	18,833
non ferrous	23,445	23,213	18,847	22,491	18,652
other (various materials)	68,774	68,432	68,984		
Total Metal	176,257	173,298	161,219	153,564	181,987
HDPE	9,658	9,377	3,420	2,274	4,410
PET	4,909	4,766	8,725	9,042	6,521
LDPE film	537	526	711	4	
polystyrene		8	0	554	6
Other	542	631	531	1,917	1,211
Total Plastic	15646	15,308	13,387	13,791	12,148
wood waste	94,518	93,582	92,154	40,443	41,103
leaves	30,237	29,938	33,376	26,340	27,421
food waste	134	142	2,623	23,744	24,582
Total Organic	124889	123,662	128,153	90,527	93,106
tires	30,678	30,374	35,467	19,621	32,530
CDD, other wastes	24,831	23,425	49,714	38,848	39,469
Mercury-added/UW	642	487	327	242	
Total Hard to Manage	56,151	54,286	85,508	58,711	71,999
Textiles	1,832	1,724	2,260	3,827	6,023
other nonbulky MSW	7,409	6,935	7,638	3,445	2,740
TOTAL TONS RECYCLED:	**720,410**	**708,931**	**717,583**	**687,815**	**699,738**