

Columbus Consolidated Government Solid Waste Management Plan

2019 through 2028

DRAFT January 2019



Prepared by:



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1 INTRODUCTION

1.1 DESCRIPTION OF THE AREA

This is the Solid Waste Management Plan for the consolidated government of the City of Columbus and Muscogee County. The City and County joined together in 1971 to form the Columbus Consolidated Government, the first consolidated city-county government in the State of Georgia. The Columbus Consolidated Government is geographically the same area formerly identified as Muscogee County, shown in Figure 1-1, and consists of 221 square miles (141,440 acres) in west central Georgia. It is bordered on the west by the Chattahoochee River across which lies the state of Alabama. A portion of the Fort Benning

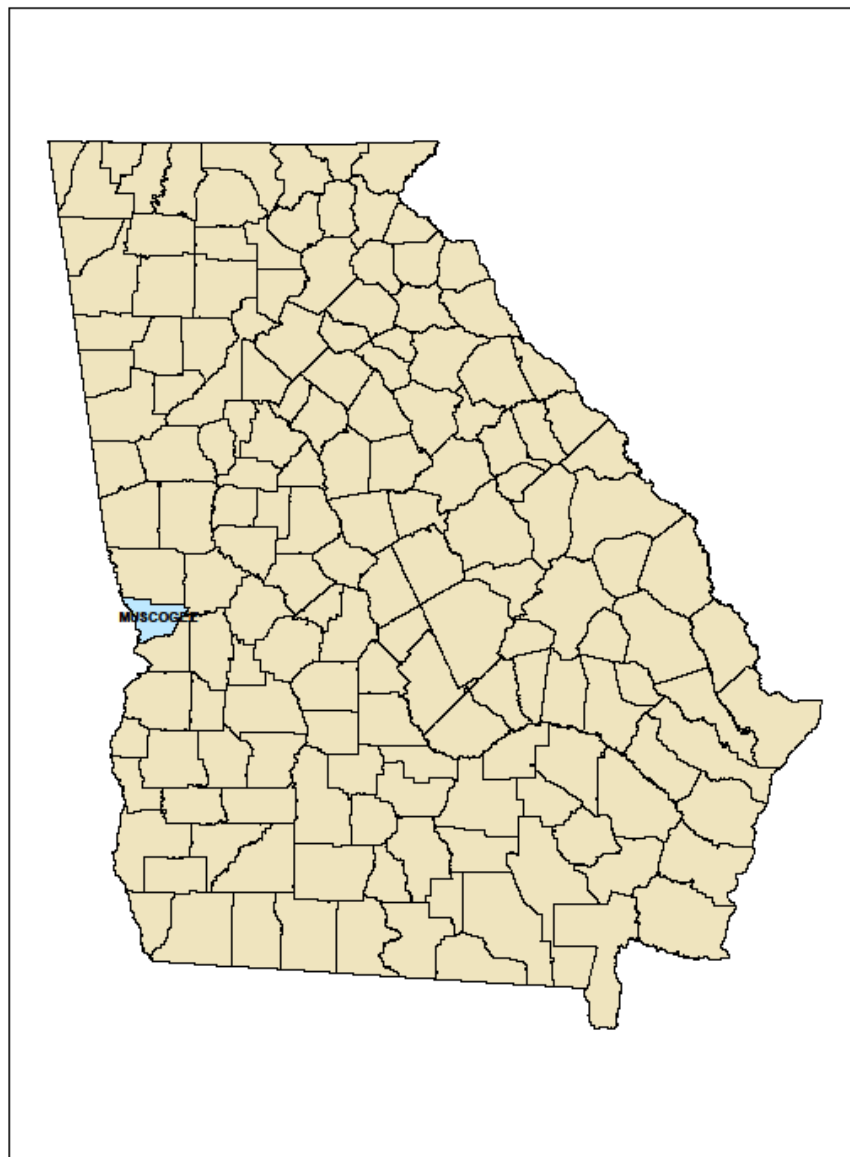


Figure 1-1 Location of Columbus, Georgia

The Columbus Consolidated Government, hereafter referred to as Columbus, lies in two distinct geographic regions divided by the Fall Line of the Chattahoochee River. The southern and eastern portions lie in the Coastal Plain while the northern and western portions lie in the Piedmont. Early development in the area was located on the river bank and the bluffs to the east. More recent development has occurred in Northwest Columbus, the Panhandle, and Southeast Columbus. Much of the remaining undeveloped land in the area is geographically and geologically difficult to develop. Thus, future growth is being directed back into the urban core.

According to the draft *Columbus Consolidated Government 2038 Comprehensive Plan (October 2018)* (the Comprehensive Plan), the estimated population of Columbus was 199,997 in 2016 (ESRI Community Profile) with minimal growth projected through 2040. Thus, for purposes of this Solid Waste Management Plan, the population is projected to remain steady at 200,000 throughout the ten-year planning period.

The Comprehensive Plan also reports that 100,741 people are employed in Muscogee County (or Columbus), 71,862 of which live in the County. Table 1-1 shows the largest employers as of 2015 with Fort Benning Military Reservation being the largest employer by far.

Table 1-1 Largest Employers, 2015

Employer	Employees
Fort Benning	40,000
TSYS	4,600
Muscogee County School District	4,300
Aflac	3,670
Columbus Regional Healthcare System, Inc.	3,180
Columbus Consolidated Government	3,130
St. Francis Hospital	3,000
Pratt & Whitney	1,500 ¹
BlueCross BlueShield of Georgia	1,400
Columbus State University	1,360

Source: Draft Columbus Consolidated Government 2038 Comprehensive Plan (October 2018).
¹ Pratt and Whitney employment which is for 2017.

1.2 THE SOLID WASTE MANAGEMENT PLAN

Up until 2011, local governments in Georgia were required to be part of a current solid waste management plan to be eligible for solid waste permits, grants, or loans from the State. The Georgia Department of Community Affairs established Minimum Planning Standards for local government solid waste management plans and reviewed the plans to ensure that these standards were met. The most recent Solid Waste Management Plan for Columbus Consolidated Government established needs, goals, and an implementation strategy for the years 2008 through 2018. It was updated in 2011.

In 2011, Senate Bill 157 modified the requirements for local government solid waste management plans. Every local government in Georgia is still required to be part of a current solid waste management plan but these plans are no longer reviewed by a regional or state entity prior to local government adoption. Since 2011, local government solid waste management plans are only required by the state to include the following: 1) demonstration of ten years of collection capability; 2) demonstration of ten years of disposal capacity; 3) description of the type and size of solid waste handling facilities located within the jurisdiction; and 4) identification of sites which are unsuitable for solid waste handling facilities based on environmental and land use factors. Green text boxes in this Plan indicate where these four state requirements are addressed.

This Solid Waste Management Plan (the Plan) for Columbus Consolidated Government, covering the years 2019 through 2028, goes beyond state requirements to identify goals for reducing and managing solid waste and to establish a roadmap to achieve these goals. The Plan addresses solid waste management throughout Columbus except within the Fort Benning Military Reservation, which is under the jurisdiction of the federal government.

Section 2 of this Plan describes the projected amount and type of solid waste generated in Columbus that will require management over the next ten years. Section 3 describes the policies, facilities and programs in place to reduce and manage solid waste in Columbus. Section 4 establishes specific goals for the next ten years and strategies to achieve them. Section 5 presents an action plan that identifies how Columbus and others will implement the strategies and achieve its goals.

This Solid Waste Management Plan was prepared by A. Goldsmith Resources, LLC with extensive input from the staff in the Department of Public Works. The following individuals gave generously of time and expertise to ensure that the Plan reflected not only the significant accomplishments to date, but ambitious yet realistic goals and strategies for the future.

- Pat Biegler, Director of Public Works
- Kyle McGee, Deputy Director of Public Works
- Les Moore, Manager, Waste Collection
- Matthew Dolan, Manager, Waste Disposal
- Carl Nunley, Manager, Recycling and Sustainability Center
- Gloria Westin-Smart, Executive Director, Keep Columbus Beautiful

2 AMOUNT AND TYPE OF SOLID WASTE

2.1 AMOUNT OF SOLID WASTE DISPOSED

Municipal solid waste (MSW) landfills in Georgia are required to report the amount and origin of solid waste received each quarter to the Georgia Environmental Protection Division (EPD). From July 1, 2017 through June 30, 2018 (FY18), MSW landfills in Georgia reported that they received 81,638 tons of solid waste originating in Columbus (referred to as Muscogee County in EPD reports). As shown in Table 2-1, more than 89 percent of the solid waste disposed in MSW landfills located in Georgia was reportedly disposed in Columbus Consolidated Government’s Pine Grove MSW landfill.

Table 2-1 Reported Tons Disposed in Georgia MSW Landfills from Columbus in FY18

Landfill	Tons	Percent of Tons Reported
Columbus, Pine Grove	73,058	89.5%
WI Taylor County Disposal, LLC	8,576	10.5%
Republic Services - Pine Ridge Recycling	4	<.01%
Total	81,638	
Source: EPD Landfill Tonnage Reports		

It is likely that a significant portion of the solid waste collected in Columbus is disposed in MSW landfills in Alabama. However, no information about tonnage disposed outside of Georgia is available. A privately owned and operated transfer station located in Columbus reportedly received 99,222 tons of solid waste in FY18, all of which was transferred and disposed at landfills in Alabama. However, how much of the MSW received at this transfer station originated in Columbus is unknown. In addition, at least one large hauler delivers MSW it collects from commercial customers in Columbus directly to a transfer station in Alabama. Given that an undetermined amount of MSW generated in Columbus is delivered to landfills outside of Georgia, the total amount of MSW generated in the City is likely to be significantly higher than the 81,638 tons per year reported by Georgia landfills.

2.2 PROJECTED SOLID WASTE TO BE DISPOSED

As part of the planning process, it is necessary to project the amount of solid waste likely to be disposed from Columbus over the next ten years. Typically, such an estimate is based on current per capita disposal rates, anticipated changes in population, and any known or planned change in per capita disposal. However, since an unknown quantity of solid waste collected in Columbus is disposed outside of Georgia, it is not possible to calculate the current per capita disposal rate for solid waste originating in Columbus. Thus, the statewide per capita disposal rate is used as a proxy for the per capita disposal rate from Columbus.

To estimate the current per capita disposal rate for solid waste originating in Columbus on which to base projections, the statewide per capita disposal rate is used. This is done by dividing the total tonnage of solid waste disposed in MSW and C&D landfills in Georgia, according to FY18 reports from these landfills to EPD, by the population of the State. The result of these calculations, shown in Table 2-2, is 1.15 tons per person per year disposed in MSW landfills and .29 tons per person per year disposed in C&D landfills for a total statewide disposal rate of 1.45 tons per person per year.

Table 2-2 Calculation of Statewide Per Capita Disposal Rate, FY18

	MSW Landfills	C&D Landfills	TOTAL
Tons Disposed in Georgia Landfills ¹	12,026,698	3,049,654	15,076,352
Population ²	10,429,379	10,429,379	10,429,379
Tons Disposed per Person per Year	1.15	.29	1.45
Pounds Disposed per Person per Day	6.32	1.60	7.92
¹ Based on EPD Landfill Tonnage Reports, July 2017 through June 2018 excluding tons listed as originating out of state. ² U.S. Census Bureau as of July 1, 2017.			

When the statewide per capita disposal rate of 1.45 tons per person per year is applied to Columbus' projected population of 200,000, an estimated 290,000 tons per year is projected for disposal from Columbus, 230,000 tons per year for disposal in MSW landfills and 60,000 tons per year for disposal in C&D landfills. Over the ten-year planning period, a total of 2.9 million tons of solid waste from Columbus would require disposal in an MSW or C&D landfill assuming the per capita disposal rate remains the same through the planning period. However, if waste reduction and recycling efforts described in Sections 4 and 5 of this Plan are successful in reducing the per capita disposal rate, the total tons requiring disposal will be lower.

2.3 COMPOSITION OF SOLID WASTE

Although there is no recent data available about the composition of MSW disposed from Columbus or from the State of Georgia as a whole, a statewide waste composition study conducted in 2005 characterized the MSW disposed in landfills by region of the State.¹ In this study, the Pine Grove MSW landfill was the sample site for the Lower Chattahoochee region of Georgia. Thus, the waste composition data for this region is likely to be representative of the MSW disposed from Columbus at that time. Even though these data are nearly 15 years old and the composition of MSW has likely changed over this time, the composition of MSW disposed in the Pine Grove MSW landfill in 2005, shown in Table 2-3, is likely to be the most representative site-specific MSW composition data available. These data indicate that over two-thirds of the MSW disposed is paper or organic material with the three most prevalent individual materials being food waste, corrugated cardboard, and non-recyclable paper.

Table 2-3 Waste Composition of MSW Disposed at Pine Grove

Material	% of MSW Disposed ¹	Tons ²
Newspaper	4.4%	6,797
Corrugated Cardboard	11.6%	17,838
Office	3.6%	5,451
Magazine/Glossy	2.1%	3,268
Paperboard	2.6%	4,047
Mixed (Other Recyclable)	3.8%	5,816
Other (Non-recyclable)	10.5%	16,063
Total Paper	38.7%	59,279

¹ Georgia Statewide Waste Characterization Study, prepared by R.W. Beck for the Georgia Department of Community Affairs, June 2005.

Material	% of MSW Disposed ¹	Tons ²
#1 PET Bottles	1.5%	2,357
#2 HDPE Bottles	0.7%	1,053
#3-#7 Bottles	0.2%	232
Expanded Polystyrene	1.4%	2,124
Film Plastic	6.0%	9,213
Other Rigid Plastic	4.3%	6,533
Total Plastic	14.0%	21,512
Clear	1.3%	1,957
Green	0.1%	157
Amber	1.2%	1,907
Other	0.4%	650
Total Glass	3.0%	4,671
Steel Cans	1.1%	1,691
Aluminum Cans	0.7%	1,120
Other Ferrous	2.8%	4,272
Other Non-Ferrous	0.6%	941
Total Metal	5.2%	8,024
Yard Waste	4.4%	6,754
Wood (non-C&D)	1.2%	1,880
Food Waste	13.8%	21,109
Textiles	3.9%	6,043
Diapers	2.2%	3,428
Fines	1.7%	2,552
Other Organics	1.2%	1,913
Total Organic	28.5%	43,680
Drywall	0.5%	790
Wood	4.4%	6,756
Inerts	0.5%	749
Carpet	0.8%	1,213
Other C&D	2.5%	3,905
Total C&D	8.8%	13,412
Televisions	0.0%	-
Computers	0.2%	313
Other Electronics	0.5%	725
Tires	0.0%	-
HHW	0.2%	268
Other Inorganics	0.8%	1,296
Total Inorganics	1.7%	2,602
TOTAL	100.0%	153,180 ²
<p>1 From Table H-2 Lower Chattahoochee RDC Landfilled MSW Composition Detail, Georgia Statewide Waste Characterization Study, prepared by R.W. Beck for the Georgia Department of Community Affairs, June 2005.</p> <p>2 Composition percentages applied to estimated tonnage of MSW disposed from the City of Columbus based on the FY18 statewide per capita disposal rate of 1.15 tons per person per year in MSW landfills times 66.6%. A survey of landfills conducted as part of the statewide waste composition study indicated that an estimated 66.6% of solid waste disposed in MSW landfills met the definition of MSW used in this study. Thus, if an estimated 230,000 tons per year of solid waste is disposed in MSW landfills from Columbus, and 66.6% is MSW, then an estimated 153,180 tons of MSW from Columbus is disposed in landfills.</p>		

3 CURRENT SOLID WASTE MANAGEMENT SYSTEM

3.1 WASTE REDUCTION AND RECYCLING

3.1.1 Source Reduction and Reuse

Source reduction (generating less waste that requires disposal or recycling) and reuse are the first steps in the process to reduce the amount of solid waste requiring management. The Columbus Department of Public Works (DPW) and the Keep Columbus Beautiful Commission (KCBC) encourage residents and businesses to reduce and reuse through education and outreach.

3.1.2 Columbus Recycling and Sustainability Center

The Columbus Recycling and Sustainability Center (the Recycling Facility), located at 8001 Pine Grove Way, is the centerpiece of Columbus' recycling programs. The facility, which opened in 2013, is a 54,000 square foot, LEED (Leadership in Energy and Environmental Design) certified building that includes a high-tech processing facility as well as an extensive education center. Columbus owns and operates the Center, staffed in part by state prison inmates. A private company, Pratt Industries, Inc., installed, owns, and maintains the sorting equipment. Pratt receives all processed materials coming out of the facility and uses some materials in their own facilities and markets others to other end users.

The Recycling Facility accepts single-stream (commingled) or source separated material including plastic (#1 through #7), mixed paper, cardboard, and aluminum and steel cans. These materials come from residents and businesses in Columbus and throughout the region including from the cities of Auburn and Opelika (Alabama) and Lagrange (Georgia) and from institutions such as Auburn University and Fort Benning. Table 3-1 shows the tons of material processed and marketed from the facility from July 2017 through June 2018.



Table 3-1 Materials Marketed from Columbus Recycling Facility, FY18

Materials	Tons
PET (#1)	328
HDPE Colored (#2)	137
HDPE Natural (#2)	77
Mixed Plastic (#3 - #7)	148
Mixed Paper	2640
Cardboard (OCC)	1258
Aluminum Cans	108
Steel Cans	123
Subtotal – Tons Collected by Columbus DPW	4,819
Other Tons Delivered to the Recycling and Sustainability Center ¹	8,872
Total	13,691 ²
¹ An estimated 22 percent of this generated in Columbus, ² 14,667 tons when tons received in FY2017 but marketed in FY2018 is included.	

According to 2018 contract terms, Pratt pays Columbus 90 percent of the revenue from the sale of materials that Columbus delivers. Pratt pays the City for processing recyclable materials delivered by outside vendors (other than the City of Columbus), based on the level of processing required, at the following rates.

- \$40 per ton for single stream material received and processed
- \$30 per ton for materials unloaded, baled, and reloaded
- \$5 per ton for materials unloaded, staged, and reloaded
- \$1 per ton for materials that do not require processing or moving of bales.

In FY18, Columbus received \$621,397 in gross revenue from Pratt including both revenues from the sale of recyclables delivered by the City and processing fees for materials received from outside vendors.

3.1.3 Curbside Recycling

Columbus DPW offers weekly curbside collection of recyclables to 56,500 residential and 209 small commercial customers on the same day as their solid waste is collected. The following materials are collected single-stream (commingled).

- All paper and cardboard
- Aluminum cans and food trays
- Steel/tin cans
- Aluminum foil
- PET (Plastic #1) bottles and jars
- HDPE (Plastic #2) bottles and jugs
- Plastics #3 - #7
- Motor oil, transmission fluid, and anti-freeze

A total of 4,587 tons of recyclables were collected at the curb in FY18.

In 2013, the City initiated a pilot program offering 65- and 95-gallon recycling carts in lieu of the 18-gallon bins previously being used. Since the City began offering recycling carts, tons diverted in the curbside recycling program has increased more than three-fold. Now, when residents volunteer to participate in the curbside recycling program, they can choose between a 65-gallon cart or an 18-gallon bin.

3.1.4 Drop-off Recycling Sites

Columbus operates four mobile recycling sites that accept the same items as collected at the curb. These recycling containers are at the following locations, shown on Figure 3-1.

- Georgia Welcome Center, 1751 Williams Road
- Cooper Creek Park, 4816 Milgen Road
- Sacerdote Lane, 7175 Sacerdote Lane
- Victory Drive Site #25, 22nd Ave.

A total of 232 tons of recyclables were collected at these drop-off recycling sites in FY18.



3.1.5 Business and Institutional Recycling

Columbus DPW offers weekly collection of recyclables to 209 small businesses on its residential routes and to 32 businesses in the Uptown Business District from whom it collects MSW daily. DPW provides recycling carts and collects recyclables from 18 apartment buildings and 21 schools that have private haulers collecting their MSW. In addition, all Columbus government buildings recycle paper, aluminum cans, and plastic bottles.

In addition to the recycling offered by Columbus DPW, some private haulers and recyclers offer collection of recyclables to businesses in Columbus, primarily collecting paper and metal. Many of these haulers deliver the recyclables they collect to Columbus' Recycling Facility. Approximately 1,060 tons of recyclables from businesses in Columbus were delivered to the Recycling Facility in FY18.

Columbus Water Works (CWW) accepts used grease and cooking oil for recycling from Columbus residents and businesses at eight locations. On average, 631 participants brought 682 gallons per year of grease and oil to CWW for recycling.

3.1.6 Yard Trimmings Diversion

Most of the limbs and branches collected from residents at the curb by DPW each week and those delivered by citizens and haulers to the landfill is diverted from disposal. Currently, approximately 20,000 tons per year of yard trimmings are diverted from disposal, 90 percent of which is ground and used for boiler fuel. Columbus also operates a pilot composting site for yard trimmings at the Granite Bluff Inert Landfill.

3.1.7 Recycling at Landfills

Columbus Consolidated Government recycles appliances, mattresses, and tires collected at the curb and those delivered to the landfill for recycling. Tonnages are shown in Table 3-4.

Table 3-4 Materials Diverted for Recycling at the Landfill, FY18

Material	Tons
Tires	145.9
Mattresses	233.4
Metal	157.9



In addition, 564 tons of asphalt and 19 tons of pallets delivered to the Pine Grove landfill were diverted from disposal in FY18 and over 95 percent of the inert material delivered to Granite Bluff Inert Landfill was crushed for use on site rather than disposed.

3.1.8 Periodic Collection Events

Columbus DPW, KCBC and other partners sponsor periodic collection events to divert material from disposal, including those described below.

- DPW and KCBC sponsor a household hazardous waste and electronics collection event each year in October. Material collected here is either recycled or disposed by a contractor at a facility permitted to manage these materials. A total of 44.2 tons was collected in 2017.
- KCBC sponsors a shoe recycling campaign in collaboration with local partners. Shoes are collected at area schools, fire stations, and other government facilities and are either reused or recycled. A total of 7,430 shoes were collected in FY18.
- KCBC participates in the statewide “Bring One for the Chipper” Christmas Tree Recycling program after each Christmas season. Residents are encouraged to bring the trees to drop-off locations and Columbus collection crews also pick up tree at curbside. Collected trees are used for fish habitat in area lakes.
- KCBC sponsors a twice a year prescription and over-the-counter drug and cooking oil(s) collection event.
- KCBC sponsors two community-wide paper shredding events, one during the annual Help-the-Hooch cleanup event and one on America Recycles Day. Approximately 20,000 pounds of paper per year is collected and shredded at these events.

3.2 SOLID WASTE COLLECTION

3.2.1 Residential Curbside Collection

Columbus DPW collects garbage (MSW), recyclables, yard trimmings bulky items, and tree limbs at the curb weekly from 56,500 households. The City utilizes 65 rear loading collection vehicles, each staffed by one driver and two inmates. Residents pay \$18 per month on their monthly water and sewer bills for these collection services. A total of 260 low-income households receive a 25 percent discount from this base rate.

In FY18, Columbus DPW collected 54,737 tons of MSW from its customers and delivered it to the MSW landfill at Pine Grove. Another 6 tons were collected and delivered to the C&D landfill at Pine Grove. Columbus DPW collected and delivered 27,325 tons of yard trimmings, limbs, and trees to Granite Bluff Inert landfill in FY18.



3.2.2 Commercial Collection

DPW collects MSW from 209 small businesses on its residential routes. These businesses purchase an annual decal that they post on their window or door. An annual decal cost \$240 for weekly collection of two 32-gallon containers plus \$120 for each additional container. Columbus DPW also collects MSW from 32 businesses in the Uptown Business District from 32-gallon bags labeled with pre-purchased stickers and placed at the curbside or the city right-of-way.

Since the City does not provide front-end loader or roll-off collection, most of the businesses in Columbus make their own collection arrangements directly with private haulers. All private haulers operating in Columbus must obtain a business license from the City. Businesses that collect and/or dispose of solid waste must also acquire a permit from the Columbus Department of Public Health According to Chapter 13, Article VII of the Columbus Code of Ordinances. Currently, private haulers are not required to get a permit for solid waste collection from DPW.

Table 3-5 lists the private haulers that had a business license to operate in Columbus in 2018.

Table 3-5 Haulers with Columbus Business License, 2018

Name	Address
Advanced Disposal	2015 Veterans Parkway Columbus, GA 31904
Advanced Disposal	4900 Warm Springs Road Columbus, GA 31909
Mark Dunning Industries, Inc	1719 Knowles Road Phenix City, AL 36869
Recyc Systems Southeast, LLC ¹	2223 Brookstone Centre Parkway #B Columbus, GA 31904
Sep Rentals, LLC	2920 4th Avenue Columbus, GA 31904
USA Junkout	233 12th Street #910 -B Columbus, GA 31901
Waste Away Group, Inc	4210 Lee Road 183 Opelika, AL 36804
All Season Lawn Care	3001 Buena Vista Road Columbus, GA 31906
C & B Hauling, LLC	6751 Macon Road #10 Columbus, GA 31907
Corey Williams Hauling	2016 Wagner Drive Columbus, GA 31907
Med Away Disposal Services, Inc.	3715 1st Avenue #6A Columbus, GA 31904
Padgett Pressure Washing	1304 29th Street Phenix City, AL 36867
Containers by Reaves, LLC	18 Old Brick Yard Road Phenix City, AL 36869
NBRS Investments, LLC	3100 Gentian Boulevard Columbus, GA 31907
1 Hauls alum sludge, biosolids, and sand/grit from Columbus Water Works operations.	

3.2.3 Transfer Stations

Advanced Disposal operates a solid waste transfer station at 2015 Veterans Parkway in Columbus (EPD Permit PBR-106-14TS). This facility received 99,222 tons of solid waste between July 2017 and June 2018 from private haulers and citizens within and outside of Columbus. The solid waste delivered to this facility is transferred to landfills in Opelika and Tallassee, Alabama.

According to EPD's database, a second facility located at 3715 1st Avenue in Columbus has a transfer station permit from the State (permit by rule number PBR 106-23TS). The permit was issued to Med Away Disposal Services, Inc. for management of biomedical waste.

3.3 DISPOSAL

This section addresses the requirement that local government solid waste management plans describe the type and size of solid waste handling facilities located within the jurisdiction.

3.3.1 MSW Landfill

Columbus DPW operates the Pine Grove MSW landfill, EPD permit number 106-016D (SL), located at 7900 Pine Grove Way. shown on Figure 3-1. This is the only operating lined, Subtitle D landfill located in Columbus. The landfill site is comprised of over 343 acres, 91.5 of which are permitted to receive MSW and 22.2 of which are permitted to receive C&D. The EPD permit for this facility was issued on July 23, 1996. The Pine Grove Landfill is open from 8 a.m. to 5:30 p.m., Monday through Friday, and 8 a.m. to noon one Saturday each month (usually the first Saturday). The posted gate rate for MSW and C&D in 2018 was \$42.50 per ton.



The Pine Grove MSW Landfill only accepts solid waste generated in Columbus. From July 2017 through June 2018, the Pine Grove landfill received 73,058 tons of solid waste and according to reports submitted to EPD, approximately 5 percent of this tonnage was characterized as C&D. The Deputy Director of DPW estimates that over three-quarters of what is received at Pine Grove MSW landfill is residential waste collected by DPW, 7 percent is commercial waste collected by DPW, and nearly 10 percent is commercial and multi-family solid waste collected by private haulers. Another 5.6 percent is biosolids, sludge and other waste generated by Columbus Water Works while the remaining 1.4 percent is delivered directly by generators to the landfill. Figure 3-2 shows this estimated breakdown of the source of solid waste delivered to Pine Grove Landfill.

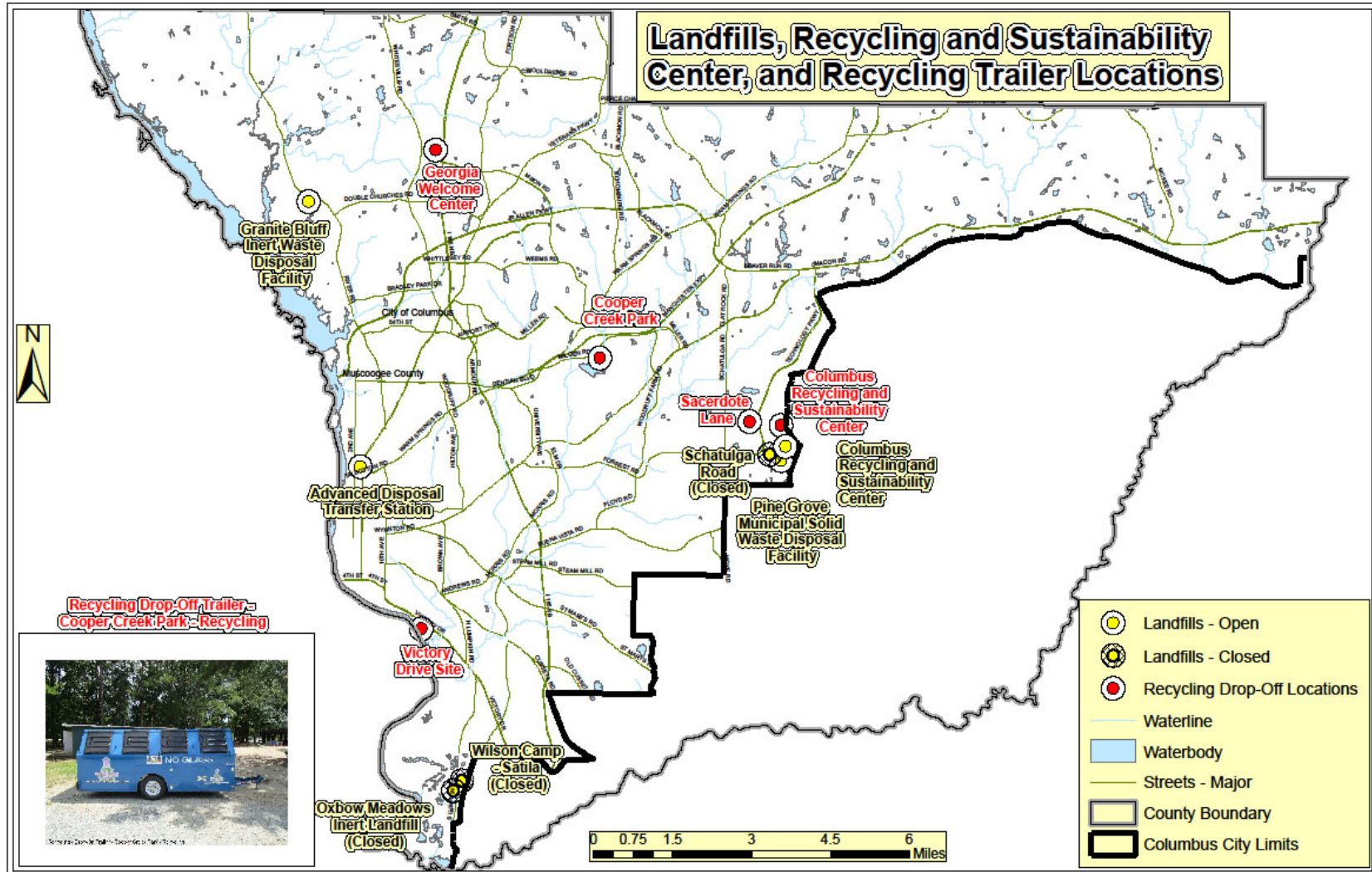


Figure 3-1 Recycling and Solid Waste Handling Facilities in Columbus

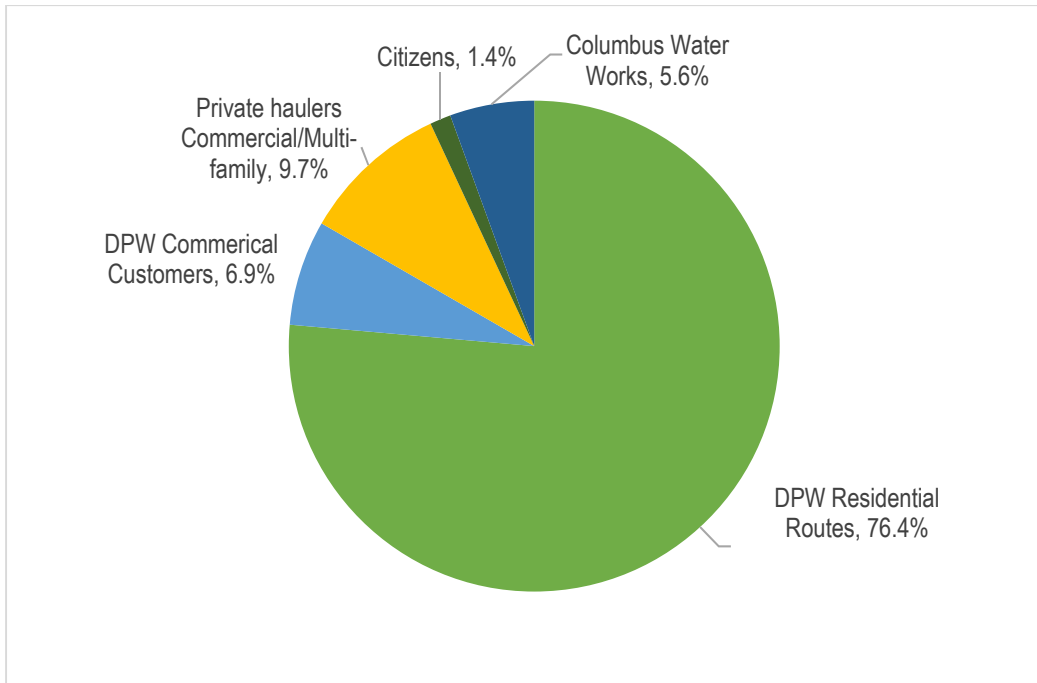


Figure 3-2 Source of Solid Waste Delivered to Pine Grove MSW Landfill

In its 2018 capacity report to EPD, Columbus estimated that 3,999,992 cubic yards of capacity for MSW remained as of March 22, 2018. At an average of 268 tons (or 430 cubic yards) per day, an estimated 36 years of capacity for MSW remained, resulting in an estimated fill date of July 8, 2054. Columbus estimated that 1,002,234 cubic yards of capacity for C&D remained at the Pine Grove landfill as of March 22, 2018. At an average of 15 tons (or 39 cubic yards) per day, an estimated 100 years of capacity for C&D remained, resulting in an estimated fill date of September 26, 2118.

3.3.2 Inert Landfill

Columbus operates the Granite Bluff Inert Landfill at 7589 River Road. This site is comprised of 94.5 acres with 37.5 acres used for disposal. This facility accepted 26,192 tons of inert material from Columbus only in FY18 (35,134 tons in FY17), including grass clippings, limbs, leaves trees, stumps, land clearing debris, dirt, rocks, brick, concrete, and cured asphalt. Only one to two years of capacity remains at Granite Bluff at the end of 2018. The Granite Bluff Inert Landfill is open the same hours as the Pine Grove Landfill. The tipping fee at Granite Bluff is \$34.00 per tons (or \$.0170 cents per pound).

3.3.3 Closed Landfills

EPD lists three closed landfills located in Columbus in its database, shown in Table 3-6. The first landfill listed, the Columbus Sanitary landfill (permit number 106-001D(SL)), has two portions that were closed separately, "Columbus (or Wilson Camp)" and "Former Satilla". The "Columbus" portion was issued a Closure Certificate on January 11, 2002. The City purchased the "Former Satilla" portion from the Satilla Communication Company in 2005 and received a Closure Certificate for this portion on June 29, 2015. Both portions had a five-year post-closure care period, in accordance with the Closure Certificates, but some monitoring continues at these locations.

Table 3-6 Closed Landfills

Permit Number	Name	Ceased Accepting Waste	Closure Certificate	Post Closure/Closure Period
106-001D(SL)	Columbus Sanitary Landfill	1/31/1985	1/11/2002*	5
106-011D(SL)	Columbus – Schatulga Rd W Fill Ph. 2 (SL)	8/9/1999	9/4/2002	30
PBR-106-06IL	Oxbow Meadows Inert Landfill	6/28/2013	10/26/2015	None
One portion, referred to as “former Satilla” portion, received closure certificate on 6/29/2015.				

The Schatulga Road site had both an MSW and C&D landfill, both under permit number 106-011D(SL), and is in a 30-year post-closure period. The Oxbow Meadows Inert Landfill (Oxbow Meadows), adjacent to the Columbus Sanitary Landfill, was permitted by rule (PBR-106-06IL) and ceased accepting waste on June 28, 2013. Oxbow Meadows was closed in accordance with EPD regulations, and EPD accepted the closure on October 26, 2015. Post-closure care is not required for Oxbow Meadows. In addition to this sites listed in EPD records, Columbus monitors conditions at a site historically used for waste disposal at Weracoba Creek.

3.3.4 Illegal Disposal

The Columbus Code of Ordinances addresses litter and illegal dumping in Chapter 13. Article VI of Chapter 13 states:

“It is the intention of the Council of Columbus, Georgia, by this article to provide for the uniform prohibition throughout Columbus, Georgia, of any and all littering on public or private property, and to curb thereby the desecration of the Beauty of Columbus, Georgia, and harm to the health, welfare, and safety of its citizens caused by individuals who litter.”

This Article makes it unlawful for any person to “dump, deposit, throw or leave” litter (or cause the same) on public or private property unless the property is designated for this purpose, placed in a receptacle, or the person is the owner or tenant of the property.

Article VII of Chapter 13 addresses the accumulation of unauthorized solid waste or junk on private property. If a property owner or occupant does not remove unauthorized solid waste or junk accumulated on his or her property as directed by the Department of Inspections and Code Enforcement or DPW, Section 13-167.7 (D)(1) allows the City to remove the unauthorized solid waste or junk, charge the owner for the cost to clean up the property and place a lien against the property if the amount is not paid within 30 days after completion of the work.

KCBC conducts a law enforcement training for those officials in the City that have the responsibility and authority to enforce these laws and the City has an environmental court division within the recorder’s court that hears cases regarding littering and illegal dumping. The City encourages citizens to report littering and illegal dumping at the Citizen Service Center at 311 and reports that 168 litter service calls were received in March 2018 alone.

In addition to enforcement, Columbus prevents and abates litter with outreach, collection events and community clean-ups. KCBC sponsors Help-the-Hooch, an annual community clean-up effort, and the Great American Clean-Up, among other beautification activities. Both DPW and the KCBC have online and printed materials to discourage littering and give presentations to educate citizens about the types and sources of litter in Columbus, the associated costs, and what citizens can do to mitigate litter and illegal dumping.

3.4 PUBLIC EDUCATION AND OUTREACH

3.4.1 Keep Columbus Beautiful Commission

The Keep Columbus Beautiful Commission (KCBC), the local Keep Georgia Beautiful affiliate, leads education and outreach efforts for Columbus' waste reduction, recycling and litter abatement programs. Organizationally, KCBC is part of DPW who provides a large part of KCBC's budget and provides office space for KCBC in the Columbus Recycling Facility and Sustainability Center.

Highlights of KCBC's 2017-2018 activities, several of which are described in previous sections, are described below.

- Aflac, Amerigroup, and KCBC sponsor a "Back to School Teacher Recycling Project" in which teachers are provided with reusable and recycled office and classroom materials for the coming year.
- Help-the-Hooch is an annual clean-up event which engaged over 11,200 volunteers that collected 98,700 pounds of trash from Columbus and 1.19 tons from Fort Benning. KCBC sponsors an annual golf tournament to raise funds for this event.
- A total of 88,400 pounds of household hazardous waste and electronic equipment were collected, and 7,800 pounds of paper shredded during the 2017 annual Household Hazardous Waste Project.
- KCBC offered twelve "Magic of Recycling" shows reaching more than 3,000 elementary school students.
- Approximately two tons of shoes were collected during KCBC's annual shoe campaign and delivered to developing countries.
- KCBC collected Christmas trees at six drop-off sites for use as fish habitat in area lakes.
- KCBC provided supplies and administrative support to 23 neighborhood community cleanup projects.
- KCBC supported two CWW prescription and over-the-counter and drug collection event.
- KCBC participated in Keep America Beautiful "Great American cleanup" by supplying twelve area schools and community organizations with supplies.
- KCBC collected and shredded almost four tons of paper during Fourth Annual Earth Day Personal Paper Shredding Project and Midtown Cleanup.

3.4.2 Training Center at the Columbus Recycling and Sustainability Center

Columbus' Recycling and Sustainability Center houses an on-site classroom and extensive education resources for students and other members of the public about how and why to recycle. On average, 1,200-1,500 students visit the Center each year. In addition, anyone can schedule a tour of the Recycling and Sustainability Center to see Columbus recycling in action.

3.4.3 Web Site and Social Media

Columbus' website contains information and interactive resources for those interested in recycling and solid waste management. The website's Waste Disposal page lists the location, hours, items accepted (and not accepted), and rates at disposal facilities. The Collection Division's page uses interactive tools (phone, tablet or computer App) to let customers know their collection day by entering their address and how to properly dispose of or recycle an item that the user types into a search engine. The Recycling and Sustainability Center page describes what, where, why and how to recycle in Columbus and includes short educational videos about recycling, including a virtual tour of the Recycling Center. DPW and KCBC also use social media, including Facebook®, Instagram®, and Twitter® to keep citizens updated on upcoming events and to provide ongoing education and information.

3.5 LAND LIMITATION

This section addresses the requirement that local government solid waste management plans identify sites which are unsuitable for solid waste handling facilities based on environmental and land use factors.

3.5.1 Facility Siting and Operation Limitations

Federal and State policies restrict where solid waste facilities can be sited and how they must be designed and operated. Georgia Department of Natural Resources Rule 391-3-4-.05(1) addresses site limitations related to airports, floodplains, wetlands, fault areas, seismic impact zones, unstable areas, and significant groundwater recharge areas. DNR Rule 391-3-4-.05(1)(a) requires that solid waste handling facility sites “must conform to all local zoning/land use ordinances”. DNR Rule 391-3-16 contains additional criteria that prohibit the siting or stipulate design or operating requirements for solid waste handling facilities in or near water supply watersheds, groundwater recharge areas, wetlands, river corridors or protected mountains. Other provisions of Georgia law restrict the siting of solid waste handling facilities in or near national historic or archaeological sites; within one mile of certain recreational camps; within a two-mile radius of three or more solid waste landfills; and within one-half mile of another County’s borders without the approval of the jurisdiction’s governing authority. Appendix A contains maps showing areas covered by these limitations which indicate that there are few areas in Columbus where a new solid waste handling facility can be developed.

3.5.2 Local Procedures for Demonstrating Facility Consistency with Solid Waste Management Plan

Any proposed solid waste handling facility requesting permission to site, operate, or expand in Columbus must request and receive a letter from the Columbus City Council stating that the facility or facility expansion is consistent with this Solid Waste Management Plan. The procedure that the Columbus will follow to determine whether to issue such a letter is described below.

1. At least 90 days prior to filing for a solid waste handling permit, or notifying EPD in the case of a solid waste handling facility that is permitted by rule, the owner/operator will submit to the Director of DPW a written statement documenting the following:
 - How the proposed facility or facility expansion will meet the specific goals and/or needs identified in the Columbus Solid Waste Management Plan, including a description of:
 - The impact upon the collection capability within Columbus;
 - The impact upon disposal capacity identified in the Columbus; and
 - The impact to the waste reduction and recycling efforts within Columbus, specifically how the proposed facility or facility expansion will contribute toward waste reduction.
 - How the proposed facility or facility expansion and its operation will impact the community. Specifically, what will be the impact on:
 - vehicle traffic and public safety around the proposed facility and throughout Columbus;
 - natural and cultural resources within Columbus;
 - financial viability of the existing solid waste management system within Columbus;
 - individual and business solid waste management rates; and

- the current solid waste management infrastructure within the Columbus, both public and private.
 - Evidence that the proposed facility or facility expansion is sited in a location deemed suitable based on environmental and land use limitations, local zoning, and any other criteria listed in the Plan.
 - Evidence that proper public notification was given, including notification of all adjacent property owners.
2. Within 45 days after the written statement from the owner/operator is received, the Director of DPW will make a written recommendation to the Mayor and City Council as to whether the proposed facility or facility expansion is consistent with the Solid Waste Management Plan.
 3. The City Council will hold at least one public hearing on the proposed facility or facility expansion to gather input regarding the consistency of the facility with the Solid Waste Management Plan. This public hearing will be advertised according to local requirements regarding public notification of public hearings.
 4. The Columbus City Council shall review the written documentation of consistency from the owner/operator, the recommendation of the Director of DPW, and comments received at the public hearing to determine whether the proposed facility or facility expansion is consistent with the Solid Waste Management Plan. Within 30 days of making their determination the Columbus City Council shall notify the facility owner/operator whether the proposed facility or facility expansion is consistent with the Plan. If the Columbus City Council determines that the proposed facility or facility expansion is consistent with the Plan, it will issue a letter of consistency to the owner/operator. If the City Council determines that proposed facility or facility expansion is not consistent with the Plan, the owner/operator may address the inconsistencies and resubmit their request for one additional review. This review will follow the process described above in Items 1 thorough 3.

4 GOALS AND STRATEGIES

4.1 INTRODUCTION

Columbus has seven overarching goals for solid waste reduction and management for the ten-year planning period covered by this Solid Waste Management Plan. Each goal is described in this Section along with the strategies selected to meet them.

4.2 INCREASE DIVERSION

Goal 1

Divert 40 percent of the solid waste collected by Columbus or managed at its facilities.

Columbus' first goal is to divert 40 percent of the solid waste that it manages. The City has two opportunities to divert materials directly, at collection and at its processing and disposal facilities. Without significant changes in policy, Columbus has limited ability to divert material that it does not either collect or manage at its facilities except by encouraging businesses and private haulers to do so. Thus, for the ten-year planning period, Columbus' goal is to *divert 40 percent of what it collects from its curbside collection customers* and to *divert 40 percent of the total amount of material delivered to its facilities*, including the Recycling and Sustainability Center, Pine Grove Landfill and Granite Bluff Inert Landfill.

Table 4-1 shows the current diversion rate for materials collected by Columbus. DPW collected 54,737 tons of MSW and 4,587 tons of recyclables from curbside customers in FY18 which results in a 7.7 percent diversion rate.² In addition, Columbus reportedly diverted 20,000 tons of the 27,325 tons of yard trimmings it collected, a 73.2 percent diversion rate. In sum, this results in a 28.4 percent diversion rate of what they City collects from its curbside customers. To achieve its diversion goal of 40 percent of what it collects, Columbus will increase the diversion of material collected by Columbus DPW by 11.6 percent over the next ten years, both by reducing the amount of collected material that is disposed and increasing the amount of collected material that is diverted.

Table 4-1 Diversion of Material/MSW Collected by Columbus DPW, FY18

Collected by Columbus	Disposed	Diverted	Total	% Diverted
MSW/Recyclables Collected Curbside	54,737	4,587	59,324	7.7%
Yard Trimmings Collected Curbside	7,325	20,000	27,325	73.2%
TOTAL	62,062	24,587	86,649	28.4%

Table 4-2 shows that an estimated 24.5 percent of all materials and solid waste delivered to Columbus' facilities was diverted in FY18. This includes the materials and solid waste collected by Columbus at the curb (included in Table 4-1) plus all other materials and solid waste delivered by citizens, contractors, private haulers, and other City departments to Columbus facilities. Some of this material was generated in Columbus while some comes from outside the city limits.

² Columbus also collected bulky items such as mattresses and tires at the curb that were recycled. However, the tons of these items collected at the curb are aggregated with the tons delivered to the landfill for recycling and so are not included in the curbside diversion rate.

Columbus’ goal is to increase the diversion of material handled at its solid waste handling facilities by 15.5 percent over the next ten years using the strategies described below.

Table 4-2 Diversion at Columbus Facilities, FY18

Facility	Received	Disposed	Diverted	% Diverted
Recycling and Sustainability Center	13,691	0 ¹	13,691	100%
Pine Grove MSW Landfill	71,435	70,386	1,050	1.5%
Pine Grove C&D Landfill	4,599	4,016	583	12.7%
Granite Bluff	65,971	43,166	22,805	34.6%
TOTAL	155,696	117,567	38,129	24.5%

1 Tons disposed from Recycling and Sustainability Center as residue is counted in tons disposed at Pine Grove MSW Landfill.

Strategy 1-1: Continue to operate and expand current programs.

The City will continue to encourage participation in the curbside recycling program through outreach and education in collaboration with KCBC. Outreach and education will focus on getting more residents to participate in the recycling program, encouraging participants to place all recyclables in the recycling cart/bin rather than in the garbage container, and discouraging participants from placing non-recyclable material in the recycling cart/bin. DPW and KCBC will also continue to encourage residents and businesses to use mobile recycling centers, bring recyclable materials to the landfill and participate in periodic collection events.

Markets for recyclable materials change as does the technology and costs and revenues associated with recycling them. For example, in recent years, the City identified a market for mattresses and began to collect them for recycling rather than disposing of them. Over the ten-year planning period, Columbus will continue to monitor opportunities to add materials to the curbside collection program, at drop-off centers or by separating them at disposal facilities. The City has identified a feasible market for glass bottles and jars and so will add drop-off points for source-separated glass. Similarly, the City is exploring the potential to add other types of organic materials to mulching and composting programs and to identify off-site markets for aggregate materials received at Granite Bluff. Each opportunity to add a material to the City’s diversion or recycling program will be evaluated based on the diversion potential, certainty of the market, and the costs and revenues associated with collecting, processing and marketing the material.

Strategy 1-2: Facilitate recycling for multi-family and commercial generators.

The City of Columbus will provide support for recycling at multi-family residences, businesses and institutions that are not DPW’s collection customers. The Columbus Recycling and Sustainability Center will continue to accept recyclables from private haulers or directly from generators that do not have curbside recycling. Columbus will continue to offer drop-off points for recyclables from multi-family and commercial generators. DPW, in conjunction with the KCBC, will continue to offer programs, education and outreach efforts to all residents and businesses in Columbus.

Strategy 1-3: Upgrade Recycling Facility to increase capacity and reduce contamination.

Columbus’ Recycling Facility is currently operating at capacity and cannot handle additional materials. The City has identified necessary upgrades to the sort line that are needed to increase capacity and to minimize contamination. To achieve the goal of increased diversion, the City will upgrade the Recycling Facility to increase capacity.

Strategy 1-4: Support the Keep Columbus Beautiful Commission to lead outreach and education on waste reduction and recycling.

The City of Columbus will continue to fund the Keep Columbus Beautiful Commission to lead the City's education and outreach efforts on waste reduction and recycling. These efforts will include continuing current outreach, education, and collection events as well as expanding the use of social media to promote waste reduction and recycling.

Strategy 1-5: Mulch and compost an increasing amount of organic material.

Columbus will continue to mulch yard trimmings collected at curbside and delivered to Granite Bluff. Columbus operates a pilot composting facility at the Granite Bluff Inert Landfill and has a permit for an expanded compost facility at Pine Grove. Columbus will construct and operate the expanded composting facility at Pine Grove, divert deliveries of yard trimmings to Pine Grove and process them here. The City will work with Columbus Water Works to determine whether sludge could be incorporated into the composting process and implement as feasible. Columbus also will evaluate the potential to incorporate food residuals into the composting operation and implement as feasible.

Strategy 1-6: Divert 90 percent of what is currently delivered to Granite Bluff from disposal.

In addition to diverting yard trimmings, Columbus will continue to expand reduction, reuse, and recycling of other inert materials received at Granite Bluff. Most of the crushed aggregate received at Granite Bluff is currently used on-site. The City will identify and develop off-site markets for this material as well.

Strategy 1-7: Access information needed to measure progress toward goals.

Currently, Columbus does not have access to the information it needs to measure progress toward the diversion and other goals included in this Plan. The City does not have the information needed to quantify the amount of MSW collected in Columbus and where it is disposed other than that received at Columbus' own facilities. Similarly, the City has no way to determine whether all generators have access to convenient solid waste collection (Goal 3). To make sure the City can measure progress toward diversion and other goals, Columbus will develop and implement a procedure to gather data and information required to measure progress toward these goals.

4.3 MAXIMIZE LANDFILL LIFE

Goal 2

Extend the life of the Pine Grove MSW landfill to 2066.

Columbus is committed to ensuring that the currently permitted space at the Pine Grove MSW Landfill is available to Columbus citizens for as long as possible. At current disposal and compaction rates, the remaining permitted space is projected to last until 2054. The City has set a goal to extend the life of the currently permitted MSW landfill until 2066 by employing the strategies described below.

Strategy 2-1: Divert materials from disposal using the strategies listed for Goal 1.

Increasing diversion of materials collected by Columbus or managed at its facilities, using the strategies described for Goal 1, will contribute to extending the life of the Pine Grove MSW landfill.

Strategy 2-2: Explore new technologies to divert material from disposal and implement where feasible.

In addition to diversion through waste reduction and recycling, Columbus will explore technologies to divert additional materials using emerging and innovative technologies, including those that generate energy from solid waste. The technologies currently of interest to Columbus are those that are commercially proven, financially sound and have the potential to be developed on a modular basis. Columbus will further refine the criteria for considering and implementing a new technology and explore opportunities to partner with a private companies or institutions, such as Fort Benning, to implement technologies that meet these criteria.

Strategy 2-3: Maximize amount of MSW that can be placed in currently permitted area.

Between 2013 and 2017, Columbus increased the average compaction of solid waste in the Pine Grove MSW landfill from 899 to 1,280 pounds per cubic yard, significantly extending the life of the remaining capacity. The City intends to further increase compaction to an average of 1,500 pounds per cubic yard, allowing more tonnage to be placed into the remaining permitted space. To accomplish this, the City will invest in new compacting equipment.

Even with increased diversion and compaction, Columbus will need to expand beyond the currently constructed cells for the MSW landfill to last beyond the ten-year planning period. Columbus will construct and open Phase 5 and 6 of the currently permitted MSW landfill to meet the goal of extending the life of the Pine Grove MSW landfill until 2066. Columbus will expand capacity of the current and future phases of the MSW landfill by converting the sides of the landfill from terraces to side slopes. This step alone is expected to extend the life of the landfill by 25 years.

This section addresses the requirement that local government solid waste management plans provide for 10 years of disposal capacity.

As described in Section 2.2, an estimated 290,000 tons per year of solid waste is projected for disposal throughout the planning period, 230,000 tons in MSW landfills and 60,000 in C&D landfills. This is in the absence of any additional diversion. Although Columbus' Pine Grove MSW Landfill has the capacity to accommodate all 2.3 million tons projected for disposal over the next ten years, the City anticipates that most solid waste will continue to be disposed elsewhere. Thus, Appendix B includes two letters of capacity assurance, one from Pine Grove Landfill indicating its ability to handle approximately 750,000 tons over the ten-year period (similar to historic tonnage) and a second from Waste Industries indicating the capacity to accept the remaining 1,550,000 tons at its landfill in Taylor County. Solid waste from Columbus is likely to continue to go to several private MSW landfills in Georgia and Alabama over the next ten years but these letters demonstrate capacity is available for the anticipated maximum amount of waste requiring disposal in MSW landfills for the ten years covered by this Plan.

4.4 ENSURE ADEQUATE SOLID WASTE COLLECTION

This section addresses the requirement that local government solid waste management plans provide for 10 years of collection capability.

Goal 3

Ensure all residents and businesses have convenient access to solid waste collection.

To protect the environment and public health, Columbus will ensure that all generators in the city limits, whether residents, businesses, or institutions, have convenient access to collection of solid waste.

Strategy 3-1: Provide collection to all residents and selected small businesses.

Columbus will continue to provide consistent and universal access to collection to residents by providing these services with City labor and vehicles. DPW will continue to provide every resident with weekly curbside collection of MSW, recyclables, yard trimmings, and bulky items. This high level of service helps to achieve other goals in this Plan including preventing illegal disposal and increasing diversion. The City will continue to serve small businesses requiring curbside collection on the same routes as residential customers.

To ensure that the City can continue to offer these services in a cost-effective manner, it will replace collection vehicles on a regular schedule of every 5 to 7 years. The City will also update the vehicles with new technology, including GPS tracking, and evaluate such technologies like automated collection and alternative fueled vehicles.

Strategy 3-2: Provide carts to all residential customers.

To ensure consistent collection, Columbus will provide rolling carts to all its residential customers for containerization of MSW. Standardizing the way residential waste solid waste is set out will allow the City to establish a base level of service for residents; minimize littering from improper set-outs; and facilitate automated collection if the City decides to implement in the future. The City will consider the costs and benefits associated with providing standard containers to residents for yard trimmings as well.

Strategy 3-3: Ensure multi-family and commercial generators have access to convenient collection of MSW.

Currently, Section 13-167.2 of the City code requires all generators to provide a specific number and type of solid waste containers. Section 13-167.4 requires private haulers (referred to as “certified agencies” or “private contractors”) to get a written permit from the department of public health to collect and/or dispose of solid waste. The Columbus DPW will work with the department of public health to ensure these requirements are enforced, to confirm that all generators in the City have consistent and universal access to collection and to certify that all solid waste is collected and disposed in a way that protects public health and the environment.

4.5 MITIGATE ILLEGAL DISPOSAL

Goal 4

Prevent and abate illegal disposal.

Strategy 4-1: Ensure all generators have adequate solid waste collection using strategies listed for Goal 3.

Ensuring that all generators have convenient access to solid waste collection by implementing the strategies for Goal 3, is a critical step towards preventing illegal disposal.

Strategy 4-2: Target key sources of litter.

The City code dictates how solid waste containers, vehicles, and equipment must be maintained and operated to minimize the chance of littering when garbage is set out by the generator, collected, transported, and disposed. Columbus will continue to enforce these requirements and adhere to them in its own operations. In addition, to mitigate littering that results from materials and solid waste set out during evictions, DPW will work with other City departments to offer property owners containers for these materials on-site for a limited amount of time.

Strategy 4-3: Enforce litter and collection and disposal ordinances.

Columbus will continue to enforce the litter and solid waste collection and disposal provisions of the City ordinance. The City will continue to investigate reported violations, issue citations, clean-up properties if violators do not do so and place liens on properties for unpaid clean-up costs incurred by the City. Cases will continue to be heard in environmental court and the courts will impose penalties on those found guilty, especially repeat violators.

Strategy 4-4: Support Keep Columbus Beautiful Commission to lead litter prevention and abatement efforts.

KCBC will continue to lead litter clean-up events and outreach, education and training to prevent and abate litter and illegal dumping. The City will continue to provide funding and office space for KCBC at the Columbus Recycling and Sustainability Center.

4.6 MONITOR SOLID WASTE HANDLING FACILITIES

Goal 5

Ensure solid waste handling facilities conform to environmental and land use limitations and are consistent with this Plan.

Federal, state, and local policies, including the Columbus Development Ordinance, dictate where different types of solid waste handling facilities can be sited and how they must be designed, operated, and monitored to protect public health and the environment. The State of Georgia requires that any solid waste handling permit application submitted to EPD be accompanied by a letter from the elected body documenting that the proposed facility is consistent with the local Solid Waste Management Plan.

Strategy 5-1: Review siting, design, construction, operation of all solid waste handling facilities in Columbus.

Columbus will follow approved design and operating plans and closure and post-closure plans at its own facilities. Any expansions or modifications to Columbus' facilities will conform to approved permit conditions. Columbus will ensure that any private solid waste handling facilities are also sited, designed, and operated consistently with local laws.

Conditions that limit where solid waste handling facilities can be sited and how they must be designed and/or operated change over time as do federal, state, and local policies that govern where and how these facilities operate. Thus, throughout the planning period, Columbus will ensure that the maps that show limitations due to environmental or land use factors remain updated and are accessible to public or private sector developers and operators

Strategy 5-2: Update Columbus Development Ordinance to identify zoning requirements for all types of solid waste handling facilities.

Columbus' Development Ordinance specifically addresses where some, but not all, types of solid waste handling facilities can be sited and how they must be designed and operated. For example, Table 3.1.1 of the Unified Development Ordinance identifies landfills as a Special Exception Use in a Heavy Manufacturing/Industrial Zoning District only. However, the current language in the Development Ordinance does not specifically address transfer stations and other types of solid waste handling facilities. Thus, Columbus will update its Development Ordinance to clearly identify where all types of solid waste handling facilities may be sited and any design or operating requirements.

Strategy 5-3: Follow procedure to determine consistency if of any proposed facility with Plan.

Columbus has a very specific process that anyone proposing to develop or expand a solid waste handling facility within its borders must follow for the City to determine whether the proposed facility is consistent with this Solid Waste Management Plan. This process is described in Section 3.5.2. Columbus will follow this process. When the City receives a request for determination of consistency for a proposed facility or for modification of an existing facility, staff will review the required submittals based on established criteria and recommend appropriate action by the City Council. If the proposed facility or expansion is deemed consistent with this Plan, the City Council will issue a letter of consistency which Georgia EPD requires as part of its review of any permit application for a solid waste handling facility.

4.7 CONSOLIDATE COLUMBUS' SOLID WASTE FACILITIES

Goal 6

Consolidate solid waste handling and diversion facilities at Pine Grove.

To maximize efficiency and minimize costs, the City of Columbus will consolidate recycling and solid waste handling facilities at or near the Pine Grove site when feasible. Currently, the Pine Grove MSW and C&D landfills and the Recycling and Sustainability Center are already at this location.

Strategy 6-1: Redirect inert material from Granite Bluff to Pine Grove.

Granite Bluff inert landfill is located on the western edge of the City while the city's other solid waste handling facilities are on the eastern side. When Granite Bluff reaches capacity, Columbus will direct inert material to the Pine Grove site. As described in Strategy 1-7, most of the inert material will be diverted from disposal. For the inert material that cannot be diverted, Columbus will evaluate the possibility of developing a new inert landfill adjacent to the Pine Grove site and

develop if feasible. If not feasible, or until a new inert landfill is available, inert materials that cannot be feasibly diverted will be placed in the C&D landfill at Pine Grove.

Strategy 6-2: Secure sources of daily, intermediate and final cover.

Securing suitable material for daily, intermediate and final cover is critical to continued operation of the landfill. DPW will work with other city departments to identify and secure sources of cover, ideally from city-owned sites located near the Pine Grove site to minimize costs of accessing this material.

Goal 7

Continue to support solid waste management with enterprise fund.

4.8 ENSURE SUSTAINABLE FUNDING

Columbus will continue to fund its solid waste management activities and facilities, primarily with revenues from fees paid by those that benefit from them. This relieves the burden on the general fund and, to some degree, insulates solid waste management from the uncertainties of the general budgeting process.

Strategy 7-1: Secure sustainable financing for capital needs.

Many of the strategies included in this Plan require capital investment including developing, expanding, and improving diversion and disposal facilities and replacing and upgrading equipment. Columbus will continue to plan and implement financing strategies that ensure funds are available for facilities and equipment when they are needed. This will include incorporating anticipated capital costs into the City's Capital Improvement Program, accruing funds from fees charged for solid waste services, accessing grants and loans, issuing bonds or securing funds as part of a Special Purpose Local Option Sales Tax.

Strategy 7-2: Evaluate cost of each solid waste service and update rates accordingly.

In conjunction with the development of this Solid Waste Management Plan, Columbus is conducting a cost of service and rate study. This study will identify the costs associated with each solid waste management service and facility provided by Columbus and establish current and future rates for customers that benefit from these services. This study and the resulting rates will incorporate costs and revenues associated with conducting the activities included in this Plan.

Strategy 7-3: Consider host fee at solid waste handling facilities operating in Columbus.

Columbus will evaluate the potential to charge a host fee for private solid waste handling facilities operating in the city limits. Host fees are typically charged to offset the impacts of having a waste management facility located within its boundaries. State law requires that landfills pay a minimum \$1 host fee to the jurisdiction where the facility is sited but such a fee can be applied to any type of solid waste handling facility.

5 ACTION PLAN – THE ROADMAP FOR THE NEXT TEN YEARS

5.1 ROLES AND RESPONSIBILITIES

DPW will continue to have the primary responsibility for implementing most elements of this Solid Waste Management Plan. DPW will continue to recommend policy to the City Council, as needed, to achieve solid waste management goals and to implement strategies included in this Plan. DPW staff will oversee all activities in this Plan and propose budgets to the City Council each year to accomplish this.

DPW will continue to operate, expand, and upgrade solid waste management facilities for the benefit of Columbus citizens. This includes MSW, C&D, and inert landfills; the Recycling and Sustainability Center; and drop-off centers for recyclables. The Collection Division within DPW will collect solid waste, recyclables, yard trimmings, and bulky items curbside from residential and selected commercial generators. The Keep Columbus Beautiful Commission will continue to lead public education and outreach programs encouraging recycling and solid waste management and litter prevention and abatement.

5.2 SUMMARY OF GOALS AND STRATEGIES

The activities conducted over the next ten years are designed to accomplish the goals and implement the strategies identified in Section 4. Table 5-1 summarizes these goals and strategies.

Table 5-1 Solid Waste Management Goals and Strategies

Goal 1: Divert 40 percent of the solid waste collected by Columbus or managed at its facilities.
Strategies
<p>Strategy 1-1: Continue to operate and expand current programs.</p> <p>Strategy 1-2: Facilitate recycling for multi-family and commercial generators.</p> <p>Strategy 1-3: Upgrade the Recycling Facility to increase capacity and reduce contamination.</p> <p>Strategy 1-4: Support the Keep Columbus Beautiful Commission to lead outreach and education on waste reduction and recycling.</p> <p>Strategy 1-5: Mulch and compost an increasing amount of organic material.</p> <p>Strategy 1-6: Divert 90 percent of what is currently delivered to Granite Bluff from disposal.</p> <p>Strategy 1-7: Access information needed to measure progress toward goals.</p>
Goal 2: Extend the life of the Pine Grove MSW landfill to 2066.
Strategies
<p>Strategy 2-1: Divert materials from disposal using the strategies listed for Goal 1.</p> <p>Strategy 2-2: Explore new technologies to divert material from disposal and implement where feasible.</p> <p>Strategy 2-3: Maximize amount of MSW that can be placed in currently permitted area.</p>

Goal 3: Ensure all residents and businesses have convenient access to solid waste collection.
Strategies
<p>Strategy 3-1: Provide collection to all residents and selected small businesses.</p> <p>Strategy 3-2: Provide carts to all residential customers.</p> <p>Strategy 3-3: Ensure multi-family and commercial generators have access to convenient collection of MSW.</p>
Goal 4: Prevent and abate illegal disposal.
Strategies
<p>Strategy 4-1: Ensure all generators have adequate solid waste collection using strategies listed for Goal 3.</p> <p>Strategy 4-2: Target key sources of litter.</p> <p>Strategy 4-3: Enforce litter and collection and disposal ordinances.</p> <p>Strategy 4-4: Support the Keep Columbus Beautiful Commission to lead litter prevention and abatement efforts.</p>
Goal 5: Ensure solid waste handling facilities conform to environmental and land use limitations and are consistent with this Plan.
Strategies
<p>Strategy 5-1: Review siting, construction, and operation of all solid waste handling facilities in Columbus.</p> <p>Strategy 5-2: Update Columbus Development Ordinance to identify zoning requirements for all types of solid waste handling facilities.</p> <p>Strategy 5-3: Follow procedure to determine consistency of any proposed facility with Plan.</p>
Goal 6: Consolidate solid waste handling and diversion facilities at Pine Grove.
Strategies
<p>Strategy 6-1: Redirect inert material from Granite Bluff to Pine Grove.</p> <p>Strategy 6-2: Secure sources of suitable material for daily, intermediate and final cover.</p>
Goal 7: Continue to support solid waste management with enterprise fund.
Strategies
<p>Strategy 7-1: Secure sustainable financing for capital needs.</p> <p>Strategy 7-2: Evaluate cost of each service and update rates accordingly.</p> <p>Strategy 7-3: Consider host fee at solid waste handling facilities operating in Columbus.</p>

5.3 ACTION PLAN

Table 5-2 identifies the activities that the Columbus will undertake over the next ten years to achieve the goals and implement the strategies.

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Table 5-2 Action Plan 2019-2028

Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Goal 1: Divert 40 percent of the solid waste collected by Columbus or managed at its facilities.											
Strategy 1-1: Continue to operate and expand current programs.											
Collect single-stream recyclables curbside and deliver to Recycling and Sustainability Center.											DPW
Enable residents to request recycling cart or bin on-line.											DPW
Encourage residents to participate in curbside recycling by promoting in new resident package, on City web site and social media, on television and in flyers.											DPW, KCBC
Distribute 2,500 additional recycling bins/carts per year to expand participation in curbside program.											DPW
Collect recyclables at mobile recycling sites and deliver to Recycling and Sustainability Center.											DPW
Promote mobile recycling sites in new resident package, on City web site and social media, on television and in flyers and other printed material.											KCBC
Secure market for separated glass bottles and jars, purchase containers and initiate collection at mobile drop-off sites.											DPW, City Council
Collect scrap metal, appliances, mattresses and tires at the curb and at landfill and send to market.											DPW
Collect and recycle used grease and cooking oil.											CWW
Hold annual household hazardous waste and electronics collection events.											DPW, KCBC
Promote progress on diversion, waste reduction and recycling to the public, such as tons diverted, on web site and social media.											KCBC
Divert at least one additional material from disposal every 1-2 years based on feasibility of collection, processing, and markets											DPW
Strategy 1-2: Facilitate recycling for multi-family and commercial generators.											
Continue to collect recyclables from Columbus' commercial solid waste collection customers and encourage participation.											DPW

Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Continue to offer collection of recyclables to businesses in Uptown Business District and encourage participation.											DPW
Continue to offer recycling to apartment buildings and schools who use private haulers to collect MSW.											DPW
Provide an area for citizens and self-haulers to segregate and deposit a wide range of recyclables at new Pine Grove convenience center.											DPW
Promote recycling opportunities at the new Pine Grove convenience center online and in other outreach activities.											DPW, KCBC
Evaluate potential to require private haulers to offer recycling services to all MSW collection customers and implement if feasible.											DPW
Continue to recognize businesses with successful recycling programs through awards program.											KCBC
Strategy 1-3: Upgrade the Recycling Facility to increase capacity and reduce contamination.											
Evaluate options for upgrading and expanding Recycling Facility, including financing options.											DPW
Secure financing for upgrading and expanding Recycling Facility.											DPW
Upgrade sort line at Recycling Facility.											DPW
Strategy 1-4: Support the Keep Columbus Beautiful Commission to lead outreach and education on waste reduction and recycling.											
Continue to provide office space to KCBC in Recycling and Sustainability Center.											DPW
Support staff and other operating costs of KCBC with Integrated Solid Waste Enterprise Fund.											DPW
Develop annual work plan with KCBC to include outreach and education support for waste reduction and recycling activities.											DPW
Partner with schools, surrounding communities, Fort Benning and others to expand reach of waste reduction and recycling.											KCBC
Expand social media presence to reach broader audience on waste reduction and recycling.											KCBC
Strategy 1-5: Mulch and compost an increasing amount of organic material.											

Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Encourage residents to set out yard trimmings in compostable paper bags.											DPW, KCBC
Evaluate requirement for residents to set out yard trimmings in compostable paper bags and implement if feasible.											DPW, City Council
Consider diversion alternatives for processing and marketing yard trimmings and implement most feasible.											DPW
Move yard trimmings processing facility from Granite Bluff to Pine Grove.											DPW
Direct collected yard trimmings to Pine Grove.											DPW
Evaluate technology, markets, etc. for other types of organics (beyond yard trimmings).											DPW
Secure financing to develop technology and modify facility to add other types of organics processing operation.											DPW, City Council
Evaluate feasibility of adding CWW sludge at organics processing facility and implement as feasible.											DPW, CWW
Evaluate feasibility of adding select sources of industrial/institutional food residuals at organics processing facility and implement as feasible.											DPW
Evaluate feasibility of adding other diverted organics at organics processing facility and implement as feasible.											DPW
Strategy 1-6: Divert 90 percent of what is currently delivered to Granite Bluff from disposal.											
Crush concrete, rock, and asphalt received at Granite Bluff and use on-site and in other City operations.											DPW
Research markets for additional crushed aggregate received at Granite Bluff and divert to offsite markets as feasible.											DPW
Divert as much of the remaining inert materials from disposal as possible.											DPW
Strategy 1-7: Gather information needed to measure progress toward goals.											
Require private haulers to report tonnage collected from customers within Columbus as part of permit process.											DPW, City Council
Require solid waste handling facilities operating in Columbus to report tons received from generators within Columbus.											DPW

Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Ensure industrial and other nonresidential generators are reporting as required by current ordinance.											DPW
Update reporting requirements in ordinance if needed to measure progress toward goals.											DPW, City Council
Review reports from private haulers, solid waste handling facilities, and nonresidential generators to determine whether goals are met.											DPW
Goal 2: Extend the life of the Pine Grove MSW landfill to 2066.											
Strategy 2-1: Divert materials from disposal using the strategies listed for Goal 1.											
Implement strategies 1-1 through 1-7											DPW, KCBC, CWW, City Council
Strategy 2-2: Explore new technologies to divert material from disposal and implement where feasible.											
Identify criteria for considering new technologies to divert solid waste from MSW landfill.											DPW
Evaluate technologies based on established criteria.											DPW
Enter into agreements to implement projects that meet Columbus' criteria when feasible.											DPW
Develop facilities/technology and divert materials as feasible.											DPW
Strategy 2-3: Maximize amount of MSW that can be placed in currently permitted area.											
Allocate funds for new compactor to allow compaction of 1,500 pounds per cubic yard.											DPW, City Council
Purchase new compactor for MSW landfill.											DPW
Secure an estimated \$300,000 funds to redesign and permit modifications to existing MSW landfill to convert terraces to side slopes.											DPW, City Council
Permit and design modifications of landfill from terraces to side slopes.											DPW
Convert terraces at Pine Grove to side slopes.											DPW
If terraces are not converted to side slopes, conduct the following activities: ¹											
Secure an estimated \$10 million to construct Phases 5 and 6.											DPW, City Council

Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Design and permit Phases 5 and 6.											DPW
Construct Phases 5 and 6.											DPW
Open Phases 5 and 6.											DPW
Secure \$10 million for closure of Phases 1-4.											DPW
Develop closure design and begin to close Phases 1-4.											DPW
Goal 3: Ensure all residents and businesses have convenient access to solid waste collection.											
Strategy 3-1: Provide collection to all residents and selected small businesses.											
Continue to collect MSW weekly from all residents and small businesses that use curbside collection.											DPW
Continue to collect MSW from businesses in the Uptown Business District.											DPW
Finance and replace City collection vehicles every 7 years to ensure continued and consistent operation.											DPW, City Council
Strategy 3-2: Provide carts to all residential customers.											
Allocate funds to purchase carts for MSW for all residents.											DPW, City Council
Purchase and distribute carts to all residential customers.											DPW
Strategy 3-3: Ensure multi-family and commercial generators have access to convenient collection of MSW.											
Enforce requirement that all property owners and tenants have adequate containers and collection of MSW.											DPW, I&C
Update permit requirements for collectors.											DPW, City Council
Review reports from private haulers to confirm non-residential generators are adequately served, quantify solid waste generated in Columbus, and identify disposal locations.											DPW
Confirm private hauler reports are received before issuing business license and hauler permits.											DPW, Finance
Evaluate and recommend new approach to collection in Uptown Business District.											DPW
Allocate funds to implement selected approach for collection in Uptown Business District, if needed.											City Council
Implement selected approach for collection in Uptown Business District.											DPW

Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Modify billing and reporting process for City's commercial accounts to track number of customers, service level and associated revenue.											DPW, Finance, IT
Goal 4: Prevent and abate illegal disposal.											
Strategy 4-1: Ensure all generators have adequate solid waste collection using strategies listed for Goal 3.											
Implement strategies 3-1 through 3-3.											
Strategy 4-2: Target key sources of litter.											
Operate and maintain City collection vehicles in a way that prevents materials and solid waste from escaping vehicles.											DPW
Prevent and pick-up any litter from or near Columbus solid waste handling facilities and require private solid waste handling facilities to do the same.											DPW, I&D, Community Services
Enforce requirements that haulers adequately secure waste when collecting, transporting and disposing of recyclable materials and solid waste.											DPW, I&C, Environmental Court
Work with property owners to ensure that material set out during evictions is property secured.											DPW, KCBC, I&C, Marshal and Sheriff, City Council
Strategy 4-3: Enforce litter and collection and disposal ordinances.											
Continue to issue citations for violations of ordinance.											I&C, Marshal's Office, Sheriff's Office, Police Dept
Continue to hear cases regarding illegal dumping and littering in City's environmental court.											Environmental Court
Impose penalties for repeat offenders.											Environmental Court
Periodically conduct law enforcement training on litter and illegal disposal.											KCBC
Strategy 4-4: Support the Keep Columbus Beautiful Commission to lead litter prevention and abatement efforts.											
Include litter and illegal dumping education, outreach, clean-up, and enforcement tasks in KCBC annual work plan.											DPW, KCBC
Continue to provide supplies and equipment for neighborhood community cleanup projects.											DPW, KCBC

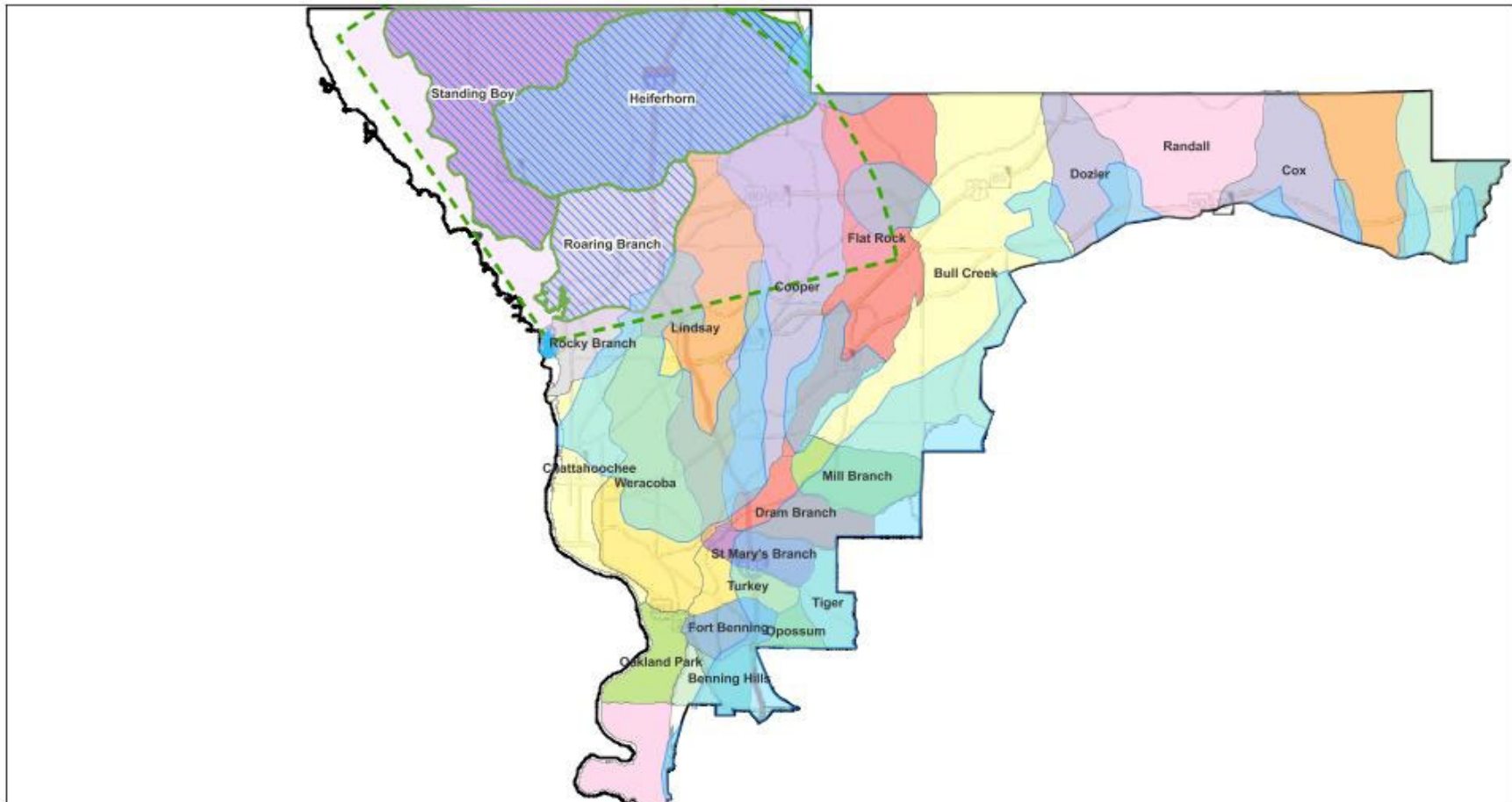
Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Continue litter and illegal dump clean-ups such as Adopt-A-Spot, Help the Hooch and the Great American Clean-Up.											KCBC
Goal 5: Ensure solid waste handling facilities conform to environmental and land use limitations and are consistent with this Plan.											
Strategy 5-1: Review siting, design, construction, and operation of all solid waste handling facilities in Columbus.											
Inform current and potential facility owners/operators of land limitations and operating requirements.											DPW
Maintain and update land limitation maps as environmental conditions, land use, and policies change.											DPW, Planning, I&C
Update requirements for solid waste handling facilities operating in City to include reporting, potential host fees, etc.											DPW
Implement updated requirements for solid waste handling facilities operating in the City.											DPW, Finance
Continue post-closure monitoring activities at closed landfills											DPW
Strategy 5-2: Update Columbus Development Ordinance to identify zoning requirements for all types of solid waste handling facilities.											
Identify types of facilities that are not currently addressed in zoning ordinance and propose siting, design, and operating requirements.											DPW, Planning
Propose and pass update to Columbus Development Ordinance to incorporate all types of solid waste handling facilities.											DPW, Planning, City Council
Strategy 5-3: Follow procedure to determine consistency of any proposed facility with Plan.											
Require facility owners/operators to submit request for determination of consistency with Plan as described in Section 3.5.2 of Plan.											DPW
Determine consistency of each proposed facility as described in Plan.											DPW, City Council
Goal 6: Consolidate solid waste handling and diversion facilities at Pine Grove.											
Strategy 6-1: Redirect inert material from Granite Bluff to Pine Grove.											
Relocate grinding operation to Pine Grove and expand as described in Strategy 1-5.											DPW
Redirect daily deliveries of inert waste to Pine Grove for diversion or disposal in C&D landfill.											DPW

Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Maintain permit for Granite Bluff, reserving capacity for overflow and/or inert debris generated by extreme weather or other disasters.											DPW
Strategy 6-2: Secure sources of daily, intermediate and final cover.											
Redesign current borrow pit to maximize availability of cover material.											DPW
Investigate sources of additional cover material as close to Pine Grove site as possible.											DPW
Secure access to the most cost-effective source of cover material.											DPW
Extract and transport cover material as needed.											DPW
Goal 7: Continue to support solid waste management with enterprise fund.											
Strategy 7-1: Secure sustainable financing for capital needs.											
Identify the availability, amount, terms and purpose of funds accrued for future facility capital costs. ²											DPW, Finance
Incorporate facility capital costs for which funds are not yet accrued into revenue requirement calculated in cost of service and rate analysis in Strategy 7-2.											DPW, Finance
Update rates that generate sufficient revenue to fund capital costs that are not covered with existing funds or other sources.											DPW, Finance, City Council
Adhere to capital financing strategy that provides for replacement collection, processing and landfill equipment on regular schedule, every 7 years for most equipment.											DPW, Finance
Strategy 7-2: Evaluate cost of each service and update rates accordingly.											
Quantify current and projected costs and revenues for each solid waste management service and facility in Columbus.											DPW, Finance
Determine annual revenue requirement to provide each service or facility and allocate this revenue requirement to appropriate customers.											DPW, Finance
Calculate projected rates to cover allocated revenue requirement for each customer/facility type.											DPW, Finance
Update rate schedule annually to recoup the allocated revenue requirement to each customer type.											DPW, Finance, City Council












Action	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Responsible Party(ies)
Update ordinance to reflect rate adjustments as needed.											DPW, City Council
Refer to action plan when preparing annual budget.											DPW
Update cost of service and rate study and adjust rates accordingly.											DPW, Finance, City Council
Strategy 7-3: Consider host fee at solid waste handling facilities operating in Columbus.											
Determine appropriate host fee as part of cost of service analysis.											DPW
Conduct outreach and education on host fee.											DPW
Implement host fee, if feasible.											DPW, Finance
<p>1 These activities will take place after 2028 if terraces are converted to side slopes in existing landfill, adding capacity to existing footprint. 2 To include, but not be limited to, landfill development, closure and post-closure; new organics facility design, permitting, development; develop of new convenience center; upgrades to sort line at Recycling Facility.</p> <p>DPW = Department of Public Works KCBC = Keep Columbus Beautiful Commission CWW = Columbus Water Works IT = Information Technology Department I&C = Building Inspections & Code Enforcement</p>											

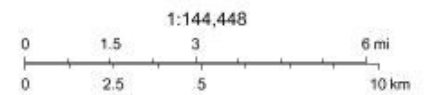
APPENDIX A
LAND LIMITATION MAPS

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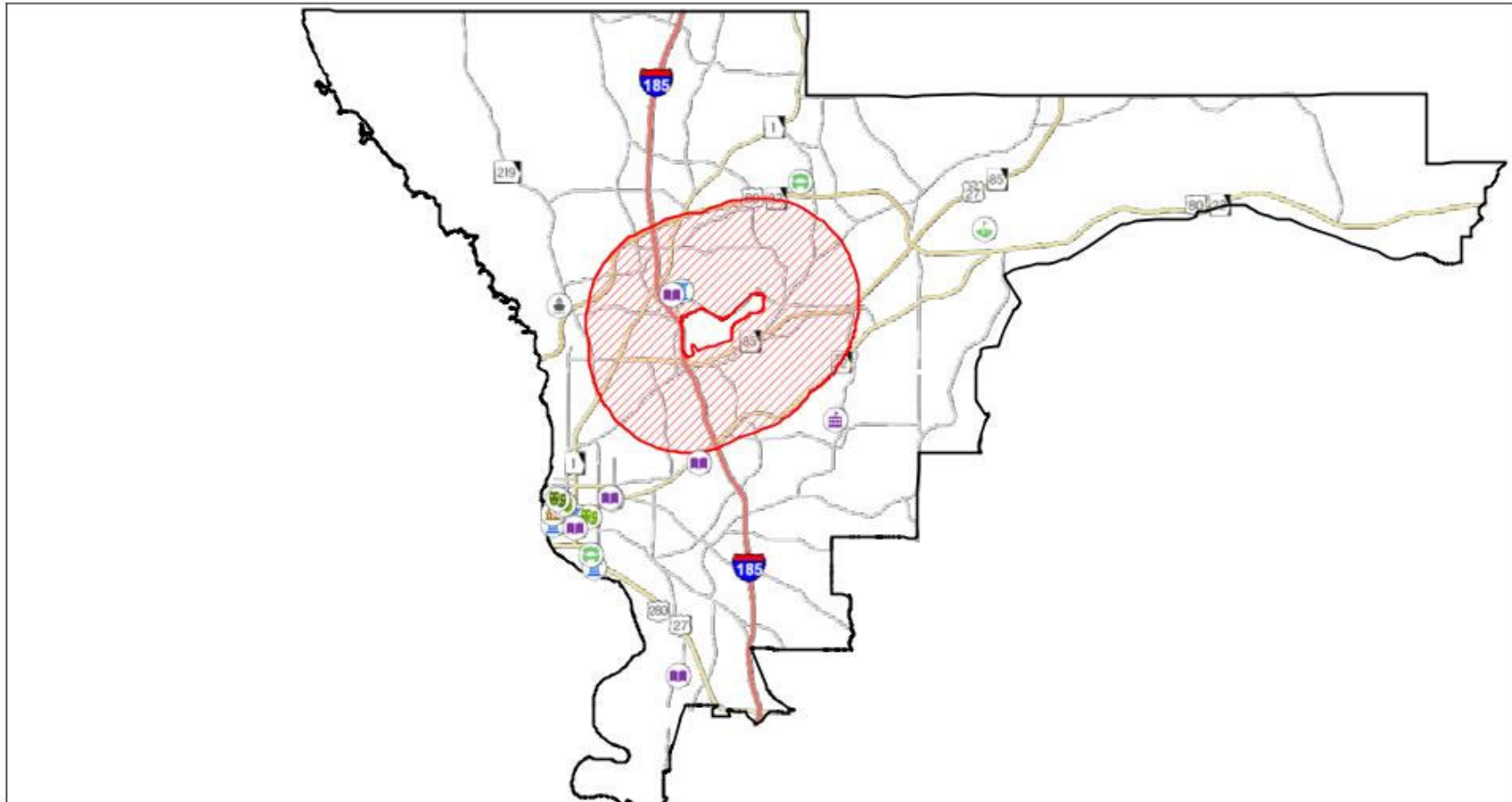
-  Raw Water Intake
-  7 Mile Protected Watershed Buffer
-  Groundwater Recharge Areas for Columbus Ga
-  Protected Watersheds
- Watersheds For Columbus GA
 -  Benning Hills
 -  Bull Creek
 -  Chattahoochee
 -  Cooper
 -  Cox
 -  Dozier
 -  Dram Branch
 -  Baker



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Land Limitation Map 1: Watersheds, Raw Water Intake, Groundwater Recharge Areas



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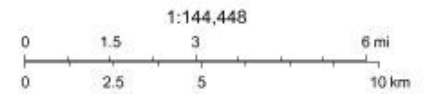
Cultural Sites

-  Britt David Cultural Arts Studio
-  Bull Creek Golf Course
-  City Marina
-  Coca-Cola Space Science Center
-  Columbus Iron Works Convention & Trade Center

-  Columbus Museum
-  Gertrude Pridgett "Ma" Rainey Home
-  Kinnett Stadium
-  Liberty Theater Cultural Center
-  Mikred L. Terry Branch Library

-  New Regional Library
-  North Columbus Branch Library
-  Patterson Planetarium
-  Port Columbus Civil War Naval Center
-  RiverCenter

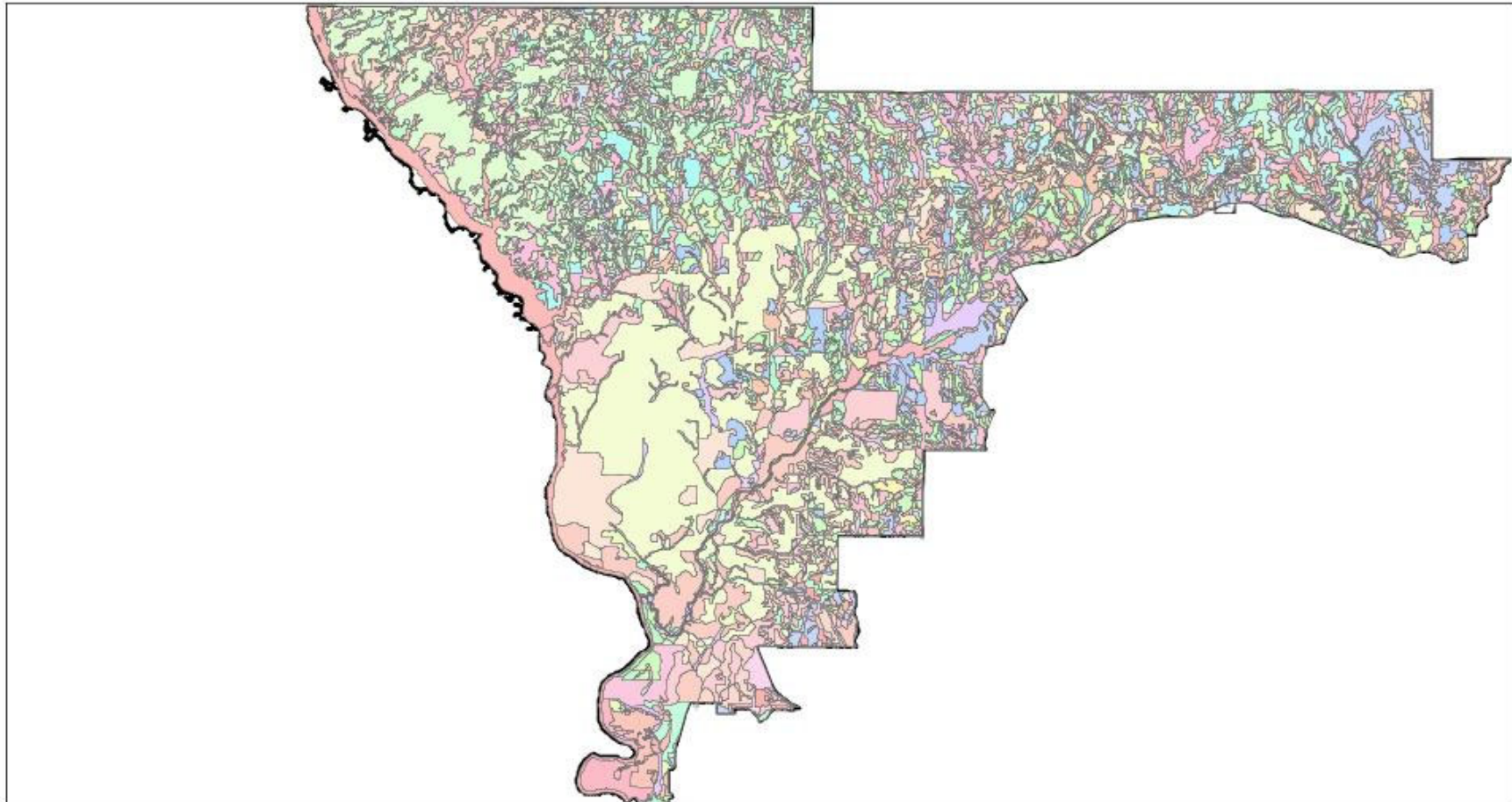
-  South Columbus Branch Library
-  South Commons
-  Springer Opera House
-  The Human Experience Theater On Broadway
-  W.C. Bradley Memorial Library
-  No Landfill permitted because of Airport



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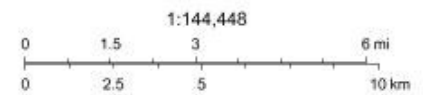
Land Limitation Map 2: Airports and Cultural Sites



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2015 NRCS Soil Survey For Columbus GA

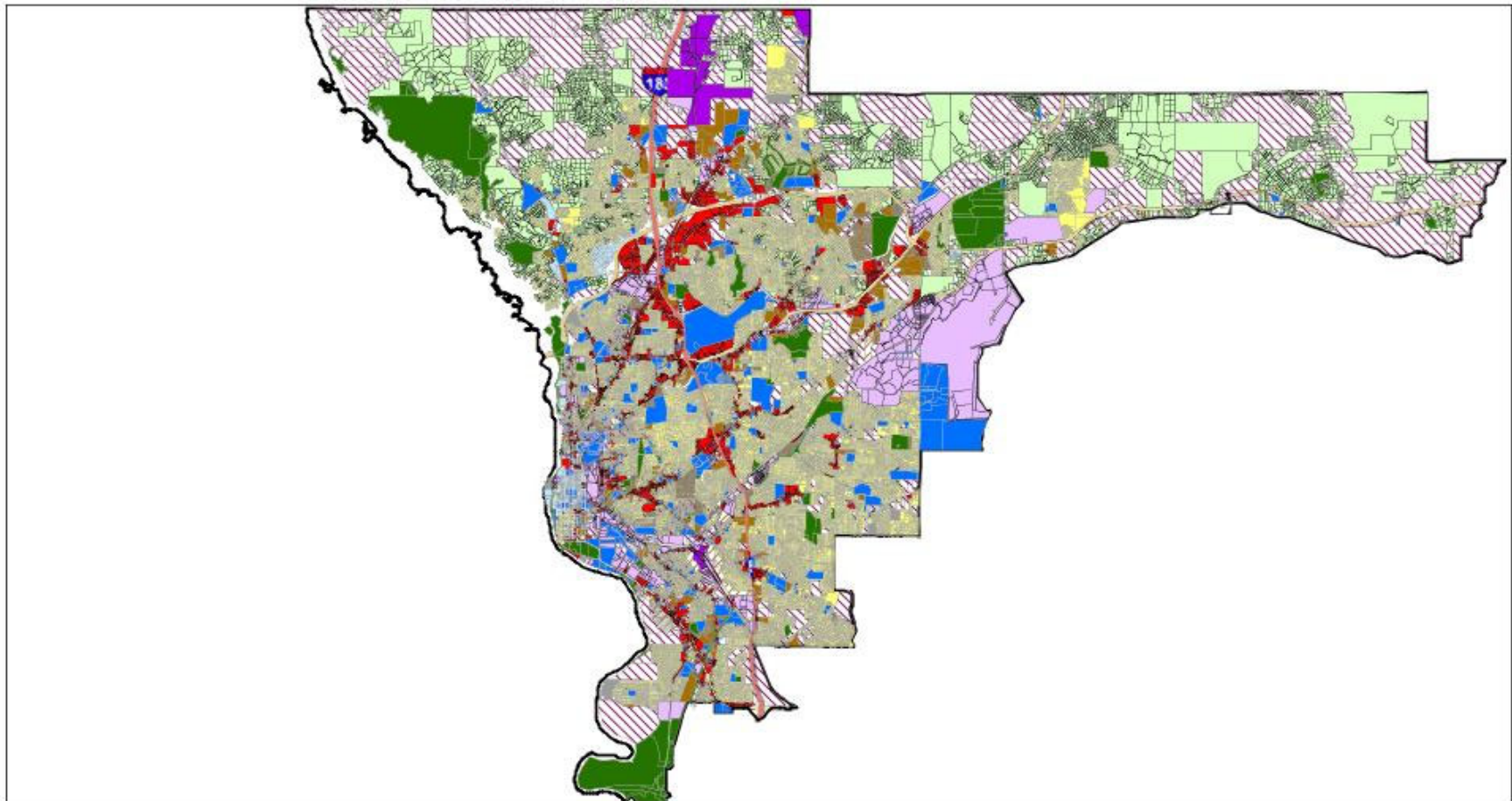
- | | | |
|---|--|---|
| Ailey loamy coarse sand, 2 to 5 percent slopes | Chestain loam | Dothan loamy sand, 5 to 8 percent slopes |
| Ailey loamy coarse sand, 5 to 8 percent slopes | Chewacha loam, 0 to 2 percent slopes, frequently flooded | Dothan-Urban land complex, 2 to 5 percent slopes |
| Bibb sandy loam | Congaree loam | Esto and Troup loamy sands, 12 to 25 percent slopes |
| Cecil sandy clay loam, 6 to 10 percent slopes, eroded | Cowarts-Ailey complex, 12 to 25 percent slopes | Esto sandy loam, 2 to 5 percent slopes |
| Cecil sandy loam, 2 to 6 percent slopes | Cowarts-Ailey complex, 5 to 12 percent slopes | Esto, Fuquay, and Ailey loamy sands, 5 to 12 percent slopes |
| Cecil sandy loam, 2 to 6 percent slopes, moderately eroded | Dam | Esto-Urban land complex, 8 to 25 percent slopes |
| Cecil sandy loam, 6 to 10 percent slopes, moderately eroded | Dogue loam, 1 to 2 percent slopes | Eunola sandy loam, 0 to 3 percent slopes |
| | Dothan loamy sand, 2 to 5 percent slopes | Eunola-Urban land complex, 0 to 3 percent slopes |



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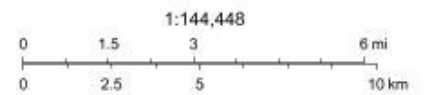
Land Limitation Map 3: Soil Types



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Existing Land Use

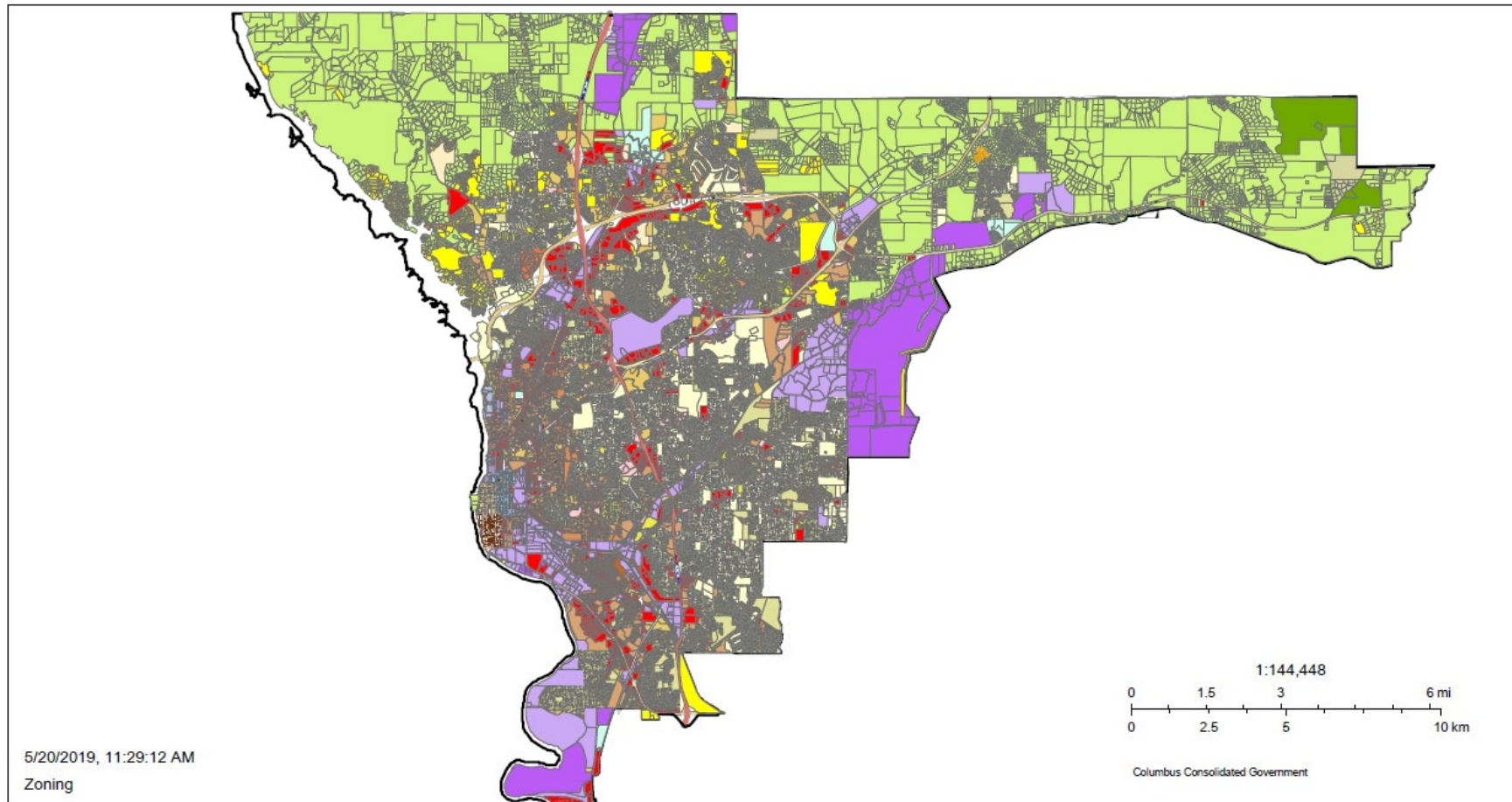
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|--------------------------------|---------------------------|-------------------------------|--------------------------------------|
| General Commercial | Mixed Use | Office/Professional | Single Family Residential |
| Heavy Manufacturing/Industrial | Mobile Homes/Trailer Park | Parks/Recreation/Conservation | Transportation/Communication/Utility |
| Light Manufacturing/Industrial | Multifamily | Public/Institutional | Vacant/Undeveloped |
| Neighborhood Commercial | Rural Residential | Columbus City Limits | |



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Land Limitation Map 4: Existing Land Uses



5/20/2019, 11:29:12 AM
Zoning

1:144,448
0 1.5 3 6 mi
0 2.5 5 10 km
Columbus Consolidated Government

- | | | | | |
|------------------------------------|------------------------------------|---|--|----------------------|
| RE10 -Residential Estate--10 | SFR3-Single-family Residential--3 | CRD-Central Riverfront District | LMI-Light Manufacturing/Industrial | Columbus City Limits |
| RE5- Residential Estate-5 | SFR4 -Single-family Residential--4 | NC-Neighborhood Commercial | HMI-Heavy Manufacturing/Industrial | |
| RE1-Residential Estate--1 | RMF1-Residential Multifamily--1 | RO-Residential Office | PUD-Planned Residential Unit Development | |
| RT -Residential Transitional | RMF2-Residential Multifamily--2 | CO-Commercial Office | PCD-Planned Commercial Development | |
| SFR1 -Single-family Residential--1 | RMH -Residential Manufactured Home | GC-General Commercial | PMUD-Planned Mixed Use Development | |
| SFR2 -Single-family Residential--2 | UPT -Commercial Uptown | SAC-Special Activity and Technical Center | MROD-Mill Restoration Overlay District | |

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Land Limitation Map 5: Zoning Districts

APPENDIX B
CAPACITY ASSURANCE LETTERS

DRAFT



We do amazing.

Columbus, Georgia
Georgia's First Consolidated Government
602 11th Ave Bldg E, Columbus, Georgia 31901

Columbus Consolidated Government
Department of Public Works

Phone 706-225-4665
Fax 706-225-4577

May 20, 2019

Isaiah Hugley
City Manager City of Columbus

RE: Landfill Capacity Assurance Letter from Pine Grove MSW Landfill

Dear Mr. Hugley,

The City of Columbus' Pine Grove Landfill has the capacity to receive 750,000 tons of solid waste at the MSW Landfill (EPD permit number 106-016D (SL)) from 2019 through 2028, an average of 75,000 tons per year as projected in the Columbus Consolidated Government Solid Waste Management Plan. As of December 31, 2018, the Pine Grove MSW Landfill had remaining waste capacity for 4,000,019cy which is equivalent to 2,480,011 tons at the current compaction density of 1,245lbs/cy and thus can accommodate anticipated solid waste from Columbus over the next ten years.

Sincerely,

A handwritten signature in cursive script that reads "Patricia Biegler".

Patricia Biegler, Director
Columbus Department of Public Works



208 Southern States Rd | Mauk, GA 31058

Taylor County Landfill

May 23, 2019

Isaiah Hugley, City Manager
City of Columbus, GA

Re: Landfill Capacity Assurance Letter from GFL / Waste Industries

Dear Mayor Henderson,

GFL / Waste Industries has the capacity to receive 1,550,000 tons of solid waste at the Taylor County Disposal, LLC landfill (EPD permit number: 133-003D(SL) from 2019 - 2028, an average of 155,000 tons per year according to the Columbus, GA Consolidated Government Solid Waste Management Plan. As of December 31, 2018 the Taylor County Landfill had a remaining capacity for 40,050,045 cy and thus can accommodate anticipated solid waste from Columbus in its MSW landfill.

Sincerely,

John Walker
Business Development Manager - Taylor County
LF GFL / Waste Industries