

# Solid Waste and Recycling

## BACKGROUND

Over the last few decades, the generation, recycling, and disposal of everyday garbage and trash—characterized by the U.S. Environmental Protection Agency (EPA) as municipal solid waste (MSW)—has changed dramatically.

### GLOSSARY

#### Municipal solid waste (MSW)

A statutory category of waste pertaining to the refuse of everyday living as opposed to that generated by industrial, agricultural, and other processes; otherwise known as trash or garbage. Commonly includes such commercial, residential, and industrial administrative and packaging waste as paper, office equipment, product packaging, furniture, newspapers, appliances, food scraps, clothing, and bottles.

#### Resource recovery

Collecting, sorting, processing, and manufacturing into new products recyclable materials that otherwise would be considered waste.

#### Solid waste

Garbage, rubbish, ashes, incinerator residue, street cleaning residue, municipal and industrial sludge, solid commercial and industrial waste, and animal waste other than organic waste generated in livestock and poultry production.

### Waste Generation

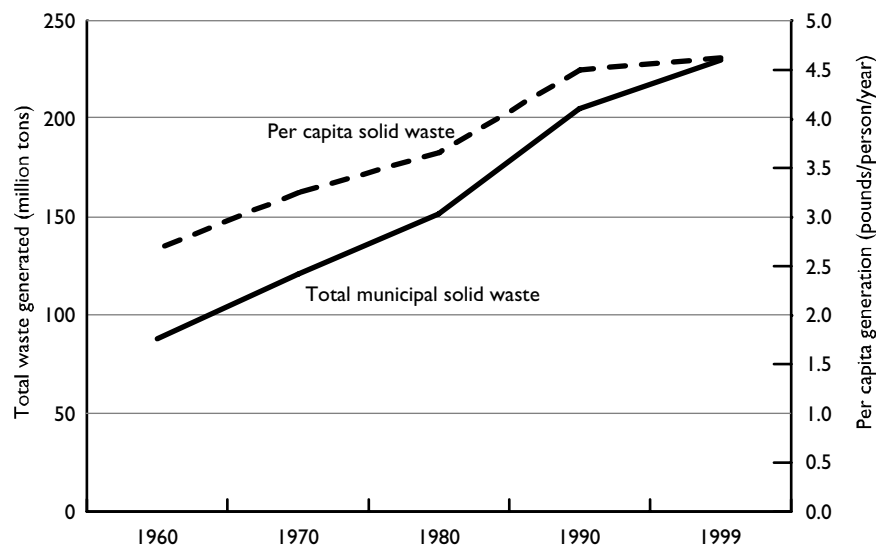
Currently, U.S. residents, businesses, and institutions produce about 230 million tons of MSW annually—approximately 4.6 pounds per person per day. Over the last 40 years the amount of waste generated annually has increased 161 percent and the amount generated per capita is up 70 percent (see Exhibit 1).

Because there are inadequate state data, the Michigan Department of Environmental Quality (MDEQ) uses national per capita estimates by the EPA to estimate the amount of MSW generated in Michigan: nearly 46 million tons annually. Waste generation would be even higher if not for such waste-prevention practices as composting, leaving grass clippings on the lawn, and reducing packaging.

### Waste Disposal

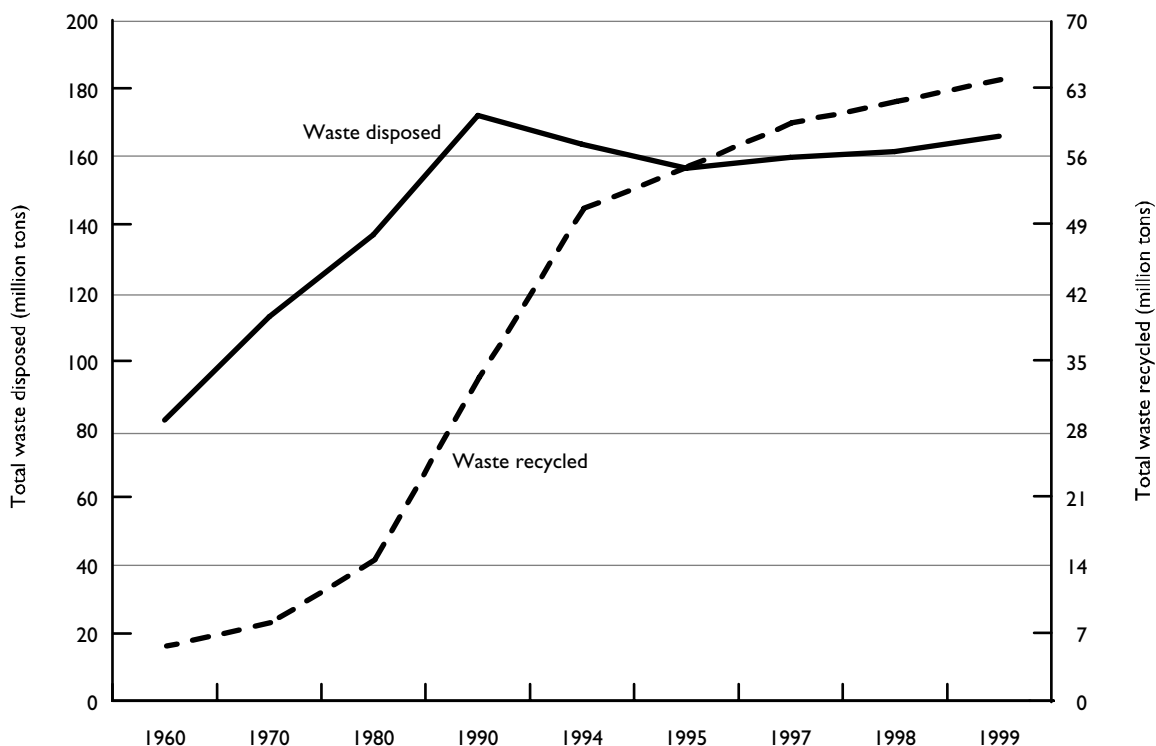
Exhibit 2 shows that the amount of MSW disposed of nationally has doubled over the past 40 years, rising from about 83 million tons annually to 166 million. Fifteen percent is burned at combustion facilities, 57 percent is disposed of in landfills, and 28 percent is recycled.

## EXHIBIT I. Waste Generation, United States, 1960–1999



SOURCE: U.S. EPA (April 2000), Municipal Solid Waste in the United States: 1999 Facts and Figures.

**EXHIBIT 2. Waste Disposal and Recycling, United States, 1960–1999**



SOURCE: U.S. EPA (April 2000), *Municipal Solid Waste in the United States: 1999 Facts and Figures*.

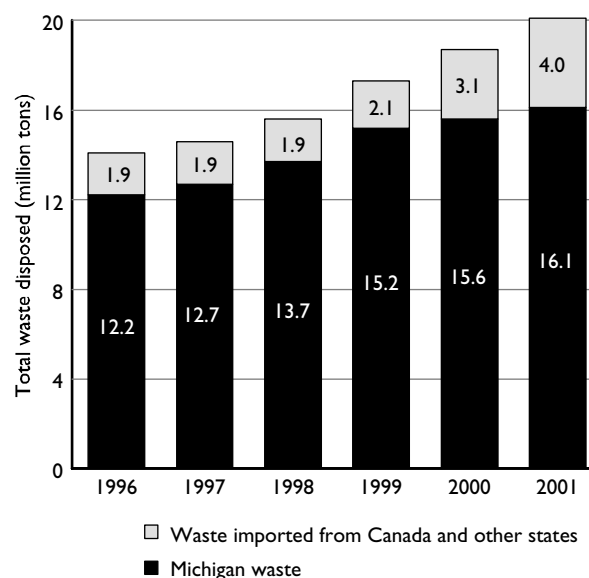
Were it not for waste-prevention measures such as those mentioned above and other resource-recovery efforts, the problem would be much worse. In 1980, the year recycling began to “take off,” the amount of MSW that had to be disposed of nationally was 90 percent; today, at 72 percent, the figure is better.

Michigan MSW disposal-rate information has only recently been collected. In 1996 Public Act 359 amended the state Solid Waste Management Act and now requires landfills to report to the state the amount of waste received from all sources and geographic locations. Exhibit 3 shows that in 2001, 20 tons of MSW were disposed of in Michigan landfills; this is almost 43 percent more than in 1996, when data collection began.

State laws passed in the last decade have helped to reduce the amount of waste going into Michigan landfills, and, in some cases, the waste is put to good use. Examples of waste management include

- barring yard waste from landfills and establishing composting sites—in some, humus is made from the waste for use as a soil conditioner;

**EXHIBIT 3. Solid Waste Disposal, Michigan Landfills, 1996–2001**



SOURCE: Michigan Department of Environmental Quality (April 2001), *Report of Solid Waste Landfilled in Michigan*.

- barring discarded tires from landfills and requiring that they be sent to and disposed of only in locations specifically set up for that purpose—in some, tires are prepared for recycling into other products; and
- barring from landfills products containing toxins and hazardous materials and requiring that they be disposed of in locations specifically established for that purpose—often a deposit is required on such products (e.g., refrigerators and wet-cell batteries) at purchase and refunded when they are returned for proper disposal.

### Waste Management and Planning

The MDEQ's Waste Management Division administers the state's solid-waste program under part 115 of the state Natural Resources and Environmental Protection Act. The division

- reviews the construction permits and operating licenses for municipal and industrial nonhazardous solid-waste disposal facilities;
- inspects those facilities to ensure that they comply with operating requirements;
- manages the disposal-area financial-assurance program, which ensures that facility owners/operators have the funds necessary to meet the costs of (1) closure when capacity is reached, (2) post-closure maintenance and monitoring, and (3) corrective action if needed; and
- administers grants and loans related to waste-management planning and waste alternatives.

Among its other provisions, part 115 requires every Michigan county to develop and implement a solid-waste management plan. The plan must include input, through a local planning committee, from interested local organizations. A plan's purpose is to

- protect public health;
- assure adequate disposal capacity for all waste generated within county borders for 5- and 10-year periods of time;
- establish goals for waste prevention and recycling;
- control waste imported from or exported to other counties;
- define the roles of county and local governments in implementing and enforcing the plan; and
- assure that the county begins to investigate a new disposal site when a current site has less than five and a half years of capacity remaining.

Part 115 requires that the plans be updated every five years. The last round of updates occurred in 1997 and the next round was scheduled for 2002, but the MDEQ director has notified county boards of commissioners that the 2002 round will be delayed because of (1) state budget cuts, (2) pending revisions to the plan format and guidebook, and (3) the fact that many plans have been approved only recently.

### Imported Waste

Among the states, Michigan is the third largest importer of MSW. Imported waste is not held to the same standards as in-state waste, and virtually all out-of-state MSW must be accepted because the U.S. Supreme Court has ruled that solid waste is an article of commerce subject to protection of the U.S. Constitution's Commerce Clause (*Philadelphia v. New Jersey*, 1978).

In 2001 Michigan imported four million tons from Canada, Illinois, Indiana, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin—up 111 percent in the last five years (see Exhibit 3). Imported waste currently comprises 20 percent of all waste disposed of in Michigan, up from 12 percent in 1999. During the past two years, MSW imports from Canada have risen 156 percent and now constitute half of all imported waste received at Michigan landfills, the majority of it coming to Berrien, Monroe, Washtenaw, and Wayne counties.

### Recycling

Nationally, recycling has increased from 10 percent of the MSW generated in 1980 to the current rate of 28 percent. In 1999 resource-recovery efforts prevented 64 million tons of materials from ending up in landfills and incinerators.

Michigan is one of eight states not collecting data about the amount of MSW recycled and/or composted annually. The Michigan Recycling Coalition (MRC) estimates that in 1999 Michigan recycled 2.5 million tons of MSW—about 16 percent of the state's discarded glass, metal, organic matter, paper, plastic, and other products. This is considerably lower than the average (26 percent) of all Great Lakes states. Recycling in Michigan includes curbside collection in 345 locales and drop-off collection in 413 others.

## DISCUSSION

### Bottle Bill

Legislation has been introduced to expand Michigan's so-called bottle bill (passed in 1976) to "new age" drinks, effective January 1, 2003. House Bill 4096 would require deposits on single-serving containers of bottled water, juice, and iced tea; SB 223 would extend the deposit re-

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quirement only to single-serving juice containers. Proponents cite the well-known recycling and environmental benefits that have resulted from the current law, which covers containers for beer, soft drinks, carbonated and mineral water, wine coolers, and canned cocktails.

Opponents claim that expanded coverage will impose a huge burden on retailers, who would have to take the additional returns. Storeowners say that the presence of dirty containers in a store where food is sold poses health risks, which expanding the practice would exacerbate, especially in view of recent changes in the state health code. They also point to the costs (including personnel) of collecting, processing, and storing the empties.

At this writing, a compromise seems possible whereby stores would receive incentives to buy bottle-return machines that are operated by customers, which would reduce retailers' health risks and personnel costs.

### Waste Imports

As mentioned, Michigan is the nation's third largest trash importer. MDEQ officials estimate that Michigan's current major landfills will not fill up for another 15 years, but if garbage imports keep increasing at their current rate—up 47 percent in FY 1999–2000—the state could run out of room in a decade, accelerating the need for new sites.

At the federal level, the proposed Solid Waste International Transportation Act would authorize states to prohibit or limit the receipt and disposal of MSW generated outside the country. A similar bill, the Solid Waste Interstate Transport Act, also under consideration, would ban garbage generated outside a state unless a local government has agreed to accept it or the state specifically permits it. In Michigan, numerous bills are pending to address imported trash.

- In the Senate, SB 46 would hold out-of-state MSW to the same standards as in-state waste—that is, certain types of waste would be prohibited (e.g., wet-cell batteries, tires, and anything containing harmful toxins). Senate Bill 222 would prohibit any imported waste.
- In the House, HBs 5598–99 would require the MDEQ to inspect, at the border, every solid-waste unit transporting trash from Canada to Michigan. HB 5573 would hold waste ash generated out of state to the same standards as that generated in state. HB 5602 would prohibit trash from being imported from Canada unless it is in hermetically sealed containers to prevent it from entering the environment during

transport. HB 5561 would permit a county to ban solid waste or ash from its disposal areas if it was generated in a county that does not have a recycling rate comparable to its own. HB 4317 would prohibit solid waste or ash from being imported from states and countries that do not have a solid waste or disposal regulatory system at least as stringent as Michigan's.

Environmentalists strongly support legislation to restrict or ban the amount of waste being imported into Michigan. Waste-disposal companies fear that such a move would pose economic problems for their business and could harm many landfill-hosting communities as well. For example, Berrien County's Bertrand Township, population 2,300, earns about \$50,000 a year from landfill fees, half from trash trucked in from Indiana and Illinois; the money goes mostly to road improvements.

Michigan may be attracting outside waste in part because it has done a better job of planning. Chicago and South Bend suburbs are among the out-of-state cities that find it less expensive to haul waste to Michigan than to plan, construct, and monitor sites in their own state.

The MDEQ opposes importation of waste from Canada but believes that banning or even limiting it would violate the U.S. Constitution or the North American Free Trade Agreement.

### Scrap Tires

Michigan generates nine million scrap tires annually, which end up in stockpiles across the state that pose such health and safety hazards as breeding disease-carrying mosquitoes and rodents and catching fire from arson, accident, or lightning. Recycling methods developed to reduce the tire stockpiles include chipping the tires for use in gardens, playgrounds, parks, and road resurfacing material and also recycling them into new tires.

One recycling alternative—burning scrap tires to create power—garners considerable controversy. Citizens and environmentalists are concerned about the health implications of emissions from tire-burning power plants, which may contain human carcinogens and components of acid rain. Plant operators and the MDEQ claim that the public is safe as long as air-emissions standards are met. They say that no more pollutants result from burning tires than from burning such common fuel sources as wood and coal. Michigan has eight tire-burning power plants, and permits are being sought for two more.

### Deep-Injection Wells

Deep-injection wells are very controversial. These wells are 4,000 to 5,000 feet deep and injected with liquid waste,

most commonly leachate (liquidized garbage mixed with rainwater). There currently are 21 in Michigan; of the 15 that are active, five are used for hazardous waste. Another well, proposed for Romulus, recently was approved and is awaiting MDEQ licensure.

Opponents to deep-injection wells claim that they pollute the groundwater and pose other environmental hazards as well. Supporters say that the groundwater is safe because the waste is deposited below the water table.

**FOR ADDITIONAL INFORMATION**

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