



**WASTE OPTIONS
Post 2018**



MEMORANDUM

TO: Bangor City Council
FROM: Catherine Conlow, City Manager
DATE: February 11, 2016
SUBJECT: Waste Options Post 2018

Proposed for the February 22, 2016 agenda is an order seeking Council authorization for Bangor to join with the Municipal Review Committee (MRC) in its proposed Fiberright project in Hampden, Maine. From a timing standpoint, it is necessary to decide how the City shall move forward with its solid waste disposal as it will take several years to implement. In advance of Council's consideration of this important issue, this memo lays out the options available to the City and why the recommendation is to remain with MRC. Additionally, I have attached a comparison of the proposals (Exhibit A) and the Frequently Asked Questions which provides details on the two main options. (*Exhibit B*)

Background

The City's 30 year contract to dispose of municipal solid waste (MSW) at the Penobscot Energy Recovery Company (PERC) facility in Orrington, Maine expires on March 31, 2018. Maine law requires that municipalities provide for the disposal of MSW generated within their limits.

Prior to 2011, the MRC and PERC Partners including USA Energy worked together on how to operate the PERC facility at 200,000 tons or lower. In 2011, the PERC Partners broke off negotiations for Post 2018 disposal with the MRC and its member communities. The primary reason cited was that MRC was concerned about the proposed tip fee structure which had the Charter (original partners) municipalities paying a tip fee of \$110 per ton at the same time PERC was proposing a \$75 per ton tip fee from other municipalities and \$55 per ton tip fee for commercial waste from outside PERC's municipal service territory. Additionally, the MRC did not believe it would be financially feasible for Charter Municipalities to provide 165,000 to 175,000 tons of MSW per year at \$110 per ton as required by PERC. Under that proposal the City of Bangor's annual net tipping fees would increase by \$1.4 million over today's tipping fees, with no subsidization. At that price, MRC felt that lower cost alternatives could be sought. Without a guarantee of 165,000 tons and the fee structure cited above, PERC partners told MRC communities to seek other alternatives and plan for the closure of the PERC plant. PERC did not respond to the proposal process initiated by the MRC on behalf of the 187 communities.

In early 2013, the MRC initiated a Request for Proposals (RFP) process seeking alternatives that would retain the MRC longstanding commitment to environmentally sound disposal that was not dependent on the importation of solid waste and would be economically viable for the region served. The RFP sought responses that included proposals to retrofit the existing PERC facility and site as well as development of a new process and site. PERC's managing partner informed the MRC that continued operation of PERC's existing technology was the only business approach they were willing to move forward with after 2018. It was for this reason that the MRC prepared the RFP and secured rights to a new development location in Hampden.

The MRC received and reviewed 15 responses. After visits and significant research by MRC Board members and staff, the recommendation was to pursue disposal through Fiberright solution. While not extensively utilized technology in the U.S., it is widely used in European Countries.

Disposal Options in Maine

Below are some of the options that are available in Maine. Although not all widely available to Bangor, I thought it was important to identify each of the options evaluated.

Landfilling. The nearest landfill, Juniper Ridge in Old Town, is only licensed to accept limited amounts of MSW as bypass and for placement of soft layer in base cell construction. Additionally, it would require both a license renewal and a license expansion for both capacity and to accept MSW. An expansion application has been filed with the Maine DEP. However, the expansion application proposes to accept even less MSW annually than is currently accepted at the facility. Finally, Casella, the operator of the landfill, is prohibited under the terms of a contract entered into with PERC, from contracting with any MRC community for post 2018 disposal services until 2019—a full year after the PERC contract ends. For these reasons, Juniper Ridge does not represent a viable, long term disposal option. Landfill options such as Crossroads in Norridgewock face long term capacity constraints and have the added issue of substantial transportation costs. Nonetheless, Norridgewock is the only viable contingency plan should Fiberright be delayed in commencing commercial operations by April 1, 2018.

Non-PERC waste to energy (WTE) facilities. Maine has three WTE plants in operation: PERC, Ecomaine in Portland, and Mid Maine Waste Action Corporation (MMWAC) in Auburn. MMWAC and Ecomaine, both substantially smaller than PERC, have capacity and transportation obstacles that make these options impractical for Bangor. For instance, Ecomaine has capacity for approximately 20,000 additional tons annually and Bangor generates as much as 28,000 to 30,000 tons annually.

Jay Dresser Model – Mr. Dresser is proposing to locate a 70,000 sf+ drop off sort facility in a convenient location by the Bangor Mall. (Exhibit C) Mr. Dresser would also provide pre-sort curbside pickup with weight scales on a sorter truck. Residents would be reimbursed either curbside through the use of bar codes or through a property tax credit or rent credit. The financing hasn't been worked out but he would propose to use the \$25 million of MRC funds along with a series of voluntary payments from commercial and retail establishments. Mr. Dresser believes that he could recover and reuse 90% of the material with the remaining 10% going to the landfill or PERC facility.

The MRC has not yet reviewed this proposal as Mr. Dresser did not submit a proposal in response to the Request for Proposals. Mr. Dresser has not figured all the financing pieces or location at this time but has indicated that he may be prepared to do so in a month. Since Mr. Dresser's proposal is to use MRC funds to construct and/or retrofit this facility it would be difficult for Bangor to decide on this approach. Further, the PERC cannot sustain operations affordably at 20,000 tons.

I think it is important to note that the model that Jay Dresser is looking to implement includes source separation. Two years ago, the City changed from source separated to single sort in response to resident pressure. City Infrastructure utilized for source separated recyclables was sold and/or re-purposed.

PERC - PERC has been reliable partner with the MRC for the past 30 years. As many of you know, the plant is sized to accept 310,000 tons of MSW, which is burned and the residuals delivered to Juniper Ridge in Old Town. The challenges are twofold. First, PERC has been selling its electricity to Emera under a contract with a special rate that is four times the market rate, which has subsidized PERC operations on the order of \$15 to \$20 million per year. The net result has been that the EMERA service area electricity rate payers have been subsidizing tip

fees for 187 communities that make up the MRC, many of which are located outside the EMERA service area. (See memo from George Aronson, Exhibit D)

Additionally, the PERC plan has been heavily reliant on importation of solid waste from out of state. The Emera subsidies and the tip fees paid by the MRC municipalities allowed for substantial discount of tip fees for out of state waste. These deep discounts of tip fees have made up for the high transportation costs to deliver out of state waste. The proposed tip fees presented in 2011 were substantially higher than what is paid now and although their proposal included discounts for the importation of out of state waste it is questionable whether that will still be viable, post 2018.

The PERC private sector partners have presented the City with an offer to continue incinerating MSW after 2018 using their existing process and technology. The main parameters of the offer are laid out in the table on the Exhibit A. The proposal is for tip fees of \$84.36 per ton for a 15 year contract adjusted quarterly. In addition, the PERC private partners have also proposed options that municipalities could opt into which include the following: Collect and deliver single-stream recyclables to the Lewiston MRF; Collect and deliver source-separated organic materials to the Agri-Energy anaerobic digestion and biogas-to-electricity facility in Exeter; and to collect and deliver residual materials either to the PERC facility or to the Juniper Ridge Landfill. (See Exhibit A)

The PERC private partners now claim that the Orrington plant can operate on 200,000 tons, effectively eliminating the need for out of state waste. However prior to 2012, both the MRC and the PERC partners could not find a solution that would allow the operation of the Orrington facility at 200,000 tons. A proposal at this time by USA Energy is to cycle the boilers so that they can reduce operating hours, maintenance costs and labor expense. A review of their own engineering report concluded that PERC would be capable of operating till 2035 based on present day approach to operations currently established. (Exhibit E) The PERC proposal is substantially different and includes significant non-strategic "across the board" cuts to fixed operating costs that are not plausible given the strains of the proposed change to operations. Part of the proposal is to reduce the workforce by approximately 25 employees, leaving approximately 50 employees to operate the facility. Further, the PERC facility has never operated in this manner and the practice would go against industry standard practice for such a facility.

Finally, when the plant has operated below its current level, it is not clear whether the facility can continue to operate within its existing air quality permit. There has been no information made available to the experts at MRC which would address this concern.

At this time, USA Energy has provided no indication that significant resources would be available to support operation of the PERC facility in the event of any contingencies. USA Energy is a privately-held entity with no credit rating and no evidence of ability to raise substantial funds, nor has it any history of investment into the facility without the cash flow made available through the electricity prices. Without that subsidy, it is unclear whether USA Energy would have the demonstrated financial resources to deal with potential contingencies such as unbudgeted repairs, made more challenging because of the cuts in staff and resources.

Contractually, the proposal includes a few changes that are not favorable to the MRC communities and operating assumptions that are not feasible. The deal is two parts including a Restated Partnership Agreement and a waste disposal agreement. Most notably, the draft partnership agreement proposed by USA Energy does not include oversight by the MRC or the municipalities. As a note, staff and consultants for MRC have worked with the partners for 30 years to ensure that the plant operates in a financially viable and environmentally friendly manner. A memo from Dan McKay of Eaton Peabody outlines some of the concerns and is attached

(Exhibit F). Under this proposed restated agreement we would be solely reliant on the partners to provide us with information, determine expenditures and set tip fees.

In addition to a review by Dan McKay, the City Solicitor has been reviewing all contracts submitted by USA Energy, including the draft Restated Partnership Agreement and the Waste Disposal Agreement signed by USA Energy and mailed to the communities in mid-December of 2015. In addition to the elimination of the MRC oversight in the restated partnership agreement, the contract, like the MRC proposal relies on the delivery of a fixed amount of material. Currently, the Oversight Committee determines budget and tip fees subsidies to municipalities. Under the restated partnership agreement that becomes the sole discretion of the USA Energy partners. Further, the Waste Disposal Agreement includes substantial penalties for withdrawal. (For example, the penalty to Bangor if PERC exercises its unilateral right to declare a Deemed Termination under the agreement would be over \$7 million payable within 30 days of PERC's determination).

One potential money savings for the city is that if the MRC dissolves, the City would be entitled to use its share of the reserves (approximately 4 million) to pay down the cost of garbage disposal. The attached (Exhibit G) is an email from George Aronson on the reserves and how long they would last in Bangor under that scenario.

The primary concern with continuing to operate the PERC facility is that we have been unable to verify the operating pro-forma. In fact, the pro-forma developed by MRC staff indicates that we could be responsible for substantially higher tip fees. No reliable information has been presented to the MRC which would address the likelihood of that concern.

Fiberight -The Fiberight solution is the one that has been reviewed and recommended by the Board of the MRC, an organization made up representatives of Bangor and 186 other Maine communities. Based on careful review and site visits, the board has determined that Fiberight has developed a comprehensive, long term waste processing and disposal solution that will convert waste to high value energy and related products. The net result is a reduction of waste, increase in recycling, at an affordable cost which provides greater security and far less risk than the PERC facility and contract offer.

The Fiberight process is based on European MBT (Mechanical Biological Treatment) plants that separate and recover recyclables from organic material. (Exhibit H) There are currently over 330 MBT plants in Europe, with a total of 450 expected by 2020. Collectively these plants process over 34 million tons of waste per year. For reference, PERC processes 300,000 tons per year, and the entire US waste to energy sector processes 29 million tons per year. The Fiberight team includes Covanta Energy, which is a public company listed on the New York Stock Exchange and a world leader in waste processing technology, with revenues over \$1.6 billion per year and free cash flow on the order of \$200 million per year.

Concerned about the use of this technology in the US, the MRC Board of Directors contracted with Dr. Hemet Pendse and the University of Maine Forest Byproduct's Research Institute to conduct an independent analysis on the viability of the Fiberight technology. In addition to confirmation from our own staff and consultants, Dr. Pendse's team confirmed that the science behind the technology was sound and would work in this region.

If approved, the MRC deal continues to ensure cooperative oversight over disposal through the MRC. In January 2014, the Council adopted an order which continued to favor the cooperative assistance that is the keystone of the MRC.

The MRC proposal is \$70 a ton. Further, the MRC plan includes the use of current reserves to reduce the cost of waste to \$65 per ton. Further, the MRC included contingency planning such as backup disposal capacity at Crossroads Landfill and sufficient reserves that the MRC administers on behalf of members offer further insurance of stable tip fees and other costs in the event of the unexpected service interruption. (Exhibit I)

MRC communities would receive additional financial benefits for revenues on recyclables and energy products above a revenue baseline established in the agreement and sharing of tip fee revenues for waste disposal over 180,000 tons annually.

Under the terms of the agreements, the MRC would acquire the land and develop the land with road, water and sewer and Fiberight and Covanta Energy would invest at least \$70 million to build the facility. Owning the land and leasing it to Fiberight, provides an extra layer of control for the MRC.

Recommended Option

The recommendation is to continue with the MRC plan and move forward with the construction of the Fiberight facility in Hampden. In addition to the above discussion:

The MRC plan is comprehensive. It provides local control and flexibility with regard to waste reduction through means like recycling and PAYT programs. It pairs that with innovative Fiberight technology that will increase diversion of recyclables and convert MSW, including organics, into high value energy products. A contract with Crossroads Landfill in Norridgewock ensures an interim disposal location in case of unanticipated events.

The MRC plan is prepared to address contingencies. In addition to backup disposal capacity at Crossroads Landfill, the reserves MRC administers on behalf of members offer further insurance of stable tip fees and other costs in the face of the unexpected.

Covanta's willingness to invest upwards of \$100 million in the Fiberight facility is confirmation of the project's promise and technical and economic feasibility.

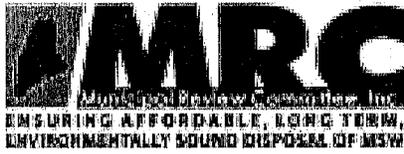
MRC has been a trusted partner and advocate for the municipal interests. The MRC is made up of member communities, like Bangor, working toward the common goal of affordable waste disposal for municipalities over the long term. MRC's success is manifest in the exceptionally strong position members are in as we approach termination of the PERC contract. By remaining united, we can continue this collective success past 2018.

The final recommendation is to authorize the City Solicitor to negotiate an agreement with the MRC on behalf of the City of Bangor for post 2018 waste disposal.

Additional Attachments:

MRC Presentation
Bios for Fiberight
Exeter Proposal

**MRC COMPARISON
OF
FIBERIGHT
&
PERC
PROPOSALS**



We're asking for your continued support.

Soon your community will be discussing and deciding on a new arrangement for handling municipal trash.

The current agreement terminates in 2018.

Your community has most likely been a member of the Municipal Review Committee (MRC) since 1991 (some communities joined later) and benefits from its oversight, experience and advocacy as it pertains to trash, recycling and municipal solid waste best practices.

Because of a drastically changing economic model in 2018, the facility that has served our needs for nearly 30 years will not be viable past 2018.

Therefore a new solution is needed.

After a eight year effort, we have selected a solution that aligns with the current and future collective needs of our members.

But to ensure this opportunity becomes reality, we need commitment from all individual member municipalities.

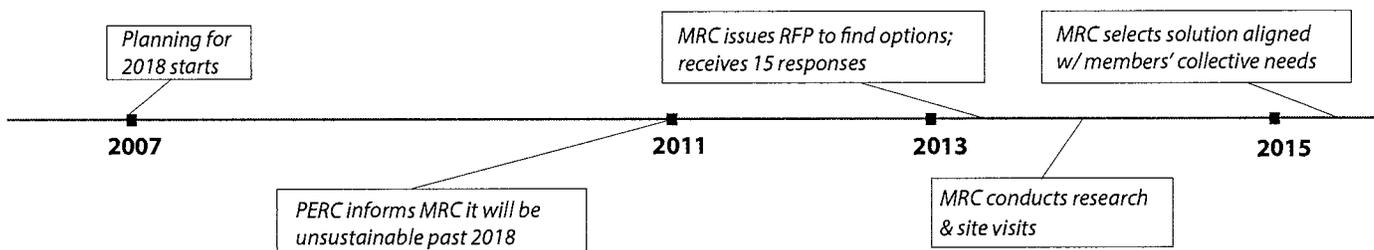
Who Is MRC?

MRC, the Municipal Review Committee, was formed in 1991 and has played a critical role in ensuring long-term, affordable and environmentally sound waste disposal ever since.

- 187 Community Members
- Elected 9 Member Board
- 25 Year History

The Background

An eight year path to find the recommended solution for our future needs





What Is The Plan:

The building of a next-generation materials recovery and conversion facility, with recovery of recyclables and conversion of organics to biomethane, in-house power and heating needs and other high-value products. This will help us increase recycling, decrease the volume of disposal and save time, travel and money with a single facility to serve our processing needs.

Who's Involved:

MRC - Advocacy & Oversight
Fiberight - Innovative Technology Partner
Covanta - Strong Financial & Technical Backing

Where Will It Be Built:

Hampden, ME.

Evaluating The Options		
	MRC/Fiberight	PERC Plan
Tipping Fees	\$70/ton	\$84.36/ton
Fee Adjustments	Annually 1x CPI	Annually 4x CPI
Rate Guarantee	Yes - In Writing	No
Rebates / Revenue Sharing	Yes - In Writing	No
Organics Program Cost	Yes - Included	No - Billed Extra
Out-Of-State Waste	Not Allowed	Allowed
MRC Oversight	Yes	No
MRRA* Endorsed	Yes	No

**Maine Resource Recovery Association*

Community Benefits Of MRC's Recommended Solution

- Predictable cost and budgeting formula
- One-stop location for municipal solid waste (MSW), organics & single-stream recyclables
- No change to current trash and/or recycling programs
- Participating communities share in revenue agreements
- Plan does not rely on or allow out-of-state waste to be received
- Organics program does not require households to sort separately from trash and recycling

Project Timeline

- **Spring 2016:** Communities sign joinder agreements before deadline
- **Summer 2016:** Land purchased, roads & utilities construction begins
- **Fall 2016:** Site work and facility construction begins
- **April 1, 2018:** Facility ready to receive MSW

QUESTIONS?

Please contact: **Greg Louder**, Executive Director
 Phone: 207-664-1700
 Email: glouder@mrcmaine.org

**FAQs
FROM
MRC**



The Plan For 2018
Managing Our Future Together

**Answers To Frequently
Asked Questions**
(revised 2.8.16)



TOPIC: The Municipal Review Committee (MRC)

Who is the MRC and how long as the MRC and PERC been working together?

MRC, the Municipal Review Committee, was formed by municipalities in 1991 and has played a critical role in ensuring our long-term, affordable and environmentally sound waste disposal ever since. The mission of the MRC is to ensure affordable, long-term, environmentally-sound disposal of MSW for its member municipalities. Currently there are 187 communities that make up membership of the MRC.

MRC, which stands for Municipal Review Committee, Inc., is the name of a non-profit organization comprised of the 187 municipalities and inter-municipal entities that send their MSW to the PERC waste-to-energy facility. The MRC was formed in 1991 to work with the PERC partnership to improve facility operating and economic performance after the initial struggles of that facility. Since then, the MRC has worked with the private owners of PERC to upgrade the facility, achieve a high level of environmental performance, and keep disposal costs down.

Does the MRC have an ownership share in PERC?

No. The MRC represents 86 municipal entities that, taken together, own 25.5214 % of the shares in the limited partnership that owns the PERC facility, which is known as PERC, L.P.

How did the towns get their ownership shares in PERC, L.P.?

When the PERC facility was struggling to stay open in 1991, the MRC negotiated to have the tipping fees increased, but only if the towns would share any profits that might be made later. That arrangement led to the ownership shares after the PERC facility was re-financed in 1998.

How much money have the towns received as a results of the profit-sharing arrangement negotiated by the MRC?

The MRC has distributed over \$61 million to its member towns since 1999 to offset tipping fees. An additional \$40 million set aside into a special fund from town tipping fees has gone directly into financing major maintenance projects at the PERC facility.

Did any of this money come directly from the towns other than from the initial increase in the tipping fee in 1991?

No. None.

Did any of this money come from sources other than profit-sharing?

Yes. As part of the re-financing in 1998, the MRC negotiated for the 86 towns that extended their agreements to 2018 at that time to become joint owners of rights to buy one million shares of stock in Bangor Hydro-Electric Company. That stock became worth more than \$15 million dollars in 2003, when Bangor Hydro was bought by Emera. That transaction, arranged by the MRC, provided the funds that can be used by the towns to purchase a site and otherwise support the MRC's proposed plan after 2018 with no additional need for any money to be contributed by the towns.

How involved has MRC been in the financial and operational oversight of PERC?

The MRC has been very involved. Involvement includes approval of every budget, maintenance and expenses. MRC receives detailed monthly financial reports, examines every tip fee and cash distribution, and is involved in weekly calls and quarterly meetings with PERC leadership and ownership partners.



Why are the MRC and PERC no longer working together?

Because PERC would need to raise tip fees so much that waste disposal at PERC would no longer be affordable for the MRC communities. Without waste from the MRC communities, continued operation of the PERC plant will not be economically feasible.

Why was a closure memo issued in 2011 by PERC?

The MRC did not foresee that MRC Charter Municipalities would ever agree to provide 165,000 to 175,000 tons at a \$110 a ton tip fee. While at the same time, PERC was suggesting a \$110 tip fee per ton for Charter Municipalities, PERC proposed a \$75 per ton tip fee from other municipalities and \$55 per ton tip fee for commercial fee. The MRC could not reasonably recommend Charter Municipalities pay the \$110 tip fee while other entities would have such lower tip fees.

MRC questioned whether PERC's boilers could operate efficiently at a lower annual tonnage and requested further technical and economic evaluations.

MRC questioned the appropriateness of the increase in the management fee paid to PERC's private general partner to \$1.2 million per year because it significantly improved the position of PERC's private partners at the expense of Charter Municipalities.

Furthermore, the MRC proposed that MRC and PERC jointly investigate alternative concepts at the PERC facility. PERC's 2011 memo and later decisions not to participate with the MRC in evaluating alternative technologies clearly indicated that they were not willing to work with the MRC.

How many companies did MRC review before deciding on the Fiberight/Covanta facility?

The MRC received 15 responses to its RFP for post-2018 services and spent considerable time researching the options and conducting site visits. The Fiberight proposal was accepted as the one that best suited the collective needs of the MRC membership.

Why is the MRC buying land and not Fiberight?

By purchasing the site in the name of the Equity Charter Municipalities that elect to stay together, the MRC can continue to exercise oversight over the Fiberight facility. The MRC has oversight of the Fiberight facility, but as landlord rather than as a limited partner, which avoids the difficulties and challenges of being limited partners in a privately-owned and controlled partnership as is the case with the Equity Charter Municipalities in the PERC Partnership. Moreover, as owner of the site, if the Fiberight facility fails, the MRC can make the site available for redevelopment as a modern transfer station, conventional single-stream processing facility, source-separated organics processing facility, or other facility that might serve the waste management needs of the region.

The MRC chose to accept the responsibility for site acquisition and development for a variety of reasons. As site-owner and landlord, the MRC gains leverage and control in its agreements with Fiberight that enables it to continue to represent the interests of its member municipalities throughout the development process. By controlling the site, the MRC is positioned to protect the needs of its member municipalities in the event of default and termination scenarios, and to control the re-development of the site for an alternative facility in the event the Fiberight process is unsuccessful.

Who is paying to build the Fiberight facility?

Fiberight and its partners will pay for the Hampden facility without government subsidies. The MRC will purchase the land on behalf of its members and pay for the road construction and utilities.



How will rebates be calculated?

Rebates will be calculated based on the revenue of Fiberight. That revenue will include the tip fees that Fiberight collects from MRC members and other entities that choose to send their waste to Fiberight. It also includes the sale of biogas and recovered recyclables and other products.

Why did the MRC select Fiberight?

Fiberight has many advantages compared to the alternatives reviewed by the MRC. Simply stated, the MRC plan would divert more solid waste away from landfills to produce more products at less cost, all while using new technology that is sustainable for the long-term than any other option reviewed. The MRC plan achieves the MRC mission to ensure long-term, affordable, environmentally sound disposal of MSW.

Of particular note are the following:

- The Fiberight facility can convert organic wastes into high-value products without needing a new region-wide system to collect organic materials separately from other wastes. Whereas there are precedents for source-separated collection in urban areas, instituting a broad new and duplicative system for separate collection and transportation of organic wastes in rural Maine would be expensive and burdensome and pose major challenges for implementation. It would undermine the goals of the MRC to ensure a long-term affordable and environmentally sound system of MSW disposal. The Fiberight facility would convert organics to high-value products while avoiding the need for such a broad new duplicative collection and transportation system.
- The Fiberight technology, which uses proprietary enzymes, can convert more of the organic material to biofuels than can a conventional or farm-based anaerobic digestion facility. As a result, the Fiberight will produce far less wastewater than a conventional or farm-based anaerobic digestion facility.
- The Fiberight facility uses a proprietary system for pulping waste prior to recovery of recyclable materials that avoids contamination issues associated with conventional mixed-waste processing facilities. Recovered materials will be clean with little contamination in line with Maine's tradition and reputation for producing high-quality recyclable materials.
- As a regional facility, the Fiberight facility offers the capability to make use of technologies, market opportunities and environmental control measures at a scale that is not available or feasible for use by individual municipalities or groups of municipalities in the MRC service territory. If the towns work together through the MRC, they can accomplish far more than if each town were to pursue an individual solution. Likewise, the more towns join together, the more successful the project will be.

The MRC selected Fiberight over other vendors that responded to the Request for Expressions of Interest (RFEI) for reasons that included:

- experience with the technology at the demonstration project in Lawrenceville, Virginia;
- willingness to finance, own and operate the facility rather than having the MRC or the municipalities take on debt to construct the facility and arrange for operation thereafter;
- use of the wet pulping process, which offers the opportunity to recover high-quality recyclable materials using technology with which there is experience in Maine in other applications, and with a minimum of manual picking;
- the use of the sugar platform, which provides opportunities to produce a variety of products that include bio-methane, industrial sugars and/or ethanol, with prospects for a high level of diversion and a low level of residuals requiring landfill disposal; and
- interest, willingness and capability to facilitate major capital investment in a commercial facility in Maine. The project design has evolved over 2015 to concentrate initially on the production of bio-gas rather than industrial sugars or ethanol, which makes the project better positioned to achieve financing. The project retains the other features that were the basis for selection over other respondents to the RFEI, and that were far more important in that selection than the ethanol production.

**Did PERC submit a proposal to MRC's RFP?**

No. The MRC did not receive a proposal from PERC for consideration in post-2018 services.

Will MRC be part of owner of PERC post 2018?

December 31, 2018 the partnership dissolves. There is currently no agreement in place for after December 31. So long as the partnership agreement is active, MRC has oversight rights on behalf of its membership.

What is MRC's plan to replace PERC after 2018?

The MRC plans to develop a state-of-the-art processing facility in Hampden to handle the waste from its 187 member communities starting in 2018. This facility will use innovative technology to significantly increase the recycling and reuse of the waste stream. This proposal does not include a landfill component and will make use of the existing Crossroads Landfill for all residuals, ensuring that waste will remain in Hampden no longer than the short time required for processing.

What will happen if Fiberight does not open by April 1, 2018?

Joining Members will send their MSW to the Crossroads Landfill. If the delay in opening is long-term or if it appears that Fiberight will not open, then the MRC, as owner of the site, can make the site available for redevelopment as a modern transfer station, conventional single-stream processing facility, source-separated organics processing facility, or other facility that might serve the waste management needs of the region as approvable at the local and state levels.

TOPIC: The Fiberight/Covanta facility

Who will be the owners of the facility?

The facility will be privately owned by Fiberight and its investors, including Covanta.

What will be the MRC's role in the new facility?

MRC owns the land and leases the property to Fiberight and will have all the rights of a landlord over its tenant.

What technology will the Fiberight/Covanta facility utilize?

The Fiberight process is based on European MBT (Mechanical Biological Treatment) plants that separate and recover recyclables from organic material. There are currently over 330 MBT plants in Europe, with a total of 450 expected by 2020. Collectively these plants process over 34 million tons of waste per year. For reference, PERC processes 300,000 tons per year, and the entire US waste to energy sector processes 29 million tons per year.

What is the Fiberight process?

The Fiberight business model involves front end processing equipment that recovers recyclable materials and converts organic materials to biofuels. While strides have been made to increase recycling, there are still a number of recyclables that remain in household MSW. We expect that the Fiberight's capture rate will have a large impact for our communities meeting the State of Maine's recycling rate, which has stayed stagnant for over 20 years despite repeated efforts to raise it. Following the capture of recyclables, Fiberight capitalizes on the organic material that makes up approximately 40% of MSW. Through an accelerated anaerobic digestion and proprietary process, Fiberight converts the MSW to biofuel. Approximately 20% will be residuals that will be sent to the Crossroads Landfill for disposal.



What type of material will this facility recycle and process?

The facility will handle municipal solid waste (MSW) from MRC member communities and, potentially, other cities and towns in Maine if capacity is available. It will not receive any out-of-state waste for processing.

Is this technology untested or new? Where else is this being used?

Fiberight has operated a small facility in Lawrenceville, Virginia, where it tested its technology. MBT projects are now being constructed in the USA, for example Entsorga West Virginia (120,000 TPY), and Zero Waste San Jose (California). Several large private projects have also been announced with major US waste companies, including of course the Fiberight/Covanta project.

Will there be emissions from the Hampden facility like there are from PERC across the river?

It is necessary for the PERC facility to release strictly regulated and controlled air emissions from a smokestack because it is based in a waste-to-energy incinerator. The Fiberight facility would have a small biomass gasifier/boiler on-site to make its own electricity, but would not produce any emissions from a tall smokestack. At most, the proposed processing operation would be a very low emissions project resulting from energy usage in processing steps and the kind of heating and cooling systems that would be associated with any typical facility of comparable scale and process systems.

The technology is not proven at this scale. What due diligence has been completed that demonstrates that the Fiberight process is scalable to meet the needs of the MRC communities?

The Fiberight process is based on European MBT (Mechanical Biological Treatment) plants that separate and recover recyclables from organic material. There are currently over 330 MBT plants in Europe, with a total of 450 expected by 2020. Collectively these plants process over 34 million tons of waste per year. For reference, PERC processes 300,000 tons per year, and the entire US waste to energy sector processes 29 million tons per year.

The proposed Fiberight facility in Hampden would be the first of its kind at its scale in the United States and has the potential to positively transform the solid waste industry in our state, regionally, and nationally. The Fiberight facility reflects an approach to processing that involves a combination of both very well proven and emerging technology. Similar facilities have been implemented in Europe, Asia and Canada with various levels of government support and tipping fees. The Hampden facility would involve scale-up of the technology demonstrated in the facility in Lawrenceville, Virginia. This technology has been peer reviewed by the University of Maine whose report was positive on some of the issues that we had concerns about, like scale up potential. The Peer Review specifically addressed the differences in the climates between Maine and Virginia.

Where does the gas go?

The biogas will be sold to local purchasers and will be delivered into the Bangor Natural Gas distribution system. In fact, one reason the proposed facility in Hampden is attractive because the Bangor Natural Gas pipeline is adjacent to the site.

Is the Fiberight/Covanta facility being financed by municipalities? If so, how much will it cost our town for the facility to be built?

No. The facility itself is being financed with private funds. The MRC proposes to purchase the land, build a road and develop the utility infrastructure utilizing funds from the equity charter municipal reserve fund.

How many jobs are projected for the Fiberight/Covanta facility?

Fiberight founder and CEO, Craig Stuart-Paul, reports that the facility will employ approximately 60 people. Many of the jobs will be technical in nature and have above average pay scales.



When the Fiberight/Covanta facility is built, will PERC close?

We expect PERC will close whether or not Fiberight is built, just as many other RDF facilities have in the last 25 years, including MERC in Biddeford in 2012.

How many tons of trash will be needed for the Fiberight/Covanta facility to operate?

150,000 is the threshold. It can operate with fewer tons.; There is no physical constraint with the equipment as there is currently with the boilers in PERC.

Will out of state trash be used at the Fiberight/Covanta facility to fulfill volume?

No. It is not allowed per contracted language in the master waste supply agreement. In addition, the DEP permit application does not allow for out-of-state deliveries.

Why is this facility in Hampden needed and who will use it?

This facility is an essential replacement for the PERC waste-to-energy incinerator in Orrington. After the MRC communities' 30-year contract with PERC concludes in 2018, the PERC facility will no longer be an economically viable option and the 180+ MRC member communities and several non-member municipalities will need a processing solution for their MSW. The MRC has been planning for this possibility for nearly ten years and has identified the kind of facility being proposed for Hampden as the best option to replace PERC. The facility will not accept out of state waste.

Is there any difference in the material composition in what we send to PERC versus what we would send to Fiberight?

No, just as with PERC, Joining Members are precluded by contract from delivering Unacceptable Waste to the Fiberight facility. Joining Members that make such deliveries despite the contractual prohibition will be required to pay the cost of removing and of providing an appropriate manner for disposal of such materials. Again, this type of contractual provision is standard in the waste industry and is substantially the same as that included in the current PERC contracts.

What impacts would this facility have on Hampden residents?

As the projected cost of the facility is \$80 million, this project will have a significant positive impact on the town's commercial tax base.

This project is being designed to have very minimal impact on Hampden residents by conforming to the town's comprehensive vision for planned land use in and around the project location. The biggest change will be increased truck traffic on the short portion of the Cold Brook Road between where the access road will be built and Interstate 95 at the exit near Dysart's. This project will not involve an incinerator like PERC across the river so there is no need for a large stack. or water discharges into the Penobscot River. Additionally, we're planning to put in place a comprehensive plan to be a responsible neighbor by mitigating off site impact of the facility's operations, which includes an innovative system that prevents odors from migrating off site. The nature of this operation and its distance from neighbors should make this very manageable.

What is the proposed tipping fee for the Fiberight/Covanta facility?

\$70/ ton is the base tipping fee and will adjusted annually based on the Consumer Price Index.

How many years is the proposed Fiberight/Covanta facility tipping fee for?

There is a possible 40 year horizon on the contracted tip fee. The base fee of \$70/ton is for an initial agreement of 15 years. Equity charter members have the option of terminating the contract at the end of the 15 year period or contracting for up to five additional 5-year extensions.



What is my town's current tipping fee?

As of January 1, 2016, equity charter members currently pay \$76.50 /ton at PERC.

What protections exist to protect unexpected tipping fee increases?

Contract language in the Joinder Agreement and the Master Waste Supply Agreement that protects Joining Members from increased tip fees or additional capital contributions beyond or in variance to those identified in the original agreements. The contract language prevents the Joining Members from being a funding source in the event the Fiberight technology fails to perform as intended.

What if my town wants to change its recycling program in five years? Will I be penalized because the tonnage is lower than what was provided in the estimated tonnage that was provided to the MRC?

No. One of the benefits of the Fiberight process is that it lends itself to recycling and local control. MRC negotiated with Fiberight specifically allow towns to continue or expand their existing recycling programs. The Fiberight facility is being designed with the understanding that many communities will choose this route. Towns that would like to continue or expand their existing recycling programs will be able to do so. The MRC agreements for the Fiberight facility will not impose requirements to deliver a Guaranteed Annual Tonnage (GAT) of MSW on individual towns, and towns will NOT be liable for penalties for failure to deliver any specific amount of MSW so long as they continue to deliver all MSW under their control to the Fiberight facility. Thus, towns can continue existing PAYT programs, or add new PAYT programs, without fear of being penalized individually for delivery shortfalls.

What if the Fiberight/Covanta facility fails to perform as planned? What's the backup plan?

The MRC has a contract for disposal of residuals from the facility with the Crossroads Landfill. If the Fiberight/Covanta facility is delayed or cannot accept MSW for any reason, that MSW can be sent to the Crossroads Landfill at a very reasonable tip fee of \$62 per ton plus transportation until the problem can be addressed.

Why do we need to sign up in 2016?

In order for the Fiberight facility to be constructed, performance tested and operational in 2018, the MRC must have commitments from municipalities totaling 150,000 tons of MSW by June 2016. The short construction season in Maine requires the preparations to begin construction are ready to by June 2016. In order for this to happen MRC communities must have sufficient waste commitments to meet the minimum waste processing requirements of the facility. This will allow Fiberight to meet the requirements to close on its financing for construction , which would start in late 2016 before the winter and be completed by the end of 2017. the necessary .

If my town chooses to send its recyclables to Fiberight, will the recycling tonnage help satisfy 150,000 tonnage and delivery requirement?

No. The delivery requirement of 150,000 tons per year includes deliveries of acceptable waste, but does not include recyclables. Joining members are requested to determine their Estimated Delivery Amounts no the basis of the amount of acceptable waste they expect to deliver to the Fiberight facility on an annual basis, and not to include materials that would be diverted from that waste stream through waste reduction and recycling programs.

Is there a penalty if we do not sign up with the MRC/Fiberight Facility before June 2016?

Municipalities whether Equity Charter or Charter members that do not sign up between January – June 2016 will forfeit a favored position (\$2.21 per ton) and will not be eligible for rebates during the first term (15 years). The MRC Board will consider waiving this if a municipality can demonstrate good faith for the delay. There are exceptions for towns that have regularly scheduled town meetings in June



Who pays for the transportation to Crossroads Landfill if there is a delay in opening of the Fiberight facility?

In the event that the Fiberight facility in Hampden is up and running and needs to bypass the MSW to the Crossroads Landfill, Fiberight will pay for the transportation costs. If the Fiberight facility does not start on time, or it appears likely that the contract between MRC and Fiberight will terminate, Joining Members will pay for the transportation costs. The MRC has set aside \$1.0 million in reserve funds to reduce the cost of this transportation for towns that would be burdened by it,

Do we have to send our MSW to the Crossroads Landfill if Fiberight is not operational?

Joining Members will be obligated to send their MSW to the Crossroads Landfill in the event that the Fiberight facility is not open.

Why are municipalities signing up with the MRC instead of Fiberight like we did with PERC?

After a quarter century of experience with PERC, the MRC understands what works and what does not in the solid waste industry. One of the concerns we heard repeatedly was the Guaranteed Annual Tonnage (GAT). In the Master Waste Supply Agreement between MRC and Fiberight, the Delivery Commitment is 150,000 tons of MSW per year, which will be met collectively by waste deliveries from Joining Members and other sources. In developing this approach, MRC's goal was to insulate communities to the extent possible from community specific tonnage guarantees. The GAT in current PERC contracts act as a disincentive to recycling and other waste reduction efforts. By pooling tonnage, setting the delivery commitment well below the current GAT, counting non-MRC member MSW deliveries to the Delivery Commitment and by including other mitigating factors such as delivery shortfall reserves, this contract structure greatly reduces risk of any penalty for future waste delivery shortfalls.

Why should my town choose to sign up with MRC and not PERC?

The MRC has been in the municipal interest for 187 Maine municipalities for over 25 years. Our nine member board is made up of municipal officials and experienced individuals with extensive knowledge of the MSW industry. Our decisions are made in public meetings not in a private board room whose members are beholden to investors. We have been proactive about ensuring that our members will have an affordable and long-term solution to MSW disposal. We recognize that if we collaborate and are in this together, we all are in a better position to address the waste handling needs of the region.

What is the essential feature of the MRC plan that makes it superior to the PERC plan?

As compared to the PERC plan, the MRC plan would divert more solid waste away from landfills to produce more products at less cost and using new technology that is sustainable for the long-term. The MRC plan embodies the MRC mission to ensure long-term, affordable, environmentally sound disposal of MSW.

TOPIC: PERC

Who are the owners of PERC?

PERC, L.P., is literally a public-private partnership. The general partner is USA Energy Group, LLC, a small privately-held partnership based in Minnesota whose owners are former electric utility executives, but own no other waste facility. The limited partners include USA Energy; a second private firm from Minnesota called PERC Holdings, LLC; and the 86 towns represented by the MRC, which, taken together, own 25.5214 percent of the limited partnership shares.

What technology does the PERC facility use and are there new facilities being developed with this technology?

The PERC facility uses RDF technology with a multi-step process to convert MSW into "fuel" that is burned in a very different boiler and on a very different grate than either new facility. PERC has no NOx control equip-



ment.. The plant most like PERC in the United States was MERC, in Biddeford, which closed in 2012. The RDF technology used by PERC was used in about 20 plants in the 1980s, many of which have been closed. The plant with a similar technology constructed most recently, in Robbins, Illinois, closed in 1996, after the subsidy supporting its elevated electricity sales price was repealed by the state legislature. No new plants using PERC's RDF technology have been built since 1996.

Why won't PERC continue to operate the same as it does now past 2018?

Because PERC would need to raise tip fees so much that waste disposal at PERC would no longer be affordable for the MRC communities. Without waste from the MRC communities, continued operation of the PERC plant will not be economically feasible

Can't PERC simply cut costs?

No. Most of PERC's costs are fixed and can't be cut even if less MSW is received. The MRC gets detailed cost information of the PERC facility on a monthly basis, with historical data back to 1991, as well as annual budget information and analyses of fixed vs. variable costs. We know that as the fixed costs are spread over fewer tons of MSW, the cost per ton will go up, not down. Long term cost trends also tell us that PERC continues to face increasing expenses to operating and maintain an aging facility with 1980s technology, which provides further upward pressure on costs.

How many tons of trash does PERC process now?

Approximately 300,000 per year

Does PERC use out of state trash?

Yes. Currently the total volume of of out of state trash is approximately 56,000 tons or about 18%

What is the history with PERC and moving forward with Fiberight?

In 2007, the MRC began to focus on the post-2018 period, when the current contracts with PERC and Power Purchase Agreement (PPA) end. Initially, the MRC discussed with the PERC private partners the feasibility of an extension of PERC waste disposal agreements beyond 2018. Over a four year period from 2007 – 2011, the MRC staff spent hundreds of hours investigating the economics of the PERC facility and the circumstances that would result after the termination of the power purchase agreement in February 2018. The MRC also made public presentations to the towns on the post-2018 situation starting with the Annual Meeting in December 2009.

The conclusions were discouraging. The PERC facility operates well when it accepts over 300,000 tons per year of MSW, which includes significant quantities of out-of-state MSW. After 2018, when the market cost of electricity is projected to be much lower than the PPA price, it will no longer be profitable for the PERC facility to accept out-of-state waste at low tip fees. Moreover, many of the operating costs of the PERC facility are substantially fixed, and the boilers operate less efficiently, and with challenges in meeting emissions standards, when they are turned down. The MRC spent much effort evaluating scenarios in which the PERC facility might accept substantially less waste after 2018. None were shown to be feasible, even if waste was assumed to be supplied at elevated tip fees. At this point, the private partners in PERC notified the MRC that "the only conclusion that can be reached is that PERC will not be an economically viable business beyond 2017." Memorandum from Steve Kaminski, Esq. (attorney for the PERC private partners), dated October 14, 2011.

Through the rest of 2011 and 2012, the MRC turned its attention to opportunities for modifying the PERC facility to incorporate alternative or emerging technologies. The private partners in PERC refused to participate in these efforts despite multiple requests by the MRC.



In 2013, the MRC released its Request for Expressions of Interest (the RFEI), which solicited responses from vendors of emerging technologies to process municipal solid waste via retrofit or re-development of an existing RDF combustion and electric generation facility. The MRC received 15 vendor responses to the RFEI, of which the response from Fiberight was selected as most advantageous. Unfortunately, the PERC private partners continued to refuse to work with the MRC on the application of new technology to the PERC facility. Given the short time horizon and the need to develop an alternative facility by 2018, and despite the strong preferences of the MRC to find a way to continue the use of the PERC facility, the MRC was forced to investigate alternative sites by the non-cooperation of the PERC private partners and by their refusal to consider a sale of the site or the facility to the MRC at any price.

In searching for an alternative site, the MRC began with a comprehensive process to identify available industrial sites and properties within a reasonable radial distance of the centroid of the MRC service territory, which is near Bangor. Ultimately, the MRC identified the site in Hampden as consistent with its threshold and preferential criteria for site selection and proceeded with arrangements for the development of that site.

As indicated above, the MRC worked hard over a five-year period to incorporate the PERC facility after 2018, which efforts were ultimately frustrated by the refusal of the PERC private partners to participate in or cooperate with those efforts. At this point, the timeframe for development is being compressed in order to meet the 2018 date. This is in part a consequence of the MRC spending too much time focusing on the use of the PERC facility after 2018 rather than abandoning such efforts in favor of alternatives at an earlier time.

Recent public statements by USA Energy have include mention of \$100 million of investments by USA Energy over the past 10 years. Is this true and, if so, what was the \$100 million used for?
This is false. The total amount of capital contributions made through direct payments from USA Energy Group for upgrades and improvements to the PERC facility over the last 10 years is zero. Not one penny.

The actual investment in capital and major maintenance measures at the PERC facility from 2005 to 2015 is \$40.702 million and every dollar came from operational cash flow. No outside investments were made.

Of that amount, \$21.419 million was derived from set-asides from the tip fees paid by Charter Municipalities under the CMRA Fund program, which funds are dedicated to facility upgrades and improvements and can be used for no other purpose.

The remaining \$19.283 million in investment was provided from excess cash flow generated by the facility as a result of electric sales under the Power Purchase Agreement.

Audited data are available.

Recent public statements by USA Energy have stated its post-2018 model will utilize a “peak” manner whereby the plant is closed down or reduced operations night, and then ramp back up to generate electricity only during the day to maximize revenues. Does this work?

Because of the unpredictable and random manner in which peak hours are realized, there is no pre-determined schedule in which the plant could be programmed to run efficiently to consistently capture peak rates. For example, in January 2016, hourly prices spiked up at 3:00 a.m. on Saturday, January 2, the day after New Years Day, then returned to low levels by 8:00 a.m.. The PERC plant boilers would have been turned down or off and PERC would have missed the price spike.



Operating facilities as a “peaking” unit would result in supplemental firing with auxiliary fuel and increased thermal cycling of boilers and flue gas treatment systems which will negatively impact their emissions, causing greater maintenance issues by cycling through corrosion dew point temperatures that could be considered significant.

Recent public statements by USA Energy have stated that PERC technology is the same as being used in new waste-to-energy plants such as those in Durham, Ontario, Canada, and West Palm Beach, Florida... is this true?

This is false.

The PERC facility uses RDF technology with a multi-step process to convert MSW into “fuel” that is burned in a very different boiler and on a very different grate than either new facility. PERC has no NOx control equipment. There are no new plants like PERC. The plant most like PERC was MERC, in Biddeford, which closed in 2012.

The new Durham facility uses Covanta mass-burn technology to combust unprocessed MSW, and has NOx control equipment to reduce air emissions. The new West Palm Beach facility is also a mass-burn facility that uses mass-burn technology to combust unprocessed MSW, and has NOx control equipment to reduce air emissions. Note that there is an existing RDF facility in West Palm Beach, but that when the county authorities needed to build a new plant, they went with mass-burn technology, not with 1980s PERC RDF technology.

How many facilities does USA Energy manage or oversee?

None besides PERC.

TOPIC: General Qusetions

What is the major change coming in 2018? Why are things changing?

Through 2018, PERC will be selling its electricity at a rate that is far above market prices due to its expiring 30-year power purchase agreement with Emera Maine (formerly Bangor Hydro). When that agreement expires in 2018, PERC will be forced to sell the electricity at a much lower market price and will need to make up the lost revenue through higher tip fees.

What is the MRC’s recommendation for Charter Municipalities to manage their MSW after the waste disposal agreements with PERC terminate in 2018?

The MRC recommends that Charter Municipalities manage their MSW through a three-part system that includes the following components: (1) continuation of local efforts for waste reduction and recycling and for control of waste collection and transportation; (2) use of the Fiberight facility, being developed in Hampden, Maine, for processing of mixed acceptable waste to recover recyclables and to convert organic materials into bio-methane and other high-value products; and (3) use of the Crossroads Landfill in Norridgewick, Maine, as a disposal facility for residual materials from the Fiberight facility and for management of acceptable waste and materials that the Fiberight facility cannot accept for any reason. In the view of the MRC, the recommended system is the best way for the Charter Municipalities to achieve a long-term, affordable, environmentally sound method for managing solid waste starting in 2018.

How can Charter Municipalities participate in the MRC’s recommended system?

Charter Municipalities are asked to review and authorize execution of the Joinder Agreement by the appropri-



ate legislative body, be it a council or town meeting, in accordance with the requirements of Exhibit C to the Joinder Agreement and elsewhere on this website. The Joinder Agreement is the contractual agreement between the MRC and the Charter Municipality that sets forth the terms and conditions on which the Charter Municipality would deliver acceptable waste and otherwise participate in the MRC's recommended system.

Did the MRC make changes to the legal agreements that were mailed in October?

One of the benefits to sharing the draft agreements was the thoughtful and constructive feedback the MRC received by our members. We have provided a red-lined version of the agreements on our website.

Will there be an independent legal review of the agreement?

Yes. An independent legal review was completed by Perkins Thompson per the request of a group of MRC communities. The review encompassed the proposed Site Lease, Master Waste Supply Agreement and the Municipal Joinder Agreement related to the proposed Fiberight project. The written work product provided by Perkins Thompson is available to all MRC member communities, as is information on the numerous revisions to the agreement that are included in the agreements and the handful of suggestions that could not be accommodated. .. The Board has agreed to reimburse legal expenses related to this legal review and will not reimburse other independent legal review requests.



**CONCEPT
PROPOSAL
FROM
JAY DRESSER**

TO: City of Bangor, City of Brewer, and MRC

Patent

Background

Jay Parker Dresser is a native of Dedham, Maine and has resided in the State of Maine for most of his life. His broad experience in banking and environmental education helped spur a 20 year R & D journey in which Jay created a national recycling concept. His idea was shared with upper levels of management of Walmart, Sears Holdings, Supervalu supermarket chain (parent of Shaw's), Whole Foods Market, Hannaford, and Food Marketing Institute.

He is a graduate of Brewer High School and UMaine Orono with a BS in Business Administration with a concentration in Management. In the early '90s, he and his family moved to New Jersey where he studied at Princeton University. While at Princeton, he audited a graduate level environmental course focusing on the siting of big box stores, which was instructed by Professor Clinton Andrews (now at Rutgers).

He endured relocations and mergers for a thirteen year career in commercial banking in Eastern and Coastal Maine; completing banking schools at Dartmouth and Williams. He was a AVP/commercial loan officer/branch manager/business development officer out of the Belfast and Exchange Street Bangor Fleet Bank of Maine offices. There he supervised 12 employees and managed a commercial loan portfolio of \$10 million. He enlisted several new commercial and trust customers for it's banks.

Later, Jay founded Dresser Refillables, Inc (DR) after receiving a grant from Maine Technology Institute and a consulting fee from Owens-Illinois, which is the largest glass manufacturer in the world. This enabled him to study the feasibility of returning the US to a refillable glass beer bottle economy; prevalent in the U.S. in the '50s and '60s. He hired 3 independent contractors to assist in the study, finding that improved sorting and standardization of bottles were key to the DR idea.

Dresser's interest in MRFs began in 1990 when he traveled to Springfield, MA from Belfast, Maine on a solo trip to visit the western Massachusetts MRF. In 2009, he presented a concept to serve the Bangor, Maine area to EMDC, but was set aside until 2015, while other interests prevailed while the city moved in different directions. Equipped with time and resources, he developed more specific concepts on methodology formed in part by his four year membership on the City of Bangor Recycling Committee, where he became aware of a successful drop-off, curbside, baler, and collection program.

Dresser has also written two scholarly essays on the professional and financial elite of the the pre-American Civil War era. He seeks publication in the coming months and years.

The Problem

North America currently operates approximately 70 MRF's (some dirty, some "clean", although it is reported that the "clean" only recycle 45% of materials collected) and 80+ incinerators. In 1986, there were 7,683 dumps in the United States. By 2009, there were just **1,908** landfills.

- Maine has about 414 municipal landfills that include current licensed operating sites, closed sites or inactive sites that no longer take municipal waste, **however never went through an approved closure process.**

- Most were unlicensed sites that threatened ground and surface water quality because of inappropriate siting, inadequate design or improper operation.
- The majority of sites dated from the '60s, '70s and '80s and were often located in old gravel pits where they posed a risk to groundwater supplies.
- PCM were initially burned but in later years was covered on a daily basis with fill material.
- The slow rate of closures during the late '70s and early to mid '80s showed the need for the state to provide assistance to municipalities for the proper planning and closure of these sites.
- Lack of bottle & can redemption near Bangor Mall, and facility on Broadway has inadequate parking.
- Current Bangor single stream program results in considerable waste from cross-contamination of materials.
- Households and businesses not compensated for sorting, reuse
- They weren't invented and vetted by a full complement of university faculty, student, and professional disciplines. Without a scientific approach, landfill, incinerator, and MRF proponents all sold their views for best practice on a less knowledgeable local and regional public bodies. By comparison, millions have been spent on R&D at UMaine for ocean wind power and virtually nothing on PCM handling.

MRF's in other parts of US, such as Chicago, have resulted in multiple lawsuits. Certainly there were prototypes but never an incubator testing each method against the other, while inviting all models to the test table. In various geographical locations, we now have an array of processes that work with varying degrees of success. Perhaps, Greater Bangor could be a test model for my proposal.

A prime example: New York City in the 1990s was, and believe still is, trucking its post-consumer materials(pcm) to Virginia and PA landfills by 1000 tractor trailer loads a day. Greater Bangor Maine sends 150,000 tons/yr to PERC and another 150,000 tons/yr is trucked from out of state.

Dresser Refillables, Inc. will work with existing redemption center operators to derive a best solution for all. There has been a dire lack of education with single stream in Bangor and as was true for the former Bangor drop off and curbside programs.

The Solution

- Funded by retailers and consumers - taxpayers; the largest 2 contributors (ie Federal, State, and Local grant monies) to current waste.
- DR, along with Michigan State University School of Packaging and an MDEP office of sustainability in an advisory capacity, may be qualified to lead this test to arrive at the ideal model and develop infrastructure in US and Canada for processing PCM into new materials or reused in their virgin state.
- Lastly, reduced packaging will be sought after and will further explore collection depots for Hampden,

Brewer, and Old Town/Orono. Further develop automobiles that can easily carry containers to local and regional collection depots.

Goal: 90% combined reuse & recycling rates. DR MRF will be capable of processing to 800 tons of PCM per day.

The Dresser model for Greater Bangor, Maine:

- Locate a drop-off sort by stall collection plant at a highly convenient location at the Bangor Mall Area, may require purchasing existing buildings and property, and razing them for the best location.
- Construct 70K-80K sf building with 2, 4, or 6 lane reverse traffic entry, similar the Irving fueling station models. 35K sf on one side and 35K sf on the other side, split by four traffic lanes, under a canopy, to be designed by a group of Bangor Area architects and engineers. Electrically powered lift trucks will transfer the materials to a baler in each building. Uniformed, congenial staff will be on hand to assist drop off patrons and weigh their materials, and reimburse with cash, similar perhaps to a Californian model; or the Dalton-Whitfield Project in the state of Georgia in the U.S.
- Dresser will also provide presort curb side collection with weight scales on a sorter truck –the purpose to accommodate all types of recyclers. The homeowner, apartment, condo dweller, business and shopper. Product bar-codes could assist in crediting the recycler. A credit towards property taxes or rent.
- Patrons will be compensated by weight for their reusables and recyclables in clean, good condition.
- Patrons will be supplied presort tools, such as crates with dividers for glass bottles and jars.
- A bottle and can deposit refund facility will also be a feature of the building. Refillable glass beverage containers will be presorted and collected at curbside and drop -off, and transferred to a bottle washing facility logistically located for lowest possible transportation and handling costs.
- The best possible collection method and disposal for organics will be explored, including composting and bio fuels.
- Expired CFL light bulbs will be accepted at drop-off and curbside with detailed information where they are processed and how the mercury is disposed of.
- Encorp of N.B., Canada to advise on bottle sorting. Paper board containers for glass containers will be baled and recycled as in New Brunswick, Canada's Moosehead brewery's refillable bottle plant.
- Apartment & condo complexes to be provided sorting, separation, and collection stations to phase out dumpsters. Roll on, roll off containers as has been tested in Knoxville, Tenn.
- E-waste take back with full disclosure to public where these products are processed and what results in the materials.
- The familiar prescription drug vials will be collected, and offered to a sub-company for reconditioning and reuse and/or recycled into new products.
- Accept commercial paper from local institutions and throughout Northern New England.

- Mini collection depots will be situated at apartment, condos, and businesses for presorting, diminishing or virtually eliminating the need for dumpsters, incineration, and landfilling.
- Single stream will be considered at mobile home parks, condos and apartment complexes, with bi-monthly collection.
- Municipalities and towns will provide free divider bins to new and existing residents, for new residents the Chamber of Commerce will deliver a welcome gift including a divider bin or single sort bin. New resident list to be provided to chamber on monthly basis by realtors assoc and landlords. With laminated magnetized instructions on what is reusable and what is recyclable and options for delivering.
- Presort for quality product to supply commodity market.

Proposed Funding Sources:

\$24 million in escrow with Municipal Review Committee (187 member town in Greater Bangor and City block grants.

- Private equity, with no debt, ideally. Annual operating costs will be funded by sale of recyclables and reusables and municipal tipping fees of \$70/ton; at peak capacity, \$70/ton x 200,000 tons = \$14,000,000/yr gross revenue.
- Plant and equipment cost to be determined by community meetings.
- Dresser Refillables, Inc. will propose to lease building and equipment from MRC, but supply staff, trucks and market recyclables.

Education:

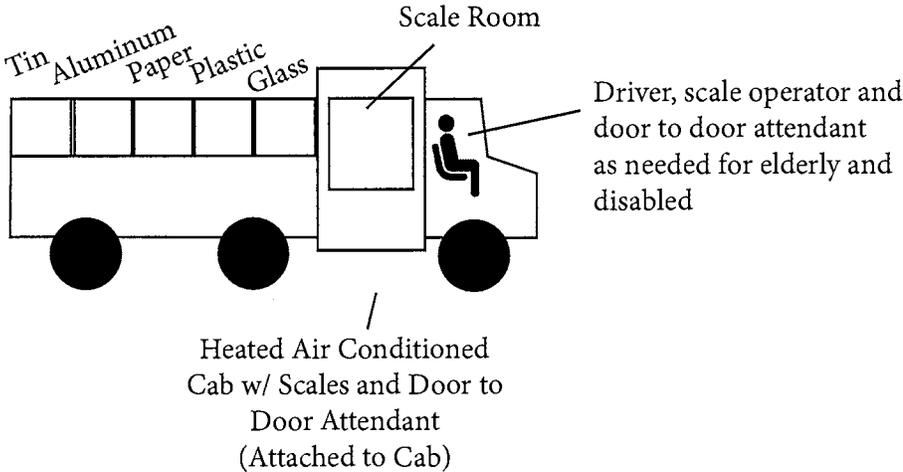
Via social media, TV and radio public address announcements on regular intervals year round and print media, on where and how these facilities operate, educating new and current residents alike. Also, in K-12 schools. Weekly seek pre-school, middle school, and high school curriculum changes for education in programs.

- Delivering product to the drop off center utilizes transportation costs by local residents and businesses.
- Credits by Code Indicator Device scanned on container bin sent into town or municipality of origin, for property tax credit.

Building, etc.

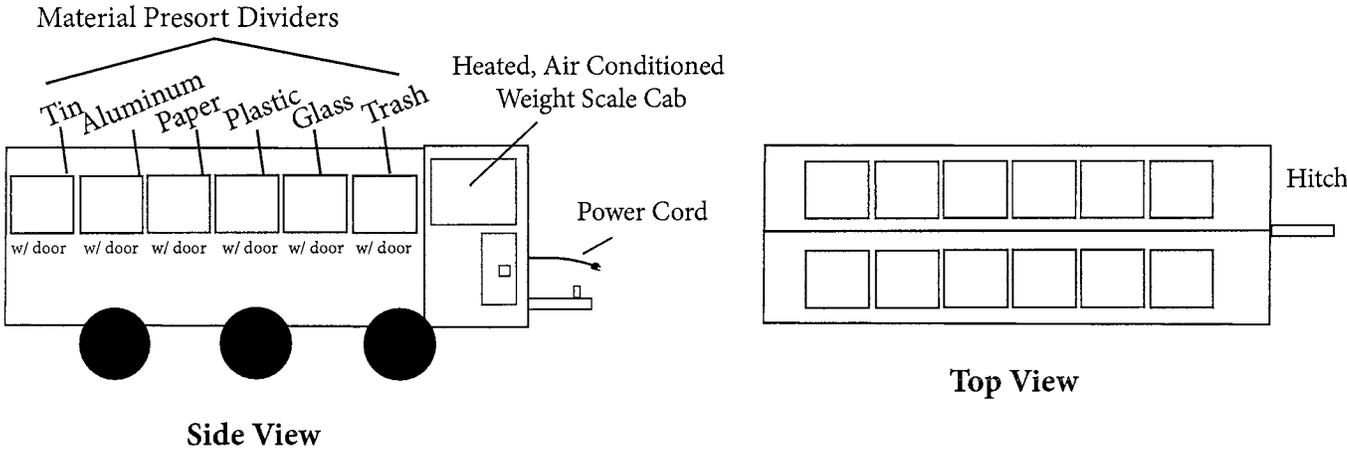
- Brick facade with ivy growth on exterior, for an appealing, architecturally compatible neighbor for mall area buildings.
- Consideration will be given to paper bag(s) to be issued by Dresser Refillables at wholesale price.
- Cardboard Divider Glass Bottle Collection Device: This process will also have a sociological benefit in that citizens will derive self-satisfaction from having done a positive behavior (Reuse & Recycle)

Curbside Truck



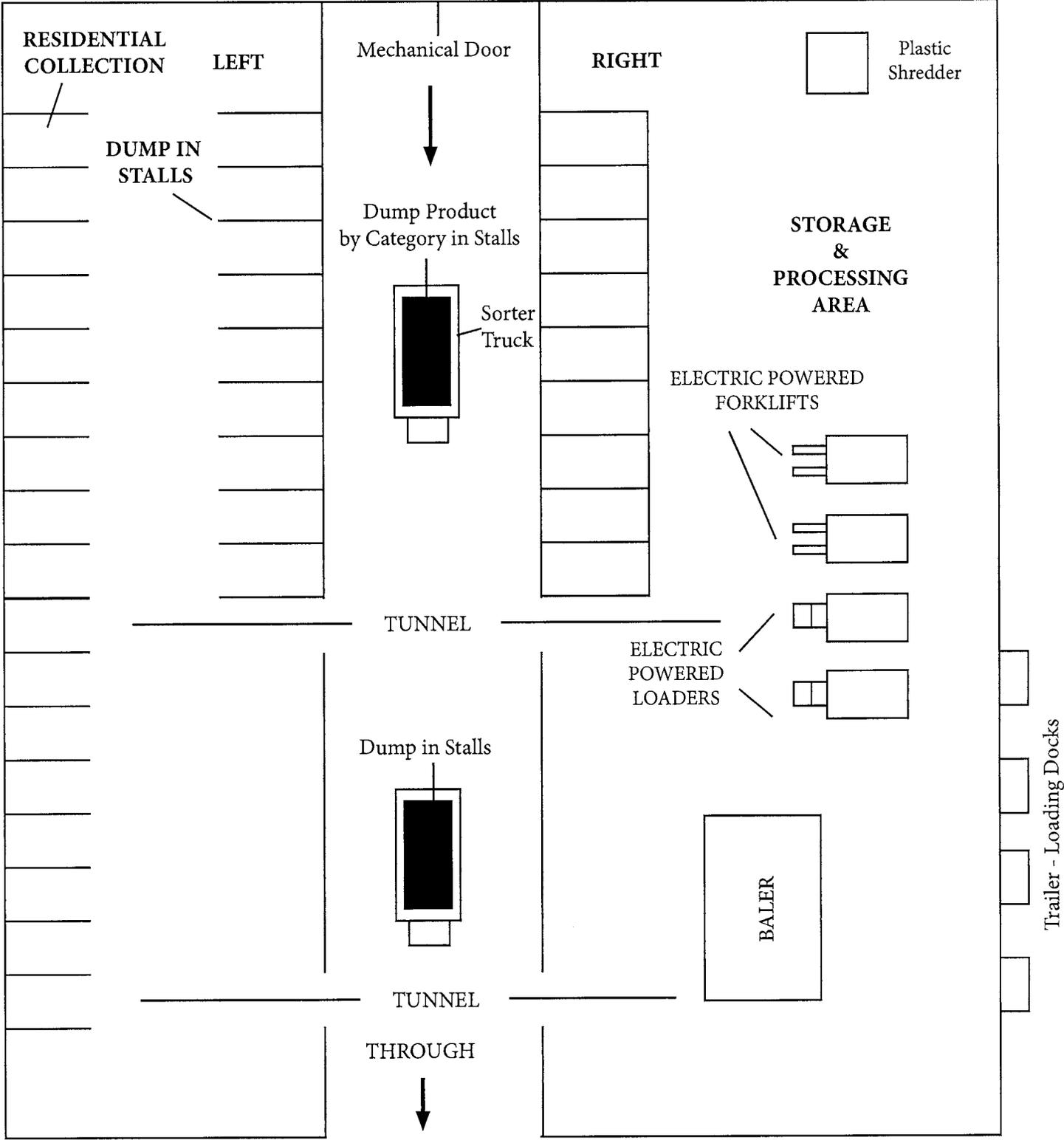
Collection Trailer

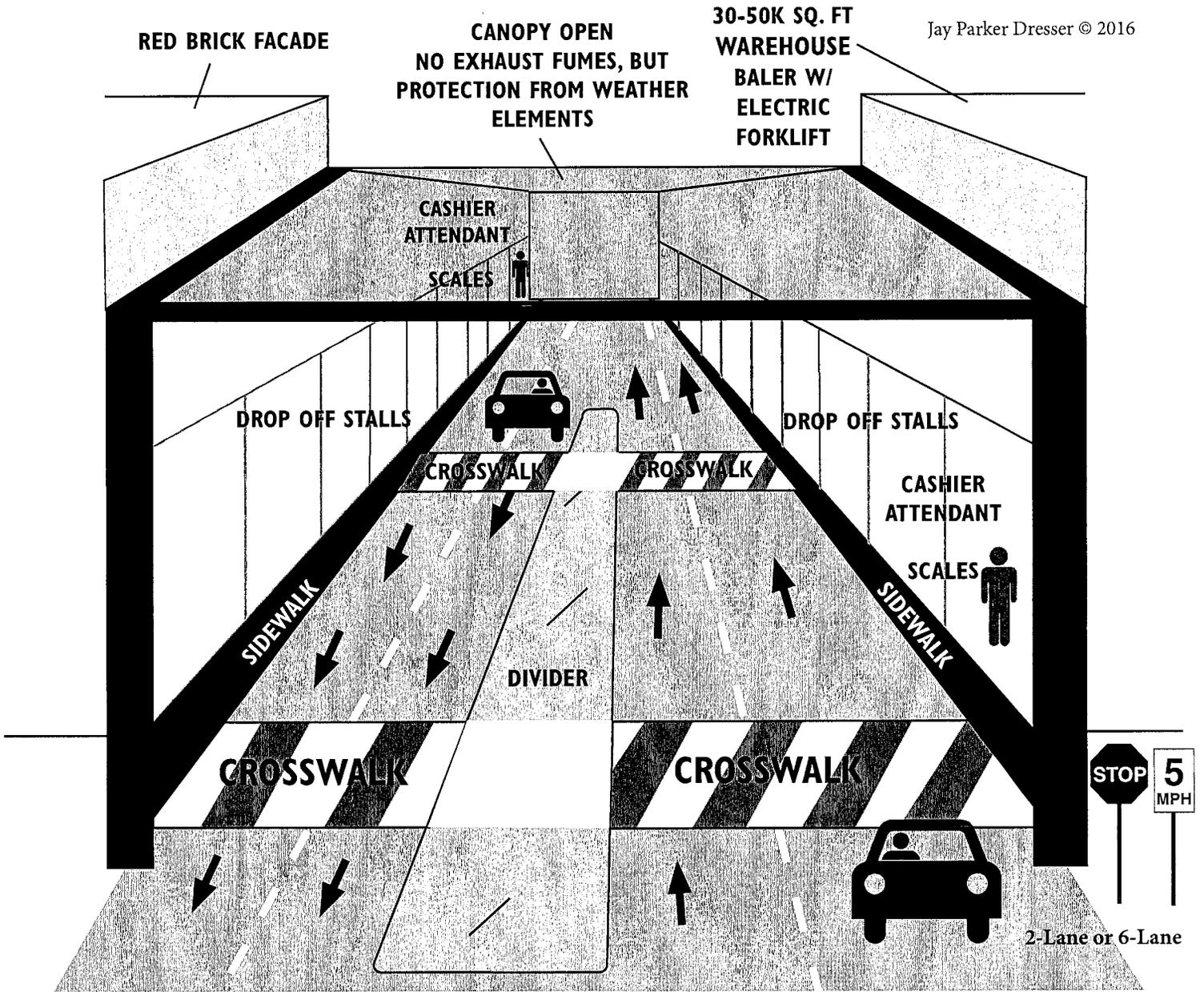
Apartment, Condo, Mobile Home Park Collection Receptacle



- Standardized household and business collection bins, uniforms
- Weight and size, barcoded with electronic indicator, weight converted dollar amount to municipal main frame for credit.

Dresser Model





DROP OFF STALLS

Plastic Rings	Reusable Glass	Mixed Glass	Aluminum	Tin	Batteries All Kinds	Heavy Metals	Drug Vials for Re-Conditioning	Paper Clean	Paper Newsprint, Magazines	Paper Board	E-Waste	Food Waste Organics	Bottles & Can Redemption Cashier Attendant
Carpet												SMALLER DROP OFFS	

Education

Magnetized, Laminated Document of Stall Configuration in all Businesses & Households in 187 Town Area

Locations (smaller drop offs)

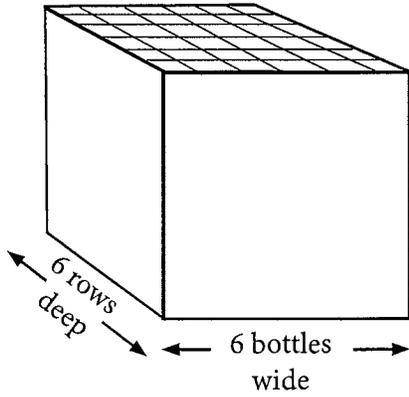
Walmarts: Bangor, Brewer, Hampden, Orono-Old Town, Outlying Towns

Curbside Pre-sort & Sort

Design Stage Planning will be advocated and implemented

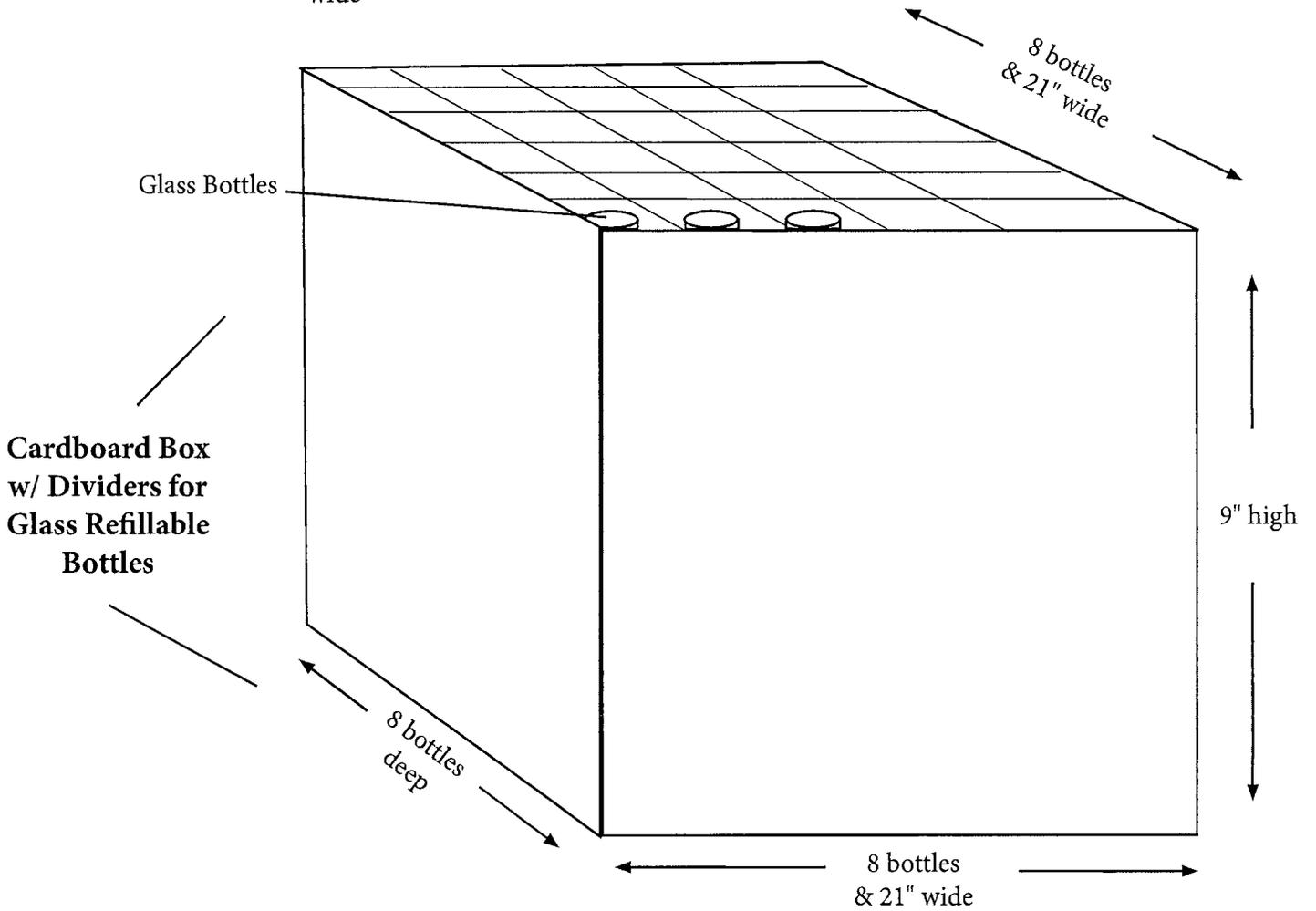
Glass Refillable Bottle Transport Box to Collection Facilities for Households & Businesses

Single Family Household

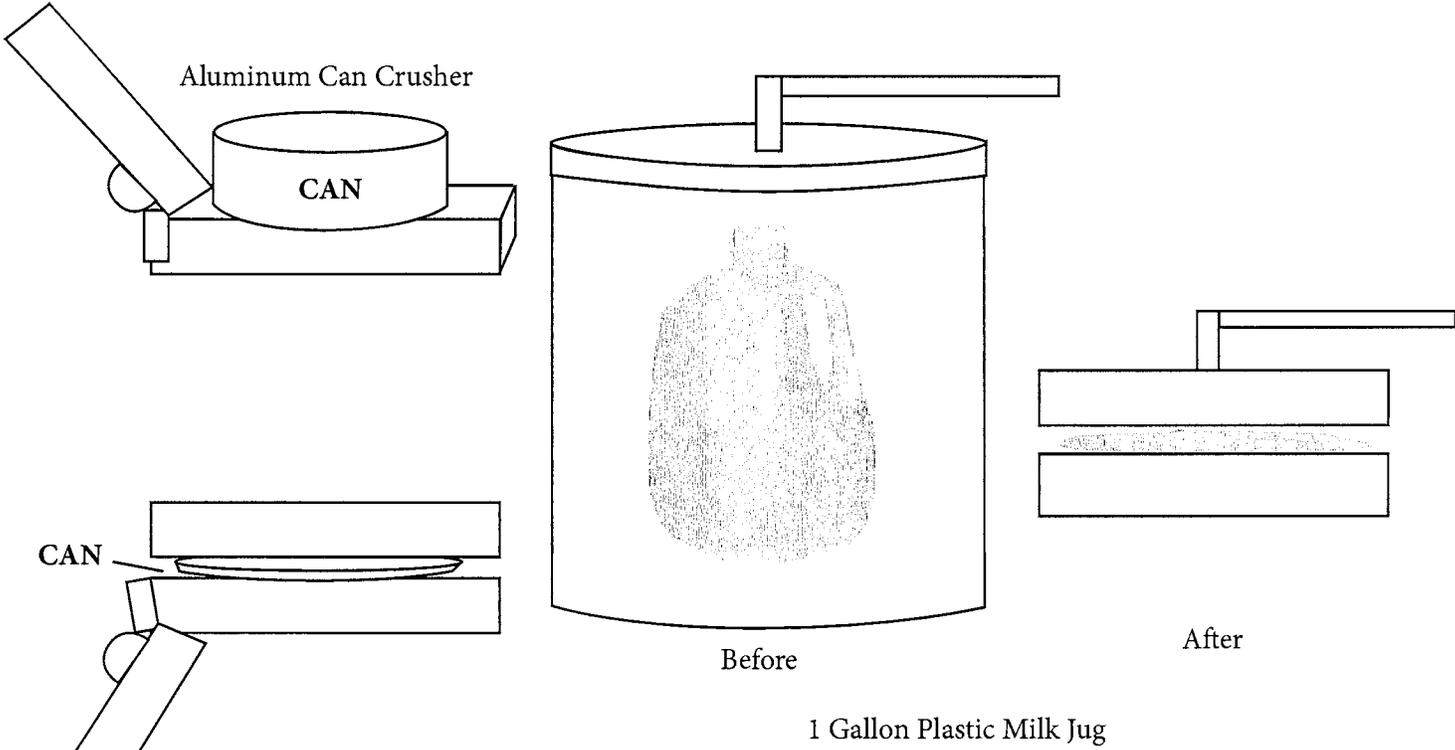


Business

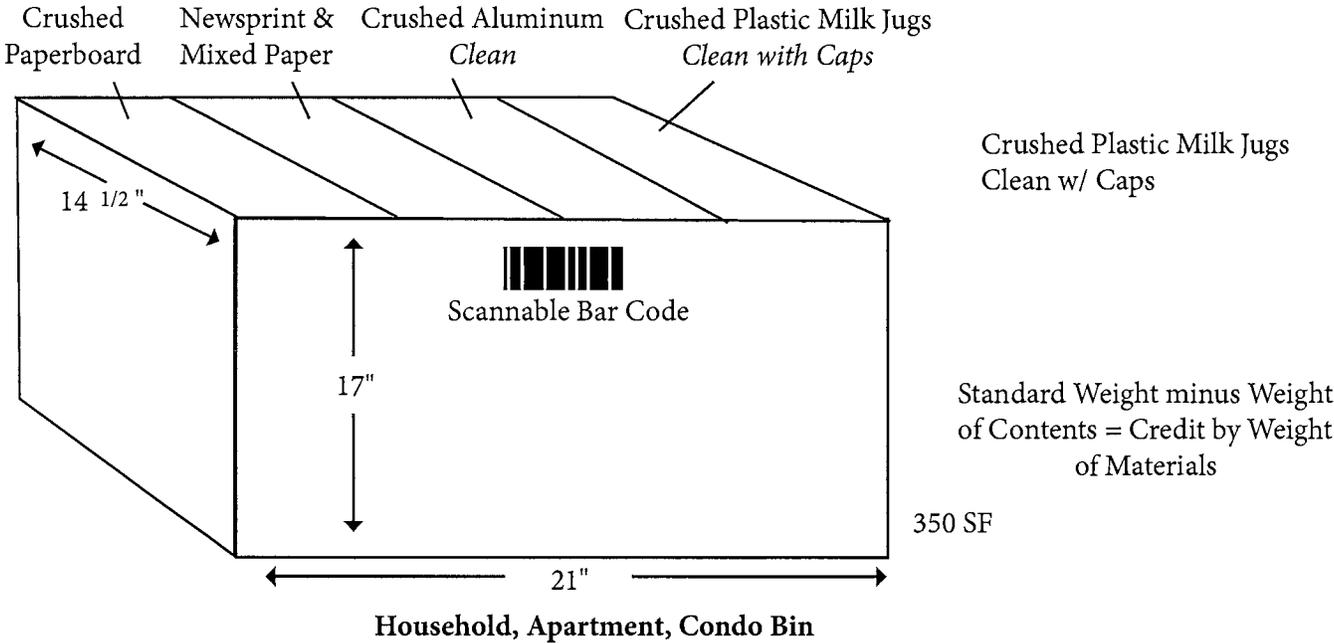
DR will pick up weekly from
Bangor-Brewer area restaurants and pubs



Household Compactors



**Supplied by Landlords, Condo Associations and Municipalities,
& Housing Authorities via Dresser Refillables**



**MEMO FROM
GEORGE
ARONSON
REGARDING PERC
PROFORMA,
OPERATIONS**

MEMORANDUM

TO: Greg Lounder, Executive Director, MRC
FROM: George H. Aronson, Principal, CRMC /S/
RE: Updated MRC Version of PERC Post-PPA Pro Forma
DATE: 16 February 2016

Per your direction and in response to inquiries from several towns, CRMC has reviewed further the economics of the PERC facility after the termination of the Power Purchase Agreement (PPA) in 2018. The analysis responds to the economic model results posted publicly by USA Energy on the Internet on the assumption that the PERC facility would process 200,000 tons per year of MSW. The model uses USA Energy's assumptions of tip fee revenues and electricity prices without adjustment, and incorporates USA Energy's allowances for non-operating income. The analysis is intended to incorporate generously plausible cost reductions associated with the lower level of tonnage being processed, but consistent with the history of actual operations and maintenance (O&M) costs actually experienced at the PERC facility. Costs are allocated between waste processing and boiler operations and electricity production, and between fixed and incremental costs, on the basis of past analyses performed by management staff at the PERC facility, with specific adjustments made as described below. The analysis and supporting information are provided in Exhibit A. Note the following regarding the analysis:

1. CRMC projects O&M costs for the PERC facility in 2018 (excluding non-operating costs) on the order of \$22.9 million per year, as compared to \$18.773 million per year in 2018 per USA Energy. PERC's O&M costs in 2015 were \$26.58 million. CRMC does not accept that the PERC facility can cut both labor costs and O&M costs, many of which are fixed, by more than 30 percent on an ongoing basis as projected by USE Energy without a significant adverse impact on the performance of the facility, even with significant reductions in the amount of waste being processed. Note that the HDR Report, which had been commissioned and released by USA Energy, recommended that PERC *increase* its O&M spending after 2018 in order to sustain the condition of the facility. The projected cuts in budgeted O&M costs are of special concern if USA Energy would cycle the boilers as is its publicly stated intent. The HDR report did not evaluate a post 2018 operations plan that included processing and combusting less than 300,000 tons per year and cycling the boilers. Boiler cycling would go against standard practice in the waste-to-energy industry and could lead to substantial increases in O&M costs for the boilers and turbine and their components due to thermal cycle fatigue, accelerated creep and corrosion fatigue, and other factors.
2. USA Energy's plan to cycle the boilers would cause the PERC facility to increase its fuel oil consumption and costs. PERC must burn fuel oil each time a boiler is started up or shut down in order to maintain temperatures as required for complete combustion both (i) before waste

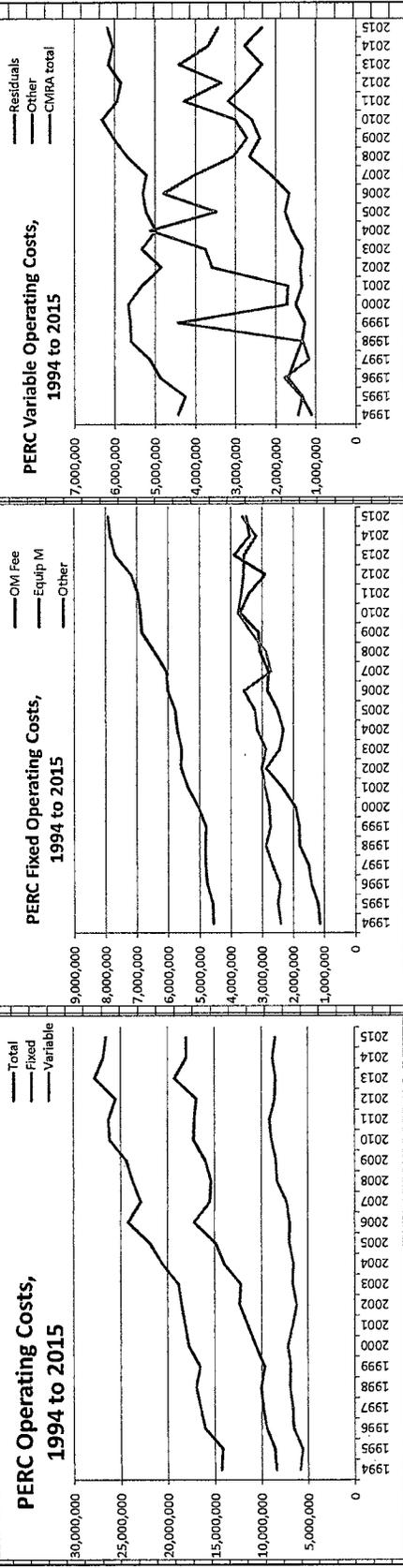
can be fed into the boiler during start-up, and (ii) while unburned RDF remains on the grates before shut-down. The additional cost for fuel oil is significant, even at today's low oil prices – and future oil prices are more likely to return to prior levels than to continue to fall or to stay low indefinitely. Note that USA Energy projects that fuel oil use will *decline* by more than 30 percent despite the increased number of start-ups and shut-downs. CRMC does not consider this assumption to be credible.

As Exhibit A shows, even with the generously plausible cost reductions associated with the lower level of tonnage being processed, CRMC projects that the PERC facility would generate cash losses from operations on the order of \$2.5 million per year before any new debt service it might incur. Such losses are not sustainable. USA Energy is a privately-held entity with unknown resources, but has no credit rating and no significant assets other than its ownership interests in PERC. Since USA Energy bought into the PERC partnership in 2004, they have not invested a single dollar in the PERC facility. CRMC does not believe that USA Energy has the capability to sustain cash losses on the order of \$2.5 million on an ongoing basis. Moreover, under these circumstances, there is no basis for presuming that USA Energy could provide infusions of cash into the PERC facility if needed for unforeseen major maintenance projects (such as boiler repairs that are needed due to excessive cycling) or to address the need for additional pollution control equipment or other potential requirements that might result from a change in law or regulation (such as addition of new systems to control NOx or CO emissions).

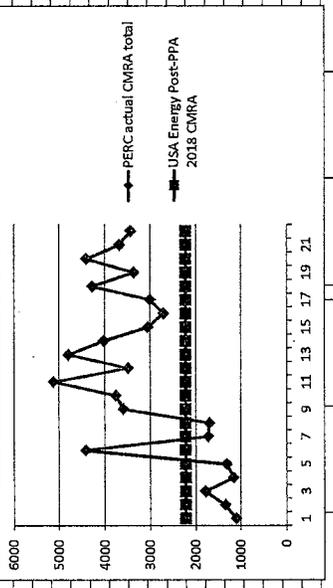
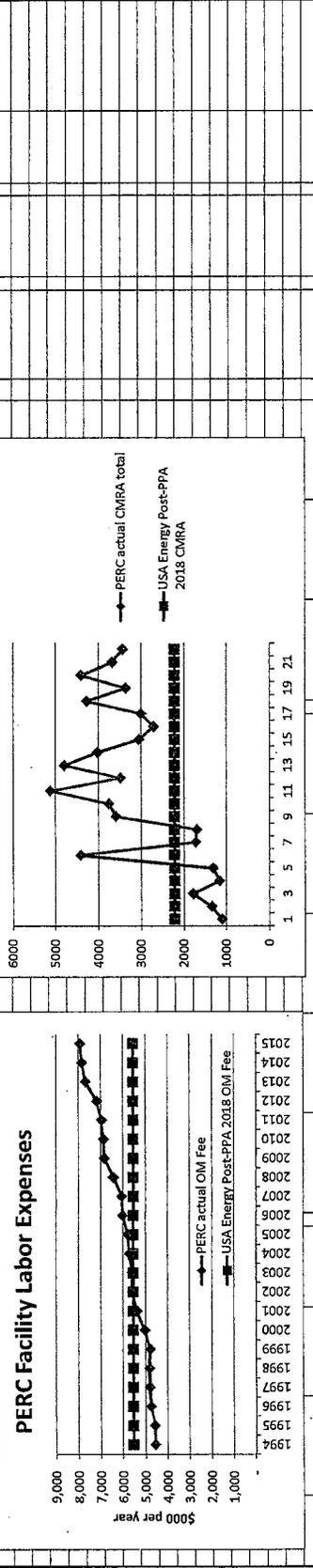
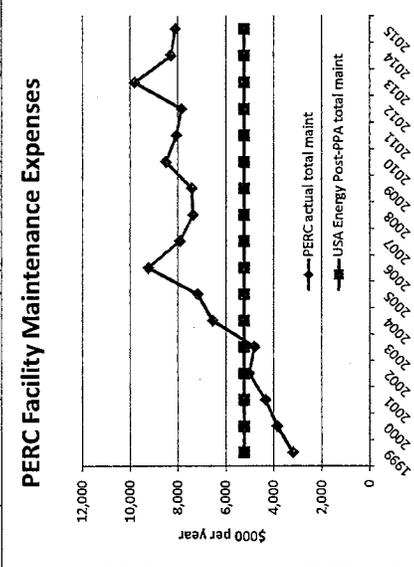
Under these circumstances, the economic projections for the PERC facility do not support the claim that its continued operation beyond the expiration of the PPA in early 2018 would be economically sustainable.

PERC O&M Costs
Data from PERC Monthly Performance Reports and Year-End Reports

	Total operating expenses				Fixed expense				Variable expense				CMRA total	CPLU	Total in 2015
	Total	Fixed	Variable	Total	ESOCO labor		No SM/RS, BM		Total	Residuals	Other	CMRA capital			
					OM Free	Major Maint	Equip M	Other							
1994	14,319,805	8,438,496	5,881,309	8,438,496	4,565,748	1,446,630	2,424,061	300,058	4,436,171	1,445,138	805,732	1,105,790	149.4	22,806,733	
1995	14,166,606	8,581,647	5,584,959	8,581,647	4,584,957	1,201,329	2,500,537	2,500,537	4,253,355	1,331,604	1,063,959	1,359,184	153.2	22,003,088	
1996	16,034,709	9,461,347	6,573,362	9,461,347	4,757,977	1,413,034	2,429,552	864,783	4,879,690	1,693,672	918,308	1,783,091	157.8	24,178,573	
1997	16,511,397	9,847,761	6,663,636	9,847,761	4,810,670	1,506,451	2,673,651	856,989	5,137,112	1,528,525	308,680	1,165,669	161.2	24,372,236	
1998	16,999,209	10,046,144	6,963,065	10,046,144	4,822,160	1,783,427	2,885,165	555,384	5,604,607	1,348,458	767,120	1,322,504	163.6	24,724,166	
1999	16,582,137	9,692,750	6,889,387	9,692,750	4,801,296	1,803,889	2,738,688	351,866	5,614,323	1,275,064	4,074,594	4,426,460	167.9	23,499,920	
2000	17,790,738	10,604,366	7,186,372	10,604,366	5,042,427	1,926,022	2,769,630	869,216	5,677,326	1,508,906	852,893	1,722,109	173.7	24,370,893	
2001	18,142,765	11,457,822	6,684,943	11,457,822	5,381,227	2,345,868	2,142,263	816,463	5,335,325	1,349,616	883,430	1,699,893	178.3	24,211,891	
2002	18,566,061	12,306,235	6,249,826	12,306,235	5,593,751	2,876,312	3,018,349	819,823	4,860,126	1,389,700	2,770,073	3,589,896	181.0	24,394,044	
2003	18,854,508	12,183,096	6,671,412	12,183,096	5,696,480	2,445,166	2,881,697	1,269,753	4,671,412	1,337,506	2,487,991	3,757,744	185.2	24,224,276	
2004	20,593,333	13,990,020	6,593,313	13,990,020	5,720,322	2,334,718	3,159,539	2,776,441	4,988,288	1,605,025	2,348,466	5,124,907	189.9	26,790,949	
2005	21,865,743	14,875,782	7,009,961	14,875,782	5,779,251	2,510,858	3,268,742	3,356,931	6,985,676	1,777,598	128,945	3,485,876	198.8	28,195,187	
2006	24,203,513	17,217,837	6,985,676	17,217,837	6,014,591	2,819,635	3,583,054	4,800,556	5,308,347	1,677,329	-	4,800,556	202.9	28,383,957	
2007	22,867,719	15,519,727	7,347,992	15,519,727	6,060,916	2,791,955	2,721,977	3,944,879	5,222,947	2,125,045	78,492	4,023,371	208.5	26,098,419	
2008	23,790,824	15,381,983	8,349,841	15,381,983	6,440,507	3,070,563	2,873,648	2,997,265	6,348,841	2,648,012	57,975	3,055,240	218.8	26,809,276	
2009	24,416,005	15,981,276	8,434,729	15,981,276	6,843,688	3,115,820	3,344,548	2,677,901	8,434,729	2,401,492	35,648	2,713,549	216.0	26,900,484	
2010	26,176,088	17,262,400	8,913,688	17,262,400	6,883,024	3,708,423	3,754,620	2,916,333	9,134,688	6,318,098	96,988	3,013,321	218.4	28,513,540	
2011	26,301,348	17,166,960	8,134,388	17,166,960	6,970,675	3,414,902	3,655,473	3,125,910	8,134,388	5,946,921	1,156,442	4,282,352	226.9	27,582,978	
2012	25,543,755	16,953,425	8,590,330	16,953,425	7,188,481	2,900,126	3,592,714	3,274,104	8,590,330	5,858,376	86,353	3,360,457	231.4	26,265,449	
2013	27,799,286	19,286,254	8,513,032	19,286,254	7,700,171	3,892,226	3,574,465	4,119,892	8,513,032	6,163,675	290,000	4,409,382	234.1	28,249,965	
2014	26,845,501	18,025,041	8,820,461	18,025,041	7,859,684	3,405,274	3,191,936	3,968,147	8,820,461	6,051,499	115,559	3,683,706	238.0	26,835,802	
2015	26,582,408	18,044,142	8,538,266	18,044,142	7,930,285	3,495,881	3,620,883	2,997,093	8,538,266	6,184,521	437,278	3,434,371	237.9	26,582,408	
Growth	1.6%	4.5%	-4.2%	4.5%	15.2%	-5.7%	-3.6%	2.8%	-4.2%	-2.1%	14.0%	14.0%	8.9%	-6.8%	
5-yr	21.5%	21.3%	21.8%	21.3%	31.2%	39.2%	12.1%	-10.7%	21.8%	18.2%	-1.5%	-1.5%	19.7%	1.5%	
10-yr	49.4%	70.2%	18.8%	70.2%	57.3%	81.5%	30.9%	244.8%	18.8%	8.9%	56.0%	99.4%	37.0%	9.1%	
20-yr	15.9%	14.9%	17.1%	14.9%	5.2%	57.0%	12.9%	17.3%	17.1%	26.6%	300.3%	300.3%	12.4%	3.0%	
ACGR	0.3%	0.9%	-0.9%	0.9%	2.9%	-1.2%	-0.7%	0.5%	-0.9%	-0.4%	2.7%	2.7%	1.7%	-1.4%	
5-yr	2.0%	1.9%	2.0%	1.9%	3.2%	3.4%	1.2%	-1.1%	2.0%	2.8%	-0.1%	-0.1%	1.8%	0.1%	
20-yr	2.0%	2.7%	0.9%	2.7%	2.3%	3.0%	1.4%	6.4%	0.9%	0.4%	3.5%	3.5%	1.6%	0.4%	
94-99	3.0%	2.8%	3.2%	2.8%	1.0%	9.4%	2.4%	3.2%	3.2%	4.8%	32.0%	32.0%	2.4%	0.6%	



	PERC actual OIM Fee	USA Energy Post-PPA 2018 OIM Fee	PERC actual CMRA total	USA Energy Post-PPA 2018 CMRA	PERC actual total maint	USA Energy Post-PPA total maint
1994	4,565.75	5,539	1,105.79	2,219	3,206	5,225
1995	4,584.56	5,539	1,359.18	2,219	3,848	5,225
1996	4,757.98	5,539	1,783.09	2,219	4,941	5,225
1997	4,810.67	5,539	1,165.67	2,219	5,020	5,225
1998	4,822.17	5,539	1,322.50	2,219	4,790	5,225
1999	4,801.30	5,539	4,426.46	2,219	6,555	5,225
2000	5,042.50	5,539	1,722.11	2,219	7,172	5,225
2001	5,381.23	5,539	1,689.89	2,219	9,257	5,225
2002	5,591.75	5,539	3,599.90	2,219	7,914	5,225
2003	5,586.48	5,539	3,757.74	2,219	7,373	5,225
2004	5,720.32	5,539	5,124.91	2,219	7,416	5,225
2005	5,779.25	5,539	3,485.88	2,219	8,501	5,225
2006	6,014.59	5,539	4,800.56	2,219	8,071	5,225
2007	6,060.92	5,539	4,023.37	2,219	7,859	5,225
2008	6,440.51	5,539	3,055.24	2,219	9,826	5,225
2009	6,843.01	5,539	2,713.55	2,219	8,293	5,225
2010	6,883.02	5,539	3,013.32	2,219	8,109	5,225
2011	6,970.68	5,539	4,282.35	2,219		
2012	7,186.48	5,539	3,360.46	2,219		
2013	7,700.17	5,539	4,409.39	2,219		
2014	7,859.68	5,539	3,683.71	2,219		
2015	7,930.29	5,539	3,434.37	2,219		



**MEMO FROM
GEORGE
ARONSON
REGARDING
HDR REPORT
TO PERC**

MEMORANDUM

TO: MRC Board
FROM: George H. Aronson, CRMC
RE: Perspective on the HDR Report
DATE: 27 January 2016

In its public presentations on the PERC facility after 2018, USA Energy often cites the finding from the HDR Report that

“...the PERC Facility should be capable of continuing to process waste in the waste processing facility and efficiently producing steam and electricity in the generation side until at least the year 2035.” Condition Assessment Report of the PERC Facility (the HDR Report), June 8, 2015, Executive Summary, page ES-3.

More recently, USA Energy has disclosed its plan for reducing the costs to operate the PERC facility such that it is economically viable accepting 200,000 tons per year of waste at the proposed 10-year tipping fee of \$89.57 per ton or the 15-year tipping fee of \$84.36 per ton starting in 2018. Among the measures USA Energy has proposed are the following:

- Ramp level of boiler operation up in order to maximize electricity sales during weekday times when electricity prices are highest, and turn the boilers down, or turn one boiler off, to minimize electricity sales at nights and on weekends when electricity prices are lowest.
- Cut the PERC plant payroll to \$5.016 million per year for about 51 employees from the 2016 level of \$8.365 million per year for about 75 employees.
- Cut the budget for major maintenance to \$2.219 million in 2018 from the 2016 level of \$3.8 million, with similar cuts in other maintenance budget line-items.

These proposals by USA Energy would be in direct conflict with the HDR Report, the full text of which provided the following condition on the previous findings as follows:

“Provided that appropriate capital repairs and replacements are completed and that the facility operator continues to operate and maintain the facility under the current operations and maintenance practices, it would be expected that the PERC Facility should be capable of continuing to process waste in the waste processing facility and efficiently producing steam and electricity in the generation side until at least the year 2035.” The HDR Report, Executive Summary, page ES-3. Emphasis added.

PERC’s proposal to ramp the level of boiler operations up and down would constitute a significant change in operations practices that the boiler was not designed to accommodate – and

that the HDR Report did not anticipate or examine. Such ramping could place significant thermal stress on the boiler, resulting in reduced component life, increased maintenance and repair costs, reduced performance, and potential violations of air emission limits in its Maine DEP permits. Similarly, USA Energy's proposed cuts in staff levels and the maintenance budget would make it impossible to continue for PERC to complete appropriate capital repairs and replacements and to continue current maintenance practices as conditioned in the HDR Report. Indeed, the HDR Report specifically states that

“...the annual capital and refurbishment budget will need to be increased by approximately 14%, or \$600,000 per year.” HDR Report, page 49.

Moreover, the HDR Report explicitly warns that

“It is imperative to maintain a high level of repairs and replacements in these facilities. If maintenance, repairs or replacements are delayed or postponed, too many components of the facility will start to have operational issues, and problems will escalate... HDR Report, page 49.

With its proposals to reduce PERC operating costs, USA Energy would violate explicit conditions of the HDR Report regarding the technical viability of the PERC facility and can no longer rely on any resulting conclusions of that report regarding the PERC facility. If PERC's staff is cut and PERC's maintenance budget is slashed, Maine communities would have no assurance that the PERC facility would be available to accept their MSW on a reliable basis going forward after 2018.

**MEMO FROM
MRC BOARD OF
DIRECTORS
AUGUST 17, 2015
REGARDING
PARTNERSHIP
AGREEMENT**



MEMORANDUM

To: Municipal Review Committee Member Communities

From: Municipal Review Committee Board of Directors

Date: August 17, 2015

Re: Sixth Amended and Restated Agreement of Limited Partnership of Penobscot Energy Recovery Company, Limited Partnership

On July 31, 2015, the current General Partner of the PERC Partnership, USA Energy (USAE), distributed to the MRC membership a proposed "Sixth Amended and Restated Agreement of Limited Partnership of Penobscot Energy Recovery Company, Limited Partnership" for review and comment. On behalf of member communities, the MRC has reviewed the draft proposal with our general counsel and felt it important to share our initial concerns.

First, under the terms of the current existing partnership agreement, the PERC Partnership expires on December 31, 2018 and USAE does not have the power to either amend its provisions or extend its term as it is attempting to do in this draft proposal without the prior written consent of the MRC. The MRC Board of Directors would provide its consent to proposed partnership agreement amendments that actually supported a continued mission of affordable, long term and environmentally sound disposal of MSW, but the proposal in no way supports this mission. Therefore, even if MRC member communities were to sign and return the purported Sixth Amendment, it would not have the legal effect of extending the term of the current PERC Partnership beyond December 31, 2018, and the current PERC Partnership will dissolve under its own terms as of that date.

Secondly, while at first glance this document may appear similar to the partnership agreement under which the PERC Partnership currently operates, it is not. In fact, it is radically different in key respects from the agreement under which the PERC Partnership now operates, and it would have the effect of totally changing the historical relationship between the PERC Partnership and the MRC membership. Among the key changes proposed by USAE are the following:

- **Oversight Committee Eliminated.** The three member Oversight Committee which, as you may know, currently oversees Partnership operations and which includes a representative from the MRC, would be eliminated entirely. All Partnership operations and decision making would be left solely in the hands of USAE as general partner with no opportunity for input from, or even notice to, the MRC Communities or Board of Directors.
- **MRC Role as Umbrella Organization Eliminated.** There would be no role for the MRC in connection with management of the limited partnership interests held by the MRC communities after 2018. Each municipality remaining as a limited partner would be left on its own with sole responsibility to manage its partnership interest without any umbrella organization to offer technical guidance and support.
- **Checks on General Partner Powers Removed.** Under the current Limited Partnership Agreement, a number of fundamental Partnership decisions require the consent of the Oversight Committee or, in some cases, of the MRC specifically. For example, the MRC now must consider approval of any change in the business of the Partnership, the admission of new limited partners, the removal or replacement of the General Partner, any transaction in which the General Partner has a conflict of interest, or any new operating and maintenance agreement. A vote of a majority of the Oversight Committee is required to approve major capital projects, sales of assets, major financings, or changes in partnership capital. The Oversight Committee currently must approve all capital and operating budgets. All of these checks and balances would be completely eliminated under the proposed new Partnership Agreement. USAE, and USAE alone, would have the unfettered power and discretion to impose its own unilateral decisions on the Partnership.
- **Ground Rules for Partnership Cash Distributions Eliminated.** USAE would have total discretion over when, whether and in what amounts, if any, revenue sharing cash distributions to partners would be made.
- **No Limits on Admission of New Partners or Dilution of Existing Partners.** USAE would have the unilateral authority to issue new limited partnership interests to itself, its affiliates or to other third parties on terms it alone would determine. This could have the impact of significantly diluting the interests of the existing limited partners, including the current MRC communities, without their approval or input.
- **No Limits on Fees Billed By USAE or Affiliates.** USAE would have the unilateral power to determine the amount of its own compensation for services to the Partnership and to cause the PERC Partnership to pay other consulting fees to USAE, its affiliates or others without limit and without reference to the efficacy of the services rendered. These fees could be increased at any time in any amount in USAE's sole discretion without any consultation with or approval from the other partners. USAE could also approve other extraordinary expenses in its discretion without any input or approval from the MRC Communities.
- **No Limits on Conflict of Interest Transactions.** The current provisions giving the Oversight Committee the right to approve conflict of interest transactions would be eliminated.

- **No Power to Remove General Partner.** The other partners in the PERC Partnership, including the MRC communities, would lose the power they currently have to remove USAE as General Partner or to approve any successor general partner should USAE resign.
- **Unilateral Right to Dissolve.** USAE would have the unilateral right to dissolve the Partnership at any time without notice.

This draft partnership agreement as presented would effectively eliminate the public/private partnership which has characterized the relationship between PERC and the MRC communities since the MRC's inception in 1991. That relationship would be replaced by a new regime in which USAE would have total and absolute control over all aspects of Partnership operations and finances without any check or balance and without any ability for the other partners to replace USAE as General Partner in the event of mismanagement. USAE would establish and approve its own compensation, could pay extraordinary consulting fees from Partnership funds to itself and its affiliates without any check or balance, and it would have the power to perpetuate itself as general partner indefinitely irrespective of its performance.

The MRC Board of Directors does not believe that this proposed agreement is in the best interests of the MRC membership and recommends that it be rejected. Any community having additional questions or concerns should feel free to contact Greg Louder at 664-1700 or glouder@mrcmaine.org.

**EMAIL FROM
GEORGE
ARONSON
TO CITY MANAGER
ON DRAWDOWN
OF MRC
RESERVES HELD
IN BANGOR'S
NAME**

Conlow, Cathy

Subject: reserves

-----Original Message-----

From: George Aronson [mailto:garonson@crmcc.com]

Sent: Friday, January 08, 2016 11:18 AM

To: glounder@mrcmaine.org; Conlow, Cathy

Subject: Re: reserves

Supposing a \$90/ton (PERC's tip fee, rounded) down to \$65/ton (\$70/ton less \$5/ton rebate) would require cash of \$25/ton. (90-65 = 25) For Bangor, 28,000 tons per year @ \$25/ton is \$700,000 per year

Bangor's share of the \$25M tip fee fund would be about \$4.2 M

If that spread is maintained, Bangor would give all the \$4.2M back to PERC/Exeter/Casella in about six years (\$4.2M/\$700k/year = 6 years).

If the tip fee/cost ends up being \$115/ton instead of \$90/ton, it would be three years.

If the tip fee/cost ends up being \$125/ton, it would be 2.5 years or 30 months.

Then the money would be gone and Bangor would just be paying more.

Casella would have a basis for arguing for their landfill expansion to take MSW - which they do not have now.

(Casella needs to have PERC "operate" so that it can take all the MSW as "bypass").

Will DEP really let that happen? Maybe

Exeter might get some loads of source-separated organics direct from generators, but it would be a lot of work and cost to implement a residential organics separation program that would yield material clean enough for Exeter to take post-consumer organics without any issues -- not to mention that Exeter would still be land-applying its digestate to its fields in significantly higher volumes.

George

George H. Aronson, Principal

CommonWealth Resource Management Corporation

229 Billings Street

Sharon, Massachusetts 02067

Tel: (781) 784-8835 leave messages here

Cell: (781) 771-8710

Fax: (781) 784-0468

Email: garonson@crmcc.com

FIBERIGHT'S APPROACH TO ORGANICS

Fiberight's Approach to Organics Recycling

Core arguments:

- The Fiberight process is based on European MBT (Mechanical Biological Treatment) plants that separate and recover recyclables from organic material. There are currently over 330 MBT plants in Europe, with a total of 450 expected by 2020. Collectively these plants process over 34 million tons of waste per year.
- MBT plants provide a centralized location for separation and processing of organic wastes. Despite high population density, European nations recognized that source separated collection of food and organic waste from residential waste streams is not economically viable given that collection costs far exceed disposal costs
- MRC issued an RFP in 2013 that required respondents to provide a solution for waste processing and disposal in the MRC service area. The RFP imposed conditions (such as in-state waste only) and required respondents to propose a solution that intersected with existing collection and transfer infrastructure.
- Given that MRC's service area consists of many rural areas, and includes a network of transfer stations, Fiberight chose a centralized approach as the most cost-effective and environmentally efficient solution for organics processing. This solution best fits the existing and planned MRC service area collection infrastructure.
- Studies have shown that between 10% (lower bound voluntary programs) and 45% (upper bound mandatory programs) of organic waste is diverted by existing North American curbside organics collection programs. In the MRC service area this would equate to a range of between 4% and 17% of total MSW collections; therefore the Fiberight/Covanta project design basis requires the inclusion of organics separation and processing equipment *anyway*, in order to process the organic waste that would remain in mixed MSW as shown by experience.
- In late 2013, after the RFP response deadline, Messrs. Northern Tilth issued a feasibility study on organics recycling for ecomaine¹. This study supports our position, and further provides detailed cost calculations for organics collection in Maine. The study concluded that there were several collection systems available for the collection of Source Separated Organics ("SSO") including:
 1. Every Other Week collection, alternating the collection of recyclables and SSO's using split-bodied trucks
 2. Co-Collected SSO's where organics are separated in "blue-bags" which in turn are collected and mixed with normal trash collection for removal at a MRF prior to processing
 3. Dedicated collection programs where containers are provided to households and then collected as part of a dedicated collection route
 4. Transfer station drop-off or aggregation
- We have studied these options to see if the Fiberight/Covanta Hampden project could be improved to accommodate them with the objectives of a) reducing cost to the community, and b) increasing the rate of organics recovery. We looked at 3 case studies², Lincoln, Bangor and Rockland. In all cases costs to the community would increase significantly, and in almost all cases recovery rates would be lower.

¹ http://www.ecomaine.org/specialwaste/ecomainefinal_11-07-13.pdf

² See table 1 [Please provide]

- We have also studied the same options and case studies when applied to proposals put forward by PERC and Exeter Agri-Energy.³ Collection costs also increase significantly, and there is no discernable increase in the rate of organics recycling. We note that the overall recycling rate for collected materials would likely decrease in all but one collection method chosen, because EAE would send to a landfill the non-organic materials, including recyclable plastics, that are screened from incoming organic materials as contaminants by their de-packaging systems.
- The feasibility study did point out, and we agree, that large producers of organic materials such as fish processing plants and food wholesalers, where large quantities of homogenous organic materials are generated, are well-served in Maine by existing infrastructure, and that Exeter Agri-Energy is a good example of a solution for this type of material.
- Fiberight's closed system has a higher conversion rate for organics than do farm-based manure AD systems such as the Exeter Agri-Energy system, which uses high-solids CSTR technology. Fiberight produces higher volumes of clean digester gas and less wastewater than the Exeter Agri-Energy system. Fiberight will be installing equipment to compress this gas for use as CNG in transfer trailers. Estimating 100,000 tons per year of waste transferred to Hampden (Or PERC) at a 75 mile average (150 mile round trip) – this would displace over 100,000 gallons of diesel fuel per year. $(100,000 \div 21 \text{ \{Tons per load\}} \times 150 \text{ \{miles round trip\}} \div 7 \text{ \{miles per gallon\}})$
- The feasibility study also pointed out the following:
 - The financial viability of compost producing projects relies on high-value, high-quality compost production. This is difficult with curbside collected materials where participants are less disciplined than commercial or volunteer participants
 - Compost is a seasonal product
 - There was a concern that additional collection would place more pressure on the Maine road system, particularly in the summer time when high food waste generation intersects with high tourist traffic volumes
 - In the Markets Evaluation, the report noted that the current market could not absorb more compost without a price impact. The market for topsoil and blending operations now encompasses about 26,000 cubic yards per year at \$0 to \$20 per cubic yard. If 18,200 cy is added to the market – a 70% increase in the supply – will the demand also increase by 70% to avoid a fall in prices? Or, when supply spikes up, will it cause prices to crash?
- The study did not find it financially viable for an organics recycling program to be implemented based on increased collection costs.

Key Messaging:

- The additional collection cost of source separated organics recycling costs between \$130 and \$200 per ton of organics depending on the collection method chosen.
- Fiberight's mixed waste processing approach recovers a significantly higher proportion of organics in our waste than even the best organics recycling programs
- The Fiberight/Covanta organics recycling program is seamless in its implementation, no extra collection vehicles, no extra requirements at the transfer station, no new mandates to force residents to separate their trash into yet another container, no public education campaign to teach people how to avoid contamination, no changes – period.

³ See Table 2

- Our program is far more environmentally sustainable, not only do we recover more organics, but we capture more gas, and we use that gas in the very transfer vehicles that collect the organics. People's food powering the program! [fueling the fleet?]
- Fiberight/Covanta's Anaerobic Digester is designed for the types of organics found in residential waste. Because of the use of proprietary enzymes, the Fiberight/Covanta technology is capable of breaking down a higher proportion of the material it sees in one 20th the time of a conventional AD facility (>1 day versus 21). This is a far more efficient system than those designed primarily for manure digestion.
- The Fiberight/Covanta project is an example of new organics recycling infrastructure being built before state and federal mandates ban organic materials from landfills. Yes, landfilling may seem cheaper now, but quite a different story when you are forced to set up separate collection of organics!
- Do we really want more traffic on the roads—especially in the summertime?

FAQ's

What is Anaerobic Digestion?

God and Mother nature has for millennia taken waste food and plants, and converted them to methane over the course of months and years. We do the same thing, but in a controlled environment that captures the methane through a process that takes hours, not years.

TARGET VALUE RESERVE FUNDS

Subject: Re: Target Value Reserve Fund

This analysis is dependent on how many towns leave and take their money out.

Balance is approximately \$25 million

5M for the site acquisition and development

7M building reserve -

3M for shortfall protection –

1M for haul cost help – If bypass is necessary, MRC will subsidize hauling costs

1M extra for partnership closure - PERC

That leaves 8M

If 3M is taken out by departing municipalities, 5M would be left for distribution. Approximately 16.8 % is Bangor's or roughly 840,000.

EXETER PROPOSAL

Conlow, Cathy

From: George Aronson <garonson@crmcx.com>
Sent: Monday, February 15, 2016 7:21 PM
To: Conlow, Cathy; Greg Louder
Subject: Re: Fwd: Exeter Agri-Energy: A Cost-Effective Organics Solution for Your Community

Cathy Same issues as before. Here are some of the same responses as before.

Exeter is only cheaper if Bangor puts in place a new collection system for source-separated organics, which they have not priced out or included in their cost comparison. Exeter does not cost out collection. What is their price per household per month?

At \$7 per household per year, a family of four that makes 1.6 tons of waste per year, and diverts 40% of that to Exeter, would be paying \$84 per year to get rid of 0.64 tons per year -- THAT's \$131 per ton. For smaller households, or folks that divert less than 40%, the cost per tons gets even higher -- over \$200 per ton. Does the City of Bangor really want to FORCE its residents to pay that for disposal? Will residents that are FORCED to separate trash really do so without contamination?

Exeter would divert less from landfill than Fiberright. When Exeter gets contaminants, it screens them out and sends them to a landfill. They don't recycle any plastics - and some of the food waste sticks to the plastics that they send to the landfill.

Fiberright can separate the plastics from the organics and recycle both, sending less to landfill.

More recovery, less cost -- that's why the MRC cannot recommend the Exeter option.

Good luck

George

George H. Aronson, Principal
CommonWealth Resource Management Corporation
229 Billings Street
Sharon, Massachusetts 02067
Tel: (781) 784-8835 leave messages here
Cell: (781) 771-8710
Fax: (781) 784-0468
Email: garonson@crmcx.com

On 2/15/2016 6:51 PM, Conlow, Cathy wrote:

Sent from my iPhone

Begin forwarded message:

From: Greg Williams <greg@agricycleenergy.com>

Date: February 15, 2016 at 6:50:01 PM EST

To: "cathy.conlow@bangormaine.gov" <cathy.conlow@bangormaine.gov>, "sean.faircloth@bangormaine.gov" <sean.faircloth@bangormaine.gov>, "nelson.durgin@bangormaine.gov" <nelson.durgin@bangormaine.gov>, "joe.baldacci@bangormaine.gov" <joe.baldacci@bangormaine.gov>, "gibran.graham@bangormaine.gov" <gibran.graham@bangormaine.gov>, "david.nealley@bangormaine.gov" <david.nealley@bangormaine.gov>, "sarah.nichols@bangormaine.gov" <sarah.nichols@bangormaine.gov>, "joe.perry@bangormaine.gov" <joe.perry@bangormaine.gov>, "josh.plourde@bangormaine.gov" <josh.plourde@bangormaine.gov>, "benjamin.sprague@bangormaine.gov" <benjamin.sprague@bangormaine.gov>
Cc: Adam <adam@biogasenergypartners.com>, "Dan @ agricycleenergy.com" <dan@agricycleenergy.com>

Subject: Re: Exeter Agri-Energy: A Cost-Effective Organics Solution for Your Community

Dear Council Members,

We would like to reiterate points made in the BDN editorial opinion below, particularly that 40% of MSW is in fact organics and that our tip rate of \$40-\$55 per ton would lead to a significant and reliable cost savings for the City of Bangor. We look forward to sharing more details with you at Wednesday's workshop. Thank you for your due diligence and consideration.

<https://bangordailynews.com/2016/02/12/opinion/editorials/187-maine-towns-have-a-critical-trash-decision-to-make-theres-risk-either-way/?ref=moreInopinion>

Regards,

Greg

Greg Williams
Director of Waste Solutions | Agri-Cycle Energy
(207) 669-2457 | greg@agricycleenergy.com
www.agricycleenergy.com |



This email does not constitute a binding agreement on behalf of Biogas Energy Partners or Agri-Cycle Energy, or for the consequences of any actions taken on the basis of the information provided, without express written confirmation by letter delivered from us by mail, fax or scan. If you are not the intended recipient you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited.

From: Greg Williams <greg@agricycleenergy.com>

Date: Wednesday, February 3, 2016 1:32 PM

To: "cathy.conlow@bangormaine.gov" <cathy.conlow@bangormaine.gov>,

"sean.faircloth@bangormaine.gov" <sean.faircloth@bangormaine.gov>,
"nelson.durgin@bangormaine.gov" <nelson.durgin@bangormaine.gov>,
"joe.baldacci@bangormaine.gov" <joe.baldacci@bangormaine.gov>,
"gibran.graham@bangormaine.gov" <gibran.graham@bangormaine.gov>,
"david.nealley@bangormaine.gov" <david.nealley@bangormaine.gov>,
"sarah.nichols@bangormaine.gov" <sarah.nichols@bangormaine.gov>,
"joe.perry@bangormaine.gov" <joe.perry@bangormaine.gov>,
"josh.plourde@bangormaine.gov" <josh.plourde@bangormaine.gov>,
"benjamin.sprague@bangormaine.gov" <benjamin.sprague@bangormaine.gov>
Cc: Adam <adam@biogasenergypartners.com>, "Dan @ agricycleeenergy.com"
<dan@agricycleeenergy.com>

Subject: Exeter Agri-Energy: A Cost-Effective Organics Solution for Your Community

Dear Council Members:

I am writing to introduce our company, Agri-Cycle Energy, and the food waste collection services we offer municipalities and commercial entities throughout Maine. Agri-Cycle Energy currently serves 40 Hannaford supermarket locations and numerous other markets, restaurants, colleges, and hospitals from Portland to Machias to Bridgton, creating a broad geographic area in which our trucks are passing through on a minimum twice weekly basis. Given this existing footprint, Agri-Cycle Energy is poised to offer reliable, convenient, and cost-effective organics collection services to residents in your area.

Attached is a one pager that offers initial pricing ranges for both a tip fee at the Exeter Agri-Energy facility in Exeter – our sister company - and transport from a local consolidation and transfer point. This would likely be accomplished by using 64 or 96-gallon totes, or small dumpsters up to 6 yards in size. We also could explore a residential curbside approach if the volume and density support it. And in each of these cases, we are open to working with third-party haulers if it makes most sense for all involved. Please keep in mind that the ranges in the attached document are a starting point and with more details we may be able to do better.

We are aware that your town and others within the MRC region are making big decisions on how to manage your waste in the coming years. And we know we have the most sustainable and cost effective solution for managing approximately 40%-50% of your total MSW and converting it to renewable energy that goes back to Maine's electric grid. Currently, Exeter Agri-Energy generates enough heat and energy to power 800 Maine households and offset 3,000 passenger vehicles each year. My colleague Dan Bell and I are proud of this story and are excited to have an opportunity to share collection scenarios and pricing for an independent organics solution for your town no matter which direction you choose to take for your overall MSW. In the meantime, the bullets below represent some of the key points we want to share with you:

1) We are a significantly cheaper option for up to nearly 50% of MSW, if you include compostable paper and plastic products, and conservatively 40% of overall MSW. If a town chooses to go with Fiberight, which depends heavily on organics for viability, it will not likely be encouraged to divert organics to their highest and best use, clean AD. However, if a town goes with PERC or WM, an independent

organics program will remain an option, and this cost-effective and most sustainable of solutions can become a reality.

- 2) We have a fully-funded and proven technology that is widely used throughout the world, and we have been operating in Exeter for five years without issue.
- 3) We are locally-based on a fifth generation dairy operation and are, therefore, invested in Maine not only financially but personally.
- 4) We have a demonstrated solution for Maine communities, working under contract with some of the area's largest and most reputable businesses and institutions, including Colby, Bates, Whole Foods, Maine General, Jackson Lab, and Hannaford.
- 5) 5) We have supply contracts with a handful of digesters throughout Maine and the Northeast offering town's additional capacity and program security.
- 6) We offer exceptional customer service and hands-on personal relationships with each of our partners, as we are entirely Maine-based and seek to optimize our services for everyone involved.
- 7) And, to reiterate, we are cheaper than all other options on the table, including Fiberight's \$70 / ton fee, by a significant margin.

We hope to have an opportunity to discuss these points in more detail, and more importantly, lay out a proven, cost-effective, and truly environmental solution for your community. If this sounds of interest to you, please send one or two openings on your upcoming meeting schedule during which we could present. Lastly, I've included a link to a recent Maine Biz article on our operation, as well as links to a recent BDN article on the issue and the Agri-Cycle Energy website. I have also attached some additional information on our collection and processing capabilities. Thank you again for your time and attention. We hope you find our story and solution compelling and worthy of consideration.

Maine Biz article (good summary of EAE and

ACE): <http://www.mainebiz.biz/article/20160111/CURRENTEDITION/301069994/1088>

Agri-Cycle Energy website: www.agricycleenergy.com

BDN article on PERC vs

Fiberight: <http://bangordailynews.com/2016/01/16/the-point/how-these-two-companies-are-headed-for-a-showdown-over-your-trash/>

Best regards,

Greg

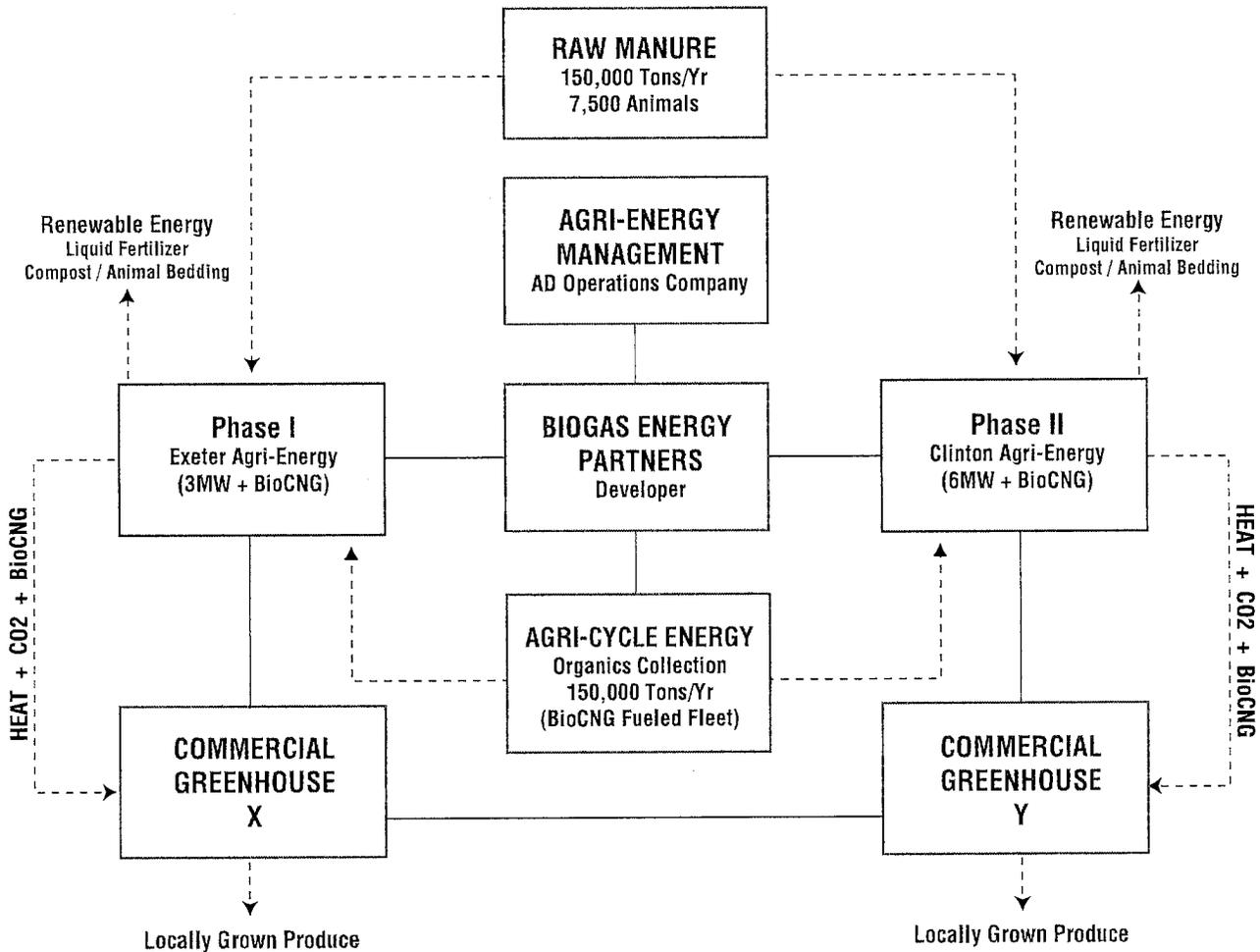
Greg Williams
Director of Waste Solutions | Agri-Cycle Energy
(207) 669-2457 | greg@agricycleenergy.com
www.agricycleenergy.com |





BIOGAS ENERGY PARTNERS

Organizational Chart & Resource Flow Diagram



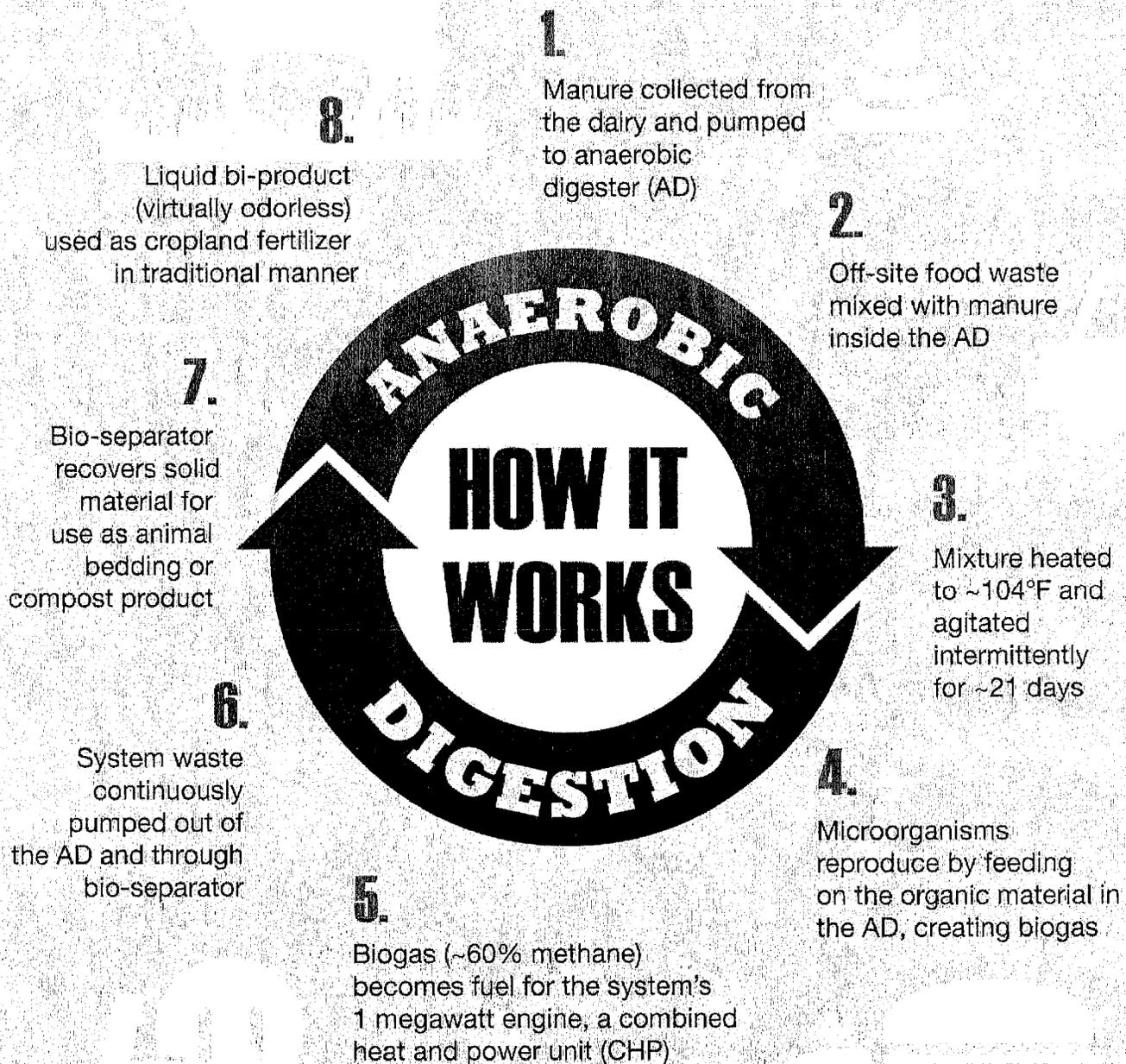
Products and Services: (See www.exeteragrienergy.com for more information)

- Organic Waste Collection and Disposal – from 15,000 to 150,000 tons/yr (solids, liquids, and slurries including pre and post consumer packaged waste)
- Renewable Energy – from 8,000-72,000 MWh/yr
- Renewable Energy Certificates (RECs) – from 8,000 – 72,000 RECs/yr qualified in the required states
- Renewable CNG – for fleet and industrial use by summer 2015
- Digested Compost – from 10,000 – 55,000 cubic yards per year
- Local Food Production – commercial scale greenhouse planned to reuse excess resources derived from the host AD facilities
- Sustainable Milk Production – from 3MM – 9MM gallons per year within the integrated dairy system

Significant Economic, Social, and Environmental Benefits:

- \$50MM+ economic impact from development activities including temporary job creation of over 1,000 people in the next 5yrs
- Greenhouse gas destruction value (methane offset) equivalent to removing approximately 25,000 - 30,000 passenger vehicles from the road each year
- Sustaining Maine's two largest dairy producers, over 100 jobs, and generations of family farming tradition - www.exeteragrienergy.com/about-us/stonyvale-farm/
- Elimination of major nutrient management issues and watershed impacts resulting from irresponsible alternative organic waste disposal methods
- Renewable CNG fueling system to reduce organics collection hauling expenses by 25-30% and address significant environmental concerns associated with diesel fuel consumption
- Significant year round odor reduction in host communities as well as increased fertilization value on croplands for participating farms
- Integration of commercial greenhouse facilities using excess process heat, CO2, and BioCNG to establish year round growing operations serving the Northeast

Anaerobic digestion uses cow manure and organic waste to produce heat and electricity as well as other organic bi-products.



A ZERO ENERGY, CLOSED LOOP SYSTEM

FIBERIGHT TEAM



MRC RFEI

Attachment C

Qualifications of Project Team
Resumes and Biographies

Updated as of July 2012

Corporate Management Team Resumes

Craig Stuart-Paul **Fiberight, Chief Executive Officer / President**

Project Team Role:

As the CEO and President for Fiberight, Mr. Stuart-Paul will have senior most executive responsibility for all activities of the Fiberight company. Mr. Stuart-Paul will oversee all business venture, strategic partnership, and technology arrangements for the firm required to successfully deliver the Fiberight project. He will also be responsible for obtaining all financial and other required resources to guide the future expansion of Fiberight in the execution of its commercialization plan to achieve future production across the US.

Education / Training

HND Business Studies, University of Brighton (Great Britain), 1985

Professional Experience

Craig Stuart-Paul has developed a variety of businesses since moving from Great Britain in 1988, starting with The Oxford Brewing Company, Maryland's first microbrewery. He then entered the recycling business with the formation of Resource Recovery of Maryland in 1994. This business focused on processing recycled glass into furnace ready material for the glass container industry. Mr. Stuart-Paul founded Fairfax Recycling, Inc. in 1996 and implemented key technologies, management systems and team building processes to create a highly successful recycling organization that was both a model in efficiency and low staff turnover.

Past Experience

Mr. Stuart-Paul was an industry pioneer in the use of optical sorting technologies for contaminant removal. In 1996 he formed Fairfax Recycling, Inc, a company focusing on recycling residential materials collected in central Maryland and Northern Virginia. He grew this business to be a large regional recycler, processing over 150,000 tons of recycled materials annually before selling the business to a fortune 50 company in 2004. Mr. Stuart-Paul then formed Atlantic Recycling Technologies, LLC and Fiberight LLC to develop advanced fiber recovery and alternative fuel technologies. In addition, he has been part of the design and build team of several large recycling plants in the United States and Europe collectively processing over 350,000 tons per year of wastes. He holds a business degree from the University of Brighton, England.

Professional

Relevant Project Listing

Fiberight – Iowa Commercialization Project 2008	<p>Working with Mr. Thompson, conceived, financed and helped manage conversion of existing corn ethanol biorefinery to be able to accept processed feedstocks from Fiberight’s Lawrenceville, VA plant. Ensured project deliverables were met and successfully produced batches of finished cellulosic ethanol. Project cost >\$1mm</p>
Greenstar Aldridge MRF – 2006 (United Kingdom)	<p>Brought in for peer review of designs for single stream recycling facility. Substantially changed design, process flow & layout and became key member of project team. Involved in project management from concept to final commissioning. Plant now handles almost 40 TPH of mixed wastes & recyclables, the largest of its kind in the U.K. Project cost >\$20mm (land, building & equipment)</p>
KIT Kat Road MRF - 2005	<p>Working with Waste Management, Inc. conceived and managed construction of 8 acre recycling plant facility. Managed permitting, site & building construction in a project where the equipment and building were being constructed together to expedite time to operations commencement. - Project cost >\$15mm (land, building & equipment)</p>
Atlantic Recycling Technologies - 2003	<p>Conceived, designed and implemented technology and system to handle contaminated waste fiber from Fairfax Recycling’s MRF operations. Progressed operation and technology through a series of market tests and used change systems to optimize business for enzymatic conversion of biomass when enzymes became viable. Pre-cursor to Fiberight. Project cost >\$3.5mm</p>
Palmyra Fire Rebuild 2000	<p>One of Fairfax’ 3 PA locations was lost to a major fire. Rebuilt substantial portions of building, replaced over 90% of equipment, negotiated with all stakeholders and achieved new plant operations in less than 120 days. Project cost >\$2mm</p>
Fairfax Recycling, PA - 1999	<p>Took knowledge from VA plant and incorporated processes into three Pennsylvania facilities and established efficient processes and systems in all three. Demonstrated ability to deploy systems in multiple locations. Project cost <\$1mm</p>
Fairfax Recycling, Process Upgrade 1998	<p>Designed and implemented a system using novel screening methods that increased plant throughput from 18 TPH to almost 35 TPH while maintaining quality standards. Integrated new balers & rolling stock.</p>

	Project cost <\$1mm
Fairfax Recycling, Comingle Project 1996	Conceived and implemented container recycling & sort system that allowed waste collectors to reduce amount of curbside sorting and increase household collections over 30% per route per day. Project cost >\$1mm
Resource Recovery of Maryland - 1995	Conceived and implemented integrated glass recycling process featuring novel optical sorting technology. Project included site selection & permitting, engineering & ground up equipment installation. Project cost <\$1mm
Oxford Brewing Co. 1990	Designed and implemented integrated brewing operations in association with master brewer to produce consistent beer batches, control sterility, and manage a biochemical process.

Other Professional / Business Affiliations

Maryland Recyclers Coalition, President 2004 - 2005

Awards / Honors / Publications

Barclays Bank Young Businessman of the Year, 1985

Alan Iantosca
Fiberight, Project Team Leader

Project Team Role:

As Project Team Leader, with his diverse background and experience in process/power plant engineering, procurement, construction, start-up and operations/maintenance as well as business development, Mr. Iantosca will be the project manager for the PERC re-configuration.

Professional Experience

Business Development Executive with the ability to build a winning team, develop strategies, set strategic direction and develop and close the complex deal within that strategy. Consistent record of improving profits through creative and effective asset and cost management. Solid business, engineering and operating background with proficiency in analyzing commercial arrangements for upside potential. Skilled in creating positive relationships with both internal and external customers and negotiating with win-win results. Also experienced in organizational development, acquisitions and new venture start-ups.

NICHE ENERGY LLC, Middleburg, VA

2010 – Present

President and CEO

Started Niche Energy LLC to consult in the energy and water / wastewater markets and work with municipal and industrial customers on sustainability initiatives, cost savings projects and new opportunity development.

- Assisted northern New Jersey firm with due diligence effort prior to investing in a cellulosic ethanol business.
- Worked with a local group in developing a 1000 MW power plant in Northern Virginia.
- Engaged Black and Veatch to perform preliminary plant engineering.
- Obtained re-zoning for the facility and filed air permit.
- Worked on multiple water and wastewater opportunities.

EMC, O’Fallon, MO

2007 – 2010

Vice President / General Manager, Energy Market Sector / Eastern Region

Worked as an independent contractor, responsible for the development and execution of the energy market sector strategy and the eastern region strategy to identify, develop and win industrial and municipal opportunities providing water and wastewater services to identified / targeted customers. Coordinated the overall management and P&L for all existing and future opportunities in the eastern region. Won and renewed multiple water and wastewater contracts in the energy market sector and in the eastern region.

- Introduced EMC to DuPont, Bayer Material Sciences, Linde, ConocoPhillips, CITGO, Sunoco, BP and Valero through previous relationships resulting in obtaining exclusive development positions with Bayer, BP, Citgo, Linde and Sunoco and participation in competitive situations with ConocoPhillips and Valero.
- Annually developed over ten projects with customers in the eastern region and energy market sector.

- Managed seven industrial facilities supplying water and wastewater services in the refining, chemicals and food industries.

THE BOC GROUP, Murray Hill, NJ

2000 – 2007

Global Vice President, Business Development / VP Major Tonnage Projects

Directed global business development activities and teams to win identified major targets mainly in the petroleum, chemicals and metals sectors, including both grass root projects and acquisitions.

- Won and executed four hydrogen supply and one air separation project from US\$12M – US\$130M.
- Represented BOC in successful contract development for US\$255M ASU / Power Project in Mexico.
- Annually developed over 10 projects in various stages, ranging from \$10M to over \$750M.
- Negotiated Strategic Alliance Agreement with number 1 independent refining company in US.
- Completed successful construction and start-up of 2 \$20M Air Separation Unit (ASU) Projects.
- Initiated formation of project consortiums to bid \$200M / \$750M ASU / Power Projects in Venezuela.
- Led change management process for implementation of new BU strategy / operating model for US.

AMERICAN REF-FUEL COMPANY, Houston, TX

1988 – 2000

General Manager, Essex County Resource Recovery Facility, Newark, NJ 1995 – 2000

Directed operations of the \$350M Essex County Resource Recovery Facility, annual gross revenues of \$65M. Responsible for P&L, facility staff of 100 employees, organizational and business development, asset improvement, customer, government, regulatory and media relations.

- Analyzed/restructured business deal with EBT improvement of 24%/year for five consecutive years.
- Operated facility at 8% increased throughput while maintaining maintenance costs at original level.
- Piloted safety process optimization and cost management systems which became company standard.
- Initiated sustainable cost reduction program cutting annual cost by \$0.5M en-route to \$1M.
- Obtained OSHA VPP Star Site certification achieving 13 months without an OSHA recordable injury.
- Recognized in company for leadership, teamwork and empowerment skills.

Manager, Operations, Houston, TX

1994 – 1995

Key member on due diligence teams for acquisition of two Ref-Fuel facilities. Coordinated operations input and lessons learned in the design of the Niagara, NY facility \$150M construction retrofit.

Head of Engineering, Birmingham, UK 1992 – 1994
Key member of ex-patriot team and Operating Committee Member starting up WTE joint venture with English power company. Directed all company engineering and environmental activities.

Manager, Operations Support, Houston, TX 1991 – 1992
Liaison between the operations Department and the Corporate Office including support of existing projects and new development activities.

Start-up Manager, Newark, NJ 1989 – 1991
Structured and executed a safe, environmentally sound, cost effective and on schedule start-up of the Essex County Resource Recovery Facility (ECRRF), the largest WTE facility in New Jersey.

Operations Project Manager, NY, NY 1988 – 1989
Lead member on design team for the ECRRF providing operating / business input and guidance to the team ensuring a design with the lowest possible evaluated capital cost while facilitating efficient operations and ease of construction and maintenance.

AIR PRODUCTS AND CHEMICALS, INC., Allentown, PA 1979 – 1988

Assistant Production Manager 1984 – 1988
Managed 5 domestic and 5 international tonnage air separation plants providing pipeline gases and bulk liquids via pipeline and bulk tanker to the steel and electronic industries and also a LNG peak shaving facility. Involved in formation / growth of international joint ventures in Korea, Thailand and Malaysia.

Design Engineer / Operations Mechanical Engineer 1979 – 1984
Designed and executed new and retrofit asset improvement projects up to \$1M. Involved in the design, construction, start-up and repair of various plants and systems in the U.S. and overseas. Performed staff function in piping stress analysis, plant HVAC design / specification and design, specification and procurement of packaged process and utility systems.

EDUCATION

BS, Mechanical Engineering, Villanova University, Villanova, PA
Continuing Business Education, Columbia University, New York, NY

Nick Thompson, P.E.
Fiberight, Vice President - Engineering

Project Team Role:

As the Vice President of Engineering and Lead Process Engineer, Mr. Thompson will have overall responsibility for technical aspects of the process and products as well as will coordinate the ongoing research and development activities with the engineering of the plant re-configuration.

Education / Training

University of Bath, United Kingdom, Bachelor of Chemical Engineering, 1986.

Professional Experience

Nick Thompson is a Chemical Engineer who has worked in a variety of manufacturing sectors including food, chemicals and building materials for over 20 years. During this time he has progressed from direct line management through general manufacturing management and finally to full profit and loss accountability. As a result of the various roles he has had direct responsibility for all operational aspects including Health and Safety, procurement, capital investment, maintenance, quality assurance, product development and human resources.

Past Experience

Mr. Thompson's career has included a number of plant start ups and business process re-engineering activities, generally based around capital investment programs, where he has had direct project management responsibility for all aspects including engineering design, equipment procurement and installation. He has always delivered added value through improved productivity, and product quality using modern manufacturing systems whilst ensuring that the capital investment programs have been delivered on budget and on time. He has also led several projects to develop innovative new products which gained the companies involved significant market advantage. Mr. Thompson has worked on a number of initiatives involving the introduction of recycled materials in established manufacturing processes.

Professional

Nick Thompson is an experienced executive with both commercial and technical experience. During 25 years in the UK manufacturing arena he has been responsible for all aspects of operations including a number of startups of large scale production facilities and has been instrumental in managing market focused product and process development to add value to the operations under his control. He has also been focused on improving the management of these facilities, with a particular focus on quality where he has been instrumental introducing ISO 9001 based quality management systems into a number of plants.

Relevant Project/Positions Listing

<p>Excel Industries Ltd. Ebbw Vale, UK</p> <p>2001-2008</p>	<p>As CEO responsible for re-engineering the entire structure of the business after purchase by private equity group. This included development of sales force, relocating production, introduction of new technology and products, services. Increased the turnover by 150% over the period. The key projects involved site identification, design, procurement, installation of two new processing lines for cellulose insulation and technical cellulose products. Development of new product and technology for the production of pelletized SMA fibers for the Asphalt industry allowing Excel to increase its market share from 25% to 65%. Development of news Sales and Marketing Structure for the Insulation business which increased revenues by 50% in this area of the business.</p>
<p>Kronospan, Chirk, UK</p> <p>1995-2001</p>	<p>As General Manager- Chemicals responsible for the resin production business unit, within a \$200M chipboard and MDF production plant. Also responsible for MDF and chipboard technical support and quality control functions. Designed and implemented an upgrade of the resin production facility increasing the capacity by 50% ensuring the plant was self sufficient in low cost resins for MDF and chipboard production. Managed the development of sales of excess formaldehyde from the plant. Introduced new resin technology to reduce cost and increase capacity of paper laminates. Developed an integrated supply chain for waste timber for the production of chipboard. Developed a new resin system for the production of MDF for laminate flooring and introduced throughput the Kronospan group in Europe this innovation improved the product quality and created savings of \$20M per annum.</p>
<p>John Cotton Ltd. Mirfield</p> <p>1993-1995</p>	<p>As Operation Director was responsible for all aspect of production in \$50M non-wovens textiles. Supervised the modernization with fire retardant chemicals addition systems reducing the costs of the operation by 20%. Also responsible for the introduction of new air quality management processes to ensure compliance with local emissions standards. Re-engineered and relocated non-woven abrasives line leading to reduced costs and improved quality, this allowed company to divest this unit</p>

<p>Knauf Plasterboard, Various UK</p> <p>1987-1993</p>	<p>As General Manager- Operations, responsible for all aspects of production for Knauf UK including purchasing, Production, logistics, quality, safety and product development.</p> <p>1987 - Part of the start-up team for the Knauf's first Plasterboard Plant in Sittingbourne, UK.</p> <p>1989 - Responsible for all aspects of new Plasters Production Plant including design, procurement, construction and startup.</p> <p>1989 - Parachuted into a failing operation in Immingham, UK and completed turnaround resulting in the plant being the lowest cost producer in the group.</p> <p>Integrated a secondary lamination business into the Immingham business unit requiring introduction of new equipment, production processes and technology. Led the team that introduced new gypsum sources derived from power station flue gas desulphurization plant and chemical waste streams. Introduced production of fireboard technology to Knauf's UK plants</p>
<p>National Starch and Chemicals, Tilbury, UK</p> <p>1984-1987</p>	<p>Production Manager of Starch Modification Facility, restructured packaging and logistics functions. Introduced new products to the plant. Developed a new quality system leading to a 98% reduction in rejects.</p>

Steve Gerber
Fiberight, Vice President - Operations

Project Team Role:

As the Vice President of Operations, Mr. Gerber will have the responsibility to interface with the PERC team with regards to training, sequencing and commissioning of the re-configured plant. He will also guide the local team with regards to plant specific safety concerns, and engage to create and monitor Key Performance Indicators.

Education / Training

St. Francis College, B.A. Degree in Business Management

Professional Experience

Steve Gerber has held executive positions with five different businesses in the recycled products industry for over 30 years. His experience diversified with four years as Manager of Material/Production Control for Magnavox Defense Contracting Division and as Vice President of Sales for Tracer Net a mobile asset management company utilizing GPS technology.

Past Experience

Mr. Gerber was a co-founder and Executive Vice President of GreenStone Industries established with an IPO in 1994 and continued on as Vice President of Operations with its successor GreenFiber a consolidation and joint venture with Louisiana-Pacific and Cassella. As V.P. of Operations for GreenFiber, he was responsible for managing 13 manufacturing facilities with revenues of over \$100 MM with over 400 employees converting over 300,000 tons of waste paper and delivering over 20,000 truckloads of product annually. He was also responsible for Engineering, Transportation, Procurement, Safety, Quality Control and R&D and oversaw the construction of two new manufacturing facilities. Since then he has been instrumental in the process development of the pulping technology with Atlantic Recycling Technologies, as Vice President of Operations.

Professional

Relevant Project Listing

GreenStone Industries Phoenix, AZ	As EVP of GreenStone held overall responsibility to manage the design, equipment purchase, installation and oversee the subsequent operation of the largest cellulose insulation manufacturing facility in the world with 400 tons per day capacity.
GreenStone Industries Atlanta, GA	As EVP of GreenStone held overall responsibility to manage the design, equipment purchase, installation and oversee the subsequent operation of an innovative cellulose insulation plant, utilizing novel system controls for the automation and consistency of raw material feed as well as new building design and construction.
GreenStone Industries	As EVP of GreenStone held overall responsibility to manage the design, equipment purchase, installation and oversee the subsequent operation

Bucyrus, OH	of an innovative lawn-patch and wild flower production facility in partnership with The Scotts Company.
Atlantic Recycling Tech. Low Ash Pulping	As Vice President of Operations for Atlantic Recycling Technologies, Gerber was a co-inventor of an innovative low-ash hydropulping technology that currently has a patent-pending.
Atlantic Recycling Tech. Ethanol R&D	As Vice President of Operations held the responsibility for on-sight project pilot plant development and operation. Assisting in testing protocols and analysis of results.
Thermtron Products Ft. Wayne , IN	As an R&D technician was responsible for developing the testing protocols, conducting the lab testing and evaluating and reporting the results. This led to a patented design for a method and apparatus for fiberizing cellulose products.
GreenStone Industries Bethesda, MD	As EVP of GreenStone held overall responsibility for Business and Product Development. Developed innovative chemical application system, automatic quality assurance apparatus, insulation application equipment, cellulosic poultry bedding product, lawn-patch product and low density cellulose insulation.

Other Professional / Business Affiliations

Past President and Board of Directors for Cellulosic Insulation Manufacturers Association
 Past Board of Director – Tiger Fibers
 Past Board of Director – Fiberight Mgmt.
 Current Board of Directors – Thermtron Research Corp.
 Current Advisory Board – ComfortTech Heating and Air Conditioning

Steven T. Ragiel
Fiberight, Director – Project Advisor.

Project Team Role:

As Chief of commercial development Mr. Ragiel will provide important strategic advice and technical assistance with matters regarding waste management, recycling and the pre-sorting process for the project.

Education / Training

Vanderbilt University, Nashville, Tennessee, Bachelor of Chemical Engineering, 1986

Professional Experience

Seasoned executive with proven leadership qualities, solid growth credentials, entrepreneurial orientation, and success in applying technology to business opportunities. Twenty years of world-wide experience in commodity-driven manufacturing businesses. Excellent track-record of building teams, integrating acquisitions, tailoring solutions for customers, restructuring capacity, hedging commodity risk, reducing unit costs and improving margins in order to increase shareholder value.

GREENSTAR North America, Houston, Texas / Dublin, Ireland

CEO, Director
Present)

(2005 –

Founded and built Greenstar North America into a \$200 million/year, 20 facility, multi-material commodity processor and manufacturer. Member of and reporting into the Greenstar Board of Directors with full responsibility for the development and implementation of the initial business plan, ongoing strategic planning, annual budgets, P+L performance, hedging strategy, financial controls and human resource development.

- Growth driven through a combination of acquisitions and organic sales. Primary customer base includes major solid waste haulers, municipalities and multinational companies.
- Integrated acquisitions through a combination of; cultural workshops, a detailed communications strategy, the implementation of common metrics and common financial and operating software packages, sharing of operational best practices and peer reviews of major capital investments.
- Implemented innovative automated ballistic and optical processing at regional hubs in order to increase both out-bound quality and yield while significantly reducing labor costs.
- Implemented a commodity upgrading strategy that included the manufacture of reflective glass beads for use in highway construction, production of furnace ready cullet for use in the manufacture of new glass bottles, and the conversion of recycled HDPE bottles into food grade HDPE packaging in the UK.

- Rationalized acquired company SG+A costs through the centralization of all accounting, HR, Finance, hedging and procurement functions.
- Improved acquired company safety performance by 60% over a two year period from a starting OSHA recordable TRIR metric of over 12.0 to a current rate under 5.0.
- 2005 through first half of 2006 – Dublin Ireland based – advised Greenstar Ireland and Greenstar UK on the implementation of customer account profitability and the build out of manufacturing infrastructure.

Past Experience

RECYCLE AMERICA ALLIANCE LLC, Houston, Texas / Chicago Illinois

- President
(1997 - 2005)
- Initiated and built Recycle America Alliance (RAA) into the largest recycling company in North America with \$750 million/year in diversified manufacturing and commodity marketing revenues. Managed all aspects of the business including: P+L, Sales and Marketing, 3,000 employees, 80 manufacturing facilities, 100 product grade offering and 20 sales offices. Member of and reported to the RAA Board of Directors.
- Increased annual EBITDA by over \$35 million, in the period 2004 vs. 2003 as a result of \$8 million in SG+A cost reductions, an 8% improvement in manufacturing plant labor cost per ton, and 5% volume growth.
- Built the Recycle America brand into the premiere recycle services offering in North America.
- Generated overall compound revenue growth of more than 25% per year, 1997 through 2005.
- Significant organic growth achieved through building a customer service culture and a revitalized sales and marketing program focused on key regional and national retail and IPS accounts.
- Built strong partnerships with both domestic and international paper mill customers through long term contracts and direct mill investment in RAA plants.
- Implemented a \$100 million multi-year investment program to upgrade plants using optical scanning and ballistic separation technologies, generating an average pretax ROI at the upgraded sites in excess of 25%.
- Implemented a “Manufacturing Excellence” program of key metrics, benchmarking, facility scorecards, and annual awards – decreased manufacturing cost per ton by 29% from 1999 to 2005.
- Rationalized capacity by closing and combining over 70 processing sites. The average volume per remaining plant increased by 150%.
- Negotiated and executed 25 acquisitions and successfully kept owners of acquired businesses engaged in the company. Success in this area due mainly to building an effective change management and entrepreneurial culture at RAA.
- Built a pulp and paper financial trading business in year 2000 to provide customers with price risk management tools and Hedged out 70% of overall RAA revenues. In 2004,

spun-off the trading business to a strategic buyer while maintaining preferred access to markets.

WASTE MANAGEMENT INTERNATIONAL plc, London, England

- Director of Resource Recovery
(1992-1997)
- Brand management responsibility for \$225 million per year, international resource recovery business.
- Expanded operations to meet surging customer demand for resource recovery services. New demand driven primarily by the initial round of Product Stewardship legislation in Europe and Asia.
- Grew manufacturing network from 17 facilities in five countries in 1992 to over 70 facilities in 17 countries by 1997 in Europe, Asia, and Australia. Growth was generated through a balance of 50% organic-green field start-ups and 50% acquisition activity.

WASTE MANAGEMENT OF NORTH AMERICA, Atlanta, Georgia

- Region Manager
(1990 - 1992)
- Responsible for manufacturing operations in a ten-state region in the southeastern US.

HDR ENGINEERING, Alexandria, Virginia

- Technical Director
(1987 - 1990)
- Responsible for evaluating competitive bids, negotiating terms, and awarding service contracts.

Other Professional / Business Affiliations

- National Recycling Coalition, Board of Directors and Executive Committee, year 2000 to 2006
- PRI, Board of Directors, 1997-1999, Joint Venture with Stone Container
- CRA, Board of Directors, 1997–2000, Joint Venture with American National Can/Pechiney
- RAA was the National Recycling Coalition, annual “Recycle Works” award winner for 2003. Award recognizes outstanding corporate and personal contributions to recycling in the United States.
- “*Waste News*” Newsmaker of the Year runner-up in 2000 and 2003.