

January 15, 2016

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Mr. David Kinney
Town Administrator
Town of Lincolnville
493 Hope Road
Lincolnville, ME 04849

Subject: Mid-Coast Solid Waste Corporation
Evaluation of Waste Handling Options
Post-2018

Dear David:

Sevee & Maher Engineers, Inc. (SME) has completed its technical review of municipal solid waste (MSW) handling options available to the communities of Mid-Coast Solid Waste Corporation (MCSWC) once the current contractual obligations with the Penobscot Energy Recovery Company (PERC) expire in April 2018. SME's technical review included an assessment of the various waste management options within the State of Maine that currently exist or potentially could become available to MCSWC post-2018. These options include:

- Three waste-to-energy facilities (incinerators);
- Seven secure landfills (municipal/commercial and State-owned facilities); and
- The proposed Municipal Review Committee (MRC)/Fiberight LLC (Fiberight) waste processing facility that is currently under permit review by the Maine Department of Environmental Protection (MEDEP).

With the exception of the Fiberight facility, all of these options are operating facilities which are part of the State's solid waste management infrastructure. Information on the current and

future capacities of these existing facilities is summarized in the January 2015 Maine Solid Waste Generation and Disposal Capacity Report (Capacity Report), prepared by the MEDEP. The Capacity Report includes information reported by each facility through the end of 2013 and estimates available capacity for the next 5, 10, and 20-year periods using the reported 2013 fill rate of the facility.

SME's review included telephone interviews and email correspondences with representatives of the facilities identified in the Capacity Report as well as with representatives of the MRC and Fiberight. Telephone interviews were conducted to confirm the information contained in the MEDEP Capacity Report (e.g., facilities permitted and available capacity, consumption rate, etc.) and to determine the level of interest each facility had in terms of accepting approximately 6,000 tons/year of MSW from MCSWC. The interviews also allowed SME to understand the potential each facility has to expand in the future and if any local or state permit restrictions exist that would preclude the facility from accepting MSW from MCSWC. SME also reviewed available literature on the Fiberight process and the MRC/Fiberight permit application filed with the MEDEP.

During the interview process, SME was provided with additional information by both the PERC and MRC/Fiberight representatives to better understand the operations and economics of each of these entities post-2018. Ecomaine also provided SME with a more formal response to our initial telephone inquiry. All parties contacted by SME during the review process were open and forthcoming with information about their facilities and future plans, which allowed SME to better understand the operating assumptions and risks that each of these waste management options will face post-2018.

The following is a summary of the information SME gathered during our review. The summary includes a brief description of the facility, its capacity to accept the MCSWC MSW post-2018, the potential range of transportation and tipping costs for the facility and other information provided by the facility representative that may be useful for MCSWC to consider. We've also identified potential advantages and disadvantages for each option based on factors such as permitting considerations, the underlying assumptions which support the technology and economics of the facilities, the need for the facility's board or town council to

approve accepting the MCSWC wastes and the facility ranking relative to the State of Maine solid waste hierarchy. A summary table of this information is also attached.

LANDFILLS

SME contacted a total of seven landfills currently operating in the State of Maine. Five of the landfills are municipally or quasi-municipally owned, one is a commercial landfill, and one is a state owned landfill. With the exception of the commercial and state owned landfill, each landfill generally accepts waste from specific regions of the State, local to the municipality where the facility is located. These municipal landfills are interested in exploring the acceptance of the MCSWC MSW; however, the representatives for these facilities indicated that the acceptance would have to be vetted by their governing entity (e.g., boards or town council) and in some cases may require MEDEP approval.

Tri-Community Landfill

Contact person: Mark Draper (473-7840)

The Tri-Community Landfill provides solid waste management services to the Aroostook County region and its membership currently includes the City of Caribou and the towns of Fort Fairfield and Limestone. Currently discussions are underway with the City of Presque Isle to accept its waste, if Presque Isle decides to close its landfill. The current licensed capacity of the Tri-Community Landfill is approximately 1.6 million cubic yards which is expected to provide 50 to 60 years of life at current fill rates (25,000 to 35,000 tons/year). The facility has the potential to expand by approximately 1-million cubic yards in the future. The typical disposal contract term for the facility is generally 7 to 10 years and is based upon available capacity (developed cell) of the facility. Currently the tipping fee for member communities is \$88.50 per ton, and the estimated transportation fee to this facility from the Mid-Coast transfer station is \$87.60 per ton¹. Total disposal fee for this facility is estimated to be approximately \$176 per ton.

¹ Estimated transportation fees to all facilities evaluated in this review were determined using a unit price of \$0.40/mile for a relative comparison of transportation cost for each disposal option.

Advantages

- Permitted facility with available capacity and the potential to expand; and
- Generates revenue through tipping fees. Financial stability is not predicated on variable income streams such as sales of processed materials or energy outputs (e.g., gas or electrical power).

Disadvantages

- Relatively high tipping fee;
- Distance from MCSWC communities resulting in high transportation costs; and
- Landfilling is the last option on the State's waste management hierarchy.²

² Waste Management Hierarchy: Maine statute established a hierarchy for management of solid waste, to be used as a guiding principle in decision-making. 38 M.R.S.A. § 2101(1) states:

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;
- B. Reuse of waste;
- C. Recycling of waste;
- D. Composting of biodegradable waste;
- E. Waste processing that reduces the volume of waste needing land disposal, including incineration; and
- F. Land disposal of waste.

Presque Isle Landfill

Contact person: Dana Fowler (764-4485)

The Presque Isle Landfill currently handles waste from six member towns and one organized territory. The landfill is a secure landfill centrally located on a 600-acre parcel with a 95 to 100 years of permitted airspace at the current fill rates (approximately 10,000 to 15,000 tons/year). Due to the Landfill's central location and the size of the parcel, the facility has the ability to expand if necessary. Current commercial disposal tipping fee for municipal solid waste at the Presque Isle Landfill is \$80.00 per ton and the transportation fee to this facility from the Mid-Coast transfer facility is estimated to be approximately \$82.80 per ton. The total disposal fee for the Presque Isle Landfill is estimated to be approximately \$163 per ton.

Advantages

- Permitted facility with available capacity and the potential to expand; and
- Generates revenue through tipping fees. Financial stability is not predicated on variable income streams such as sales of processed materials or energy outputs (e.g., gas or electrical power).

Disadvantages

- Relatively high tipping fee;
- Distance from MCSWC communities resulting in high transportation costs;
- Landfilling is the last option on the State's waste management hierarchy; and
- Presque Isle is considering closing the landfill and taking future waste to the Tri-Community Landfill.

Brunswick Landfill

Contact person: John Foster (725-6654)

The Brunswick Landfill is a 16-acre facility with approximately 80,000 tons of capacity remaining. The current fill rate for this facility is approximately 4,000 tons/year. The facility does not have the opportunity for future expansion. Brunswick is currently evaluating future options for the facility, including closing the landfill since continuing operations of the facility will likely require an expensive upgrade to its leachate treatment system. They may be interested in receiving the MCSWC waste for an interim period of 3 to 5 years to expedite closure. The facility would require MEDEP approval to receive MSW from outside of Brunswick for expedited closure of the facility. Tipping fees to receive MCSWC waste, if permits were received from the MEDEP, are estimated to be approximately \$80.00 per ton, subject to negotiation between the Town of Brunswick and the MCSWC. Estimated transportation fees to this facility from the Mid-Coast transfer station is \$21.60 per ton, for a total estimated disposal cost of approximately \$102 per ton.

Advantages

- May be agreeable to short-term, less than 5-year, waste disposal contract that would provide the MCSWC with an interim option for MSW disposal as the State's solid waste infrastructure assets adjust to the post-2018 conditions.

Disadvantages

- Brunswick is currently trying to determine its overall solid waste management plans;
- Limited air space without the potential for expansion;
- The facility's current MEDEP permits restrict the acceptance of MSW from outside of the City of Brunswick. This permit could be modified but there would be an expense associated with the permit modification; and
- Landfilling is the last option on the State's waste management hierarchy.

Hatch Hill Landfill

Contact person: Leslie Jones (626-2435)

The Hatch Hill Landfill serves the City of Augusta and eight other surrounding communities. There are no permit conditions (local or state) that would preclude the landfill from receiving additional MSW from other communities. The existing landfill has approximately 15 years of capacity remaining at its current fill rate of 24,000 tons/year. The landfill has potential to expand, but future expansion is subject to the approval of the City of Augusta Town Council. Tipping fees and waste handling contract durations are subject to further discussion and consideration by the Board of Directors. Estimated tipping fees are expected to be within the range \$70.00 to \$75.00 per ton. Estimated transportation fees to the Augusta landfill from the Mid-Coast transfer station is estimated to be \$16.00 per ton. Total disposal costs for the Hatch Hill Landfill are estimated to be approximately \$88 per ton.

Advantages

- Permitted facility with available capacity and potential to expand;
- Relatively short haul distance from MCSWC; and
- Generates revenue through tipping fees. Financial stability is not predicated on variable income streams such as sales of processed materials or energy outputs (e.g., gas or electrical power).

Disadvantages

- Uncertainty with the facility's desire to receive MCSWC's waste. This issue would have to be vetted with the Hatch Hill governing board; and
- Landfilling is the last option on the State's waste management hierarchy.

City of Bath

Contact person: Lee Leiner (443 8357)

The City of Bath is a city-owned facility that accepts commercial MSW waste from approximately 20 communities in the Mid-Coast area. The facility receives approximately 15,000 cubic yards of MSW per year. Approximately 75 percent of the waste received is from commercial sources (e.g., greater than 3-family structures, retail business, etc.,) located both in the City of Bath and from neighboring communities, and 25 percent residential from the City of Bath, Arrowsic, and Georgetown. The facility's current operating cell has approximately 40,000 cubic yards of capacity. The facility has an additional permitted capacity of approximately 250,000 cubic yards contingent upon funding authorization from the City. It is unlikely that the facility will have potential to expand in the future. The City is planning to start construction of the next operating cell in 2017. The facility does not have any local or state restrictions that would preclude or require permit modifications to accept MSW from MCSWC. They currently are not accepting additional out-of-town waste due to the current cell airspace capacity constraints, but may be interested in doing so in the future. Future tipping fees and the length of future waste disposal contracts are unknown at this time, but are expected to be in the range of \$75.00 per cubic yard and 5 to 10 years duration, respectively. Transportation costs to the Bath facility from the Mid-Coast transfer station is estimated to be \$18.40 per ton. Total disposal cost at the facility is estimated to be approximately \$93 per ton.

Advantages

- Permitted facility with potential available capacity;
- Relatively short waste haul distance from MCSWC; and
- Generates revenue through tipping fees. Financial stability is not predicated on variable income streams such as sales of processed materials or energy outputs (e.g., gas or electrical power).

Disadvantages

- Uncertainty with the facility's desire to receive MCSWC's waste. This issue would have to be vetted with the Bath City Council;
- Does not have the potential to expand; and
- Landfilling is the last option on the State's waste management hierarchy.

Crossroads Landfill, Norridgewock, Maine

Contact person: Jeff McGown (240-9739)

Crossroads Landfill is located in Norridgewock, Maine and is Maine's only licensed commercial landfill. The landfill has the permitted capacity until 2025 at current fill rates (approximately 300,000 tons/year). The Norridgewock Landfill anticipates an approximate 60-acre horizontal expansion of the existing landfill in the next six to eight years. Mr. McGown indicated that he has spoken with four or five towns in the Waterville area which currently use the PERC facility about accepting their MSW directly post-2018. Mr. McGown quoted a tipping fee in the range of \$60.00 to \$65.00 a ton, for a minimum of five years with options to expand the disposal contract. Estimated transportation fee to this facility from the Mid-Coast transfer station is \$23.20 per ton. Total disposal fee for this facility is estimated to be approximately \$86 per ton.

Advantages

- Permitted facility with available capacity to operate until year 2025 and the potential to expand; and
- Generates revenue through tipping fees. Financial stability is not predicated on variable income streams such as sales of processed materials or energy outputs (e.g., gas or electrical power).

Disadvantages

- Dependent on expansion of facility to continue operations beyond 2025; and
- Landfilling is the last option on the State's waste management hierarchy.

Juniper Ridge Landfill, Old Town, Maine

Contact person: Wayne Boyd (862-4200)

The Juniper Ridge Landfill (JRL) is a state-owned landfill located in Old Town, Maine. The facility is currently licensed to receive up to 81,800 tons of MSW per year until March 31, 2018. After March 31, 2018, JRL can only accept MSW that is associated with bypass from an existing MSW incinerator in Maine. Currently JRL cannot accept MSW directly from communities who currently use PERC until April 1, 2019, due to contractual terms of its agreement with PERC. The landfill has a current disposal capacity of approximately five years and has a pending application with the MEDEP to increase the disposal capacity of the facility by 9.35 million tons, which will add approximately 12 years of capacity to the facility. The price quote to accept MSW at the JRL facility is approximately \$62.00 per ton, with a State mandated contractual fee cap currently set at \$73.81 per ton. The estimated transport cost to JRL from the Mid-Coast transfer station is approximately \$26.00 per ton, for a total estimated disposal cost of approximately \$88.00 per ton.

Advantages

- Permitted facility with available capacity and plans to expand;
- Generates revenue through tipping fees. Financial stability is not predicated on variable income streams such as sales of processed materials or energy outputs (e.g., gas or electrical power); and
- JRL is the only landfill facility with a contractual fee cap on what they can charge to receive waste from within the State of Maine.

Disadvantages

- JRL cannot accept MSW after March 31, 2018 that is not associated with bypass from an existing municipal solid waste incinerator located in Maine without a permit modification; and
- Landfilling is the last option on the State's waste management hierarchy and because it is a state owned landfill it would have to demonstrate that any MSW

accepted at the facility has been reduced to the maximum extent practicable by solid waste management methods higher on the hierarchy.

WASTE-TO-ENERGY FACILITIES

There are three waste to energy incinerators currently operating in the State. Two are quasi-municipally owned and one is commercial facility:

Ecomaine, located in Portland, Maine

Contact Person: Lissa Bittermann (773-1738 x.319)

The Ecomaine facility is a mass-burn waste to energy facility located in Portland, Maine approximately 80 miles from the Mid-Coast transfer station. The facility has rated capacity of approximately 170,000 tons/year. In fiscal year (FY15), Ecomaine handled approximately 180,000 tons of MSW, of which approximately 38,000 tons were from spot market sources. The facility derives its revenue stream from waste received at the facility (waste tipping fees) and from the sale of power generated at the facility. In FY-15 Ecomaine's revenue derived from tipping fees was approximately \$11.82-million and electrical sales were approximately \$4.62-million. Discussions with Ecomaine indicated that they would be willing to replace spot market MSW with contracted MSW from Mid-Coast, pending approval by its Board, for a 20-year period commitment at the rate of \$70.50 per ton, with an annual CPI³ adjustment beginning April 1, 2018. Ecomaine also noted that this rate and the length of contract is subject to change depending on market conditions and available capacity of the waste energy plant. Ecomaine also offers a single-sort recycling option to municipalities that they serve. Estimated transportation costs to this facility from the Mid-Coast transfer station are estimated to be \$32.00 for a total disposal fee of approximately \$102 (assuming a 20-year contract).

Advantages

- Currently permitted facility using proven technology that has a history of well-run operations;

³ Consumer Price Index.

- Facility has available capacity that offers revenue sharing of recycled materials processed at the facility, as well as single-sort recycling; and
- Incineration is above landfilling on the State's waste management hierarchy.

Disadvantages

- Distance from Mid-Coast communities results in higher estimated transport fees;
- Ecomaine is looking for a formal commitment in the near future and acceptance of the MCSWC waste is subject to its Board approval and subject to change;
- Variability in revenue generated through recyclables and through power generation can affect the finances of the facility and future waste disposal fees; and
- The potential for additional permitting/compliance (air emission) requirements from state and federal agencies.

Mid-Maine Waste Action Corporation (MMWAC), Auburn, Maine

Contact person: Joe Kazar (783-8808 x. 203)

The Mid-Maine Waste Action Corporation (MMWAC) is a waste to energy plant that is owned by 12 member towns in the Lewiston/Auburn area and serves 30 municipalities. The plant can process up to 200 tons/day and averages approximately 70,000 tons/year. In fiscal year (FY15), MMWAC generated 24,000 MWh of electricity and sold approximately 17,000 MWh. Total revenues in FY15 were approximately \$6.2 million of which \$5.2 million came from tipping fees and \$773,000 came from electrical sales. The plant operates at capacity during the summer months, but has available capacity in the winter months. If ongoing efforts to reduce the amount of MSW handled at the plant by increased recycling from pay-as-you throw programs are successful, the facility may be able to accept additional MSW from the Mid-Coast towns. Currently, MMWAC uses the City of Lewiston for disposal of ash generated at the incinerator, and the Crossroads Landfill in Norridgewock for MSW bypass and other residuals. Current tipping fees are \$71.40 per ton for a three-year contract, and \$67.32 per ton for a 5-year contract. Estimated transportation costs to this facility from the Mid-Coast transfer station is estimated to be \$26.80, for a total disposal fee of approximately \$94 (assuming a 5-year contract).

Advantages

- Currently permitted facility using proven technology with competitive disposal fee; and
- Incineration is above landfilling on the State's waste management hierarchy.

Disadvantages

- Facility currently does not have the capacity during the summer months to handle additional MSW from Mid-Coast towns;
- Variability in revenue generated through recyclables and through power generation can affect the finances of the facility and future waste disposal fees; and

- The potential for additional permitting/compliance (air emission) requirements for state and federal agencies.

Penobscot Energy Recovery Company (PERC)

Contact person: Kevin Norby, Specialized Environmental Technologies, Inc.
Robert Knudsen, USA Energy Group, LLC
(829-4566)

The Penobscot Energy Recovery Company (PERC) is a refuse-derived-fuel (RDF) and waste to energy facility located in Orrington, Maine, approximately 51 miles from the Mid-Coast transfer station. The facility has a rated capacity of 304,000 tons/year. In 2014, the total MSW received at the facility was approximately 312,000 tons of which 261,000 tons were in-state waste and about 51,000 tons were from out of state sources. The facility derives its revenue stream from waste tipping fees and from the sale of power generated at the facility. In 2014, the revenue derived from tipping fees was approximately \$18.58-million and electrical sales accounted for approximately \$25.71-million (PERC, 2014 Annual Report). PERC's current purchase power agreement (PPA) results in PERC receiving "above-market rate" price for electricity generated by the facility. This price is currently in the range of \$150.00 per MWh.

The price PERC will receive for electricity post- 2018 will likely be more in line with ISO New England Hub Locational Marginal Pricing (LMP) structure. The average monthly real time all hours LMP for Maine in 2014 and 2015 was approximately \$59.52 per MWh and \$39.71 per MWh respectively. To account for the reduced revenue from power generation post-2018, PERC intends to adjust its operations by processing less waste (approximately 200,000 tons of in-state waste sources per year), and operating the facility to take advantage of peak power pricing⁴. They will also have reduced costs as a result of eliminating the current contractual obligations to provide rebates and revenue sharing with the users of the facility and with Emera.

In June 2015, HDR Engineering conducted a third-party assessment in engineering due-diligence of the PERC facility to assess the general condition of the facility and

⁴ Peak power pricing typically occurs during the time of day when power demand is the greatest (i.e., first thing in the morning and early event) and when there are warm and cold periods. The average monthly LMP on peak pricing for 2015 was \$45.63/MWh.

major equipment, to review and evaluate historical performance of the facility and identify major capital expenditures and potential operating and maintenance modifications/improvements that may be required over the next 20 years of operation (HDR 2015). The costs identified by this study appeared to be included in PERC's financial model reviewed by SME for operations post-2018.

PERC has offered Maine communities a fix price tipping fee of \$89.57 per ton and \$84.36 per ton for 10- and 15-year contracts, respectively, with a quarterly CPI adjustments. It is our understanding that these contracts do not contain guaranteed annual tonnage (GAT) requirements. Transportation costs to the PERC facility from the Mid-Coast transfer station is estimated to be \$20.40 per ton. Total disposal cost at the facility is estimated to be approximately \$105 per ton assuming the 15-year tipping fee.

Advantages

- Currently permitted facility using proven technology with an operational history that is understood by the Mid-Coast community;
- PERC has secured back-up disposal options for waste received by the facility in the event that the facility cannot operate;
- Incineration is above landfilling on the state's waste management hierarchy.

Disadvantages

- Future operation of the facility post-2018 appears to be dependent on receiving a minimum amount of in-state waste tonnage;
- Variability in revenue generated through power generation can affect the finances of the facility and future waste disposal fees; and
- The potential for additional permitting/compliance (air emission) requirements from State and Federal agencies.

WASTE PROCESSING FACILITIES

Fiberight

Contact person: Greg Louder, MRC (664-1700)
George Aronson, CWRMC ((781) 784-8835)
Craig Stuart-Paul, Fiberight

Fiberight is a proposed waste processing facility that will be located in the Town of Hampden, Maine. The facility is designed recover marketable recyclables from the waste stream and separate and process soluble and insoluble organics for conversion into renewable bio-fuels. The project is currently going through the permitting process with the MEDEP, based on a joint application filed by the MRC and Fiberight. The facility is being designed to accept up to 650 tons/day of MSW. The facility will include sorting of incoming waste streams to recover recyclable, non-organic materials, extracting the organics from the wastes, and converting them to sugars, which will be fed into an anaerobic digester to produce biogas (methane). The biogas will either be delivered into the natural gas pipeline located adjacent to the facility, or used as compressed natural gas (CNG) fuel. A portion of the processed organics will be used as a solid fuel in facility boilers to provide steam and electricity for the facility or sold as biomass fuel. Residuals generated by the facility will be disposed of at the Crossroads Landfill. A bench scale facility similar to what is proposed for construction in Hampden has been running in Virginia since 2010, but to date there are no full-scale facilities currently in operation in the United States.

Fiberight intends to support its operations through three main sources of revenue generated at the facility. These include:

- (1) Tipping fees charged on incoming wastes,
- (2) The sale of recyclable materials recovered from the waste (e.g., aluminum, ferrous and other metals, plastics, glass, etc.), and
- (3) The conversion of soluble and insoluble organics within the waste stream for sale or use onsite as fuel, including.

- Anaerobic digestion of soluble organics to produce bio-methane;
- Enzymatic hydrolysis of insoluble organics to produce clean sugars that will be marketed separately or used in the anaerobic digester to produce biogas; and
- The sale or onsite use of post-hydrolysis solids (biomass) as a fuel source.

The facility has been sized and initial tipping fees established to cover anticipated operating expenses based on estimates of the amount (tons) and projected MSW makeup received from communities in Maine, and projected operating costs of the facility. The MRC/Fiberight hired the University of Maine Forest Byproducts Research Institute to review the Fiberight process and the results of the UMO review are contained in a report dated January 30, 2015. An independent technical assessment was also performed by the engineering firm Black & Veatch for a similar Fiberight plant proposed for the City of Marion, Iowa. Both studies conclude that the Fiberight process utilizes technologies and equipment that have been demonstrated and proven on a smaller scale and that technically the process should perform as anticipated. However, both studies that SME reviewed did not address the economic feasibility of the project. The MRC has shared its evaluation of the feasibility of the project completed by Commonwealth Resource Management Corporation (CRMC) for the MRC's 2015 Annual meeting. CRMC found that "the Facility, if constructed, operated and maintained in accordance with proposed technical performances levels and projected revenues and costs, would generate positive cash flows and positive return on investment under a wide range of scenarios. The returns might reasonably be evaluated and verified as technically and economically feasible by an independent reviewer in support of financing" (CRMC, 2015). SME's opinion is that this feasibility statement is reasonable, provided the assumptions used in the analysis prove to be representative of actual revenues and expenses. The lack of data from a full scale

operating facility to obtain actual operating data does, however, create a level of uncertainty in this analysis.⁵

The MRC is currently working to procure the needed tonnages to meet its obligation under a proposed Master Waste Supply Agreement with Fiberight. Its delivery commitment under this contract is set at not less than 150,000 tons/year. The MRC has a proposed a waste management agreement (i.e., Municipal-Joinder-Agreement) which dictates the terms and conditions between participating towns (i.e., Joining Member), who would use the Fiberight facility. This agreement addresses a number of different items including terms and conditions for waste management for Joining Members, and the management and deposition of existing municipal asset and project assets relating the existing PERC contract.⁶ The disposal costs for the Fiberight facility will be \$70.00 per ton, with an annual CPI adjustment, with the Joining Members to receiving rebates of \$5 per ton for the first three years with the funds coming from a "Target Value Reserve Fund" that will be funded as described in the Municipal-Joinder-Agreement Exhibit B, Section 29(c). Future rebates from the facility would be based on the financial performance of the facility. Transportation costs to the Fiberight facility from the Mid-Coast transfer station is estimated to be \$ 19.20 per ton. Total disposal cost at the facility is estimated to be approximately \$89 per ton pre-rebate and \$84 per ton post rebate.

Fiberight recently announced that it has negotiated a 15-year deal with Covanta Energy Corp. to construct and operate the plant. Covanta owns and operates more than 40 waste-to-energy facilities in North America and provides additional expertise

⁵ In discussions with CRMC they acknowledge that lack of actual operating data for an active facility presents is a level of risk associated with the development of this project. The MRC has considered these risks in its establishment of tipping fees, that would cover projected operating expenses, and the inclusion of backup disposal options for users of the facility in the event costs are materially different from the costs used in the analysis that change the outcome of the analysis. Risks identified by CRMC for the Fiberight facility include technical performance risk, scale-up risk, permit acquisition risk, waste supply risk, waste composition risk, product market price and purchaser payment risk, O & M cost risk, financing risk, and force majeure risk.

⁶ This agreement addresses a number of items that will affect MCSWC communities' solid waste management method and funds both past and present. Advisement on the acceptance of these terms and conditions are beyond the scope of this evaluation.

and waste management support to the Fiberight project. Currently, Fiberight is working with Covanta on a long-term disposal agreement that would provide an additional level of contingency to the proposed processing facility in addition to the Crossroads Landfill.

Advantages

- The proposed facility is located such that it is easily accessible and is a reasonable distance from the Mid-Coast transfer station;
- The proposed facility has an option to handle MSW from MRC communities at the Crossroads Landfill should the construction of the Fiberight facility be delayed or not constructed. Fiberight is also working with Covanta on a long-term disposal agreement to provide an additional level of contingency to the process;
- The Fiberight process provides waste reduction by processing organics and utilizing and recycling various components contained in MSW that is more consistent with the State of Maine solid waste hierarchy than waste reduction through combustion or landfilling;
- The production of CNG gas from biogas qualifies as an advanced biofuel eligible for renewable energy RIN⁷ credits; and
- The facility offers opportunity for revenue sharing to member communities.

Disadvantages

- To date, there has not been a facility constructed and operated in the United States of similar scale on a commercial basis. A similar plant proposed in Marion, Iowa, which is cited in the MEDEP project application has been delayed and has not been fully constructed;

⁷ A RIN (Renewable Identification Number) is a serial number assigned to a batch of biofuel for the purpose of tracking its production, use, and trading as required by the U.S.EPA's Renewable Fuel Standard (RFS) implemented according to the Energy Policy Act of 2005. To generate RINs a project must apply to U.S.EPA and demonstrate compliance with program requirements to be assigned RINs. Once approved, the project must document and maintain records on the fuel production and use in compliance with the requirements of the program.

- Scaling of the technology used by Fiberright to a commercial scale to handle MSW has technical risks, along with other risks identified by CRMC, that create economic uncertainty;
- RIN credits are scheduled to expire in 2023;
- In order for the Fiberright project to work out financially, members must be able to commit to provide a minimum 150,000 tons of MSW per year⁸; and
- Variability in revenue generated through the sale of recyclable materials and biogas will affect the financial viability of the facility and the ability to provide rebates to the MRC community in the future.

The attached table summarizes the options presented above in a format which allows comparison of the potential costs associated with each option. As described above, each option has risks that may require further, and more detailed, consideration by the MCSWC. In addition several of the potential options, such as the Ecomaine incinerator, and the Bath, Brunswick, and Augusta Landfills would require approval by facility's governing boards.

Although not originally envisioned as part of our scope of work, SME has also performed a cursory review of the waste disposal contracts provided by the MRC/Fiberright and PERC. SME recommends that the MCSWC have all contracts reviewed by legal counsel to fully understand the limitations and obligations of these documents. SME also anticipates that contract agreements between MCSWC and other waste disposal facilities that do not require a minimum amount of MSW to be financially viable will like be a more straightforward use for fee contract.

⁸ According to the Master Waste Supply Agreement with Fiberright, the MRC and the Joining Member Towns may be liable for "Delivery Sufficiency Payments" and "Delivery Diversion Charges" in the event that less than 150,000 tons of MSW is delivered to the facility.

We look forward to meeting with you to discuss these options in greater detail at your earliest convenience.

Sincerely,

SEVEE & MAHER ENGINEERS, INC.

A handwritten signature in black ink, appearing to read 'SE Patch', written in a cursive style.

Steven E. Patch, P.E.

Senior Project Manager

REFERENCES

CRMC 2015 Slide titled, Economic Analysis of Fiberight presented at 2015 MRC Annual Meeting

MEDEP, 2015. Maine Solid Waste Generation and Disposal Capacity Report: For Calendar Year 2013. Report to the Joint Standing Committee on Environment and Natural Resources ¹²⁷ Legislature, First Session January 2015.

MID-COAST SOLID WASTE CORPORATION
WASTE MANAGEMENT OPTIONS - POST 2018

A	B	C	D	E	F	G	H	I
1 FACILITY	2 DISPOSAL CAPACITY (TONS/YR)	3 AIR SPACE CAPACITY (CY - POST 2018)	4 REMAINING CAPACITY (YEARS - POST 2018)	5 ADDITIONAL AIRSPACE POTENTIAL	6 EST. TRANSPORT DIST. (MILES - ONE WAY)	7 EST. TRANSPORT FEE (PER TON@ \$0.40/MILE)	8 EST. TIPPING FEE (PER TON)	9 TOTAL EST. FEE (PER TON)
4 PERC	304,000	NA	NA	NA	51	\$20.40	\$84.36	\$104.76
6 ECOMAINE	170,000	625,250	25.5	NO	80	\$32.00	\$70.50	\$102.50
8 MIMWAC	70,000	528,300	39.6	NO	67	\$26.80	\$67.32	\$94.12
10 FIBERIGHT	237,250	NA	NA	NA	48	\$19.20	\$70.00	\$89.20
12 CROSSROADS		2,200,000	7.4	YES	58	\$23.20	\$62.50	\$85.70
14 HATCH HILL		704,000	16.4	MAYBE	40	\$16.00	\$72.50	\$88.50
16 BATH		260,800	19.8	YES	46	\$18.40	\$75.00	\$93.40
18 BRUNSWICK		162,000	14.8	NO	54	\$21.60	\$80.00	\$101.60
20 PRESQUE ISLE		1,641,500	69.1	YES	207	\$82.80	\$80.00	\$162.80
22 TRI-COMMUNITY		1,516,000	49.7	YES	219	\$87.60	\$88.50	\$176.10
24 JUNIPER RIDGE		10,772,000	16.8	YES	65	\$26.00	\$62.00	\$88.00