

Municipal Solid Waste & Recycling: Bridgton's Future Challenges



Report

Bridgton Recycling Committee

February 11, 2014

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Executive Summary

Charge

The Bridgton Recycling Committee was charged with researching and evaluating options for the future of recycling and waste disposal for the town of Bridgton.

Guidelines & Values

The committee reviewed all current contracts and reached out to neighboring communities and potential contractors to gather data for the analysis. In addition to data gathering, in order to better understand the full extent of the issue, the committee researched national and state policies on waste management practices, costs and benefits of various methods, as well as community values.

Summary of Data

It is clear from the committee's research that the costs of hauling are going to increase next year. The range of estimated bids for a hauling contract is wide and the town hauling option is inside this range.

With ecomaine's recent decision to remove the assessment charge, it appears as though the town will save money on solid waste disposal next year, regardless of the hauling contractor choice. Since the estimates provided to the committee all are within the same range, it is important to take into consideration the other, less quantifiable factors, when making a decision. The committee also recognizes the importance of cost.

Table 13: Total costs for bidding out hauling and disposal

	Haul	Disposal	TOTAL	Notes
CURRENT	\$55,900	\$281,940	\$337,840	Waste to energy then landfill
ECO-'15	\$87,100	\$156,510	\$243,610	Waste to energy then landfill
CTR. II*	\$84,500	\$144,300	\$228,800	Waste to energy then landfill & future estimated price
CTR. III*	\$66,300	\$166,500	\$232,800	Landfill only & future estimated price
CTR. IV*	\$97,500	No Quote		Lacks MSW disposal rate
CTR. V*	No Quote	\$124,320		Landfill only; Lacks RECLBL haul rate; current pricing only

Recommendations

After reviewing the hauling data, there is not a clear choice to be made. The town hauling estimate falls within the range of estimated bids for a contractor, so a true cost estimate can only be made if the town goes out to bid and then compares those with the town hauling option.

The issue of solid waste and recyclables disposal is more complicated with price playing a primary role, but other non-quantifiable considerations, such as type of disposal facility, play an important role as well.

Based on the committee's research, the most important factors and guiding principles to consider in this decision are:

- Competitive price.
- Disposal method following the state's waste management hierarchy: waste to energy plants are higher on the hierarchy than landfills.
- Protecting the environment: landfills have high potential for pollution, ash from incinerators take up 90% less volume and the ash is much less likely to cause future pollution problems.
- Aligning with Bridgton's community values: providing for sustainable growth, the importance of quality of place, being responsible citizens for future generations.
- Knowing that the town's trash is going to the designated facility: not all waste to energy facilities are accessible directly from Bridgton and waste must go through another transfer before final deposition, allowing for potential diversion to a landfill.

With these factors in mind, the committee recommends that the town stay with ecomaine for solid waste and recyclables disposal. With the recent elimination of the assessment charge, ecomaine's rates are competitive and the town is able to send waste directly to their site and therefore knows that the waste is first being incinerated and not sent to a landfill. Also ecomaine is being responsible by setting aside money for the closure of the ash landfill and not pushing the costs off onto future generations, as many other disposal sites do.

Introduction

In May 2013, the Bridgton Recycling Committee was charged with researching and evaluating options for the future of recycling and waste disposal for the town of Bridgton. The committee has researched the town's current contracts and gathered data on estimated costs for renewing the contracts or going out to bid. In addition to this quantitative analysis, the committee has also completed some policy research to help guide the Select Board through the decision process.

The committee was also charged with reviewing the metals contract and the charge for compost. Both of these are reviewed in their own section following the recycling and waste disposal analysis.

Disposal of MSW¹ and Recyclables: Methodology

The committee went through the following steps to provide the material for this report:

1. The first step was to thoroughly understand the current contracts so the committee could weigh the costs and benefits to renewing or leaving the current vendors.
2. The second step was to gather data from neighboring towns and other contractors to provide comparison pricing. The committee accomplished this by reaching out directly to other town managers and transfer station managers, as well as developing a questionnaire for other contractors.² Despite multiple attempts to contact potential contractors, the committee was not able to obtain prices for all categories of information.
3. The third step was to gather and analyze the data and provide a useful framework to guide the Select Board's decision process. The committee developed the following framework:
 - A. Remain with ecomaine
 - 1) Renew existing hauling contract
 - 2) Bid out a new hauling contract
 - 3) Town provides hauling
 - 4) Send MSW to ecomaine and bale and market recyclables with a new hauling contract or town hauling

¹ MSW is municipal solid waste.

² See Appendix II.

- B. Leave ecomaine
 - 1) Renew existing hauling contract
 - 2) Bid out a new hauling and disposal contract
 - 3) Town provides hauling
 - 4) Send MSW elsewhere and bale and market recyclables with a new hauling contract or town hauling
- 4. The fourth step was to provide additional information that would help guide the decision process. These include state laws, state policies, best practices and community values.
- 5. The fifth step was to analyze all the data, policies and additional information to draw conclusions and make recommendations to the Select Board.

Disposal of MSW and Recyclables: Alternatives Analysis³

The committee created this framework to help organize the different options the town has for recycling and waste disposal. The first alternative (A) is based on the condition that the town continues with ecomaine in some form. The first three scenarios for alternative A, the town sends both the MSW and recyclables to ecomaine. The fourth scenario for alternative A would involve us sending the town's MSW to ecomaine and then baling recyclables with either a town haul or contracting out the haul.

- A. Remain with ecomaine
 - 1. Renew existing hauling contract
 - 2. Bid out a new hauling contract
 - 3. Town provides hauling
 - 4. Send MSW to ecomaine and bale and market recyclables with a new hauling contract or town hauling

The second alternative (B) also has four scenarios and is based on the town leaving ecomaine.

- B. Leave ecomaine
 - 1. Renew existing hauling contract
 - 2. Bid out a new hauling and disposal contract
 - 3. Town provides hauling
 - 4. Send MSW elsewhere and bale and market recyclables with a new hauling contract or town hauling

³ All supporting data for this section can be found in Appendix I.

A. Options for remaining with ecomaine

1. Renew existing hauling contract

The town's current hauling contract is with Pine Tree⁴ and a representative told the committee that the per haul cost will increase significantly over the current \$215 and could be as high as \$335 per haul.⁵

Table 1: Renew existing hauling contract

	MSW		RECLBLS		TOTAL
	Per Haul	Annual	Per Haul	Annual	
CURRENT	\$215	\$39,775	\$215	\$16,125	\$55,900
ECO-'15	\$335	\$61,975	\$335	\$25,125	\$87,100

If the town stays with ecomaine, disposal costs will remain the same, regardless of the hauler.

Table 2: Disposal costs with ecomaine

	MSW		RECLBLS	
	Per Ton	Annual	Per Ton	Annual
CURRENT	\$127	\$281,940	\$0	\$0
ECO-'15 ⁶	\$70.50	\$156,510	\$0	\$0

Table 3 combines the hauling and disposal rate for a final estimated figure for 2014 with renewing the existing hauling contract.

Table 3: Total cost of renewing hauling contract and disposal with ecomaine

	Haul	Disposal	TOTAL
CURRENT	\$55,900	\$281,940	\$337,840
ECO-'15	\$87,100	\$156,510	\$243,610

⁴ Pine Tree recently acquired BBI, who currently has the town's hauling contract.

⁵ The haul rate is likely to increase significantly regardless of the provider.

⁶ Assessment charge has been eliminated effective July 1, 2014.

2. Bid out a new hauling contract

The committee has learned that the town's current haul rate of \$215/haul is a very good rate and it is highly likely that any new contract will be significantly higher.

The table below represents four estimated prices for 2014 (ECO-'15, CTR II, III, IV) and one current price (CTR V) for hauling materials to ecomaine.

Table 4: Hauling bids

	MSW		RECLBLS		
	Per Haul	Annual	Per Haul	Annual	TOTAL
CURRENT	\$215	\$39,775	\$215	\$16,125	\$55,900
ECO-'15	\$335	\$61,975	\$335	\$25,125	\$87,100
CTR. II*	\$325	\$60,125	\$325	\$24,375	\$84,500
CTR. III*	\$255	\$47,175	\$255	\$19,125	\$66,300
CTR. IV*	\$375	\$69,375	\$375	\$28,125	\$97,500
CTR. V*	\$220	\$40,700	No Quote		Current pricing only

* Haulers did not want their pricing public

If the town stays with ecomaine, disposal costs will remain the same, regardless of the hauler.

Table 2 : Disposal costs with ecomaine

	MSW		RECLBLS	
	Per Ton	Annual	Per Ton	Annual
CURRENT	\$127	\$281,940	\$0	\$0
ECO-'15	\$70.50	\$156,510	\$0	\$0

When the hauling and disposal costs are added together, the result is the total estimated price for 2014 if the town bids out the haul contract and stays with ecomaine for disposal.

Table 5: Total cost of bid out hauling and disposal with ecomaine

	Haul	Disposal	TOTAL	
CURRENT	\$55,900	\$281,940	\$337,840	
ECO-'15	\$87,100	\$156,510	\$243,610	
CTR. II*	\$84,500	\$156,510	\$241,010	
CTR. III*	\$66,300	\$156,510	\$222,810	
CTR. IV*	\$97,500	\$156,510	\$254,010	
CTR. V*	No Quote	\$156,510		Current pricing only

3. Town provides hauling

The committee also researched the cost of the town purchasing a truck and hauling materials to ecomaine. The table below compares the price of the town hauling with the estimated prices from other contractors.

Table 6: Town hauling estimate

O&M/Year	\$78,649
Haul comparison:	\$/Year
CURRENT	\$55,900
ECO-'15	\$87,100
CTR. II*	\$84,500
CTR. III*	\$66,300
CTR. IV*	\$97,500

If the town stays with ecomaine, disposal costs will remain the same, regardless of the hauler.

Table 2: Disposal costs with ecomaine

	MSW		RECLBLS	
	Per Ton	Annual	Per Ton	Annual
CURRENT	\$127	\$281,940	\$0	\$0
ECO-'15	\$70.50	\$156,510	\$0	\$0

When hauling and disposal costs are added together, the result is the total estimated price for 2014 if the town provides hauling.

Table 7: Total cost of town hauling and disposal with ecomaine

	Haul	Disposal	TOTAL
CURRENT	\$55,900	\$281,940	\$337,840
ECO-'15	\$87,100	\$156,510	\$243,610
TOWN HAUL	\$78,649	\$156,510	\$235,159

4. Send MSW to ecomaine and bale and market recyclables with a new hauling contract or town hauling

MSW

For the MSW portion of this option (staying with ecomaine), table 8 displays estimated prices of bidding out the hauling contract.

Table 8: MSW hauling and disposal with ecomaine

	MSW Haul	MSW Disposal	TOTAL MSW	
CURRENT	\$39,775	\$281,940	\$321,715	
TOWN				
HAUL	\$55,709	\$156,510	\$212,219	
ECO-'15	\$61,975	\$156,510	\$218,485	
CTR. II*	\$60,125	\$156,510	\$216,635	
CTR. III*	\$47,175	\$156,510	\$203,685	
CTR. IV*	\$69,375	\$156,510	\$225,885	
				Current
CTR. V*	\$40,700	\$156,510	\$197,210	pricing only

Recyclables

For the recyclables portion of this option, the options are to either have the hauler deal with the recyclables or bale the materials and sell them ourselves.

Table 9 displays the costs of just having the hauler deal with the recyclables or having the town haul the recyclables to a disposal site.

Table 9: Recyclables hauling and disposal

	RECLBLS Haul	RECLBLS Disposal	TOTAL
CURRENT	\$16,125	\$0	\$16,125
ECO-'15	\$25,125	\$0	\$25,125
TOWN HAUL	\$22,940	\$0	\$22,940
CTR. II*	\$24,375	\$0	\$24,375
CTR.III*	\$19,125	\$0	\$19,125
CTR. IV*	\$28,125	\$0	\$28,125
CTR.V*	NO QUOTE	\$0	

The other option with recyclables is to have the town bale the material and sell it on the open market. Table 10 displays the revenue and the cost of the town baling.

Table 10: Town baling figures

Baling revenue	\$74,612
Cost of baling	(\$95,526)
Total	(\$21,914)

B. Options for leaving ecomaine

1. Renew existing hauling contract

The town's current hauling contract is with Pine Tree and a representative told the committee that the per haul cost will increase significantly over the current \$215 and could be as high as \$335 per haul.

Table 1: Renew hauling contract

	MSW		RECLBLS		
	Per Haul	Annual	Per Haul	Annual	TOTAL
CURRENT	\$215	\$39,775	\$215	\$16,125	\$55,900
ECO-'15	\$335	\$61,975	\$335	\$25,125	\$87,100

The following table presents the total disposal costs if the town renews the hauling contract.

Table 11: Total disposal costs with renewing hauling contract

	Haul	Disposal	TOTAL	
CURRENT	\$55,900	\$281,940	\$337,840	
ECO-'15	\$87,100	\$156,510	\$243,610	
CTR. II*	\$87,100	\$144,300	\$231,400	
CTR. III*	\$87,100	\$166,500	\$253,600	
CTR. IV*	\$87,100	No Quote		
CTR. V*	\$87,100	\$124,320	\$211,420	Current pricing only

*Note that any new contract not with ecomaine, for the first year, the town must add a onetime short term liability payment to ecomaine that will be a percentage (4.82%) of ecomaine's liabilities of the date of our leaving ecomaine, per our contract. The most recently estimated figure is \$65,400. This is in addition to the town's share of the ash landfill closure cost, currently estimated at \$650,000.

2. Bid out a new hauling and disposal contract

This option gathers estimates for both the hauling and the disposal. The first table presents the range of bids on the hauling portion.

Table 4: Hauling bids

	MSW		RECLBLS		
	Per Haul	Annual	Per Haul	Annual	TOTAL
CURRENT	\$215	\$39,775	\$215	\$16,125	\$55,900
ECO-'15	\$335	\$61,975	\$335	\$25,125	\$87,100
CTR. II*	\$325	\$60,125	\$325	\$24,375	\$84,500
CTR. III*	\$255	\$47,175	\$255	\$19,125	\$66,300
CTR. IV*	\$375	\$69,375	\$375	\$28,125	\$97,500
CTR. V*	\$220	\$40,700	No Quote		Current pricing only

The following table presents the range of bids on the disposal portion including notes about the type of facility.

Table 12: Disposal bids

	MSW Per Ton	RECLBLS	Annual	Notes
CURRENT	\$127	\$0	\$281,940	Waste to energy then landfill
ECO-'15	\$70.50	\$0	\$156,510	Waste to energy then landfill
CTR. II*	\$65	\$0	\$144,300	Waste to energy then landfill & future estimated price
CTR. III*	\$75	\$0	\$166,500	Landfill only & future estimated price
CTR. IV*	No Quote			
CTR. V*	\$56	\$0	\$124,320	Landfill only & current pricing

The final table presents the hauling and the disposal bids together.

Table 13: Total costs for bidding out hauling and disposal

	Haul	Disposal	TOTAL	Notes
CURRENT	\$55,900	\$281,940	\$337,840	Waste to energy then landfill
ECO-'15	\$87,100	\$156,510	\$243,610	Waste to energy then landfill
CTR. II*	\$84,500	\$144,300	\$228,800	Waste to energy then landfill & future estimated price
CTR. III*	\$66,300	\$166,500	\$232,800	Landfill only & future estimated price
CTR. IV*	\$97,500	No Quote		Lacks MSW disposal rate
CTR. V*	No Quote	\$124,320		Landfill only; Lacks RECLBL haul rate; current pricing only

*Note that any new contract not with ecomaine, for the first year, the town must add a onetime short term liability payment to ecomaine that will be a percentage (4.82%) of ecomaine's liabilities of the date of our leaving ecomaine, per our contract. The most recently estimated figure is \$65,400. This is in addition to the town's share of the ash landfill closure cost, currently estimated at \$650,000.

3. Town provides hauling

The committee also researched the cost of the town purchasing a truck and hauling materials to other disposal sites. The table below compares the price of the town hauling with the estimated prices from other contractors.

Table 6: Town hauling estimate

O&M/Year	\$78,649
Haul comparison:	\$/Year
CURRENT	\$55,900
ECO-'15	\$87,100
CTR. II*	\$84,500
CTR. III*	\$66,300
CTR. IV*	\$97,500

The following table presents the range of bids on the disposal portion including notes about the type of facility.

Table 12: Disposal bids

	MSW Per Ton	RECLBLS	Annual	Notes
CURRENT	\$127	\$0	\$281,940	Waste to energy then landfill
ECO-'15	\$70.50	\$0	\$156,510	Waste to energy then landfill
CTR. II*	\$65	\$0	\$144,300	Waste to energy then landfill & future estimated price
CTR. III*	\$75	\$0	\$166,500	Landfill only & future estimated price
CTR. IV*	No Quote			
CTR. V*	\$56	\$0	\$124,320	Landfill only & current pricing only

The final table presents the total if the town hauls the materials to a variety of disposal sites.

Table 14: Total cost of town hauling materials to other sites

	Haul	Disposal	TOTAL	Notes
CURRENT	\$55,900	\$281,940	\$337,840	Waste to energy then landfill
ECO-'15	\$78,649	\$156,510	\$235,159	Waste to energy then landfill
CTR. II*	\$78,649	\$144,300	\$222,949	Waste to energy then landfill & future estimated price
CTR. III*	\$78,649	\$166,500	\$245,149	Landfill only & future estimated price
CTR. IV*	\$78,649	No Quote		Lacks MSW disposal rate
CTR. V*	\$78,649	\$124,320	\$202,969	Landfill only; current pricing only

*Note that any new contract not with ecomaine, for the first year, the town must add a onetime short term liability payment to ecomaine that will be a percentage (4.82%) of ecomaine's liabilities of the date of our leaving ecomaine, per our contract. The most recently estimated figure is \$65,400. This is in addition to the town's share of the ash landfill closure cost, currently estimated at \$650,000.

4. Send MSW elsewhere and bale and market recyclables with a new hauling contract or town hauling

MSW

The cost for sending the town's MSW to another site and contracting for hauling is presented in the following table:

Table 15: Disposing of MSW at other site with hauling contract

	MSW Haul	MSW Disposal	TOTAL	Notes
CURRENT	\$39,775	\$281,940	\$321,715	Waste to energy then landfill
ECO-'15	\$61,975	\$156,510	\$218,485	Waste to energy then landfill
CTR. II*	\$60,125	\$144,300	\$204,425	Waste to energy then landfill & future estimated price
CTR. III*	\$47,175	\$166,500	\$213,675	Landfill only & future estimated price
CTR. IV*	\$69,375	No Quote		Lacks MSW disposal rate
CTR. V*	\$40,700	\$124,320	\$165,020	Landfill only ; current pricing only

The cost for sending the town's MSW to another site and the town hauling the MSW is presented in the following table:

Table 16: Disposing of MSW at other site with town hauling

	MSW Haul	MSW Disposal	TOTAL	Notes
CURRENT	\$39,775	\$281,940	\$321,715	Waste to energy then landfill
ECO-'15	\$55,709	\$156,510	\$212,219	Waste to energy then landfill
CTR. II*	\$55,709	\$144,300	\$200,009	Waste to energy then landfill & future estimated price
CTR. III*	\$55,709	\$166,500	\$222,209	Landfill only & future estimated price
CTR. IV*	\$55,709	No Quote		Lacks MSW disposal rate
CTR. V*	\$55,709	\$124,320	\$180,029	Landfill only ; current pricing only

Recyclables

For the recyclables portion, the options are to either have the hauler deal with the recyclables or bale the materials and sell them ourselves.

Table 9 displays the costs of just having the hauler deal with the recyclables or having the town haul the recyclables to a disposal site.

Table 9: Recyclables hauling and disposal

	RECLBLS Haul	RECLBLS Disposal	TOTAL
CURRENT	\$16,125	\$0	\$16,125
ECO-'15	\$25,125	\$0	\$25,125
TOWN HAUL	\$22,940	\$0	\$22,940
CTR. II*	\$24,375	\$0	\$24,375
CTR.III*	\$19,125	\$0	\$19,125
CTR. IV*	\$28,125	\$0	\$28,125
CTR.V*	NO QUOTE	\$0	

The other option with recyclables is to have the town bale the material and sell it on the open market. Table 10 displays the revenue and the cost of the town baling.

Table 10: Town baling figures

Baling revenue	\$74,612
Cost of baling	(\$96,526)
Total	(\$21,914)

*Note that any new contract not with ecomaine, for the first year, the town must add a onetime short term liability payment to ecomaine that will be a percentage (4.82%) of ecomaine's liabilities of the date of our leaving ecomaine, per our contract. The most recently estimated figure is \$65,400. This is in addition to the town's share of the ash landfill closure cost, currently estimated at \$650,000.

Disposal of MSW and Recyclables: Supporting Materials

State and National Policy on Waste Management

The State of Maine recognizes the importance of recycling and waste reduction and the negative consequences of disposing of waste in a landfill. The state followed the lead of the US EPA (Environmental Protection Agency)⁷ and created a solid waste management hierarchy with the following priority listing:

1. Reduction of waste generated at the source.
2. Reuse of waste.
3. Recycling of waste.
4. Composting of biodegradable waste.
5. Waste processing that reduces the volume of waste needing land disposal, including incineration.
6. Land disposal of waste.⁸

The State Legislature highlights the priority of recycling and limited resources for land filling,

The Legislature finds that it is in the best interests of the State to prefer waste management options with lower health and environmental risk and to ensure that such options are neither foreclosed nor limited by the State's commitment to disposal methods.

The Legislature declares that it is in the public interest to aggressively promote waste reduction, reuse and recycling as the preferred methods of waste management.

The Legislature finds that environmentally suitable sites for waste disposal are in limited supply and represent a critical natural resource. At the same time, new technologies and industrial developments are making recycling and reuse of waste an increasingly viable and economically attractive option which carries minimal risk to the State and the environment and an option which allows the conservation of the State's limited disposal capacity.⁹

Recycling

One easy way for the town to save money is to increase the recycling rate, since disposing of recyclable materials incurs no disposal costs, and more recyclables would mean fewer tons of

⁷ US EPA Non-Hazardous Waste Management Hierarchy.

<http://www.epa.gov/osw/nonhaz/municipal/hierarchy.htm>, see Appendix III.

⁸ 38 MRSA §2101. <http://www.mainelegislature.org/legis/statutes/38/title38sec2101.html>, see Appendix III.

⁹ 38 MSRA §1302. <http://www.mainelegislature.org/legis/statutes/38/title38ch13.pdf>, see Appendix III.

MSW. A recent article in the Bangor Daily News in April 2013, “How Lewiston could save \$100,000: Recycle more,” explained how the town could easily save a significant amount of money if there was more effort to recycle.¹⁰

As an example of how the town could save more money by recycling, the current recycling rate in Bridgton is 21% and the town spent \$337,840 to haul and dispose of MSW and recyclables. For every ton of MSW sent, it costs the town \$145 (hauling plus disposal), but for every ton of recyclables, it only costs \$27 (hauling plus disposal). If the town was able to move up to a reachable 30% recycling rate, the town would spend \$309,072 to haul and dispose of our MSW and recyclables. That is a potential savings of \$28,768 just by increasing the recycling rate!

Table 17: Costs of Disposal/Ton

MSW	\$145
RECLBLS	\$27

Table 18: Potential savings from increasing recycling rate

Current rate (21%)	
Total MSW costs	\$337,840
Projected rate (30%)	
Total MSW costs	\$309,072
Savings	\$28,768

Composting

Another way to reduce current costs to dispose of waste is to encourage residents to remove food scraps from the trash and compost them. According to the EPA, 14.5% of MSW is food scraps that could be composted and removed from the waste stream.¹¹ Removing food scraps is very easy to do either by creating a compost pile on the home property or using a compost bin. By removing those tons, the town saves money by not having to pay to dispose of the compost and reducing the number of hauls to the disposal site. Table 19 demonstrates the

¹⁰ Washuk, Bonnie. “How Lewiston could save \$100,000: Recycle more.” 22 Apr 2013. <http://bangordailynews.com/2013/04/22/environment/how-lewiston-could-save-100000-recycle-more/?ref=search>.

¹¹ US EPA Municipal Solid Waste. <http://www.epa.gov/epawaste/nonhaz/municipal/index.htm>.

potential for significant savings if all compostable food waste is removed from the MSW stream.

Table 19: Potential savings from diverting compost from MSW

2220	tons MSW in Bridgton
67.6	tons of food scraps diverted with 21% removed from MSW
\$9,801	potential savings from 21% compost diversion
321.9	TOTAL tons food scraps that could be diverted from MSW
\$46,675	potential savings from 100% compost diversion

Waste to Energy

Currently, the town sends waste to ecomaine, which is a waste to energy facility. Waste is burned and generates electricity and the leftover ash is land filled. This process reduces the waste volume by 90%, thus saving precious landfill space.

Waste to energy is higher on the state waste management hierarchy and preferable to land filling. There are many benefits to waste to energy including no landfill odors or gas, less leachate that needs to be treated, and less transportation to landfills. Waste to energy is considered a renewable energy source and reduces our reliance on fossil fuels.¹²

Ecomaine is not the only provider of waste to energy services in the area and the committee encourages the Select Board to weigh this option more heavily than land filling alone.

Landfill Option¹³

Landfills can be an appealing option because their upfront costs are often less expensive than other options. As quoted in an April 2013 Bangor Daily News article,

Landfill space is an asset right now...It will become a liability when we fill it. Land filling is a forever proposition. It doesn't go anywhere. It's the cheapest way out today, but it's

¹² Final Report of the Joint Standing Committee on Natural Resources: Interim Study of Solid Wastes Issues. <http://www.maine.gov/legis/opla/natcomsolidwasterep.pdf>.

¹³ It is hard to find much empirical data on landfills because in the state, the issue is very politically charged.

*not the cheapest way out in the future. We're just passing the cost down to our children and future generations to deal with.*¹⁴

There are a number of factors to consider when considering land filling waste. To start, Maine is running out of landfill space. It has been estimated that the Juniper Ridge landfill will be full within a decade,¹⁵ and the state will be out of landfill space by 2025.¹⁶ A 2013 report on Maine's solid waste system stated, "It is both geographically and politically challenging to find a suitable landfill location in Maine. Environmentally suitable landfill sites have been legislatively recognized in Maine as being "...in limited supply..." and representing "...a critical natural resource.""¹⁷ Creating new landfills is a time consuming and expensive proposition, which is why the state is prioritizing reducing the amount of waste that goes into landfills.

Landfill closure and monitoring is also an expensive undertaking that is often not set aside during the lifespan of a landfill and therefore is an additional cost that is not paid up front. For example, in 2011, the DEP estimated that it will cost \$17 million to close and cap and contain leachate in two sections of the Dolby landfill in Millinocket.¹⁸ In addition, any pollution from a leaking landfill can be expensive for the tax payers to clean up. In a 2013 report on Maine's solid waste system,

*...some of Maine's larger landfills are beginning to close and experts believe that the amount of public Maine dollars which will be needed to monitor, maintain and fix these landfills will increase significantly if action is not taken to reduce the volume of Maine-sourced and out-of-state-sourced solid waste deposited in Maine landfills. **We have already seen formerly private Maine landfills become the financial responsibility of Maine citizens for closure, monitor and maintenance.** One such landfill is currently polluting a tributary to the Penobscot River, and will cost the state millions of dollars for pollution containment.*¹⁹[emphasis added]

While landfills may appear to be less expensive to the town in the short term, the cost does not reflect the true cost of being responsible for the long term care of our waste. In the long term,

¹⁴ Koenig, Seth. "Maine running out of landfill space, recycling rates stalled, but new technologies are emerging." 21 Apr. 2013. <http://bangordailynews.com/slideshow/maine-running-out-of-landfill-space-recycling-rates-stalled-but-new-technologies-are-emerging/>.

¹⁵ Sambides, Jr. Nick. "Is East Millinocket's Dolby landfill the next Juniper Ridge?" 09 Dec. 2011. <http://bangordailynews.com/2011/12/09/news/state/is-east-millinocket%E2%80%99s-dolby-landfill-the-next-juniper-ridge/?ref=search>.

¹⁶ See 14.

¹⁷ Criner, George Ph.D. "Paying Now or Paying Later for Maine's Solid Waste Management." 9 Apr 2013. <http://www.doylenelson.com/cmsAdmin/uploads/criner-reportpdf.pdf>.

¹⁸ See 15.

¹⁹ See 17.

landfills are a significant environmental and financial burden. As a closing thought on the long term financial and environmental consequences of landfills,

In the closure of the nearly 400 old-style dump/landfills, the Maine DEP provided \$79 million to municipalities between 1989 and 2000. The Maine DEP notes in their January 23, 2012 publication, that Maine's unfunded obligations to municipalities for additional needed landfill closure and remediation was estimated at just under \$6.9 million. Unfortunately, these closed old-style dump/landfills will pose a virtually perpetual environmental, human health, and financial risk to Maine.²⁰

Community Values

Bridgton takes pride in highlighting and conserving its natural community as evidenced from public investment in parks and recreation and visiting the town's website. As the town website states, "And so it is in our Bridgton...this special town which offers a more meaningful life and a community built upon social and economic connectivity, sustainable growth, and "quality of place".²¹ The website also states that the community of Bridgton supports the philosophy that "...an overall culture that consumes lavishly and disposes thoughtlessly proves to be less valued."²²

Our town is marketed as a community where its citizens are committed to having the moral, ethical, and fiscal values that will ensure that the residents pass along to our children a town, as well as a state, that has clean waters, clean air, and a healthy natural outdoor environment that is free of pollutants, and with a limited risk of future pollutants. Is it congruous for our town to be branded as such, but then choose to dispose of its trash in a manner that is low on the national and State of Maine hierarchy of MSW disposal? Should the town be responsible and pay for the true cost of disposing of waste generated? Would it be counter to our values to push off our responsibilities and liabilities for our children to handle?

²⁰ Ibid.

²¹ Town of Bridgton website. http://www.bridgtonmaine.org/res_community.php.

²² Ibid.

Conclusions and Recommendations: Disposal of MSW and Recyclables

In evaluating how the town should move forward with its waste disposal options, there are a number of important factors to consider, with the primary consideration after cost being adherence to the sustainable waste management hierarchy adopted by the state. Variables to consider:

1. Cost—can the town save money by doing things differently? Is the price reduction stable or will market forces or additional fees reduce the savings?
2. Implementation of a new method. For example, if the town switches away from single stream recycling and returns to baling, how much of an inconvenience will that be for the public, and how much will the recycling rate drop because people are used to single stream and do not want to be bothered or are confused with going back to separating recyclables?
3. Where does the trash go after it leaves Bridgton? Knowing exactly where our trash is deposited after it leaves our transfer and recycling station is an important part of being responsible for our own waste. If our trash is sent to another transfer station and then shipped out for disposal, the town has no way of knowing exactly where it goes. A preferable option would be for our trash to be taken directly to the final disposal site.
4. Future liability. Currently the town has approximately \$650,000 liability for the ecomaine ash fill. If the town leaves ecomaine as an owner, that liability will not increase and will not decrease. Will the town accrue additional liability if the town switches to another disposal site?
5. Sustainability. Waste to energy facilities reduce the volume of trash by 90% and ranks higher on the state's waste management hierarchy than land filling.
6. True cost of being responsible. Land filling can be a less expensive option up front, but has many long term costs being passed down to our children (i.e. finding more landfill space, monitoring costs and potential groundwater pollution remediation).

Summary of Fact: Hauling

It is clear from the committee's research that the costs of hauling are going to increase next year. The range of estimated bids for a hauling contract is wide and the town hauling option is inside this range.

**Table 6: Town hauling
estimate**

O&M/Year	\$78,649
Haul comparison:	\$/Year
CURRENT	\$55,900
ECO-'15	\$87,100
CTR. II*	\$84,500
CTR. III*	\$66,300
CTR. IV*	\$97,500

Final Recommendation: Hauling

After reviewing the hauling data, there is not a clear choice to be made. The town hauling estimate falls within the range of estimated bids for a contractor, so a true cost estimate can only be made if the town goes out to bid and then compares those with the town hauling option.

An important factor to consider with hauling is whether the materials removed from the town transfer station are taken directly to a disposal site or sent to a transfer station where materials are loaded onto other trucks and then taken to a disposal site. When materials are sent directly to final disposal, the town can be sure that materials are being handled the way the town would like.

Summary of Fact: Disposal

MSW

With ecomaine's recent decision to remove the assessment charge, it appears as though the town will save money on MSW disposal next year, regardless of the contractor. While price is an important factor in this decision, since the estimates provided to the committee all are within the same range, it is important to take into consideration the other less quantifiable factors, such as type of disposal facility.

Table 12: Disposal bids

	MSW Per Ton	Annual	Notes
CURRENT	\$127	\$281,940	Waste to energy then landfill
ECO-'15	\$70.50	\$156,510	Waste to energy then landfill
CTR. II*	\$65	\$144,300	Waste to energy then landfill & future estimated price
CTR. III*	\$75	\$166,500	Landfill only & future estimated price
CTR. IV*	No Quote		
CTR. V*	\$56	\$124,320	Landfill only & current pricing only

RECYCLABLES

For recyclables disposal, the committee researched two different options: using a contractor or baling and selling materials on the open market. The town baling estimate falls within the range of estimates for using an outside contractor, so taking other factors into consideration, such as changing how the public recycles, will be important.

Table 9: Recyclables hauling and disposal

	RECLBLS Haul	RECLBLS Disposal	TOTAL
CURRENT	\$16,125	\$0	\$16,125
ECO-'15	\$25,125	\$0	\$25,125
TOWN HAUL	\$22,940	\$0	\$22,940
CTR. II*	\$24,375	\$0	\$24,375
CTR.III*	\$19,125	\$0	\$19,125
CTR. IV*	\$28,125	\$0	\$28,125

Table 10: Town baling figures

Baling revenue	\$74,612
Cost of baling	(\$96,526)
Total	(\$21,914)

Opinion: The committee does not think it makes sense to go back to baling for a number of reasons:

- To start, the market is very unstable.
- Hiring additional staff will expose the town to more potential workers compensation claims.
- The committee thinks the public will not like the return to the labor-intensive separating materials since the current single sort system is very simple and easy to do. If the town switched back to separating, the committee believes that the recycling rate will drop.
- In addition, the public will not be able to recycle as many materials since our current contractor takes in many more types of items than the town can sell on the open market. Therefore those materials will go into MSW and cause a slight increase in tonnage and costs of MSW.

Final Recommendation: Disposal

The committee recommends that the town stay with ecomaine for MSW and recyclables disposal for the following reasons:

- Fiscal stability: ecomaine provides a fiscally stable option for the town. Like any of the other options, changes in price may occur. However, being on the board of ecomaine gives Bridgton “a voice” in the price structure, and as we recently witnessed a greater influence than being solely at the discretion of a private business decision.
- Following state MSW hierarchy: ecomaine incinerates its trash, which is higher on the waste management hierarchy than land filling. Adherence to the State of Maine hierarchy minimizes the risk of future expenditure liabilities that might have to be paid by the taxpayers.
- Knowing where our trash is going: Since ecomaine’s facility is easily accessible from Bridgton, the hauler can take the materials directly to ecomaine and therefore the town knows that its trash is being incinerated and not being transferred to a different disposal site.

- Community values: Unlike other waste disposal sites, ecomaine is currently setting aside money for the closure of its landfill and taking responsibility today for the future costs of today's waste. It is important to note that many other disposal sites do not factor these future costs into their current pricing and therefore this will be a future cost for these sites.
- Protecting the environment: Through incineration, the volume of waste is reduced saving landfill space. The ash in the landfill is less likely to cause future pollution problems compared with land filled trash.
- Continuing to have an ownership role in ecomaine: This allows the town to "anticipate" its future costs and potential liabilities, as well as how ecomaine assets are operated, maintained and financed.

Metal Contract

Under the current contract that expires June 30, 2014, the town receives 45% of market rate and does not pay any hauling or container rental fee.

The committee recommends that the town sell the materials on its own. The transfer station manager would call around for the spot market rate and choose the highest rate.

Compost

The town currently charges \$.01 per pound of compost and sells approximately 48 tons a year. The committee recommends that price be increased to a minimum of \$.04 per pound. This will increase the revenue from \$960 to \$3,840.

Appendix I

Constants (based on 2014 budget)

		TONS	HAULS	TONS/HAUL
ANN'L	MSW	2220	185	12
	RECYCLS	600	75	8

Recycle %

Total tons	2820
% Recycled	21%

Costs of Disposal/Ton

MSW	\$145
RELCBLS	\$27

- Each roll off can holds 12 tons of MSW, MSW disposal rate is \$127 and haul rate is \$215, so cost/ton is $((\$127 \times 12) + \$215) / 12 = \$145$
- Each roll off can holds 8 tons of recyclables and haul rate is \$215, so cost/ton is $\$215 / 8 = \27

Town Hauling Calculations

Note: The town budget for hauling is composed of multiple pieces: MSW, single sort, wood and demo, and metals. These calculations are ONLY for the MSW and single sort portions of the budget.

In the 2015 budget, of the 494 hauls estimated, only 312 are MSW and recyclables (64%). The hauls for demo and wood are not as far as MSW, so the proportional mileage is higher for MSW and recyclables (30,880 MSW vs. 37,100 total (84%)).

Individual Pieces:

Tractor (used): cost \$85,000, paid over 10 years
(new truck should have \$20,000 reserve)

Operators

# Workers	Wage	Hrs	Weekly	Yearly
3PT	\$20.00	18 HRS/WEEK	\$360	\$18,720

Fuel

Rnd Trip Miles: 90	Trips/Week: 6 trips	Mileage/Year: 28,080 miles	Add 10%: 30,880 miles
MPG: 6	Gallons Used: 5,147		
EST. Fuel: \$4.25/gal	Total Fuel Cost: \$21,874		

General maintenance (based on miles)

30,880 (MSW + recycle miles)/37,100 (total miles)=84%
84% * \$11,000 (total maintenance)
\$9,240

Insurance (based on miles)=\$13,000 * 84%=\$10,920

Final Calculation

TRACTOR	\$8,500
FUEL CHARGE	\$21,874
GEN. MAINT	\$9,240
INSURANCE	\$10,920
RENTAL RPLCMT	\$6,400
OPERATORS	\$18,720
WC/UC	\$2,995
TOTAL O&M	\$78,649

Town Baling Calculations

COSTS: Individual Pieces:

Wages

PAYROLL TAX				
# EMPLYS	HRLY WAGE	ANN'L	0.0765	SUBTOTAL
2	\$13.47	\$56,035	\$4,287	\$60,322

HEALTH DENTAL CLOTH WC/UC RET. Total

INS- ANNL	INS.	ALLOW.	\$2.10	5%	HRA	All
\$21,412	\$1,060	\$600	\$1,267	\$2,802	\$1,000	\$88,462

Workers Comp Insurance and Claims

Workers comp insurance rate	\$1.10	per \$100
Wages	\$91,853.00	\$918.53
Total		\$1,010

Average worker's comp claim	2	accidents/year
Average hourly rate at station	\$16	
Average loss of work time	60	hours
Average claim	\$953	

Final Calculation

Wages	\$88,462
Workers Comp Ins	\$1,010
Workers Comp Claims	\$953
Addtl Maintenance	\$3,500
Addtl Utility Costs	\$1,500
Addtl O&M Supplies	\$600
Addtl LP	\$500
Total	\$96,526

Income

Category	Tons/Yr 2007 data	Current Market Price/Ton	Estimated Ann'l Revenue
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Cardboard	275.04	\$110	\$30,254
Newspaper	154.70	\$60	\$9,282
Mixed paper	44.94	\$50	\$2,247
Plastics	16.74	\$370	\$6,194
Tin	15.30	\$130	\$1,989
Aluminum	1.19	\$1,240	\$1,476

Glass	40.65	\$570	<u>\$23,171</u>
Est. Total Revenue			\$74,612

Assumptions:

All paper is grouped as mixed

Acceptable plastics mixed.

Glass was mixed at an average price of \$.285/lb

Increasing the Recycling Rate Calculations

% Recycled	30
Recycled tons	846
MSW tons	1974
Costs at 21%	
MSW	\$321,715
RECL	\$16,125
Total	\$337,840
30% costs	
MSW	\$286,230
RECL	\$22,842
Total	\$309,072
Savings MSW Costs	\$28,768

Composting Calculations

2220	tons MSW
0.145	percent of trash that is food waste
321.9	compost that could be diverted from tons of MSW that is compost
67.599	tons of compost at 21% diversion rate
\$9,801.86	potential savings from 21% diversion (multiplied by cost of MSW/ton)

Appendix II

The committee reached out to the following towns and companies for data and research:

- A/L Murphy Waste Systems
- Androscoggin Valley Solid Waste District
- Corcoran Environmental Services
- ecomaine
- Pine Tree Waste
- RW Herrick
- Town of Denmark
- Town of Farmington
- Town of Fryeburg
- Town of Naples

The following is the questionnaire sent out to potential contractors.

TOWN OF BRIDGTON- REVIEW OF HAULING AND DISPOSAL OPTIONS

The following are suggested questions that may be used by the Recycling Committee to gather data and information from contractors in the hauling and MSW disposal business. Additional questions and follow up may be necessary.

1. How long have you been in the MSW hauling and disposal business?_____
2. In terms of tonnages about how many tons do your customers generate in MSW and RECYCLABLES?
- 3.a Where do you take the MSW and /or recyclables once you pick them up?
Bridgton Transfer Station_____ Landfill (name)_____
Waste to energy plant (name)_____ other_____
- 3.b Are any of the above the final disposal site or is there another facility that becomes the final disposal site? If so please provide its name_____
4. If you were hired by the Town of Bridgton to haul and dispose of all of the MSW/RECYCLABLES can you give me a cost range per ton to:

- a. Haul_____ [do you use compacting containers?_____]
- b. Dispose at any landfill or regional system set up to handle disposal_____
- c. What other charges would you expect?_____
- d. Would you provide any revenues back to the Town for marketing any of the:
- MSW_____ RECYCLABLES_____ METALS_____
- DEMOLITION DEBRIS_____ WOOD_____
- OTHER_____

5. If you were hired by the Town of Bridgton to handle all of the hauling and disposal as indicated above, what would you want for the contract length? Single year_____Multiple years _____

6. Again under the above scenario, what would you not handle for hauling and disposal?_____

7. What is your current surcharge for fuel, if any?_____

8. Do you have any other surcharges to customers?_____

Thank you....The Bridgton Recycling Committee

Appendix III

US EPA Non-Hazardous Waste Management Hierarchy

Because no single waste management approach is suitable for managing all waste streams in all circumstances, EPA developed a hierarchy ranking the most environmentally sound strategies for municipal solid waste. The hierarchy places emphasis on reducing, reusing, and recycling the majority of wastes and demonstrates the key components of EPA's



Sustainable Materials Management Program (SMM).

SMM is an effort to protect the environment and conserve resources for future generations through a systems approach that seeks to reduce materials use and their associated environmental impacts over their entire life cycles, starting with extraction of natural resources and product design and ending with decisions on recycling or final disposal.

Source Reduction and Reuse

Source reduction, also known as waste prevention, means reducing waste at the source. It can take many different forms, including reusing or donating items, buying in bulk, reducing packaging, redesigning products, and reducing toxicity. Source reduction also is important in manufacturing. Lightweighting of packaging, reuse, and remanufacturing are all becoming more popular business trends. Purchasing products that incorporate these features supports source reduction.

Source reduction can:

- Save natural resources;
- Conserve energy;
- Reduce pollution;
- Reduce the toxicity of our waste; and
- Save money for consumers and businesses alike.
- Recycling/Composting

Recycling/Composting

Recycling is a series of activities that includes the collection of used, reused, or unused items that would otherwise be considered waste; sorting and processing the recyclable products into raw materials; and remanufacturing the recycled raw materials into new products. Consumers provide the last link in recycling by purchasing products made from recycled content. Recycling also can include composting of food scraps, yard trimmings, and other organic materials.

Recycling prevents the emission of many greenhouse gases and water pollutants, saves energy, supplies valuable raw materials to industry, creates jobs, stimulates the development of greener technologies, conserves resources for our children's future, and reduces the need for new landfills and combustors.

Energy Recovery

Energy recovery from waste is the conversion of non-recyclable waste materials into useable heat, electricity, or fuel through a variety of processes, including combustion, gasification, pyrolyzation, anaerobic digestion, and landfill gas (LFG) recovery. This process is often called waste-to-energy (WTE).

Treatment and Disposal

Landfills are the most common form of waste disposal and are an important component of an integrated waste management system. Landfills that accept municipal solid waste are primarily regulated by state, tribal, and local governments. EPA, however, has established national standards these landfills must meet in order to stay open. The federal landfill regulations have eliminated the open dumps of the past. Today's landfills must meet stringent design, operation, and closure requirements. Methane gas, a byproduct of decomposing waste, can be collected and used as fuel to generate electricity. After a landfill is capped, the land may be used for recreation sites such as parks, golf courses, and ski slopes.²³

Maine Solid Waste Management Hierarchy

Title 38: WATERS AND NAVIGATION

Chapter 24: SOLID WASTE MANAGEMENT AND RECYCLING HEADING: PL 1995, C. 465, PT. A, §26 (RPR)

Subchapter 1: GENERAL PROVISIONS HEADING: PL 1995, C. 465, PT. A, §27 (RPR)

§2101. Solid waste management hierarchy

1. Priorities. It is the policy of the State to plan for and implement an integrated approach to solid waste management for solid waste generated in this State and solid waste imported into this State, which must be based on the following order of priority:

- A. Reduction of waste generated at the source, including both amount and toxicity of the waste; [1989, c. 585, Pt. A, §7 (NEW).]
- B. Reuse of waste; [1989, c. 585, Pt. A, §7 (NEW).]
- C. Recycling of waste; [1989, c. 585, Pt. A, §7 (NEW).]
- D. Composting of biodegradable waste; [1989, c. 585, Pt. A, §7 (NEW).]

²³ US EPA Municipal Solid Waste. <http://www.epa.gov/osw/nonhaz/municipal/hierarchy.htm>.

E. Waste processing that reduces the volume of waste needing land disposal, including incineration; and [2007, c. 583, §7 (AMD).]

F. Land disposal of waste. [1989, c. 585, Pt. A, §7 (NEW).]

It is the policy of the State to use the order of priority in this subsection as a guiding principle in making decisions related to solid waste management. [2007, c. 583, §7 (AMD) .]

2. Waste reduction and diversion. It is the policy of the State to actively promote and encourage waste reduction measures from all sources and maximize waste diversion efforts by encouraging new and expanded uses of solid waste generated in this State as a resource.

[2007, c. 192, §2 (NEW) .]

SECTION HISTORY

1989, c. 585, §A7 (NEW). 2007, c. 192, §2 (AMD). 2007, c. 583, §7 (AMD).²⁴

DECLARATION OF POLICY (38 §1302)

For the purposes of this chapter and chapter 24, the Legislature finds and declares it to be the policy of the State, consistent with its duty to protect the health, safety and welfare of its citizens, enhance and maintain the quality of the environment, conserve natural resources and prevent air, water and land pollution, to establish a coordinated statewide waste reduction, recycling and management program. [1989, c. 585, Pt. E, §2 (RPR).]

The Legislature finds and declares that it is the policy of the State to pursue and implement an integrated approach to hazardous and solid waste management, which shall be based on the following priorities: reduction of waste generated at the source, including both the amount and toxicity of waste; waste reuse; waste recycling; waste composting; waste processing which reduces the volume of waste needing disposal, including waste-to-energy technology; and land disposal. [1989, c. 585, Pt. E, §2 (RPR).]

The Legislature finds that it is in the best interests of the State to prefer waste management options with lower health and environmental risk and to ensure that such options are neither foreclosed nor limited by the State's commitment to disposal methods. The Legislature declares that it is in the public interest to aggressively promote waste reduction, reuse and recycling as the preferred methods of waste management. [1989, c. 585, Pt. E, §2 (RPR).]

The Legislature finds that environmentally suitable sites for waste disposal are in limited supply and represent a critical natural resource. At the same time, new technologies and industrial

²⁴ 38 MRSA §2101. <http://www.mainelegislature.org/legis/statutes/38/title38sec2101.html>.

developments are making recycling and reuse of waste an increasingly viable and economically attractive option which carries minimal risk to the State and the environment and an option which allows the conservation of the State's limited disposal capacity. [1989, c. 585, Pt. E, §2 (RPR).]

The Legislature further finds that needed municipal waste recycling and disposal facilities have not been developed in a timely and environmentally sound manner because of diffused responsibility for municipal waste planning, processing and disposal among numerous and overlapping units of local government. The Legislature also finds that direct state action is needed to assist municipalities in separating, collecting, recycling and disposing of solid waste, and that sound environmental policy and economics of scale dictate a preference for public solid waste management planning and implementation on a regional and state level. [1989, c. 585, Pt. E, §2 (RPR).]

The Legislature finally declares that the provisions of this chapter shall be construed liberally to address the findings and accomplish the policies in this section. [1989, c. 585, Pt. E, §2 (RPR).]

SECTION HISTORY

1973, c. 387, (NEW). 1979, c. 383, §1 (AMD). 1983, c. 342, §1 (AMD).

1987, c. 517, §5 (RPR). 1989, c. 585, §E2 (RPR).²⁵

²⁵ 38 MSRA §1302. <http://www.mainelegislature.org/legis/statutes/38/title38ch13.pdf>.

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