

Institute for Public Policy and Social Research College of Social Science (IPPSR)

Michigan Applied Public Policy Research

Tipping the Scale on Recycling in Michigan:
A State of the State Survey Policy Brief

February 5, 2025



Michigan State University

Center for Community and Economic Development

Prepared By: Jayla Simon, Rex LaMore, Robert Richardson, Rafael Auras

REPORT SUMMARY

This report summarizes the research conducted by a research team out of Michigan State University to gauge the public’s attitudes towards recycling and understand what the outstanding barriers are to recycling behaviors in the state of Michigan. By gaining a better understanding about attitudes and behaviors on recycling, the state can be more strategic in allocating support to targeted recycling infrastructure, public education, and research towards reducing waste, advancing a circular economy and suggesting diverse sets of policies and practices in this critical area.

Considering past recycling behavior research, a comprehensive approach that includes investment in public infrastructure and recycling availability must be complimented with strategies to encourage targeted private investments to reduce waste and increase the recycling, reuse and salvage of materials.

Michigan recycles about 23% of its municipal solid waste, below the national average of 34%. The state generates 17 million tons of trash annually, with landfill capacity projected to last at the current rate of disposal a maximum of 26 more years. Over 22% of Michigan’s trash is imported, mainly from Canada. Comparing average tipping fee rates between Canada and Michigan as well as the difference in a volume-based surcharge service fee program instated in Toronto versus the statewide disposal surcharge program instated in Michigan similar to many programs around the Midwest and the rest of the country has raised questions in Michigan legislature considering waste dumping incentivization.

Additionally, besides Canada, the second biggest importer of waste into Michigan is Ohio, whose disposal surcharge is \$4.75, well over 10-times greater than Michigan's statewide fee. Most significant to the recent initiatives to reform Michigan's surcharge program was Governor Whitmer’s proposal to increase the disposal surcharge to \$5.00 per ton to align with the more expansive regional averages and reduce waste importation.

For context, the Great Lakes region has an average of \$5.30 per ton of trash rate compared to Michigan’s tipping fee of \$0.36 per ton. Whitmer's proposal, however, has faced challenges in legislature due to concerns about increased costs and economic impacts. In December 2023, Michigan passed bills to modernize recycling policies, aiming to increase the recycling rate to 30% by 2025 through infrastructure upgrades, local initiatives, and public-private investments.



Figure 1. Solid waste tipping fees per ton, by state for selected states in the Great Lakes region

WHAT WE DID

The project research team partners, included MSU Center for Community and Economic Development Director Dr. Rex LaMore, Research Coordinator Ms. Jayla Simon, former MSU professor and Ecological Economist with the White House Office of Management and Budget Dr. Robert Richardson, and the MSU Amcor Endowed Chair in Packaging Sustainability Dr. Rafael Auras. The team utilized the MSU's Institute for Public Policy and Social Research (IPPSR) State of the State Survey (SOSS) in order to better understand consumer opinions on some the pressing conversations around Michigan's recycling rates and policy issues, such as waste importation, household recycling behaviors, and the interplaying impact of statewide disposal surcharges and recycling infrastructure. In preparation to administer the SOSS in mid-2024, the MSU team reviewed literature and baseline data to develop a conceptual framework for analyzing a specific, meaningful policy issue. Key findings were that Michigan recycles only 18% of its solid waste, well below the national average, while importing over 22% of its trash from out of state and Canada. At the intersection of these facts lies a series of questions and assertions that are rooted in various research questions to understand Michigan households' recycling behaviors, barriers to recycling, support for importing solid waste, willingness to support higher disposal surcharges, and relevant implications on public policy.

The team conducted preliminary surveys and interviews with landfill operators and waste management industry experts to further the team's understanding of the challenges and opportunities in material recycling and disposal. Interviews with landfill managers highlighted differences in fee structures and perspectives between public and private landfills, and the lack of clear terminology surrounding fees and surcharges that are collected by landfills. Terminology around landfill fees varies, causing confusion over who pays for what. Rooted in the previous research, the team developed six questions, purchased through grant funding, for the State of the State Survey (SOSS). These questions explored household attitudes towards recycling and importing solid waste and support for increasing the statewide disposal surcharge for varying reasons.

The survey was distributed via email to a sample of landlines and cell phone numbers selected and managed by the IPPSR. The MSU SOSS is a phone and online public opinion survey of Michigan adults. SOSS findings are published in top-tier academic journals, guide policy decisions, and receive national media coverage. From pilot projects to full-scale data collection, the MSU State of the State Survey is your source for high-quality public opinion data in Michigan. SOSS has been the force behind scores of faculty, student, and non-profit research projects and publications over the last 20 years (<http://ippsr.msu.edu/survey-research/state-state-survey-soss>) Additionally, findings from a past survey (IPPSR SOSS 87, 2023) informed the selection of specific questions. The research team excluded specific questions from our survey that were most similar to past questions that we deemed reasonable to analyze.

The team organized the data from the SOSS to identify any trends or themes coming through respondent answers. The team then analyzed the organized data and used the identified trends and percentages of responses to pinpoint the most desired ways forward according to citizens. For purposes of analysis the team constructed the following categories.:

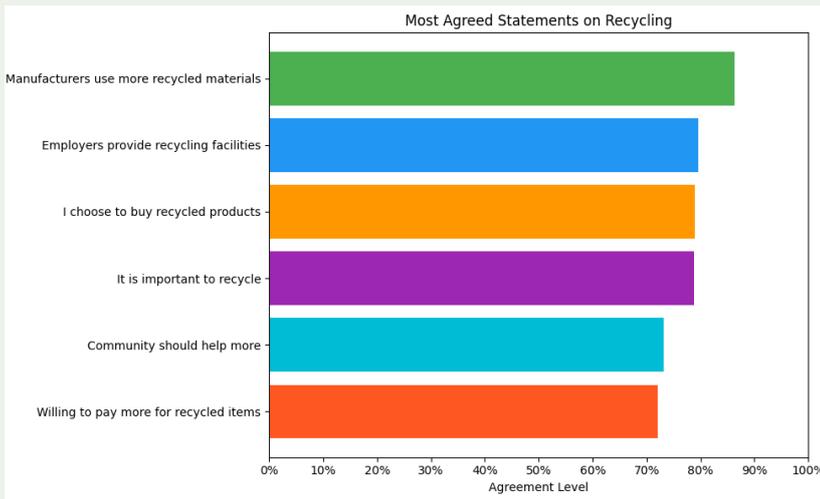
1. Enhance Education on Surcharge Impacts: *Provide more information on the impacts of surcharges and their potential uses, such as importation.*
2. Support Surcharge Increase for Recycling Infrastructure: *Advocate for a surcharge increase to expand recycling infrastructure, making it more convenient and meaningful for consumers to recycle.*
3. Allocate Funds for ‘zero waste’ initiatives: *Funds from a surcharge increase supported by consumers to be directed to ‘zero waste’ solutions can go towards research and efforts in advancing a Circular Economy, targeting policy and business action and relieving some of the burden from consumers and reducing waste streams in general.*
4. Increase Extended Producer Responsibility (EPR): *Adopt extended producer policies and programs that reduce the use of single use products/materials that will reduce the overall waste stream, create economic opportunities for salvage and reuse enterprises and reduce the burden of recycling on consumers.*

SURVEY RESPONSES

In interpreting the data, our team prioritized the most relevant questions for the discussion in this Policy Brief, the following analysis has been presented using percentages that consider the number of respondents who chose each answer out of a total of 1,000 respondents who received the survey. Also, not explicitly mentioned, part of each 100% is made up of respondents who ‘skipped’ the question. Access to the raw data and non-summarized components of the response data can be found on the State of the State Survey page within the IPPSR webpage (<https://ippsr.msu.edu>) under ‘SOSS 89’.

Survey Responses

- Most Agreed Upon Statements on Recycling (Graph 1)

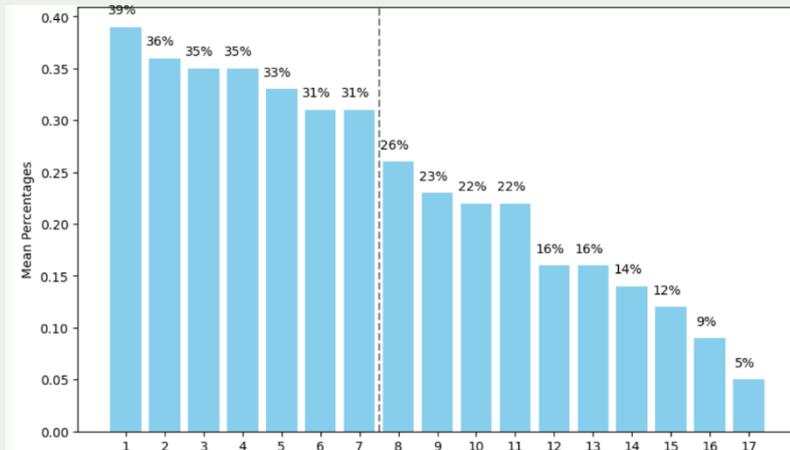


Overall Consumer Attitudes Towards Recycling Rates and Behaviors

The top 6 agreed upon statements about recycling, all over 50% agreement, can be categorized by 3 different responsibility avenues.

- **Producer Responsibility:** Consumers want manufacturers to use more recyclable materials and make recycling straightforward.
- **Expanded Choice Set:** People desire resources that make recycling easier and value more recyclable product options, willing to pay more for recyclability.
- **Community Accountability and Support:** Consumers desire more accessible and diverse resources provided by the community

- Most effective solutions to encouraging consumer to recycle more (Graph 2)



- From highest percentage to lowest percentage: (“What, if anything, would encourage you to recycle more? Select all that apply.”)
 1. Community collecting more types of recycling (39%)
 2. Better availability of recyclable products (36%)
 3. More guidance on packaging about recycling (35%)
 4. More information on what items to recycle (35%)
 5. More conveniently located drop-off sites (33%)
 6. More incentives like cash-back schemes (31%)
 7. More frequent curbside collection (31%)
 8. Improvements to local recycling facilities (26%)
 9. More guidance from local government about which items to recycle (23%)
 10. More information about the recycling facilities available in my local area (22%)
 11. If I could see that it made a real difference (22%)
 12. Improvements to recycling facilities in local shopping areas (16%)
 13. Knowledge about the possibilities of material reuse and benefits to recycling (16%)
 14. Improvements to recycling facilities at local events (14%)
 15. Realistically, I can't see myself recycling more in the future (12%)
 16. Improvements to recycling facilities at my place of work (9%)
 17. Other (5%)

Effective Recycling Initiatives: Community, Corporate, and Public Infrastructure Roles

The top seven responses highlight the key challenges with adequate recycling rates due to insufficient community support and manufacturer accountability.

Top Seven Responses:

- Community collecting more types of recycling
- Better availability of recyclable products
- More guidance on packaging about recycling
- More information on what items to recycle
- More conveniently located drop-off sites
- More frequent curbside collection
- More incentives like cash-back schemes

The research team grouped the responses in the following categories based on accountability

Manufacturers/Industry Role:

- Desire for businesses to simplify recycling and provide significant support suggesting a needed shift of waste management burden from consumers to producers.

Community Role:

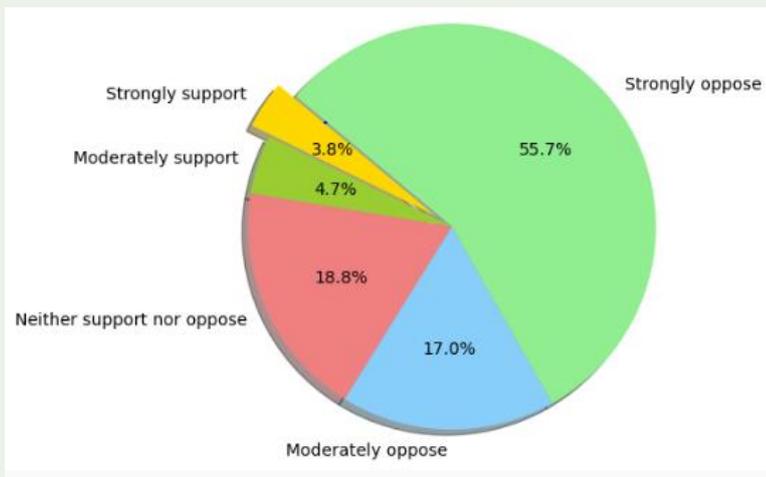
- Desire for communities to improve recycling behavior through investment in additional infrastructure, education, and supportive programs and policies.

Individual Support:

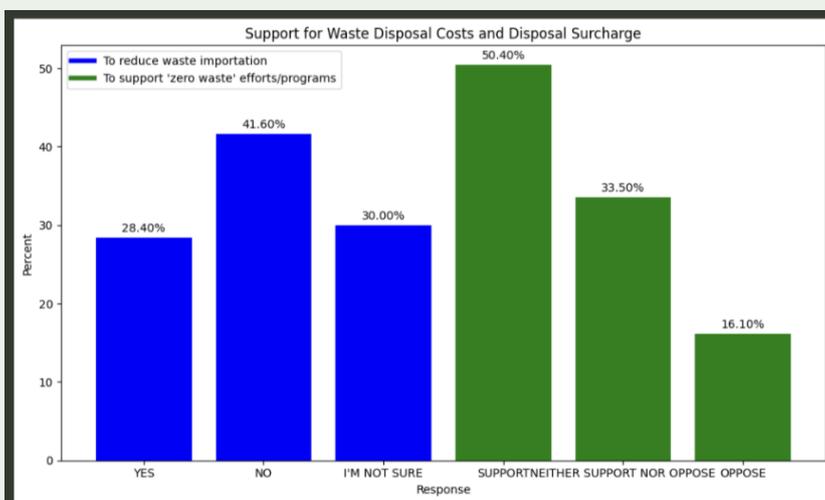
- Desire for community engagement to focus on more instructive public education and increased resources and opportunities for recycling through unique policies or programs, such as cash-back schemes.

Although less than 5% of respondents wrote in “other,” the majority of those who did write something that could be grouped in the following three categories. **Eighteen respondents indicated a barrier** based on special needs. **Fourteen indicated a feeling of apathy** towards recycling, sensing items will end up in the landfill anyway. **Eight had a desire for financial incentives** or ‘cheaper’ ways to recycle. These responses relate to common themes revealed in our data: barrier-based infrastructure needs and a lack of confidence in current recycling methods. This highlights the need for improved infrastructure and stronger community programs to build trust and encourage more effective recycling practices.

- Attitudes towards waste importation (Graph 3)



- Increasing surcharge to reduce importation versus using extra funds for recycling infrastructure and programs (Graph 4)



Public Opinion on the Disposal Surcharge and Funding-Based Issues in Michigan

Key findings:

- A large majority (72.7%) oppose importing solid waste from other states/countries; 55.7% strongly oppose.
- However, only 28.4% are in support of a surcharge increase in order to reduce importation; 30% are unsure about increasing disposal costs: and a large portion (41.6%) oppose the increase.

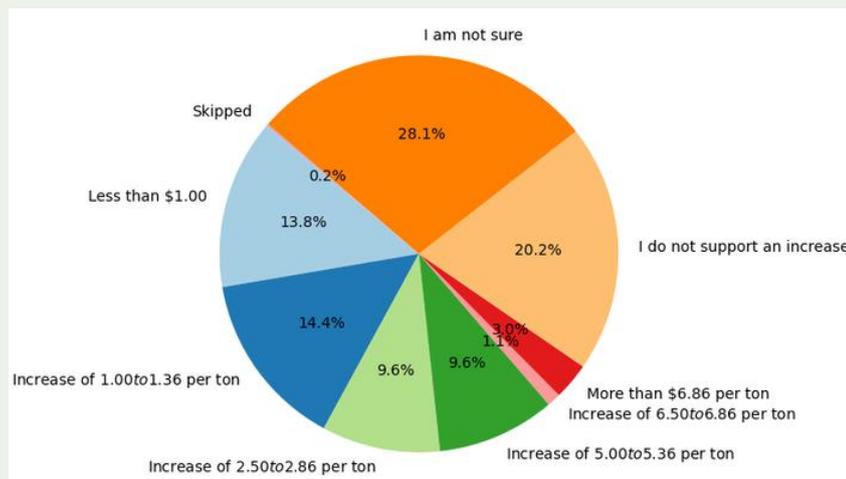
The peculiar variations noted suggests many respondents may not understand the link between low disposal surcharges and high waste importation, which is an assumption suggested by research that increased costs of waste disposal encourages more recycling.

The research team found support for surcharge increase if additional funds are used for "zero waste" and environmental cleanup programs (graph 3):

- 50.4% in favor.
- 33.5% neutral.
- 16.1% opposed.

The findings indicate a $\geq 20\%$ discrepancy between support for surcharge increase to reduce importation versus increase municipal waste reduction resources

- Varying increments of surcharge increase (Graph 4)



- This suggests a lack in understanding the relationship between low disposal surcharges and high waste importation
- This supports a need for public education on the benefits of policy changes and increased government responsibility to align public opinion with sustainable waste management practices.

When respondents were asked about possible different surcharge increases, they indicated the following:

- 14.4% favor \$1.00 to \$1.36 per ton increase.
- 13.8% support less than \$1.00 increase.
- Less than 10% ‘in support’ of increase to \$5.00 to \$5.36
- 20.2% do not support any increase
- 28.1% are unsure.

Most respondents support smaller surcharge increases, and higher increases see less support, with significant opposition and uncertainty indicating concerns about financial burdens and a need for clearer information on the benefits.

CONTEXT

Michigan has one of the lowest recycling rates in the US, recycling only about 23% of its municipal solid waste (MSW) compared to the national average of 34% (Michigan Recycling Coalition, n.d.; EGLE, 2022). The state generates 17 million tons of trash annually, with landfill capacity projected to last 26 more years at the current rate of disposal (EGLE, 2022). Over 22% of Michigan’s trash is imported, mainly from Canada and the rest from neighboring states (EGLE, 2022). Analysis of out of state waste importing and state-imposed surcharges suggests that places with higher surcharges and tipping fees import less trash from outside the state. Michigan’s tipping fee is \$0.36 per ton, much lower than the Great Lakes States’ average of \$5.30 per ton and Toronto’s \$120 per ton (SWANA, n.d.; DeLany, & Belanser, 2024).

A “surcharge” is a fee collected from landfills to fund the solid waste program, while a “tipping fee” is charged for customers to dump waste (O’Laughlin, 2024). Disposal surcharges are added to the service tipping fee, collected by weight statewide and do not change for private versus municipal landfills (O’Laughlin, 2024). In an interview with an EGLE representative from the Sustainable Materials Management Unit, we’ve come to understand that the terms are often used interchangeably across states and localities, which confuses who is paying for which fee and how much fees are in each state (Oyer, 2024). The lack of standard term usage is most perplexing when considering that not every state has a statewide surcharge and the implementation of a surcharge is dependent on each state’s solid waste program. Such confusion speaks to the importance of understanding public opinion and awareness of the issue

The relationship between Michigan’s low tipping fees and waste importation has been an element of policy debate for Michigan’s most recent governors (Li, 2018). In 2018, Gov. Snyder (R) proposed increasing the statewide disposal surcharge to disincentivize landfill growth more rapidly than nearby states. His proposal, however, did not pass through the state legislature (Li, 2018). Again, amid the 2024 state budget discussions, Gov. Whitmer (D) proposed increasing from 0.36 cents a ton, the lowest surcharge in the Great Lakes region, to \$5.00, just under the average of the Great Lakes region (Hermani, 2024). On par with past efforts to launch an initiative to decrease the importation of waste and overall waste generation, the Whitmer administration says the surcharge increase plan is meant to “bring Michigan in line” with regional averages and “stop neighbors from treating the state like a dumping ground” (Hermani, 2024; Li, 2018). This policy proposal is also stalled at the time of this report. The main issues at play in preventing the passage of a disposal surcharge in Michigan lie in the difficulty gaining consensus amidst balancing environmental goals and economic impacts. Concerns for increasing the statewide disposal surcharge are rooted in a variety of concerns ranging from increased costs to households, businesses, and local governments to the interests of private landfill owners to benefit from increased tipping regardless of the source.

IMPROVING RECYCLING RATES

Efforts in the past to achieve better recycling rates have been through targeting consumer behavior and citizen education. For example, Michigan stands out as a leader through its Know It Before You Throw It initiative, funded through EGLE, which has a campaign featuring 'recycling raccoons' that aims to influence residents to recycle more through basic recycling education and attention-grabbing advertising that promotes recycling (EGLE, 2023). While the Michigan Raccoon Recycling Campaign has been extremely successful in its goals, taking partial credit in Michigan’s near 35% increase in recycling rates over just a few years, the campaign is limited in its target on consumer responsibility rather than possible systemic issues inhibiting the recycling rates such as waste importation (EGLE, 2023). Additionally, if the dwindling landfill capacity of Michigan and future national and global goals are going to be achieved, a focus on consumer education will need to expand and accountability must be pursued elsewhere -- that is, at the industry level and greater community level. As research suggests, to develop more effective ways to increase recycling rates, community engagement and consideration of consumer and citizen needs are required not only to

understand reasons why people may or may not recycle but also to inform the policies and plans municipalities may initiate to promote more recycling in the future. An example of a program targeting citizen incentives is the Pay-as-you-throw (PAYT) system in Grand Rapids, where recycling is collected free of charge and waste is priced by size of can (U.S. EPA, n.d.). Thus, the system treats trash services the same as electricity or other utilities, which incentivizes households to recycle more the same way residents might create a habit of turning their lights off when they are not home (U.S. EPA, n.d.). Over 5,000 communities use such a system and constitutes an average of a 44% waste reduction rate in such communities, as opposed to rates like 12% for enforced mandatory recycling (Platt, B. et al., 1990; Eunomia Research & Consulting, 2021; U.S. EPA, n.d.). The success of such incentive-based programs can lead to policy discussions to bridge the gap in consumer behavior. However, to adequately address the compounding issues impacting consumer attitudes, research suggests that significant public and private investment in recycling infrastructure is necessary to facilitate recycling programs, which would encourage more knowledge about and participation in recycling through a more comprehensive system that engages the public and private stakeholders in all facets of the recycling sphere.

Driven by the estimation that the US needs to invest \$17 billion over the next five years to improve the recycling system and get reasonable economic benefits and returns, The Recycling Partnership, a Circular Economy based NGO, proposed a multifaceted approach to advance municipal recycling infrastructures sustainably (The Recycling Partnership, 2021). Informed by various case studies and quantified information about recycling behaviors across the US, the report recommended a multidimensional approach that includes disposal surcharges from waste grantors to pay for recycling operational costs. (The Recycling Partnership, 2021; LaMore, 2020). The logistics of the approach, which aligns with similar findings from studies regarding packaging reform, require collaboration from “all parts of the industry, *all levels of government, policymakers, investors, and the public, to bring it to fruition and maximize its potential* (The Recycling Partnership, 2021). Thus, research points to the implication that effective recycling policies must be informed by consumer and citizen opinion because of the need for collective efforts.

Recent proposals highlight the potential of additional revenue from surcharges to be utilized at a macro-level, emphasizing the connection between waste importation and disposal surcharge and the programs that would benefit from increased funding to improve recycling programs meant to simplify and optimize recycling capacities (Hermani, 2024). Adopting Extended Producer Responsibility (EPR) policies in Michigan is another significant initiative. EPR policies, which shift the responsibility of waste management from consumers and to producers, have been successful globally and are being considered to support recycling infrastructure and reduce landfill waste (LaMore, 2020). Recent legislation in Minnesota mandates producers to manage packaging materials’ lifecycle, requiring registration with a Producer Responsibility Organization (PRO) and fines for non-compliance (Rachal & Quinn, 2024). Product stewardship initiatives, highlighted in a MSU CCED 2020 white paper, emphasize recycling, waste reduction, and reusable packaging (LaMore, 2020). Despite investments in recycling, a disconnect between manufacturers and recyclers hampers effectiveness, and while retailers currently educate consumers on disposal options, manufacturer support could enhance accuracy and reach, making government funding and accountability essential for circular system initiatives.

In addition to this ongoing policy debate about the state's tipping fee the State of Michigan in December of 2023 in an effort to increase the states recycling rate from 18% to 30% by 2025 passed a series of bills substantially modifying the state previously 30-year-old recycling policies. This package of bills referred to as 'PA 115' seeks to upgrade the State's municipal solid waste recycling infrastructure (MRC, n.d.). It calls, amongst other things, for local implementation of materials management initiatives and attracting public and private sector investment in all aspects of material collection, processing, and utilization in manufacturing new products (MRC, n.d.). Part 115 also aims to support both local and statewide education and research efforts; overall, Michigan's Part 115, emphasizes recycling and reuse, engaging communities, and supporting recycling programs through funding, market development, and authority support for sustainable and economically beneficial waste management systems (MRC, n.d.).

It is in this persisting environment of pressure for more comprehensive recycling and reuse systems and policy milieu, further pressured by the dwindling number of years left of landfill capacity in Michigan, that in the spring of 2024 a team of researchers at Michigan State University conducted a statewide public opinion survey to assess the public's attitude towards increasing the state's tipping fee and their attitudes/behaviors related to recycling of household waste.

MAIN FINDINGS AND CONCLUSIONS

To conclude, the research team analyzed responses to the SOSS alongside insights highlighted in research on surcharges and waste generation, policies related to extended producer responsibilities, and findings from interviews and secondary surveys conducted within MSU's connections among the waste management industry and producer sphere. Such an analysis has led to a series of concrete findings and recommendations.

Data from the SOSS suggests that consumers support a disposal surcharge increase, with certain conditions, being that the funds go towards 'zero waste' initiatives and lessen the burden of household recycling expressed through responses. While Governor Whitmer's proposal to increase the disposal surcharge targets a reduction of waste importation, the specific use of the additional revenue from the fee is most often referred to as a general improvement of recycling programs and clean-up. Much oppositional discourse surrounding a surcharge increase focuses on the financial burden of raising the surcharge. Perhaps, suppose policymakers could emphasize the connection between waste importation and disposal surcharges and pinpoint specific programs, institutions, or structural changes that would be inserted with more money. In that case, representatives might be able to move forward feasibly and in citizen favor. Nonetheless, policies introduced to tackle Michigan's recycling discrepancies that involve macro-level changes, such as funding overhaul, are essential to explore further, and now is the time to do so, as industry and consumer support for change is high and the risks of dwindling landfill capacity are higher.

The inextricable link between consumer attitudes, knowledge, and ultimately behaviors suggests that to develop more effective ways to increase recycling rates, community engagement and consideration of consumer and citizen needs are required not only to understand reasons why people may or may not recycle but also to inform the policies and plans municipalities may initiate to

promote more recycling in the future. Some innovative initiatives to encourage more recycling rooted in this understanding of consumer desires already exist, and they employ tactics targeted towards citizen behaviors through various kinds of recycling incentivization and landfilling de-incentivization. Adopting Extended Producer Responsibility (EPR) policies in Michigan is a significant initiative. EPR policies, which shift the responsibility of waste management to producers and consumers, have been successful globally and are being considered to support recycling infrastructure and reduce landfill waste. Support for such initiatives has been growing, as the importance of transitioning business to a circular economy has been more prominent in sustainability discourse and Michigan policymaking discussions.

Efforts at MSU's CCED to establish a Circular Economy Institute through surcharge fund allocations is an example of the suggestion "research and efforts in advancing a Circular Economy, targeting policy and business action and relieving some of the burden from consumers"

- As Circularity and Extended Producer Responsibility (EPR) gain traction, with businesses adopting strategies to reduce material waste and carbon footprints. Michigan State University Circular Economy Institute (CEI) aims to support Michigan's industry and communities in achieving greater circularity. The institute would:
 - a. Collaborate with industry, public, and non-profit partners to research material waste reduction, alternative materials, and safety standards.
 - b. Help industry and public agencies implement best practices in material tracking, waste reduction, and the use of biological and technical material alternatives.
 - c. Enhance job creation and corporate social responsibility within Michigan's circular economy.
 - d. Offer professional certificate programs and other opportunities to build workforce capacity in the circular economy.

FUTURE POTENTIAL

There is a variety of factors that influence material management, and this research focuses on just a few of those. The data presented in this report, along with the raw data from SOSS 89 not included in this report prove only what can be stated as fact, which is reflected in our findings. Such data, however, can also be used to suggest many compelling arguments and aid various directions of research aimed to take on the numerous challenges to tackling the waste stream in Michigan.

Most particularly, more research to develop a direct correlation between disposal surcharge increases and increases in recycling would be helpful for making the surcharge increase and expanded recycling rates in Michigan more feasible. Additionally, such research can be helpful in exploring the nuances between disposal surcharge and tipping fee-related policies, which can be inferred, based on

background research conducted for his brief, to impact the public knowledge and support for or against surcharges. Beyond the conversations about term and transparency nuance, the data and research presented on this policy would be most helpful for learning more and framing arguments around new EPR initiatives, based on the distinct desire for more community and manufacturer accountability, and a desire for more effective recycling and more recyclable products speaks to many of the arguments presented in EPR policies and practices.

This policy brief is a starting point for many varying conversations that are vital to the future of managing Michigan's municipal solid waste stream and developing strategies surrounding recycling, manufacturing, and community engagement in the future.

References

- DeLany, Will & Belanser, Matthew (2024). Disposal Surcharge database. MEDQ & EGLE
- EGLE (2022). Michiganders' recycling rate reaches all-time high as access grows
- EGLE (2022). Report of Solid Waste Landfilled in Michigan for FY 2021
- Eunomia Research & Consulting (2021). 50 States of Recycling: A State-by-State Assessment of Containers and Packaging Recycling Rates. Ball Corporation.
- Hermani, J. (2024). Michigan is No. 1 for trash, but Whitmer wants higher fees to curb imports. Bridge Michigan.
- IPPSR 87. (2023). 87th State of the State Survey (SOSS) Brief Report. Michigan State University
- Li, R (2018). Michigan governor's recycling plans fall short as term expires. Waste Dive
- Michigan Department of EGLE. (n.d.) Recycling Funding. <https://www.michigan.gov>
- Michigan Department of EGLE (2023). Michiganders' recycling rate up to all-time high as access grows. Recycling Raccoons
- Michigan Recycling Coalition. (n.d.). Mission, Vision, & Policy Positions
- MRC (n.d.). Part 115 Update. Michigan Recycling Coalition
- P+PB (2021). New Survey Reveals Gaps in Consumer Recycling Behavior and Knowledge. Paper and Packaging Board
- Platt, B. et al., (1990). Beyond 40 percent: Record-Setting Recycling and Composting Programs. Institute for Local Self-Reliance
- Pyzyk, K. (2019). Recycling Campaign of the Year: Michigan's 'Know It Before You Throw It'. Waste Dive.
- Rachal, M., & Quinn, M. (2024). Minnesota becomes 5th US state with packaging EPR law. Packaging Dive. www.packagingdive.com
- Sarmaniotis, C., & Tilikidou, I. (2000). Consumer Attitudes towards Recycling: Construction of a Reliable and Valid Multi-item Measure. MEDIT, 2, 48-51.
- The Recycling Partnership. (2021). Paying It Forward: How Investment in Recycling Will Pay Dividends. <https://recyclingpartnership.org>
- U.S. EPA. (n.d.). Michigan Counties with Pay-As-You-Throw Programs. <https://archive.epa.gov>