



michiganrecyclingcoalition

2011 STATE OF RECYCLING IN MICHIGAN: A WAY FORWARD

The State of Michigan has recognized that recycling is important to Michigan's economy, its quality of life and its environment but also that public and private recycling in Michigan has underperformed. Without leadership and investment by the State of Michigan, our state cannot fully benefit from the economic and environmental returns that recycling can yield.

This document was developed to define the costs and benefits of Michigan establishing a best-in-class recycling program. Herein, the Michigan Recycling Coalition provides a framework and recommendation for ensuring that Michigan maximizes the benefits and opportunities associated with recycling.

Report Highlights

- Recycling benefits the environment and the economy.
- Michigan is woefully behind other states in its recycling efforts.
- Best-in-class programs throughout the United States provide state-level funding and the resources necessary to achieve success.
- The State of Michigan Solid Waste Policy establishes a waste utilization goal of 50% by 2015.
- An investment in recycling by the State of Michigan to achieve that goal will yield a significant return on that investment, from both an economic and environmental standpoint.
- Residents overwhelmingly support the idea of comprehensive recycling in Michigan.
- The public is willing to pay for comprehensive recycling.
- The Michigan Recycling Coalition urges the State of Michigan to adopt a comprehensive approach to recycling and to make the investment necessary for Michigan to accomplish adopted State goals and to realize the economic and environmental benefits associated with achieving those goals.
- Numerous funding proposals have been evaluated over the past decade with none being adopted, thereby leaving recycling in Michigan even further behind our neighboring states. The Michigan Recycling Coalition recognizes that a mix of tools may be necessary to accomplish the statewide funding required to raise Michigan's recycling level to that of its best performing peers.

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***“Michigan recognizes solid waste as a resource...
[and] will facilitate waste management options...
by educating its citizenry about the options available to avoid waste generation,
furthering the development of infrastructure to reuse and recycle wastes,...***

It is important that Michigan develop the infrastructure necessary to utilize wastes by converting them into resources.” (Michigan Solid Waste Policy)

EXECUTIVE SUMMARY

The Background

A vibrant and sustainable economy is inextricably dependent upon a healthy, productive environment. The resources and services provided by our ecosystem are indispensable to economic activity. Consequently, economic activity that serves to extend the productive life of natural resources and minimizes the waste byproducts of the economy's productive activity must be a cardinal element of any lasting economic system. Recycling is one of those elements.

Nearly ten years ago, the Michigan Recycling Coalition documented that Michigan residents are underserved when it comes to recycling services. In its 2001 report, Michigan Recycling Measurement Project: Annual Collection and Diversion of Municipal Solid Waste, the Michigan Recycling Coalition identified a need for more statewide investment in recycling.

In 2003, in his charge to the Beverage Container and Recycling Task Force, then Senate Majority Leader, Ken Sikkema stated, “Michigan is one of the worst states in the nation when it comes to recycling.” One of the major findings of the Task Force in their 2003 Final Report was that people in Michigan overwhelmingly support recycling and that new state policies must be developed to support a more successful statewide recycling program.

According to a 2006 study submitted by William R. Rustem of Public Sector Consultants, Inc. (PSC), Michigan is “woefully behind in its recycling efforts”, “Michigan’s economy benefits greatly from recycling”, and “increasing recycling in Michigan enhances the economic benefit.”

The official State of Michigan Solid Waste Policy, adopted in 2007, “recognizes solid waste as a resource that should be managed to promote economic vitality, ecological integrity, and improved quality of life in a way that fosters sustainability.” The Policy was developed by a multi-stakeholder group that included business, municipal, and waste industry leaders, as was environmental and conservation organizations. The Policy establishes a waste utilization and recycling goal of 50% to be achieved by 2015.

The economic benefits of achieving that established goal include capturing more than 4.3 million tons of resources that are now simply buried in landfills. The immediate raw material value of those resources is estimated to be nearly \$435 million. In other words, resources that are valued at millions of dollars are buried each year in Michigan and achieving 50% utilization would allow many of those resources to be recaptured so that new value-added activity could take place with those resources.

According to the PSC study, merely achieving the performance level of other Great Lakes states (30% recycling) would produce 7,000 to 13,000 jobs, as much as \$300 million in income and \$3.9 billion in receipts, and as much as \$22 million in additional state tax revenue.

The environmental benefits of achieving the established goal are dramatic. Studies show that using recycled material in place of virgin raw material saves energy and reduces pollution. Recycling the more than 4.3 million tons of resources currently buried each year in Michigan will save more than 42 trillion Btu, or the annual energy equivalent of nearly 417,000 homes.

Capturing those materials for recycling instead of burying them will also allow a reduction in airborne pollution emissions of more than 122,000 tons and a reduction in waterborne pollution emissions of more than 20,000 tons. In addition, greenhouse gas emissions would be reduced by nearly 2.8 million metric tons of carbon equivalent.

A Way Forward

The PSC study and detailed studies in other states identify state-level funding to meet target goals as a key characteristic of “best-in-class” programs throughout the United States. Michigan’s Solid Waste Policy stipulates that the State of Michigan should “identify and implement a sustainable and equitable funding mechanism.” However, as found by the PSC study, Michigan has not made the investments necessary to be successful: “Michigan’s recycling program is funded at a fraction of the level of other Great Lakes state programs and ranks 41st out of 48 states that reported their allocations for recycling.”

The PSC study also found:

- Residents overwhelmingly support the idea of comprehensive recycling in Michigan.
- The public is willing to pay for comprehensive recycling.

RECYCLING IN MICHIGAN: A WAY FORWARD

Introduction

A vibrant and sustainable economy is inextricably dependent upon a healthy, productive environment. The resources and services provided by our ecosystem are indispensable to economic activity. Consequently, economic activity that serves to extend the productive life of natural resources and minimizes the waste byproducts of the economy's productive activity must be a cardinal element of any lasting economic system. Recycling is such an element.

Investing in recycling should be considered an essential component of economic development and included in strategies to nurture Michigan's challenged economy. Not only does recycling provide services critical to a sustainable economy, it is a substantial and growing sector of the U.S. economy, representing more than 1.1 million jobs and billions of dollars in sales and payroll.

Moreover, due to its ability to cultivate value-added economic activity from resources that would otherwise remain unproductive, even costly, recycling has the capacity to create jobs and foster further economic progress and prosperity. Studies show, for example, that recycling waste creates four jobs in the recycling industry for every one job that is created in the waste disposal industry if the material is not recycled. Further, for every job collecting recyclables, there are 26 jobs in processing the materials, manufacturing them into new products and getting those new products to the marketplace and consumers.

Recycling represents one of those unique opportunities in which both public and private investment can cooperatively promote robust and sustainable economic activity while concurrently supporting environmental protection. As such, government economic development efforts, public/private partnerships, intergovernmental cooperation, and policies to encourage recycling should be supported.

The Michigan Recycling Coalition seeks to strengthen recycling in our state and notes that Michigan's official Solid Waste Policy encourages us to consider waste as a valuable resource.

"Michigan recognizes solid waste as a resource... [and] will facilitate waste management options... by educating its citizenry about the options available to avoid waste generation, furthering the development of infrastructure to reuse and recycle wastes,..."

It is important that Michigan develop the infrastructure necessary to utilize wastes by converting them into resources." (Michigan Solid Waste Policy)

The Michigan Recycling Coalition believes that Michigan should strive to achieve best-in-class status and realize the economic and environmental benefits that come with achieving its established goals. As such, the MRC believes the State of Michigan should, consistent with existing findings and the State Solid Waste Policy, implement a statewide funding program for the following elements of a comprehensive statewide recycling system:

- Measurement and Data Collection
- Education and Technical Assistance
- Community Services and Infrastructure
- Market and Economic Development
- County Planning
- State Solid Waste Policy Administration

The estimated cost for such an effort is \$75,351,000 or \$7.62 per capita. This compares to an initial raw material value of nearly \$435 million or nearly \$44 per capita, as well as the other job, income, and tax revenue benefits identified by Public Sector Consultants. Clearly, the financial investment to move Michigan toward the benchmark of a high performing state will yield a significant return on that investment, without even considering the important environmental benefits associated with achieving stated goals.

There are a variety of ways by which the State could generate revenue to finance this investment in Michigan's future. Some of those approaches are outlined in this document. Suffice it to say that a statewide, comprehensive approach is necessary to overcome the funding gap created by the current, ad hoc approach of relying on local funding.

Furthermore, the MRC calls on the State to evaluate and consider the implementation of additional policy tools that could move Michigan toward meeting the goal of 50% waste utilization. A variety of policy tools are identified in the State Solid Waste Policy and policy tools that are characteristic of the high-performing states are identified in this document. It is clear that Michigan could benefit by moving away from the insufficient and perfunctory, piece meal approach currently in place and implementing a comprehensive and robust policy approach.

About the Michigan Recycling Coalition

The MRC represents recycling and composting interests at a statewide level in Michigan. The Coalition is a recognized authority on waste reduction, beneficial utilization, recycling and composting and draws upon the skills and talents of its members.

The Michigan Recycling Coalition's mission is to foster effective resource use and recovery in Michigan by developing, supporting and educating a coalition of business, government, non-profit and individual members working toward the common goals of waste reduction, recycling, reuse, composting and recycled-content purchasing.

Recycling in Michigan

2001

The Michigan Recycling Coalition documented that Michigan residents are underserved when it comes to recycling services. In its report, Michigan Recycling Measurement Project: Annual Collection and Diversion of Municipal Solid Waste, the Michigan Recycling Coalition identified a need for more statewide investment in recycling.

According to the National Recycling Economic Information (REI) Project, conducted at the same time as the MRC study, recycling creates economic benefits at the local, state, and national level. The REI project documented that recycling is responsible for:

- 1.1 million U.S. jobs.
 - \$236 billion in gross annual sales.
 - \$37 billion in annual payrolls.
- and that
- public sector investment in local recycling programs pays dividends by creating private sector jobs. For every job collecting recyclables, there are 26 jobs in processing the materials and manufacturing them into new products.
 - recycling creates four jobs for every one job created in the waste management and disposal industries.

The study also found that economic activity related to recycling is comparable to the auto and truck manufacturing industry; significantly larger than mining and waste management and disposal industries; and wages for workers in the recycling industry are notably higher than the national average for all industries.

2003

In his charge to the Beverage Container and Recycling Task Force, then Senate Majority Leader, Ken Sikkema stated, "Michigan is one of the worst states in the nation when it comes to recycling." One of the major findings of the Task Force in their 2003 Final Report was that people in Michigan overwhelmingly support recycling and that new state policies must be developed to support a more successful statewide recycling program.

2006

A study submitted by William R. Rustem of Public Sector Consultants, Inc. (PSC), found that Michigan "is woefully behind its neighboring states and the nation in its MSW recycling efforts." The report found the following:

- Michigan's recycling rate decreased by 20% from 1994 to 2004, while every other state in the region had at least a marginal increase in recycling.
- The per capita recycling rate (0.38 tons/year/person) has remained almost stagnant and continues to be below the regional and national averages (0.44 and 0.46, respectively).

- Michigan's recycling program is funded at a fraction of the level of other Great Lakes state programs and ranks 41st out of 48 states that reported their allocations for recycling.
- Only 37% of Michigan residents have access to curbside recycling, the lowest percentage of all the states in the region.
- Michigan has not invested in developing or sustaining markets for recycled materials, and some businesses have to import recycled materials from other states because of the inconsistency in local supplies.

The PSC study also found the following:

- Michigan residents do not rank themselves highly when it comes to recycling.
- Residents overwhelmingly support the idea of comprehensive recycling in Michigan.
- The public is willing to pay for comprehensive recycling.

2007

The State of Michigan adopted a new Solid Waste Policy that provides a framework to guide Michigan citizens, businesses, government agencies, institutions, universities, and political leaders in making smart choices for managing Michigan's solid waste by viewing solid waste as a resource in a global economy.

The Policy was developed by a multi-stakeholder group that included representatives from the Michigan Chamber of Commerce, Michigan Manufacturers Association, Small Business Association of Michigan, Michigan United Conservation Clubs, Michigan Municipal League, Michigan Townships Association, Michigan Association of Counties, Michigan Waste Industries Association, and the Michigan Recycling Coalition, among others.

2009

In an update to the PSC study, the following benefits of recycling were identified:

- Increased U.S. competitiveness and an expansion of manufacturing sector jobs.
- Decreased dependence on landfills and incinerators.
- Decreased pollution.
- Increased energy savings.
- Lower greenhouse gas emissions.
- Conservation of natural resources.
- Environmental protection for future generations.
- Increased health and aesthetic benefits.

Goal Statement of the State Solid Waste Policy

The State Solid Waste Policy uses the three principles of sustainability –economic vitality, ecological integrity, and improved quality of life– to guide solid waste management decisions. The Solid Waste Policy encourages a deliberate and inclusive solid waste management decision-making process and recommends goals.

According to the Policy, Michigan’s preference is first to avoid waste generation, then to utilize generated waste for beneficial purposes and, finally, to properly dispose of what remains. The Policy “recognizes solid waste as a resource that should be managed to promote economic vitality, ecological integrity, and improved quality of life in a way that foster sustainability.” Goals outlined in the Solid Waste Policy include finding uses for 50% of Michigan’s municipal solid waste by 2015 and ensuring that all Michigan citizens have convenient access to residential recycling programs by 2012.

Economic Benefits of Meeting the 50% Utilization Goal

The PSC report showed that national and state studies have found that the recycling and reuse industry creates a significant economic impact, and that investments in promoting recycling create benefits well in excess of their cost.

According to the National Recycling Economic Information (REI) Project, recycling creates economic benefits at the local, state, and national level. The 2001 REI project documented that recycling is responsible for:

- 1.1 million U.S. jobs.
- \$236 billion in gross annual sales.
- \$37 billion in annual payrolls.

The study also found that economic activity related to recycling is comparable to the auto and truck manufacturing industry; significantly larger than mining and waste management and disposal industries; and wages for workers in the recycling industry are notably higher than the national average for all industries.

In the PSC study, Mr. Rustem found the following:

- Michigan’s economy receives substantial benefits from the recycling and reuse sector in terms of jobs, support to the manufacturing sector, and tax revenues collected by state and local governments.
- In Michigan, there are an estimated 2,242 establishments in the recycling and reuse industry with receipts of \$11.6 billion, a payroll of about \$2.06 billion, and employment of 61,700.

Recycling creates sustainable jobs by stimulating productive, value-added use of waste materials that would otherwise go unused. For example, the REI Project found:

- Public sector investment in local recycling programs pays dividends by creating private sector jobs. For every job collecting recyclables, there are 26 jobs in processing the materials and manufacturing them into new products.
- Recycling creates four jobs for every one job created in the waste management and disposal industries.

Furthermore, as recycling increases and as industry strives to become more efficient, investment, research, and development (R & D) will likely include:

- New investment in material collection and processing equipment leading to manufacturing opportunities for such equipment.
- New R & D and innovation in recycling and materials processing equipment.
- New R & D and innovation in industrial materials use and manufacturing.

Finally, as recycling increases, the stock of materials available for use as raw feedstock for other industrial and manufacturing operations become more plentiful and less expensive, improving the competitiveness of industries using such materials.

The economic benefits of achieving that established goal include capturing more than 4.3 million tons of resources that are now otherwise simply buried in landfills. The immediate raw material value of those resources is estimated to be nearly \$435 million.

In other words, resources that are valued at millions of dollars are buried each year in Michigan and achieving 50% utilization would allow many of those resources to be recaptured so that new value-added activity could take place with those resources. The per capita value of those resources is nearly \$44 per year.

The PSC report found that increasing recycling efforts in the state would greatly enhance the economic benefits of recycling.

The report shows that increasing the recycling rate in Michigan from the current level of 20% (2001 estimate) to the average of the other Great Lakes states (30%), would produce a total increase of 6,810 to 12,986 jobs, approximately \$155 to \$300 million in income, and approximately \$1.8 to \$3.9 billion in receipts (accounting for multiplier effects). This additional income would generate about \$12 to \$22 million in state tax revenue.

According to the report, these estimates may be conservative because they do not take into account the substitution of recycled materials for alternate raw materials, which would allow recycling manufacturing to grow and create even more jobs. Moreover, utilizing resources that are currently being buried is akin to using domestic resources as opposed to import manufacturing resources from other countries.

The PSC study makes the following recommendation:

“Given Michigan’s job prospects, unemployment rate, and economic outlook, capturing the economic benefits provided by increased recycling should be made a priority for the state.”

Environmental Benefits of Meeting the 50% Goal

Because recycling is an activity that is known to conserve natural resources and using recycled material creates fewer pollutants than using virgin resources, it is generally accepted that recycling is essential to protecting our natural environment, human health, and our quality of life.

A strategy report prepared for the State of Florida in 2009 noted the following:

“Recycling also provides a range of environmental benefits at every stage of a consumer product’s lifecycle, from mining of raw materials through use and final disposal. These benefits include:

- *Production of less pollution than caused by manufacturing products from virgin materials;*
- *Conservation of natural resources, such as timber, water, and minerals;*
- *Energy savings;*
- *Reduction in greenhouse gas (GHG).”*

Various input-output models exist to quantify the environmental benefits of recycling. For purposes of this report, the Environmental Benefits Calculator (EBC), developed by the National Recycling Coalition is used. The EBC generates estimates of environmental benefits, based on the number of tons of specified materials recycled, landfilled and incinerated in a particular geographic region. The calculator is based on per-ton figures for energy use and emissions estimated in several recent lifecycle analysis studies.

Applying the EBC to the potential additional material recycled in Michigan if the 50% goal is achieved yields the following results:

- Energy Savings: 42.1 trillion Btu; equivalent to the annual energy consumption of nearly 417,000 homes;
- Reduced GHG Emissions: 2,787,801 metric tons of carbon equivalent (MTCE);
- Reduced airborne pollution emissions: 122,264 tons;
- Reduced waterborne pollution emissions: 20,024 tons.

Roles Defined in the State Solid Waste Policy

Michigan’s Solid Waste Policy calls for ensuring that the roles of individual units of government are clearly defined, adequately funded, and their actions are consistent with one another. It recognizes that the State should undertake actions that cannot be handled at the local level and that local units of government are primarily responsible for ensuring the delivery of services to residents.

In addition, the Policy stipulates that Michigan should:

- Identify and implement a sustainable and equitable funding mechanism(s) to provide for a minimum level of solid waste management activities identified by the state.
- Develop and encourage the use of effective local funding mechanisms.
- Encourage development of financial and other incentives to promote collaboration.

Indeed, an active role by the State is essential to the success of a statewide recycling program. As reported by PSC, “The states with the highest recycling rates are generally those that provide funding, tools, and technical assistance for communities to meet target goals.”

A Way Forward

Studies show that funding is one of the elements critical to the success of statewide programs. Best-in-class programs are those that are provided the resources necessary to be successful.

However, as found by the PSC study, Michigan has not made the investments necessary to be successful: “Michigan’s recycling program is funded at a fraction of the level of other Great Lakes state programs and ranks 41st out of 48 states that reported their allocations for recycling.”

In February of 2010, the MRC adopted “Recycling Fund Recommendations”, which identifies the elements of a comprehensive statewide recycling program that should be facilitated by a statewide funding approach. The recommendation is organized according to broad categories for which funding is key. The categories identified for funding and their estimated costs are as follows:

- Measurement and Data Collection. Estimated Annual Costs: \$321,000
- Education and Technical Assistance. Estimated Annual Costs: \$542,000
- Community Services and Infrastructure. Estimated Annual Costs: \$69,500,000
- Market and Economic Development. Estimated Annual Costs: \$1,400,000
- County Planning. Estimated Annual Costs: \$3,438,000
- State Solid Waste Policy Administration. Estimated Annual Costs: \$150,000

Elements of a Statewide Recycling System that Merit Statewide Funding

Following is a more detailed description of the above-mentioned funding categories and the costs associated with each category:

Measurement and Data Collection

Description: Funds to characterize and measure waste and waste utilization in Michigan to benchmark progress and materials; accurate inventories of entities involved in the collection, processing and utilization of waste. Use of the data includes the bi-annual evaluation of all of the programs developed as a consequence of the State Solid Waste Policy.

Estimated Annual Cost: \$321,000

Understanding the composition and flow of materials in Michigan will provide public and private stakeholders with the information needed to make sound investments. The cost estimate for this element is based on the responses received by the Michigan Solid Waste Advisory Committee Measurement Subcommittee to two Request for Proposals that were issued. Those solicitations sought proposals for a data management system and a third party operator of the system. The costs included are the lowest cost proposals received. Additional costs include staff time for state employees to collect and forward associated data.

Education and Technical Assistance

Description: Funds to support the development and delivery of consistent statewide information, education, and messaging regarding recycling and litter prevention.

Estimated Annual Cost: \$542,000

Modeling best-in-class programs from across the country helped develop the cost estimate for this program. Estimated costs include state employee staff time and program costs. Actual program costs were based on North Carolina's successful outreach and technical assistance program. That program consists of expanded campaigns to help boost public participation in recycling and to provide educational resources to public and private recycling programs around the state. Outreach efforts include campaign branding, television commercials, radio advertising, and new media outlets.

Technical assistance programming includes using retired engineers and business professionals to provide environmental technical assistance to companies and local governments.

Consistent with Michigan's Solid Waste Policy, an education program should include the following:

- A statewide message on waste utilization that can be appropriately tailored and presented to different audiences.
- Information on the economic development potential of waste utilization.
- Variety of tools and media.
- A means to evaluate effectiveness.
- Addressed to key audiences such as local decision-makers, industry, retailers, residents, and students.
- Support for coordinated and collaborative efforts at the local level.

Community Services and Infrastructure

Description: Funds to be used by local units of governments and nongovernmental entities for operation of benchmark recycling and waste diversion programs; which include minimum service levels and data reporting and education requirements. As is currently the case with locally generated recycling funds, the funds may be used directly by local units of government to run benchmark recycling programs or may be used to pay private service providers to ensure that benchmark recycling programs are achieved.

Estimated Annual Cost: \$69,500,000

\$69.5 million is what is needed to bring the entire state up to a sustainable and comprehensive benchmark recycling program. Many Michigan residents are already paying to fund existing recycling programs, therefore this report does not conclude that an additional \$69.5 million will need to be generated to achieve a benchmark recycling program for all of Michigan residents. However, community eligibility for any funding distributed by the State of Michigan is based on having a benchmark program, not on whether or not the community has already committed local funds for recycling and composting services. This distinction ensures that those communities that already provide solid waste alternatives for their residents are not financially penalized and that communities that need financial assistance to provide these public services can get it. Therefore, the State of Michigan needs to ensure that all recycling programs have an equal opportunity at funding so that the State of Michigan is not in the position of picking winners and losers.

Cost estimates for this are based on the estimated costs for a benchmark recycling collection program as described below. Using cost data from existing collection programs and U.S. Census data for Michigan, the cost for a statewide benchmark recycling collection program was developed using a per capita multiplier approach. This approach assumes that the collection programs remain operated at the local level, either publicly or privately, and that funds from the state are directed to local government units to offset the costs associated with the program.

For a municipality with a population greater than 10,000 or a population density greater than 300 per square mile, the recycling program uses trucks and related equipment to collect recyclable materials from the curbside or similar locations at least every other week from each household in the municipality, other than households in multifamily dwellings of five or more dwelling units. At least five of the following materials shall be collected in this manner:

- Clear glass.
- Colored glass.
- Aluminum, steel, and bimetallic cans.

- Mixed residential paper.
- Newsprint.
- Corrugated cardboard.
- Magazines.
- Boxboard.
- HDPE and PETE.

For a municipality with a population of 10,000 or less and a population density of 300 or less per square mile, the recycling program must meet the requirements described above or it must include an easily accessible drop-off collection point available to citizens not less than 24 hours per week where at least five of the materials listed above are collected.

Municipalities must conduct a comprehensive and sustained public information and education program concerning recycling program features and requirements. Each municipality shall adequately document its recycling and waste diversion program.

Market and Economic Development

Description: Funds granted for the research, development, and demonstration of recycling markets and new technologies and methodologies in the industry. As well as, technical and economic development assistance, business development loans and matching grants to increase the use of recycled material in manufacturing, and waste assessment services to governmental and nongovernmental entities.

Estimated Annual Cost: \$1,400,000

Modeling best-in-class programs from across the country helped develop the cost estimate for this program. Estimated costs include state employee staff time and program costs. Actual program costs were based on Pennsylvania's successful Recycling Markets Center. Organized as a non-profit 501c(3) corporation, the Pennsylvania Recycling Markets Center is a leader in developing and expanding recycling markets in Pennsylvania. In a competitive global marketplace, the RMC is the keystone clearinghouse of environmental, economic development, and manufacturing resources for end use support of recycled commodities and products. The RMC is headquartered at Penn State Harrisburg with satellite offices near Pittsburgh. The Mission of the RMC is to expand and develop more secure and robust markets for recovered (recycled) materials by helping to overcome market barriers and inefficiencies.

Among the services provided by the RMC are the following:

Business Services

- Market analysis
- Assistance for start-up ventures
- Process evaluation and process development assistance

- Strategic partnering through networks of internal and external resources available to the RMC
- Project and program management through partner linkages
- Technology transfer assistance and training
- Acceleration of product commercialization

Environmental Services

- Recycled materials sourcing
- Recycled materials and secondary commodity evaluations
- Feasibility analysis of material reuse and recycling
- Material substitution life cycle analysis
- Avoided cost analysis
- Process sustainability evaluation
- Lean manufacturing techniques
- Demanufacturing analysis
- Green building design assistance

Economic Services

- Siting of new business opportunities in tax incentive areas
- Supply chain evaluation
- Material quality evaluation
- Resource clearinghouse for business networking
- Business and environmental policy advocacy

County Planning

Description: Funds to provide resources for the Department and Designated Planning Entities to administer the county solid waste management planning process.

Estimated Annual Cost: \$3,438,000

The state's solid waste program operates under Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Part 115 requires every Michigan county to develop and implement a solid waste management plan and update it every five years. Related to recycling, the plan must include an evaluation of local recycling, composting, and waste reduction opportunities.

The cost estimate for this element is based on information collected by the MRC and includes \$30,000 for each of Michigan's 83 counties to update their solid waste management plan every five years, for a total of \$2,490,000. The annual cost presumes that county plans will be updated on a rotating five-year cycle, leaving an annual cost of \$498,000. Additional costs include \$30,000 per county for annual plan administration and implementation totaling another \$2,490,000 and another \$450,000 annually for state employee staff time to review, approve, and monitor plans.

State Solid Waste Policy Administration

Description: Funds to provide resources for the implementation of the State Solid Waste Policy, including necessary tools, leadership, data management, and other assistance to stakeholders.

Estimated Annual Cost: \$150,000

The cost estimate for this component was developed based on the estimated state staff time associated with administrative duties related to the State Solid Waste Policy, assuming that the other program costs and staffing requirements are fully funded.

Statewide Funding Options

There are a variety of means available at the state and local level to fund a comprehensive, statewide recycling program. A number of local funding mechanisms exist at the county and municipal level. However, relying on local funding in Michigan has led to an ad hoc, insufficient, and underperforming system. Only through a comprehensive, statewide approach can Michigan achieve the economic and environmental results found in best-in-class performers in North America and the world.

Following is a brief discussion of the various state-level funding approaches that merit consideration. It is important to note that this document does not advocate a particular funding tool and recognizes that a mix of tools may be necessary to accomplish the statewide funding required to raise Michigan's recycling level to that of its best performing peers. It is also important to note that the Michigan Recycling Coalition advocates that whatever funding approach is adopted, those monies designated for a statewide recycling system should be available exclusively for that purpose.

General Fund

Relying on general fund revenue has the advantage of not requiring the expansion or development of other funding tools. However, given the deficit condition of the State of Michigan budget, it seems unlikely that such funding would be available within the timeframes spelled out in Michigan's Solid Waste Policy.

Landfill Surcharges

Externality theory can make an important contribution to the design of public policies to protect the environment. First described by British economist A.C. Pigou, when costs are externalized to society, resources are misallocated. It has been widely recognized that basic economic principles of environmental policy are to be found in externality theory. In its most basic form, when environmental externalities are not internalized, prices are distorted, creating incentives for environmentally harmful practices. In other words, price is not an optimal policy unless it reflects the full social marginal costs.

A commonly accepted economic policy designed to cause prices to account for full social costs are taxes or surcharges on a particular activity. In economic academia, such an approach is known as a Pigovian tax. From an economic standpoint, surcharges are considered to be efficient and equitable when they reflect true external costs. A surcharge approach is further legitimized when the revenue is used for activities associated with mitigating the impact of external costs, such as funding associated regulatory activities and alternative activities.

The use of landfills as a means of solid waste management has a variety of adverse environmental and social impacts that are not incorporated into the price of landfilling. When such external costs are not borne by those seeking to dispose of solid waste, the cost of waste disposal is underpriced and, therefore, overproduced. Put another way, landfills impose environmental and social costs for which its users are not charged and, as a result, landfills are overused while more environmentally sound alternatives are underused.

Estimates of those total external costs range from more than \$3 per ton to nearly \$77 per ton, with the most recent estimates placing the costs between \$5.38 and \$8.76 per ton. Those costs are felt varyingly at local, regional, and global levels.

An incentive-based approach useful to address this disparity is a tax set equal to the external marginal cost of solid waste disposal. Such an approach forces landfill prices to be optimally set and causes each cost-minimizing entity, public and private, to internalize all social costs of disposing solid waste and adopt efficient solid waste management systems.

A share of the proceeds from such taxes can be passed along to communities that bear those existing external costs as a consequence of hosting a landfill within their borders and a portion could be channeled to those entities engaged in activities that reduce the creation of those costs. In other words, entities that recycle, thereby reducing landfill-related external costs, should be subsidized through such tax or surcharge revenue.

Michigan currently relies on a modest surcharge to fund solid waste regulatory activities. However, the present surcharge level (\$.07 per cubic yard or \$.21 per ton) is generally insufficient to keep pace with regulatory costs. In fact, in order to maintain its existing regulatory program for solid waste, over the past several years, the State of Michigan has had to raid the State's Landfill Perpetual Care Account, which is the fund into which landfill operators contribute to provide funding in the event that the State needs to remediate environmental contamination caused by an abandoned landfill.

During the past several legislative sessions in Michigan, legislation has been introduced to enact an increased landfill surcharge. In each case, the legislation has not made it through the legislative process. Per ton surcharge amounts of \$3.00, \$6.00, and \$7.50 have been proposed. According to the 2009 Annual Report of Solid Waste in Michigan, 47,837,680 cubic yards, or 15,945,893 tons, of solid waste were disposed in Michigan landfills. Below is the amount of potential revenue raised by each of the surcharge amounts proposed:

Surcharge per Ton Revenue	Potential Total
\$ 3.00	\$47,837,680
\$ 6.00	\$95,675,360
\$ 7.50	\$115,594,200

It is important to note that the volume of waste disposed in Michigan landfills has been declining since 2005. Efforts to further reduce that volume, either through creating a disincentive with increased surcharges or through increased recycling and waste utilization, may cause a downward impact on the total potential revenue. However, empirical studies show that demand for garbage collection services is inelastic. Surcharges, it appears, are a relatively ineffective means of discouraging the use of landfills. As such, an increased surcharge itself may not reduce volume. Nevertheless, increased efforts to utilize waste will decrease the amount of refuse collected.

According to the 2009 update to the PSC study, 53% of Michigan residents support a tipping fee surcharge.

Transaction Fee

Another legislative proposal during recent years is the transaction fee, otherwise known as the “Penny Plan.” This approach recognizes that everything we purchase has a disposal consideration.

The proposal is for a 1-cent fee for all transactions over \$2, to be applied to the sale of all goods sold at retail outlets. Retailers would remit the fee collected to the state Treasury (using current methods in place) to a dedicated recycling fund. The fee would not increase and the collected revenue could not be used for other programs or moved into the general fund. The 1-cent would be on purchases of goods only (not services) and there would be only 1-cent charged for the entire transaction, regardless of the amount of the transaction.

The transaction fee approach is considered to have several positive attributes:

- It acts much like a general consumption tax that assigns the cost of general governmental responsibilities (in this case, funding environmental protection) broadly across the general population.
- The approach doesn’t create a cost burden to any one particular group or entity. It can be passed on to consumers (as all taxes are) without harming local governments, businesses, or other organizations. The retailers that collect the fee would use existing administrative infrastructure and will be compensated for their additional administrative burden
- The fee will raise revenue from the consumptive behavior of visitors to the state without adversely affecting in-state spending by such visitors.

It is estimated that the transaction fee would generate \$42 million annually. According to the 2009 PSC study update, more than two-thirds “somewhat” or “strongly” support the idea of a penny fee on retail transactions. Among three choices, the transaction fee was the overwhelming favorite of the respondents, who preferred it by a ratio of more than 2:1 over the other two choices.

Used Beverage Container Deposits

Michigan is one of eleven states that currently have a law that requires a deposit on various beverage containers. The Michigan Beverage Containers Initiated Law of 1976 is commonly known as the Bottle Bill or Bottle Deposit Law (Michigan Compiled Laws (MCL) Sections 445.571 through 445.576). The law went into effect in 1978 and calls for a deposit of 10 cents per can or bottle. The Michigan Department of Treasury (Treasury) administers the Bottle Deposit Law.

According to the Treasury, in 2008, total deposits collected were \$420.7 million and refunds were \$407.6 million, for a 96.89% redemption rate. Michigan’s redemption rate is the highest in the U.S. Unclaimed deposits (escheat) totaled \$13.1 million. The Michigan

75% of the escheat money is deposited into the Cleanup and Redevelopment Trust Fund (Trust Fund), and 25% is returned to the retailers. Of the 75 percent deposited in the Trust Fund, 80% is deposited into the Cleanup and Redevelopment Fund, 10% is deposited into the Community Pollution Prevention Fund, and 10% remains in the Trust Fund. The Trust Fund continues to collect the 10% per year until a maximum of \$200 million is met. The Community Pollution Prevention Fund is used for programs to educate the general public and businesses that use or handle hazardous materials on pollution prevention methods, technologies, and processes, with an emphasis on the direct reduction of toxic material releases or disposal, at the source. The Trust Fund is used to clean up specific sites of contamination in Michigan.

Under the current law, consumers are entitled to reclaim their entire deposit upon return of the used beverage container. However, in some jurisdictions elsewhere in North America, a system by which only a portion of the original deposit is refundable. For example, Nova Scotia, Canada utilizes a “half-back” system, wherein half of the deposit is refunded to the consumer when they return their containers. Instead of returning the used containers to retailers, consumers take the containers to collection depots, at which they can also recycle a variety of other items. Retained and unredeemed deposits are used by a third-party, non-governmental entity, the Resource Recovery Fund Board to offset the costs of the deposit – depot system. Surplus funds are distributed to municipalities for recycling programs at a rate of approximately \$8 per capita. The redemption rate in Nova Scotia is 78%.

According to the 2009 update to the PSC report, 55% of Michigan residents would support an increase in Michigan’s deposit to a 13-cent deposit, with consumers getting 10 cents back and the remainder being retained for a statewide recycling program. At current consumption and redemption rates, such a program would yield revenue of \$13,293,770, based on 2008 state deposit law data.

Policy Tools that move Michigan toward Meeting the 50% Goal

In addition to providing statewide funding, states that have high performing recycling programs also have implemented a variety of other policy measures. Those policies include the following:

- Goals and Plans
- Construction and Demolition (C&D) Debris Recycling
- Disposal Bans
- Bottle Bills
- Organics Recovery
- Recycling Market Development
- Product Stewardship
- Technical Assistance

Some of those policy measures have been deployed in Michigan to varying degrees. Examples include goals, disposal bans on certain materials, limited technical assistance, and the bottle bill.

The State Solid Waste Policy also identifies certain policy measures that should be developed and promoted. The Michigan Recycling Coalition generally supports such policies and calls on the State to further evaluate implementation of each of following policies, as identified in the State Solid Waste Policy.

- Incentive Systems. Such measures include residential “Pay As You Throw” variable rate disposal pricing, recycling reward systems, investment tax credits/deductions, technical assistance grants, market development matching grants, program development matching grants, and business recognition systems.
- Disposal Bans. Michigan already bans certain materials such as tires, yard waste, and lead-acid batteries from disposal with regular waste. Michigan should consider banning additional materials that present “significant and avoidable harm if there are acceptable alternatives such that the ban would not result in an unacceptable increase in illegal disposal.”
- Deposit Systems. Michigan already has a deposit system for items such as certain beverage containers and lead-acid batteries. Michigan should consider similar approaches for “high risk or large volume products only if they would create an efficient, effective, and equitable collection and utilization infrastructure.”
- Public Space Recycling. Michigan should ensure that recycling is available at all state-owned public facilities and encourage recycling in all public spaces.
- Product Bans. Michigan should consider banning certain products “if Michigan cannot effectively prevent significant threats to public health and the environment associated with its management as a solid waste.”

CONCLUSION

It is clear that statewide public investment in recycling will yield significant economic and environmental results. Equally as clear is that Michigan’s recycling and waste utilization efforts are underperforming.

Despite broad recognition of this fact and a State Solid Waste Policy that provides guidance on how to improve Michigan’s program, the State has not made the investment or commitment necessary to accomplish its stated goals.

In this document, the Michigan Recycling Coalition has identified the elements of a successful, comprehensive, statewide recycling program in which the State should invest. The cost of such investment is estimated to be approximately \$7.62 per capita. The economic return on that investment is estimated to be \$43.95 per capita, as many as 13,000 jobs, as much as \$300 million in income and \$3.9 billion in receipts, and as much as \$22 million in additional state tax revenue.

The environmental return on that investment is dramatic, yielding more than 4.3 million tons of resources captured from manufacturing, conserving more than 42 trillion Btu, or the annual energy equivalent of nearly 417,000 homes, reducing airborne pollution emissions by more than 122,000 tons, reducing waterborne pollution emissions by more than 20,000 tons, and reducing greenhouse gas emissions by nearly 2.8 million metric tons of carbon equivalent.

The MRC has also identified a variety of additional policy measures that will help ensure a high return on Michigan’s investment in recycling. Those policy measures are characteristic of policies in high-performing states and are consistent with the State Solid Waste Policy.

Investing in recycling represents a significant opportunity for Michigan’s policymakers to foster a sustainable economy and a sustainable environment. As Michigan’s leadership works to meet the challenges facing our state, Michigan would be well served to take advantage of solutions offered by recycling.



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