

## RESOLUTION

To Adopt the 2023 City of Alexander City, Alabama Solid Waste Management Plan

**WHEREAS**, the Alabama legislature enacted Alabama Act Number 89-824 in 1989; and

**WHEREAS**, the act requires the Alabama Department of Environmental Management (ADEM), the state's Regional Planning Commissions, and units of local government (counties and municipalities) to plan for the orderly management of solid waste generated in the state, prepared every ten (10) years; and

**WHEREAS**, the City of Alexander City, Alabama, (city) located in the western portion of Tallapoosa County, adopted their most recent Solid Waste Management Plan (SWMP) in 2013; and

**WHEREAS**, it is now necessary to update the SWMP to reflect current activities associated with solid waste in the city; and

**WHEREAS**, the proposed agreement is shown as Attachment "A"; and

**WHEREAS**, the SWMP is intended to serve the city for the next ten (10) years and will be updated as required by ADEM or as deemed necessary by the city to continue to achieve its solid waste management goals.

**NOW, THEREFORE, BE IT RESOLVED** that the City Council of the City of Alexander City, Alabama hereby authorizes the Mayor to execute the Solid Waste Management Plan, as attached.

**BE IT FURTHER RESOLVED** that the Mayor is hereby authorized to sign any and all other documents and agreements necessary to carry out the intent of this resolution.

**ADOPTED THIS 14TH DAY OF DECEMBER, 2023.**

**FOR PUBLIC RELEASE**

By: Audrey "Buffy" Colvin, President

Alexander City Council

AUTHENTICATED THIS 11<sup>TH</sup> DAY OF DECEMBER, 2023.

**FOR PUBLIC RELEASE**

By: Stephanie J. Southerland,  
City Clerk

APPROVED:

**FOR PUBLIC RELEASE**

By: Curtis "Woody" Baird,  
Mayor

Yeas: Hardy, Colvin, E. Brown, C. Brown, Keel

Nays: None

RESOLUTION BOOK 23-131

# **The City of Alexander City**



## **Solid Waste Management Plan**

**Adopted: December 11, 2023**

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## **1.0 INTRODUCTION AND BACKGROUND**

In 1989, the Alabama Legislature enacted Alabama Act Number 89-824 (ACT). The act requires the Alabama Department of Environmental Management (ADEM), the state's Regional Planning Commissions, and units of local government (counties and municipalities) to plan for the orderly management of solid waste generated in the state. Pursuant to the ACT, plans are prepared every 10 years and are referred to as Solid Waste Management Plans (SWMP).

The City of Alexander City (City) is located in the western portion of Tallapoosa County. The City's demographics are varied and have changed significantly over the years. The City was once a heavy industrial town with Russell Mills being the largest employer in the City. Russell has been reducing its Alexander City facilities for many years and now is almost entirely. As a result, the economic base of the City has shifted to light commercial and industrial and the development around Lake Martin. Lake Martin has seen a large development boom of weekend and retirement homes. Although not all of these homes are in the City, many businesses depend on this development.

The City completed its most recent SWMP in 2013. Since then, there have not been many changes in the way solid waste is handled in the City. This plan will serve to update elements of the 2013 plan to reflect current activities associated with solid waste in the City. The plan includes updated waste production estimates, collection and hauling information, a summary of existing and future disposal facilities, and a summary of recycling operations in the City.

The format of this plan follows the guidance stated in Code of Alabama 2022, §22-27-47. A copy of the Code is included as Appendix A.

The resolution adopted by the Alexander City Council, affidavit of advertisement of public notice, attendee list from the public hearing, any comments from the public hearing, responses to these comments, etc., are included as Appendix D.

## **2.0 PLAN GOALS**

The goal of the City of Alexander City Solid Waste Management Plan is to provide for the orderly management of solid waste generated within the City's corporate limits. Specific goals of the solid waste management plan include:

- Ensuring citizens and commercial and industrial enterprises within the corporate limits have access to waste collection services either through the City's collection contract or through private contract with waste hauler(s) operating in the City.
- Providing adequate waste disposal capacity for the City. Landfills providing this capacity should be properly managed, self-supporting, and financially viable.
- Continuing to identify, halt, and clean up illegal dumping within the City.
- Encourage recycling and the availability of recycling collection either through City sponsored collection bins or locally operated recycling centers so long as economically feasible or desired.

It is intended that this SWMP will serve Alexander City for the next 10 years. Information within the SWMP will be updated as required by the Alabama Department of Environmental Management or as deemed necessary by the City to continue to achieve its goal.

### **3.0 SWMP SCOPE AND BOUNDARIES**

This plan includes all areas within the City of Alexander City corporate limits. To the extent practical, the information presented has been obtained directly from haulers, landfills, and City personnel. Where the varied nature of waste generation and collection throughout the City makes direct determination of certain waste characteristics difficult or a “reasonableness” standard is required, reference materials such as the EPA’s Advancing Sustainable Materials Management: 2018 Fact Sheet (found in Appendix B) have been used.

Certain waste streams generated in the City are considered negligible to the extent that their quantity is small and difficult to estimate. These include hazardous wastes, waste oils, wastes from spills, and industrial wastes. Management of these wastes is therefore not addressed by this document.

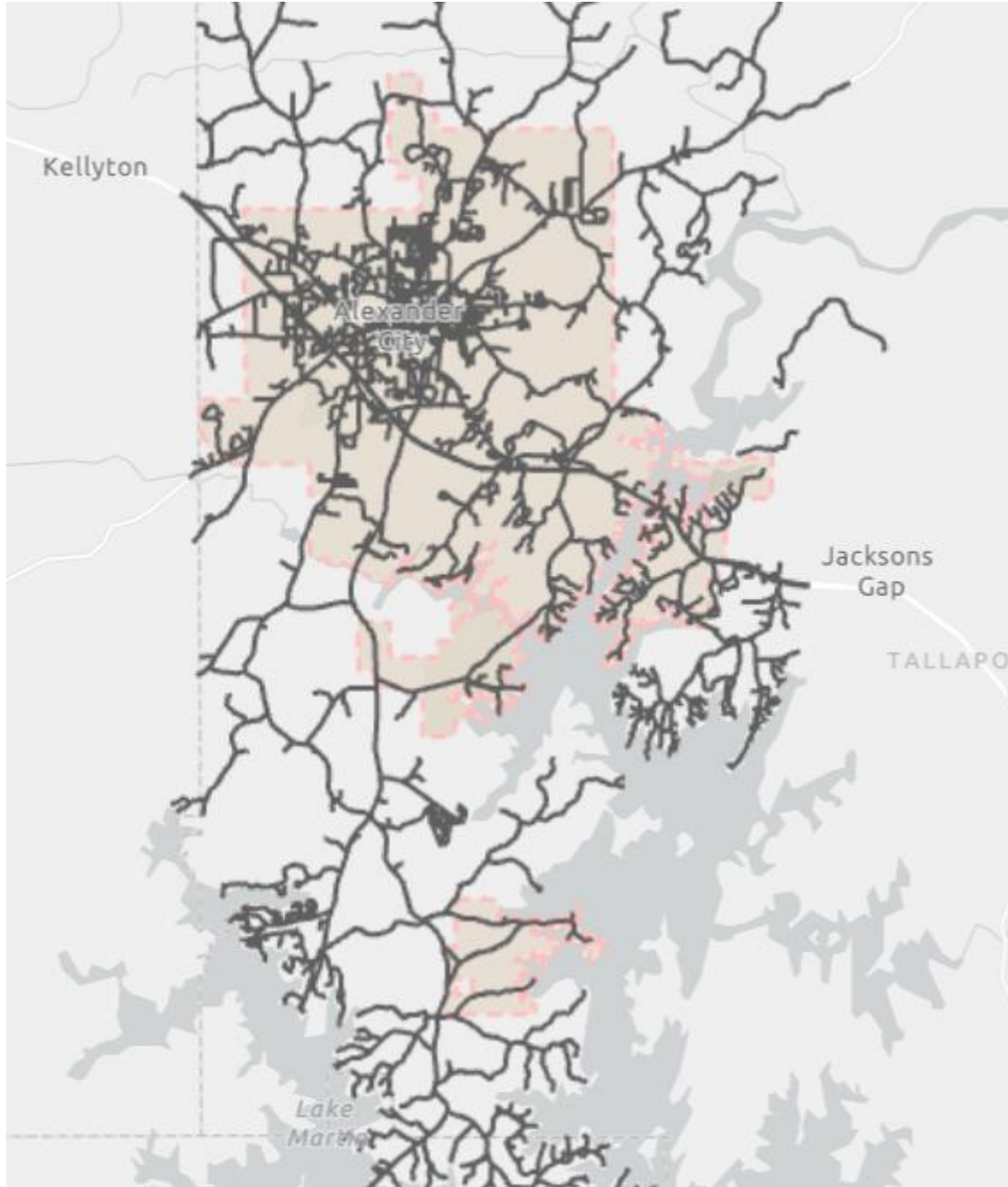
### **4.0 CITY STATISTICS**

Figure 1 shows the municipal boundaries of Alexander City. The City covers approximately 44 square miles. The City has historically had a large industrial base resulting from the operation of Russell Mills. Over the last several years, Russell has moved its operations out of Alexander City and predominantly relocated them to Latin and South America. As Russell Mills has decreased

employment, the population has generally followed the same trend. The City's population has steadily declined between 2010 and 2022 dropping from 14,875 in 2010 to 14,636 in 2022. Table 1 shows the US Census estimates for Alexander City. Since the decline rate varies from year to year and is generally slow, a population growth rate of 0.00% and the 2022 population are used for this plan.

<b>TABLE 1 THE CITY OF ALEXANDER CITY POPULATION STATISTICS (US CENSUS BUREAU)</b>	
<b>Year</b>	<b>Estimated Population</b>
2010	14,875
2020	14,843
2021	14,741
2022	14,636

FIGURE 1: The City of Alexander City Corporate Limits



## **5.0 SOLID WASTE GENERATION**

A direct measurement of the solid waste generated in the city at any point in time can be difficult. Alexander City's solid waste can be divided into two waste streams, municipal solid waste (MSW) and construction and demolition waste (C &D). C & D waste is commonly referred to as inert waste.

MSW generated by all City residents is collected and disposed of under contract through the City of Alexander City with a solid waste service provider. All commercial and industrial businesses located within the City either contract directly with a service provider for collection and disposal or collect and dispose of the waste themselves. For this plan, per capita waste generation is based on Alexander City MSW tonnages received at the Stones Throw Landfill for the year 2022. In 2022, 4,900 tons<sup>(1)</sup> of residential MSW was received from a population of 14,636. This equates to a per capita generation rate of 1.83 pounds per person per day.

The 2022 per capita MSW generation rate is used as the base rate for the Plan. Use of this rate is based on the following assumptions:

- The amount of MSW generated by City residents and not disposed of in the curbside collection program is negligible.
- The year 2022 was a "typical" year for MSW generation from Alexander City.

A broad "check" of this approach is a comparison with numbers from the United States Environmental Protection Agency's Advancing Sustainable Materials Management: 2018 Fact Sheet (found in Appendix B). EPA estimates

<sup>(1)</sup> This information was obtained from GFL Environmental.



a gross MSW generation rate of 4.91 pounds per person per day in 2018. According to the EPA report, the MSW generation rate has increased steadily over the past 10 years until 2018 when the generation rate increased significantly up from 4.51 in 2017. This rate includes yard trimmings (12.12%) and wood wastes (6.18%), both of which are typically found in a construction and demolition waste stream. Also included is a 32.1% combined recycling and composting rate. Subtracting yard trimmings and wood from the gross generation rate results in a net MSW generation rate of 4.01 pounds per person per day. After accounting for recycling and composting, this number is further reduced to 2.43 pounds per day per person. This number is about 0.6 pounds per person per day more than the number estimated for Alexander City. This can be attributed to the GFL Environmental value only including residences and the EPA estimate including all MSW waste (e.g. light commercial) produced. A copy of the fact sheet from this EPA report is included in Appendix B of this document.

Alexander City's second waste stream is C&D (i.e. inert) waste. Inert waste includes brush, construction debris, yard waste, etc.. These wastes are disposed of at the North Central Avenue Inert Landfill. The City provides curbside collection of brush for all Alexander City residents. All other C&D waste generated is hauled to the landfill by residents and businesses within the city limits. Only C & D waste generated within the corporate limits of Alexander City is accepted at the North Central Avenue Inert Landfill; however, this policy is subject to change by the City Council. Since disposal at the North Central facility is convenient and cost effective and the landfill service area is confined to the corporate limits, the volume of waste received at the North Central Avenue Inert

Landfill is assumed to be the total amount of inert waste generated within the City. Table 2 presents Alexander City's C&D waste received from 2013 through 2022. The yearly average of inert waste received at the North Central Avenue Inert Landfill was 32,424 cubic yards (CY). Since the landfill does not have a scale, a typical 750 lb/yd<sup>3</sup> unit weight is used for estimating the C&D waste tonnage. Under these parameters, an estimated 12,159 tons of C&D waste is generated within the city annually and disposed of at the North Central Avenue Inert Landfill. If the city population for 2022 of 14,636, as estimated by the US Census Bureau, was used along with the average annual C&D waste generated of 12,159 tons, this would equate to an average C&D generation rate of 4.55 pounds per day per capita, which is higher than the EPA report estimated for C&D waste generation.

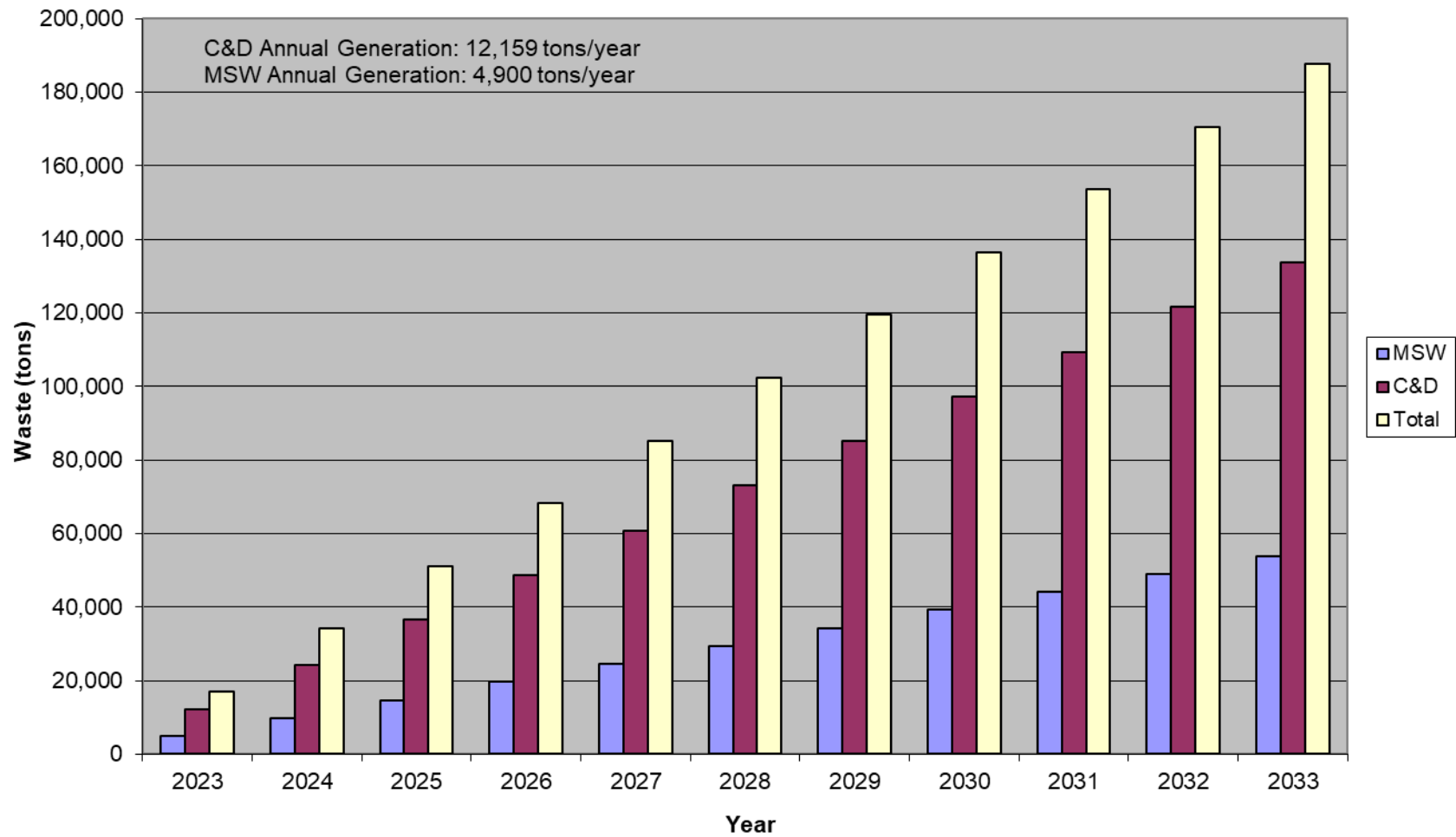
<b>TABLE 2 NORTH CENTRAL AVENUE INERT LANDFILL YEARLY WASTE RECEIVED</b>	
Year	C&D Waste Received (CY)
2013	24,171
2014	29,236
2015	33,212
2016	38,343
2017	30,015
2018	28,422
2019	38,417
2020	37,914
2021	29,217
2022	35,290
<b>Average</b>	<b>32,424</b>
*Note: These waste amounts received are for Alexander City residents and businesses only.	

## **5.1 PROJECTED FUTURE WASTE GENERATION**

With the decline of the textile industry within the City, the population within the City is expected to remain relatively constant for the foreseeable future. This would be consistent for the past 12 years as the population has only decreased by 1.6% over that timeframe. Table 3 presents Alexander City's waste generation projections through 2033 using a 0% growth. Based on the per capita rates presented, cumulative waste generation is shown graphically in Figure 2. It is important to note that this is a long-term approach based on Alexander City only and that annual tonnage amounts can vary significantly. Where short-term estimates are required, this approach should be considered in conjunction with recent tonnage receipts and local market conditions that may affect private haulers. Short term estimates should also consider the effects of large storms which can significantly increase the amount of waste entering the North Central Avenue Landfill.

<b>TABLE 3</b> <b>PROJECTED WASTE GENERATION</b> <b>(TONS)</b>							
Year	Estimated Population	MSW Generated	CUMULATIVE MSW	C&D Generated	CUMULATIVE C&D	Total Waste	CUMULATIVE WASTE
2023	14,636	4,900	4,900	12,159	12,159	17,059	17,059
2024	14,636	4,900	9,800	12,159	24,318	17,059	34,118
2025	14,636	4,900	14,700	12,159	36,477	17,059	51,177
2026	14,636	4,900	19,600	12,159	48,636	17,059	68,236
2027	14,636	4,900	24,500	12,159	60,795	17,059	85,295
2028	14,636	4,900	29,400	12,159	72,954	17,059	102,354
2029	14,636	4,900	34,300	12,159	85,113	17,059	119,413
2030	14,636	4,900	39,200	12,159	97,272	17,059	136,472
2031	14,636	4,900	44,100	12,159	109,431	17,059	153,531
2032	14,636	4,900	49,000	12,159	121,590	17,059	170,590
2033	14,636	4,900	53,900	12,159	133,749	17,059	187,649

**Figure 2**  
**City of Alexander City Cumulative Yearly Waste Produced**



## **6.0 COLLECTION SUMMARY**

The City of Alexander City has chosen to mandate curbside MSW collection through city ordinance number 982 for all residences. Curbside MSW collection is available to all of Alexander City through a City contract with GFL Environmental. Residents within the corporate limits contract through the City with GFL Environmental for curbside MSW collection. MSW collection for commercial and industrial businesses within the corporate limits is either contracted directly with the service provider or performed by the business itself. GFL Environmental disposes of collected MSW at its Stone's Throw Landfill located in southern Tallapoosa County. GFL Environmental presently owns and operates the landfill. It is therefore the most economical choice for both the local provider and the local businesses.

Commercial, Industrial, and Residential inert waste or construction and demolition waste is collected and hauled to the North Central Avenue Inert Landfill. Alexander City also offers curbside collection of brush, using its own personnel, to residents within the corporate limits at no charge. The City collects residential brush waste using a city brush truck and disposes of the waste at the North Central Avenue Inert Landfill.

The City also operates a recycling facility at the Public Works Department where they accept many types of recyclable materials. A list of the accepted materials is in Section 9. Recyclable materials are collected at the Public Works Department and separated by the generator. The City uses its personnel and equipment to handle these recycled materials so they can be reused. The

recycled materials are collected and processed utilizing multiple recycling companies in and around the City.

## **7.0 EXISTING DISPOSAL FACILITIES**

There is one landfill permitted in The City of Alexander City; North Central Avenue Inert Landfill (Permit Number 62-10). This facility is permitted for construction and demolition (i.e. inert) wastes and consists of 183 total acres with 35.7 acres of permitted disposal area. The landfill location is shown in Figure 3. Appendix C contains permit information for the facility as published by the Alabama Department of Environmental Management.

The landfill is owned and operated by The City of Alexander City. It previously served all of Tallapoosa and many surrounding counties, but due to the rapid consumption of remaining capacity, the City changed its service area in 2011 to Alexander City residents and businesses only. With the recently permitted expansion, the City may broaden their service area once the expansion is made fully operational.

GFL Environmental collects MSW generated in Alexander City and disposes of this waste in the Stone's Throw Landfill (Permit Number 62-11) located in the extreme southern portion of Tallapoosa County. The Stone's Throw Landfill location is shown on Figure 3.1. The Stone's Throw Landfill is owned and operated by GFL Environmental but is regulated by the Alabama River Regions Solid Waste Authority. Its permitted maximum volume is 1,500 tons/day. GFL Environmental personnel have indicated that the existing cell has approximately 1 year of remaining capacity. The existing landfill permitted



property line has plans for an additional 4-5 cells after the current one reaches capacity.

FIGURE 3: Existing Disposal Locations

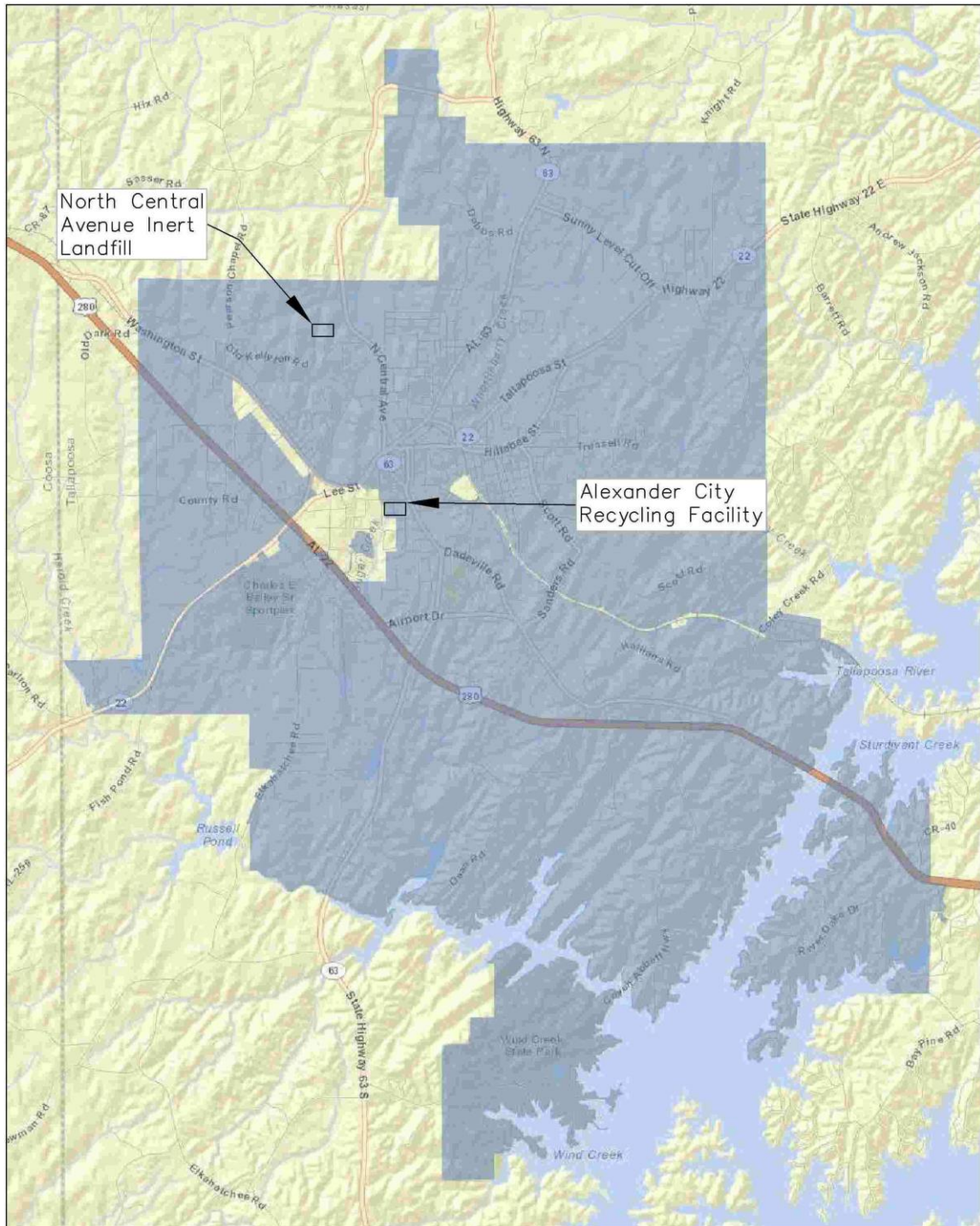
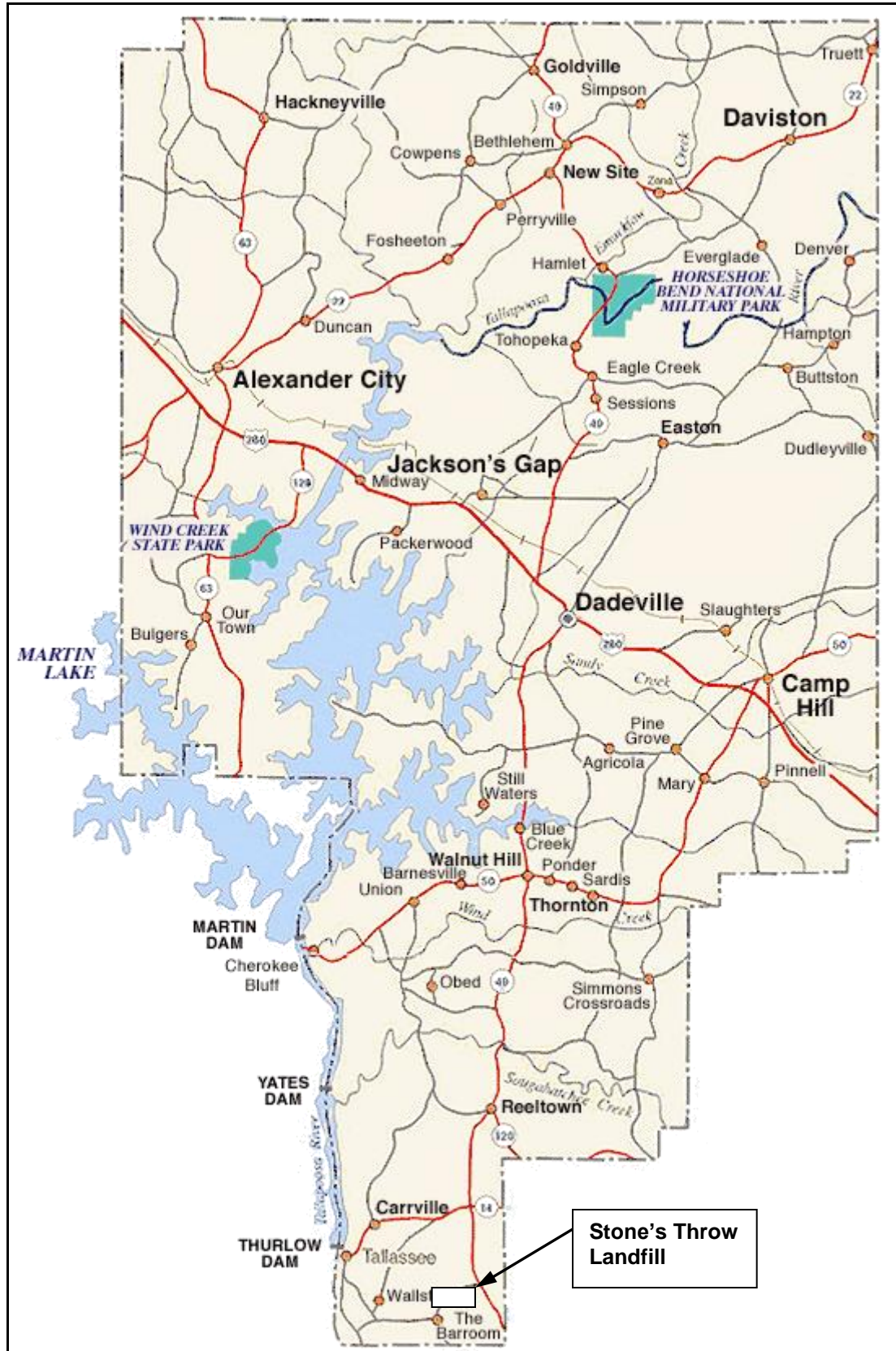


FIGURE 3.1: Stone's Throw Landfill Location



The Stone's Throw landfill permit consists of 175 permitted acres with 124 acres of disposal area. There are over 200 additional acres of land owned by the landfill for future expansions beyond the current cell. With the available land currently owned surrounding the existing landfill, this landfill has enough remaining capacity to last through this plan period (10 years).

The City operates the Alexander City Recycling Facility (ACRF) located at the Public Works Department located at 824 Railey Road (Figure 3). They accept many different types of recyclable materials from local residents and businesses. City personnel and equipment are used to segregate and recycle materials. The City currently has two balers that are used to compact the cardboard and plastics, one forklift, and other equipment that is utilized to handle and manage the recycled materials. Grant funds received from ADEM allowed the City to purchase and put in service new balers in 2014 and 2020 to replace the old balers. The baler installed in 2020 was a new vertical style baler that improves efficiency and lowers overall footprint. As part of their recycling efforts, the City also recently received grant funds from ADEM for the purchasing of a recycling trailer. The recycling trailer consists of disposal bins mounted on a mobile trailer that can be utilized at special events and other activities throughout the City to promote and encourage recycling among the residents.

## **7.1 NORTH CENTRAL AVENUE INERT LANDFILL**

### **7.1.1 GENERAL**

Alexander City owns and operates the North Central Avenue Inert C&D Landfill. The landfill is located off of North Central Avenue at address 1507 North

Central Avenue (Figure 3). The landfill previously had 34.65 acres total permitted area with 12.72 acres approved for construction and demolition waste disposal. In 2022, the Alabama Department of Environmental Management approved a landfill expansion as requested by the City. This landfill expansion consisted of an additional 148.83 acres of land adjacent to the existing property to the north and west and included an additional 23 acres of C&D waste disposal area. The current C&D landfill permit for the City consists of 183.48 acres of total permitted area with 35.72 acres approved for construction and demolition waste disposal. The permitted areas not currently approved for waste disposal remain for future landfill expansions and other City use. The new landfill expansion cell is currently under construction by City personnel. The City intends to have the new waste disposal area with corresponding drainage structures complete and operational prior to the existing cell capacity being reached. In addition to the disposal areas, the landfill has a designated area for scrap metal recycling, 2 stormwater detention ponds, and a compliance office. The landfill has a maximum permitted intake of 120 tons/day. At the beginning of 2023, the existing landfill cell had minimal waste volume capacity remaining. With the approved expansion, the City now has an approximate remaining waste volume of 1,000,000 cubic yards. With the amount of land permitted and the available topography, the City has available space for future expansion that will help them manage C&D waste disposal for the City for many years to come.

A copy of the landfill permit is contained in Appendix C. The current landfill permit is effective through April 2024. The City is currently in the process of renewing their landfill permit with ADEM. The North Central Avenue Inert landfill



is currently permitted to receive waste from Chambers, Clay, Coosa, Elmore, and Tallapoosa Counties. When the City was accepting waste from Tallapoosa and surrounding counties at higher intake volumes, the City recognized the dwindling capacity of their existing C&D waste landfill. With limited available land within the City limits and understanding the extensive process of a new landfill permit, the City recognized something had to be done. In 2011 resolution number 11-54 was adopted by the City, which allowed only Alexander City residents and businesses to utilize the facility. This step was taken to maximize the existing facilities life and allow time for the City to develop a plan for future C&D waste disposal within the City. With the recent landfill expansion approval to surrounding land, the City will have the option and availability to go back to accepting waste from Tallapoosa and surrounding counties as previously done, if so determined by the City to be in their best interest. Alexander City residents are allowed to use the landfill at no charge. Businesses are charged a fee based on the size of containers to be dumped. The businesses must purchase a ticket from the Utilities Department to be presented at the landfill. Table 4 list types of acceptable inert materials that can be disposed of at the C&D landfill.

<b>TABLE 4 ACCEPTED INERT MATERIALS</b>	
Dirt	Bricks/Blocks
Gravel	Carpet
Stumps	Bed Frames
Pallets	Furniture
Toys	Boats
Clothes	Lawn Mowers
Shingles	Bicycles

To maximize cell life and further its recycling efforts, the City requires the C&D waste generator to separate metal from other waste and place it into an onsite collection bin for recycling. When practical, the City separates metal from the other cell waste that was not separated by the generator. Periodically, the scrap metal will be collected by a recycling company. An estimated 52 tons of metal was recycled in 2022 at this facility. Over the past 5 years, an average of 45 tons per year of metal was recycled from this facility.

### **7.1.2 NORTH CENTRAL AVENUE LANDFILL PROJECTED LIFE**

Table 2 (Section 5) shows the historical C&D waste volumes received at the North Central Avenue Inert landfill over the past 10 years. As noted previously, all MSW waste generated in Alexander City is disposed of at the Stone's Throw Landfill facility located outside of Alexander City limits. The landfill does not have a scale and measures waste in cubic yards. As a general rule for calculating tonnages, the City uses 750 lbs/cy. When the new landfill expansion was designed for the North Central Avenue Inert Landfill, the waste volume of the new cell was determined to be approximately 1,000,000 cubic yards. This estimated volume accounts for a 5% allowance for daily cover and a 5% closure soil required.

The projected C&D volumes for the North Central Avenue facility have been estimated through 2033 under the following assumptions:

1. All in City C&D waste generated is disposed of at the North Central Avenue Landfill.
2. The amount of out of city waste received stays at 0 tons.
3. Per capita generation rates remain unchanged.



4. Since the City population has seen a slight decrease over the past 10 years, a steady population will be used.

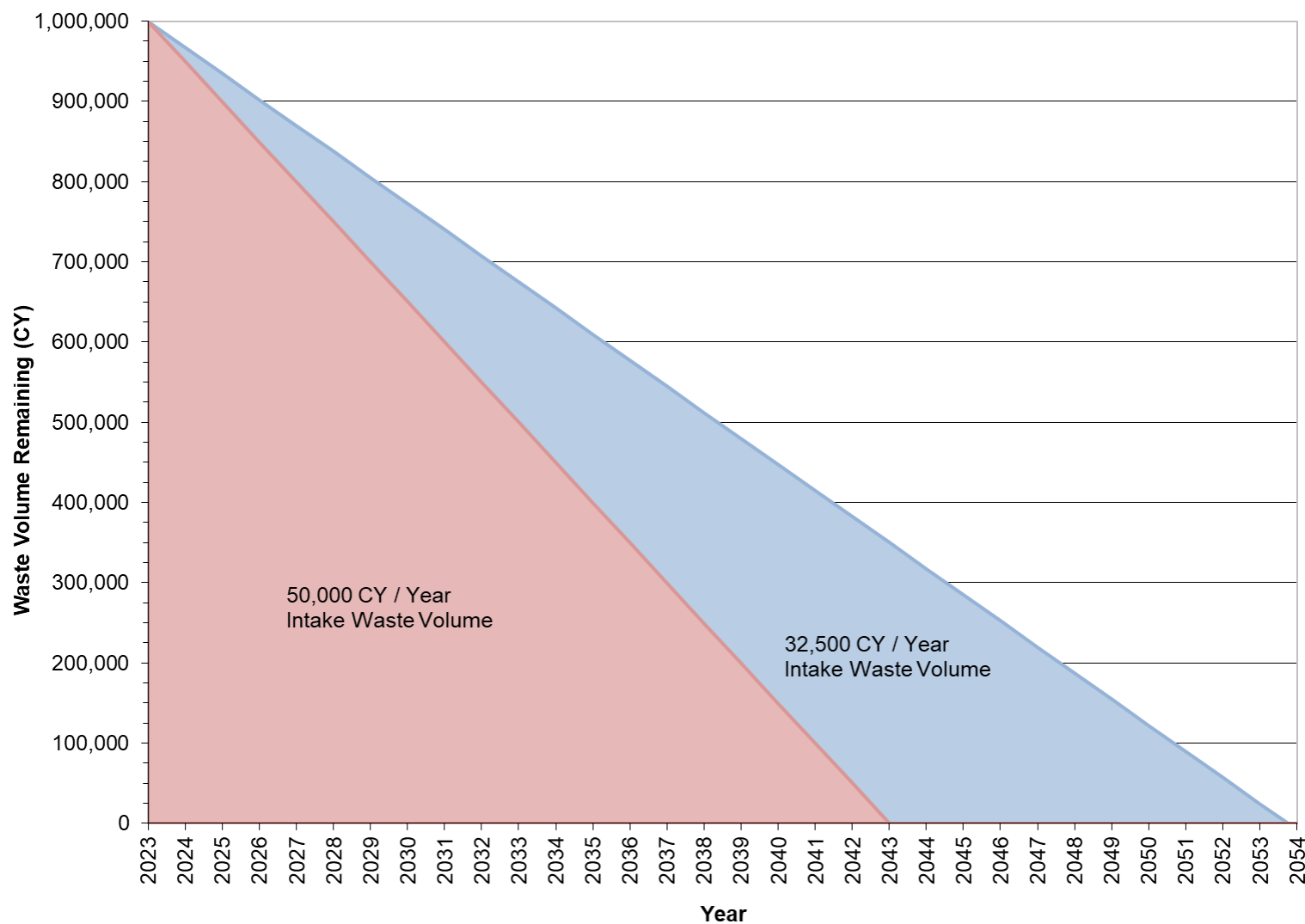
The projected volumes of C&D waste for the North Central Avenue site are presented in Table 5.

<b>TABLE 5 NORTH CENTRAL AVENUE INERT LANDFILL PROJECTED YEARLY WASTE RECEIVED</b>	
Year	Waste Received (CY)
2023	32,500
2024	32,500
2025	32,500
2026	32,500
2027	32,500
2028	32,500
2029	32,500
2030	32,500
2031	32,500
2032	32,500
2033	32,500

The projected volumes in Table 5 have been used to estimate the remaining life at the newly expanded C&D landfill. Based on the projections from Table 5 and using the same assumptions for the projected incoming waste volumes, the newly expanded North Central Avenue Landfill should last approximately 30 years and reach capacity by 2053. If the City were to open the landfill back up to Tallapoosa County and surrounding counties and the future intake waste volume received was 50,000 cubic yard per year, the landfill would last approximately 20 years and reach capacity by 2043. Since the City is constructing the landfill expansion in house, these projections are under the assumption that the cell bottom is constructed as designed. The remaining

volume and future projections also assume that 0% compaction rate of the C&D waste is achieved. This would be typical given the types of materials that are received. As shown in Figure 4 under these assumptions for the projected incoming waste volumes, the existing North Central Avenue Landfill is expected to reach capacity by 2043 or 2053 depending on waste intake used, giving the City approximately 20 to 30 more years of service of the current cell. Based on the permitted land and surrounding topography, there is room for expansion in the future.

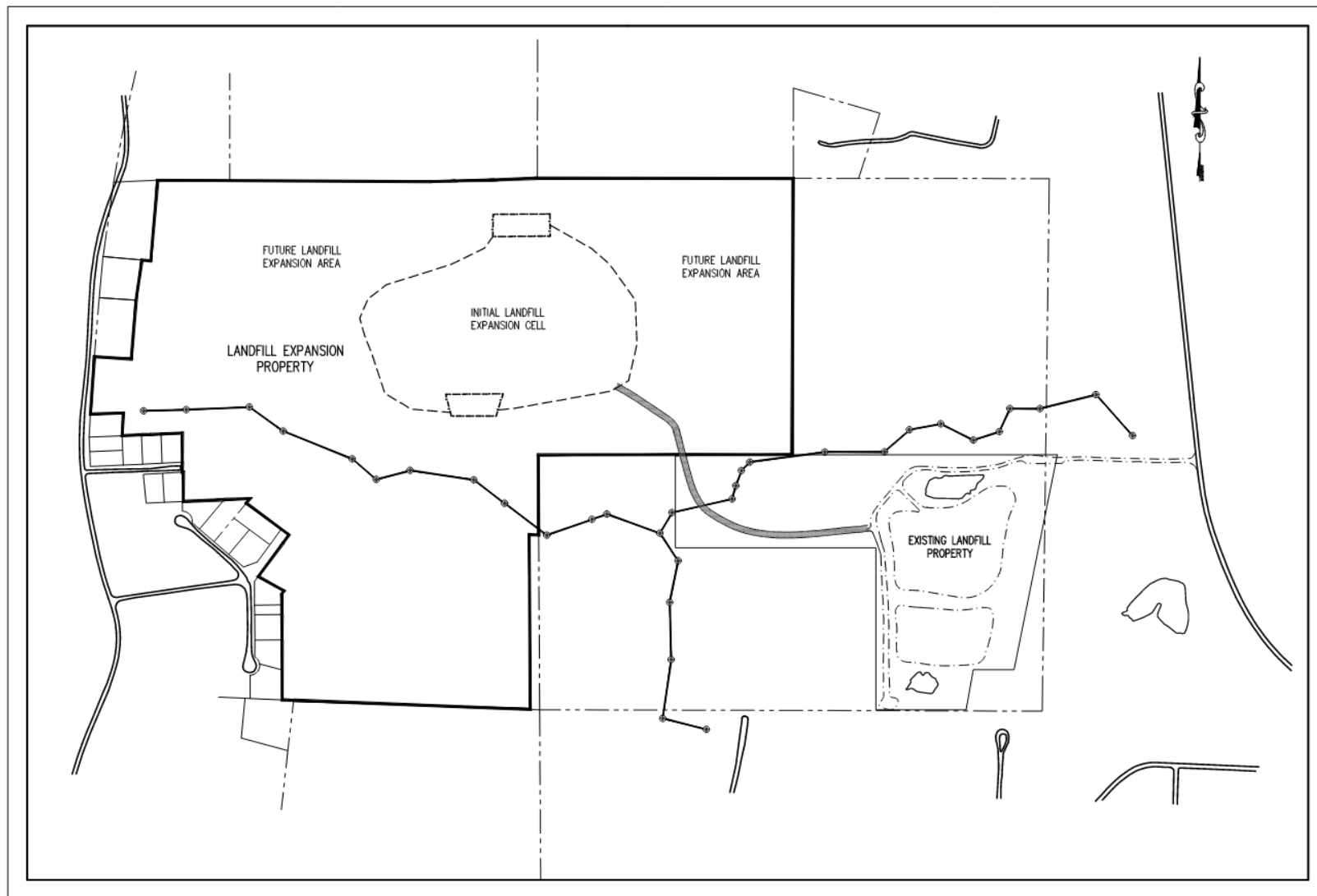
**Figure 4**  
**Life Expectancy of North Central Avenue Inert Landfill**



### **7.1.3 FUTURE EXPANSIONS**

As shown in Figure 4, the existing North Central Avenue Inert Landfill has many years of construction and demolition waste life remaining. With the addition of 145.83 acres of new land to the existing landfill permit, there are additional phases and expansions of the waste disposal area planned for the future. Based on the topography of the land, the next C&D expansion is planned to be to the east of the existing phase. Figure 5 shows the layout of the new 145 acres with proposed future disposal areas. Alexander City has always recognized the importance of C&D disposal. With the permitting of the landfill expansion, the City has ensured that inert disposal capacity will be available for the citizens of Alexander City in the future.

FIGURE 5: North Central Avenue Inert Landfill Property Layout



## **8.0 GOVERNMENTAL DISPOSAL CONTRACTS**

The North Central Avenue Inert landfill is currently permitted to receive waste from Chambers, Clay, Coosa, Elmore, and Tallapoosa Counties. There are currently no disposal contracts with other counties or municipalities at the landfill.

The City is currently contracted with the Alabama River Regions Solid Waste Authority. The agreement guarantees that the owner and operator of Stone's Throw Landfill cannot refuse waste from Alexander City or their local provider.

## **9.0 RECYCLING**

Alexander City encourages residents of the City and surrounding communities to recycle as much as possible. They do this by operating a local recycling facility, recycling materials from their C&D landfill, partnering with local agencies for recycling programs in the City, and continuing to pursue funding opportunities to broaden and expand the City's recycling efforts. Because of their efforts, the City has decreased the amount of waste disposed of in the local and surrounding landfills.

The Alexander City Recycling Facility (Figure 3) is operated by the City and located at the Public Works Department at 824 Railey Road. All recycled materials are delivered to this facility by local residents and businesses. In 2019, the City stopped accepting paper products such as newspapers, mixed paper, magazines, etc. This did however lower the tonnage received and handled of

recycled products at this facility. Table 6 lists the current recyclable materials accepted by the City at this facility.

<b>TABLE 6 ACCEPTED RECYCLABLE MATERIALS</b>	
Cardboard	Aluminum Cans
#1 Plastic	Tin Cans
#2 Plastic	Scrap Metal

The City currently owns and operates 2 balers to compact cardboard and plastics. Grant funds received from ADEM allowed the City to purchase and put in service new balers in 2014 and 2020 to replace the old balers. These new balers allow the City to bale cardboard along with plastics and cans more efficiently and effectively. This allows the City to provide a recycling service without adding additional personnel. The City also recently received grant funds from ADEM for purchasing a recycling trailer consisting of disposal bins mounted on a mobile trailer. The trailer will be utilized at different events throughout the City to raise public awareness and increase recycling within the City. Table 7 shows the estimated tonnage of recyclables handled by the City in 2022. The per capita recycle rate based on these numbers is 21.83 lbs/person/year.

<b>TABLE 7 RECYCLABLE MATERIALS RECEIVED BY ALEXANDER CITY IN 2022</b>	
Material	Tons
Cardboard	121.58
#1 and #2 Plastics	6.00
Aluminum Cans	2.03
Tin Cans	0.00043
Scrap Metal (From Landfill)	52.24
Total Recyclables	181.85
Per Capita Rate (lb/person/year)	24.85
source – Alexander City	



This table does not include any local private recyclers or recycling by local businesses and industries. The City currently works with three different recycling companies to dispose of the materials. The aluminum cans are collected by CMC Recycling, the metals and tin cans are collected by Central Alabama Recycling, and the plastics and cardboard is collected by Mount Scrap Material Company.

At the North Central Avenue Inert Landfill, an area is dedicated to recycling metals. In order to help lower the waste volume collected, the City has the C&D waste generator separate its metal from other waste and place it into an onsite collection bin at this landfill for recycling. When practical, the City will separate any metal from the other cell waste that was not separated by the generator. Periodically, the scrap metal will be collected by Central Alabama Recycling and recycled. It is estimated that 45 tons of metals are recycled per year at the landfill.

Another method of promoting and educating local residents about recycling is partnering with local agencies to sponsor recycling programs. In the past, Alexander City has partnered with programs and organizations to host monthly electronics recycling events. These types of recycling programs help keep additional waste out of the Stone's Throw Landfill in Tallapoosa County. Recycling helps prolong the life of all the surrounding landfills by reducing the air space required, and avoiding the costs associated with landfilling waste. The City is taking steps to make the public more aware of recycling by educating students and local residents, public media, and providing for the collection of recyclables as described above. Also, as part of recycling public awareness, the City utilizes

their recycling trailer at special events throughout the City to promote and encourage recycling.

Alexander City plans to continue to pursue funding opportunities in the future to expand the City's recycling facilities and capabilities. With these funding opportunities, the City plans to potentially pursue a new recycling facility within the City that will further encourage residents of the City and surrounding communities to recycle as much as possible.

#### **10.0 SUBTITLE D**

Alexander City does not operate a municipal solid waste landfill. The City will meet Subtitle D requirements by contracting with GFL Environmental. GFL Environmental operates under a Solid Waste Disposal Facility Permit (Permit 62-11) from the Alabama Department of Environmental Management. The Permit was issued in accordance with the Subtitle D requirements. All household garbage generated from residences within the corporate limits is disposed of in the permitted landfill.

#### **11.0 UNAUTHORIZED DUMPS**

Alexander City has been very successful in minimizing the occurrence of illegal dumping sites in the past. Since the limits of the C&D landfill service area were reduced, the presence of illegal dump sites within the corporate limits and the county has been on the rise. In an effort to minimize these dump sites, City personnel are responsible for investigating and making cases to prevent or clean up illegal dump sites. The Alexander City Police Department and the Alexander City Public Works Department work together to help eliminate or minimize illegal

dumping where possible. At the request of the police, public works departments have blocked roads with soil, erected gates or fences, installed “No Dumping” signs and performed other preventative measures as necessary. Dump sites that are discovered are cleaned up by Public Works Departments after they have been investigated.

## **12.0 JOINT USE AGREEMENTS**

The City is currently contracted with the Alabama River Regions Solid Waste Authority for waste disposal at the Stone’s Throw Landfill in Tallapoosa County. The agreement guarantees that the owner and operator of Stone’s Throw Landfill cannot refuse waste from Alexander City or their local provider.

The North Central Avenue Inert Landfill permit includes a service area of 5 counties including Tallapoosa County, where Alexander City is located, that may dispose of waste at the landfill. However, there are no existing contracts between Alexander City and other governments or authorities for the joint use of this disposal facility. At present, only Alexander City citizens are allowed to use the landfill to maximize cell life. Provided this continues, joint use contracts will likely not be pursued by the City.

## **13.0 SUMMARY OF PERTINENT FACTS**

In 1989, The Alabama Legislative enacted Alabama Act Number 89-824 requiring local governments, in this case, Alexander City, to plan for the orderly management of solid waste generated in the city limits.

Waste generation estimates have been made for the City through 2033 as well as estimates and projections of existing facilities through 2033. The North

Central Avenue Inert Landfill has C&D waste capacity to 2043 and beyond. MSW capacity is available at the Stone's Throw Landfill beyond 2033. Alexander City recognizes the need for all waste disposal streams in the near future and will continue to monitor and actively seek ways to manage and maintain facilities more efficiently and effectively.

## Information:

For information on this plan, contact:

The City of Alexander City Public Works Department  
Drew Meacham  
(256) 409-2020

## Waste Generation Estimates:

MSW	1.83 pounds/person/day
Inert	4.55 pounds/person/day
Recyclables	24.85 pounds/person/year

Annual MSW Generation 4,900 tons

Annual Inert Generation 12,159 tons

Recycled Materials 181.85 tons

## Disposal Sites

MSW:	Stone's Throw Landfill >10 years
Inert:	North Central Avenue Landfill >10 years

## Recycle Sites

Alexander City Recycling Facility (256) 409-2020

# **APPENDIX A**

# JUSTIA

[Go to previous versions of this Section](#)

## **2022 Code of Alabama**

### **Title 22 - Health, Mental Health, and Environmental Control.**

#### **Title 1 - Health and Environmental Control Generally.**

#### **Chapter 27 - Solid Waste.**

#### **Article 3 - Solid Waste Management Plan.**

#### **Section 22-27-47 - Local Plans Required.**

**Universal Citation:** AL Code § 22-27-47 (2022)

#### **Section 22-27-47**

##### **Local plans required.**

(a) Each county and any municipality as described below shall submit to the department, within one and one-half years of May 16, 1989, a plan for the management of solid waste generated within its boundaries. A county's plan shall include the municipal jurisdictions within its boundaries except that any municipality may choose to submit its own solid waste management plan intended for implementation within its city limits and thereby be excluded from its county plan. Cities which do not choose to exclude themselves from their county's plan shall be responsible to share in the county's costs proportionately on a per capita basis. The content of all plans shall be consistent with the requirements of this article and every plan shall not become final until it has been officially adopted and approved pursuant to the requirements of this article. In the event a county or city does not submit a required plan or if said plan does not meet the minimum requirements set out in this article, the department shall prepare the plan which shall serve as the official county or city plan.

(b) Each plan shall at a minimum:

(1) Describe and explain the general origin, and weight or volume of solid waste currently generated

within the jurisdiction's boundaries. For purposes of this estimate the jurisdiction may use such information as is reasonably available, or may use accepted methods of estimation recommended by the department;

(2) Identify current methods of collection and haulage of solid waste within the jurisdiction;

(3) Identify and describe the facilities where solid waste is currently being disposed or processed and the remaining available permitted capacity of such facilities and the capacity which could be made available through the reasonable expansion of such facilities. The plan shall also explain the extent to which existing facilities will be used during the life of the plan and shall not substantially impair the use of their remaining permitted capacity;

(4) Provide a description of current or planned recycling programs and an analysis of their impact on waste generated within the jurisdiction. Particularly regarding recycling, the plan shall describe and evaluate:

a. Potential benefits of recycling, including the potential solid waste reduction and the avoided cost of municipal waste processing or disposal.

b. Existing materials recovery operations and the kind and weight or volume of materials recycled by the operations, whether public or private.

c. The compatibility of recycling with other waste processing or disposal methods used in the jurisdiction including methods of collecting recyclables.

d. Options for cooperation or agreement with other jurisdictions for the collection, processing and sale of recyclable materials.

(5) Address the requirements proposed under Subtitle D of the federal Resource Conservation and Recovery Act, 42 U.S.C. Section 6941 as amended and identify and explain those actions the jurisdiction should take to assure proper management of its wastes under these requirements;

(6) Propose procedures for the identification and elimination of unauthorized dumps in the jurisdiction;

(7) Describe and explain the general origin and weight or volume of solid waste reasonably expected to be generated within the jurisdiction annually during the next 10 years. The assessment shall describe the primary variables affecting this estimate and the extent to which they can reasonably be expected to affect the estimate;

(8) Provide for the development or expansion of solid waste management systems in a manner that is consistent with the needs of the area, taking into account planning, zoning, population and development estimates, and economics of the jurisdiction and the protection of air, water, land and other natural resources;



- (9) Identify any current agreements between the jurisdiction and other units of local government or public authorities for the joint use of solid waste processing or disposal facilities and evaluate the need for and feasibility of entering joint agreements in the future;
- (10) Identify any current contractual agreements with private entities for the collection, processing or disposal of solid waste and evaluate the need for and feasibility of entering into such agreements in the future;
- (11) Identify the general location within a county where solid waste processing or disposal facilities and recycling programs may be located, and identify the site of each facility if a site has already been chosen. In identifying general locations for facilities in the plan, each jurisdiction shall consider at least the following:
- a. The jurisdiction's solid waste management needs as identified in its plan;
  - b. The relationship of the proposed location or locations to planned or existing development, to major transportation arteries and to existing state primary and secondary roads;
  - c. The relationship of the proposed location or locations to existing industries in the jurisdiction or state that generate large volumes of solid waste and to the areas projected by the state or local regional planning and development commission for development of industries that will generate solid waste;
  - d. The costs and availability of public services, facilities and improvements which would be required to support a facility in this location and protect public health, safety and the environment;
  - e. The potential impact a facility in the proposed location or locations would have on public health and safety, and the potential that such locations can be utilized in a manner so as to minimize the impact on public health and safety; and
  - f. The social and economic impacts that a facility at the proposed location would have on the affected community, including changes in property values, community perception and other costs;
- (12) For any facility expected to serve the jurisdiction's future needs that is located or is proposed to be located outside the jurisdiction, the plan shall explain in detail the reasons for selecting such a facility;
- (13) The plan shall include such other information as the department may require by regulation.
- (c) Counties may, by agreement with other counties, combine in the development of a joint solid waste management plan.
- (d) The department and the local regional planning and development commission shall, upon request, provide assistance to any county or municipality in the development of their local plan.
- (e) The plan shall be completed on forms provided by the department and in accordance with the

provisions of this act and any regulations promulgated by the department.

(f) Prior to final adoption or amendment of a plan, the jurisdiction shall afford the public an opportunity to present data, views and arguments thereon, orally or in writing. The public comment period shall be no less than 30 days in length and shall include at least one public hearing. Notice of the public comment period shall be published at least once in a newspaper of general circulation in the jurisdiction and in the official gazette, if any, in the jurisdiction. Notice of the inclusive dates of the public comment period and the date of the public hearing may be combined in the same publication. Notice of the time and place of the public hearing shall be published at least 30 days, but not more than 45 days prior to the date of said hearing. Any published notice shall contain a brief description of the proposed plan, and shall identify a location where copies of the plan shall be available for inspection during normal business hours, and shall also identify a contact person from whom interested persons can obtain additional information or copies of the proposed plan. The plan, including any revisions, subsequently submitted for adoption shall be accompanied by a document containing written responses to comments made during the comment period.

(g) The governing body of the jurisdiction shall adopt the final plan within 60 days from the end of the public comment period at an official business meeting open to the public.

(h) Upon completion and adoption of the local plan, it shall be submitted to the department for review and approval. Within 30 days after receiving a complete plan, the department shall approve, conditionally approve or disapprove it, unless the department gives written notice that additional time is necessary to complete its review. If the department gives such notice, it shall have 30 additional days to render a decision. The department shall approve any local plan that demonstrates to the satisfaction of the department that:

(1) The plan is complete and accurate and consistent with this article and regulations promulgated hereunder.

(2) The plan provides for the processing and disposal of municipal waste in a manner that is consistent with the requirements of the solid waste management act and the regulations promulgated pursuant thereto.

(3) The plan provides for the processing and disposal of local waste for at least 10 years.

(i) Each county and municipality with an approved solid waste management plan shall submit a revised plan to the department in accordance with the requirements of this article:

(1) At least three years prior to the time all remaining available permitted capacity for the jurisdiction will be exhausted, or

(2) When otherwise required by the department.

**(Acts 1989, No. 89-824, p. 1638, §8.)**

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# **APPENDIX B**



# Advancing Sustainable Materials Management: 2018 Fact Sheet

Assessing Trends in Materials Generation and  
Management in the United States

December 2020

# Introduction

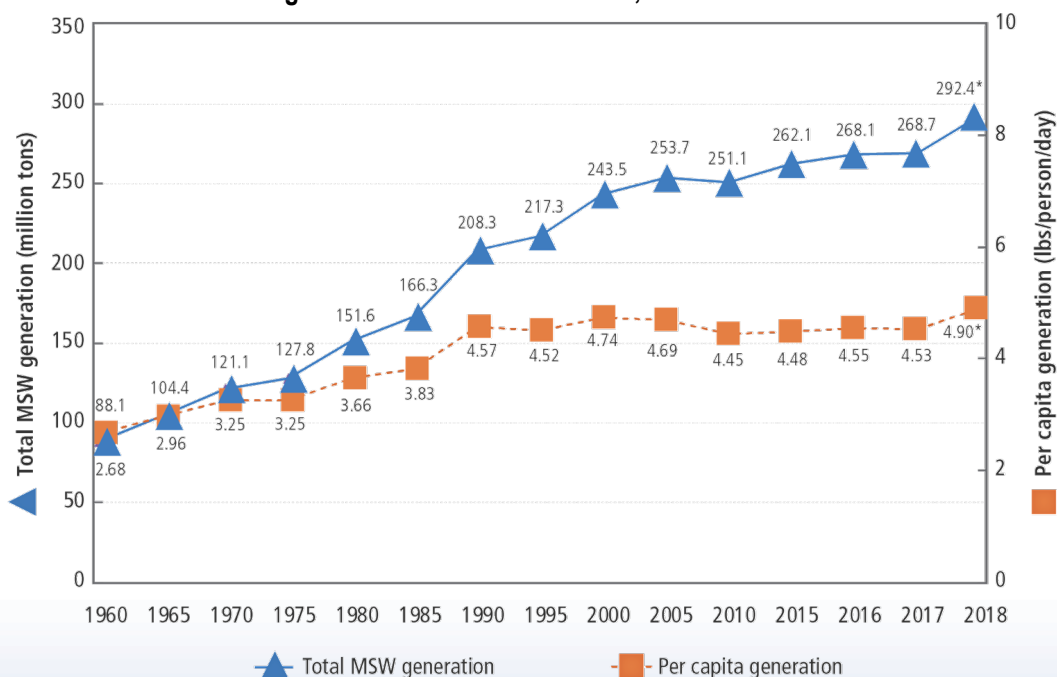
The U.S. Environmental Protection Agency (EPA) has collected and reported data on the generation and disposition of municipal solid waste (MSW) in the United States for more than 35 years. This information is used to measure the success of materials management programs across the country and to characterize the national waste stream. These facts and figures are based on the most recent information, which is from calendar year 2018.

In 2018, in the United States, approximately 292 million tons (U.S. short tons unless specified) of MSW were generated (See Figure 1). Of the MSW generated, approximately 69 million tons were recycled and 25 million tons were composted. Together, about 94 million tons were recycled or composted, equivalent to a 32.1 percent recycling and composting rate (See Figure 2). In addition, about 18 million tons of food (6.1 percent) were processed through other food management pathways (See Figure 3, Table 1 and text box page 5). More than 34 million tons of MSW (11.8 percent) were combusted with energy recovery. Finally, more than 146 million tons (50.0 percent) were landfilled (See Figure 3 and Table 1).

Information about waste generation and management is an important foundation for managing materials. EPA’s Sustainable Materials Management (SMM) approach refers to the use and reuse of materials in the most productive and sustainable way across their entire lifecycle. Through SMM, EPA helps to meet the material needs of the future by providing methods to decrease environmental impacts of materials use while increasing economic competitiveness.

This report analyzes MSW trends in generation and management, materials and products, and economic indicators affecting MSW. It also includes a section on the generation and management of construction and demolition (C&D) debris, which is not a part of MSW, but comprises a significant portion of the non-hazardous solid waste stream.

**Figure 1. MSW Generation Rates, 1960 to 2018\***



\*MSW generation rose considerably from 2017 to 2018 mainly because EPA enhanced its food measurement methodology to more fully account for all the ways wasted food is managed throughout the food system.

Figure 2. MSW Recycling and Composting Rate, 1960 to 2018

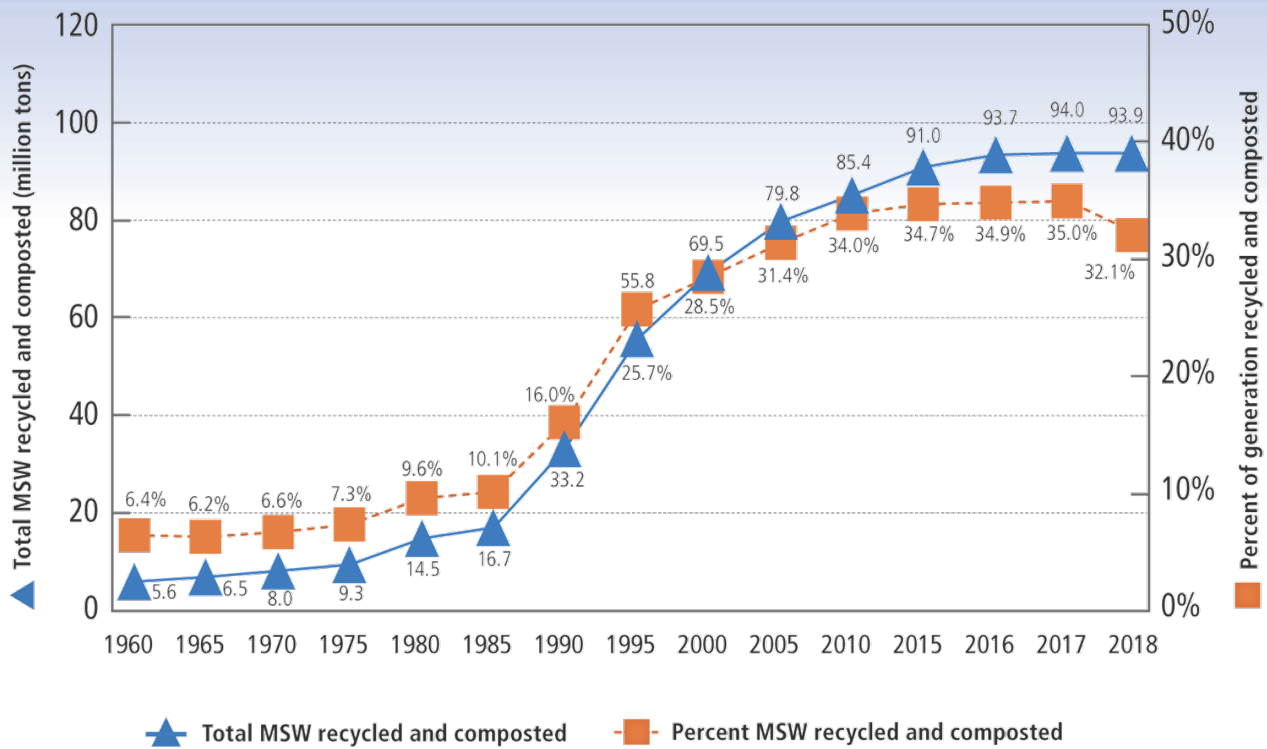
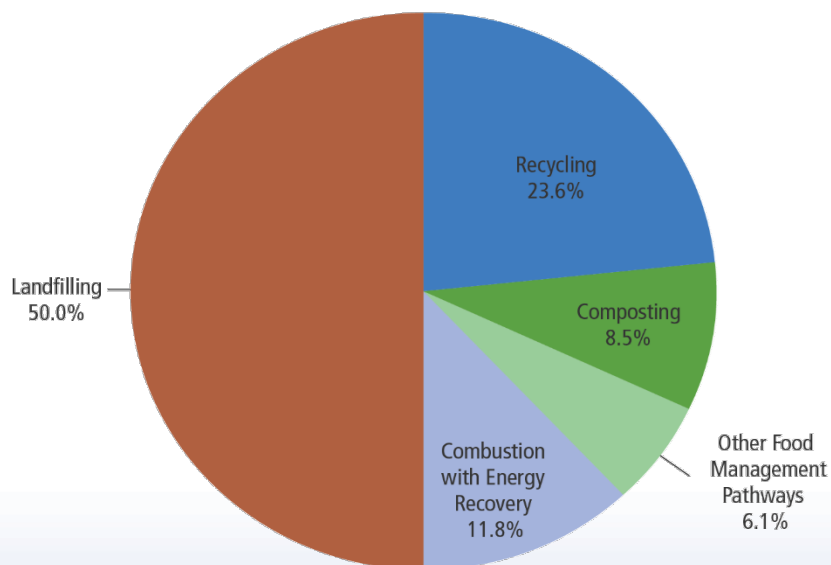


Figure 3. Management of MSW in the United States, 2018



**Table 1. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of Materials in MSW, 2018\***  
(in millions of tons and percent of generation of each material)

Material	Weight Generated	Weight Recycled	Weight Composted	Weight Other Food Management Pathways‡	Weight Combusted with Energy Recovery	Weight Landfilled	Recycling as Percent of Generation	Composting as Percent of Generation	Other Food Management Pathways as Percent of Generation	Combustion as Percent of Generation	Landfilling as Percent of Generation
Paper and paperboard	67.39	45.97	-	-	4.20	17.22	68.2%	-	-	6.2%	25.6%
Glass	12.25	3.06	-	-	1.64	7.55	25.0%	-	-	13.4%	61.6%
<i>Metals</i>											
Steel	19.20	6.36	-	-	2.31	10.53	33.1%	-	-	12.0%	54.9%
Aluminum	3.89	0.67	-	-	0.56	2.66	17.2%	-	-	14.4%	68.4%
Other nonferrous metals†	2.51	1.69	-	-	0.08	0.74	67.3%	-	-	3.2%	29.5%
<b>Total metals</b>	<b>25.60</b>	<b>8.72</b>	<b>-</b>	<b>-</b>	<b>2.95</b>	<b>13.93</b>	<b>34.1%</b>	<b>-</b>	<b>-</b>	<b>11.5%</b>	<b>54.4%</b>
Plastics	35.68	3.09	-	-	5.62	26.97	8.7%	-	-	15.8%	75.5%
Rubber and leather	9.16	1.67	-	-	2.50	4.99	18.2%	-	-	27.3%	54.5%
Textiles	17.03	2.51	-	-	3.22	11.30	14.7%	-	-	18.9%	66.4%
Wood	18.09	3.10	-	-	2.84	12.15	17.1%	-	-	15.7%	67.2%
Other materials	4.56	0.97	-	-	0.66	2.93	21.3%	-	-	14.4%	64.3%
<b>Total materials in products</b>	<b>189.76</b>	<b>69.09</b>	<b>-</b>	<b>-</b>	<b>23.63</b>	<b>97.04</b>	<b>36.4%</b>	<b>-</b>	<b>-</b>	<b>12.5%</b>	<b>51.1%</b>
<i>Other wastes</i>											
Food, other‡	63.13	-	2.59	17.71	7.55	35.28	-	4.1%	28.1%	11.9%	55.9%
Yard trimmings	35.40	-	22.30	-	2.57	10.53	-	63.0%	-	7.3%	29.7%
Miscellaneous inorganic wastes	4.07	-	-	-	0.80	3.27	-	-	-	19.7%	80.3%
<b>Total other wastes</b>	<b>102.60</b>	<b>-</b>	<b>24.89</b>	<b>17.71</b>	<b>10.92</b>	<b>49.08</b>	<b>-</b>	<b>24.3%</b>	<b>17.3%</b>	<b>10.6%</b>	<b>47.8%</b>
<b>Total municipal solid waste</b>	<b>292.36</b>	<b>69.09</b>	<b>24.89</b>	<b>17.71</b>	<b>34.55</b>	<b>146.12</b>	<b>23.6%</b>	<b>8.5%</b>	<b>6.1%</b>	<b>11.8%</b>	<b>50.0%</b>

\* Includes waste from residential, commercial and institutional sources.

‡ Animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application, sewer/wastewater treatment.

† Includes lead from lead-acid batteries.

‡ Includes collection of other MSW organics for composting.

Details might not add to totals due to rounding.

Negligible = Less than 5,000 tons or 0.05 percent.

A dash in the table means that data are not available.



## Trends in Municipal Solid Waste

Our MSW, or trash, is comprised of various items consumers throw away. These items include packaging, food, yard trimmings, furniture, electronics, tires and appliances. MSW does not include industrial, hazardous or C&D waste. Sources of MSW include residential waste, as well as waste from commercial and institutional locations, such as restaurants, grocery stores, other businesses, schools, hospitals and industrial facilities. Industrial facility waste includes waste from sources such as offices, cafeterias and packaging, but not process waste.

Over the last few decades, the generation, recycling, composting, combustion with energy recovery and landfilling of MSW has changed substantially. Solid waste generation peaked at 4.74 pounds per person per day in 2000 and 2005, falling to 4.51 pounds per person per day in 2017. The higher rate of 4.91 pounds per person per day in 2018 reflects the change in food waste measurement methodology (See Figure 1 and text box).

The combined recycling and composting rate increased from less than 10 percent of generated MSW in 1980 to 35.0 percent in 2017. In 2018, the recycling and composting rate was 32.1 percent (See Figure 2). Without including composting, recycling alone rose from 14.5 million tons (9.6 percent of MSW) in 1980 to 69 million tons (23.6 percent) in 2018. Although more tons were recycled in 2018 than ever before, the recycling rate decreased to the lowest levels since 2006. Composting was negligible in 1980, but it rose to 24.9 million tons in 2018 (8.5 percent).

In 2018, for the first time in this report series, EPA revised its food measurement methodology to more fully capture flows of excess food and food waste throughout the food system. The resulting category, other food management pathways, accounted for 17.7 million tons (6.1 percent) (See Figure 3, Table 2 and text box for details).

Combustion with energy recovery was less than 2 percent of generation in 1980 at 2.8 million tons. In 2018, 34.6 million tons (11.8 percent of MSW generated) were combusted with energy recovery (See Table 2).

Since 1990, the total amount of MSW going to landfills has increased by less than one million tons, from 145.3 million tons in 1990 to 146.1 million tons in 2018 (See Table 2). The net per capita 2018 landfilling rate was 2.4 pounds per day, which was lower than the 3.2 per capita rate in 1990 (See Table 3).

### New Enhanced Food Measurement Methodology

EPA enhanced its food measurement methodology to more fully estimate flows of food throughout the food system. Expanding beyond composting, combustion with energy recovery and landfilling, 2018 estimates include food flowing to a total of nine pathways. The food waste generation estimates for 2018 account for the additional food flowing to the six new pathways which are:

- animal feed
- land application
- codigestion/anaerobic digestion
- bio-based materials/biochemical processing
- donation
- sewer/wastewater treatment

**Table 2. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of MSW, 1960 to 2018 (in millions of tons)**

Activity	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Generation	88.1	121.1	151.6	208.3	243.5	253.7	251.1	262.1	268.7	292.4
Recycling	5.6	8.0	14.5	29.0	53.0	59.2	65.3	67.6	67.0	69.1
Composting*	neg.	neg.	neg.	4.2	16.5	20.6	20.2	23.4	27.0	24.9
Other Food Management**	-	-	-	-	-	-	-	-	-	17.7
Combustion with energy recovery†	0.0	0.5	2.8	29.8	33.7	31.7	29.3	33.5	34.2	34.6
Landfilling and other disposal‡	82.5	112.6	134.3	145.3	140.3	142.2	136.3	137.6	140.5	146.1

\* Composting of yard trimmings, food and other MSW organic material. Does not include backyard composting.

\*\* Other food management pathways include animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application and sewer/wastewater treatment.

Details might not add to totals due to rounding.

neg. (negligible) = less than 5,000 tons or 0.05 percent.

A dash in the table means that data are not available.

† Includes combustion of MSW in mass burn or refuse-derived fuel form, and combustion with energy recovery of source separated materials in MSW (e.g., wood pallets, tire-derived fuel).

‡ Landfilling is what remains after recycling, composting, other food management and combustion with energy recovery are accounted for. Landfilling includes other disposal methods such as combustion without energy recovery.

**Table 3. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of MSW, 1960 to 2018 (in pounds per person per day)**

Activity	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Generation	2.7	3.3	3.7	4.6	4.7	4.7	4.4	4.5	4.5	4.9
Recycling	0.2	0.2	0.4	0.6	1.0	1.1	1.1	1.2	1.1	1.2
Composting*	neg.	neg.	neg.	0.1	0.3	0.4	0.4	0.4	0.5	0.4
Other Food Management**	-	-	-	-	-	-	-	-	-	0.3
Combustion with energy recovery†	0.0	neg.	0.1	0.7	0.7	0.6	0.5	0.6	0.6	0.6
Landfilling and other disposal‡	2.5	3.1	3.2	3.2	2.7	2.6	2.4	2.3	2.4	2.4
Population (In millions)	180.0	204.0	227.3	249.9	281.4	296.4	309.1	320.9	325.1	327.2

\* Composting of yard trimmings, food and other MSW organic material. Does not include backyard composting.

\*\* Other food management pathways include animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application and sewer/wastewater treatment.

Details might not add to totals due to rounding.

neg. (negligible) = less than 5,000 tons or 0.05 percent.

A dash in the table means that data are not available.

† Includes combustion of MSW in mass burn or refuse-derived fuel form, and combustion with energy recovery of source separated materials in MSW (e.g., wood pallets, tire-derived fuel).

‡ Landfilling is what remains after recycling, composting, other food management and combustion with energy recovery are accounted for. Landfilling includes other disposal methods such as combustion without energy recovery.

## Analyzing MSW

EPA analyzes MSW by breaking down the data in two ways: by material and by product. Materials are made into products, which are ultimately reprocessed through recycling or composting or managed by combustion with energy recovery facilities or landfills. They may also be processed by other management methods for food. Examples of materials that EPA tracks include paper and paperboard, plastics, metals, glass, rubber, leather, textiles, wood, food and yard trimmings. For a full list of materials, see Table 1.

Products are what people buy and handle, and they are manufactured out of the types of materials listed above. Product categories include containers and packaging, nondurable goods, durable goods, food and yard trimmings. Containers and packaging, such as milk cartons and plastic wrap, are assumed to be in use for a year or less; nondurable goods like newspaper and clothing are assumed to be in use for less than three years; and durable goods, such as furniture, are assumed to be in use for three or more years. Some products, such as appliances, may be made of more than one material. Information about products shows how consumers are using and discarding materials and offers strategies on ways to maximize the source reduction, recycling and composting of materials.

## Materials in MSW

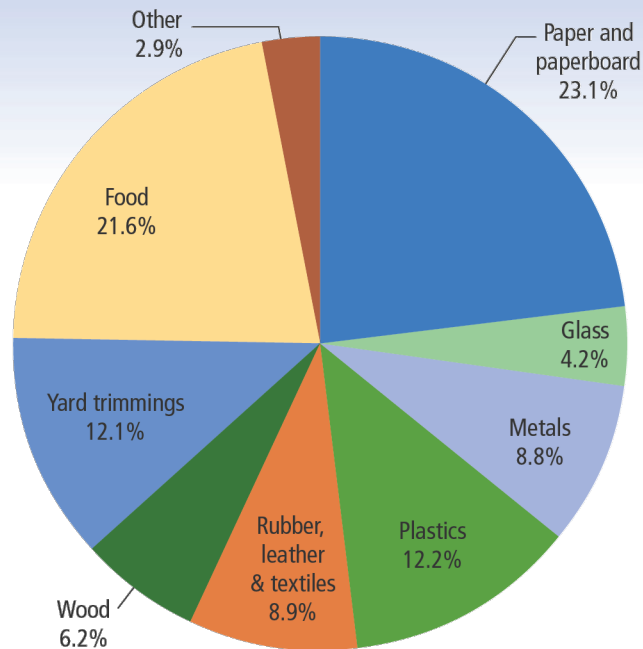
Table 1 and the following figures provide specific information about materials in MSW. Table 1 shows generation, recycling, composting, other food management pathways, combustion with energy recovery and landfilling by material, weight and percent of generation.

Figure 4, below, provides the breakdown of MSW generation by material. Paper and paperboard, along with food, continued to be the largest components of MSW generated. Paper and paperboard accounted for about 23 percent, while food accounted for over 21 percent. Yard trimmings and plastics comprised about 12 percent each. The remaining amount of MSW generated consisted of rubber, leather and textiles; metals; wood; glass; and other materials.

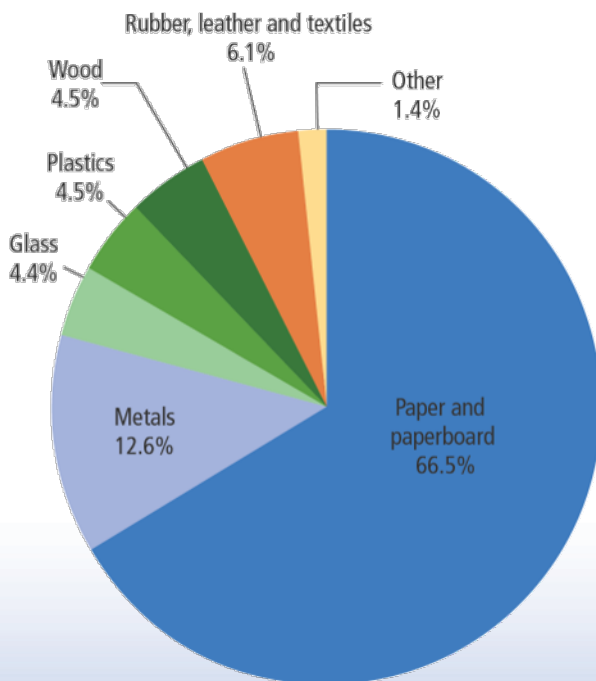
Figure 5 provides the breakdown of MSW recycling by material in 2018. Paper and paperboard comprised the largest component of MSW recycling, representing nearly 67 percent. Metals made up over 12 percent of MSW recycled. The remaining amount of MSW recycled consisted of rubber, leather and textiles; plastics; glass; wood; and other materials.

Figure 6 provides the breakdown of MSW composting and other food management pathways by material, Figure 7 provides the breakdown of MSW combustion with energy recovery and Figure 8 provides the breakdown of MSW landfilling.

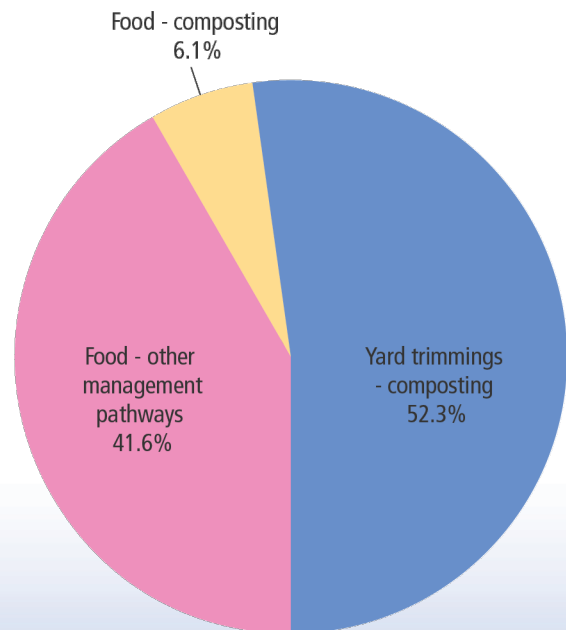
**Figure 4. Total MSW Generation (by material), 2018**  
292.4 Million Tons



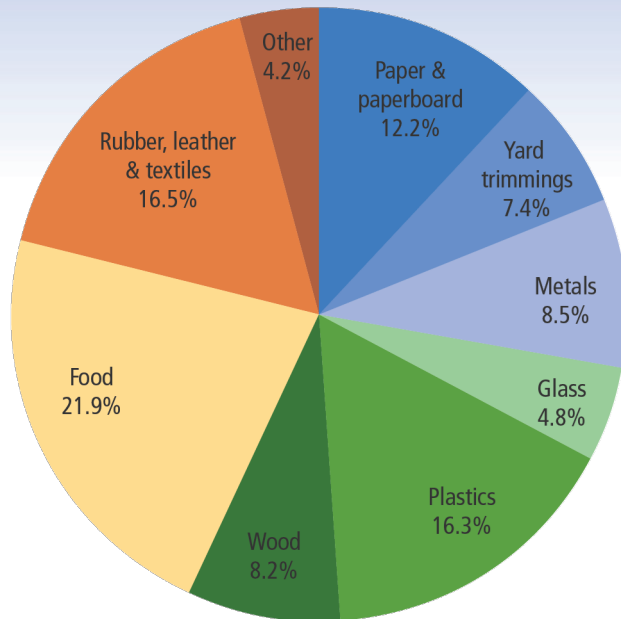
**Figure 5. Total MSW Recycling (by material), 2018**  
69.1 Million Tons



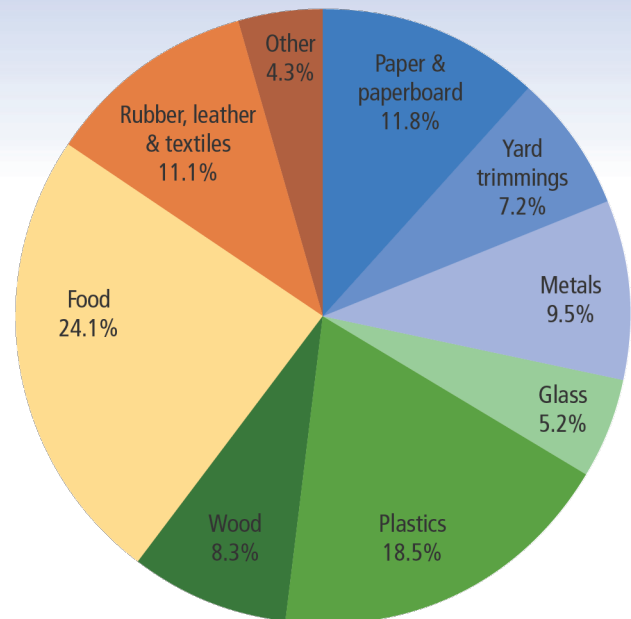
**Figure 6. Total MSW Composting and Other Food Management Pathways (by material), 2018**  
42.6 Million Tons



**Figure 7. Total MSW Combusted with Energy Recovery (by material), 2018 34.6 Million Tons**



**Figure 8. Total MSW Landfilled (by material), 2018 146.1 Million Tons**



## Products in MSW

The following information provides the details of the products found in MSW, including generation, recycling, composting, other food management pathways, combustion with energy recovery and landfilling by product category, weight and percent of generation. The product categories include containers and packaging, durable goods, nondurable goods, and other wastes which include food, yard trimmings and miscellaneous inorganic wastes. See Table 4 for generation and management by product category.

These other wastes made up the largest portion of MSW generated at 102.6 million tons (35.1 percent) in 2018. More than 82 million tons of containers and packaging (28.1 percent), 57.1 million tons (19.5 percent of MSW generation) of durable goods and more than 50 million tons (17.3 percent of MSW generation) of nondurable goods were generated.

The containers and packaging product category had the highest recycling rate at 53.9 percent in 2018. Paper products, steel and aluminum were the most recycled materials by percentage in this category. The recycling of nondurable goods was 28.1 percent. Paper products such as newspapers/mechanical papers were the most recycled nondurable goods. Newspapers/mechanical papers include newspapers, directories, inserts, as well as some advertisement and direct mail printing. Overall, 18.5 percent of durable goods were recycled. With a 99 percent recycling rate in 2018, lead-acid batteries continued to be one of the most recycled products.

Yard trimmings had the highest composting rate of all product categories at 63 percent. Food was composted at a rate of 4.1 percent. Other food management pathways were estimated at 28.1 percent of food waste generation.

Durable goods were combusted at a rate of 16 percent and nondurables at a rate of 14.1 percent. Food and miscellaneous inorganic wastes were combusted with energy recovery with a rate of 11.9 percent and 19.7 percent, respectively. Containers and packaging, along with yard trimmings, were combusted at rates below 10 percent.

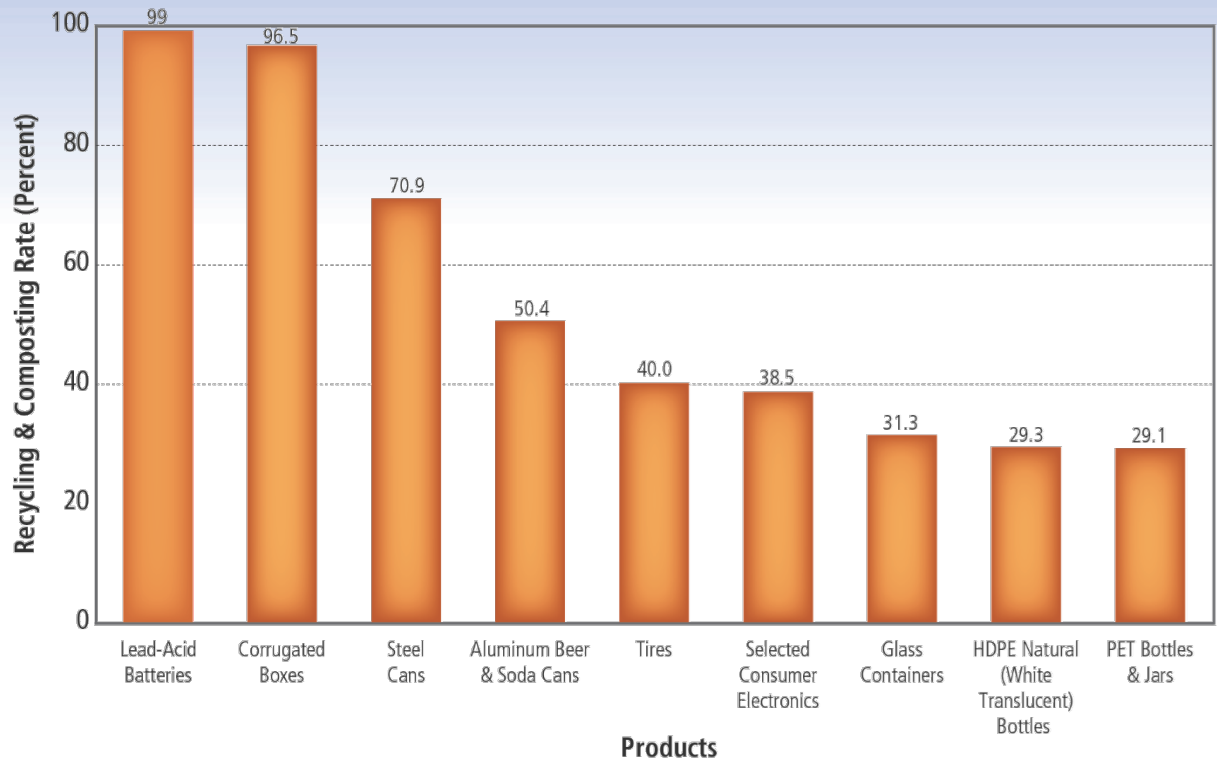
Durable goods had the highest landfill rate of 65.5 percent. Nondurable goods had the second highest landfill rate at 57.8 percent. Food had the third highest landfill rate of 55.9 percent. Containers and packaging, along with yard trimmings, were the product categories with the lowest landfill rates at 37.1 percent and 29.7 percent, respectively.

Figure 9 displays selected individual products with high recycling rates.

### Recycling Rates

Measured by percent of generation, individual products with the highest recycling rates in 2018 were lead-acid batteries (99 percent), corrugated boxes (96.5 percent), steel cans (70.9 percent), newspapers/mechanical papers (64.8 percent), major appliances (59.8 percent), aluminum cans (50.4 percent), mixed paper (43.1 percent), tires (40 percent) and selected consumer electronics (38.5 percent).

**Figure 9. Selected Products with High Recycling Rates, 2018\***



\*Does not include combustion with energy recovery

**Table 4. Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of Products in MSW, 2018\***  
(in millions of tons and percent of generation of each product)

Products	Weight Generated	Weight Recycled	Weight Composted	Weight Other Food Management Pathways¥	Weight Combusted with Energy Recovery	Weight Landfilled	Recycling as Percent of Generation	Composting as Percent of Generation	Other Food Management Pathways as Percent of Generation	Combustion as Percent of Generation	Landfilling as Percent of Generation
<b>Durable goods</b>											
Steel	16.99	4.73	-	-	2.20	10.06	27.8%	-	-	13.0%	59.2%
Aluminum	1.75	-	-	-	0.27	1.48	-	-	-	15.4%	84.6%
Other nonferrous metals†	2.51	1.69	-	-	0.08	0.74	67.3%	-	-	3.2%	29.5%
Glass	2.46	Negligible	-	-	0.33	2.13	Negligible	-	-	13.4%	86.6%
Plastics	13.69	0.93	-	-	1.74	11.02	6.8%	-	-	12.7%	80.5%
Rubber and leather	7.98	1.67	-	-	2.27	4.04	20.9%	-	-	28.5%	50.6%
Wood	6.51	Negligible	-	-	1.18	5.33	Negligible	-	-	18.1%	81.9%
Textiles	3.87	0.58	-	-	1.02	2.27	15.0%	-	-	26.3%	58.7%
Other materials	1.34	0.97	-	-	0.03	0.34	72.4%	-	-	2.2%	25.4%
<b>Total durable goods</b>	<b>57.10</b>	<b>10.57</b>	<b>-</b>	<b>-</b>	<b>9.12</b>	<b>37.41</b>	<b>18.5%</b>	<b>-</b>	<b>-</b>	<b>16.0%</b>	<b>65.5%</b>
<b>Nondurable goods</b>											
Paper and paperboard	25.49	12.08	-	-	2.63	10.78	47.4%	-	-	10.3%	42.3%
Plastics	7.46	0.18	-	-	1.42	5.86	2.4%	-	-	19.0%	78.6%
Rubber and leather	1.18	Negligible	-	-	0.23	0.95	Negligible	-	-	19.5%	80.5%
Textiles	12.87	1.93	-	-	2.14	8.80	15.0%	-	-	16.6%	68.4%
Other materials	3.44	Negligible	-	-	0.67	2.77	Negligible	-	-	19.5%	80.5%
<b>Total nondurable goods</b>	<b>50.44</b>	<b>14.19</b>	<b>-</b>	<b>-</b>	<b>7.09</b>	<b>29.16</b>	<b>28.1%</b>	<b>-</b>	<b>-</b>	<b>14.1%</b>	<b>57.8%</b>



**Table 4 (continued). Generation, Recycling, Composting, Other Food Management Pathways, Combustion with Energy Recovery and Landfilling of Products in MSW, 2018\***  
(in millions of tons and percent of generation of each product)

Products	Weight Generated	Weight Recycled	Weight Composted	Weight Other Food Management Pathways‡	Weight Combusted with Energy Recovery	Weight Landfilled	Recycling as Percent of Generation	Composting as Percent of Generation	Other Food Management Pathways as Percent of Generation	Combustion as Percent of Generation	Landfilling as Percent of Generation
<b>Containers and packaging</b>											
Steel	2.21	1.63	-	-	0.11	0.47	73.8%	-	-	5.0%	21.2%
Aluminum	1.92	0.67	-	-	0.25	1.00	34.9%	-	-	13.0%	52.1%
Glass	9.79	3.06	-	-	1.31	5.42	31.3%	-	-	13.3%	55.4%
Paper and paperboard	41.90	33.89	-	-	1.57	6.44	80.9%	-	-	3.7%	15.4%
Plastics	14.53	1.98	-	-	2.46	10.09	13.6%	-	-	16.9%	69.5%
Wood	11.58	3.10	-	-	1.66	6.82	26.9%	-	-	14.3%	58.8%
Other materials	0.29	Negligible	-	-	0.06	0.23	Negligible	-	-	20.7%	79.3%
<b>Total containers and packaging</b>	<b>82.22</b>	<b>44.33</b>	<b>-</b>	<b>-</b>	<b>7.42</b>	<b>30.47</b>	<b>53.9%</b>	<b>-</b>	<b>-</b>	<b>9.0%</b>	<b>37.1%</b>
<b>Other wastes</b>											
Food, other†	63.13	-	2.59	17.71	7.55	35.28	-	4.1%	28.1%	11.9%	55.9%
Yard trimmings	35.40	-	22.30	-	2.57	10.53	-	63.0%	-	7.3%	29.7%
Miscellaneous inorganic wastes	4.07	-	-	-	0.80	3.27	-	-	-	19.7%	80.3%
<b>Total other wastes</b>	<b>102.60</b>	<b>-</b>	<b>24.89</b>	<b>17.71</b>	<b>10.92</b>	<b>49.08</b>	<b>-</b>	<b>24.3%</b>	<b>17.3%</b>	<b>10.6%</b>	<b>47.8%</b>
<b>Total municipal solid waste</b>	<b>292.36</b>	<b>69.09</b>	<b>24.89</b>	<b>17.71</b>	<b>34.55</b>	<b>146.12</b>	<b>23.6%</b>	<b>8.5%</b>	<b>6.1%</b>	<b>11.8%</b>	<b>50.0%</b>

\* Includes waste from residential, commercial and institutional sources.

‡ Animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application, sewer/wastewater treatment.

† Includes lead from lead-acid batteries.

‡ Includes collection of other MSW organics for composting.

Details might not add to totals due to rounding.

Negligible = less than 5,000 tons or 0.05 percent.

A dash in the table means that data are not available.

# Environmental and Economic Benefits

## Environmental Benefits of Recycling and Composting

The energy and greenhouse gas (GHG) benefits of recycling, composting and combustion with energy recovery that are shown in Table 5 are calculated using EPA's WARM (Waste Reduction Model) tool (See: <https://www.epa.gov/warm>). WARM calculates and totals the GHG emissions of baseline and alternative waste management practices, including source reduction, recycling, composting, combustion with energy recovery and landfilling. For example, paper and paperboard recycling, at about 46 million tons, resulted in a reduction of over 155 MMTCO<sub>2</sub>E in 2018. This reduction is equivalent to removing over 33 million cars from the road for one year.

In 2018, about 94 million tons of MSW in the U.S. were recycled and composted, saving over 193 MMTCO<sub>2</sub>E. This is comparable to the emissions that could be reduced from taking almost 42 million cars off the road in a year.

**Table 5. 2018 Environmental Benefits**

(The numbers in the Recycled, Composted, Combustion with Energy Recovery and Landfilled columns are listed by weight of material\* in millions of tons)

Material	Recycled	Composted	Combustion with Energy Recovery	Landfilled	GHG Benefits (MMTCO <sub>2</sub> E)	Number of Cars Taken Off the Road Per Year (millions of cars)
Paper and paperboard	45.97	-	4.20	17.22	(155.17)	(33.52)
Glass	3.06	-	1.64	7.55	(0.90)	(0.19)
Metals						
Steel	6.36	-	2.31	10.53	(15.50)	(3.35)
Aluminum	0.67	-	0.56	2.66	(6.12)	(1.32)
Other nonferrous metals**	1.69	-	0.08	0.74	(7.54)	(1.63)
<b>Total metals</b>	<b>8.72</b>	<b>-</b>	<b>2.95</b>	<b>13.93</b>	<b>(29.16)</b>	<b>(6.30)</b>
Plastics	3.09	-	5.62	26.97	4.13	0.89
Rubber and leather†	1.67	-	1.73	0.78	0.17	0.04
Textiles	2.51	-	3.22	11.30	(2.56)	(0.55)
Wood	3.10	-	2.84	12.15	(3.30)	(0.71)
Food, other‡	-	2.59	7.55	35.28	(6.97)	(1.51)
Yard trimmings	-	22.30	2.57	10.53	0.78	0.17
Miscellaneous inorganic wastes	-	-	0.80	3.27	(0.28)	(0.06)
<b>Totals</b>	<b>68.12</b>	<b>24.89</b>	<b>33.12</b>	<b>138.98</b>	<b>(193.26)</b>	<b>(41.74)</b>

\*Includes material from residential, commercial, institutional and industrial sources (except not industrial process waste).

\*\*Includes lead-acid batteries. Other nonferrous metals calculated in WARM as mixed metals.

†Only includes rubber from tires.

‡Includes collection of other MSW organics for composting.

These calculations do not include an additional 24.9 million tons of MSW that could not be addressed in the WARM model (including 17.7 million tons from food waste managed by means outside of the scope of the WARM model). MMTCO<sub>2</sub>E is million metric tons of carbon dioxide equivalent. Numbers in parentheses indicate a reduction in either greenhouse gases or vehicles, and therefore represent environmental benefits. Details might not add to totals due to rounding.

Source: WARM model Version 15 (<https://www.epa.gov/warm>). Number of cars taken off the road/year was calculated using the Greenhouse Gas Equivalency Calculator, updated March 2020.

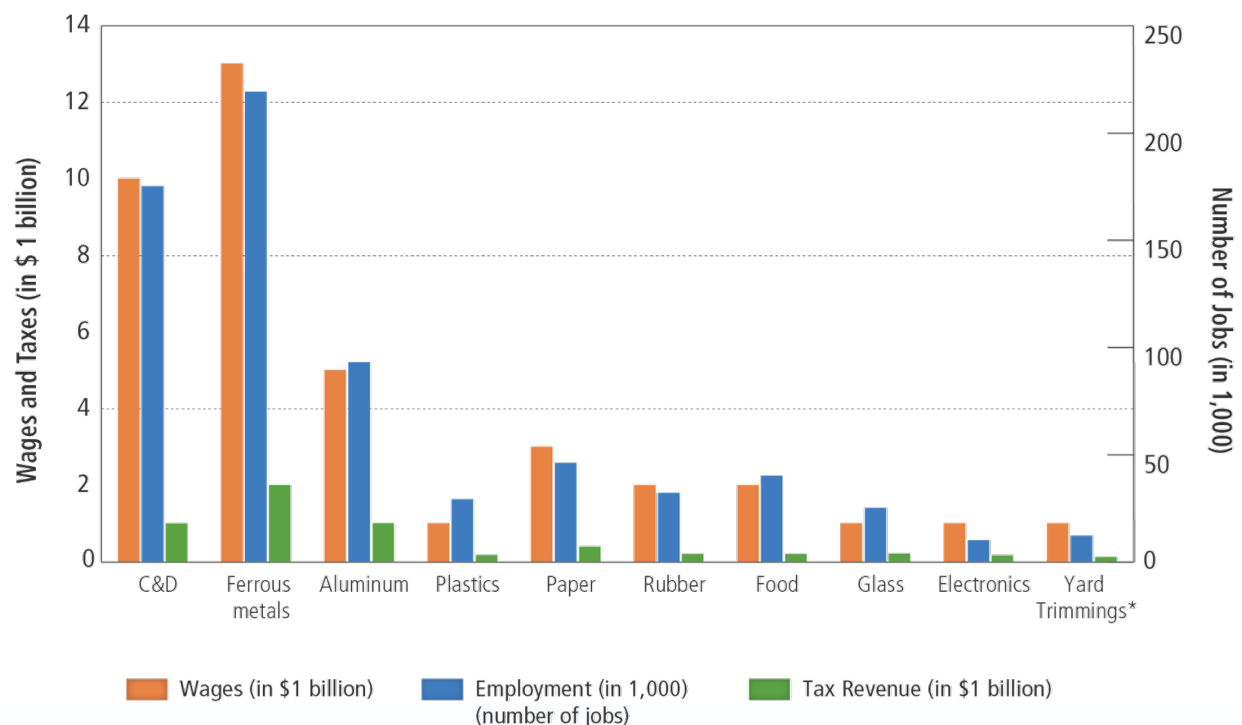
# Economic Indicators

## Economic Benefits of Recycling and Composting

How our nation uses materials is fundamental to our economic and environmental future. Economic and community benefits of recycling include increasing economic security by tapping a domestic source of materials; supporting American manufacturing; conserving valuable resources; and creating jobs in the recycling and manufacturing industries.

In 2020, EPA updated the Recycling Economic Information (REI) Report<sup>1</sup> to increase the understanding of the economic implications of material reuse and recycling. The 2020 REI Report included updated information about the number of recycling jobs, wages and tax revenue (See Figure 10). The report showed that the recycling and reuse of materials creates jobs and also generates local and state tax revenues. The data from the most recent year available showed that in 2012, recycling and reuse activities in the United States accounted for: 681,000 jobs; \$37.8 billion in wages; and \$5.5 billion in tax revenues. This calculation equates to 1.17 jobs for every 1,000 tons of materials recycled. Ferrous metal provided the largest contribution to all three categories (jobs, wages and tax revenue), followed by C&D and nonferrous metals, such as aluminum.

**Figure 10. Wages, Taxes and Jobs Attributed to Recycling**



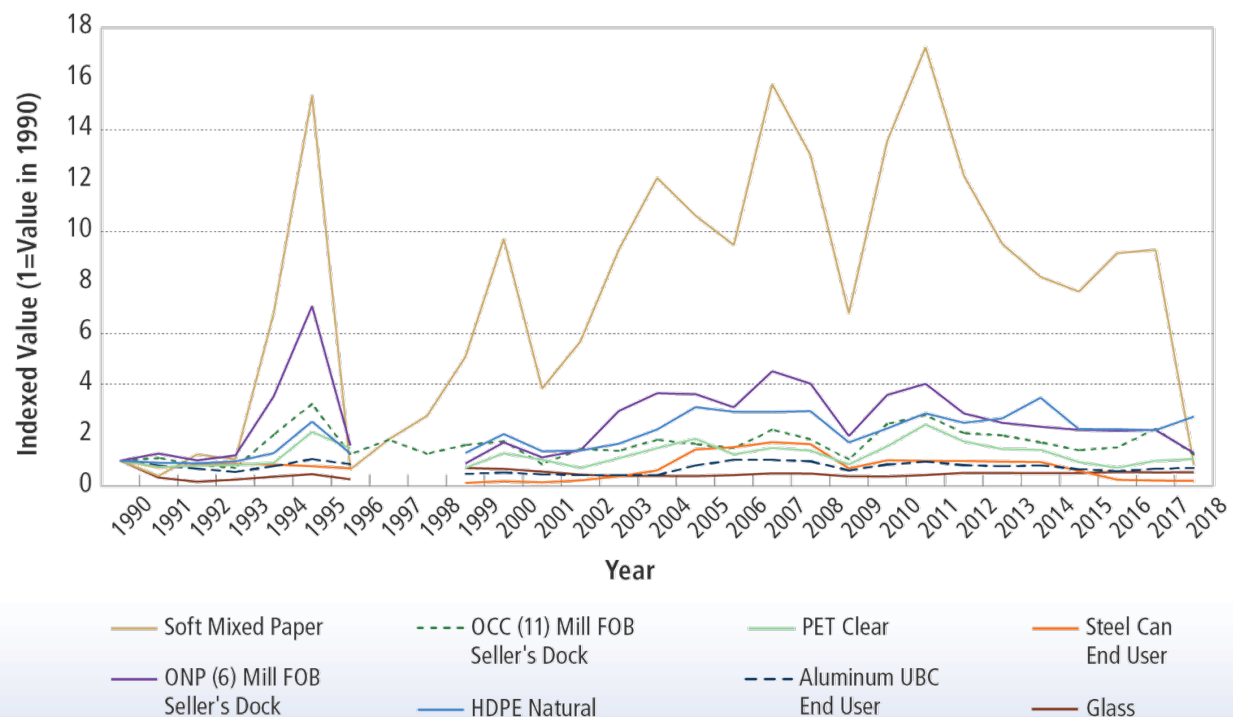
\* Yard Trimmings category includes biodiesel, biogas, compost, mulch and wood chips

## Recycled Commodity Values

Scrap<sup>2</sup> commodity markets set the price for materials that are being recycled, such as various types of paper or plastic. Manufacturers can realize cost, energy and environmental savings when scrap commodities are used as raw materials instead of virgin materials<sup>3</sup>. The prices for these markets are determined by the perceived value of the commodity and the relative supply and demand at any given point in time. This could provide insight on how municipalities or other organizations responsible for recycling may change their behavior to promote recycling practices and the resulting prices could be a driver toward the overall incentive to recycle across the country. This analysis focuses on the market set prices of a variety of postconsumer plastics, steel and aluminum cans, paper and glass, which represent a subset of all recycled commodity markets.

Figure 11 shows trends in commodity prices over time. It provides the indexed values by year for the following recycled commodities from 1990 to 2018: high-density polyethylene (HDPE) natural bottles; polyethylene terephthalate (PET) clear bottles; aluminum used beverage cans (UBC); steel cans; old newspaper (ONP) (grade 6 and 56); old corrugated containers (OCC) (grade 11); paper stock (PS) (grade 1 and 54) soft mixed paper; and glass containers. The values are normalized to 2018 using the Consumer Price Index (CPI) from the Bureau of Labor Statistics (BLS). They are indexed to allow commodity values with different metrics, such as dollars per ton, dollars per gross ton and dollars per short ton, to be shown on the same graph and to compare their relative rates of change. The indexed value indicates the change in value of the data since 1990, where one is equal to the value in 1990. For example, an indexed value of two would mean the commodity value for that year would be two times the 1990 value.

**Figure 11. Indexed Recycled Commodity Values by Year**



Source: Pulp & Paper Global Fact & Price Book, 2003-2004. Page 128. Paperloop, Inc. 2004. See endnotes for additional sources<sup>4</sup>

Figure 11 shows similar trends across all commodities for indexed values, where one is equal to the value in 1990. For example, all commodity values spiked in 1995, except steel cans, and dipped in 2009. Many commodities also experienced a price spike in 2000, 2007 and 2011. In contrast, the indexed lines for glass, aluminum and steel cans appear to fluctuate less frequently. Figure 11 also shows all paper grades (ONP, OCC and mixed paper) experienced a drop in 2018.

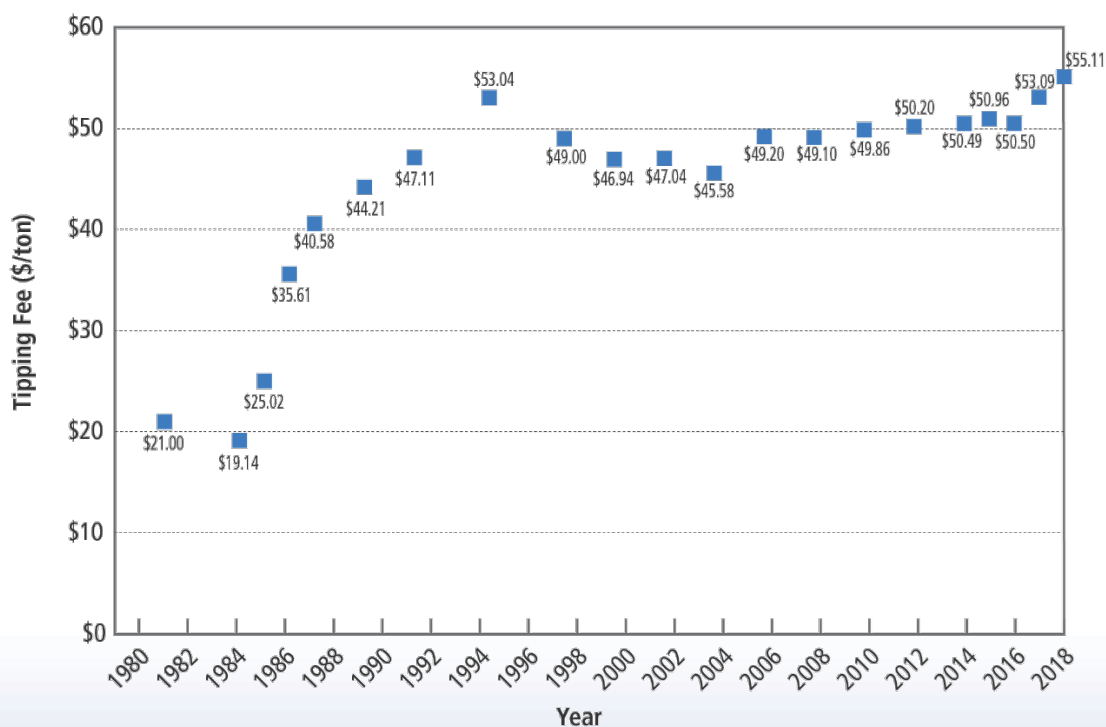
## Landfill Tipping Fees

Tipping fees are important to consider as they typically increase as landfill capacity decreases. For example, the average tipping fee in South Central states (\$34.80) with more available space for landfills (Arkansas, Louisiana, New Mexico, Oklahoma, Texas) is about half of the average in the Northeast (\$67.39).<sup>5</sup>

From 1985 to 1995, there was a rapid rise in national landfill tipping fees, followed by a steady decrease from 1995 to 2004. Since 2004, there has been a slow and steady average increase of about one percent per year in landfill tipping fees (See Figure 12). The tipping fees are expressed in constant 2018 dollars.

To allow for meaningful comparisons, national mean annual landfill tipping fees were normalized to the value of the dollar in 2018 using the Consumer Price Index (CPI) from the Bureau of Labor Statistics. This figure shows an average increase from 1985 to 1995 of \$3.39 per year, followed by a steady decrease of \$0.83 per year through 2004 and an average increase of \$0.68 per year from 2004 to 2018.

**Figure 12. National Landfill Tipping Fees, 1982-2018 (\$2018 per ton)**



Source: National Solid Wastes Management Association (NSWMA) Municipal Solid Waste Landfill Facts. See endnotes for additional sources<sup>6</sup>

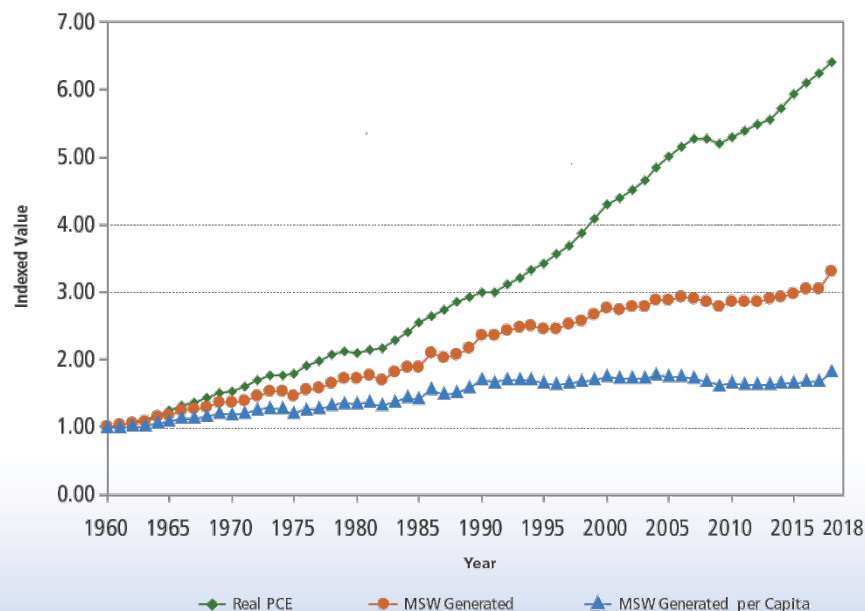
## MSW Generation and Household Spending

In the United States, the change in the amount of MSW generated typically mirrors trends in how much money households spent on goods and services. Personal Consumer Expenditures (PCE) measure household spending on goods and services such as food, clothing, vehicles and recreation services. PCE is one of the four components of economic growth, along with government spending, private investments and net exports. As PCE is an indicator of the household consumption of goods and services, which make up nearly 70 percent of the gross domestic product (GDP), PCE has a stronger conceptual tie to MSW generation than the other three GDP components. PCE adjusted for inflation is referred to as real PCE. This metric is more useful in making comparisons over time because it normalizes the value of a dollar by considering how much a dollar could purchase in the past versus today. Figure 13 explores the relationship between MSW generated and real PCE.

Figure 13 is an indexed graph, showing the relative changes in real PCE, MSW generated and MSW generated per capita over time. It is indexed to allow all three of these metrics to be shown on the same graph and to compare their relative rates of change since 1960. The indexed value indicates the change in the value of the data since 1960. For example, if, for a given year, the value was three, then the data value for that year would be three times the 1960 value. In this case, a 1960 value of 200 would mean the resulting year's value would be 600. The 2018 MSW per capita generation indexed value is 1.8, which means that MSW per capita generation has increased by 80 percent since 1960.

Figure 13 shows that real PCE has increased at a faster rate than MSW generation, and the disparity has become even more distinct since the mid-1990s. This index indicates that the amount of MSW generated per dollar spent is falling. In other words, the U.S. economy has been able to enjoy dramatic increases in household spending on consumer goods and services without the societal impact of similarly increasing MSW generation rates. This figure also shows that the MSW generated per capita leveled off in the early-to-mid 1990s.

**Figure 13. Indexed MSW Generated and Real PCE over Time (1960-2018)**



Source: See endnotes<sup>7</sup>

## MSW Methodology

The data summarized in this fact sheet characterizes the MSW stream as a whole by using a materials flow methodology that relies on a mass balance approach. EPA recognizes that there are several approaches to measuring material flows. To be consistent, EPA reports the quantities of materials in tons in the current fact sheet, but the Agency will continue to explore options for alternative measurement methodologies to describe materials management in the United States.

Using data gathered from industry associations, businesses and government sources, such as the U.S. Department of Commerce and the U.S. Census Bureau, EPA estimates the weight in tons of all MSW materials and products generated, recycled, composted, managed by other methods for food, combusted with energy recovery and landfilled. Other sources of data, such as waste characterizations and research reports performed by governments, industry or the press, supplement these data.

EPA has consistently used materials flow analysis to allow for the comparison of data over the last three decades. EPA recognizes that this methodology differs from other methodologies that also estimate the generation of MSW and other waste data. EPA will continue to work with stakeholders to identify methodologies and additional publicly available data to improve our national understanding of materials flow in the United States.

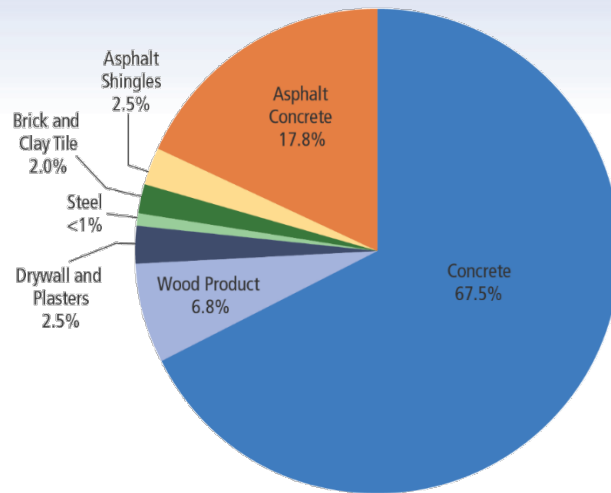
## Construction and Demolition (C&D) Debris Generation and Management Results

Construction and demolition (C&D) debris is a type of waste that is not included in MSW. Materials included in C&D debris are steel, wood products, drywall and plaster, brick and clay tile, asphalt shingles, concrete and asphalt concrete (asphalt pavement). These materials are used in buildings, roads and bridges, and other structures. The generation estimate represents C&D debris amounts from construction, renovation and demolition activities for buildings, roads and bridges, and other structures. C&D debris end-of-life (EOL) management includes quantities of materials going to next use or directed to landfills. "Next use" designates an intended next-use market which, depending on the material, may include fuel, manufactured products, aggregate, compost and mulch or soil amendment. The manufactured products next use encompasses estimates of C&D debris processed (e.g., ground, crushed or extracted and melted) for incorporation in the manufacture of new materials and products. For example, C&D asphalt is processed for use in the production of asphalt mixtures.

In 2018, 600 million tons of C&D debris were generated. Figure 14 shows the 2018 generation composition for C&D debris. C&D concrete was the largest portion at 67.5 percent, followed by asphalt concrete at 17.8 percent. C&D wood products made up 6.8 percent, and the other products accounted for 7.9 percent combined. The 2018 generation estimates are presented in more detail in Table 6. As shown in Figure 15, demolition represented over 90 percent of total C&D debris generation. Construction, on the other hand, represented under 10 percent.



**Figure 14. C&D Debris Generation Composition by Material (before processing), 2018  
600 Million Tons**



**Table 6. C&D Debris Generation by Material and Activity, 2018 (in millions of tons)**

	Waste During Construction	Demolition Debris	Total C&D Debris
Concrete	24.2	381.0	405.2
Wood Products <sup>7</sup>	3.4	37.4	40.8
Drywall and Plasters	3.9	11.3	15.2
Steel <sup>8</sup>	0	4.7	4.7
Brick and Clay Tile	0.3	12.0	12.3
Asphalt Shingles	1.2	13.9	15.1
Asphalt Concrete	0	107.0	107.0
<b>Total</b>	<b>33.0</b>	<b>567.3</b>	<b>600.3</b>

<sup>8,9</sup> See endnotes.



**Figure 15. Contribution of Construction and Demolition Phases to Total 2018 C&D Debris Generation**

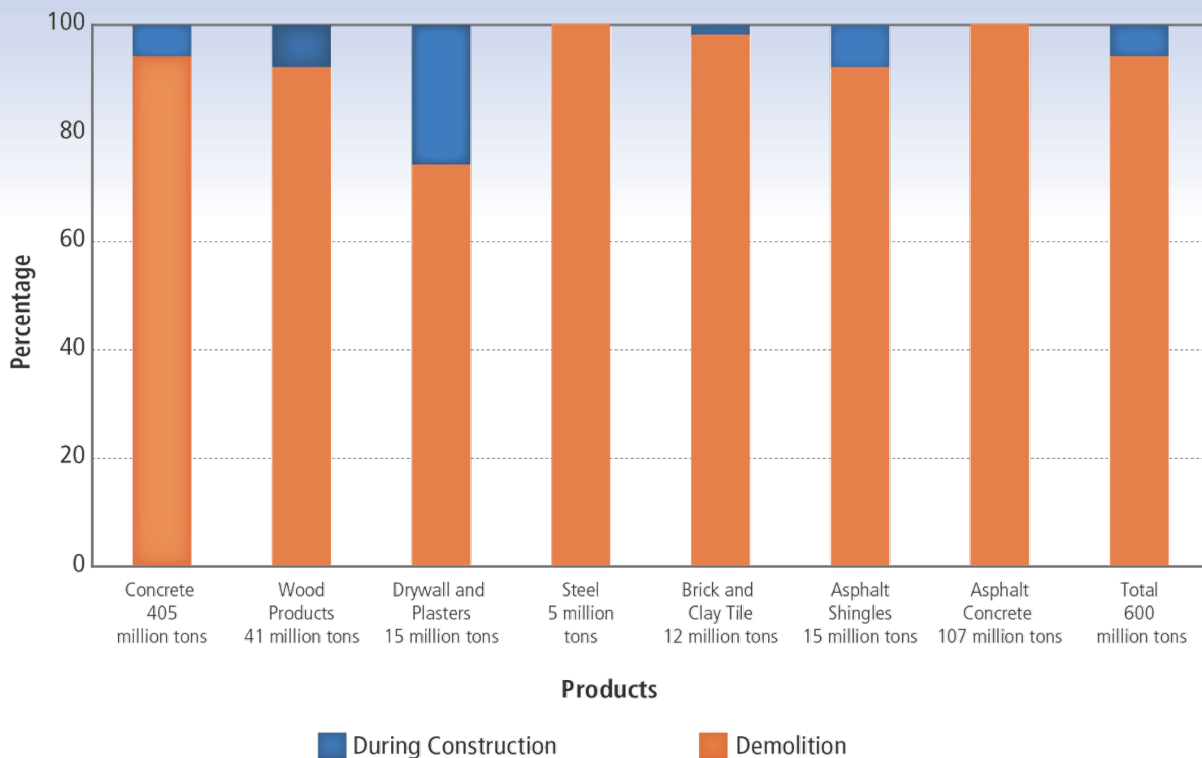


Table 7 displays the amount of C&D debris generation from buildings, roads and bridges, and other structures for each material. The “other structures” category includes C&D debris generation estimates from communication, power, transportation, sewer and waste disposal, water supply, conservation and development, and the manufacturing infrastructure. In 2018, roads and bridges contributed significantly more to C&D debris generation than buildings and other structures, and concrete made up the largest share of C&D debris generation for all three categories.

**Table 7. C&D Debris Generation by Source, 2018 (in millions of tons)**

	Buildings	Roads and Bridges	Other
Concrete	102.0	168.3	134.9
Wood Products <sup>7</sup>	39.5	0.0	1.3
Drywall and Plasters	15.2	0.0	0.0
Steel <sup>8</sup>	4.7	0.0	0.0
Brick and Clay Tile	12.3	0.0	0.0
Asphalt Shingles	15.1	0.0	0.0
Asphalt Concrete	0.0	107.0	0.0
<b>Total</b>	<b>188.8</b>	<b>275.3</b>	<b>136.2</b>

Figure 16 shows 2018 C&D debris managed through next use or sent to landfills. Aggregate was the main EOL next use for C&D debris at 52 percent. The total quantity of all C&D debris that was sent to aggregate was about 313 million tons. Concrete alone, was sent to aggregate at the quantity of about 301 million tons (see Table 8). The next largest end destination was landfill, at 24 percent of the total amount of C&D debris. The total quantity of all C&D debris that was sent to landfills was about 144 million tons. Over 71 million tons of concrete alone were sent to landfills (see Table 8).

**Figure 16. C&D Debris Management by Destination, 2018**  
600 million tons

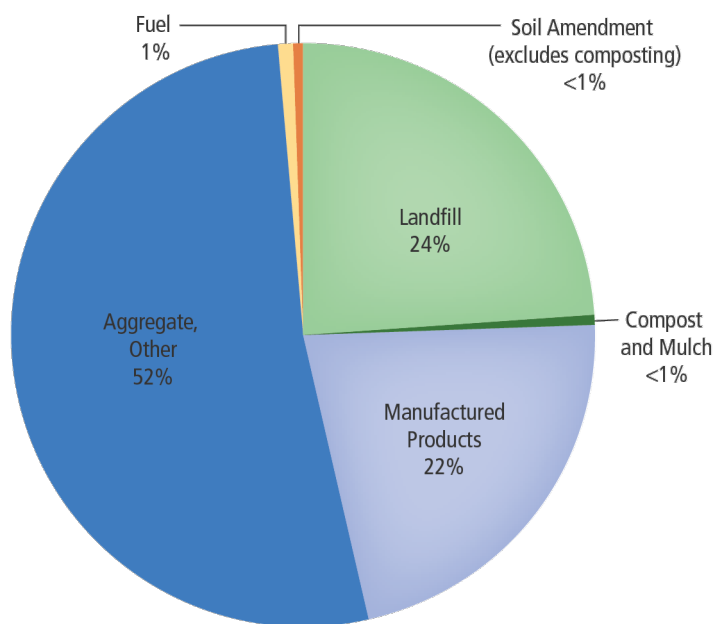


Figure 16 also shows that the “manufactured products” next use followed at 22 percent of the total generated C&D debris amount. The total quantity of all C&D debris that was sent to manufactured products was 132 million tons. About 92 million tons of C&D asphalt pavement alone, were incorporated in manufactured products (see Table 8). About 3 percent of the total C&D debris was directed to fuel, compost and mulch, and soil amendment (see Figure 16).

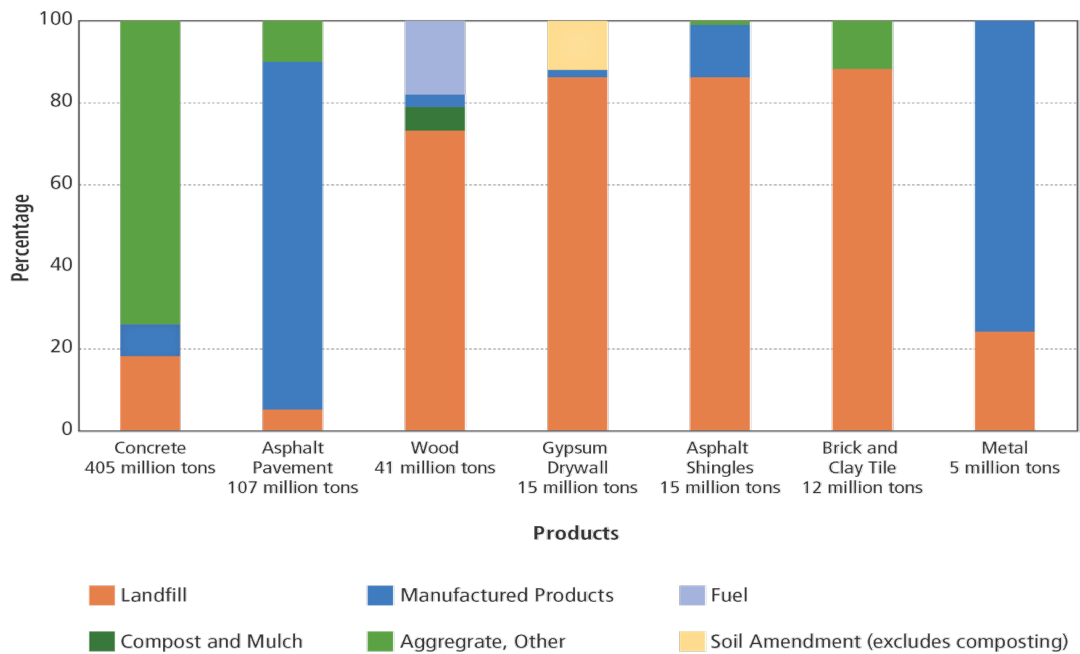
Table 8 is a summary of the total tonnages of each material type intended for next use destinations or sent to landfills. About 457 million tons were directed to next use and over 143 million tons of C&D debris were sent to landfills in 2018.

Figure 17 depicts quantities of a material in each destination as a fraction of the total generated amount for the material in 2018. The use in manufactured products was the dominant next use for asphalt concrete (asphalt pavement) and metals. Aggregate was the main destination for C&D concrete. Landfills were the primary destination for C&D debris wood, asphalt shingles, gypsum drywall<sup>10</sup> and brick and clay tile.

Table 8. C&D Debris Management by Material and Destination, 2018 (in millions of tons)

Material Type in C&D Debris	Landfill	Next Use					Total Next Use
		Compost and Mulch	Manufactured Products	Aggregate, Other	Fuel	Soil Amendment	
Concrete	71.2	0	32.8	301.2	0	0	334.0
Wood	29.6	2.5	1.2	0	7.5	0	11.2
Gypsum Drywall	13.2	0	.2	0	0	1.9	2.1
Metal	1.1	0	3.6	0	0	0	3.6
Brick and Clay Tile	10.8	0	0	1.5	0	0	1.5
Asphalt Shingles	13.0	0	2.0	.1	.02	0	2.1
Asphalt Concrete	4.9	0	91.8	10.3	0	0	102.1
<b>TOTAL</b>	<b>143.8</b>	<b>2.5</b>	<b>131.6</b>	<b>313.1</b>	<b>7.5</b>	<b>1.9</b>	<b>456.6</b>

Figure 17. C&D Debris Management by Destination, 2018 (percent of total generation amount for the material)



## Resources

The 2018 data tables and the summary of the MSW characterization methodology are available on the EPA website, along with information about waste reduction, recycling and sustainable materials management.

Please visit:

<https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling>

<https://www.epa.gov/warm>

## Endnotes

1. US EPA. 2020. "Recycling Economic Information Report" (2020). The 2020 REI report provided updated economic and recycling information to reflect the most recent available data for input-output modeling in the United States. The 2020 report built on the Waste Input-Output methodology by generating more current results based on transparent and publicly available data. This revised study provides greater clarity and transparency for assessing the economic impacts of recycling activities in the U.S.
2. Scrap can refer to both postconsumer as well as pre-consumer commodities; however, this analysis addresses postconsumer commodities only.
3. Institute of Scrap Recycling Industries (ISRI) 2020. 2019 Recycling Industry Yearbook. <https://www.isri.org/recycling-commodities/recycling-industry-yearbook>.
4. Recycled Commodity Values. Soft mixed paper consists of a clean, sorted mixture of various qualities of paper not limited as to type of fiber content. Prohibitive Materials may not exceed 1 percent. There are specific limits on the percent of contaminants allowed in soft mixed paper. Data were not available for ONP, metals, plastics and glass in 1997 and 1998. For plastics, glass and metals, there was a transition in data sources between 1996 and 1999 and between 2004 and 2005, so some of the change between years could be due to the methodology of the data source for capturing data.  
Additional sources include Secondary Materials Pricing and Secondary Fiber Pricing. 2003-2018. Accessed February 2020. Available at <http://www.recyclingmarkets.net/>. 1970 to 2004 historical data tabulated from weekly or monthly industry publications and averaged annually during the time periods shown. Publications included Waste Age Recycling Times, Waste News, Paper Recycler, Miller Freeman, Inc.
5. Waste 360. 2018. "EREF Study Shows Continued Increase in Average MSW Landfill Tip Fees". August 1. <https://www.waste360.com/landfill-operations/eref-study-shows-continued-increase-average-msw-landfill-tip-fees>
6. Sources include National Solid Wastes Management Association (NSWMA) Municipal Solid Waste Landfill Facts. October 2011 (Data from 1985 to 2008). Waste Business Journal. "The Cost to Landfill MSW Continues to Rise Despite Soft Demand." July 11, 2017 (Data for 2010 to 2015). Environmental Research & Education Foundation. "Analysis of MSW Landfill Tipping Fees" April 2018 (Data for 2016 and 2017). Waste 360. "EREF Study Shows Average MSW Landfill Tip Fee Continues to Rise". October 29, 2019. (Data from 2018).
7. MSW Generation: US EPA. 2020. Solid Waste in the United States: 2018 Facts and Figures working papers. Population: U.S. Census Bureau. Population Division. Annual Estimates of the Resident Population. PCE: Bureau of Economic Analysis (BEA). 2019. Tables 2.3.4 and 2.3.5.
8. Wood consumption in buildings also includes some lumber consumed for the construction of other structures. Data were not available to allocate lumber consumption for non-residential and unspecified uses between buildings and other structures except for railroad ties. Since non-residential buildings such as barns, warehouses and small commercial buildings are assumed to consume a greater amount of lumber than other structures, the amount of lumber for construction remaining after the amount for railroad ties is split out is included in the buildings source category.
9. Steel consumption in buildings also includes steel consumed for the construction of roads and bridges. Data were not available to allocate steel consumption across different sources, but buildings are assumed to consume the largest portion of steel for construction.
10. Names of the materials are slightly different in the generation versus management analyses, due to material categorizations across the various data sources and data availability. For example, in the generation analyses the term used is drywall and plasters, whereas in the management analysis the term used is gypsum drywall.



United States Environmental Protection Agency  
Office of Land and Emergency Management (5306P)  
Washington, DC 20460

Official Business

Penalty for Private Use \$300

EPA 530-F-20-009

December 2020

# **APPENDIX C**



Alabama Department of Environmental Management  
[adem.alabama.gov](http://adem.alabama.gov)

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463  
Montgomery, Alabama 36130-1463  
(334) 271-7700 ■ FAX (334) 271-7950

October 4, 2022

Mr. Gerard Brewer  
City of Alexander City  
P.O. Box 552  
Alexander City, AL 35011

RE: Permit Modification  
New North Central Avenue Inert Landfill  
Permit No. 62-10

Dear Mr. Brewer:

Enclosed is the modified Solid Waste Facility Disposal Permit for the New North Central Avenue Inert Landfill. The effective date for the permit modification is October 3, 2022 and the permit expiration date would remain April 28, 2024.

If you should have any questions, please contact Mr. Jonathan Crosby of the Solid Waste Engineering Section at (334) 270-5644.

Sincerely,

Jason Wilson, Chief  
Solid Waste Branch  
Land Division

JW/jc





## **FINAL DETERMINATION**

### **MAJOR PERMIT MODIFICATION**

City of Alexander City  
P.O. Box 552  
Alexander City, Alabama 35011

New North Central Avenue Inert Landfill  
Permit No. 62-10

October 3, 2022

The City of Alexander City has submitted to the Alabama Department of Environmental Management (ADEM) an application to modify the Solid Waste Facility Permit for the New North Central Avenue Inert Landfill, Permit No. 62-10. The New North Central Avenue Inert Landfill is described as being located in the Southwest ¼ of Section 21, Township 23 North, Range 21 East, Tallapoosa County, Alabama. On June 19, 2017, the City of Alexander City passed a resolution granting host government approval for the expansion of the New North Central Avenue Landfill. The proposed modification increases the permitted facility area from 34.65 acres to 183.48 acres and the permitted disposal area from 12.72 acres to 35.72. All other permit conditions would remain unchanged.

A public comment period was announced by ADEM on August 12, 2022 and ended on September 16, 2022. The permit application and draft permit was available for inspection at the Alabama Department of Environmental Management and on the Alabama Department of Environmental Management Website. The Department received no comments during the comment period.

The Land Division has determined that the major permit modification meets the applicable requirements of ADEM's Administrative Codes Division 13.

Technical Contact:

Mr. Jonathan Crosby  
Solid Waste Engineering Section  
Land Division  
(334) 270-5644





# ***SOLID WASTE DISPOSAL FACILITY PERMIT***

**PERMITTEE:** City of Alexander City

**FACILITY NAME:** New North Central Avenue Inert Landfill

**FACILITY LOCATION:** SW ¼ of Section 21, Township 23 North, Range 21 East in Tallapoosa County, Alabama. The total permitted area is approximately 183.48 acres with 35.72 acres approved for disposal.

**PERMIT NUMBER:** 62-10

**PERMIT TYPE:** Construction/Demolition (C/D) Landfill

**WASTE APPROVED FOR DISPOSAL:** The Permittee may accept non-putrescible and non-hazardous construction and demolition waste, discarded tires, and rubbish as defined by ADEM Admin Code r. 335-13-1-.03. The Permittee may accept textile waste from Russell Corporation and Avondale Mills and nonhazardous silica sand which exhibits less than 50 percent of each of the TC levels as defined by the USEPA's Toxicity Characteristics Leaching Procedure (TCLP) from Robinson Iron and Alexander Casting.

**APPROVED WASTE VOLUME:** Maximum Daily Volume of 120 tons per day

**APPROVED SERVICE AREA:** Chambers, Clay, Coosa, Elmore, and Tallapoosa Counties in Alabama.

In accordance with and subject to the provisions of the Alabama Solid Wastes and Recyclable Materials Management Act, as amended, Code of Alabama 1975, SS 22-27-1 to 22-27-27 ("SWRMMA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, SS 22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to dispose of the above-described solid wastes at the above-described facility location.

**ISSUANCE DATE:** April 10, 2019

**EFFECTIVE DATE:** April 29, 2019

**MODIFICATION DATE:** October 3, 2022

**EXPIRATION DATE:** April 28, 2024

Alabama Department of Environmental Management

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
SOLID WASTE PERMIT**

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Permittee: City of Alexander City  
P.O. Box 552  
Alexander City, Alabama 35011

Landfill Name: New North Central Avenue Inert Landfill

Landfill Location: Southwest ¼ of Section 21, Township 23 North, Range 21 East in Tallapoosa County,  
Alabama

Permit Number: 62-10

Landfill Type: Construction and Demolition Landfill

Pursuant to the Solid Wastes & Recyclable Materials Management Act, Code of Alabama 1975, §§22-27-1, *et seq.*, as amended (the "Act"), and attendant regulations promulgated thereunder by the Alabama Department of Environmental Management (ADEM), this permit is issued to City of Alexander City (hereinafter called the Permittee), to operate a solid waste disposal facility, known as the New North Central Avenue Inert Landfill.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions set forth herein (including those in any attachments), and the applicable regulations contained in Chapters 335-13-1 through 335-13-16 of the ADEM Administrative Code (hereinafter referred to as the "ADEM Admin. Code"). Rules cited are set forth in this document for the purpose of Permittee reference. Any Rule that is cited incorrectly in this document does not constitute grounds for noncompliance on the part of the Permittee. Applicable ADEM Administrative Codes are those that are in effect on the date of issuance of this permit or any revisions approved after permit issuance.

This permit is based on the information submitted to ADEM on November 28, 2018, August 22, 2019, and as amended and is known as the Permit Application (hereby incorporated by reference and hereinafter referred to as the Application). Any inaccuracies found in this information could lead to the termination or modification of this permit and potential enforcement action. The Permittee must inform ADEM of any deviation from or changes in the information in the Application that would affect the Permittee's ability to comply with the applicable ADEM Admin. Code or permit conditions.

This permit is effective as of **April 29, 2019, modified on October 3, 2022**, and shall remain in effect until **April 28, 2024**, unless suspended or revoked.



Alabama Department of Environmental Management

10/3/2022

Date Signed

## SECTION I. STANDARD CONDITIONS

- A. Effect of Permit. The Permittee is allowed to dispose of nonhazardous solid waste in accordance with the conditions of this permit and ADEM Administrative Code, Division 13. Issuance of this permit does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws or regulations. Except for actions brought under Code of Alabama 1975, Section 22-27-1, *et seq.*, as amended, compliance with the conditions of this permit shall be deemed to be compliance with applicable requirements in effect as of the date of issuance of this permit and any future revisions.
- B. Permit Actions. This permit may be suspended, revoked or modified for cause. The filing of a request for a permit modification or the notification of planned changes or anticipated noncompliance on the part of the Permittee, and the suspension or revocation does not stay the applicability or enforceability of any permit condition.
- C. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- D. Definitions. For the purpose of this permit, terms used herein shall have the same meaning as those in ADEM Administrative Code, Division 13, unless this permit specifically provides otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.
1. "EPA" for purposes of this permit means the United States Environmental Protection Agency.
  2. "Permit Application" for the purposes of this permit, means all permit application forms, design plans, operational plans, closure plans, technical data, reports, specifications, plats, geological and hydrological reports, and other materials which are submitted to the Department in pursuit of a solid waste disposal permit.
- E. Duties and Requirements.
1. Duty to Comply. The Permittee must comply with all conditions of this permit except to the extent and for the duration such noncompliance is authorized by a variance granted by the Department. Any permit noncompliance, other than noncompliance authorized by a variance, constitutes a violation of Code of Alabama 1975, Section 22-27-1 *et seq.*, as amended, and is grounds for enforcement action, permit suspension, revocation, modification, and/or denial of a permit renewal application.
  2. Duty to Reapply. If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The renewal application must be submitted to the Department at least 180 days before this permit expires.
  3. Permit Expiration. This permit and all conditions therein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application as required by Section I, Paragraph E, Subparagraph 2, and, through no fault of the Permittee, the Department has not made a final decision regarding the renewal application.
  4. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit.
  5. Duty to Mitigate. In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.

6. Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this permit.
7. Duty to Provide Information. If requested, the Permittee shall furnish to ADEM, within a reasonable time, any information that ADEM may reasonably need to determine whether cause exists for denying, suspending, revoking, or modifying this permit, or to determine compliance with this permit. If requested, the Permittee shall also furnish the Department with copies of records kept as a requirement of this permit.
8. Inspection and Entry. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the employees of the Department or their authorized representative to:
  - a. Enter at reasonable times the Permittee's premises where the regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
  - c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
  - d. Sample or monitor, at reasonable times, any substances or parameters at any location for the purposes of assuring permit compliance or as otherwise authorized by Code of Alabama 1975, Section 22-27-1 *et seq.*
9. Monitoring, Corrective Actions, and Records.
  - a. Samples and measurements taken for the purpose of monitoring or corrective action shall be representative of the monitored activity. The methods used to obtain representative samples to be analyzed must be the appropriate method from Chapter 335-13-4 or the methods as specified in the Application and incorporated by reference. Laboratory methods must be those specified in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), other appropriate EPA methods, or as specified in the Application. All field tests must be conducted using approved EPA test kits and procedures.
  - b. The Permittee shall retain records, at the location specified in Section I, Paragraph I, of all monitoring, or corrective action information, including all calibration and maintenance records, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report or record or for periods elsewhere specified in this permit. These periods may be extended by the request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.
  - c. Records of monitoring and corrective action information shall include:
    - i. The exact place, date, and time of sampling or measurement.
    - ii. The individual(s) and company who performed the sampling or measurements.
    - iii. The date(s) analyses were performed.
    - iv. The individual(s) and company who performed the analyses.



- v. The analytical techniques or methods used.
  - vi. The results of such analyses.
- d. The Permittee shall submit all monitoring and corrective action results at the interval specified elsewhere in this permit.
- 10. Reporting Planned Changes. The Permittee shall notify the Department, in the form of a request for permit modification, at least 120 days prior to any change in the permitted service area, increase in the waste received, or change in the design or operating procedure as described in this permit, including any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- 11. Transfer of Permit. This permit may be transferred to a new owner or operator. All requests for transfer of permits shall be in writing and shall be submitted on forms provided by the Department. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of this permit.
- 12. Certification of Construction. The Permittee may not commence disposal of waste in any new cell or phase until the Permittee has submitted to ADEM, by certified mail or hand delivery, a letter signed by both the Permittee and a professional engineer stating that the facility has been constructed in compliance with the permit. ADEM must inspect the constructed cells or phases before the owner or operator can commence waste disposal unless the Permittee is notified that ADEM will waive the inspection.
- 13. Compliance Schedules. Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule required and approved by the Department shall be submitted no later than 14 days following each schedule date.
- 14. Other Noncompliance. The Permittee shall report all instances of noncompliance with the permit at the time monitoring reports are submitted.
- 15. Other Information. If the Permittee becomes aware that information required by the Application was not submitted or was incorrect in the Application or in any report to the Department, the Permittee shall promptly submit such facts or information. In addition, upon request, the Permittee shall furnish to the Department, within a reasonable time, information related to compliance with the permit.
- F. Design and Operation of Facility. The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of contaminants (including leachate and explosive gases) to air, soil, groundwater, or surface water, which could threaten human health or the environment.
- G. Inspection Requirements.
  - 1. The Permittee shall comply with all requirements of 335-13.
  - 2. The Permittee shall conduct random inspections of incoming loads.
  - 3. Records of all inspections shall be included in the operating record.
- H. Recordkeeping and Reporting.
  - 1. The Permittee shall maintain a written operating record at the location specified in Section I.,I. The operating record shall include:
    - a. Documentation of inspection and maintenance activities.

- b. Daily Volume reports.
  - c. Personnel training documents and records.
  - d. Solid/Hazardous Waste Determination Forms for Industrial Wastes, and associated ADEM disposal approval correspondence for industrial waste and special waste.
  - e. Groundwater monitoring records.
  - f. Explosive gas monitoring records.
  - g. Surface water and leachate monitoring records.
  - h. Copies of this Permit and the Application.
  - i. Copies of all variances granted by ADEM, including copies of all approvals of special operating conditions.
2. Quarterly Volume Report. Beginning with the effective date of this permit, the Permittee shall submit, within thirty (30) days after the end of each calendar quarter, a report summarizing the daily waste receipts for the previous (just ended) quarter. Copies of the quarterly reports shall be maintained in the operating record.
3. Monitoring and Corrective Action Reports. The Permittee shall submit reports on all monitoring and corrective activities conducted pursuant to the requirements of this permit, including, but not limited to, groundwater, surface water, explosive gas and leachate monitoring. The groundwater monitoring shall be conducted in March and September of each year, or as directed by ADEM, and the reports shall be submitted at least semi-annually, or as directed by ADEM. The reports should contain all monitoring results and conclusions from samples and measurements conducted during the sampling period. Explosive gas monitoring must be submitted once each year, and the reports should be submitted to ADEM and placed in the operating record within 30 days of the monitoring event. Copies of the groundwater and explosive gas monitoring reports shall be maintained in the operating record.
4. Availability, Retention, and Disposition of Records.
- a. All records, including plans, required under this permit or 335-13 must be furnished upon request, and made available at reasonable times for inspection by any officer, employee, or representative of ADEM.
  - b. All records, including plans, required under this permit or 335-13 shall be retained by the Permittee for a period of at least three years. The retention period for all records is extended automatically during the course of any unresolved enforcement action regarding the facility, or as requested by ADEM.
  - c. A copy of records of waste disposal locations and quantities must be submitted to ADEM and local land authority upon closure of the facility.
- I. Documents to be Maintained by the Permittee. The Permittee shall maintain, at the Alexander City Hall, office the following documents and amendments, revisions and modifications to these documents until an engineer certifies closure.
- 1. Operating record.
  - 2. Closure Plan.

- J. Mailing Location. All reports, notifications, or other submissions which are required by this permit should be sent via signed mail (i.e. certified mail, express mail delivery service, etc.) or hand delivered to:
1. Mailing Address.  
Chief, Solid Waste Branch  
Alabama Department of Environmental Management  
P.O. Box 301463  
Montgomery, AL 36130-1463
  2. Physical Address.  
Chief, Solid Waste Branch  
Alabama Department of Environmental Management  
1400 Coliseum Blvd.  
Montgomery, Alabama 36110-2400
- K. Signatory Requirement. All applications, reports or information required by this permit, or otherwise submitted to ADEM, shall be signed and certified by the owner as follows:
1. If an individual, by the applicant.
  2. If a city, county, or other municipality or governmental entity, by the ranking elected official, or by a duly authorized representative of that person.
  3. If a corporation, organization, or other legal entity, by a principal executive officer, of at least the level of Vice President, or by a duly authorized representative of that person.
- L. Confidential Information. The Permittee may claim information submitted as confidential if the information is protected under Code of Alabama 1975 §§22-39-18, as amended.
- M. State Laws and Regulations. Nothing in this permit shall be construed to preclude the initiation of any legal action or to relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

## SECTION II. GENERAL OPERATING CONDITIONS.

- A. Operation of Facility. The Permittee shall operate and maintain the disposal facility consistent with the Application, this permit, and 335-13.
- B. Open Burning. The Permittee shall not allow open burning without prior written approval from ADEM and other appropriate agencies. A burn request should be submitted in writing to ADEM outlining why that burn request should be granted. This request should include, but not be limited to, specifically what areas will be utilized, types of waste to be burned, the projected starting and completion dates for the project, and the projected days and hours of operation. The approval, if granted, shall be included in the operating record.
- C. Prevention of Unauthorized Disposal. The Permittee shall follow the approved procedures for the detecting and preventing the disposal of free liquids, regulated hazardous waste, PCB's, and medical waste at the facility.
- D. Unauthorized Discharge. The Permittee shall operate the disposal facility in such a manner that there will be no water pollution or unauthorized discharge. Any discharge from the disposal facility or practice thereof may require a National Pollutant Discharge Elimination System permit under the Alabama Water Pollution Control Act.
- E. Industrial Waste Disposal. The Permittee shall not dispose of industrial process waste at this landfill. Only those wastes shown in Section III, Paragraph B are allowed for disposal in this landfill.

- F. Boundary Markers. The Permittee shall ensure that the facility is identified with a sufficient number of permanent boundary markers that are at least visible from one marker to the next.
- G. Certified Operator. The Permittee shall be required to have an operator certified by the Department on-site during hours of operation, in accordance with the requirements of ADEM Admin. Code 335-13-12.

### SECTION III. SPECIFIC REQUIREMENTS FOR C/D LANDFILLS

A. Waste Identification and Management

1. Subject to the terms of this permit, the Permittee may dispose of the nonhazardous solid wastes listed in Section III, Paragraph B. Disposal of any other wastes is prohibited, except waste granted a temporary or one time waiver by the Director.
2. The total permitted area for the New North Central Avenue Inert Landfill is approximately 183.48 acres with 35.72 acres approved for disposal.
3. The maximum average daily volume of waste disposed at the facility, as contained in the permit application, shall not exceed 120 tons/day. Should the average daily volume exceed this value by 20% or 100 tons/day, whichever is less, for two (2) consecutive quarters the permittee shall be required to modify the permit in accordance with ADEM Admin Code r. 335-13-5-.06(2)(b)2. The average daily volume shall be computed as specified by ADEM Admin. Code r. 335-13-4-.23(2)(f).

B. Waste Streams. The Permittee may accept for disposal non-putrescible and non-hazardous construction and demolition waste, discarded tires, and rubbish as defined by ADEM Admin Code r. 335-13-1-.03. The Permittee may accept for disposal textile waste from Russell Corporation and Avondale Mills and nonhazardous silica sand which exhibits less than 50 percent of each of the TC levels as defined by the USEPA's Toxicity Characteristics Leaching Procedure (TCLP) from Robinson Iron and Alexander Casting.

C. Service Area. The Permittee is allowed to receive for disposal waste from the Chambers, Clay, Coosa, Elmore, and Tallapoosa Counties in Alabama.

D. Waste Placement, Compaction, and Cover. All waste shall be confined to an area as small as possible within a single working face and placed onto an appropriate slope not to exceed 4 to 1 (25%). All waste shall be spread in layers two feet or less in thickness and thoroughly compacted weekly with adequate landfill equipment prior to placing additional layers of waste or placing the weekly cover. A minimum of six inches of compacted earth or other alternative cover material approved by ADEM shall be added at the conclusion of each week's operation. These are minimum requirements for waste placement, compaction and cover unless a variance is granted in Section VIII.

E. Liner Requirements. At this time, the Permittee shall not be required to install a liner system. The base of the landfill shall be a minimum of five (5) feet above the highest measured groundwater level as determined by ADEM Admin Code r. 335-13-4-.11(2)(a).

F. Security. The Permittee shall provide artificial and/or natural barriers, which prevent entry of unauthorized vehicular traffic to the facility.

G. All Weather Access Roads. The Permittee shall provide an all-weather access road to the dumping face that is wide enough to allow passage of collection vehicles.

H. Adverse Weather Disposal. The Permittee shall provide for disposal activities in adverse weather conditions.

I. Personnel. The Permittee shall maintain adequate personnel to ensure continued and smooth operation of the facility.



- J. Environmental Monitoring and Treatment Structures. The Permittee shall provide protection and proper maintenance of environmental monitoring and treatment structures.
- K. Vector Control. The Permittee shall provide for vector control as required by ADEM Admin. Code, Division 13.
- L. Bulk or Noncontainerized Liquid Waste. The Permittee shall not dispose of bulk or noncontainerized liquid waste, or containers capable of holding liquids, unless the conditions of ADEM Admin Code r. 335-13-4-.23(1)(j) are met.
- M. Empty Containers. Empty containers larger than 10 gallons in size must be rendered unsuitable for holding liquids prior to disposal in the landfill unless otherwise approved by ADEM.
- N. Other Requirements. ADEM may enhance or reduce any requirements for operating and maintaining the landfill as deemed necessary by the Land Division.
- O. Other Permits. The Permittee shall operate the landfill according to this and any other applicable permits.
- P. Scavenging and Salvaging Operations. The Permittee shall prevent scavenging and salvaging operations, except as part of a controlled recycling effort. Any recycling operation must be in accordance with plans submitted and approved by ADEM.
- Q. Signs. If the landfill is available to the public or commercial haulers, the Permittee shall provide a sign outlining instructions for use of the site. The sign shall be posted and have the information required by ADEM Admin Code r. 335-13-4-.23(1)(f).
- R. Litter Control. The Permittee shall control litter.
- S. Fire Control. The Permittee shall provide fire control measures.

#### SECTION IV. GROUNDWATER MONITORING REQUIREMENTS:

Groundwater monitoring is not being required at this landfill provided that the waste stream is in accordance with Section III, Paragraph B. Should any waste be disposed other than the waste streams indicated in Section III, Paragraph B, the Department may require that groundwater-monitoring wells be installed.

#### SECTION V. GAS MONITORING REQUIREMENTS

The permittee must install and maintain an explosive gas monitoring system in accordance with ADEM Administrative Code, Division 13.

#### SECTION VI. SURFACE WATER MANAGEMENT

The permittee shall construct and maintain run-on and run-off control structures. Any discharges from drainage control structures shall be permitted through a discharge permit issued by the ADEM Water Division.

#### SECTION VII. CLOSURE AND POST-CLOSURE REQUIREMENTS

The Permittee shall close the landfill and perform post-closure care of the landfill in accordance with ADEM Admin. Code, Division 13.

- A. Final Cover. The Permittee shall grade final soil cover such that surface water does not pond over the permitted area as specified in the Application. The final cover system shall comply with ADEM Administrative Code, Division 13. (See Section VIII.)

- B. Vegetative Cover. The Permittee shall establish a vegetative or other appropriate cover within 90 days after completion of final grading requirements in the Application. Preparation of a vegetative cover shall include, but not be limited to, the placement of seed, fertilizer, mulch, and water.
- C. Notice of Intent. The Permittee shall place in the operating record and notify ADEM of their intent to close the landfill prior to beginning closure.
- D. Completion of Closure Activities. The Permittee must complete closure activities of each landfill unit in accordance with the Closure Plan within 180 days of the last known receipt of waste.
- E. Certification of Closure. Following closure of each unit, the Permittee must submit to ADEM a certification, signed by an engineer, verifying the closure has been completed according to the Closure Plan.
- F. Post-Closure Care Period. Post-closure care activities shall be conducted after closure of each unit throughout the life of this permit and continuing for a period of thirty (30) years following closure of the facility. ADEM may shorten or extend the post-closure care period applicable to the solid waste disposal facility. The Permittee shall reapply in order to fulfill the post-closure care requirements of this permit.
- G. Post-Closure Maintenance. The Permittee shall provide post closure maintenance of the facility to include regularly scheduled inspections. This shall include maintenance of the cover, vegetation, monitoring devices and pollution control equipment and correction of other deficiencies that may be observed by ADEM. Monitoring requirements shall continue throughout the post closure period as determined by ADEM unless all waste is removed and no unpermitted discharge to waters of the State have occurred.
- H. Post-Closure Use of Property. The Permittee shall ensure that post closure use of the property never be allowed to disturb the integrity of the final cover, liner, or any other component of the containment system. This shall preclude the growing of deep-rooted vegetation on the closed area.
- I. Certification of Post-Closure. Following post-closure of each unit, the Permittee must submit to ADEM a certification, signed by an engineer, verifying the post-closure has been completed according to the Post-Closure Plan.
- J. Notice in Deed to Property. The Permittee must provide documentation of compliance with the requirements of the Uniform Environmental Covenants Program in ADEM Admin Code, Division 5 and shall record a notation onto the land deed containing the property utilized for disposal within 90 days after permit expiration, revocation or when closure requirements are achieved as determined by ADEM as stated in the Application. This notation shall state that the land has been used as a solid waste disposal facility, the name of the Permittee, type of disposal activity, location of the disposal facility and beginning and closure dates of the disposal activity.
- K. Recording Instrument. The Permittee shall submit a certified copy of the recording instrument to ADEM within 120 days after permit expiration, revocation, or as directed by ADEM as described in the Application.
- L. Removal of Waste. If the Permittee, or any other person(s), wishes to remove waste, waste residues, or any liner or contaminated soils, the owner must request and receive prior approval from ADEM

#### SECTION VIII. VARIANCES

- 1. The Permittee has been granted a variance from ADEM Admin. Code r. 335-13-4-.20(2)(c)2. requiring a maximum 4 to 1 (25%) final grade for the final closure system. The maximum final grade shall be 3 to 1 (33%). (See Section VII. A.)
- 2. The Permittee has been granted a variance from ADEM Admin Code r. 335-13-4-.20(2)(c)3. requiring horizontal terraces every 20 feet rise in elevation for slopes longer than 25 feet (See Section VII.A.)

Any variance granted by the Department may be terminated by the Department whenever the Department finds, after notice and opportunity for hearing, that the petitioner is in violation of any requirement, condition, schedule, limitation or any other provision of the variance, or that operation under the variance does not meet the minimum requirements established by state and federal laws and regulations or is unreasonably threatening the public health.