



MICHIGAN  
RECYCLING  
INDEX



# MEASURING RECYCLING IN THE STATE OF MICHIGAN

EXECUTIVE SUMMARY | MAY 2015



A PROJECT OF THE MICHIGAN RECYCLING COALITION WITH GRANT  
FUNDING FROM THE DEPARTMENT OF ENVIRONMENTAL QUALITY

PREPARED BY



416 LONGSHORE DRIVE  
ANN ARBOR, MI 48105  
734.996.1361 | RECYCLE.COM



# INTRODUCTION

In April 2014, Governor Snyder announced a statewide recycling initiative with the aim of boosting material recovery through public education and technical assistance, provision of convenient access to recycling and development of markets that will capture an increasing stream of recycled content. The plan established benchmarking and measurement as a first step, and the Michigan Recycling Coalition received a pollution prevention grant from the Michigan Department of Environmental Quality (MDEQ) to launch the Michigan Recycling Index. The project's task was to measure access to recycling throughout Michigan, evaluate participation in recycling, and calculate the rate of recycling for municipal solid waste (MSW).

To achieve this goal, the Michigan Recycling Index team worked with sponsors and partners to gather information from many recycling stakeholders in the state including Michigan communities, material recovery facilities, yard waste facilities and take-back program operators. Information sharing was voluntary for all parties, and the MRI team did not receive full data from every recycler in the state, with different types of data proving more readily available than others. To account for data gaps, the project team developed an extrapolation model to make reasonable projections for those regions. In addition to a base recycling rate calculation, conservative and aggressive scenarios were examined for each material category to reflect levels of certainty, and are expressed as a range. The result of the MRI project is a better understanding of Michigan's recycling systems, and the learnings may be used to support state leadership and funding in this arena, attract public and private sector investments, increase the availability of low cost, environmentally beneficial feedstock to manufacturers, and improve program performance at all levels.

# HIGHLIGHTS

## ACCESS

- At least 61% of Michigan households have access to curbside recycling services. 49% have access through municipal or contracted services while 13% have access via subscription services.
- 33% of Michigan households have minimal or no access to convenient recycling – either curbside or convenient drop-off locations.
- At least 34% of Michigan households have access to curbside compost collection for materials such as leaves and yard waste.

## PARTICIPATION

- Participation in recycling programs varies widely across Michigan, from less than 1% of eligible households participating in some programs to over 95% participation in others.
- Curbside recycling programs on the whole reported substantially higher participation compared to drop-off recycling. Across the state, an estimated 38.5% of Michigan households participate in recycling programs in their community.
- Municipalities and counties have very limited information on participation in the recycling programs they offer, leaving them at a potential disadvantage in targeting program improvements.

## RATE OF RECYCLING

- Michigan achieved an estimated MSW recycling rate of 15% in 2013, with a possible range of 12.9%-18.7% based on the parameters in this study.
- The container deposit program accounts for 11% of recycled MSW in Michigan, or 1.7% of total MSW.
- 44% of MSW recycled is made up of 'traditional' recyclable materials collected from commercial and residential sources, while 26% of the total is composted organics, and other source separated streams (such as lead-acid batteries, white goods, tires, e-waste, and textiles) make up the remaining 19%.

## KEY RECOMMENDATIONS

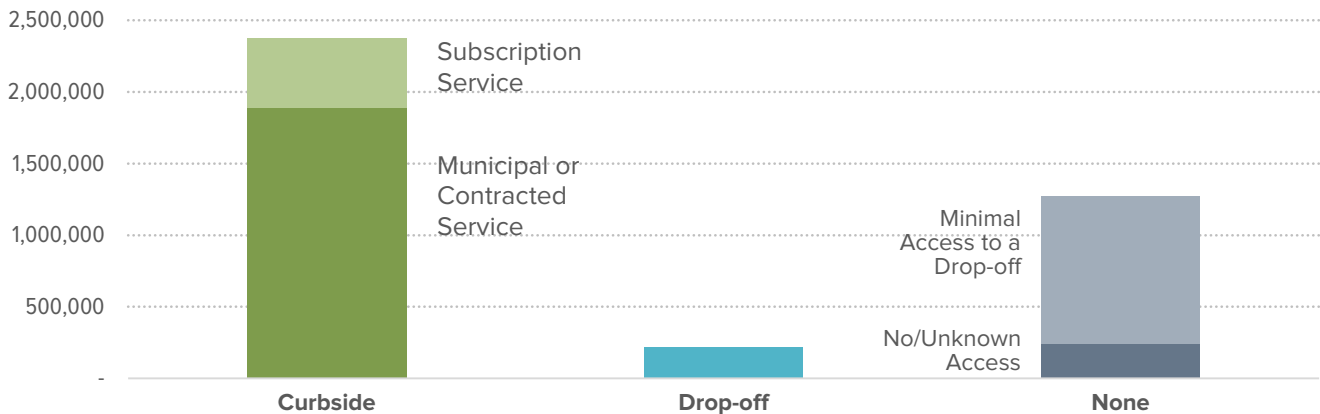
- An aggressive multi-pronged strategy will be required to achieve recycling rate of 30%.
  - Residential recycling improvements alone will not be sufficient to achieve this goal
    - If all households in every city in Michigan with a population greater than 25,000 recycled at the same proportion as reported curbside programs (i.e. 433 lbs recyclables per household annually), the state recycling rate would increase to 16%.
    - If all households in the state (including single family and multi-family) recycled at the same proportion as reported curbside programs (i.e. 433 lbs recyclables per household annually), the state recycling rate would increase to 18.2%.
    - If all households in the state (including single family and multi-family) recycled at the expected level of a high-participation curbside programs (i.e. generating 550 lbs recyclables per household annually), the state recycling rate would increase to 20.2%.
  - Commercial recycling needs to be better tracked and participation increased.
    - Commercial recycling was not well documented in reported data.
  - Increasing the corrugated cardboard recycling rate to be similar to data reported by South Carolina and Delaware, would increase the recycling rate to 18.6%.
- Establishment of systematic and consistent reporting protocols for recyclers will enable MDEQ to more precisely track the performance and improvement of recyclers.
- Additional aspects of the recycling rate calculation should be considered. For example, consider capturing recovered portions of construction and demolition (C&D) materials as a component of diversion rate calculations.
  - For reference, if half of all C&D waste were recycled and included in the calculation, the baseline recycling rate would be 21%.
- Confirm accuracy of reported disposal data
  - If the landfill tonnage were converted from cubic yards using the US EPA conversion ratio of 3.3 tons per cubic yard instead of 3 tons per cubic yard as calculated by DEQ, the baseline recycling rate would be over 16%.

# THE STATE OF RECYCLING IN MICHIGAN

## ACCESS

The Michigan Recycling Index evaluated over 1,700 communities representing at least 95% of the state’s population to evaluate the level of access to recycling and composting services statewide. These services are provided in a variety of ways, including curbside pickup provided by communities, curbside pickup available through subscriptions with private waste haulers, and drop-off locations for recycled materials. The study found that two-thirds (67%) of Michigan households have access to some form of convenient recycling – either municipal or subscription curbside recycling, or convenient drop-off locations (defined by MDEQ as one location for every 10,000 residents of a county). Curbside recycling provided by municipalities is available to 49% of Michigan households, while another 13% have curbside services available via subscription. Drop-off stations are found in the vast majority of Michigan counties and support 94% of the state’s households, but these facilities only reach the 10,000 residents per drop-off threshold for 7% of Michiganders. The MRI project also measured access to compost drop-off and curbside collection services, concluding that at least 43% of Michigan households have access to composting services for materials like yard waste and leaves.

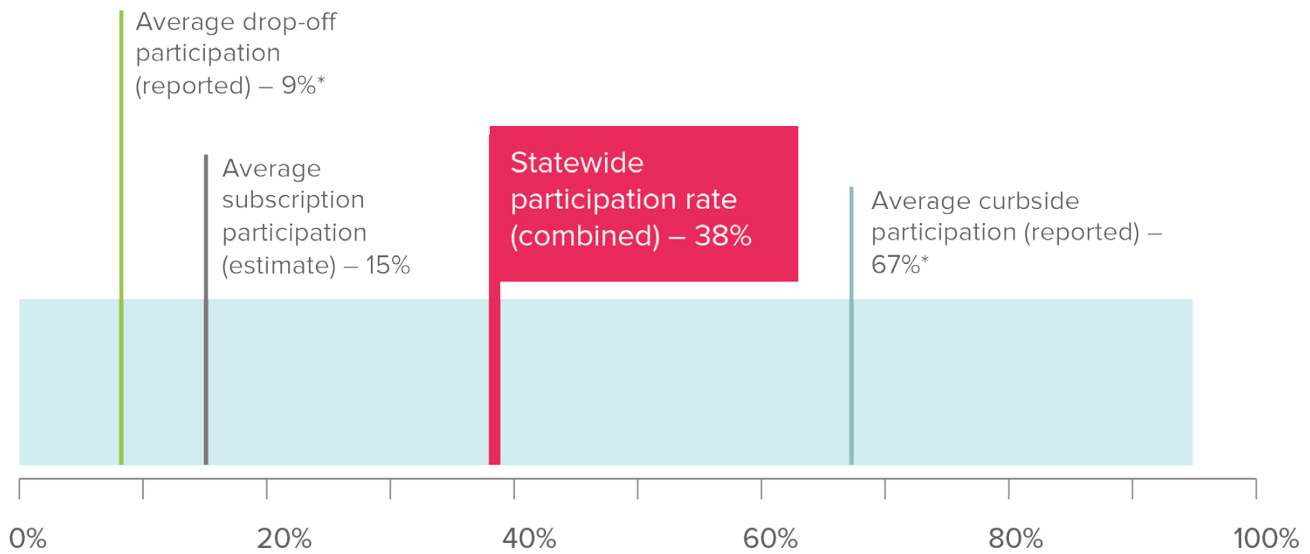
### HOUSEHOLDS WITH ACCESS TO CONVENIENT RECYCLING



## PARTICIPATION

The Michigan Recycling Index compiled data from communities on participation rates for their recycling programs, defined as the percent of households who make use of the program over the course of a year. Although data on participation is limited as this information is challenging for recycling programs to collect, the MRI found a wide range of participation in recycling programs, ranging from less than 1% of households participating to over 90%. This wide range held true for both curbside and drop-off recycling, but outside of the extremes on either end, curbside programs tended to have much greater participation. The average participation rate for drop-off, weighted by program size, was just 9%, compared to 67% for curbside. Based on the availability of access to each type of recycling program, the study estimated that approximately 38.5% of households statewide participated in recycling in 2013.

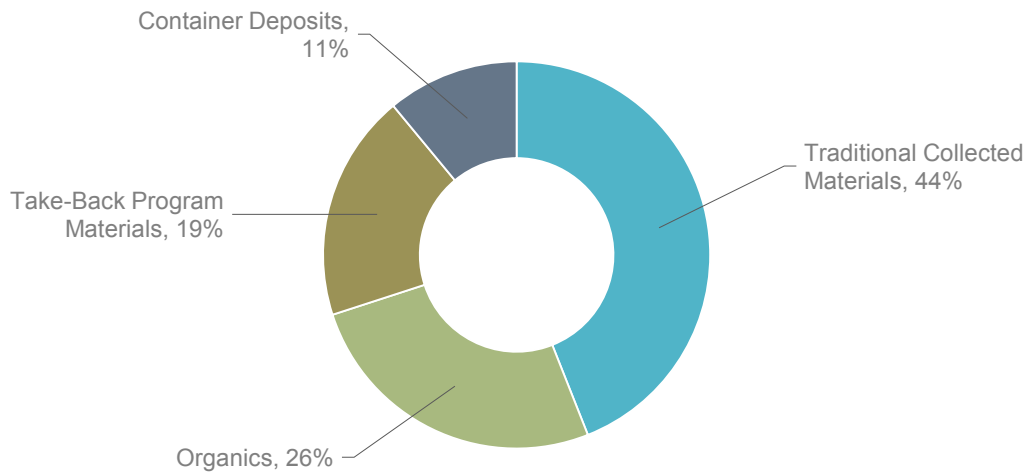
## RANGE OF PROGRAM PARTICIPATION RATES



## RECYCLING RATE

Based on EPA's guidelines for measuring recycling, the MRI project conducted a series of voluntary information-gathering surveys with direct outreach to Michigan municipalities, counties, material recovery facilities, and haulers, and also reached out to Michigan-based paper mills, plastics re-processors and a variety of take-back programs. Through this process, sources and quantities of materials from Michigan curbside and drop-off programs were collected from a respondents and analyzed, in addition to materials that are sent from commercial sources and recycled into new products. In addition to curbside and drop-off collection programs, direct outreach and research was conducted to measure materials collected through take-back programs for e-waste, tires, organics, beverage container deposits, textiles, hazardous household waste and batteries.

## MATERIAL RECYCLED BY CATEGORY IN 2013



Community-specific and facility data was submitted to the MRI project team, then directly applied to the specific communities which it represented. Due to the voluntary nature of information sharing for all stakeholders, a sophisticated model was built to leverage the data that was provided and enable extrapolations to be made to account for data gaps. In addition to a base recycling rate calculation, conservative and aggressive scenarios were examined for each material category to reflect levels of certainty, and is expressed as a range. The study found Michigan to have an estimated recycling rate of 15% in 2013, with a possible range of 12.9-18.7%.

### MATERIAL RECYCLED BY CATEGORY IN 2013

$$\frac{\text{TONS RECYCLED}}{\text{TONS RECYCLED} + \text{TONS DISPOSED}} = \text{RECYCLING RATE} \quad \frac{1,414,029 \text{ TONS}}{1,414,029 \text{ TONS} + 8,026,443 \text{ TONS}} = 15\%$$

Traditional household recyclables collected from commercial and residential sources comprise 44% of the recycling stream, while 26% of the total is composed of organics including yard waste. The container deposit program accounts for 11%, and other materials that are collected through a variety of take-back programs such as lead-acid batteries, appliances, tires, e-waste, and textiles comprise the remaining 19% of the recycling stream.

### MATERIALS RECYCLED IN 2013

