

Department of Environmental Quality
Recommendations for Improving and Expanding Recycling in Michigan

February 22, 2005

INTRODUCTION

Michigan's recycling rate of 20 percent is the lowest in the Great Lakes Region and one of the lowest in the nation. With its long interest in conservation and environmental protection--including the most successful bottle deposit return system in the country--there is much that Michigan can do to increase recycling. Waste reduction, reuse, and recycling improves and protects the beauty of Michigan by saving energy, conserving natural resources, decreasing pollution, and reducing greenhouse gas emissions. Such efforts also stimulate the economy by creating jobs, generating revenues, and encouraging capital. In recognition of these benefits, Governor Jennifer M. Granholm has called for a recycling rate of 40 percent by 2008. Likewise, the Michigan Legislature has indicated an interest in how to improve recycling.¹ This report assesses Michigan's recycling efforts and provides specific recommendations to improve our recycling rate.

BACKGROUND

Description of Recycling

A diverse number of businesses, individuals, and local governments participate in Michigan's recycling system. Recycling, in the broad sense of the word, is much more than just putting recyclable materials in a recycle bin rather than a trash can. Beyond that step, it also includes:

- Designing and producing products that minimize waste and are easy to recycle;
- Reducing waste by making informed decisions about product purchases, thereby minimizing the amount of trash eventually generated and subsequently disposed of;
- Reusing materials like building materials, furniture, and clothing;
- Using organic materials by composting degradable materials, using the nutrients in plant production and agriculture, and using organic material to create energy;
- Using production by-products and recycled materials in manufacturing processes;
- Buying products made from recycled content; and

¹ The Department of Environmental Quality (DEQ) appropriations bill, 2004 PA 350, Section 801, provides that: "The recycling coordinator shall conduct a study of the state's capacity to handle material recovered for recycling, the feasibility of collecting and transporting the material for recycling within the state, and the ability of the state to sustain markets for products containing recycled content. The department shall make recommendations for improving and expanding recycling in the state in a report submitted to the legislature, the state budget director, and the senate and house fiscal agencies no later than December 30, 2004."

- Residents and businesses placing their recyclables in a curbside or drop-off recycling bin.

All of these activities, collectively referred to as recycling in this report, require a collection, transportation, processing, and marketing infrastructure to facilitate the diversion of Michigan's waste.

Recycling Measurement and Data Collection

Unlike many other states, there is no obligation on those collecting or managing recycled materials in Michigan to collect or report data. As a result, Michigan does not have an established method to measure the state's capacity to handle, collect, transport, and market recyclable materials. In 1996 the Michigan Legislature directed the DEQ to develop a plan to collect recycling data. That plan (Collection of Recycling Data, Appendix A) recommended statutory amendments to require the collection and reporting of recycling data, but the Legislature never acted upon the recommendations.

In 1996 DEQ staff participated in a work group led by the U.S. Environmental Protection Agency (EPA) to devise a standard method for recycling data collection. That effort, entitled "Measuring Recycling – A Guide for State and Local Governments," recognized that it is important for states to be able to compare recycling rates and that these rates should be devised using similar methods of calculation.

In 1999 the Michigan Recycling Coalition used the EPA recycling measurement methodology, and an EPA, Region 5, grant, to survey municipal recycling in Michigan. The resulting "Michigan Recycling Measurement Project" (MRMP): (1) developed an inventory of the state's residential recycling programs, (2) calculated a recycling rate from data collected on the types and volumes of municipal solid waste diverted from disposal, and (3) collected financial and employment information from recycling processors in order to demonstrate the impact of recycling on Michigan's economy. A substantial amount of time and money was spent gathering data but provided only a snapshot of recycling in Michigan.

The MRMP calculated a 20 percent recycling rate for Michigan by dividing the total number of tons recycled by the total number of tons disposed of and recycled. The trade publication *Biocycle* recognized the importance of standardizing recycling rates and used this method to calculate recycling rates for all 50 states. According to *Biocycle*, Michigan ranks 30th among the states in terms of its municipal recycling rate.²

Michigan has diverse methods of managing recycling programs. Some Michigan recycling programs are municipally run, others are privately run by businesses or not-for-profit organizations, and others are public/private partnerships or a combination of both. In addition, many counties do not have staff available to answer questions about recycling programs in their county. This makes it necessary to contact each recycling

² The January 2004 issue of *Biocycle* reported a 15.1 percent recycling rate for Michigan. However, *Biocycle* later recognized this as a misprint and corrected it in a later issue to reflect the most recently calculated recycling rate of 20 percent, and a ranking of 30th among the 50 states.

program individually in order to determine the stability of recycling programs and to collect data on the population served, materials collected, and participation rates.

Recycling Work Group

In order to adjust to these information deficiencies and to tap their collective expertise, the DEQ formed a work group of recycling professionals to assist in preparing this report.³ While the DEQ staff drafted this report with input from the recycling work group, the recommendations included in this report are those of the DEQ.

Work group members represented recycling businesses, recycling processors, municipal and county recycling programs, not-for-profit recycling organizations, and the solid waste industry. The goals of the recycling work group were to assist the DEQ in:

- Developing a strategy to collect the information required in the report requested by the Michigan Legislature.
- Identifying limitations to collecting recycling data in Michigan.
- Creating a report that will be of value to the recycling industry.
- Providing sufficient information to allow the DEQ to provide detailed information and recommendations to policymakers.

In pursuing these goals, the recycling work group considered the various sources of information relevant to recycling in Michigan, including the 2003 report of the Michigan Beverage Container and Recycling Task Force⁴.

In order to augment existing information and specifically assess the current availability of residential recycling opportunities to Michigan citizens, the DEQ, in consultation with the recycling work group, developed a survey. The DEQ sent the survey to all Michigan counties to gather information on local recycling programs. A work group member conducted an additional survey of materials recovery facilities to identify the capacity available to process recyclable materials collected in Michigan.

The work group developed a third survey to determine the ability of the state to sustain markets for products containing recycled content that has not yet been used. The survey could be used to gather data from manufacturers using recycled materials in their manufacturing process. Additionally, the work group identified trade organizations from which recycling data could be collected on a commodity basis.

ASSESSMENT OF RECYCLING PROGRAMS

The DEQ believes that Michigan has strong recycling programs in the Bottle Bill,⁵ household hazardous waste (HHW) collections, and some business recycling.

³ See Appendix B, Recycling Work Group Members List.

⁴ *The Michigan Beverage Container and Recycling Task Force 2003 Final Report* can be obtained via the Internet at: <http://www.senate.michigan.gov/gop/recycle.pdf>.

⁵ Also known as the Bottle Deposit Law and the Initiated Law of 1976.

However, there are opportunities to build upon these strengths and expand efforts in each of these and other areas to significantly improve Michigan's recycling rates.

Bottle Deposit Law

Michigan's Bottle Bill is the most successful in the country. It provides the opportunity for all Michigan residents to recycle their deposit beverage containers. On average, consumers return 97 percent of deposit containers purchased. Nationwide, beverage container recycling rates are below 50 percent. However, while highly visible and accessible to all Michigan residents, the Bottle Bill contributes about 2 percent to Michigan's overall municipal recycling rate or 10 percent of the municipal waste recycled in Michigan. As successful as the Bottle Bill is, Michigan could improve the law, as recommended in this report, by expanding it to include additional containers.

Household Hazardous Waste

Michigan has a strong network of locally-sponsored HHW collection programs designed to safely divert hazardous materials such as pesticides, mercury thermometers, electronics with heavy metals, solvent-based cleaners, and oil-based paints from disposal in Michigan landfills and incinerators. By reducing the toxicity of the waste disposed of in Michigan, natural resources are better protected. Approximately 71 HHW collection programs operate in Michigan serving about 50 percent of Michigan's population. These programs are not required to report their operations to the DEQ and vary widely in terms of operations and success. The programs range from one-day events serving the same community once or twice a year to permanent facilities available to county populations several days a week.

HHW collection programs are funded by a variety of methods. Over the past 20 years, the state of Michigan provided start-up and expansion funds through several different grant programs. Most recently, one million dollars in Clean Michigan Initiative bond monies were used to start and expand 11 HHW collection programs. Using hazardous waste disposal companies, communities have been able to recycle or safely dispose of thousands of pounds of hazardous materials that would otherwise have ended up in solid waste landfills or solid waste incinerators or even been illegally dumped on state and private lands.

Not only do these programs ensure that collected materials do not end up polluting Michigan's air, land, and water, but they also remove a hazard to public health. Many common household products are casually stored by residents without thought to the threat to pets, children, and other at-risk individuals. By providing an alternative to long-term storage of unwanted hazardous materials, this health risk is reduced.

Michigan HHW programs are successful but still only serve about half of all Michigan residents. Thus, there is room for improvement in the number of available programs and reporting of the amount and types of material collected.

Business Recycling

Recycling collection, transportation, processing, and marketing systems can most simply be divided into two categories, business/industrial and residential. In many cases, each system is dependent on the other so that it is difficult to discuss one system without discussing the other.

Success of business/industrial recycling often depends on a combination of factors:

- The ease of incorporating the by-product back into the manufacturing process.
- The desire of the business to seek markets for the material.
- The desire to modify the manufacturing processes to reduce the production of by-products or reincorporate the by-product into the manufacturing process.
- The comparative cost of disposal of by-products.
- Most importantly, the availability of a financially viable market for the material.

In Michigan, business recycling is successful, but improvements can be made. As identified in a 2003 DEQ report,⁶ for example, DEQ inspectors found large amounts of old corrugated cardboard in commercial waste loads. Assisting businesses in properly managing easy-to-recycle waste and prohibited waste will improve Michigan's recycling rate.

There are additional areas where Michigan could direct improvements in recycling. These include promoting waste reuse and reduction, improving the county solid waste management plan (County Plan) effectiveness, and updating the statewide solid waste and recycling policy.

Waste Reuse and Reduction

Collecting, transporting, processing, and marketing recycled materials comprise only one component of managing municipal solid waste and reducing the amount of material destined for disposal. Developing an expanded infrastructure of reuse and a culture of waste reduction are also key components of sensibly managing the municipal waste stream. Many states and countries have successfully reduced the amount of waste disposed by supporting increased opportunities for reuse of materials. Supporting businesses and nonprofit organizations that reuse construction and demolition materials, like Habitat for Humanity ReStores, or that help to direct unused food to people in need are other ways to reduce the amount of waste disposed. Additionally, educating consumers on ways to reduce the amount of goods they buy and then throw away is another way to decrease our waste generation rates.

Solid Waste Policy

The states with the highest recycling rates and greatest opportunity to recycle also have strong statewide solid waste and recycling policies. State governments that provide support to local governments in the form of technical and financial assistance,

⁶ "Report on Waste Inspections at Michigan Landfills," dated September 22, 2003

accompanied by clear goals and the tools needed to achieve those goals, have the highest recycling rates. Michigan last updated the State Solid Waste Policy in 1988. Given intervening developments in solid waste management, the 1988 Policy no longer offers adequate guidance on the direction of solid waste policy. Among other things, developing a comprehensive solid waste management policy would address current challenges associated with waste generation, waste diversion, market development, recycling infrastructure, and innovation and technology.

County Solid Waste Management Plan

Each Michigan county is required to enact a County Plan and update it every five years. A handful of counties use the County Plan to drive recycling efforts by setting goals and objectives for recycling within the county. Other counties only minimally mention recycling and waste prevention in their Plans.

The County Plan provides an excellent opportunity to design and encourage effective recycling programs at the local level., Additional discussion regarding this potential and recommendations for action can be found within the DEQ report to the Legislature, *Recommendations for Changes to the Solid Waste Planning and Disposal Area Siting Provisions of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended*, dated January 31, 2005.

ASSESSMENT OF RECYCLING INFRASTRUCTURE

Recycling Program Funding

At the state level, Michigan annually allots \$200,000 to supporting recycling efforts. This funding is largely devoted to salary and support of two staff persons--the Recycling Coordinator, who primarily assists residential recycling and composting programs, and a Recycling Specialist, who primarily focuses on electronics recycling and assists industrial and commercial recycling programs.

This level of program support ranks 41st nationally out of 48 states reporting and last among the Great Lakes States.⁷ Annual budgets for the Great Lakes States reporting are:

Pennsylvania	\$66,000,000
Wisconsin	\$29,000,000
Minnesota	\$14,200,000
Ohio	\$12,000,000
Illinois	\$6,500,000
Indiana	\$3,200,000
Michigan	\$200,000

⁷ See Appendix E, State Funding Mechanisms. Recycling budget for New York is unknown. The seven reporting states that annually spend less on recycling than Michigan are Alaska, Kentucky, Louisiana, Montana, New Mexico, North Dakota, and Wyoming.

Collection Systems

The 1999 MRMP study of municipal recycling in Michigan identified 303 communities that manage and/or operate 347 curbside programs for approximately 3,670,072 Michigan residents. The study also found that 377 communities and private businesses manage and/or operate 425 drop-off collection programs that serve approximately 5,471,053 residents.

The DEQ conducted a much less extensive survey of all 83 counties to identify curbside and drop-off recycling opportunities in 2004.⁸ The survey identified 203 curbside and 320 drop-off recycling programs. Based on this data, the DEQ concludes that Michigan's population is still underserved and lacks access to the opportunity to have their waste recycled rather than landfilled or incinerated.

In a state-by-state comparison, Michigan ranks in the bottom half of most lists compiled by the EPA, *Bicycle*, and trade organizations, comparing recycling rates, availability, programs, and infrastructure. While state-by-state comparison is difficult because of inconsistent data collection and reporting methods, it is clear that Michigan could improve dramatically. Michigan has nationally recognized residential recycling programs like those in Ann Arbor and Mackinac Island. However, Michigan also has communities, like the city of Detroit, with some of the lowest recycling rates in the country. Michigan also ranks near the bottom of similar lists comparing programs designed to improve recycling rates and expand recycling opportunities.

Capacity to Handle Material Recovered for Recycling

With input from work group members, the Resource Recovery and Recycling Authority of Southwest Oakland County (Authority) collected data on statewide recycling volumes and processing capacity. See Appendix C, Estimates of Residential Recycling Volume and Primary Processing Capacity.

The Authority obtained recycling data from 79 communities throughout Michigan representing urban, suburban, and rural communities. Those communities had a total population of 1,786,532 and generated 89,903 tons of recyclable material in 2003, for a total of 101 pounds-per-capita. The annual average among those communities was 98 pounds per capita. The lowest generation rate was 28 pounds per capita and the highest rate was 222, with a median of 88.

Based on those rates, if all Michigan communities had comprehensive residential recycling programs, the likely volume of residential recycled material could vary between 139,935 and 1,100,380 tons per year. Based on the historical average experience of Michigan communities with existing programs, the Authority estimated that the likely amount would be approximately 488,000 tons.

⁸ The following 18 counties did not respond to this survey: Alcona, Barry, Bay, Berrien, Branch, Charlevoix, Delta, Dickinson, Genesee, Gratiot, Huron, Ingham, Macomb, Mason, Menominee, Oakland, Osceola, and Ottawa.

Approximately 60 facilities in Michigan collect and, at least partially, process recyclable materials for market.⁹ Most of these facilities are not large-scale processing facilities. In addition to these facilities, many communities send material out of state to Wisconsin, Ohio, and Ontario for processing.

The Authority estimated the current processing capacity in Michigan at 478,000 tons per year. Thus, the capacity to handle material recovered for recycling is adequate, on a statewide basis, to process the materials currently collected. However, because this capacity is not evenly distributed, many areas of the state are without easily accessible processing capacity. There are regions of the state, such as northwest Michigan and Wayne County, without adequate capacity to process all of the recyclable materials generated in those areas.

If recycling efforts are increased and recycling opportunities become available to more Michigan residents, additional processing capacity may be required. If recycling is expanded to all residents in Michigan, it is expected that processing capacity would need to increase slightly (by about 10,000 tons per year) to be able to process the additional material generated. However, if all Michigan residents were to have access to a recycling program on par with the best programs in the state, recycling processing capacity would need to more than double.

The capacity to process material collected through residential curbside and drop-off recycling programs is constantly changing as materials recovery facilities expand or reduce their processing capacity in response to trends in material generation and market need. Temporary transfer facilities could be developed to prepare materials for transport to available processing infrastructure. Private industry sources involved in transportation and processing of Michigan recyclables have indicated a ready willingness to expand or build the infrastructure required to process increased volumes of recycling material if the expanded operations will be economically viable.

Feasibility of Collecting and Transporting Recycled Material

Similar to data on collecting material for recycling, data identifying the feasibility of transporting material for recycling within the state is difficult to collect. Based on this lack of data, the DEQ cannot fully characterize the nature of current transportation systems for recycled material nor the potential for expansion. The DEQ does conclude that because of limited processing capacity and markets for material collected within some regions of the state, material often travels long distances before it can be recycled into new products. Long transportation distances make collecting some materials less economical and lead to reduced opportunities to recycle.

Additionally, increasing transportation costs will limit the feasibility of transporting material for recycling. That is, as freight costs increase due to increases in fuel costs, the cost of getting materials to the processing facility or market will increase.

⁹ See Michigan Materials Recovery Facility Contacts, Appendix D

Ability to Sustain Markets for Products Containing Recycled Content

Given the lack of recycling data, as described throughout this report, it is difficult to draw generalized conclusions about Michigan's ability to sustain markets for products containing recycled content. However, it is clear that Michigan has a current unused potential for such markets. Michigan businesses are currently importing recycled materials because they cannot rely on a steady supply of post-consumer materials from inside the state, largely because collection programs in Michigan are inconsistent and scattered geographically.

Michigan lacks economic incentive programs to attract recycled product manufacturers to the state, does not encourage established manufacturers to convert to using recycled feedstock, does not specifically support existing Michigan-based recycled product manufacturers, and does not promote the purchase of recycled products available to the public and private sectors.

At a minimum, Michigan could sustain greater markets for products containing recycled content by providing information on where recyclables are being generated in a large enough volume to attract a recycling company. In addition, the state of Michigan could use its purchasing power to support markets for products containing recycled content through recycled product purchasing requirements and dedicated resources to find recycled products.

Beyond those simple efforts, Michigan should recognize that recycling is a global industry. Market fluctuations in Asia can affect the price of collected post-consumer plastics in the Thumb Area of Michigan. Understanding that recycling markets may not be very controllable at the state or local level, there are still many actions the state can take to support local collection, transportation, and processing of recyclables to make collected material valuable in a global economy. For example, the state could implement a market development program for recycling, provide grants to communities for collection programs, or provide tax incentives to businesses to use recycled feedstock in manufacturing products.

Other Great Lakes States have economic development programs to support (1) recycling of materials collected at curbside and from drop-off facilities and (2) creation of local recycling markets. These states have economic packages that attract recycling businesses and recycling rates that reflect that success. Recycling businesses not only provide an end-use for the recycled material but also create jobs and contribute to the economy. Furthermore, developing local markets for recycled materials leads to increased incentives for collection of recyclables because transportation costs are reduced.

RECOMMENDATIONS

The following are DEQ recommendations developed in consideration of the deliberations of the recycling work group and the various sources of information available, including the Senate's report entitled *The Michigan Beverage Container and*

Recycling Task Force 2003 Final Report (Senate Task Force Report), which is referenced in each recommendation below when relevant.

Recommendation 1 - Update the Statewide Solid Waste Policy and Goals to be consistent with current trends and preferred management options.

Michigan has not comprehensively reconsidered its solid waste policy since the Natural Resources Commission adopted the original State Solid Waste Policy in 1988. An appropriate, forward-looking, and responsible state solid waste strategy must address a number of the following issues. It must:

- Capture the environmental and economic benefits of waste reduction, reuse, and recycling;
- Incorporate education of individuals, businesses, and governmental institutions, focusing on the waste management hierarchy by promoting source reduction, reuse, and recycling;
- Develop capacity for recovery of organic residuals;
- Attack urban and rural litter and illegal dumping problems with strategies for litter prevention and clean communities;
- Create economic incentives to encourage the appropriate reuse of resources and market development for recycling, as well as discourage waste disposal;
- Realize the value created by consistent data on solid waste and waste diversion practices by requiring data reporting and collection;
- Use this data to support and guide the development of detailed and effective County Plans; and
- Respond to the need for safe disposal of those wastes that cannot be economically reduced, reused, or recycled.

The Senate Task Force Report came to similar conclusions, recognizing the importance of reducing, reusing, and recycling as first-choice alternatives to landfilling. The Senate Task Force Report recommended that the state:

- create a set of short-term and long-term recovery goals in statute;
- require that the DEQ annually report the state's recycling rates; and
- establish a comprehensive plan to improve the current average of 20 percent recycling, including components that focus on improving assistance to local recycling programs in terms of financial and technical assistance, improvements in litter control, education, incentives to stimulate markets, and encouraging new business investment that supports the recycling industry.

Recommendation 2 - Expand the Bottle Deposit Law.

Expanding the current beverage container deposit system to include additional beverage containers will increase overall beverage container recycling rates and bring the Bottle Deposit Law up to date with current products on the market. The most effective way to expand the Bottle Deposit Law will be to manage newly-included containers in the same manner as current deposit containers. Realizing this way of

expanding the Bottle Deposit Law will place additional burden on retailers, ways of lessening the burden should be identified.

While the Senate Task Force Report did not recommend immediate expansion of the containers covered under the Bottle Deposit Law, it did support the need to recycle additional items once the other structural and funding recommendations mentioned in the Senate Task Force Report have been implemented, including modifications to minimize or eliminate negative impacts on the dealers and distributors.

Recommendation 3 - Create a continuing funding source for waste diversion programs and other aspects of the Statewide Solid Waste Policy.

Michigan must establish a stable funding source for the comprehensive waste diversion and waste management programs outlined in an updated Statewide Solid Waste Policy. Funding must be sufficient to support waste diversion programs; informational and technical assistance efforts; and financial assistance to local units of government to facilitate and encourage waste diversion, data collection, infrastructure, and efforts to ensure safe, environmentally sound solid waste disposal in Michigan. One effective, equitable, and easy-to-administer funding source is a surcharge on all waste disposed of in Michigan. Nearly all Midwestern states and many other states across the country have successful surcharge programs and fund innovative and effective waste management programs through them.

Municipalities with existing waste diversion programs have great potential to supply additional services, make their programs more efficient, and increase participation. In addition, both large communities, such as Flint and Detroit, and rural communities have the potential to create new recycling programs. Michigan should implement a Solid Waste Surcharge that is distributed equitably to local units of government, to fund expanded recycling efforts, and to strengthen efforts of communities that have existing waste diversion programs in place. For example, for each dollar per ton surcharge levied, approximately \$17 million could be raised to support recycling efforts based on current disposal rates. Another advantage of imposing a surcharge would be that citizens from other states and Canada who dispose of their waste in Michigan would more fairly share in the cost of solid waste management in Michigan. Based on Fiscal Year 2004 data, approximately 31 percent of each dollar raised by imposition of a surcharge would be paid by out-of-state generators of waste. In addition, at some level, a surcharge should have an impact on the amount of waste imported and disposed of in Michigan. As an example, in Pennsylvania, volumes of imported waste dropped following an increase in its surcharge from \$3.25 to \$7.25 per ton, with imports down over 15 percent in just two years.

The Senate Task Force Report came to similar conclusions concerning the needs for stable funding, recommending the development of:

- a consistent, dedicated source of funding for local recycling programs;
- a per ton surcharge on commercial and residential waste disposed of in the state's Type II sanitary landfills; and

- a review of current local funding options to see if any changes could be made or if these local funding options could be expanded.

Recommendation 4 - Set ambitious statewide waste reduction, reuse, and recycling goals.

The DEQ should establish new diversion and management goals for Michigan residents and businesses linked to incentives for improvement. Long-term goals should be established as follows:

Waste diversion:	60 percent minimum
Disposal:	40 percent maximum

In an effort to reach these long-term goals, Michigan should be challenged to reach a 40 percent recycling rate by 2010.

The Senate Task Force Report supported the establishment of short-term and long-term recovery goals (in statute), to be reviewed annually by the DEQ.

Recommendation 5 - Measure recycling.

Quality information encourages quality decision-making. Michigan does not currently collect any statistics on waste diversion rates or even where recycling programs are available in the state. In order to track our progress, identify trends, and increase the effectiveness and efficiency of our efforts, Michigan needs better data. Michigan law should require submission of recycling data. The data should be uniformly collected throughout the state at the county level and should be consistent with other states' methods.

The Senate Task Force Report similarly recommended establishing a method for regular review of the state's local recycling programs, including recycling rates.

Recommendation 6 - Enact appropriate disposal bans.

Prohibiting the disposal of additional materials will increase waste diversion, provided there is an adequate alternative use for the material. By the enactment of 2004 PA 34, beverage containers and whole tires were added to the list of waste items prohibited from landfills. Market structure to support disposal bans or steps to develop such markets for material such as electronics, paint, and carpet should be identified.

The Senate Task Force Report supported this concept by recommending a phase-in of additional banned items from the state's landfills.

Recommendation 7 - Encourage manufacturers to adopt take-back systems.

Banning materials from disposal and encouraging market development for recyclable materials will only be successful if manufacturers and retailers play an active role in designing, manufacturing, and selling products that first reduce the amount of waste

generated, and when this is not possible, more easily facilitate recycling. One method for encouraging this is by working with manufacturers and retailers on developing producer responsibility and take-back systems. Michigan should become an active participant in efforts to establish cooperative agreements with industry and develop other initiatives that reduce the health and environmental impacts from consumer products.

The Senate Task Force Report recommended that Michigan policymakers consider the use of “advanced recycling fees” (fees paid at the time of sale to support recycling programs for that item) to help ensure proper management of certain items that contain toxic materials, such as various forms of electronic waste.

Recommendation 8 - Require County Solid Waste Management Plans to directly address recycling.

Not all areas of the state have adequate processing capacity to manage the foreseen increased volumes of recycled material. In order to extend recycling opportunities throughout the state, County Plans should provide for adequate recycling and composting capacity for processing material generated in each county or region.

Recommendation 9 - Expand HHW prevention and collection efforts.

Michigan should discourage the generation of HHW, such as pesticides and solvents, through information and education. Not all areas of the state have opportunities to appropriately dispose of HHW when it is generated. The state of Michigan should provide additional financial and technical assistance to communities to expand HHW prevention and collection efforts.

Recommendation 10 - Provide economic incentives for manufacturers that produce products from recycled material.

Michigan should identify economic incentives for businesses that convert to recycled feedstock, create recycled products, or incorporate the purchase of recycled materials into their buying policies. The economic incentives should be implemented to foster purchase, production, and use of recycled materials.

The Senate Task Force Report recommended:

- a package of financial incentives designed to provide immediate relief to existing businesses and to promote new business investment in recycling (e.g., tax credits for the purchase or lease of equipment or other technology to more fully utilize recycled goods or to allow for recycling of waste products); and
- that Michigan focus on attracting firms that have both novel, workable concepts for using recycled goods and firms that have a demonstrated record of success in other states.

Recommendation 11 - Promote pay-as-you-throw approaches to waste management.

Perhaps the most successful step a community can take to boost waste diversion rates is to charge waste generators for disposal based on their waste volumes, rather than a flat fee. This is especially true when in conjunction with accessible, easy-to-use recycling programs. These systems, known as “pay-as-you-throw,” provide a financial savings to residents and businesses that choose to recycle rather than pay to dispose of additional waste. Michigan should transition to waste management fee systems that incorporate pay-as-you-throw features.

The Senate Task Force Report also supported the adoption of pay-as-you-throw approaches to waste management.

Recommendation 12 - Encourage the diversion and proper management of organic wastes.

Whether from farms, food processing plants, or cafeterias, organic residuals make up a large part of the waste stream. Michigan should promote source-separated collection and use of this valuable resource by developing a comprehensive source-separated organic waste management plan.

Recommendation 13 - Lead by example.

State government must do its part as an environmental steward. Promoting environmentally preferred purchasing, waste prevention, green building design, purchase of recycled content products, and recycling of office paper as well as other wastes will serve as a demonstration to businesses and individuals.

The Senate Task Force Report recommended creating a new set of recycling rates for state office paper recovery and other appropriate items with review on a regular basis.

Recommendation 14 - Promote waste diversion by providing information and technical assistance to individuals, businesses, and governmental institutions.

Effective education efforts for all Michigan businesses and citizens are important if Michigan is to once again become a leader in waste reduction and recycling efforts. Additional technical and informational material on waste diversion practices for businesses, individuals, government, and others should be created. Additional staff and resources to accomplish this should be funded by the disposal surcharge recommended in this report (Recommendation 3).

The Senate Task Force Report recommended developing: (1) an education campaign that promotes an ethic to reduce, reuse, and recycle, with an emphasis on educating children about the value of recycling and (2) an anti-litter campaign that should be combined with recycling education.

Recommendation 15 - Assist local communities in supporting waste diversion programs.

Additional recovery can be gained by assisting local units of government working with private and not-for-profit service providers to implement waste diversion initiatives through “Hauler Licensing” and “Hauler Franchise” approaches, whereby combining waste disposal and waste diversion services, municipalities may gain cost savings. Michigan should enact legislation authorizing methods for licensing and franchising in order to create the tools for municipalities and counties to increase waste diversion through public/private partnerships.

The Senate Task Force Report recommended that incentives should be implemented for the coordination of local recycling programs in shared regions of the state, resulting in more regionalization of these recycling programs. This should ensure coordination of programs in adjacent areas of the state and the sharing of information.

Recommendation 16 - Work to ensure that Michigan has an adequate amount of solid waste disposal capacity without creating excess capacity.

Michigan’s excess solid waste disposal capacity has artificially driven down landfill prices. Low disposal costs provide an attractive disposal solution for other states and countries that have not stepped up to the disposal challenge, as Michigan has, and this discourages waste diversion. Often, the cost of recycling competes with low disposal costs. If the cost to send the material to a landfill is less than the cost to process and ship it to a recycling market, the material will likely be disposed of rather than recycled. More specific recommendations, if enacted, will work to ensure an adequate amount of disposal capacity without creating excess. Such recommendations can be found within the DEQ report to the Legislature entitled *Recommendations for Changes to the Solid Waste Planning and Disposal Area Siting Provisions of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended*, January 31, 2005.

Appendix A Collection of Recycling Data

Department of Environmental Quality Recommendations for Improving and Expanding Recycling in Michigan

Section 11507a(2) of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, requires the Department of Environmental Quality (DEQ) to provide to the Legislature by September 1, 1996, a plan to collect data on the amount of materials recycled in Michigan by point of origin.¹

The U.S. Environmental Protection Agency (U.S. EPA) is currently in the process of developing a model for national use in developing consistent data on solid waste recycling, with the intent of being able to calculate a national recycling rate, as well as state-specific rates. Michigan has been a participant in this U.S. EPA effort. The plan proposed here is based on the model developed through this process.

The national model offers several options for collecting recycling data, allowing states to use that portion of the model that best fits the nature of waste management and government organization of that state. In addition, the model is flexible regarding what data is collected. It requires certain information to be collected that fits within the federal definition of solid waste and recycling, which is different from Michigan's and other states. Recognizing these differences, the model allows the collection of additional, state-specific information that states can use apart from calculating the recycling rate the U.S. EPA needs, based on federal waste definitions.

After evaluating Michigan's existing waste management definitions, the goals of the State Solid Waste Policy, current law regarding solid waste management and planning, and the current structure of Michigan law, the DEQ recommends an approach incorporating county and local government in the data collection process. This is preferred for several reasons. First, counties have primary responsibility for solid waste management planning under existing law. They need this information to assist their local planning efforts. Second, many counties already collect data of the type and from the sources discussed in the U.S. EPA model. By having counties as the primary data collection point, we can build on existing infrastructures and knowledge. Third, many of the entities from which data will be sought are accustomed to reporting this information locally and may be more comfortable reporting to a local planning agency, rather than to the state regulatory agency. This will facilitate better and more complete data submittals. Lastly, county agencies are likely to have a far better knowledge of local collection and processing activities and be better able to identify data reporters and verify collected data.

¹ This requirement was established by Section 11507a(2) of 1996 PA 359, signed on July 1, 1996.

Defining the scope of who is required to submit data to the county is a critical and difficult consideration. During development of the U.S. EPA model, it became clear from ongoing experience of states that have large data collection programs that two primary issues were of paramount concern in defining the universe of reporters. First, is ensuring accurate and complete data that will not result in double counting of recyclables. Second, is ensuring that, while collecting the data needed by government, the legitimate proprietary interests of commercial collectors, processors, and others are protected.

For residential recyclable material, the U.S. EPA model's preferred option is to have collections data reported by the entities that pick up recyclables from the curb or other collection points. In Michigan, this approach may be difficult to implement for two reasons. First, there exist a number of "blue bag" programs that collect recyclables commingled with solid waste. Collectors using this technique tip their entire load, solid waste and recyclables, at a processing facility where the recyclables are separated from the solid waste. The collectors may never know how much of their load was recyclables and how much was solid waste. Secondly, some programs that collect source separated recyclables may deliver them to a processing facility for a flat tipping fee or a per ton revenue. These collectors may never know the relative contribution of each recyclable material to the total tonnage of recyclables collected. Processors of these materials, however, will be able to track this data. For these reasons, collecting data from processing facilities (defined as any entity that receives recyclable materials either directly from a generator or from a collector) is the preferred approach in Michigan. Processing facilities would include materials recovery facilities, solid waste transfer stations, composting facilities, and end-users who receive recyclable materials directly from collectors or generators. This approach generates the most complete and accurate data and will have the fewest double counting problems. Since Part 115 also requires this data to be reported by point of origin, processing facilities will need to track information on where the material that they are processing came from. Since most material they receive is under contract or through their own collectors, information on the geographic origin of these materials should not be difficult for them to obtain.

All persons who receive and process or use source separated recyclables or recyclables commingled with solid waste would need to report on an annual basis the amounts and types of materials collected and from which jurisdiction collected. The DEQ would provide the county with a form on which the data should be collected to ensure the proper categories of information are reported. Counties would be required to compile this information and submit it to the DEQ annually. The DEQ would compile the information for the statewide calculations and for submittal of those portions of the information that the U.S. EPA wants for national analyses.

Collection of commercial and industrial recycling information is also best done by processors or end-users who receive material directly from generators or collectors. In general, commercial and industrial materials are either collected and/or reused at the location where they are generated or are handled through contract arrangements with brokers or directly with processors. While the in-house recycling data does not need to

be collected, the broker and processor streams are an important data source. Most broker managed waste streams will eventually go to a processor, so processors become the most effective point to collect this data. Data on recyclable imports from out of state can also be collected from this source.

Using processors as the source of data on volumes and types of materials recycled in Michigan ignores that material that may be sent directly from collectors or generators to processors or end-markets out of state. Since it is the U.S. EPA's goal to have all states use the data collection and reporting methodology discussed here, it is likely that exports or recyclables from Michigan could be estimated by reviewing reports from neighboring states that accept materials from Michigan.

Counties and local governments are going to have the best information on who the recyclable processors are in their area. Likewise, the processors are more likely to give reliable and complete information to the local agencies than to the state. Part 115 should be amended to require processors of recyclables to annually report information to the county. The county should be required to annually compile and submit this information to the DEQ, as with the residential waste. The DEQ should be required to provide forms for the county to use in collection of all data and submittal to the DEQ.

Suggested statutory amendments to Part 115 to implement these recommendations follow:

- Section 11507a(3) - By October 31 of each year, all persons who accept recyclable materials collected through curbside collection programs or through community or area-wide drop-off programs or who accept recyclable materials directly from commercial and industrial sources shall submit a report, to the county in which they are located, on a form approved by the DEQ, which details, for the period of the previous October 1 through September 30, the total volume of each type of recyclable material processed by county, state, or country of origin. This requirement shall not apply to those persons who receive recyclable materials from persons who have previously reported those same materials.
- Section 11507a(4) - By February 28 of each year, each county shall submit to the DEQ, on a form approved by the DEQ, a summary of the information submitted to it under Section 11507a(3).

Appendix B
Recycling Work Group Members List

Department of Environmental Quality
Recommendations for Improving and Expanding Recycling in Michigan

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Recycling Coordinator
City of Lansing DPS, Waste Reduction
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Waste and Hazardous Materials Division
Department of Environmental Quality
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Chief, Storage Tank and Solid Waste Section
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Holland, Michigan 49423-1979

Mr. Michael Csapo
Resource Recovery and Recycling Authority
of Southwest Oakland County
20000 W. 8 Mile Rd. Southfield, MI 48075
(248) 208-2270
rrrasoc@aol.com

Appendix C
Estimates of Residential Recycling Volume and Primary Processing Capacity

Department of Environmental Quality
Recommendations for Improving and Expanding Recycling in Michigan

Generation

The total volume of material that a comprehensive residential recycling program might generate depends upon a variety of factors, including program design, program implementation, and community characteristics. A case study approach, in which a variety of local specific variables are closely examined, is the most accurate method for estimating material volumes. Such a detailed resource-dependent effort, however, is beyond the scope of this current effort and largely unnecessary for the purposes of this initial report.

A common alternative approach is the average multiplier method that bases estimates on a statistical per household or per capita average. While often less accurate for community specific estimates than the more robust case study approach, the multiplier method is significantly less costly and time consuming. Also, it can be quite accurate in both the aggregate and detail given well-developed multiplier factors.

In this report, the average per capita multiplier approach is appropriate. It uses a per capita multiplier developed through a survey of a variety and range of Michigan communities with comprehensive residential recycling programs, including curbside collection. Recycling data was obtained from 79 communities throughout Michigan representing urban, suburban, and rural communities. Those communities had a total population of 1,786,532 and generated 89,903 tons of recyclable material in 2003, for a total pounds-per-capita of 101. The annual average among those communities was 98 pounds per capita. The lowest generation rate was 28 pounds per capita and the highest rate was 222, with a median of 88.

Based on those rates, if all Michigan communities had comprehensive residential recycling programs, the state could be expected to generate between 139,935 and 1,100,380 tons of residential recyclable material per year. The likelihood is that the total amount would be near 488,051 tons, based on the historical average experience of Michigan communities with existing programs.

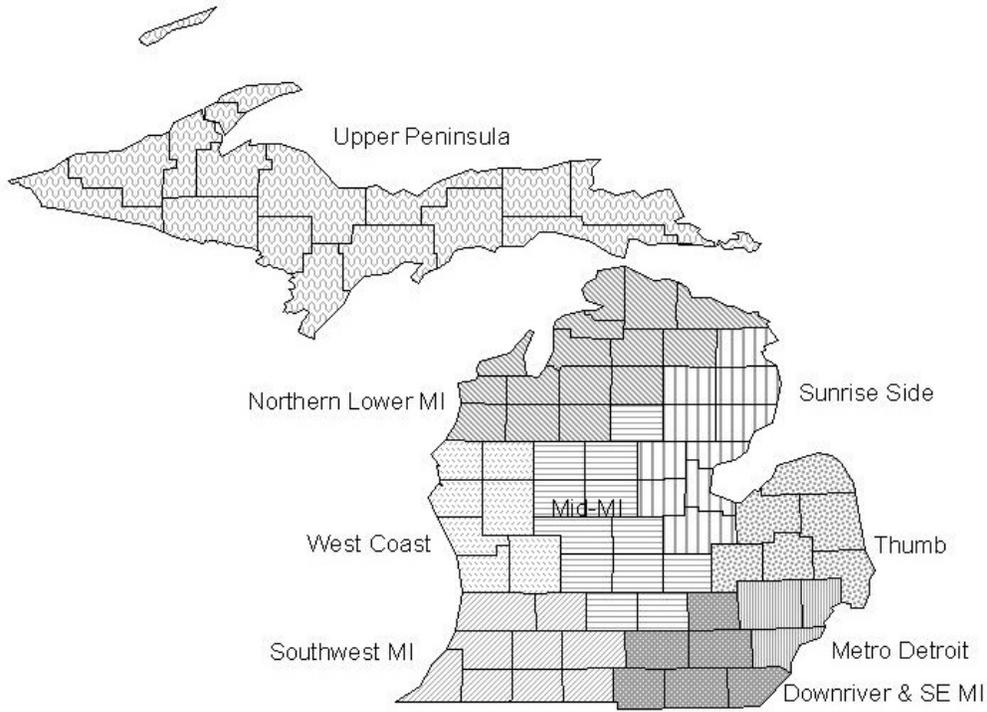
Table 1 shows the county-by-county estimates based on the low, average, and high generations rates. Map 1 also depicts the county results. Table 1 also shows the statewide total, as well as the individual county results consolidated into Michigan's recycling regions as defined by the Michigan Recycling Measurement Project, published by the Michigan Recycling Coalition in 2001. Map 2 delineates the regions, and Map 3 depicts the regional results.

It should be noted that most of the communities surveyed for the development of the multipliers do not have curbside recycling for multifamily housing units. Also, many did not have drop-off centers to complement curbside collection. Communities that develop new programs that incorporate one or both of those elements are likely to experience above average generation rates.

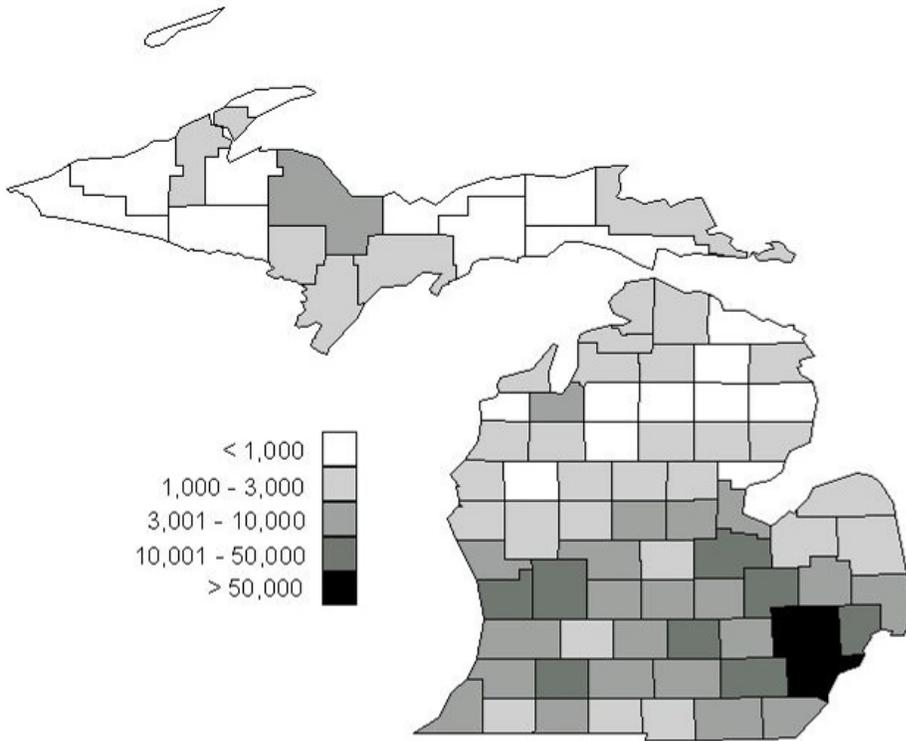
Table 1

Region	County	Population (2000)	Low Generation	Average Generation	High Generation	Processing Capacity	Avg. Capacity Surplus (Deficit)	
Downriver & SE MI	Hillsdale	46,527	654	2,287	5,156	0	(2,287)	
	Jackson	158,422	2,226	7,787	17,556	0	(7,787)	
	Lenawee	98,890	1,390	4,861	10,959	360	(4,501)	
	Livingston	156,951	2,206	7,714	17,393	0	(7,714)	
	Monroe	145,945	2,051	7,173	16,173	0	(7,173)	
	Washtenaw	322,895	4,537	15,871	35,783	118,500	102,629	
	Subtotal	929,630	13,064	45,693	103,020	118,860	73,167	
Metro Detroit	Macomb	788,149	11,075	38,739	87,342	104,000	65,261	
	Oakland	1,194,156	16,781	58,694	132,335	79,200	20,506	
	Wayne	2,061,162	28,964	101,309	228,415	0	(101,309)	
	Subtotal	4,043,467	56,821	198,742	448,092	183,200	(15,542)	
Mid-Mi	Clare	31,252	439	1,536	3,463	0	(1,536)	
	Clinton	64,753	910	3,183	7,176	10,000	6,817	
	Eaton	103,655	1,457	5,095	11,487	0	(5,095)	
	Gratiot	42,285	594	2,078	4,686	0	(2,078)	
	Ingham	279,320	3,925	13,729	30,954	0	(13,729)	
	Ionia	61,518	864	3,024	6,817	0	(3,024)	
	Isabella	63,351	890	3,114	7,020	7,500	4,386	
	Mecosta	40,553	570	1,993	4,494	0	(1,993)	
	Montcalm	61,266	861	3,011	6,789	0	(3,011)	
	Osceola	23,197	326	1,140	2,571	0	(1,140)	
	Roscommon	25,469	358	1,252	2,822	0	(1,252)	
	Shiawassee	71,687	1,007	3,524	7,944	0	(3,524)	
		Subtotal	868,306	12,202	42,678	96,225	17,500	(25,178)
Northern Lower MI	Antrim	23,110	325	1,136	2,561	0	(1,136)	
	Benzie	15,998	225	786	1,773	0	(786)	
	Charlevoix	26,090	367	1,282	2,891	0	(1,282)	
	Cheboygan	26,448	372	1,300	2,931	0	(1,300)	
	Crawford	14,273	201	702	1,582	0	(702)	
	Emmet	31,437	442	1,545	3,484	8,000	6,455	
	Grand Traverse	77,654	1,091	3,817	8,606	5,100	1,283	
	Kalkaska	16,571	233	814	1,836	0	(814)	
	Leelanau	21,119	297	1,038	2,340	0	(1,038)	
	Manistee	24,527	345	1,206	2,718	0	(1,206)	
	Missaukee	14,478	203	712	1,604	0	(712)	
	Montmorency	10,315	145	507	1,143	0	(507)	
	Otsego	23,301	327	1,145	2,582	0	(1,145)	
	Presque Isle	14,411	203	708	1,597	0	(708)	
Wexford	30,484	428	1,498	3,378	0	(1,498)		
	Subtotal	370,216	5,202	18,197	41,027	13,100	(5,097)	
Southwest MI	Allegan	105,665	1,485	5,194	11,710	0	(5,194)	
	Barry	56,755	798	2,790	6,290	0	(2,790)	
	Berrien	162,453	2,283	7,985	18,003	6,600	(1,385)	
	Branch	45,787	643	2,250	5,074	0	(2,250)	
	Calhoun	137,985	1,939	6,782	15,291	0	(6,782)	
	Cass	51,104	718	2,512	5,663	0	(2,512)	
	Kalamazoo	238,603	3,353	11,728	26,442	18,000	6,272	
	St. Joseph	62,422	877	3,068	6,918	0	(3,068)	
	Van Buren	76,263	1,072	3,748	8,451	0	(3,748)	
		Subtotal	937,037	13,168	46,057	103,841	24,600	(21,457)
	Sunrise Side	Alcona	11,719	165	576	1,299	0	(576)
Alpena		31,314	440	1,539	3,470	9,600	8,061	
Arenac		17,269	243	849	1,914	0	(849)	
Bay		110,157	1,548	5,414	12,207	0	(5,414)	
Gladwin		26,023	366	1,279	2,884	0	(1,279)	
Iosco		27,339	384	1,344	3,030	0	(1,344)	
Midland		82,874	1,165	4,073	9,184	0	(4,073)	
Ogemaw		21,645	304	1,064	2,399	0	(1,064)	
Oscoda		9,418	132	463	1,044	0	(463)	
Saginaw		210,039	2,952	10,324	23,276	38,200	27,876	
	Subtotal	547,797	7,698	26,925	60,706	47,800	20,875	
Thumb	Genesee	436,141	6,129	21,437	48,333	0	(21,437)	
	Huron	36,079	507	1,773	3,998	0	(1,773)	
	Lapeer	87,904	1,235	4,321	9,741	0	(4,321)	
	St. Clair	164,235	2,308	8,072	18,200	0	(8,072)	
	Sanilac	44,547	626	2,190	4,937	2,000	(190)	
	Tuscola	58,266	819	2,864	6,457	0	(2,864)	
		Subtotal	827,172	11,624	40,657	91,666	2,000	(38,657)
Vest Coast	Kent	574,335	8,071	28,229	63,647	45,000	16,771	
	Lake	11,333	159	557	1,256	0	(557)	
	Mason	28,274	397	1,390	3,133	0	(1,390)	
	Muskegon	170,200	2,392	8,366	18,861	15,000	6,634	
	Newaygo	47,874	673	2,353	5,305	0	(2,353)	
	Oceana	26,873	378	1,321	2,978	0	(1,321)	
	Ottawa	238,314	3,349	11,713	26,410	0	(11,713)	
		Subtotal	1,097,203	15,418	53,929	121,591	60,000	6,071
	Upper Penninsula	Alger	9,862	139	485	1,093	0	(485)
Baraga		8,746	123	430	969	0	(430)	
Chippewa		38,543	542	1,894	4,271	3,000	1,106	
Delta		38,520	541	1,893	4,269	5,000	3,107	
Dickinson		27,472	386	1,350	3,044	2,900	1,550	
Gogebic		17,370	244	854	1,925	0	(854)	
Houghton		36,016	506	1,770	3,991	0	(1,770)	
Iron		13,138	185	646	1,456	0	(646)	
Keweenaw		2,301	32	113	255	0	(113)	
Luce		7,024	99	345	778	0	(345)	
Mackinac		11,943	168	587	1,324	0	(587)	
Marquette		64,634	908	3,177	7,163	0	(3,177)	
Menominee		25,326	356	1,245	2,807	0	(1,245)	
Ontonagon	7,818	110	384	866	0	(384)		
Schoolcraft	8,903	125	438	987	0	(438)		
	Subtotal	308,713	4,338	15,174	34,211	10,900	(4,274)	
Statewide	Total	9,929,541	139,535	488,051	1,100,380	477,960	(10,091)	

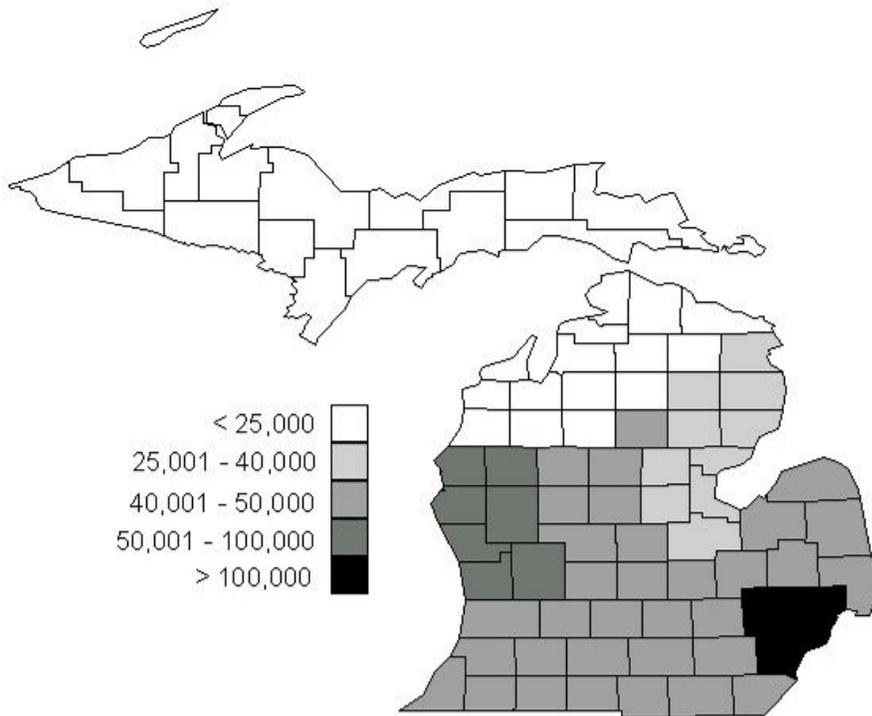
Map 1: Michigan's Recycling Regions



Map 2: Potential Generation by County (Tons/Year)



Map 3: Potential Generation by Region (Tons/Year)



Primary Processing Capacity

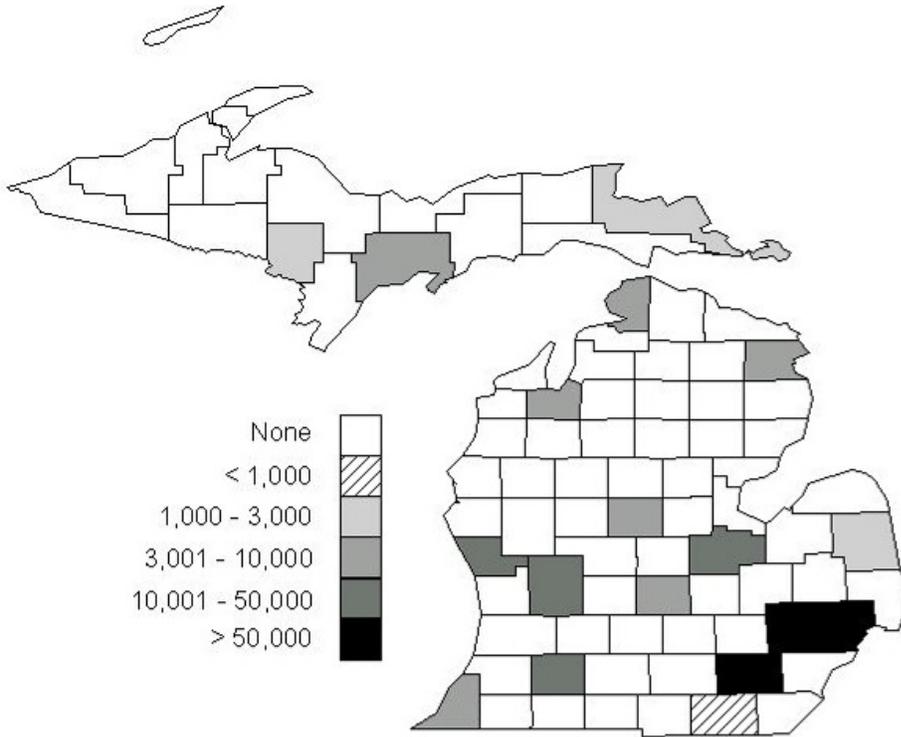
The processing of recyclable material takes place at a variety of locations throughout the state. While some is shipped directly to secondary processors such as paper mills, most is first processed, i.e., sorted and baled, at material recovery facilities (MRFs).

For the purposes of this report, an MRF is defined consistent with the description offered by the U.S. Environmental Protection Agency; wherein an MRF is identified as having equipment designed to sort and separate different kinds of recyclables and turn them into raw materials for manufacturers. In other words, the processing capacity in this report is the capacity to accept and process materials collected through curbside programs that require a degree of sorting.

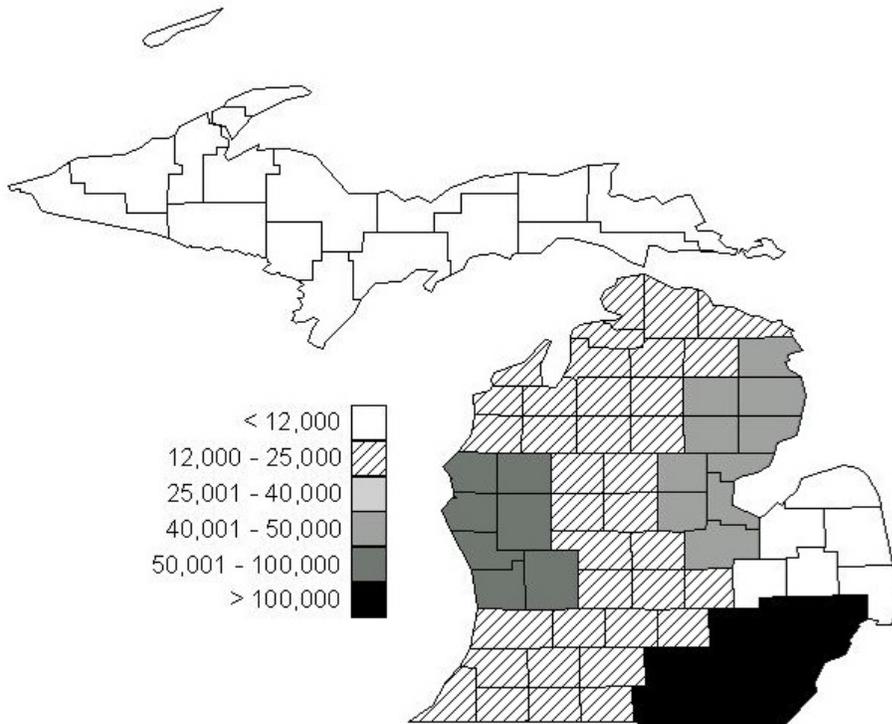
Capacity identified here constitutes reported or estimated volumes of material that existing facilities could handle, over and above current source-separated and/or commercial material, with existing equipment and infrastructure. Note that activities such as the direct hauling of source-separated material to secondary processors are not included in this analysis. Rather, this effort is designed to estimate the state's existing ability to deal with material collected from typical curbside collection programs.

Table 1 shows the county-by-county, regional, and statewide primary processing capacity, as well as a comparison of capacity to the estimated average recyclable generation. Map 4 depicts the county-by-county information, while Map 5 shows the regional capacity. Maps 6 and 7 show the capacity surplus or deficit condition of counties and regions, respectively.

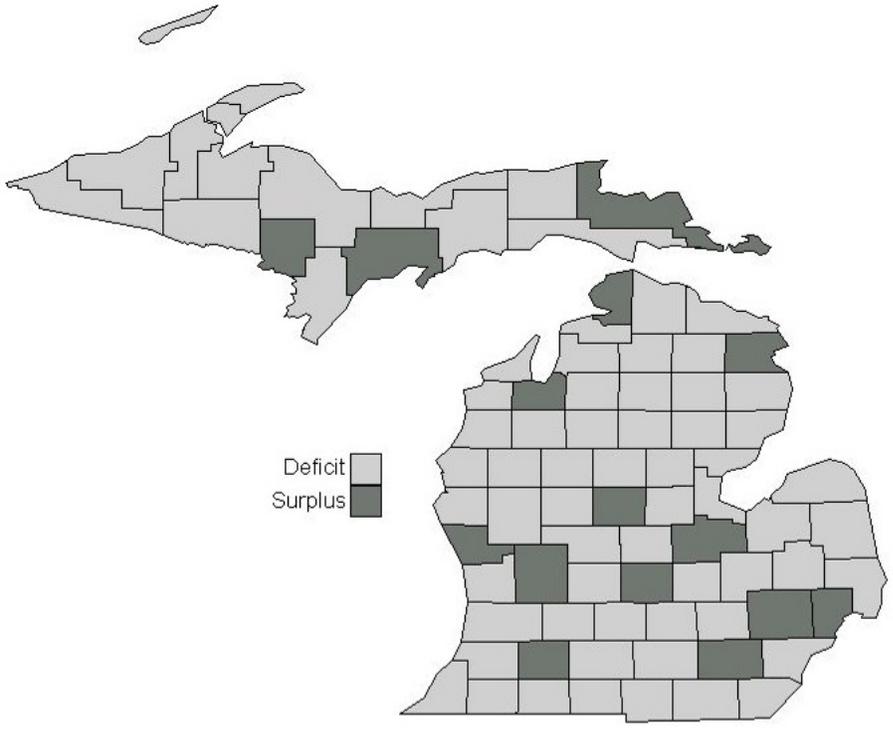
Map 4: Estimated Processing Capacity by County (Tons/Year)



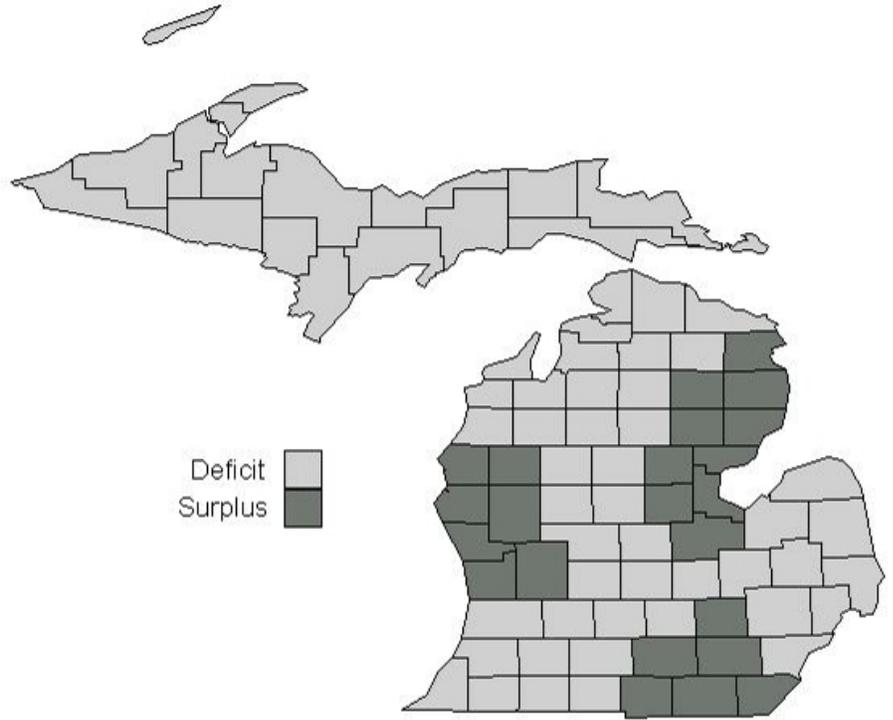
Map 5: Estimated Processing Capacity by Region (Tons/Year)



Map 6: Processing Capacity Condition by County (Based on Average Generation)



Map 7: Processing Capacity Condition by Region (Based on Average Generation)



As shown on the table and maps, various regions and counties have processing capacity above that required to accommodate average recyclable generation while other regions and counties do not have the local capacity to process the recyclables that might be generated if all the local communities had comprehensive recycling programs and average performance.

Without developing additional capacity through new capital investment, techniques to address capacity deficits may include the following:

- Intercounty, interregional, or interstate transport of recyclables. Recyclables collected by residential curbside programs may be transported, either directly by the curbside route truck or through transfer operations, to processing facilities outside the immediate area. Such activity already takes place. For example:
 - Recyclables collected in Port Huron are processed in Macomb County;
 - Recyclables collected in the Traverse City area are processed in Grand Rapids and Saginaw;
 - Recyclables collected in Big Rapids are processed in Muskegon; and
 - Some recyclables collected in southeast Michigan are processed in the Toledo, Ohio, area.
- Limiting new curbside collection to materials or collection protocols that do not require a significant degree of sorting and, therefore, can be hauled to secondary processors such as paper mills, either directly or through transfer operations.
- Limiting the establishment of new recycling efforts to source-separated drop-off centers, the material from which can be hauled to secondary processors such as paper mills, either directly or through transfer operations. Many such operations already exist throughout the state and can be replicated elsewhere.

Appendix D
Michigan Materials Recovery Facility Contacts
(Counties marked with an asterisk did not return the recycling survey.)

Department of Environmental Quality
Recommendations for Improving and Expanding Recycling in Michigan

Alcona

County does not have an MRF

Alger

County does not have an MRF

Allegan

County does not have an MRF

Alpena

Evergreen Recycling, LLC
606 Campbell
Alpena, MI 49707
Phone #: 989-354-0932

Northeast Michigan Recycling Alliance
of Alpena (NEMRAA)
Phone #: 989-354-2607

Antrim

County does not have an MRF

Arenac

County does not have an MRF

Baraga

County does not have an MRF

Barry*

County does not have an MRF

Bay*

County does not have an MRF

Benzie

County does not have an MRF

Berrien*

Best Way Disposal
3290 Hennessey Rd.
Watervliet, MI 49098
Phone #: 269-463-3232
Fax #: 269-463-7133

Reliable Recycle
7227 Reliable Path
Stevensville, MI 49127
Phone #: 800-667-1083
Fax #: 269-465-5944
fullers@reprsvcentral.com

Southeast Berrien County Landfill Authority
& Buchanan City Recycling Facility
3200 Chamberlain Rd.
Buchanan, MI 49017
Phone #: 269-695-2500
Fax #: 616-695-4230

Branch*

County does not have an MRF

Calhoun

Akers Wood Products, Inc.
1124 W. River Rd.
Battle Creek, MI 49017
Phone #: 269-962-3802
Fax #: 269-965-0038

Cereal City Recycling
15160 6½ Mile Rd.
Battle Creek, MI 49014
Phone #: 269-963-0082

Franklin Iron & Metal
120 South Ave.
Battle Creek, MI 49014
Phone #: 269-968-6111
OR 269-966-8851

Liberty Environmental
7900 S. Meridian Rd.
Clark Lake, MI 49234
Phone #: 517-787-1177

ABC Salvage
989 N. Raymond Rd.
Battle Creek, MI 49014
Phone #: 269-660-0650

Cass

County does not have an MRF

Charlevoix*

County does not have an MRF

Cheboygan

County does not have an MRF

Chippewa

Chippewa County Recycling Center
1423 W. Easterday Ave.
Sault Ste. Marie, MI 49783
Phone #: 906-632-0525
Fax #: 906-635-9075
recycling@sault.com

Clare

County does not have an MRF

Clinton

Granger Companies
16936 Wood Rd.
Lansing, MI 48906
Phone #: 517-372-0555
Fax #: 517-372-8319
www.grangernet.com

St. Johns Lions Club
6252 W. Walker Rd.
St. Johns, MI 48879
Phone #: 989-466-3808
Fax #: 989-224-2608

Crawford

Grayling Township Recycling Center
P.O. Box 521
4670 N. Down River Rd
Grayling, MI 49738
Phone #: 989-348-3195

Delta*

Delta Solid Waste Management Authority /
County Recycling Center
P.O. Box 279
1831 N. 21st St.
Escanaba, MI 49829
Phone #: 906-786-9212
Fax #: 906-786-9004

Dickinson*

Solid Waste Management Authority
P.O. Box 252
Iron Mountain, MI 49801
Phone #: 906-779-5868
Fax #: 906-779-5989

Great American Disposal
P.O. Box 2002
Kingsford, MI 49802
Phone #: 715-251-1616
Fax #: 906-563-9800

Eaton

Charlotte Area Recycling Authority
City of Charlotte
111 E. Lawrence Ave.
Charlotte, MI 48813
Phone #: 517-541-0151
Dimondale Recycling Center
162 Bridge St.
Dimondale, MI 48821
Phone #: 517-646-6183

Delta Charter Township Recycling Center
5717 Millett Hwy.
Lansing, MI 48917
Phone #: 517-332-8500

City of Eaton Rapids Recycling Center
301 Market St.
Eaton Rapids, MI 48827
Phone #: 517-663-1935

City of Grand Ledge Recycling Center
Whitney St.
Grand Ledge, MI 48837
Phone #: 517-627-2144

Mulliken Recycling Center
Corner of Main and Railroad Streets
Mulliken, MI 48861
Phone #: 517-649-8992

Sunfield Twp Recycling Center
126 First St.
Sunfield, MI 48890
Phone #: 517-566-8972

Emmet

Emmet County Recycling Center
7363 Pleasantview Rd.
Harbor Springs, MI 49740
Phone #: 231-526-2031, Ext. 10

Genesee*

Great Lakes Waste Services
3328 Torrey Rd.
Flint, MI 48507
Phone #: 810-341-9750, Ext. 7291

Gladwin

County does not have an MRF

Gogebic

County does not have an MRF

Grand Traverse

Waste Management
2294 Cass Rd.
Traverse City, MI 49686
Phone #: 231-932-0100, Ext. 3064

Gratiot*

County does not have an MRF

Hillsdale

County does not have an MRF

Houghton

County does not have an MRF

Huron*

County does not have an MRF

Ingham*

Friedland Industries
P.O. Box 14180
Lansing, MI 48901
Phone #: 517-482-3000
Fax #: 517-482-5956

Ionia

County does not have an MRF

Iosco*

Neighbors Volunteer Coalition Inc. –
Iosco County
4041 Missile Dr.
Oscoda, MI 48750
Phone #: 989-739-3235

Iron

County does not have an MRF

Isabella

Isabella County Recycling Center
4208 E. River Rd.
Mt. Pleasant, MI 48858
Phone #: 989-773-9631
Fax #: 989-773-0835

Jackson

County does not have an MRF

Kalamazoo

Michigan Recycling Industries
765 E. Vine St.
Kalamazoo, MI 49001
Phone #: 269-381-9605

Kalkaska

Northern A-1 Services
3787 U.S. 131 N.
Kalkaska, MI 49646
Phone #: 231-258-9961

Kent

Kent County Recycling Facility
1500 Scribner NW
Grand Rapids, MI 49504
Phone #: 616-336-4369
Fax #: 616-336-3338

Waste Management – Recycle America
1737 Chicago Dr.
Wyoming, MI 49509
Phone #: 616-243-7191
Fax #: 616-243-1889

Keweenaw

County does not have an MRF

Lake

County does not have an MRF

Lapeer

County does not have an MRF

Leelanau

County does not have an MRF

Lenawee*

County does not have an MRF

Livingston

Recycle Livingston
170 Catrell Rd.
Howell, MI 48844
Phone #: 517-548-4439
recycle@cac.net

Luce

County does not have an MRF

Mackinac

County does not have an MRF

Macomb*

County does not have an MRF

Manistee

County does not have an MRF

Marquette

Great American Disposal
348 US Highway 41 E
Negaunee, MI 49866
Phone #: 906-475-5260

Waste Management
910 W. Baraga
Marquette, MI 49855
Phone #: 906-228-2028
Fax #: 906-228-5906

Solid Waste Management Authority
600 County Rd. NP
Marquette, MI 49855
Phone #: 906-249-4125
Fax #: 906-249-9377

Mason*

County does not have an MRF

Mecosta

Recycle Mecosta
P.O. Box 1345
424 North 4th St.
Big Rapids, MI 49307
Phone #: 231-796-8667

Menominee*

County does not have an MRF

Midland

Midland Volunteers for Recycling, Inc.
4305 East Ashman
Midland, MI 48642
Phone #: 989-631-1668
Fax #: 989-631-3025

Brady Recycling
Phone #: 989-496-9900

Missaukee

County does not have an MRF

Monroe

County does not have an MRF

Montcalm

RWG Recycling
Sheridan, MI
Phone #: 989-291-0751

Waste Management Transfer Station
Montcalm County
1415 Shearer Rd.
Greenville, MI 48838
Phone #: 616-754-7290

Montmorency

County does not have an MRF

Muskegon*

West Michigan Recycling Center
40 Harvey St.
Muskegon, MI 49442
Phone #: 231-773-7582
Fax #: 231-773-7582

Community Recycling Services
1970 Port City Blvd.
Muskegon, MI 49442
Phone #: 231-773-8407
Fax #: 231-777-7383

Newaygo

CMS
5401 S. Warner
Fremont, MI 49412
Phone #: 231-924-4127

Fremont Metal & Paper
127 W. Elm St.
Fremont, MI 49412
Phone #: 231-924-4930

Oakland*

SOCRRA
3910 W. Webster Rd.
Royal Oak, MI 48073
Phone #: 248-288-5150
Fax #: 248-435-0310

Waste Management
Phone #: 248-357-0100

Oceana

County does not have an MRF

Ogemaw

County does not have an MRF

Ontonagon

County does not have an MRF

Osceola*

County does not have an MRF

Oscoda

County does not have an MRF

Otsego

Recycle! Otsego County
P.O. Box 2111
Gaylord, MI 49734
Phone #: 989-732-1234
Fax #: 989-732-7177

Ottawa*

County does not have an MRF

Presque Isle

County does not have an MRF

Roscommon

County does not have an MRF

Saginaw

FCR of Saginaw
911 Veterans Memorial Hwy.
Saginaw, MI

Waste Management of Saginaw County
Phone #: 989-752-4100

St. Clair

Anchor Recycling
3541 32nd St.
Port Huron, MI 48060
Phone #: 810-984-5545
Fax #: 810-984-1552

Richfield Management
4132 Dove St.
Port Huron, MI 48060
Phone: # 810-667-4885

St. Joseph

County does not have an MRF

Sanilac

Sanilac Recycling Center
150 Orval St.
Sandusky, MI 48471
Phone #: 810-648-3590

Schoolcraft

County does not have an MRF

Shiawassee

County does not have an MRF

Tuscola

Tuscola County
1123 Mertz Rd.
Caro, MI 48732
Phone #: 989-672-1673
Fax #: 517-672-3868

Van Buren

County does not have an MRF

Washtenaw

Recycle Ann Arbor
2950 E. Ellsworth Rd.
Ann Arbor, MI 48104
Phone #: 734-971-7400

FCR / City of Ann Arbor
4150 Platt Rd.
Ann Arbor, MI 48108
Phone #: 734-971-8797
Fax #: 734-971-9274

Onyx Arbor Hills Center for Resource
Management
10833 Five Mile Rd.
Northville, MI 48167
Phone #: 248-349-4444, Ext. 3125
Fax #: 248-349-4401

Recycle Ann Arbor
2420 S. Industrial
Ann Arbor, MI 48103
Phone #: 734-662-6288
Fax #: 734-662-7749

Western Washtenaw Recycling Authority
8025 Werkner
Chelsea, MI 48118
Phone #: 734-475-6160
Fax #: 734-475-7341

Ypsilanti City
1 South Huron St.
Ypsilanti, MI 48197
Phone #: 734-492-1421
Fax #: 734-483-7620

Wayne

Taylor Recycling
8767 Holland
Taylor, MI 48180
Phone #: 313-291-7410

Wexford

Wexford County Recycling Facility
5018 E. M-115
Cadillac, MI 49601
Phone #: 231-824-6858

Appendix E
State Funding Mechanisms

Department of Environmental Quality
Recommendations for Improving and Expanding Recycling in Michigan

Recycling Funds	Annual Recycling Budget (\$)	Tip Fee	Tire Fee	GRF	Bonds	Business Tax	DOE Oil Overcharge	White Goods	Grants	Haz Waste Disp Fee	SWM Fund	Other
Alabama	345,000						X					
Alaska	100,000											
Arizona	1,800,000	X	X		X							
Arkansas	3,500,000	X	X	X								
California - bb	93,000,000	X	X									
Colorado	1,500,000											
Connecticut - bb	800,000				X							
Delaware - bb	3,000,000	X										
Dist. of Columbia	4,000,000			X								
Florida	23,000,000		X									
Georgia	8,000,000		X									
Hawaii - bb	450,000											1
Idaho	not available		X									
Illinois	6,500,000	X	X									
Indiana	3,200,000	X		X								
Iowa - bb	6,500,000	X										
Kansas	1,800,000	X										
Kentucky	150,000			X								
Louisiana	none						X					
Maine - bb	470,000	X	X	X	X							
Maryland	372,000			X								
Massachusetts - bb	7,000,000				X							
Michigan - bb	200,000									X		
Minnesota	14,200,000	X		X								
Mississippi	500,000	X	X									
Missouri	7,500,000	X		X								
Montana	110,000	X	X									
Nebraska	4,000,000	X	X			X						
Nevada	265,000		X									
New Hampshire	350,000			X								
New Jersey	11,300,000			X								2
New Mexico	none								X			
Ney York	not available											
North Carolina	1,600,000		X	X				X				

Appendix E
State Funding Mechanisms

Department of Environmental Quality
Recommendations for Improving and Expanding Recycling in Michigan

Recycling Funds	Annual Recycling Budget (\$)	Tip Fee	Tire Fee	GRF	Bonds	Business Tax	DOE Oil Overcharge	White Goods	Grants	Haz Waste Disp Fee	SWM Fund	Other
North Dakota	50,000	X										
Ohio	12,000,000					X						
Oklahoma	265,000	X					X					
Oregon - bb	725,000	X		X								3
Pennsylvania	66,000,000	X										
Rhode Island	1,250,000										X	
South Carolina	10,200,000							X				
South Dakota	675,000	X										4
Tennessee	8,000,000										X	
Texas	8,000,000	X	X		X							
Utah	200,000											
Vermont - bb	285,000	X										
Virginia	4,300,000					X						
Washington	22,000,000					X						
West Virginia	1,800,000	X										
Wisconsin	29,000,000	X				X						
Wyoming	62,000											

SOURCES: U.S. EPA - JTR netshare; MACRO; MACREDO; *Biocycle*; Raymond Communications; Ohio EPA; NERC

1 - County
2 - Tax - unknown source
3 - Permit fees
4 - Vehicle registration fee
bb - Bottle Bill