

## Executive Summary

In 1988, Ohio's General Assembly passed House Bill 592, which dramatically changed Ohio's existing solid waste program. This legislation established a comprehensive planning and regulatory process to ensure that adequate and environmentally sound solid waste management capacity is available to manage the waste Ohio generates. To help preserve that capacity and to recognize the inherent value in waste materials, House Bill 592 also initiated requirements to reduce Ohio's generation of waste and increase the State's efforts to recycle.

To facilitate Ohio's reduction and recycling efforts, Ohio law requires the Ohio Environmental Protection Agency (Ohio EPA), working with the Materials Management Advisory Council (MMAC), to prepare and adopt a state solid waste management plan (state plan). Among other purposes, the state plan establishes Ohio's recycling and reduction goals that guide the programs provided by solid waste management districts (SWMDs). The state plan also establishes recycling and reduction strategies to be implemented at the state government level. These strategies are focused on efforts that Ohio's state agencies can take to enhance recycling and waste reduction efforts within the State.

Ohio has made great strides toward reducing its reliance on landfills and directing resources to other uses. This is reflected in Ohio's municipal solid waste (MSW) reduction and recycling rate which increased from 25.2 percent in 2009 to just over 29 percent in 2017. Further, Ohio has a strong network of curbside and drop-off recycling opportunities that give residents the ability to recycle.

Ohio EPA recently implemented two tools to assist businesses with their waste recovery and reuse efforts. The first is the Ohio Materials Marketplace (OMM), a free, online platform for participants to trade usable wastes. To date, OMM users have diverted a cumulative 3.7 million pounds of material from Ohio's landfills and realized more than \$208,000 in savings.

The second tool is a beneficial program which provides mechanisms for using wastes that would otherwise be disposed for value-added applications. These tools complement Ohio EPA's existing technical assistance programs, such as the Agency's compliance and pollution prevention assistance program. That program helps businesses meet their regulatory requirements and minimize waste generation.

Ohio EPA and MMAC monitor the State's progress toward implementing the effective state plan and conditions that affect the recycling industry. If MMAC and Ohio EPA both conclude that circumstances have changed enough to warrant amending the state plan, then they work together to update it.

While reviewing the 2009 State Solid Waste Management Plan (2009 State Plan), the currently effective version, MMAC and Ohio EPA identified several developments that have affected the recycling industry and the sustainability of recycling services (see Chapter 1). MMAC and Ohio EPA considered these developments profound enough to warrant updating the 2009 State Plan.

To address those developments and provide some relief to SWMDs and local communities for rapidly increasing costs of providing services, MMAC and Ohio EPA agreed to refine the existing reduction and recycling goals rather than defining new goals and do that through a partial rather than full-scale update. These refinements give SWMDs additional flexibility to best serve their constituents and achieve the goals of the state plan. Doing a partial update will make this flexibility available to the SWMDs as quickly as possible.

Ohio is committed to waste reduction and recycling and constantly looks for ways to improve those efforts. Ohio faces new challenges due to changes in world markets for recovered materials and the quality of recyclables being collected. These challenges complicate the State's ability to continue its progress. However, the State is committed to developing strategies designed to overcome these challenges. Changes introduced with this state plan are intended to help Ohio overcome these challenges, improve recovery efforts, and support growth of Ohio's economy.

## Changes Introduced with This Revision

This update to the state plan makes several changes to the goals that guide programming provided by the SWMDs. These changes include:

- Renumbering goals 5 through 9 from the 2009 State Plan to 6 through 10 to accommodate a new goal.
- Goal 1 - Infrastructure Goal
  - Reducing the percentage of the population a solid waste management district must provide with the opportunity to recycle from 90 percent to 80 percent.

Reducing the threshold for meeting Goal 1 allows SWMDs to reallocate resources to help bolster successful efforts. Over the past decade, SWMDs communicated that the 90 percent threshold sometimes results in siting drop-off locations in marginal areas. The hope with the revised goal is that recycling programs can be reexamined and strengthened where necessary. The intended result is to balance residents' access to convenient recycling options with the financial sustainability of those options. This is particularly relevant to drop-off recycling locations. Recyclables collected through drop-off recycling locations tend to be contaminated with non-recyclable waste. This increases the costs of processing recyclables and providing those drop-off recycling locations. The change to Goal 1 will allow SWMDs to eliminate some sites that might have financially hindered a district and improve other drop-off locations with a more focused approach.

- Allowing a SWMD to apply for a waiver from Ohio EPA to provide less than 80 percent of the residential population with opportunities to recycle.

This provision primarily addresses drop-offs. To receive a waiver, a SWMD would need to demonstrate that a drop-off performs better than a typical drop-off or because of its location, services a larger population than would normally be expected. This change will allow SWMDs to capitalize on locating recycling opportunities where they will provide the greatest service.

- Goal 2 - Waste Reduction and Recycling Rates
  - Replacing the industrial sector objective of reducing and recycling 66 percent of the industrial solid waste generated with Goal 5.

One of the most chronic limitations is the challenge of simply obtaining data. Each SWMD is required to report to Ohio EPA annually regarding, among other things, the quantities of materials recycled during the previous year within the SWMD. However, the entities that have the data are not required under Ohio's regulations to report to the SWMDs. Consequently, the SWMD has little to no control over the number of entities that respond to a survey or the quality of the data it receives. Often, SWMDs achieve relatively low response rates to surveys and must report incomplete data.

To alleviate the need for SWMDs to obtain data from industrial generators, this state plan replaces the industrial recycling rate with a new goal (see Goal 5 below) focused on providing programs and services to industrial generators. This will allow SWMDs to reallocate time and money previously devoted to obtaining data to helping industrial generators increase their recycling efforts.

- Goal 5 - Industrial Programs and Services
  - Creating a new goal for SWMDs to incorporate a strategic initiative for the industrial sector into its solid waste management plan. The SWMD must make at least three programs, activities, or services available to industrial generators. The SWMD will select programs from a list provided in the solid waste management plan format issued by Ohio EPA.

As stated under Goal 2, obtaining data can be extremely difficult and time consuming. This new goal

will focus on providing industrial generators education, outreach, and behavior changing programming with the goal of increasing their recycling efforts.

## **Chapter 1 — Introduction**

This chapter provides the context in which House Bill 592 was developed and adopted as well as the current state of solid waste management in Ohio.

In the mid- to late-1980s, Ohio faced a wide array of significant solid waste management issues. These issues were due in part to the lack of a comprehensive regulatory structure for overseeing solid waste disposal facilities and partly due to the lack of planning for how to manage Ohio's solid waste. The issues included decreasing landfill capacity, increasing amounts of imported waste, environmental degradation from landfill facilities, lack of solid waste management planning, and desire for local control over the flow of solid waste.

Ohio Revised Code (ORC) Section 3734.50, as established by House Bill 592, requires the state plan to:

- Reduce reliance on the use of landfills for management of solid waste;
- Establish objectives for solid waste reduction, recycling, reuse, and minimization and a schedule for implementing those objectives;
- Establish restrictions on the types of solid wastes disposed of by landfilling for which alternative management methods are available (such as yard waste);
- Establish general criteria for the location of solid waste facilities;
- Examine alternative methods for disposal of fly ash and bottom ash resulting from the burning of mixed municipal solid waste;
- Establish a statewide strategy for managing scrap tires;
- Establish a strategy for legislative and administrative actions that can be taken to promote markets for products containing recycling materials; and,
- Establish a program for the proper separation of household hazardous waste (HHW).

The state plan contains chapters devoted to each of the bulleted topics above. House Bill 592 also required all 88 counties in Ohio to form SWMDs either individually or in combination with one or more other counties. As of 2009, Ohio had 52 SWMDs. Each SWMD is required to prepare a solid waste management plan that demonstrates how the SWMD will achieve the goals of the state plan. Each SWMD is further required to obtain local approval of the plan through a ratification process, submit the plan to Ohio EPA for review and approval, and annually review implementation of the plan. SWMDs are required to revise their solid waste management plans on a regular schedule established in the statute.

Chapter 1 also describes the planning process at the local level, changes in waste management practices, solid waste generated and disposed in Ohio, available capacity at and types of landfills for disposing of solid waste, and imports and exports of solid waste.

## **Chapter 2 — Implementing the 2009 State Solid Waste Management Plan (2009 State Plan)**

Since the 2009 State Plan was adopted, all 52 of Ohio's SWMDs either obtained approval for a revised solid waste management plan or were issued an updated solid waste management plan prepared by Ohio EPA. Of those, 42 chose to meet Goal 1 (recycling infrastructure). These 42 SWMDs represent 77 of Ohio's counties. The remaining 10, representing 11 counties, chose to meet Goal 2 (waste reduction and recycling rates).

Even though they have the choice of meeting Goal 1 or Goal 2, a SWMD needs recycling opportunities to achieve its chosen goal. In 2017, SWMDs relied on the following recycling opportunities to meet both goals.

- 249 subscription curbside programs;
- 449 non-subscription curbside programs; and

- 1,212 drop-off locations.

In 2017, Ohio achieved a residential/commercial (R/C) waste reduction and recycling rate of 29.1 percent, the highest rate ever achieved. Further, the state has exceeded the R/C goal of 25 percent every year since first surpassing it in 2009. Ohio continues to make great strides, but there is always room for improvement.

In 2017, individual SWMDs achieved waste reduction and recycling rates that were quite varied as is demonstrated in the following bullet points:

- For the R/C sector, the waste reduction and recycling rates ranged from a low of a little more than three percent to a high of more than 52 percent.
- 27 SWMDs achieved R/C sector waste reduction and recycling rates of 25 percent or greater.
- 35 SWMDs achieved industrial sector waste reduction and recycling rates of 66 percent or better.

### **Chapter 3 — Goals for Solid Waste Reduction, Recycling, Reuse, and Minimization**

This chapter establishes 10 goals designed to further waste reduction and recycling in Ohio. Goals 1 and 2 have always been considered the primary goals for SWMDs. Although encouraged to attempt to achieve both goals, SWMDs are required to demonstrate compliance with either Goal 1 or Goal 2, not both. Apart from Goal 9 which is a voluntary goal, SWMDs are required to meet the remaining goals. As a result, SWMDs are required to demonstrate compliance with a minimum of eight of the 10 goals. The 10 goals are as follows:

#### **Goal 1 — Recycling Infrastructure**

The SWMD shall provide its residents and commercial businesses with access to opportunities to recycle solid waste. At a minimum, the SWMD must provide access to recycling opportunities to 80 percent of its residential population in each county and ensure that commercial generators have access to adequate recycling opportunities.

#### **Goal 2 — Waste reduction and recycling rates**

The SWMD shall reduce and recycle at least 25 percent of the solid waste generated by the residential/commercial sector.

#### **Goal 3 — Outreach and Education – Minimum Required Programs**

The SWMD shall provide the following required elements:

- A web site;
- A comprehensive resource guide;
- An inventory of available infrastructure; and,
- A speaker or presenter.

#### **Goal 4 — Outreach and Education**

The SWMD shall provide education, outreach, marketing, and technical assistance regarding reduction, recycling, composting, reuse, and other alternative waste management methods to identified target audiences using best practices.

#### **Goal 5 — Industrial Programs and Services**

The SWMD shall incorporate a strategic initiative for the industrial sector into its solid waste management plan.

#### **Goal 6 — Restricted Solid Wastes, Household Hazardous Waste (HHW) and Electronics**

The SWMD shall provide strategies for managing scrap tires, yard waste, lead-acid batteries, HHW, and obsolete/end-of-life electronic devices.

#### **Goal 7 — Economic Incentives**

The SWMD shall explore how to incorporate economic incentives into source reduction and recycling programs.

**Goal 8 — Measure Greenhouse Gas Reduction**

The SWMD will use U.S. EPA's Waste Reduction Model (WARM) (or an equivalent model) to evaluate the impact of recycling programs on reducing greenhouse gas emissions.

**Goal 9 — Market Development**

The SWMD has the option of providing programs to develop markets for recyclable materials and the use of recycled-content materials.

**Goal 10 — Reporting**

The SWMD shall report annually to Ohio EPA regarding implementation of the SWMD's solid waste management plan.

**State Strategies**

To facilitate achieving waste reduction and recycling in Ohio, this state plan establishes the following 10 strategies to be implemented by Ohio's government agencies:

**Strategy 1**

In collaboration with The Ohio Manufacturers Association, the Ohio Chamber of Commerce and other trade organizations, identify recycling-related programs and services industrial generators need/would like to be offered.

**Strategy 2**

Ohio EPA will collaborate with The Ohio Manufacturers Association and the Ohio Chamber of Commerce to encourage industrial reuse/recycling from a state level.

**Strategy 3**

Ohio EPA will evaluate its ability to establish an information clearinghouse for outreach/education resources on the Agency's website.

**Strategy 4**

Ohio EPA will assist local communities make information about what can/can't be recycled available. In carrying out this strategy, Ohio EPA will focus on using social media.

**Strategy 5**

Ohio EPA will investigate a procedure to identify new solid wastes, new contaminants, and new recyclable materials that need to be monitored and addressed.

**Strategy 6**

Ohio EPA will investigate ways of reducing contamination at drop-offs.

**Strategy 7**

Ohio EPA will include contamination reduction efforts as priorities in the Agency's Recycling and Litter Prevention Grants program.

**Strategy 8**

Ohio EPA, working with appropriate stakeholders, will investigate the best strategy for providing recycling services to residents in multi-family housing structures. Such a strategy could involve:

- working with property managers, condominium associations, and housing boards to establish and contract for on-site recycling services;
- siting drop-offs in areas with high concentrations of multi-family housing;
- developing a how-to manual for starting a recycling program for multi-family housing; and,
- targeted promotion to residents in multi-family housing about their recycling options.

### Strategy 9

Ohio EPA will develop a hierarchy that represents a phased approach for communities to implement recycling programs, services, and education. The first tier of the hierarchy would consist of basics. Each subsequent tier would consist of more advanced activities. The premise is that as a community has experience and resources, it makes continuous improvement by expanding the scope and complexity of available programs.

### Strategy 10

Ohio EPA will develop case studies to profile programs for achieving Goal 4. To be profiled, a program must have successfully resulted in changing recycling behavior.

## ***Chapter 4 — Restrictions on the Types of Solid Waste Disposed of in Landfills and Burned in incinerators***

Restricting wastes from disposal avoids potential environmental problems by managing high volume, potentially harmful, and difficult to manage wastes through more appropriate options. Restrictions on how certain waste materials can be managed are also a means of preserving landfill capacity. Furthermore, restrictions are a tool for recovering value from waste. Ohio's solid waste regulations mandate the following restrictions:

- **Yard Waste:** Ohio's current yard waste restriction bans source-separated yard waste from being disposed of in solid waste landfill facilities and burned in incinerator facilities.
- **Scrap tires:** Ohio's scrap tire restriction bans all whole and shredded scrap tires from being disposed of in landfill facilities (except for landfills or landfill units specifically designed to accept only scrap tires).
- **Lead-acid batteries:** Ohio law prohibits anyone from commingling a used lead-acid battery with solid waste or disposing of a used lead-acid battery at a solid waste facility.

Ohio EPA does not regulate most solid waste generators or transporters<sup>1</sup>. The Agency regulates where waste is managed and disposed. That means Ohio EPA cannot prevent generators or transporters from putting restricted wastes in general trash. That precludes Ohio EPA's ability to enforce a material restriction. Thus, this revision of the state plan does not recommend new material restrictions. Instead Ohio and the SWMDs will focus on developing alternative strategies for waste streams that can be properly managed through a method other than disposal. Such a focus places a strong emphasis on educating residents regarding alternative management options for specific non-restricted waste streams (such as major appliances, electronic equipment, and used oil).

## ***Chapter 5 — Revised General Criteria for the Location of Solid Waste Facilities***

Prior to House Bill 592, Ohio's solid waste regulations provided limited requirements governing the appropriateness of a location for constructing and operating a solid waste facility. Today, Ohio has comprehensive siting criteria which are reviewed every five years in compliance with Ohio's rule review process. From 2009 to 2019, Ohio did not adopt any new siting criteria or revise the existing rules.

While preparing this version of the state plan, Ohio EPA was performing a five-year review of the landfill rules and had issued a draft version of the municipal solid waste landfill rules for interested party comment. If adopted, those rules would change the existing siting criteria from applying to the entire facility boundary to applying to sources of pollution (for example, areas of waste placement, areas of leachate storage) within the facility boundary.

Given the comprehensiveness and regular reviews of Ohio's siting criteria, the state solid waste management plan now plays a minor role in influencing the program. For that reason, this version of the state plan defers to the rule development process for any recommendations to siting criteria.

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<sup>1</sup> The scrap tire restriction is an exception because Ohio's law gives Ohio EPA the authority to regulate generators, transporters, and facility owners/operators.

## **Chapter 6 — Management of Ash Resulting from the Burning of Mixed Municipal Solid Waste**

When House Bill 592 was passed, Ohio's solid waste management community anticipated that incinerating solid waste would be an important component of Ohio's overall waste management system. As a result, the General Assembly wanted to foster alternatives to disposal for the resulting ash.

In 2009, there were no operating incinerators burning mixed municipal solid waste. Therefore, managing municipal solid waste combustion ash is not a pressing issue for Ohio. Furthermore, Ohio EPA does not expect incineration to become a significant solid waste management option soon due to the expense of upgrading existing incinerator facilities to meet current air emission standards and the time required to issue a permit to install for a new facility. Consequently, this state plan does not recommend alternative methods for managing municipal solid waste incinerator ash.

## **Chapter 7 — A Statewide Strategy for Managing Scrap Tires**

When House Bill 592 was passed, Ohio lacked a regulatory program to ensure that scrap tires were managed properly. Ohio now has a comprehensive scrap tire management regulatory program that is more than 25 years old. More importantly, Ohio's five-year review requirement provides regular opportunities to make needed changes to the program.

Given the maturity of and regular updates made to Ohio's scrap tire program, the state solid waste management plan now plays a minor role in influencing the program. For that reason, this chapter summarizes recent developments in and plans for the scrap tire program rather than recommend changes to the program.

Ohio EPA was reviewing the scrap tire rules at the time this state plan was prepared. The Agency was proposing the following changes to the rules:

- Re-organize the scrap tire rules into a new program chapter in OAC 3745-580. This re-organization would involve rescinding the existing scrap tire rules in OAC 3745-27 and promulgating new rules in OAC 3745-580. The current 20 scrap tire rules are lengthy and contain multiple sub-level paragraphs. By re-organizing them, the rules can be better organized and spread out more appropriately over an entire chapter of the Administrative Code.
- Require owners of scrap tire facilities that are excluded from licensing and registration/permitting requirements to secure scrap tires in a way that minimizes theft.
- Remove the requirements that mirror Ohio's Fire Code for excluded scrap tire facilities. Ohio Fire Code requirements will remain in the scrap tire rules for the licensed and registered/permitted scrap tire facilities.

One of the primary purposes of the scrap tire program is addressing illegal accumulations of scrap tires through enforcement and cleanup activities. Those efforts are ongoing. To facilitate compliance and reduce illegal dumping of scrap tires, Ohio EPA was developing a scrap tire toolkit. The toolkit is designed to be a resource that Ohio EPA inspectors, health departments, solid waste management districts, and local law enforcement can use to educate and evaluate scrap tire generators' compliance with Ohio's requirements. Ohio EPA planned to pilot and evaluate those tools for effectiveness.

In 2019, Ohio EPA was preparing to launch a survey designed to learn what prevents and motivates businesses that generate scrap tires to comply with Ohio's regulations. Ohio EPA intended to survey both owners of businesses that generate scrap tires and the Agency's partners that regulate scrap tire generators. These partners include solid waste management district staff, Ohio EPA and health department inspectors, and local law enforcement officers. Ultimately, Ohio EPA planned to use the responses to develop a statewide approach for providing education and outreach to scrap tire generators.

## **Chapter 8 — A Program for Managing Household Hazardous Waste**

Household hazardous waste (HHW) is any material discarded from the home that may, because of its nature, pose a threat to human health or the environment when handled improperly. HHW can have many of the same properties as industrial hazardous waste. However, because of the small amount of HHW generated at a household and impracticability of regulating every household, HHW is specifically excluded from regulation as a hazardous waste by both the federal and Ohio's hazardous waste programs.

SWMDs are required, in their solid waste management plans, to provide a strategy to address HHW. The specific strategy chosen is left to the SWMD's discretion. Thus, as would be expected, there is a wide range of strategies being implemented by Ohio's SWMDs. Some SWMDs focus their attention on preparing and distributing literature regarding alternatives to hazardous materials and proper ways of managing HHW. Other SWMDs provide technical assistance to homeowners via telephone hotlines. Still other SWMDs host collection programs for HHW from residents. In 2017, more than half of the SWMDs provided collection programs for their residents.

## **Chapter 9 — Recycling Market Development**

Having adequate demand for recyclable materials is widely acknowledged as a critical component for the success of recycling programs. Strong demand translates into strong markets and higher prices paid for recovered materials. Higher prices increase the economic incentive for collecting materials, stimulate investment by private waste companies in improved processing and collection systems, and may lead private companies to more aggressively expand their customer bases. Strong demand and markets also make creating and expanding residential recycling services more attractive as the net costs associated with these programs decrease due to the increased return on the collected materials. The same dynamics make recycling more attractive for commercial and industrial generators of waste. Ultimately, strong demand for recyclable materials results in the high value of those materials as well as improved economic return and lower costs associated with recycling activities. These factors make recycling a more attractive choice when compared to the alternative management option – disposing of the materials in landfills.

Establishing a market development strategy for Ohio is one of the functions of the state plan that is especially relevant to that state's recycling industry. This is particularly true given the current low quality of recovered materials. Therefore, this state plan provides an analysis of the barriers and opportunities for four materials: food waste, plastics, glass, and fiber. Ohio's main vehicle for influencing markets is the recycling and litter prevention grant program. Therefore, Ohio EPA will evaluate the priorities for grant funding and adjust those priorities as needed. In addition, there are multiple opportunities for Ohio EPA to work with other stakeholders to improve Ohio's demand for recovered materials. Some of the opportunities identified for the market development strategy include:

- Making equipment for food recovery eligible for grant funding;
- Assist potential owners/operators of class 2 composting facilities identify acceptable sites;
- Leveraging Ohio's grants with grants and loans available through other sources;
- Conducting a study of Ohio's material recovery facilities (MRF) to identify how best to target investments in equipment;
- Establishing a glass depot in northeastern Ohio to give local service providers a local drop-off point to process glass to remove major contaminants and to consolidate glass for transportation to southwestern Ohio;
- Establishing a plastic-only MRF; and
- Establishing a fiber-only collection program.

Implementing those opportunities would require cooperation from many stakeholders, including state and local governments, private waste companies, manufacturers that use recovered materials as feedstock, and solid waste management districts.