"The Future of Materials Management in Maine"

Regional Stakeholder Engagement, May-July 2015
Compiled Outcomes Report

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I. EXECUTIVE SUMMARY

The Senator George J. Mitchell Center for Sustainability Solutions at the University of Maine has organized an interdisciplinary team of researchers with a wide array of expertise related to solid waste and materials management. Together we seek to engage stakeholders in the process of developing more sustainable materials and waste management solutions for our state. We began this process early in 2015, by outlining our understanding of problems and challenges we face, as well as the criteria by which Maine citizens and stakeholders might evaluate potential solutions in a report entitled "Solid Waste Management in Maine: Past, Present and Future". Stakeholders throughout the state were invited to comment on the report and to attend a February meeting in Augusta to discuss the future of materials and solid waste management.

In response to stakeholder interests expressed at that initial meeting, the Mitchell Center subsequently organized a series of regional meetings that brought together diverse stakeholders to identify shared visions as well as regionally specific needs and potential solutions. Five regional meetings were held across the state. The regions loosely reflect areas with shared waste and materials disposal or consolidation opportunities. The meetings were hosted in Presque Isle, Bangor, Farmington, Brunswick, and Portland with the support of local organizing committees composed of key stakeholders from the region [Appendix I]. These highly productive meetings drew together waste management professionals (landfill, waste-to-energy and composting operators, haulers, recyclers, engineers, reuse organizations, consultants, and transfer station operators) with city, town, and regional representatives, tribal nations, community institutions, citizen action-groups, students and academics to discuss the future of materials management in Maine. Over 130 individuals, representing more than 90 entities participated [see Appendix I]. The meetings demonstrated the wealth of knowledge and skills available in Maine to design more sustainable waste and materials management solutions.

During each regional meeting stakeholders were asked to: 1) imagine what the future of waste management *should* look like, 2) to identify barriers and needs that must be addressed to achieve these visions, and 3) to think about emerging goals and opportunities for moving in the right direction. This document compiles these stakeholder insights. Readers can find detailed outcomes in the pages following the executive summary and in the regional outcomes documents [Appendices II – VI]. Here we provide a high level summary which highlights five primary themes that cut across all the regional meetings. While the expression of these themes varied with different stakeholder groups and geography, the themes demonstrate areas of significant statewide consensus. We suggest that the following five shared visions (in bold) and the corresponding needs and goals necessary to achieve them (bulleted points), might provide a starting point for the development of more specific and sustainable materials and solid waste management policies and programs in Maine.

In the future, Maine will have significantly reduced waste, increased recovery in support of our waste hierarchy, and moved towards a closed loop economy:

- Achievement of the waste hierarchy will require investment in and support for diversion programs and technologies, organics diversion represents a significant opportunity.
- We will need strong policy leadership to provide direction and incentives for removing organics and other recoverable materials from the waste stream.
- We need reliable markets for recovered materials, in Maine and beyond our borders.
- Federal or state policy will need to discourage products with unrecoverable packaging or ensure that producers are responsible for the management of these materials.
- The externalization of costs will need to be addressed to ensure that the pricing of all products and disposal options accurately reflect the true, long-term costs of disposal.

In the future Maine's citizens will be more engaged in materials management:

- Education is essential to help all Mainers (households, legislators, municipal leaders) understand the true costs of waste. Waste will need to be reframed as materials and resources.
- The right incentives must be in place to ensure that awareness translates into behavior and that costs are linked to behaviors - so that all Mainers become engaged partners.
- Mainers will be more engaged in waste and materials management if we can balance convenience (e.g. curbside) with an incentivized responsibility (e.g. source separation).

Maine will have more efficient and cooperative waste management systems, able to capitalize on materials to achieve greater economic development on multiple scales.

- Municipalities and private entities will share a vision and be incentivized to cooperate on a regional basis – reducing transportation costs, redundancies and inefficiencies.
- Maine-based, value-added, reuse businesses will make use of many of the materials recovered in Maine while simultaneously contributing to local and state-level economic development.

In the future Maine will have a comprehensive "forward-thinking" materials management plan with coordinated goals and incentives to encourage their realization. The plan will also allow flexibility for regionally appropriate variation.

- Achieving state level goals will require multiple solutions in various sectors.
- Long-term state planning and goals will reduce uncertainty and allow private businesses to make secure long-term investments and develop new markets.
- State level plans should be comprehensive rather than piecemeal and should "have teeth" to ensure their realization.

Decisions about materials and waste management will be based on reliable and timely data and will build upon understandings of "best practices" proven effective in similar locales.

- Comprehensive data on waste and materials management practices (e.g. waste characterization studies, life-cycle analyses, social impact assessments) are necessary, we need full cost accounting of current and projected solutions.
- Pilot programs are important to test potential alternatives.
- A comprehensive database of "best practices" in Maine and in other states can help to consolidate data on alternatives.

II. EXPANDED STATE OUTCOMES: A SHARED VISION

Can there be a "Shared Vision" for Materials Management in various regions of Maine? Can there be one for the entire state?

At each regional meeting the first objective was to establish a vision for what materials and solid waste management *should* look like in the future. The participants were split into several groups composed of participants with varying backgrounds in solid waste and asked to discuss this topic. The small groups discussed the prompt for approximately 25 minutes and then participants were reassigned to different tables for an additional 30 minutes to ensure the cross-pollination of ideas. During a coffee break, facilitators got together to compile the results, placing emphasis on the areas of consensus. When the outcomes of this visioning process for all five meetings were combined, we observed several dominant "shared visions":

Better education for all; citizens, policy makers, municipalities, and businesses: The desire for education was one of the most prevalent points of discussion and it came in many forms. Some regions focused on how to reduce knowledge gaps and to create more informed and engaged citizens, encouraging each household to take ownership of their waste stream. Another point of emphasis was to have better information for policy makers and planners to assist them in making prudent decisions. A part of that vision is to help decision makers understand which policies are available and the various tradeoffs associated with different initiatives. There was also an emphasis on youth education and strategies to engage schools through both practices and curriculum moving. Youth education would help to mold a future where policies, such as organics diversion for instance, would not be a foreign concept, but one that is second nature to students.

Finding methods to divert organics: Organics diversion was a common (and often dominant) topic at each the five regional meetings. At several meetings stakeholders envisioned a future in which there are no organics in the waste stream. Designing programs that capture materials, but also are sensitive to costs was an important facet of the discussion. Topics such as piloting a ban or mandate, beginning with large generators in a phased approach, or working to emphasize how organics should be viewed as a "resource" and not a "waste" were all present. A future where towns and/or regions utilize appropriate strategies to manage organics was an expectation for the future.

Manufacturer responsibility as well as better and/or less packaging: Participants at all five meetings observed that the level of control citizens and municipalities have over the amount and type of packaging is limited. There were many instances in which the participants expressed a desire for a different system moving forward. Among the topics discussed were: closed-loop economies; increased product stewardship; and extended producer responsibility. All of these ideas place an emphasis manufacturer responsibility for the waste their products create, incentivizing producers to reduce packaging and waste.

Regional collaborations: The desire to achieve economies of scale in the future was at the center of discussion at many of the regional meetings. A future where there is consolidation and

cooperation at the regional level is envisioned. Some of the ideas discussed included: reestablishing or reinvigorating cooperatives that have eroded; looking for ways to promote transportation efficiencies by working together and expanding boundaries; and creating regional professional associations or planning entities to share and evaluate ideas and mutually beneficial initiatives. These ideas were not limited to municipal coordination, but also included public-private partnerships.

Increased convenience for recycling and reuse: This aspiration was based on a shared understanding that consumers demand consistent and easy-to-use avenues for disposing of materials. The attendees routinely mentioned how having simple solutions for the various waste streams was important for designing systems that citizens will be willing to utilize. Reuse must be emphasized and promoted to help facilitate lower levels of demand for disposal moving forward. A key theme that emerged was a lack of accessible information for citizens, confusion surrounding different standards for sorting in different locals and how to standardize consumer practices across the state while allowing for regional variation and efficient collection.

Less Waste: A future with less waste also constituted a common vision. Better producer and consumer practices are envisioned to lead to higher levels of reduction and reuse. Having well-formed programs that capture materials and markets for the "leftovers" from consumption is a companion to a future with less reliance on waste disposal. Ideas, such as the "zero-waste" and closed-loop systems were points of discussion. A tangent point was a vision for the future where Maine has a diverse economy that utilizes the diverted materials. There is also a need to manage "special wastes" better in the future providing necessary wastes a proper home.

Finding the "right" (dis)incentives: Stakeholders envision having the "right" incentives and disincentives in place to help guide actions and behaviors. In some regions this topic was mentioned with manufacturer responsibility (EPR, product stewardship), but it was also discussed in relation to how we might encourage positive behaviors for individuals. The long-term goal would be for the price of materials management to encourage more sustainable behavior among all Mainers. That could be done through fees (e.g. household unit-based-pricing or solid waste disposal surcharges), subsidies, credits, and a variety of other strategies mentioned at the meetings.

Multiple solutions: Stakeholders at the all meetings envisioned a future with multiple solutions for the complex and diverse streams of materials generated. Schools, hospitals, families, municipalities, and businesses all generate waste and have diverse needs. Having multiple solutions and markets available will assist these various entities as they explore their specific needs and best options for more economically, socially, and environmentally sound materials and solid waste management.

FIGURE I: Word diagram of Shared Vision across the Five Regional Meetings

In addition to these "shared visions" for the future, reflected in the word diagram above [Figure I], we also observed several areas of contrast between the visions expressed by the regions [See Appendices II – VI for regional outcomes documents]:

In **Northern Maine** there was an interest in a future where more materials have uses, best practices and information are shared across a strong professional network, and materials processing is more efficient due to regional planning and data-driven cooperation [Appendix II].

In **Western Maine** there was a desire to have more stable markets for materials, pilot projects to gather information and try new techniques, solutions for challenging wastes, and greater support for regional collaboration and planning. [Appendix III]

In **Central Maine** participants envisioned a future in which Mainers understand the real costs of waste management, a comprehensive state plan that allows for multiple solutions on various scales, and policies designed to prevent a "race to the bottom" for cheap disposal [Appendix IV]

In the **Greater Bangor Area** participants expressed the need for a comprehensive state plan, a greater understanding of the "real costs" of disposal, better data and reliable information on policy options, and practices to support better decisions, behavior and planning. [Appendix V].

In **Southern Maine** participants focused on: improved transportation efficiencies; strong regional cooperation; standardized consumer practices to prevent confusion; education and incentives designed to improve decision making; and policy to support the waste hierarchy [Appendix VI].

III. EXPANDED STATE OUTCOMES: NEEDS AND BARRIERS

Are there existing barriers and prevailing needs that must be addressed in order to achieve the "Shared Vision?"

After discussing participants' visions of the future and identifying those visions with the greatest levels of consensus, the participants of each regional meeting met as a large group to discuss the barriers and needs that would need to be addressed in order to achieve a more sustainable materials and waste management system in Maine. Our research team has compiled the outcomes of all the regional meetings to identify both shared needs and barriers, as well as those specific to each region. There were six primary themes discussed at a majority of the meetings:

Data: Participants at all five of the meetings identified poor data as a primary barrier. Questioning the accuracy or lack of current data, participants expressed a strong need for reliable and timely data in order to make better decisions about materials and waste management options.

Education: Following a shared vision of better informed and more engaged partners throughout the state, participants cited education as a primary barrier and pointed out the need for stronger education and curricular programs. Several participants emphasized that education must be viewed as a means, rather than an end.

Funding: Participants at all five meetings realized that despite significant consensus on shared visions, a lack of funding for facilities, equipment, and initiatives presented a significant barrier. Investment and support were deemed necessary to achieve the vision. A better incentive structure for the various streams would be required to help match actions to desired outcomes.

Organics diversion: In a related point participants at all five meetings felt that organics in the waste stream constituted a serious barrier to achieving the waste hierarchy. They identified the need for significant planning, investment in and support for cost-effective, higher-value use organics diversion as a first step toward realizing the waste hierarchy.

Planning: Participants observed that a piecemeal, short term solutions present a significant barrier to achieving the waste hierarchy and identified a need for planning at a higher to promote comprehensive policy and signal stability to those looking to develop strategies or invest.

In addition to these shared understandings of the needs and barriers that would need to be addressed to achieve our shared vision of a more sustainable materials and waste management system, the research team also observed some distinct needs identified and emphasized in each region [see also regional outcomes documents, Appendices II – VI for more detail].

In Northern Maine: There was a significant emphasis on cooperation in Northern Maine where participants report a strong history of and growing interest in cooperation (particularly around information sharing, organics collection and processing). Participants suggested that there is

significant potential for centralized collection and recovery which might reduce transportation inefficiencies in this highly rural area. Data, incentives and financial support are necessary to support planning and cooperation.

In Western Maine: The most prominent themes in Western Maine were linked to diversion goals, data and regional cooperation. Participants suggested that more data is needed, particularly on reduction and reuse, since these strategies are prevalent in rural areas. They also suggested that per capita waste generation goals, rather than the current 50% diversion goal, may be more appropriate. Finally, participants expressed a strong desire to reestablish cooperatives in the region, but a lack of funding to assist these endeavors remains a significant barrier.

In Central Maine: The participants in Central Maine emphasized the need for regional information exchange, planning and cooperation. Given the high population and geographical density the stakeholders in attendance emphasized the favorability of greater exchange for planning and the sharing of best practices. Central Maine also seemed to express a greater level of support for strong state-level policy relative to other regions.

In the Greater Bangor Area: Perhaps due to upcoming decisions surrounding the future of waste management, the Bangor Area meeting was focused on the need for strong regional and state level planning. Understanding the full costs of disposal was an important need discussed. There was also a strong emphasis on organics management as an important strategy to avoid the need for additional landfill capacity.

In Southern Maine: The southern Maine meeting, relative to the others, had a strong emphasis on consumer education and incentive structures to ensure more sustainable behaviors. While the discussion frequently focused on education, there was strong recognition that education must be supplemented with the right incentives. Southern Maine participants also re-emphasized the need for a "best practices" information exchange and the need to communicate successes in order to improve the acceleration of innovation in other regions.

IV. EXPANDED STATE OUTCOMES: OPPORTUNITIES AND EMERGING GOALS

Are there opportunities and emerging goals that might help us to address the identified barriers and achieve our desired vision?

After a discussion of the needs and barriers as a large group, the participants were again split into smaller groups to discuss the opportunities that exist in their communities which might facilitate more sustainable solutions. Finally, as a large group once again, participants were asked to identify promising goals that might emerge from the discussions and their engagement in the regional meeting. As with the visions, needs and barriers, we have identified areas of significant consensus across all five regions as well as distinct opportunities and goals linked to geographically specific characteristics. The opportunities of greatest consensus are listed below and can be visualized in the following word diagram [FIGURE II].

FIGURE II: Word Cloud of Stakeholder Identified Opportunities

Regional Collaborations: Participants identified a significant opportunity to establish cooperatives to: share information and best practices; consolidate activities to achieve economies of scale; foster networking amongst professionals; alleviate transportation and infrastructure barriers; and encourage public-private partnerships.

Better Data: Across the regions stakeholders felt there was an untapped opportunity to collect better data in order to: work toward real-time information; more accurate metrics; a better understanding of reduction and reuse activity and its value; to identify transport and processing inefficiencies; and ensure data driven decisions for municipalities, regions, and policy makers.

Diversion of Organic Material: Participants in all the meetings felt that organics diversion presented a significant opportunity to support the waste hierarchy and collective visions of a more

sustainable system. They forsee: capturing and using nutrients locally; gathering data on pilot projects and outcomes (avoided tip fees, operational costs, marketability of outputs); the creation of scalable programs spurred by both funding opportunities and mandates

Education: Education was also seen as a significant opportunity and emerging goal. Participants in all the meetings cited opportunities to utilize: online and traditional platforms; committed professional networks; a more unified message centered on materials and resources rather than waste; curricular programs for K-12 and university students; information on waste policy to improve compliance; regional collaborations.

Best Practices Models: Related to opportunities linked to education, there was a significant theme across the regions on opportunities and goals related to compiling and sharing best practices models (on policy, technology, models, education, etc). This directory could be disseminated in Maine to build upon past successes and inspire accelerated innovation.

In addition to these areas of consensus, we've also observed the following areas of regional differentiation in terms of localized opportunities and emergent goals:

The opportunities and goals in **Northern Maine** include increased regional collaboration, utilizing organic materials, partnering with large institutional generators and industry leaders, following best practice models, and having better data available for initiatives such as for consolidated collection of recycling. Participants expressed a strong desire to secure funds for a county-wide environmental planner and for a multi-institutional composting collaboration.

The opportunities and goals in **Western Maine** include the development of innovative ways to: educate citizens about how to best manage their waste; follow best practice models; utilize public-private partnerships; obtain funding for diversion projects; and collect data for reduction and reuse.

The opportunities and goals identified in **Central Maine** are focused on: educational programs to educate towns and citizens, the utilization of organic materials, regional collaboration among the large network of solid waste professionals and regional planning units, following best practice models, and the expansion of reuse businesses.

The opportunities and goals expressed by participants in the **Greater Bangor Area** included: the management of organics; better data reporting; building upon strong regional organization to improve planning and design of incremental steps; education for a unified vision; enforcement of solid waste policies; and the compilation of best practices models.

The opportunities and goals expressed in **Southern Maine** include: data collection to help state and municipalities plan, education to improve citizen engagement in solid waste issues through education and support for policy, to create a clear plan for how to best divert organics, and to utilize partnerships among municipalities and public-private endeavors

V. MOVING FORWARD: PARTNERING FOR SOLUTIONS

How can the Mitchell Center's Materials Management Team partner with stakeholders throughout the state to contribute to the development of more sustainable materials and waste management systems in Maine?

Stakeholders at the statewide meeting and each of the five regional meetings provided feedback during discussions and in exit surveys [Appendix VII] which indicate how the Mitchell Center Materials Management Research Group might best partner with stakeholders throughout the state. This feedback, along with conversations with legislators, the Department for Environmental Protection, and other key stakeholders suggest that the Mitchell Center might best contribute to the development of more sustainable materials and waste management solutions in our state by undertaking the following activities:

- Formulating reviews of "best practice" policies and programs for waste reduction. These reviews would help to educate municipalities, policy makers, planners, and citizens about the policies and practices that have worked well in Maine and in other comparable states and nations.
- Continuing to engage stakeholders throughout the state in order to facilitate cooperation, foster information sharing, increase trust, accelerate innovation, and ensure that purposeful outcomes emerge from stakeholder participation.
- Working with stakeholders to gather data and evaluate the economic, environmental and social costs and benefits of alternatives identified to hold the most promise in Maine.
- Participating in the design of pilot programs throughout the state and gathering data to evaluate their full costs and benefits, in order to inform decisions about the potential for scaling up.

Drawing upon of the stakeholder input summarized here and the collaborative spirit of the regional meetings, The Mitchell Center's Materials Management Research Group is committed to pursuing these activities and partnering with stakeholders to help imagine, evaluate and design more sustainable materials and waste management solutions for our state. While we firmly believe that these processes must be stakeholder driven if they are to be sustainable, we are committed to partnering with stakeholders to provide objective, knowledge based decision support. We are currently in the process of reviewing "best practice" polices for waste reduction enacted in other, comparable states, provinces and nations. We plan to make that report available to stakeholders and to the State Legislature's Joint Standing Committee on the Environment and Natural Resources (ENR) this fall for consideration and comment.

We hope that this document, a compilation of stakeholders' shared visions, needs and goals, along with the forthcoming review of "best practice" policies and programs for waste reduction, might help to guide future planning and policy priorities.