

# **Solid Waste Management Plan for the Columbus Consolidated Government Columbus, Muscogee County, Georgia**

## **Section 1 Introduction**

### **1.1 DEFINING THE PLANNING AREA**

The jurisdiction of the planning area for the purpose of this Solid Waste Management Plan is all of Columbus, Muscogee County, Georgia with the exception of the portion of Muscogee County that is part of Fort Benning Military Reservation. The military reservation is under control of the United States Government. Columbus, Georgia and Muscogee County are a Consolidated Government entity and as such are a single jurisdiction. In this report the "Planning Area" will be identified as "Columbus".

### **1.2 RESPONSIBLE PARTY**

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### **1.3 OVERVIEW OF THE AREA COVERED IN THE PLAN**

*History of the Planning Area* - Columbus, Muscogee County, Georgia<sup>1</sup> - On Feb. 12, 1825, a group of Creek Indians led by William McIntosh signed the Treaty of Indian Springs, in which they ceded all of their remaining lands in present-day Georgia. Subsequently, in an act of June 9, 1825, the General Assembly provided that the land ceded by the treaty be divided into five sections, surveyed into districts and land lots, and distributed by land lottery (Ga. Laws 1825 Extra. Session., p. 3). On Dec. 14, 1826, the legislature re designated the five land sections as the counties of Lee, Muscogee, Troup, Coweta, and Carroll and provided for their organization (Ga. Laws 1826, p. 57).

Despite the fact that the five counties were not named until Dec. 14, 1826, the date their respective boundaries were established -- June 9, 1825 -- is generally accepted as the date of their creation. Because the five counties were provided for in the same act, their order of creation is based on the order they were mentioned in the act -- Lee, Muscogee, Troup, Coweta, and Carroll. Thus, Lee was Georgia's 61st county, while Muscogee was 62nd.

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<sup>1</sup> History is taken from <http://georgiainfo.galileo.usg.edu/histcountymaps/muscogeehistmaps.htm>

Muscogee County was named for the Muscogee Indians, otherwise known as the Creek Indians.

In 1827, a portion of Muscogee County was used to create Harris County.

In 1969, the General Assembly created a special commission to draft a charter to consolidate the city of Columbus and Muscogee County into a single countywide government. [At the time, there was one other incorporated municipality in Muscogee County--the town of Bibb City. Its residents and officials decided not to be part of the consolidation, so it was exempted from the new charter.] In May 1970, voters of Columbus and Muscogee County approved the merger in separate referendums. Election of officials took place in Nov. 1970, and the new consolidated government went into effect on Jan. 1, 1971. Subsequently, in an act of Oct. 5, 1971, the General Assembly enacted the charter into law, although confirming the previous Jan. 1 as the effective date of the new consolidated government (Ga. Laws 1971 Extra. Session, p. 2007).

Bibb City, incorporated by superior court in August 1909, continued to function as an independent municipality through 2000. However, when the Bibb Mill closed in 1998, the town lost its principal source of tax revenue. In December 2000, the town council voted to give up its charter and become part of the Columbus-Muscogee Consolidated Government. Consequently, the General Assembly in 2001 repealed Bibb City's charter. On July 10, 2001 Columbus Council adopted a resolution (No. 401-01) to include the town of Bibb City into the Columbus Consolidated Government.

*Future of the Planning Area*<sup>2</sup>- The future population in Columbus is partly a function of past trends and growth strategies that the county will implement over the coming years, as well as the anticipated expansion of Fort Benning. Because these factors are somewhat unpredictable, a range of population is used in this document for planning purposes.

### **1.3.1 GEOGRAPHY OF THE PLANNING AREA**

The Planning Area lies within the west central region of the State of Georgia, bordered on the west by the Chattahoochee River and the State of Alabama. To the east and south by Chattahoochee County, Georgia which contains a portion of the Fort Benning Military Reservation, said reservation lies within both Muscogee County and Chattahoochee County. To the north the planning area is bordered by Harris County, Georgia. Muscogee County is nearly rectangular and has a land area of about 220 square miles, or 141,056 acres. Muscogee County is about 22 miles at it's widest point and about 20 miles at it's longest point. Muscogee County is identified on the attached state map seen below.

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<sup>2</sup> Technical Addendum November 2007 – Comprehensive Plan 2028, Columbus Consolidated Government

Planning Area – Columbus, Muscogee County, Georgia  
2008 – 2018 Solid Waste Management Plan  
Columbus, Georgia and Muscogee County are Consolidated Government



### 1.3.1.1 Land and Soil Information<sup>3</sup>

Muscogee County is in three major land resource areas. The northern part of the county is in the Southern Piedmont, most of the eastern part is in the Carolina and Georgia Sand Hills, and much of the southwestern part in the Southern Coastal Plain.

The Southern Piedmont consists mostly of very gently sloping to steep, well drained soils on uplands. These soils have an loamy surface layer and a clayey subsoil. The Carolina and Georgia Sand Hills are dominantly very gently sloping to moderately steep, well drained soils on uplands. These soils commonly have a thick sandy surface layer and subsurface layer and loamy subsoil. In places the subsoil is mostly firm and brittle. The Southern Coastal Plain is made up mostly of nearly level to gentle sloping, well drained soils on uplands. These soils have a sandy or loamy surface and an loamy subsoil.

About seventeen percent (17%) of Columbus is nearly level alluvial plains, streams and terraces. The soils on alluvial plains near the Chattahoochee River and it's tributaries are well drained to poorly drained.. They are dominantly loamy throughout. Soils on stream terraces are well drained and moderately well drained. They have a loamy surface layer and a loamy or clayey subsoil. A map showing the soils within Columbus is included as Appendix A.

Elevation ranges from 612 feet mean sea level (msl) in the northwestern part of the county to 190 feet (msl) in the southwestern part of the county.

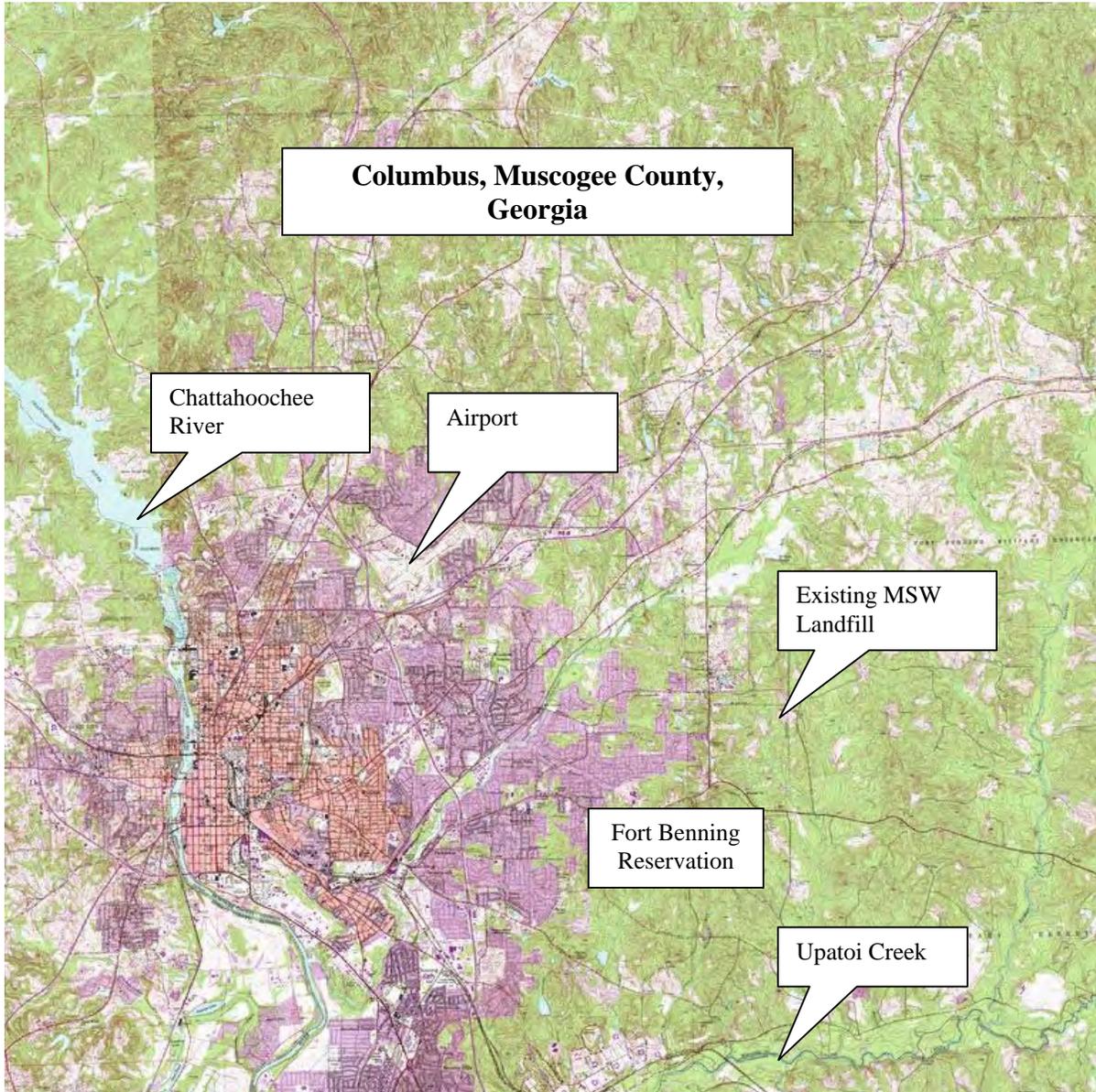
The Chattahoochee River, Upatoi Creek, and their tributaries drain most of the county. The Chattahoochee River separates the western boundary of Columbus from Alabama and generally flows in a southeasterly direction where it intersects Upatoi Creek.

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<sup>3</sup> Information obtained from "Soil Survey of Muscogee County Georgia", by John H. Johnson, Soil Conservation Service in cooperation with the University of Georgia,; 1980

### 1.3.2 TOPOGRAPHIC INFORMATION / UNIQUE FEATURES

Columbus, Muscogee County, Georgia lies in 2 distinct geographic regions and is divided by the Fall Line of the Chattahoochee River. The southern and eastern portions of the county are part of the Coastal Plane while the northern and western parts of the county are located in the Piedmont.



### 1.3.3 POPULATION<sup>4</sup>

Columbus 's population was estimated at about 189,000 and is projected to grow to between 219,000 and 226,000 by 2028. This represents an increase of approximately 30,000 to 37,500 people. These projections are based on the two growth alternatives that were developed to account for potential variances in population growth. Table 1-1(A) below gives an estimate of the population growth for the Planning Area for the next 10 years. The numbers shown here reflect the most aggressive scenario of growth and are extrapolated from the estimates in the Comprehensive Plan.

**Table 1-1(A)  
Population Projections for Columbus**

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
188,200	189,000	194,000	196,460	198,920	201,380	203,840	206,300	208,760	211,220	213,680
<b>Source:</b> Extrapolated from data in the 2028 Comprehensive Plan – Columbus Consolidated Government; October 2008										

#### 1.3.3.1 Seasonal Population Variation<sup>5</sup>

Columbus's population has historically ebbed and flowed as a result of activities at Fort Benning. As deployments occur, Fort Benning operations and the local economy are affected. As of late, the city has been challenged by two additional populations trends: (1) increasing suburbanization of the metro area and (2) a steady net outflow of individuals, particularly young professionals, to other areas, especially Atlanta. Other than variations in population accounted for by these items there is no "seasonal variation" in population that is significant enough to make any impact.

A far as waste disposal is concerned there is a seasonal variation in the amount of waste discarded. There is an increase in the amount of waste collected during the summer months. Some of which is attributed to yard maintenance activities but some is also attributed to the fact that children are not in school during the months of June and July and most of August.

#### 1.3.3.2 Number of Households

Using the numbers of projected population growth and using a factor of 3 ½ persons per household, the projection is that the number of households will increase from 55,073 in 2008 to 61,840 in 2018.

**Table 1-2(A)  
Number of Single and Multi-Family Households - 2008**

Single Family	Multi-Family
55,073 <sup>6</sup> (2008)	27,400 <sup>7</sup> (2008)
<b>Source:</b> See footnotes number 5 and footnote number 6	

<sup>4</sup> Chapter 2 the Technical Addendum to the Community Assessment of the Comprehensive Plan; Also "Community Agenda for the 2028 Comprehensive Plan" for the Columbus Consolidated Government, dated October 2008.

<sup>5</sup> "Community Agenda for the 2028 Comprehensive Plan" for the Columbus Consolidated Government, dated October 2008.

<sup>6</sup> Number of single family households paying garbage fee on water bill.

<sup>7</sup> Number of multi-family units extrapolated from data provided in the Comprehensive Plan for the Columbus Consolidated Government, Technical Addendum 2007.

### 1.3.4 ECONOMIC ACTIVITY<sup>8</sup>

The metro economy is approximately an \$8.5 billion economy. Columbus and the metro area both have not experienced much growth in population or jobs since 2000; however, income has more than kept pace with inflation. Current income is about 12 percent higher than an inflation-adjusted estimate. Over the last 10 years, outlying counties have grown more than Columbus, which is the core urban county in the metro area. In prior years, Columbus led regional jobs growth and development. There has been a sustained suburbanization trend with higher income families moving from the suburban center. Columbus currently accounts for a about 70 percent of the metro area jobs and almost 80 percent of private sector jobs. Residents represent 68 percent of the personal income , and 66 percent of the population.

#### 1.3.4.1 SIC / NAICS Codes with and Businesses for Columbus

The tables here-in list information concerning businesses within the planning area. The City of Columbus does not use the system of *Standard Industrial Classification (SIC)* codes as requested in the in the guidance document from the Department of Community Affairs. However, we do track our businesses using the *North American Industry Classification System (NAICS)* code. Listed below in table 1-3(A) are those business and industries within the planning area. The total number of business licenses issued in 2008 is 16,794. A copy of this report can be obtained upon request from the revenue division of the Columbus Consolidated Government. The report is not included in this Waste Management Plan as a hard copy attachment because it's length which is 1,064 pages long.

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<sup>8</sup> 2028 Comprehensive Plan Technical Addendum November 2007; paragraph 3, Economic Development

**Table 1-3(A) / NAICS Businesses License Listing - 2008**

<b>NAICS Code</b>	<b>Number of Businesses</b>						
2	20	23511	123	42151	2	44521	7
315	2	23521	194	42161	6	44522	9
4650	531	23531	89	42162	1	44523	5
4655	62	23541	53	42169	2	44529	3
4690	1	23542	78	42171	3	44531	32
9005	4	23543	51	42172	10	44611	42
9050	73	23551	203	42173	5	44612	77
9055	62	23552	72	42174	3	44613	4
9060	160	23561	109	42181	5	44711	90
9065	15	23571	56	42182	2	44719	6
9070	10	23591	7	42183	5	44811	13
9075	10	23592	6	42184	5	44812	37
9080	2	23593	36	42185	9	44813	11
9085	8	23594	14	42191	1	44814	57
9095	1	23595	4	42193	10	44815	58
9100	6	23599	148	42194	2	44819	24
9105	2	31131	1	42199	16	44821	37
9107	7	31192	1	42211	1	44831	30
9125	12	31193	1	42212	4	45111	38
9130	6	31312	1	42213	3	45112	8
9135	27	31521	1	42231	3	45113	5
9140	13	31599	1	42241	6	45114	5
9145	8	32192	1	42243	1	45122	10
9150	2	32311	1	42245	3	45211	46
9900	9	32562	1	42249	12	45291	1
9960	59	32732	6	42269	3	45299	38
9962	10	32739	5	42271	3	45311	77
9964	2	33242	1	42272	3	45321	27
9980	58	33271	6	42292	1	45322	90
9982	7	33281	1	42293	5	45331	38
9991	4	33711	16	42299	12	45391	6
9994	8	33712	1	44111	24	45392	6
9995	8	33791	2	44112	32	45393	2
9998	2	33995	4	44121	2	45399	34
9999	28	42111	2	44131	74	45411	98
11421	1	42112	8	44132	44	45421	43
11521	2	42113	2	44211	48	45439	169
11531	4	42114	1	44221	17	48411	10
23311	1	42121	3	44311	5	48421	9
23321	152	42122	2	44312	18	48422	6
23322	3	42131	3	44411	12	48423	2
23331	5	42132	5	44412	7	48531	12
23332	58	421133	2	44413	10	48532	4
23411	8	42139	4	44419	45	48551	4
23491	2	42143	2	44421	7	48841	23
23492	4	42144	5	44422	5	48851	3
23493	3	42145	7	44511	58	49211	5
23499	3	42149	1	44512	28	49221	2
49311	33	54131	4	61151	1	81221	1

**Table 1-3(A) / NAICS Businesses License Listing - 2008**

<b>NAICS Code</b>	<b>Number of Businesses</b>						
49312	1	54132	5	61161	8	81222	4
49319	8	54133	2	61162	21	81231	27
51111	3	54134	11	61169	3	81232	23
51112	6	54135	20	61171	4	81291	13
51113	9	54138	1	62121	1	81293	3
51114	1	54141	54	62131	6	81299	107
51121	1	54143	35	62133	7	81341	12
51211	9	54149	4	62134	19	81391	1
51212	1	54151	4	62139	1	81399	1
51221	7	54161	7	62142	2	111421	1
51223	1	54169	11	62161	20	115112	1
51224	7	54171	4	62191	4	212313	1
51229	1	54172	1	62211	2	234120	1
51331	1	54181	28	62311	6	235210	19
51332	1	54182	2	62331	1	235430	5
51333	25	54185	6	62411	4	235990	2
51419	1	54186	3	62412	9	311412	1
51421	5	54189	13	62419	15	311612	2
52231	30	54192	3	62431	5	311811	8
52232	6	54193	1	62441	57	311812	1
52239	22	54194	1	71111	2	311821	1
52331	4	54199	17	71113	3	311911	1
52312	2	56111	28	71119	3	311999	2
52313	1	56131	16	71131	2	312111	2
52392	2	56132	8	71132	15	312112	1
52393	5	56141	14	71141	7	312113	1
52421	1	56142	2	71151	18	312120	1
52429	4	56143	2	71213	1	313111	3
52591	1	56144	13	71311	1	313311	2
53111	8	56145	4	71312	11	313312	1
53112	26	56149	1	71391	6	314121	2
53113	14	56151	11	71394	15	314912	2
53119	2	56152	2	71395	1	314999	2
53121	76	56171	27	71399	23	315210	2
53132	5	56172	159	72111	48	315211	2
53139	31	56173	343	72211	193	315299	1
53212	8	56174	33	72221	26	315999	1
53221	16	56179	20	72231	3	321911	1
53222	6	56191	2	72232	5	321999	1
53223	12	56192	1	72233	35	322213	2
53229	9	56199	11	72241	49	323110	6
53241	1	56291	2	81112	8	323111	1
53242	5	56292	2	81121	2	323113	14
53249	1	61111	1	81131	38	323114	9
53311	1	61131	1	81142	24	323115	1
54111	10	61142	5	81143	2	323117	1
54119	1	61143	2	81149	46	323119	1
323121	1	442210	2	553211	14	611692	6
323122	1	442291	3	532291	8	611699	15

**Table 1-3(A) / NAICS Businesses License Listing - 2008**

<b>NAICS Code</b>	<b>Number of Businesses</b>						
324121	1	442299	27	532292	5	621111	10
325211	2	443111	16	532299	12	621112	3
325613	1	443112	48	532412	5	621330	1
325998	2	445291	4	532490	3	621391	1
326212	1	449292	5	541191	1	621399	9
327121	1	445599	7	541199	8	621492	8
327215	1	446191	11	541211	10	621493	2
327991	1	446199	12	541213	103	621498	1
327999	1	448148	8	541214	3	621511	5
331491	1	451211	17	541219	41	621512	5
331511	2	453220	17	541491	1	621990	1
332111	1	453310	12	541511	12	621991	1
332116	1	453920	5	541512	13	621999	5
332311	1	453991	5	541513	3	623311	3
332312	4	455998	65	541519	28	623312	14
332321	1	454110	15	541611	60	624120	1
332322	3	454311	1	541612	3	624190	7
332618	2	454312	2	541613	12	711130	2
332812	1	454319	2	541614	1	711211	1
332995	1	481219	1	541618	1	711212	1
332997	1	484121	6	541620	3	711219	2
332999	2	485991	3	541921	62	711510	2
333319	2	488490	1	541922	2	713990	4
333415	1	488991	1	551111	1	721191	2
333513	1	488999	2	561421	2	721211	1
333924	1	492210	4	561422	2	722211	176
333999	1	511191	2	561431	1	722212	1
334612	1	512131	5	561439	7	722213	32
335911	1	512191	1	561491	3	722320	3
335912	2	512220	1	561499	18	722330	2
336322	1	513111	4	561599	3	811111	175
336412	5	513112	1	561611	7	811112	2
337110	2	513321	4	561612	5	811113	7
337121	6	513322	9	561613	2	811118	10
337212	1	514191	1	561621	21	811121	56
339113	2	514199	4	561622	18	811122	22
339115	6	522291	47	561720	34	811191	10
339116	4	522292	10	561790	10	811192	57
339914	1	522298	38	562111	3	811198	9
339932	1	523120	7	562119	1	811211	12
339991	1	523930	3	562219	1	811212	32
339999	9	523991	2	562991	2	811213	1
422950	1	523999	2	611511	3	811219	2
441221	13	524291	1	611610	6	811310	2
441222	3	524292	2	611620	8	811411	12
441229	3	531320	1	611691	9	811412	25
812111	57						
812112	211						
812113	40						

**Table 1-3(A) / NAICS Businesses License Listing - 2008**

<b>NAICS Code</b>	<b>Number of Businesses</b>						
812191	2						
812199	51						
812320	7						
812331	3						
812332	3						
812910	6						
812921	3						
812922	2						
813212	1						
813319	1						

### 1.3.4.2 Number of Employees

**Table 1-4(A)**  
**Number of Employees by Sector**

<b>Category</b>	<b>United States</b>	<b>Georgia</b>	<b>Metro Area</b>	<b>Columbus</b>
<b><i>Total employment</i></b>	<b><i>174,249,600</i></b>	<b><i>5,197,037</i></b>	<b><i>168,194</i></b>	<b><i>121,722</i></b>
Wage and salary employment	140,967,000	4,249,749	146,210	108,735
Proprietors employment	33,282,600	947,288	21,984	12,987
Farm proprietors employment	2,135,000	49,282	725	42
Non-farm proprietors employment	31,147,600	898,006	21,259	12,945
Farm employment	2,914,000	70,588	822	48
Non-farm employment	171,335,600	5,126,449	167,372	121,674
Private employment	147,498,600	4,374,054	125,084	99,112
Forestry, fishing, related activities, and other	1,012,200	27,246	(D)	(D)
Mining	820,000	8,701	(D)	(D)
Utilities	594,100	21,420	(D)	(D)
Construction	10,845,700	338,502	8,641E	5,942
Manufacturing	14,860,900	465,899	14,766	10,346
Wholesale trade	6,401,300	230,763	3,142E	2,699
Retail trade	18,941,100	558,395	16,755	13,035
Transportation and warehousing	5,510,100	195,873	(D)	(D)
Information	3,577,100	132,272	6,768E	6,548
Finance and insurance	8,186,600	214,824	8,588E	7,665
Real estate and rental and leasing	6,934,300	209,862	4,915E	3,859
Professional and technical services	11,488,700	318,626	6,515E	5,589
Management of companies and enterprises	1,857,000	55,862	1,795	1,732
Administrative and waste services	10,645,100	375,669	8,455E	7,364
Educational services	3,552,900	87,294	(D)	577
Health care and social assistance	17,267,000	416,296	(D)	13,653
Arts, entertainment, and recreation	3,517,300	75,812	(D)	1,265
Accommodation and food services	11,728,300	355,915	12,305E	10,844
Other services, except public administration	9,758,900	284,823	8,605E	6,106
Government and government enterprises	23,837,000	752,395	42,288	22,562
Federal, civilian	2,790,000	94,188	5,110	4,821
Military	2,027,000	95,045	19,937	4,991
State and local	19,020,000	563,162	17,241	12,750
State government	5,112,000	161,094	4,254E	3,507
Local government	13,908,000	402,068	12,756E	9,243

(D) Disclosure; E Estimate

Source: US Bureau of Economic Analysis [www.bea.gov](http://www.bea.gov) August 2007

## Section 2 Waste Disposal Stream Analysis

### 2.1 INVENTORY OF WASTE DISPOSED

The Columbus Consolidated Government collects waste from the curb side for all residents living in single family or multifamily units that are not self contained (an apartment complex). Apartments and condominiums are collected mostly by private haulers. The private haulers operating within the county are Veolia and Waste Management. Some small private hauler collect waste from residential areas where there are no public dedicated streets that our trucks cannot physically service because of location or grade of the road. The diversion from the landfill is mostly done through the recycling of goods.

#### 2.1.1 WASTE CHARACTERIZATION

**Table 2-1  
Composition of Waste (Tons per Year)**

<b>Group</b>	<b>Tons / Yr</b>	<b>Percent</b>
<b>Putrescible Waste</b>		
Household Waste	72,356	54 %
Special Handling	2,800	2 %
<b>Total Putrescible</b>	<b>75,156</b>	<b>56 %</b>
<b>Recycling</b>		
Newspaper	2,095	1.5 %
Phone Books	12	Neg.
Plastic #1 & #2	893	Neg.
Glass – Clear	314	Neg.
Glass – Brown	392	Neg.
Tin Cans	152	Neg.
Aluminum	78	Neg.
Bulk Waste Metal	290	Neg.
Scrap Tires	121	Neg.
<b>Total Recycling</b>	<b>4,347</b>	<b>3.2 %</b>
<b>H. H. Waste Turn In</b>		
Electronics	13	Neg.
Other Hazardous Waste	1319	Neg.
<b>Total H. H. Waste</b>	<b>32</b>	<b>Neg.</b>
<b>Organics</b>		
Yard Waste	48,400	36 %
Trees	730	Neg.
<b>Total Organics</b>	<b>49,130</b>	<b>37 %</b>
<b>C &amp; D</b>		
Misc. Construction Debris	2,760	1%
Drywall	32	Neg.
Wood	2,119	1%
Carpet	158	Neg.
<b>Total C&amp;D</b>	<b>5,069</b>	<b>3.8 %</b>
<b>TOTAL</b>	<b>133,734</b>	<b>100%</b>

Waste Stream Generators include the following:<sup>9</sup>

1. Residential – We receive an average of a little over 75,000 tons / yr from single family residential developments.
2. Commercial / Industrial – We do not collect commercial waste. It is collected by commercial haulers and we do not have access to their records. We receive approximately 6,000 tons of commercial / industrial waste.<sup>10</sup>
3. Construction and Demolition – We do not collect C&D waste however we do receive it from various construction projects within the county. We receive about 5,000 tons per year.
4. Yard Waste – We collect yard waste as well as receive it from developers and individuals. We receive about 49,000 tons per year. About 60% of the waste received that received is processed by grinding and hauled away by our contractor for use as an alternative fuel.

### **2.1.2 UNIQUE CONDITIONS / SEASONAL VARIATIONS**

Garbage and Yard Waste quantities rise in the spring and summer of each year. Of course Yard Waste is self explanatory due to the warm growing season. Garbage is due to a higher level of activity beginning in spring and school being out in the summer. We do not collect waste from the local schools. They are serviced by one of the commercial haulers operating in the county. When school is out and children are at home they typically generate more garbage daily than when they are at school. Since we do pickup waste from residents we notice the increase in amount of waste collected. Yard Waste increases by approximately 40/50 % and garbage increases by approximately 20% during the warm months. Other variations are negligible.

### **2.1.3 WASTE GENERATING DISASTERS**

Weather related disasters are a concern and a real possibility in our area. Sever weather such as tornados present a real threat. Occasionally our weather is also affected by hurricanes coming off the Gulf of Mexico. These storms bring sever weather which include heavy rains and high winds. They often cause downed trees, power lines and flooding. The amount of debris generated by such a disasters is impossible to estimate. A tornado struck in March of 2007, and caused major damage to several structures included commercial buildings and houses. The area hit also had a large number of trees that were blown down or damaged to the extent that they had to be removed. There was a large increase in inert waste (limbs, trees and construction waste) associated with this storm. The Columbus Consolidated Government, Public Services Department is contracted with a trucking company to provide resources for hauling debris to the inert landfills. A Disaster Plan has been developed and approved by the Federal Emergency Management Agency (FEMA) and is attached as Appendix B in this plan.

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<sup>9</sup> Revision and addition of waste generator inventory list as per DCA comments – 9/14/09

<sup>10</sup> Waste from Commercial / Industrial haulers is taken from report MGLF4046 dated 2/29/08 and is offered as an average weight received.

## 2.2 PROJECTIONS OF WASTE TO BE DISPOSED

**Table 2-3(A)**  
**Waste Disposal Projections**  
**Columbus Consolidated Government**

	<b>Current Year 2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Total Disposed</b>											
<i>Putrescible &amp; Special Handling</i>	75,156	77,410	79,730	82,125	84,590	87,130	89,740	92,430	95,205	98,060	101,000
<i>C &amp; D</i>	<u>5,127</u>	<u>5,280</u>	<u>5,440</u>	<u>5,600</u>	<u>5,770</u>	<u>5,950</u>	<u>6,120</u>	<u>6,305</u>	<u>6,495</u>	<u>6,690</u>	<u>6,890</u>
<i>Total Tons</i>	<b>80,283</b>	<b>82,690</b>	<b>85,170</b>	<b>87,725</b>	<b>90,360</b>	<b>93,080</b>	<b>95,860</b>	<b>98,735</b>	<b>101,700</b>	<b>104,750</b>	<b>107,890</b>
<b>Total Diverted</b>											
<i>Inert</i>	49,130	50,600	52,120	53,685	55,300	56,955	58,640	60,420	62,235	64,100	66,025
<i>Tires</i>	131	135	140	143	147	151	156	161	166	171	176
<i>Metal</i>	291	299	308	317	327	337	347	357	368	379	390
<i>Recycling</i>	<u>4,247</u>	<u>4,375</u>	<u>4,500</u>	<u>4,640</u>	<u>4,780</u>	<u>4,920</u>	<u>5,070</u>	<u>5,220</u>	<u>5,380</u>	<u>5,540</u>	<u>5,710</u>
<i>Total Tons</i>	<b>53,799</b>	<b>55,409</b>	<b>57,068</b>	<b>58,785</b>	<b>60,554</b>	<b>62,363</b>	<b>64,213</b>	<b>66,158</b>	<b>68,149</b>	<b>70,190</b>	<b>72,301</b>
Reduction	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%
Source:	Year to Date Report for Public Service 2008 / Growth assumed @ 3% annually										

### 2.3 PER CAPITA MSW DISPOSAL REDUCTION GOAL

**Table 2-4(A)**  
**Waste Disposed Target for Planning Period**  
**Single Jurisdiction - Columbus Consolidated Government**

	<b>Base Yr 98</b>	<b>Current Yr 08</b>	<b>2009 Est.</b>	<b>2010 Est.</b>	<b>2011 Est.</b>	<b>2012 Est.</b>	<b>2013 Est.</b>	<b>2014 Est.</b>	<b>2015 Est.</b>	<b>2016 Est.</b>	<b>2017 Est.</b>	<b>2018 Est.</b>
<i>Population</i>	184,888	188,360	189,900	194,000	196,460	198,920	201,380	203,830	206,300	208,760	211,760	213,680
<i>Tons Disposed</i>	111,062	80,283	82,690	85,170	87,725	90,360	93,080	95,860	98,735	101,700	104,750	107,890
<i>Per Capita Tons Disposed</i>	0.60	0.42	0.43	0.44	0.44	0.45	0.46	0.47	0.47	0.48	0.49	0.50
<i>Reduction in Per Capita Disposal from Base Year</i>	N/A	0.18	0.17	0.16	0.16	0.15	0.14	0.13	0.13	0.12	0.11	0.10
<i>Pounds Per Day per Person Disposed<sup>11</sup></i>	3.29	2.30	2.35	2.41	2.41	2.46	2.52	2.57	2.57	2.63	2.68	2.73
Base Year 1998 – the year that Pine Grove MSW Landfill opened												

<sup>11</sup> Revision as per DCA comments- 9-14-09

## **Section 3      Waste Reduction Element**

### **3.1      INVENTORY OF WASTE REDUCTION PROGRAMS**

*Source Reduction Programs* – There are no Source Reduction Programs operating or proposed in Muscogee County except Recycling and Educational programs as discussed here-in.<sup>12</sup>

*Household Hazardous Waste Turn In* – Columbus and KCBC sponsor two household hazardous waste collection days annually for Muscogee County residents only. The purpose is to keep these materials out of the waste stream. During one of the collection days this year 65,232 lbs. of hazardous waste and electronics were received. The annual average collection for the two events is around 119,200 lbs. of hazardous/e-waste. The result of holding these events keeps untold amounts of dangerous chemicals out of the waste stream and the environment.

*Recycling Program* - The Recycling Collection program is very successful and makes a great contribution toward achieving the reduction goals. More information on the curbside program is in section 3.1.2 of this document.

*Chipping of Woody Material* – Woody material, especially larger wood such as trees and larger branches that are free from contamination with dirt are chipped up by a contractor and removed from the landfill to be used as a renewable fuel by a local paper producing facility. The removal of this material increases the life of our inert landfills and provides a renewable energy source for the company using the wood as fuel.

*Future Composting Site* – There are plans for Columbus to begin city operated compost site within the next 2 to 3 years. Compost will be produced from grass, leaves and small woody material and water. No bio-solids are proposed to be used to produce the compost. The implementation of composting will reduce the amount of material actually disposed of in our two inert landfills and thus extend their life. The material produced will be tested and a request to EPD will be submitted for a modification to the D&O plan for Pine Grove landfill that will allow the use of the compost as a daily cover material..

#### **3.1.1      SOURCE REDUCTION**

*Reduction through Recycling* - Source reduction is accomplished mainly through recycling efforts in Columbus. We promote curbside recycling through television and newspaper advertisements as well as events sponsored and done in conjunction with Keep Columbus Beautiful Commission, (KCBC). On the average we spend \$30,000.00 per year on promotions through the media. Recycling is accomplished by curb side co-mingled pick up, which makes it as easy on the resident as possible. Pick up is once per week and there are drop off containers provided by our recycling partner, Goodwill Industries. By June of 2009, the Columbus Consolidated Government will be the sole operator of the recycling facility. Expansion of the program is anticipated over the next few years to include expansion of materials recycled.

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<sup>12</sup> Additional statement as per DCA comments 9/14/09

Participation in the recycling program in Columbus is voluntary. It is available to all single family and many multi-family housing units in Columbus. This amounts to over 55,000 single-family households plus some 27,000 families living in multifamily housing. The program is also available to all small businesses such as a doctor's office, lawyer's offices, etc. Plans include expansion of the program to include all schools and government buildings

***Reduction through Education*** - Our education partner for our recycling effort is the Keep Columbus Beautiful Commission (KCBC). They provide programs through the schools and other civic organizations as an outreach to promote a cleaner community and good stewardship of the environment.

***Reduction through Reuse and Reclamation*** - Yard waste collection and disposal is also available to the residents of Columbus. Yard waste is deposited in one of the inert landfills. These sites will eventually become reclaimed natural habitat. The two inert landfills are formerly old clay pits and a former rock quarry.

### **3.1.2 RECYCLING**

Our residential recycling program removes approximately 4,000 tons of recyclables from our waste stream annually. This program is available to all 55,000 single-family households in Columbus. This program is also available to apartment complexes in Columbus upon request. Drop off sites are available at the current Recycling Facility operated by Goodwill Industries. Goodwill will continue to operate the only city sanctioned drop-off site until July 1, 2009 when the contract expires. At that time the City will staff and operate a Recycling Facility and continue the recycling program using City forces. There are at least five other centers that accept and recycle some items. None of these centers accept the wide range of goods collected curb side by City Recycling Trucks. There are many reuse/exchange programs within local businesses. Most auto parts stores exchange many parts, mostly batteries. There are several scrap metal businesses and salvage facilities in the area that receive material that is delivered to their place of business.

**Table 3-1  
Recycling Programs in Planning Area (2008)  
(Jurisdiction served is Columbus/Muscogee County)**

<b>Type of Program</b>	<b>Population Served</b>	<b>Operated by:</b>	<b>Materials Accepted</b>	<b>Annual Tonnage Diverted</b>
<b>Curbside Recycling</b>	55,000 Households	Columbus Consolidated Government	Newspaper/Magazines	2,094.57
			Aluminum Cans	78.08
			Steel Cans	152.24
			Glass Bottles	706.29
			Plastic Bottles	892.64
			Used Auto Fluids *	7,124**
			Phone Books	11.67
<b>Drop-off Center (7/1/09 Goodwill Stopped Recycling)</b>	Accessible to 55,000 Households	Goodwill Industries for the City of Columbus (Contracted)(7/1/09 CCG now handles all residential Recycling and Drop Off)	Newspaper/Magazines	Contracted to the city. Tons are included in city figures.
			Aluminum Cans	
			Steel Cans	
			Glass Bottles	
			Plastic Bottles	
			Cardboard	
<b>Business Recycling Programs</b>	N/A	Private Haulers	N/A	N/A
<b>Totals:</b>	55,000 Households	N/A	Listed Above	<b>3,935.49 Tons</b>

\*Auto Fluids consist of Used Motor Oil, Transmission Fluid and Anti-Freeze. \*\*Reported in Gallons.

**Table 3-2  
Businesses that Accept Recyclables from the Planning Area - (2008)**

		<b>Accepts Material From</b>	<b>Accepts Material From</b>	
<b>Name</b>	<b>Location</b>	<b>Geographic Area</b>	<b>Sector</b>	<b>Materials Accepted</b>
All American Recycling	Columbus, Ga.	Entire Planning Area	Commercial	All Paper and Wood Pallets
E .Cohn	Columbus, Ga.	Entire Planning Area	Commercial	Scrap Metal
Columbus Carastar Recycling	Columbus, Ga.	Entire Planning Area	Commercial	All Paper
E .J .Knight	Columbus, Ga.	Entire Planning Area	Residential/Commercial	All Metals
Goodwill Industries (July 1, 2009 Stopped Recycling)	Columbus, Ga.	Entire Planning Area	Residential (Contracted to City of Columbus)	Newspaper, Magazines, Glass, Steel Cans, Aluminum Cans and Plastics
J .T .Knight	Columbus, Ga.	Entire Planning Area	Residential/Commercial	All Metals
Columbus Consolidated Government	25, 22 <sup>nd</sup> Ave Columbus, GA	Entire Planning Area	Residential	All Office Paper, Newspaper, Magazines, Phone Books, Glass, Steel Cans, Aluminum Cans, Cardboard, and Plastics #1 & #2

**3.1.2.2 Recycling Facilities**

\* See Table 3-2

**Table 3-3  
Recycling Facilities (Jurisdiction Served is Columbus/Muscogee County)  
(2008)**

<b>Facility Name</b>	<b>Facility Type</b>	<b>Owner/ Operator</b>	<b>Sectors Served</b>	<b>Materials Accepted</b>	<b>Tons Processed</b>	<b>Average Tons Per Day Processed</b>	<b>Maximum Processing Capacity</b>
All American Recycling	N/A	Mr. Brown	Commercial	All Paper Wood Pallets	*Unknown	*Unknown	*Unknown
E .Cohn	N/A		Commercial	Scrap Metal	*Unknown	*Unknown	*Unknown
Columbus Carastar Recycling	N/A	Carastar	Commercial	All Paper	*Unknown	*Unknown	*Unknown
E .J .Knight	N/A		Residential/ Commercial	All Metals	*Unknown	*Unknown	*Unknown
Goodwill Industries	Recycling Facility – Material delivered sorted	Non-Profit	Residential Contracted to City	Newspaper, Magazines, Glass, Steel Cans, Aluminum Cans and Plastics	*Unknown	*Unknown	*Unknown
J .T. Knight	N/A		Residential/ Commercial	All Metals	*Unknown	*Unknown	*Unknown
Columbus Consolidated Government Recycle Center	Recycle Center where Items come in pre sorted	Columbus Consolidated Government	Residential	All Office Paper, Newspaper, Magazines, Phone Books, Glass, Steel Cans, Aluminum Cans, Cardboard, and Plastics #1 & #2	<i>Numbers are for 6 months only</i> Paper 1,600 tons Cardboard 22 tons Metal Cans 174 tons Aluminum 211 tons Clear Glass 144 tons Colored Glass 197 tons Plastic 530 tons	28 tons per day	35 tons per day at current facility
<b>* Commercial facilities will not share this information</b>							

### 3.1.3 YARD TRIMMINGS PROGRAMS AND FACILITIES

**Christmas Tree Recycling** – The Christmas Tree Recycling program that Columbus participates in is part of the statewide “Bring One For the Chipper” project which is sponsored by Keep Georgia Beautiful. The purpose of this project is to divert Christmas trees from our inert landfills and to provide mulch for reuse by City forces or citizens of the area. It is an annual event run after the Christmas season. Residents are encouraged to bring the trees to drop off points for chipping, however the city crews will pick up the trees left on the curbside and transport them to the inert landfills where they are chipped up.

**Tree for Fee** – The Tree for Fee program was instituted to help control the large number of trees being cut by contractors and left for City forces to pick up and dispose of. The program is designed to assist residents in removal of trees or large brush that the citizen has cut down. When citizens cut down or trim a tree and place it on the right of way the City will collect the material and transport it to one of the inert landfills for chipping and disposal for a fee of \$50 per load plus \$14 per ton tipping fee. The heavy material is chipped up and hauled away to be used as fuel at a local paper plant. The other material is disposed of in the inert landfill.

Other services that promote the proper disposal of yard waste are listed below. We do not accept yard waste in the Pine Grove MSW Landfill, but instead divert it to one of the two inert landfills that are permitted within the county.

**Table 3-4 Yard Trimmings Programs - 2008  
(Jurisdiction served is Columbus/Muscogee County)**

<b>Program</b>	<b>Owner/ Operator</b>	<b>Sector Served</b>	<b>Materials Accepted</b>	<b>Program Maximum Capacity</b>	<b>Final Disposition</b>
Municipal Curbside Yard Trimmings/Leaf Collection	Columbus Consolidated Government	Residential/ Limited Commercial	All Inert/Yard Waste	Unlimited	Grass clippings and leaves inert Land filled. Semi-woody material is mulched and sold for fuel
Municipal Curbside Limb/Tree Collection	Columbus Consolidated Government	Residential/ Limited Commercial	Tree Trimmings/ Trees	Unlimited	Trees/Tree Trimmings mulched and sold for fuel
Municipal Drop off site for Yard/Tree Trimmings/Trees	Columbus Consolidated Government	Residential/ Commercial	Lawn/Tree Trimmings/ Leaves/Trees	Unlimited	All is mulched and sold for fuel
Private Tree/Landscaping Entities	Various Privately owned	Commercial	Lawn/Tree Trimmings/ Leaves/Trees	Unlimited	Most is mulched for sale as fuel

### 3.1.4 ITEMS REQUIRING SPECIAL HANDLING

**Household Hazardous Waste Turn In** – Twice annually the Columbus Consolidated Government and KCBC cosponsor a hazardous waste collection day. Specialty contractors are hired to receive and recycle the material. Inventory of the facilities and programs are listed in Table 3-5.

**Table 3-5 Management of Special Materials**

<b>Material</b>	<b>Targeted Sectors</b>	<b>Management Strategy</b>	<b>Final Disposition of Materials</b>
Electronics	Residential	Bi-Annual Collection Events	Dismantled by Private Recycler for Sale. They are permitted to be disposed of in Pine Grove MSW.
Household Hazardous Waste (HHW) (Paint, Chemicals, Pesticides, etc.)	Residential	Jurisdiction sub-contracts management of materials. Holds bi-annual collection events. Pine Grove MSW is permitted to accept regulated quantities of HHW.	Some Materials Recycled, The rest is managed by sub-Contractor or disposed of in Pine Grove MSW.
Lead Acid Batteries	Residential	Drop-Off at Landfill/Turn in at auto parts stores. They are not accepted for disposal in the landfill	Recycled @ payment to Columbus.
White Goods	Residential	Municipality Collects and Some Drop-off at landfill. White goods are accepted free for residents. All freon is removed prior to recycling items.	Recycled @ Cost to Columbus.
White Goods	Commercial	Generators handle	Recycled
Tires	Municipality Collects at Curb	Collect at Curb or accept Drop-off at Landfill. Maximum of 5 per resident.	Recycled @ cost to Columbus. (None land filled)
Tires	Commercial	Managed by Private Firms	Recycled (None locally land filled)
Source: Pine Grove Landfill Records			

### 3.2 DISASTER DEBRIS MANAGEMENT – WASTE REDUCTION STRATEGY

The Columbus Consolidated Government, Department of Public Services and Emergency Management Office developed a plan for handling debris during times of catastrophic events and natural disasters. The plan has been developed in accordance with guidelines from the Federal Emergency Management Agency (FEMA) and the Georgia Emergency Management Agency (GEMA). The plan was presented to FEMA and accepted as being in accordance with their guidelines. The entire plan is attached to this document as Appendix B. An excerpt

from that Debris Management Plan which talks about Disposal and Reduction is included below:

***“Debris Disposal and Reduction*** - Once the debris is removed from the damage sites, it is taken to the appropriate landfills. The methods of disposal are recycling, and grinding and chipping.

Grinding and chipping will be utilized as a viable reduction method. Grinding and chipping reduces the volume on a 4 to 1 ratio. For grinding and chipping to be feasible, 25% of volume remaining must have some benefit or use.

Metals, wood, and soils are prime candidates for recycling. Most of the non-ferrous metals are suitable for recycling. The CCG provides curbside recycling and will continue to do so during a clean up operation after a disaster.”

**3.3 ASSESSMENT OF WASTE REDUCTION PROGRAMS**

The 2005 Georgia Legislature eliminated the 25% waste reduction goal, leaving it up to the local jurisdiction to identify their individual per-capita reduction goals. Our local solid waste management plan is intended to build upon the State Solid Waste Management Plan and the State Waste Reduction Goals which are summarized in the table below.

State of Georgia Goals

Per Capita MSW Disposal Rate / MSW Reduction Goal					
Commodity	Actual 04 Lbs/ person	Projected 2012 Lbs/ person	Project % 2012	Projected 2017 Lbs/person	Projected % 2017
Glass	0.153	0.140	8%	0.140	8%
Paper	1.181	1	15%	0.850	28%
Metal	0.228	0.198	13%	0.186	18%
Plastic	0.663	0.560	16%	0.530	20%
Total	2.231.99	1.99	11%	1.71	23%

The Columbus Consolidated Government will strive to meet the guidelines for reduction established by the State of Georgia. We offer an unmanned drop off site for the cardboard as well as all other materials identified in this report as recyclables. The Columbus Consolidated Government opened a recycling center to process and package recyclable material collected. We currently sell paper, card board, plastic and metal through Pratt Industries via a multi year contract. Our glass is recycled through Strategic Materials. We are on track to remove, on average, the following amounts from the waste stream through recycling in 2010:

- 2 lbs / person – Plastic
- 1 lbs / person – Glass
- 8 lbs / person – Paper

The yard trimmings (yard waste) programs are sufficient to divert all yard waste. The City of Columbus owns its own landfill, so we control what is accepted. Yard waste is not accepted at Pine Grove MSW landfill. We have two inert landfills to dispose of all yard waste. We

collect the yard waste at curbside. The diversion of yard waste helps us to achieve our reduction goal because of the tonnage associated with the material.

Our current waste reduction and recycling programs target most of the appropriate materials and all of the appropriate sectors. The only material we do not target that will be considered in the future is the collection and recycling of corrugated board (cardboard). The exclusion of this material when we began recycling in 1993 was an oversight. Currently, the recycling businesses in this area have the capacity to handle all collected materials. These recyclables are processed to the satisfaction of the markets. The future, however, is not certain at this time due to the diminishing market for recyclable materials. We have a few options to assess at this time. Discontinuing recycling is not being considered as an option.

### **3.4 NEEDS AND GOALS**

Ways to reduce waste in Columbus are all tied to either increased recycling or introduction of a facility that will use waste as a renewable fuel to generate electricity.

#### **3.4.1 RECYCLING**

*Need* - Recycling has been part of the waste disposal program for more than 10 years now. In that time the program has expanded from 2 pilot programs to city wide curb side pick up. The recycling program currently accepts about 4,000 tons of material annually and services over 42,000 households. Should this material not be pulled out of the waste stream and recycled it would add about 6% by weight of the amount going into the MSW landfill. An important need for Columbus is to expand recycling by adding additional items to the list of items recycled and thus pull those items from the waste stream.

*Goal* – Over the next ten years more emphasis will be placed on participation in recycling. Additional items will be added to the list of materials accepted. Increase participation will be sought from the school system as well as all government buildings. Mandatory recycling will be discussed but our desire is to increase participation through education and not legislation.

*Cost* – To achieve the above goals will require the construction of a new, larger Materials Recovery Facility, (MRF), additional trucks and drivers, marketing personnel and personnel to operate the MRF. Estimated cost for these items is \$3 million. Goals cannot be achieved without funding from the City Council.

#### **3.4.2 RENEWABLE FUEL**

*Need* – The Columbus Consolidated Government, Columbus Chamber of Commerce Valley Partners and Fort Benning are interested in the feasibility of a regional “Waste to Energy” plant. The plant would meet the waste disposal needs of the valley area for many years to come and could extend the life of the current land fill some 75 to 100 years. Agreement among the regional partners will need to be secured before concrete plans can be made to begin the design and permitting process.

*Goal* – Form a regional authority to begin work on the planning, design, funding, and permitting, construction and operation of a Waste to Energy facility within Muscogee County.

*Cost* - \$105 million to begin operation just to permit and construct the facility. Annual cost are unknown at this point.

## Section 4 Collection Element

### 4.1 INVENTORY OF COLLECTION

The Columbus Consolidated Government collects curb side all solid waste, recyclables and yard trimmings from single family residential units within the planning area. Most of the commercial collection of solid waste is contracted to one of the haulers listed in Table 4-1 by the entities using these services. The Columbus Consolidated Government does not contract with these haulers for collection of waste. They have a permit to operate a business in the county but we exercise no control of what they collect. Most of the waste collected by commercial haulers does not come to Pine Grove for disposal but is shipped out of the county or state for disposal.

#### 4.1.1 INVENTORY OF EXISTING PROGRAMS

**(Table 4-1) Haulers Operating in Planning Area**

Hauler Name	Hauler Address	Sector Served	Jurisdiction Served	Arrangement
Veolia Waste Management Services	2015 Veterans Parkway	Commercial	Columbus/Muscogee County	Operates under permit from city and contracts directly with commercial customers.
Waste Management Inc.	610 State Docks Rd. Phenix City, AL.	Commercial	Columbus/Muscogee County	Operates under permit from city and contracts directly with commercial customers.
Columbus Consolidated Government	602 11 <sup>th</sup> Ave Columbus, GA	Residential	Columbus/Muscogee County	Operated by the City
Goodwill Industries (ceased operation 30 June 2009)	10 <sup>th</sup> Avenue Columbus, GA	All sectors for drop off / Residential only for pick up	Columbus/Muscogee County	Operated by Goodwill Industries as Not for Profit organization / CCG picked up residential recycling and delivered to Goodwill for process and sale

(Table 4-2) Inventory of Collection Programs

Type	Collector	Program Description	Sectors Served	Number of Households/Businesses Served	Contractual Arrangements
Curbside Collection	Columbus Consolidated Government	Twice Weekly Collection of garbage. Weekly Collection of Recycling, Yard Trimmings and Yard Waste	Residential/ Limited Commercial	55,000	N/A
<sup>13</sup> Drop Off and Processing Center operated by Goodwill Industries	Columbus Consolidated Government	Once per week curb side pick up. Sorted at the curb	Single family residential in Columbus, Muscogee County, Georgia	42,000 signed up; service is available to all 55,000 households	Contract between CCG and Goodwill; CCG to pick up and Goodwill to process and market
Drop Off Center owned and operated by CCG as of 1 July 2009 <sup>14</sup>	Columbus Consolidated Government	Unmanned drop off center for all recyclables collected with the addition of cardboard	All – anyone residential or commercial within or outside of Muscogee County	N/A	N/A
Compactor and Roll-off Collection	Private Haulers	Periodic Collection of non-hazardous waste.	Commercial	N/A	Entities arrange for collections.

#### 4.1.2 CONTINGENCY STRATEGY FOR WASTE COLLECTION

The Columbus Consolidated Government has contracts as discussed in Appendix B for debris and rubbish removal in the event of emergencies. We have sufficient staff and resources to avert any normal problem in the collection of waste.

Should all commercial waste collectors stop operation in Columbus we have in place, ordinances and a fee structure where by we can begin the pick up of commercial waste and dispose of the waste in our landfill.

<sup>13</sup> Goodwill Industries ceased operation of the recycling center and all related activities on June 30, 2009.

<sup>14</sup> Drop off center is owned and operated by CCG. Goodwill Industries no longer operates a recycle center. CCG assumed responsibility offering the same service at a different location. No operation changes occurred.

### **4.1.3 DISASTER DEBRIS MANAGEMENT – COLLECTION STRATEGY**

Please see Appendix B for a complete explanation of the Disaster Debris Management Plan. As outlined in section 3.2 of this document, the City of Columbus has a disaster management plan in place for this Disaster Debris Management. The Columbus Consolidated Government has sufficient collection personnel and equipment to meet most normal and emergency needs. The City contracts with a private hauler to assist as needed during the clean up after a disaster. This can and would be enacted immediately if needed.

### **4.2 ASSESSMENT OF COLLECTION PROGRAMS**

Our collection programs are adequate to serve the current population. We currently serve a population of about 189,000 people, consisting of a little over 55,000 single-family households. In 2008, we collected 59,588.47 tons of household garbage, 20,202.68 tons of yard waste, 6,380.55 tons of bulky waste and 3,923.82 tons of recyclables. This was accomplished with a fleet consisting of 29 garbage collection trucks, 14 yard waste collection trucks, 10 bulky waste collection trucks and 8 recycling collection trucks. Our goal is to add one operator and collection truck to our garbage fleet bi-annually to keep up with normal growth. We also attempt to add one yard waste truck and one grab-all truck every three to four years for the same reason. Columbus is expecting an influx of approximately 30,000 people between 2009 and 2011 due to the expansion of Fort Benning and the permanent party personnel that will be reassigned to Fort Benning. The expansion of Fort Benning will happen because of the Base Realignment and Closure policy of the Federal Government. As a result of this policy the US Army Armour School is being moved from Fort Knox, Kentucky to Fort Benning, Georgia. To be ready for this growth, we plan to add six more garbage trucks, four more yard waste trucks, two bulky waste collection trucks and two recycling trucks by 2011. These additions are noted in our long range growth plans and are requested in the annual budget.

Columbus will continue to work toward meeting the State of Georgia's waste reduction goals through the diversion of recyclable materials, yard waste and most of the bulky waste through education, recycling and any other means practical. Voluntary recycling will continue to be emphasized through the local media. The KCBC is our education partner for the curbside recycling program. KCBC personnel conduct or sponsor educational programs through the local schools, local events and other outreach programs.

### **INVENTORY OF ILLEGAL DUMPING / LITTERING**

The areas listed are habitual problem areas within Columbus for illegal dumping. The information provided is from our Special Enforcement Division which is responsible for enforcement of our Solid Waste Ordinance.

- Cusseta Road;
- Old Cusseta Rd;
- Dead end of St. Mary's Road;
- Martin Luther King Blvd;
- Lawyers Lane;
- Morris Road;
- Fornoff Rd;

- Lynch Rd;
- Williams Rd;
- St Armour Div. Road;
- Betjemin Dr;
- Vista Drive;
- Aldridge Rd;

#### **4.3.1 STRATEGY TO COMBAT ILLEGAL DUMPING/LITTERING:**

Over the 10 -year planning period a strategy to combat illegal dumping and littering would follow the suggested guidelines shown below. These guidelines were presented by our Enforcement Division as a means of assisting with this problem. Included in implementation strategy:

- 4.3.1.1 Strengthen our enforcement with the use of video detection. The recommendation is to purchasing five (5) info-red cameras to be positioned at the problem dump sites in an effort to obtain the license plate of the vehicle used by the violators. Once this information is obtained, follow through with GCIC License Plate information and proceed to cite the owner/violator.
- 4.3.1.2 Continue to partner with our Keep Columbus Beautiful affiliate in an effort to mass educate the population on the problems caused by littering and illegal dumping.
- 4.3.1.3 Ensure all dumping cases are heard before the Environmental Court Judge, and eliminate the use of bond payment and forfeiture in lieu of court appearance.

#### **4.3.2 ASSESSMENT OF PROGRAMS TO ADDRESS ILLEGAL DISPOSAL AND DUMPING:**

The existing means of enforcing illegal dumping is not adequate. We do not have enough officers or personnel to catch those who desire to dump illegally. We must depend on the citizens who are willing to take pictures, write down tag numbers and vehicle identification and will come to court and testify against those breaking the law. The problem is that there are very few who are willing to do that. The Info-red cameras mentioned above are expensive to purchase and maintain but should help in our effort to catch and prosecute violators.

The best hope we have of curbing illegal dumping and littering is public education. The needed public education will only be accomplished through activities such as City Wide Clean Up, Help the Hooch and others. The City Wide Clean Up project is in support of the Keep America Beautiful, Inc. "Great American Cleanup". Millions of Americans will be celebrating clean, safe and healthy communities this spring as they volunteer for Keep America Beautiful's Great American Cleanup™. Now in its 22nd year, the Great American Cleanup is the nation's largest annual community improvement program. Through the efforts of this program people realize the value of a clean community and will pass this on to their children as well as others with whom they come into contact.

***Help-The-Hooch*** - is another means of educating young people about the need to keep their community clean. The City of Columbus along with Keep Columbus Beautiful Commission (KCBC) participates in the Annual Georgia Rivers Alive Clean-up, which is sponsored by the Georgia Department of Natural Resources. This statewide event targets all waterways (streams, rivers, lakes and wetlands). The mission of the event is to create awareness of and involvement in preservation of Georgia's water resources. Columbus consistently fields 10,000 or more volunteers for this 2 day event which includes participation from the school system. Columbus consistently fields more volunteers in this two day event than the entire rest of the State of Georgia combined.

***Community Service Workers*** - are used daily and on the weekends to pick up litter along the roadways. This program has been very effective in helping to keep our streets and right of ways clean. The drawback to this program is that the workers are assigned by the court for punishment and we never know how many will be available for service.

#### **4.4 NEEDS AND GOALS:**

***Needs*** - There is a need for better enforcement for littering and illegal dumping. The flip side to that is if we were to have a better education program the need for enforcement may drop significantly. The resources to do either of these is driven by revenue. Without additional revenue the goals of expanding education and enforcement will not be realized.

As for collection we are not proposing any change over the next 10 years. We currently pick up waste of various kinds to include household garbage 2 times per week, yard waste 1 time per week, bulk waste (furniture, appliances etc.) one time per week and recycling 1 time per week. We service all households (55,000 +) for every item except for recycling. Current participants in the recycling program are a little over 42,000 households. At this time recycling is voluntary. We also recycle at government building and some schools. We need to expand these programs, especially recycling at the schools. Tipping fees are among the lowest in the state and for some types of items we the tipping fee is waved for residents. Our waste collection fee of \$14 per month per household serviced is one of the lowest in the state and needs to be raised to meet the needs of the waste collection and disposal in the future.

***Goals*** – The goal is to have better education and outreach to the community. The clean up programs listed above are very valuable in doing this. KCBC is instrumental in bringing educational programs to the schools which seems to present the best return for the funds expended. Our goal is to continue to push for education and use enforcement to the fullest extent when required.

Another goal is to continue to service the needs of the citizens of Columbus as the population increases. Along with that goal we want to strive to have the most cost efficient collection program possible. Even with all the efforts to stream line collection we will be forced to raise rates within the next planning period or cut services.

## Section 5 Disposal Element

### 5.1 INVENTORY OF SOLID WASTE DISPOSAL FACILITIES

**Table 5-1  
Inventory of Disposal Facilities & Thermal Treatment Technologies  
To Be Used During the Planning Period**

Facility	Address	Owner	Facility Type	Waste Accepted	Capacity (TPD)	Year of Closure
Pine Grove MSW	7160 Sacerdote Lane	Columbus Consolidated Government	MSW Subtitle D	Putrescible	305 TPD	2034
Pine Grove C&D	7160 Sacerdote Lane	Columbus Consolidated Government	Construction and Demolition	C&D Only	21 TPD	2019
Granite Bluff	7589 River Road	Columbus Consolidated Government	Inert (permit by rule)	Grass clippings, limbs, leaves, trees, stumps, land clearing, dirt, rocks, bricks and concrete	N/A	2033
Oxbow Meadows	3491 South Lumpkin Road	Columbus Consolidated Government	Inert (permit by rule)	Grass clippings, limbs, leaves, trees, stumps, land clearing, dirt, rocks, bricks and concrete	N/A	2019
Waste Management Transfer Station	610 State Docks Rd Phenix, City, AL	Waste Management Inc.	Transfer Station	Commercial, Industrial and Recyclable	N/A	N/A
Veolia Environmental Service Transfer Station	2015 Veterans Parkway	Veolia Environmental Service	Transfer Station	Commercial, Industrial and Recyclable	N/A	N/A

***Pine Grove MSW Landfill*** - holds a useable Putrescible/ Special Handling disposal area of 91.5 acres and a Construction and Demolition (C&D) disposal area of 15 acres. Pine Grove MSW accepts Putrescible waste (household garbage), Special Handling waste (items requiring immediate burial such as asbestos, animals, records), Construction and Demolition debris, and Recyclable Metal and Tires as well as Inert waste such as dirt, rock, concrete, bricks, etc. Small quantities of Hazardous Household Waste (cleaning supplies, spray paint cans, etc.), and personal sharps are accepted at Pine Grove MSW with notice of intent to dispose.

## 5.1.1 ASSURANCE OF 10-YEAR CAPACITY – MSW LANDFILL

Each year a report is turned to the Solid Waste Management Branch of EPD. In July of 2008 a report was sent of Tamara Fisher of DNR in Atlanta with the information concerning capacity. The information was obtained from field survey information. By comparing the designed capacity with the existing topography, a remaining volume can be calculated. That remaining volume along with other information are used to calculate an estimated landfill life. The calculations are reviewed and approved by a Professional Engineer licensed in the State of Georgia. The pertinent information from the 2008 survey is reported below. A letter of Assurance of 10 year capacity is attached at Appendix C, in accordance with the standard format provided by DC A. The surveyed information provides proof of that assurance.

### 5.1.1.2 Survey Data

- Date of Topographic Survey June 19, 2008
- Remaining MSW Volume 6,447.024 cy
- Estimated % by Volume Used by Cover Soil 25%
- Remaining MSW Waste Volume 4,835.268 cy

### 5.1.1.3 Amount of Solid Waste Disposed

- Tons Per Day Received for Disposal 303.78 ton/day
- Total Operation Days Per Year 250 days
- Total Estimated Annual Tons Disposed 75,945.74 tons

### 5.1.1.4 Waste Placement

- Estimated Waste Compaction Density 826.47 lbs/cy
- Estimated Waste Compaction Density 0.413 tons/cy
- Net MSW Volume Used Per Day 735.54 cy/day
- Net MSW Volume Used Per Year 183,888 cy/yr

### 5.1.1.5 Remaining Site Life

- Remaining Capacity 6,574 days
- Remaining Capacity 26.3 years
- Estimated End of MSW Life Sept 2034

**5.1.2 Assurance of 10 Year Capacity – Construction and Demolition Site**

**5.1.2.1 Survey Data**

- Date of Topographic Survey June 19, 2008
- Remaining C/D Volume 267,074 cy
- Estimated % by Volume Used by Cover Soil 25%
- Net Remaining C/D Waste Volume 200,306 cy

**5.1.2.2 Amount of C & D Waste Disposed**

- Tons Per Day Received for Disposal 20.66 ton/day
- Total Operation Days Per Year 250 days
- Total Estimated Annual Tons Disposed 5,166 tons

**5.1.2.3 Waste Placement**

- Estimated Waste Compaction Density 551.67 lbs/cy
- Estimated Waste Compaction Density 0.276 tons/cy
- Net C/D Volume Used Per Day 74.86 cy/day
- Net C/D Volume Used Per Year 18,717 cy/yr

**5.1.2.4 Remaining Site Life**

- Remaining Capacity 2,676 days
- Remaining Capacity 10.7 years
- Estimated Date of Completion for Facility September 2019

**Table 5-2  
Disposal Capacity Assurance Summary  
(2008 – 2018)**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Amount of Waste	80,283	82,690	85,170	87,725	90,360	93,080	95,860	98,735	101,700	104,750	107,890

Source: 2008 Quarterly Reports of Waste Deposited; Information from MGLF M50 and MGLF M60

**5.1.3 CONTINGENCY STRATEGY FOR DISPOSAL**

The Columbus Consolidated Government owns the landfill that we use for disposal as well as the fleet used to collect waste curb side. In the very unlikely event EPD would revoke our permit to dispose of waste we would seek a contract with one of the commercial waste haulers to transport waste to a privately owned landfill outside the county. There is a transfer station operational within the county that we would contract to use as we continue to collect household waste. Contracts can be implemented within 180 days if necessary.

It is unlikely that Columbus Consolidated Government will ever seek a permit to open another landfill within Muscogee County, because we do not have suitable land available to site a landfill. We may request approval to mitigate wetlands and expand our current landfill, which will almost double it’s capacity. Renewable energy such as Waste to Energy is being discussed but will not affect this Solid Waste Management Plan.

#### **5.1.4 DISASTER DEBRIS MANAGEMENT – DISPOSAL STRATEGY**

See Appendix B for the complete Debris Management Plan. All inert waste has been diverted away from the MSW lined landfill since the opening of the inert landfills. This is in accordance with Georgia Law. Even in emergency events, no inert material, out side of construction debris or recycled tires and metal, are allowed on the site where the lined MSW facility is located. Material that inadvertently is deposited in the MSW is removed by personnel working the dumping face of the landfill.

In the event of an emergency situation, the Solid Waste Director will determine actions with approval from the North Georgia Regional Office of the EPD. Our inert sites area available to accept debris. There is sufficient storage on site at both inert landfills to allow time for grinding and reuse or disposal on site.

#### **5.2 ASSESSMENT OF DISPOSAL**

After a Disaster such as a tornado or hurricane, the Inert Landfill utilizes the operation of the recycling/ mulching contractor to handle debris. Previous histories of such events show a slight-medium increase in C&D disposal from damaged structures.

Most of the debris is stock piled on one of the inert landfill sites and chipped as time permits. A majority of the chipped up wood is recycled off the landfill as fuel for a local manufacturing plant.

#### **5.3 STATEMENT OF NEEDS AND GOALS**

The Columbus Consolidated Government (Muscogee County), Public Services Department has over 400 employees along with over 380 inmate laborers. Within the thirteen (13) Divisions, the majority of the employees are authorized to supervise inmate laborers from Muscogee County. CCG can also utilize inmate labor from the County Jail as well as Community Service details. Columbus Consolidated Government is adequately prepared for Disaster events.

*Needs* – Institution of a composting site to include additional man power and equipment is a need that could assist in continuing to meet the 25% reduction goal. This goal would only apply to inert landfills since 100% of inert material is diverted from the lined MSW as per Georgia law.

*Goals* – The goal of CCG is to purchase equipment and begin a compost site within the next planning period. This will require staffing and equipment and is dependant upon funding.

## Section 6 Land Limitation Element

### 6.1 INVENTORY LAND AREAS

**Current Landfill Area** - The current MSW landfill property consists of 346.47 acres (more or less) and operates under permit number 106-016D(SL). This property was permitted to begin receiving waste in both the MSW and the C&D, under Section 391-3-4-07(2) of the Georgia Rule for Solid Waste Management, in 1998.

**Other Areas in the County** – There are no other areas identified in the county under consideration for landfill siting. There is a parcel of land immediately north of the existing Pine Grove landfill that may be considered for a Waste to Energy site some time within the next 10 years. Maps showing wetlands, etc are attached in Appendix A as figure 5.

#### 6.1.1 INVENTORY AREAS WITH NATURAL ENVIRONMENTAL LIMITATIONS

**Current Landfill Area** - Approximately 35 acres of Red- Cockaded Woodpecker (RCW) foraging habitat exists near the boundaries of the current landfill. It was determined that development of a portion of the site as a compost area would not “not likely be considered to adversely affect” the RCW. The area to the north of the current landfill is zoned to be an industrial park and all wetland and habitat issues have been resolved for that eventual development. None of this land is slated for use as a new landfill or expansion to the current landfill.

Five active and four inactive Gopher Tortoise burrow areas were found on land to the north of the current landfill. Recent investigation and an effort to remove and relocate them shows that they are already gone. There are also several interesting species of plant life in the area but are not currently being infringed upon by development. The wetlands discussed below are shown on the D&O plan for Pine Grove MSW Landfill

- **Wetland A-** 4.0 Acres located at the Southern center of the property.
- **Wetland B-** 20.0 Acres located in the Center of the property near the Heavy Equipment Shop and continuing North.
- **Wetland C-** 0.34 Acres located in the Phase V, Phase VI area
- **Wetland D-** 0.10 Acres located in the same vicinity as C, separated by a borrow area of Clayey soil.
- **Wetland E-** 1.0 Acres located the same as above (D)
- **Wetland F-** 2.3 Acres located at the Southeast boundary of the property.
- **Wetland G-** 1.4 Acres located at the Eastern boundary of the property abutted to 10th Armored Division Road.
- **Wetland H-** 19.0 Acres located at the Southwest boundary of the property (Construction and Demolition Areas).

#### 6.1.2 INVENTORY AREAS WITH LAND USE LIMITATIONS

The MSW consists of Phases I, II, II, IV, V, and VI , 91.5 acres of approved landfill area. The C/D consists of C&D I and II, 15 acres of landfill area. With the exception of a borrow

area used to store recyclable materials and the Heavy Equipment Shop located toward the center of the property, the balance of the acreage (239.97 acres) is dedicated to undisturbed Natural Wetlands<sup>15</sup>.

## **6.2 LOCAL PROCEDURES FOR SITING SOLID WASTE FACILITIES**

The existing Muscogee County site adheres to the Georgia Department of Natural Resources, Environmental Protection Agency, and the Army Corps of Engineers site suitability requirements – to include (but not limited to):

- Water supply watersheds
- Groundwater recharge areas
- Wetlands
- River corridors
- Protected Mountains
- And zoning restrictions:
  - Local zoning
  - Airport safety
  - Flood plains
  - Wetlands
  - Fault areas
  - Seismic impact zones
  - Unstable areas
  - Significant groundwater recharge areas

**6.2.1 *Procedures for Location of a New or Expanded MSW Landfill***<sup>16</sup> – Any proposed solid waste landfill or solid waste handling facility requesting permission to operate within Columbus, Muscogee County, Georgia, must comply with all local ordinances including zoning restrictions as well as all State regulations regarding the development of such facilities.

Any entity requesting a renewal or issuance of a solid waste handling permit from EPD must demonstrate that the facility or facility expansion is consistent with the Columbus Consolidated Government’s Solid Waste Management Plan. Chapter 391-3-4 of the Georgia Department of Natural Resources’ Environmental Protection Division relates to Solid Waste Management in Georgia. Chapter 391-3-4.05 deals specifically with the criteria associated with solid waste handling facilities. In addition to the criteria set forth under DNR’s regulations, all future sites must adhere to all ordinances of the Columbus Consolidated Government. No proposed facility or expansion of an existing facility will be sited in the planning area without written approval from the Columbus Consolidated Government. Conditions for local approval of siting or expanding a facility shall be based on the developers written “Statement of Consistency” which shall identify how the proposed facility or expansion is consistent with the current Solid Waste Management Plan as well as with the Comprehensive Plan for Muscogee County. As a minimum the following items shall be considered by the Columbus Consolidated Government:

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<sup>15</sup> Design and Operation (D&O) Plan for Pine Grove MSW Landfill prepared by Jordan, Jones and Goulding Engineers, Inc.

<sup>16</sup> Procedure to expand or set up Solid Waste facility added as per DCA comment.

- A) How the proposed facility or expansion will meet the goals and the needs identified in the Solid Waste Management Plan;
- B) What will be the impact on the collection capacity within the planning area;
- C) What will be the impact on the disposal capacity in the planning area;
- D) What will be the impact on waste reduction goals and recycling efforts;
- E) How will the proposed facility or expansion fit with the Comprehensive Plan for the planning area;
- F) How will the proposed facility or expansion affect traffic patterns;
- G) What will be the financial impact on existing solid waste facilities;
- H) What will be the financial impact on the surrounding areas where the facility or expansion is proposed to be located, (i.e. property values);
- I) How will the owner / operator of the proposed facility guarantee that they are able to meet the financial requirements for construction, operation, maintenance, closure and post closure care of the proposed facility;
- J) The developer of the proposed facility will provide a site suitability study for the location chosen for the facility;

The Columbus Consolidated Government will review the written “Statement of Consistency” and shall determine if the proposed facility or expansion meets the goals of the Solid Waste Management Plan. The developer shall be notified of the finding of the Columbus Consolidated Government within 30 days of submittal of the statement of Consistency.

Once the “Statement of Consistency” is approved by the Columbus Consolidated Government, the developer shall hold public hearings and receive public input to be incorporated into the plans. These public hearings shall be advertised in the local news paper. These hearing shall satisfy the minimum requirements of EPD for siting or expanding a landfill.

Once the public input phase is completed satisfactorily, the developer may pursue permitting from the Georgia Environmental Protection Division for the facility. The permit process will meet all requirements of the Georgia EPD. A copy of the approved permit shall accompany the submission of plans to the Department of Engineering. The developer shall meet all laws concerning flood plains, erosion control and construction during the local permitting and construction phase of the development to include payment of all fees required by local and state governments.

### **6.3 ASSESSMENT OF LAND LIMITATIONS**

The current property is determined suitable for use as an MSW landfill. There are no other sites within the county that will be suitable and are large enough to accommodate an new landfill. (See Maps in Appendix A for natural and man made limitations)

### **6.4 NEEDS AND GOALS**

An aggressive approach toward recycling will help in saving landfill space. The most common problem at the landfill today is plastic shopping bags (which are 100% recyclable). Cardboard is another recyclable product, which is not currently part of the CCG recycling

program. Both of these commodities are being considered to be included as recyclable material in future expansion of the recycling program.

More than 37 U.S. States are already under some form of mandatory electronic waste recycling program and some states are recycling items such as clothing and carpet which are used as raw material to make carpet padding and insulation. Our goal is to find ways to use or material to keep it out of the waste stream.

## **Section 7            Education and Public Involvement**

### **7.1 INVENTORY EXISTING PUBLIC EDUCATION PROGRAMS AND PUBLIC INVOLVEMENT OPPORTUNITIES**

**7.1.1 KEEP COLUMBUS BEAUTIFUL COMMISSION GATEWAYS SCHOOL PROGRAM** - For seventeen years the Keep Columbus Beautiful Commission (KCBC) has provided information to all Muscogee County Schools (public and private) concerning campus beautification, environmental education and community improvement pride. Each year KCBC provides tools to help schools design campus beautification programs, provide campus/community project ideas and opportunities for awards. The Gateways School Program also has proven to be a great way to include Partners-In-Education.

**7.1.2 HELP-THE-HOOCH** - KCBC participates in the Annual Georgia Rivers Alive Clean-up, which is sponsored by the Georgia Department of Natural Resources. This statewide event targets all waterways (streams, rivers, lakes and wetlands). The mission of the event is to create awareness of and involvement in preservation of Georgia's water resources.

**7.1.3 TELEPHONE BOOK RECYCLING** - This is a collaborated effort with BellSouth Pioneers, Columbus Consolidated Government Recycling Division and KCBC. The purpose of this City-wide project is to save trees, water, energy, landfill space and reduce air-polluting effluents.

**7.1.4 THE MAGIC OF RECYCLING** - The Magic of Recycling show is a winner of National Recycling Coalition's prestigious Beth Boettner Award for Outstanding Public Education Program. The 40-minute, live presentation for students (grade K-4) combines educational points with fast-paced fun. The audience learns while being entertained with comedy, magic, surprises, and plenty of audience participation.

**7.1.5 CHRISTMAS TREE RECYCLING** - This program is a part of the statewide "Bring One For the Chipper" project which is sponsored by Keep Georgia Beautiful. The purpose of this project is to divert Christmas trees from our landfill.

**7.1.6 COLUMBUS GATEWAYS BEATIFICATION PROJECTS** - Columbus Gateways is a community-wide beautification and landscape enhancement program which targeted 26 gateways into and major arteries within Columbus. The trademark of the Gateway interchanges is the Southern Magnolia. Numerous other varieties of trees, shrubbery, flowers and grassed areas further enhance the sites. The interchanges include simple drip irrigation systems and are to be maintained by private contract for the first two years

**7.1.7 COMMUNITY IMPROVEMENT PROGRAM** - This program is a collaborated effort between Columbus Consolidated Government, KCBC, Columbus Health Department, other Community Service Organizations and city residents. The purpose of the program is to help targeted area residents rebuild their neighborhood. Citizen participation is the key! The community Improvement Program is designed to restore community pride, empower citizens to take responsibility and ownership for their neighborhoods, eliminate crime, improve community aesthetics and create an atmosphere of cooperation between government and citizens. Neighbors are encouraged to work together to form anti-drug groups and neighborhood watch programs. The programs motto is *"Working to Improve our Neighborhood (WIN)."*

**7.1.8 ARBOR DAY** - Cover Columbus with trees! Columbus Consolidated Government has been known for its tree stewardship for 30 years. Columbus was the first city in the State of Georgia to earn a Tree City USA designation. This designation indicates that Columbus demonstrates an outstanding commitment to caring for the community's trees. For the past several years KCBC has celebrated Arbor Day by encouraging area schools to plant trees. Mead Westvaco, CCG Tree Board and KCBC also plan and implement a city-wide Arbor Day Celebration.

**7.1.9 MARTIN LUTHER KING PRIDE CLEAN-UPS** - These Tri-community annual cleanup projects are sponsored by the Combine Communities of Southeast Columbus (CCSC). All community organizations, schools, churches, businesses and individuals are encouraged to help clean-up the community during the month of January, February and March.

**7.1.10 CITY-WIDE CLEANUP** - This community wide cleanup project encourages community cleanup and beautification initiatives. The project is in support of the Keep America Beautiful, Inc. "Great American Cleanup". Millions of Americans are celebrating clean, safe and healthy communities this spring as they volunteer for Keep America Beautiful's Great American Cleanup™. Now in its 22nd year, the Great American Cleanup is the nation's largest annual community improvement program.

**7.1.11 WASTE-IN-PLACE TRAINING** - This is an interdisciplinary, supplementary environmental training program focusing on litter prevention and solid waste management. The Enviro-scape tabletop educational unit, and the Frogline video tape are used in the school presentations. The Enviroscape is a portable, interactive tabletop models that demonstrate non-point source pollution, wetlands, and landfill issues. They illustrate the ways pollution infiltrates and affects various water bodies in our communities. With Envirosapes, participants are able to use all of their senses and relate to their own community while better understanding global issues and learning how to prevent water pollution.

The three-dimensional landscapes illustrate residential, recreational, agricultural, industrial, and transportation uses as possible sources of water pollution. Participants learn by using chemicals (drink mix) and loose soil (cocoa) to simulate typical community activities. Instructors use the materials included in the kit to illustrate how pollution can be reduced or prevented.

**7.1.12 Household Hazardous Waste / E-Scrap Recycling** - This project is for residents of Muscogee County. The purpose of the project is two fold: (1) to divert harmful household waste and electronic equipment from our land fill, and (2) to promote recycling. This project benefits every citizen in Muscogee County, as well as our environment!

## **7.2 ASSESS ADEQUACY OF ENVIRONMENTAL EDUCATION INITIATIVES**

### **7.2.1 MISSION:**

To engage and educate individuals to take greater responsibility for enhancing beautification, for protecting the environment, and eliminating litter and blight.

### **7.2.2 HIGHLIGHTS OF THE 2007-08 PROGRAMS / PROJECTS:**

The 2007 / 2008 programs accomplished the following:

- Engaged more than 10,000 volunteers in the State of Georgia Rivers Alive, Help-the-Hooch-river awareness cleanup event, which resulted in the collection of more than 223,456 pounds of trash, household hazardous waste and electronic equipment.

- Presented 12 Magic of Recycling Shows which educated more than 3,600 K-6 grade students
- Diverted more than 65,000 old telephone books from our landfill through curbside recycling and the school telephone book recycling campaign.
- Recycled more than, 4,500 Christmas Trees for the Bring One for the Chipper, Christmas Tree Recycling program.
- Participated with Trees Columbus, Inc. Holiday Forest to plant trees on area school campuses.
- City-wide Arbor Day Celebrations, to celebrate 30 years of earned recognition as Georgia's first Tree City U.S.A.
- Received the Georgia Forestry Commission Urban Forest Award.
- Received a Resolution from Georgia Department of Transportation designating 39 miles of I-185 as a Scenic Byway.
- Supported 13 Neighborhood Cleanups.
- Promoted Litter Free events and sporting activities.
- Kicked off the Lonnie Jackson Memorial Plaza Project.
- Received the Georgia Community Affairs "Away From Home Recycling Grant" to promote recycling during special events.
- Presented 5 Enviroscene classroom presentations.
- Supported the Keep American Beautiful "Great American Cleanup" by collaborating with area schools to conduct campus cleanups.
- Collaborated with Knology Communications to sponsor a "Shred it and Forget it" project to assist area residents in the proper disposal of personal documents.

With this many projects touching this many individuals the Environmental Educational Initiatives are more than adequate.

### **7.3 STATEMENT OF NEEDS AND GOALS**

The Keep Columbus Beautiful Commission will strive to plan and implement the following goals:

- Develop an electronic *Earthnotes Newsletter* to enhance our educational outreach to the community at-large, and local public/private schools.
- Hire a full-time Keep Columbus Beautiful Commissioner Educator to coordinate, plan and implement waste management educational programs/projects for the community and local schools.
- Promote Litter-Free / Recycling activities at all Columbus Consolidated Government Public Facilities.
- Collaborate with CCG Public Service to enhance solid waste educational and enforcement programs.

Columbus will continue to partner with KCBC to provide quality educational programs and clean up efforts that will reduce illegal dumping and littering, make citizens more aware of programs for reuse of material through recycling and composting.

## Section 8 Implementation Strategy

### 8.1 SUMMARY OF GOALS AND NEEDS BY PLANNING ELEMENT

Table 8-1

<p><b>Waste Reduction</b></p>	<p><b>Needs</b></p> <ul style="list-style-type: none"> <li>• To preserve landfill space by using alternative means of disposal.</li> </ul> <p><b>Goals</b></p> <ul style="list-style-type: none"> <li>• Increase citizen awareness of the importance of recycling</li> <li>• Increase public participation in recycling</li> <li>• Increase the amounts and types of materials recycled</li> <li>• Introduction of waste as a renewable energy source in a “Waste to Energy” plant.</li> </ul>
<p><b>Collection</b></p>	<p><b>Needs</b></p> <ul style="list-style-type: none"> <li>• Better enforcement of Illegal dumping</li> <li>• Keep up with the increasing demand to collect waste as the City grows</li> </ul> <p><b>Goals</b></p> <ul style="list-style-type: none"> <li>• Increase education against littering and illegal dumping</li> </ul>
<p><b>Disposal</b></p>	<p><b>Needs</b></p> <ul style="list-style-type: none"> <li>• Get the maximum life from the MSW landfill, C&amp;D landfill and the 2 inert landfills</li> </ul> <p><b>Goals</b></p> <ul style="list-style-type: none"> <li>• Institute composting to preserve inert landfill space and produce material suitable for daily cover at the MSW</li> <li>• Lobby for construction of a regional Waste to Energy Plant</li> </ul>
<p><b>Land Limitation</b></p>	<p><b>Needs</b></p> <ul style="list-style-type: none"> <li>• Seek every alternative to land filling in Columbus</li> </ul> <p><b>Goals</b></p> <ul style="list-style-type: none"> <li>• More aggressive approach toward recycling</li> <li>• Lobby for construction of a regional Waste to Energy Plant</li> </ul>
<p><b>Education and Public Involvement</b></p>	<p><b>Needs</b></p> <ul style="list-style-type: none"> <li>• More funding to be able to work more closely with KCBC on outreach programs</li> </ul> <p><b>Goals</b></p> <ul style="list-style-type: none"> <li>• Develop and use innovative ways to involve the community in keeping a cleaner environment</li> </ul>

## 8.2 IMPLEMENTATION STRATEGY FOR THE COLUMBUS CONSOLIDATED GOVERNMENT

### 8.2.1 WASTE REDUCTION ELEMENT

#### 8.2.1.1 Reduction Through Recycling

In July of 2009 Columbus will begin operating their own recycling center. The current contract for the separation and marketing of recycled goods will end on June 30, 2009 and the current contract holder has no interest in continuing the operation. Columbus desires to include a major expansion of recycled goods that will further eliminate recyclable items from being disposed of in the MSW landfill. Below is a list of current recyclable commodities collected at curbside as well as a proposed list of recycled material that will be added to the program in the coming year.

Current Recyclables	Proposed Recyclables
<ol style="list-style-type: none"> <li>1. Aluminum Cans</li> <li>2. Other Metal Cans</li> <li>3. Clear Glass Containers</li> <li>4. Colored Glass Containers</li> <li>5. Old Newspapers</li> <li>6. Old Magazines</li> <li>7. Plastic Containers- Pet #1 &amp; HDPE #2 <b>ONLY</b></li> </ol>	<ol style="list-style-type: none"> <li>1. Aluminum Cans</li> <li>2. Other Metal Cans</li> <li>3. Clear Glass Containers</li> <li>4. Colored Glass Containers</li> <li>5. Old Newspapers</li> <li>6. Old Magazines</li> <li>7. Plastic Containers – <b>All Resins #1 thru #7</b></li> <li>8. Use Motor Oil and other Automotive Fluids – Atlantic Industrial Services. (Oil, Transmission Oil, Antifreeze, Gear Grease, Oil Filters</li> <li>9. Rechargeable Batteries – Rechargeable Battery Recycling Corp</li> <li>10. Cell Phones – Rechargeable Battery Recycling Corp</li> <li>11. All types of Paper including Office Paper, School Note Book Paper, etc.</li> <li>12. Plastic Bags – shopping / garbage / yard waste, etc.</li> <li>13. All Types of Cardboard including all corrugated board, paper milk and juice containers, etc.</li> </ol>
<p><b>Currently Recycled by Others</b></p> <ol style="list-style-type: none"> <li>1. Used Motor Oil and other Automotive Fluids– Atlantic Industrial Services. (Oil, Transmission Oil, Antifreeze, Gear Grease, Oil Filters</li> <li>2. Rechargeable Batteries – Rechargeable Battery Recycling Corp</li> <li>3. Cell Phones – Rechargeable Battery Recycling Corp</li> </ol>	

#### 8.2.1.2 Residential Expansion/Increased Curbside Participation

Our existing recycle program is voluntary, however there is discussion of making it mandatory by the year 2011. Until that point we will be committing ourselves to advertising and educational programs aimed at increasing recycling. Our desire is to increase recycling by education rather than through legislation.

### ***8.2.1.3 Government Building Recycling***

We have implemented a program to collect recycled goods from the Government Center, Government Center Annex and Public Services buildings. Once resources permit we will expand this program to all City government buildings including the Civic Center. The plan is to place recycling containers in the offices of all city facilities. The containers will be emptied by custodial personnel into large ninety-six gallon containers to be serviced by the Recycling Division. The items that will be collected in the city facilities are plastic containers, cans, newspaper, magazines and high-grade office paper. We prefer the office paper be shredded for security purposes but as far as recycling goes it will not matter whether this is done or not.

### ***8.2.1.4 Muscogee County Schools***

We currently work on an individual basis with a few of the schools in the county to recycle paper. We would like to include all schools in our recycling efforts and even be able to expand the program. We should be able to recycle everything generated by the school cafeterias with the exception of food products. The included items we would recycle are glass containers, cans, plastic containers and all paper generated at the schools.

### ***8.2.1.5 Public Education***

The City of Columbus held recent public meetings regarding waste management and the Solid Waste Management Plan. The meetings were held on:

- August 7, 2008
- August 12, 2008
- April 23, 2009

The overwhelming desire expressed by those attending the meetings was for a stronger Recycling Program. We will begin implementing such a program in July of 2009 when we begin to operate our own recycling center. The market will dictate which materials and what amounts can be added to the list of recyclables but our goal to add the commodities listed in the previous chart. At the same time we will be reducing the amount of solid waste going into the landfill.

We will continue to partner with local advertisers and Keep Columbus Beautiful to provide educational programs and recycling opportunities at sporting events and other public gatherings.

## **8.2.2 COLLECTION ELEMENT**

No new programs or additions are anticipated for the collection of Waste in Columbus with the exception of expansion to meet anticipated growth from BRAC and normal growth. We do anticipate keeping pace the expected growth from Fort Benning within the next 2 years and the long term anticipated growth as outlined by the Comprehensive Plan. Therefore the long term strategic plan includes additional equipment and personnel.

In keeping with the efforts to continue to meet the state 25% reduction goal, Columbus is continuing the partnership in education with KCBC to promote responsible waste management by citizens.

## **8.2.3 DISPOSAL ELEMENT**

Columbus along with the local Chamber of Commerce and Fort Benning are investigating the feasibility of instituting a Waste to Energy Plant to use the majority of the waste as a renewable energy source. The process will take about 10 years to become a reality. When this plant comes on line the life of the current landfill should be extended by at least 75 to 100 years based on preliminary studies.

#### **8.2.4 LAND LIMITATION ELEMENT**

There is no suitable land in Columbus where a landfill could be sited.

#### **8.2.5 EDUCATION AND PUBLIC INVOLVEMENT**

There are many programs available to Columbus that are aimed at education and public involvement. These are discussed in detail in this report. Our main partner is Keep Columbus Beautiful Commission (KCBC). They take the lead in most of these programs with assistance and funding from the Columbus Consolidated Government. It is unlikely this partnership will change in the next planning period.

PROGRAM / ACTIVITY	Years Program / Activity Takes Place											Resp. Party	Estimated Cost	Funding Source
	08	09	10	11	12	13	14	15	16	17	18			
<b>Waste Reduction</b>														
Recycling - Increase Recycling program to add more commodities and more customers.	X	X	X	X	X	X	X	X	X	X	X	CCG	\$1,500,000 annually	CCG
Education - Increase Public awareness through education. Continue to utilize the Keep Columbus Beautiful "waste in Place Program" to educate our school children and the Public in proper reuse and recycling of household waste.	X	X	X	X	X	X	X	X	X	X	X	KCBC and CCG	\$100,000	KCBC and CCG
Composting - Institute composting of yard waste to produce daily cover for the MSW Landfill. Continue the once per week and yard trimmings once per week.			X	X	X	X	X	X	X	X	X	CCG	\$2 million (Yr 1) \$350,000 (Yr)	CCG
Encourage reuse and recycling in City Government; Begin In house recycling of goods in all Government buildings, the Commercial/Industries sector and Intuitional sector.		X	X	X	X	X	X	X	X	X	X	CCG	MINIMAL	

PROGRAM / ACTIVITY	Years Program / Activity Takes Place											Responsible Party	Estimated Cost Total Planning Period	Funding Source
	08	09	10	11	12	13	14	15	16	17	18			
<b>COLLECTION</b>														
Additional Personnel for Enforcement				X		X		X		X		CCG	\$400,000	CCG
Continue Cooperation with KCBC and Muscogee County Schools on educational programs involving recycling and waste management	X	X	X	X	X	X	X	X	X	X	X	CCG	\$800,000	CCG

PROGRAM / ACTIVITY	Years Program / Activity Takes Place											Resp. Party	Estimated Cost	Funding Source	
	08	09	10	11	12	13	14	15	16	17	18				
<b>DISPOSAL</b>															
<b>Composting –Non - Biosolids composting</b>				X	X	X	X	X	X	X	X				
<b>Pine Grove</b> - Continue disposal of municipal solid waste in compliance with all State and Federal Standards. Prepare for closure / post closure care	X	X	X	X	X	X							CCG	\$4,768,900	
<b>Oxbow Meadows</b> - Continue disposal of inert waste. Prepare for closure / post closure care.	X	X	X	X	X	X							CCG	\$565,000	
<b>Granite Bluff</b> – Continue disposal of inert waste. Prepare for closure / post closure care.	X	X	X	X	X	X							CCG	\$628,000	

PROGRAM / ACTIVITY	Years Program / Activity Takes Place											Responsible Party	Estimated Cost	Funding Source	
	08	09	10	11	12	13	14	15	16	17	18				
<b>LAND LIMITATION</b>															
<b>New Landfill</b> – There is not an acceptable location for another landfill in Columbus															
<b>Waste to Energy</b> – Joint project with Ft Benning, Columbus Consolidated Government, surrounding counties													CCG, Ft Benning	\$105 million	CCG, Bonds, Grants, Federal

PROGRAM / ACTIVITY	Years Program / Activity Takes Place											Responsible Party	Estimated Cost	Funding Source	
	08	09	10	11	12	13	14	15	16	17	18				
<b>EDUCATION AND PUBLIC INVOLVEMENT</b>															
<b>KCBC Programs</b> – Continue to work with KCBC in funding programs in schools and throughout the community	X	X	X	X	X	X	X	X	X	X	X	X	KCBC	Unknown	Private
<b>Household Hazardous Waste Turn in Day</b> – Semi annual event sponsored by KCBC and Columbus	X	X	X	X	X	X	X	X	X	X	X	X	CCG & KCBC	\$80,000	CCG, State, Private

# **APPENDIX “A”**

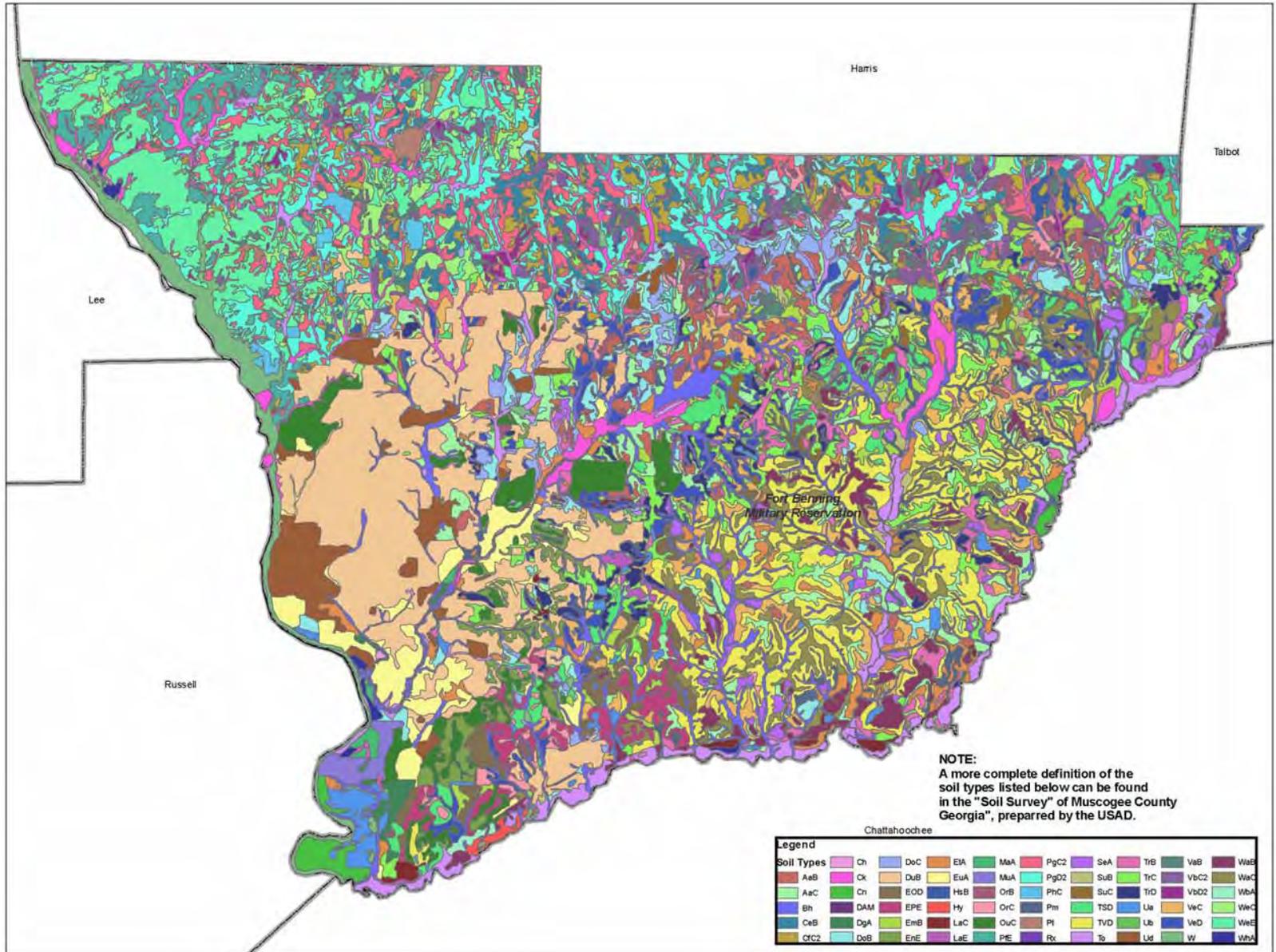
## **MAPS**

**Figure 1  
Soil Type**



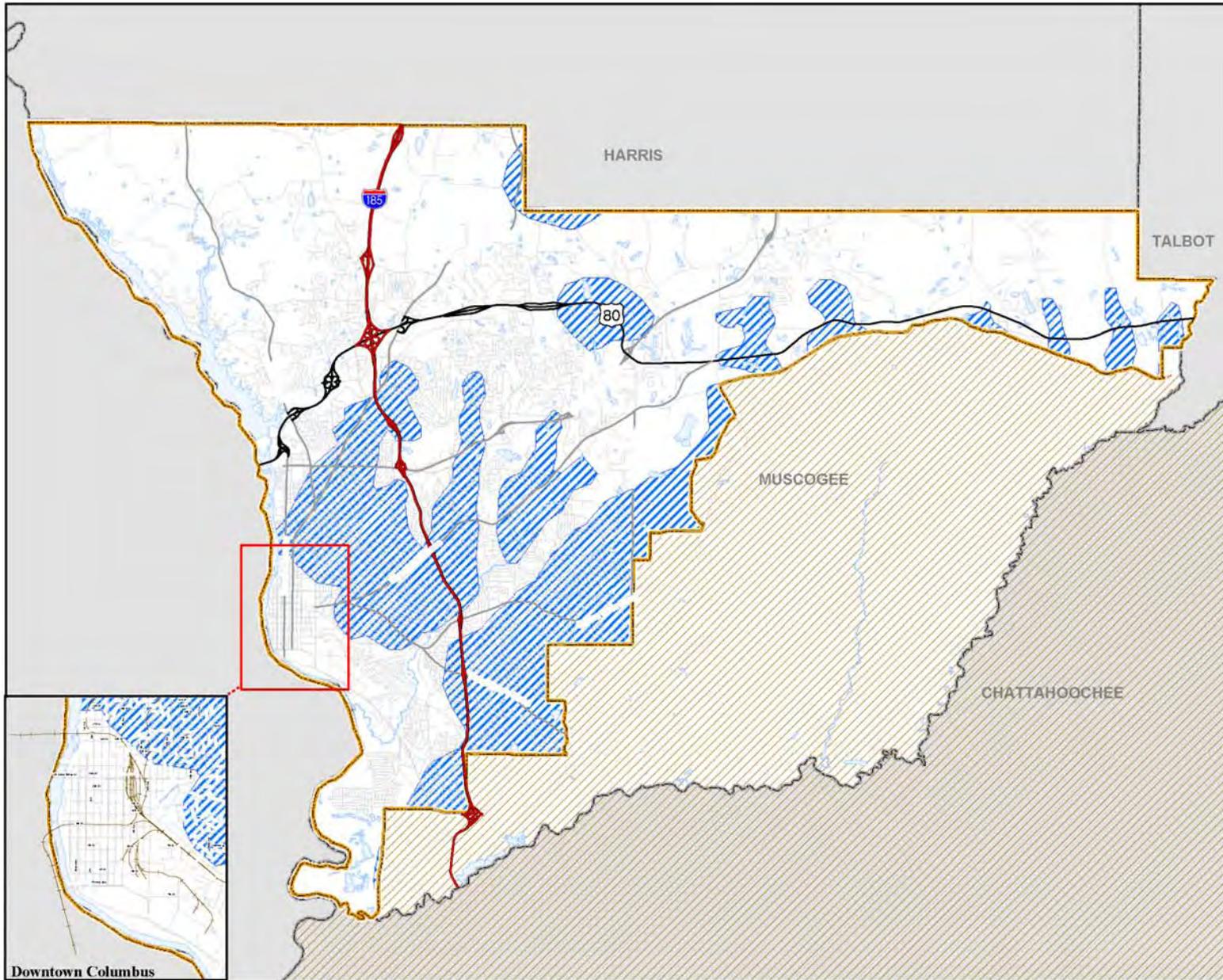
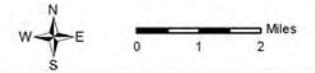
2 1 0 Miles

This material is made available as a public service. Maps and data are to be used for reference purposes only. The data contained is subject to constant change. Map information is believed to be correct but is not guaranteed.



City of Columbus 2008 - 2028  
Comprehensive Plan

Ground Water Recharge  
Areas



Ground Water Recharge Areas  
23,896 Acres

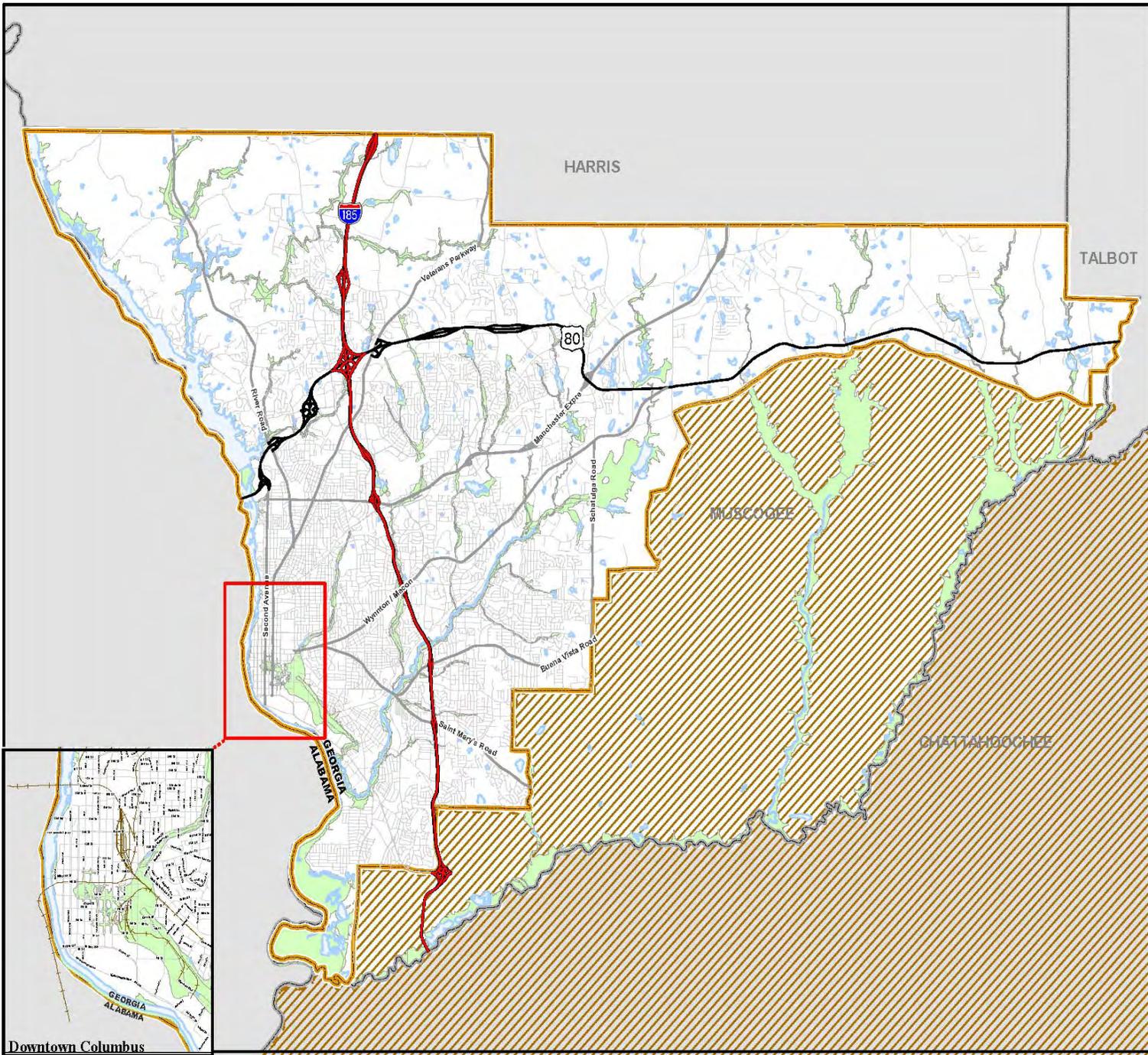
- I-185
- JR Allen / US 80
- Major Roads
- Streets (Centerline)
- Railroad
- City Boundary
- Other Counties
- Fort Benning

FIGURE 2



CONSOLIDATED GOVERNMENT  
Five Percent Set-Aside

Hydrology



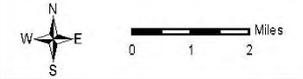
- Stream/River
- 100 Year Floodplain
- Lakes & Ponds
- I-185
- JR Allen / US 80
- Major Roads
- Streets (Centerline)
- Railroad
- City Boundary
- Other Counties
- Fort Benning

FIGURE 3



CONSOLIDATED GOVERNMENT  
Water Program 8/6/2006

Watersheds



- Raw Water Intake
  - Protected Watersheds
  - 7 Mile Protected Watershed Buffer\*
  - Watersheds
  - I-185
  - JR Allen / US 80
  - Major Roads
  - Streets (Centerline)
  - Railroad
  - City Boundary
  - Other Counties
  - Fort Benning
- \* Buffer Only Applies to Protected Watersheds

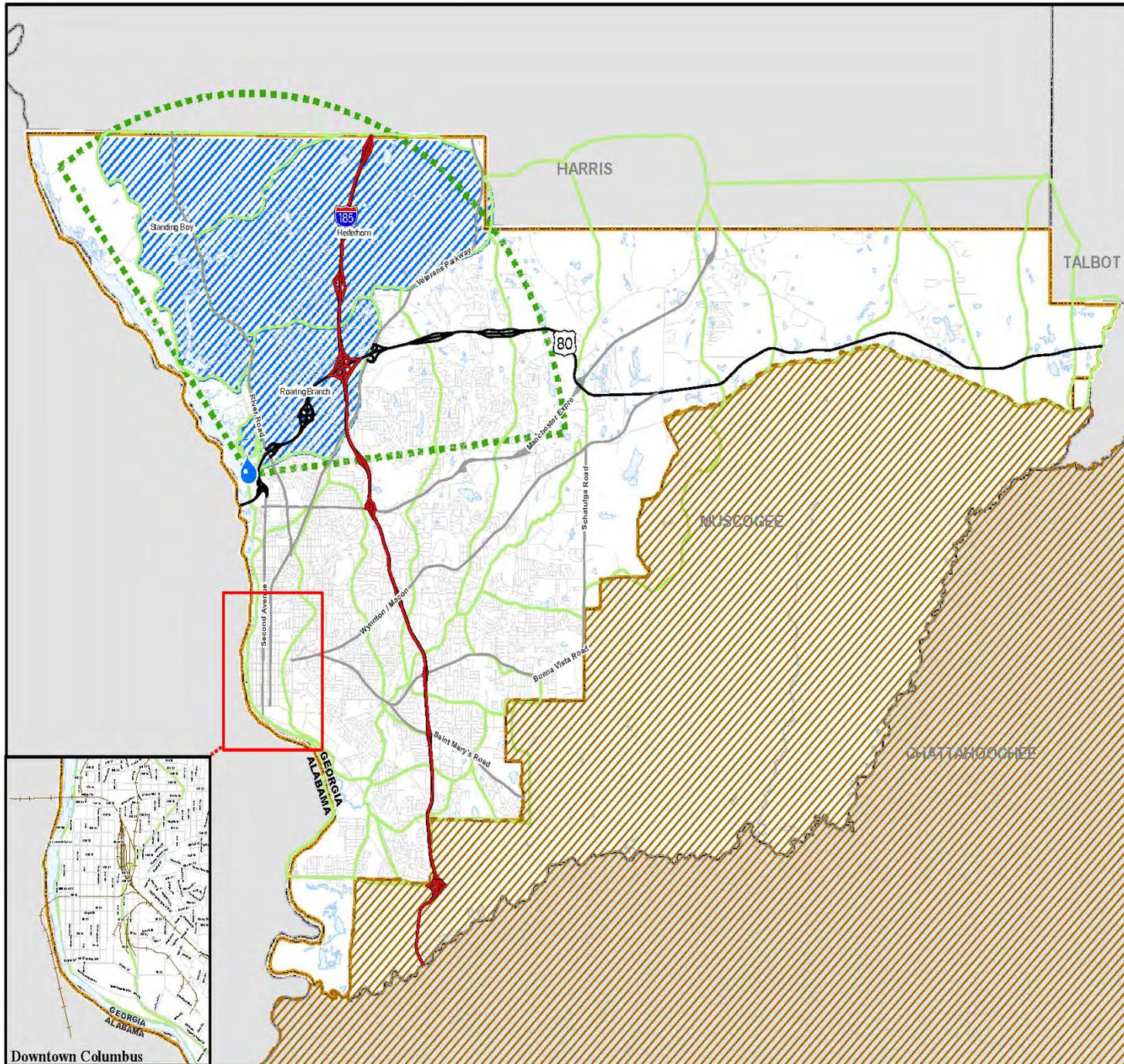
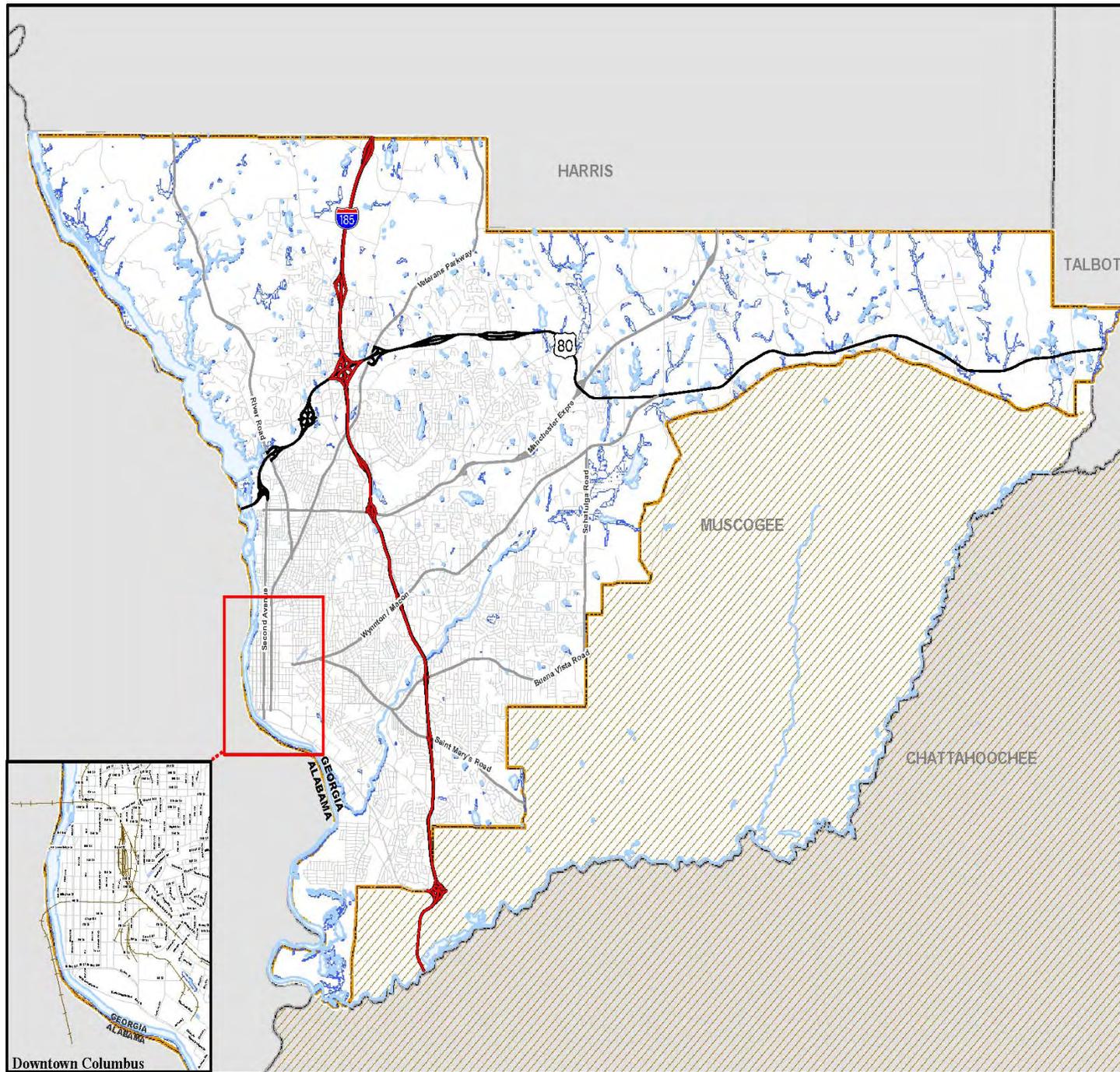
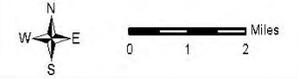


FIGURE 4



Wetlands



- Stream/River
- Wetlands - 6,000 acres
- Lakes & Ponds
- I-185
- JR Allen / US 80
- Major Roads
- Streets (Centerline)
- Railroad
- City Boundary
- Other Counties
- Fort Benning

FIGURE 5



CONSOLIDATED GOVERNMENT  
What Progress Has Preserved

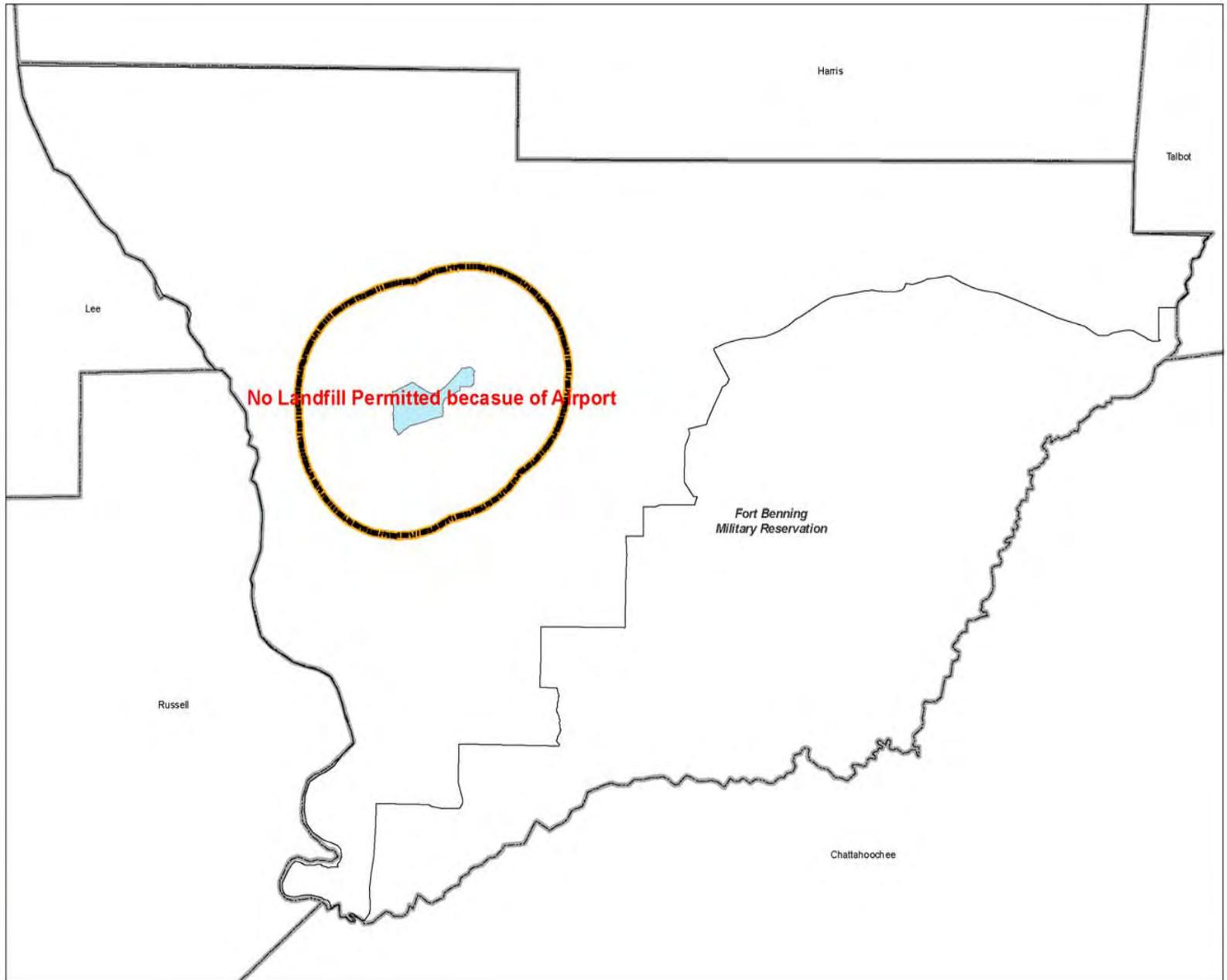
Downtown Columbus

**Figure 6**  
**10,000 FT**  
**Diameter**  
**Around Airport**

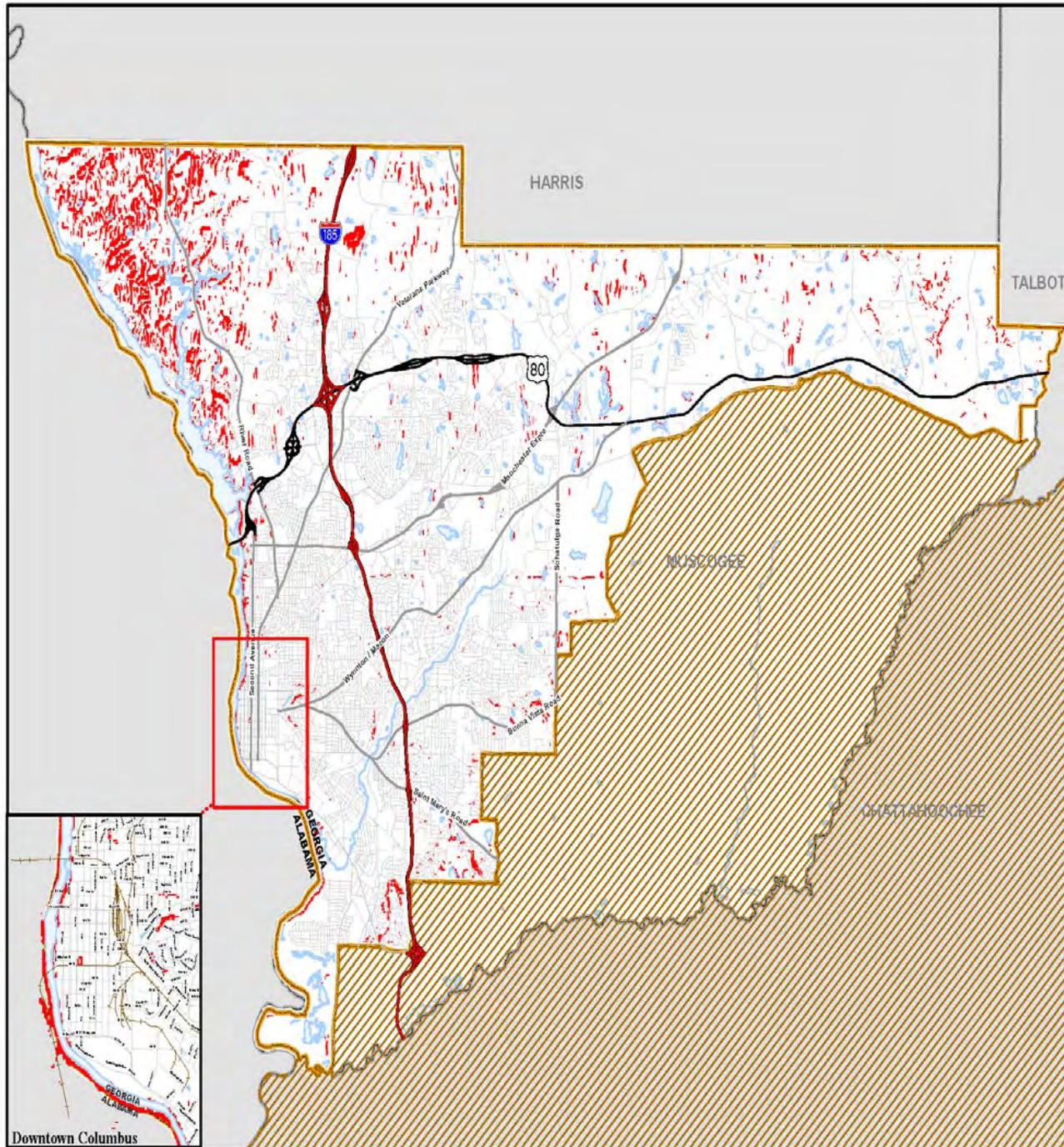
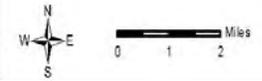


2 1 0 Miles

This material is made available as a public service. Maps and data are to be used for reference purposes only. The data contained is subject to constant change. Map information is believed to be correct but is not guaranteed.



Steep Slopes



- Stream/River
- Slopes Greater than 15%
- Lakes & Ponds
- I-185
- JR Allen / US 80
- Major Roads
- Streets (Centerline)
- Railroad
- City Boundary
- Other Counties
- Fort Benning



FIGURE 7



## **APPENDIX “B”**

# **DISASTER DEBRIS MANAGEMENT PLAN**

# **Columbus Consolidated Government**

## **DEBRIS MANAGEMENT PLAN**

**February 2008**

### **MISSION**

To facilitate and coordinate the removal, collection and disposal of debris following a disaster, to mitigate against any potential threat to the health, safety and welfare of the impacted citizens and expedite the recovery efforts in the impacted areas and address any threat of significant damage to improved public or private property.

### **SITUATION**

Natural and man-made disasters precipitate a variety of debris that include, but is not limited to such things as trees/limbs, sand, gravel, building/construction materials, vehicles, personal property, etc.

The quantity and type of debris generated from any particular disaster is dependent upon the location and kind of event experienced; as well as its magnitude, duration, and intensity.

The quantity and type of debris generated, its location, and the size of the area over which it is dispersed directly impacts the type of collection and disposal methods used to address the debris problem, associated costs incurred, and the speed with which the problem can be addressed.

In a major or catastrophic disaster, the Columbus Consolidated Government (CCG) will normally have sufficient staff, equipment, and funds to devote to debris removal, in the short as well as long term. If, however, an event is of such magnitude that the CCG cannot handle debris management internal, contracts with agencies to assist are in place. Attached as enclosure 1 is a copy of the contract with Southern Land Improvement to provide grinding and disposal of yard waste mineral on an "as needed bases". This contract is in place for daily operations as well as in the event of a disaster. Attached as enclosure 2 is the contract for the rental of approximately 10 tandem dump trucks from D.A.T. Trucking, inc., which is used only in cases of emergency disaster events.

Private contractors may be called upon to play a significant role in the debris removal, collection, reduction, and disposal process if necessary.

The debris management program implemented by the CCG will be based on the waste management approach of reduction, reuse, reclamation, resource recovery, recycling and land filling.

### **ORGANIZATION AND CONCEPT OF OPERATIONS**

The CCG Department of Public Services is responsible for all debris removal and disposal functions. The Department of Public Services (DPS) will work in conjunction with designated support agencies, utility companies, land improvement and trucking companies to facilitate the debris clearance, collection, reduction and disposal needs following a disaster. The DPS will be responsible for removing debris from the public rights-of-way. Only when pre-approved and it is deemed in the public interest will DPS remove debris from private property. DPS may further stage equipment in strategic locations locally as well as regionally, if necessary, to protect the

equipment from damage, preserve the decision maker's flexibility for employment of the equipment, and allow for the clearing crews to begin work immediately after a disaster.

The CCG Department of Public Services in conjunction with the Finance Department has developed and will maintain a list of approved contractors who have the capability to provide debris removal, collection and disposal in a cost effective, expeditious and environmentally sound manner following a disaster if needed. Procurement procedures are in place and are continuously maintained by the Finance Department of the Columbus Consolidated Government.

### **STAFF DEVELOPMENT & RESPONSIBILITIES**

The Columbus Consolidated Government, Department of Public Services, is responsible for the developing a debris management plan and the "Debris Manager" to supervise a "Debris Management Staff" is the Director of Public Services. The staff shall be comprised of personnel to perform:

1. Administration (Department of Public Services)  
Function: Dispatching, providing technical support, warehouse supplies, equipment, funding, accounting.
2. Contracting and Procurement/Legal (Finance Department)  
Function: Bidding requirements, forms, advertisements for bids, instructions to bidders, contract development, preparation of estimates, plans, specifications, public notice of contracts, contract review, right of entry permits, community liability etc...
3. Operations/Engineering (Director of Public Services)  
Function: Supervision of government and contract resources and overall project management, to include all collection, recycling and disposal activities, damage assessment, identification of project tasks, assignment of tasks and management of the event to completion.
4. Public Information Specialist (City Manager)  
Function: Coordinate press releases, contacts with local organizations, individuals, and media; and public notices for debris removal and disposal contracts.

The staff shall coordinate with all State and Federal agencies responsible for disaster response and recovery operations. The staff has on file and will maintain the following:

1. Debris Management Plan.
2. Analysis and debris management capability
3. Discourage development in hazardous zones.
4. Develop public information and education programs.
5. Trains personnel in debris management techniques.
6. Maintains pre-disaster maps, blueprints, photos and other documents.
7. Maintains a list of critical facilities (streets, roads and bridges).
8. Identify non-government groups that could assist.

## **CONTRACT AND COOPERATIVE AGREEMENTS**

Contracts with all required specifications of services and generic scopes of work have been developed and are consistently maintained by the Finance Department, Procurement Officer prior to the disaster to allow the DPS to more closely tailor its contracts to its needs, as well as expedite their implementation in a prompt and effective manner, as listed above.

The DPS will be responsible for managing the debris contract from project inception to completion. Managing the debris contract includes such things as monitoring of performance, contract modifications, inspections, acceptance, payment, and closing out of activities.

The Columbus Consolidated Government has established a Mutual Aid Agreement with the following entities to provide assistance with debris removal in the event of a disaster resulting in all hazard/emergency and copious amounts of debris:

1. Phenix City Government
2. Ft. Benning Military Installation
3. Harris County Commission
4. Talbot County Commission
5. Russell County Commission
6. Columbus Health Department
7. Muscogee Sheriff's Office
8. Lee County Sheriff's Office
9. Harris County Sheriff's Office
10. Taylor County Sheriff's Office
11. Russell County Sheriff's Office
12. Marion County Sheriff's Office
13. Chattahoochee County Sheriff's Office
14. Columbus Airport Commission
15. Mid Georgia Ambulance Services, Inc
16. Care Ambulance Service

These agreements include utilization of personnel, equipment, temporary landfill sites, emergency services, and law enforcement. A copy of this agreement is attached as Enclosure 3.

The three types of contracts that may be used are:

1. Time and Materials Contract. Will be limited to the first 70 hours of operation and only after all State and local equipment has been committed. The price for equipment applies only when the equipment is operating, the CCG can terminate the contract at its convenience, and the CCG does not guarantee a minimum number of hours.
2. Lump Sum Contract. The price of the work is fixed unless there is a change in the scope of work to be performed. Lump sum contracts will be calculated on either the "area" method or the "pass" method. The lump sum contract shall only be used when the scope of work is clearly defined and the areas of work can be specifically quantified.
3. The Unit Price Contract. Is the most accurate account of actual quantities removed; requires field inspectors to eliminate contractor fraud. All contractor trucks must be measured. Requires load tickets identifying truck number, contract number, contractor's name, date, times departed site, and estimated volume.

The CCG has contracts, which are attached to this plan as stated above.

The CCG has further identified certain volunteer (VOAD), State and Federal agencies ready to assist. These agencies include Civic Clubs, Church organizations, Salvation Army, State Department of Transportation, National Guard, scrap dealers, and U.S. Department of Labor. These VOAD organizations will be coordinated by the State.

### **SITE SELECTION**

Debris storage and reduction sites have been identified and evaluated by the Environmental Protection Division, Land Protection Branch and is registered in accordance with State Law for each area of disposal for Construction and Demolition as well as inert materials. The CCG keeps current listings of appropriate local, State, and Federal permits as required.

Debris will be placed in either of our two inert landfills 1) Granite Bluff Inert Landfill storage capacity 9.63 acres or 2) Oxbow Meadows Inert Landfill storage capacity 10.67 acres.

Should it become necessary, the CCG has other stockpile areas that could be identified as temporary holding sites. Site selection criteria will be developed into a checklist format for use by these teams to facilitate identification and assessment of potential sites. Criteria will include such factors of ownership of property, size of parcel, surrounding land uses and environmental conditions, and transportation facilities that serve the site.

The following is a list of EPD approved holding/disposal sites each of which have permits for operations and are randomly inspected by EPD:

1. Pine Grove Municipal Solid Waste Landfill (C&D, bulk waste and household garbage)
2. Granite Bluff Inert Landfill
3. Oxbow Meadows Inert Landfill

### **DEBRIS REMOVAL PRIORITIES**

The debris removal process must be initiated promptly and conducted in an orderly, effective manner in order to protect public health and safety following a major or catastrophic event. To achieve this objective, the first priority will be to clear debris from key roads in order to provide access for emergency vehicles and resources into the impacted area. Key roads in Columbus/Muscogee County are listed in the Traffic Engineering Office and those in critical areas will be identified as an emergency arises.

The need and demand for critical services will be increased significantly following a disaster. Therefore, the second priority that debris removal resources will be assigned is providing access to critical facilities pre-identified by State and local governments. Critical facilities in Columbus/Muscogee County have been identified as:

1. Schools
2. Hospitals
3. Fire Stations
4. Fuel Pumps
5. Nursing Homes
6. Mental Health Facilities
7. Prison
8. Landfills
9. Public Services

The third priority for the debris removal teams to address will be the elimination of debris related threats to public health and safety. This will include such things as the repair, demolition, or

barricading of heavily damaged and structurally unstable buildings, systems, or facilities that pose a danger to the public. Any actions taken to mitigate or eliminate the threat to the public health and safety must be closely coordinated with the owner or responsible party. If access to the area can be controlled, the necessary actions can be deferred.

## **DEBRIS CLASSIFICATION**

To facilitate the debris management process, debris will be segregated by type. It is recommended that the categories of debris established for recovery operations will be standardized. The CCG will adopt the categories established for recovery operations by the U.S. Army Corps of Engineers following Hurricane Andrew. Debris removed will consist of two broad categories (clean wood debris and construction and demolition debris). Most common hurricane-generated debris will consist of 30% clean woody material and 70% C&D. CCG will not burn C&D or woody materials unless permission is obtained from Georgia EPD. Woody material will be stored until such time that it can be chipped and hauled offsite.

Definition of classifications of debris are as follows:

**Construction and Demolition:** All materials picked up excluding household garbage and inert material, which is permitted by Georgia EPD.

**Inert Waste:** All natural material that can be accepted in the inert landfills, which are permit by rule through Georgia EPD.

**Stumps:** Stumps will be considered tree remnants exceeding 24 inches in diameter; but no taller than 18 inches above grade, to include the stump ball. Any questionable stumps shall be referred to the designated coordinating agency representative for determination of its disposition.

**Ineligible Debris:** Ineligible debris to remain in place includes, but is not limited to, chemicals, petroleum products, paint products, asbestos, and power transformers. The contract with KAM, Inc. authorizing for consulting services for remediation and packaging, labeling, manifesting, transportation and disposal of hazardous chemical/waste on an “as needed basis” is attached at enclosure 8.

Any material that is found to be classified as hazardous or toxic waste (HTW) shall be reported immediately to the designated coordinating agency representative. At the coordinating agency representative’s direction, this material shall be segregated from the remaining debris in such a way as to allow the remaining debris to be loaded and transported. Standing broken utility poles, damaged and downed utility poles and appurtenances, transformers and other electrical material will be reported to the coordinating agency representative. Emergency workers shall exercise due caution with existing overhead and underground utilities and above ground appurtenances, and advise the appropriate authorities of any situation that poses a health or safety risk to workers on site or to the general population.

## ESTIMATING DEBRIS QUANTITIES

The formula for estimating debris quantity is:  $Q=H(C)(V)(B)(S)$

H (Households)=Population/3 (3 persons per household)

C (Category of Storm)=Factor (See table below)

V (Vegetation Multiplier)= Factor (See table below)

B (Commercial Density Multiplier)= Factor (See table below)

S (Precipitation Multiplier)= Factor (See table below)

Hurricane Category	Value of "C" Factor
1	2 CY
2	8 CY
3	26 CY
4	50 CY
5	80 CY

Vegetative Cover	Value of "V" Multiplier
Light	1.1
Medium	1.3
Heavy	1.5

Commercial Density	Value of "B" Multiplier
Light	1.0
Medium	1.2
Heavy	1.3

Precipitation	Value of "S" Multiplier
None to Light	1.0
Medium to Heavy	1.3

Once the amount of debris has been estimated, the CCG will require storage sites the size of which can be determined by taking the following factors into consideration:

1. The debris pile shall be stacked to a height of no more than 10 feet.
2. 60% usage of the land area will be devoted to roads, safety buffers, burn pits, household hazardous waste, etc.,.
3. 10 foot stack height = 3.33 yards
4. 1 acre = 4,840 square yards (sy)
5. Total volume per acre = 4,840 sy/ac x 3.33y = 16,133 cy/ac.

Using the above assumptions, the estimate of total debris from any hurricane will be within 30% plus or minus of the actual amount of debris accumulated.

The CCG has estimated the that under the worst scenario, e. g., is a Category 5 hurricane, heavy vegetation cover, heavy commercial density, and heavy precipitation, the amount of acres needed for a temporary landfill is 3,352 acres. The calculation (assuming a population of 500,000) is as follows:

$$Q = H(C)(V)(B)(S)$$

$$Q = 166,667 \times 80 \times 1.5 \times 1.3 \times 1.3$$

$$Q = 33,800,068 \text{ cy of debris.}$$

$$33,800,068 \text{ (cy of debris) / } 16,133 \text{ (cy/ac) = } 2,095 \text{ acres of debris.}$$

2,095 acres x 1.66 (60% more area needed for roads, ,etc.,)= 3,352 acres.

Note: To help visualize what 33,800,068 cy of debris looks like, picture a building occupying 1 acre. 1,000,000 cy of debris would create a stack 62' high on one acre. That building would be 2,046 feet high or approximately 200 stories high.

## **DEBRIS DISPOSAL AND REDUCTION**

Once the debris is removed from the damage sites, it will be taken to the appropriate landfills. The methods of disposal are recycling, and grinding/chipping.

Grinding and chipping will be utilized as a viable reduction method. Grinding and chipping reduces the volume on a 4 to 1 ratio. For grinding and chipping to be feasible, 25% of volume remaining must have some benefit or use.

Metals, wood, and soils are prime candidates for recycling. Most of the non-ferrous metals are suitable for recycling. The CCG provides curbside recycling and will continue to do so during a disaster.

## **SITE CLOSE-OUT PROCEDURES**

Each landfill will track and record all materials received during an emergency situation and report such activities to the administrator for action. A copy of the permit for solid waste handling permit is attached as enclosure 4. The Permit by Rule Operations for the inert landfills are attached as enclosures 5 and 6.

Before, after and during activities, constant monitoring of air quality and soil and water samples will take place. Photo, maps, and sketches of the site will be updated and fuel spills will be noted.

## **DEBRIS MANAGEMENT ACTIONS**

The Debris Management Plan is separated into four stages:

### **1. Normal Operations**

Develop local and regional resource list of contractors who can assist local governments in all phases of debris management.

Develop sample contracts with generic scopes of work to expedite the implementation of their debris management strategies.

Develop mutual aid agreements with other State agencies and local governments, as appropriate, following guidelines established in agency procurement manual.

Identify and pre-designate potential debris storage sites for the type and quantity of debris anticipated following a catastrophic event.

Pre identify local and regional critical routes in cooperation with contiguous and regional jurisdictions.

Develop site selection criteria checklists to assist in identifying potential debris storage sites.

Identify and coordinate with appropriate regulatory agencies regarding potential regulatory issues and emergency response needs.

Develop the necessary right of entry and hold harmless agreements indemnifying all levels of government against any potential claims.

Establish debris assessment process to define scope of problem.

Develop and coordinate pre-scripted announcements with the Public Information Office (PIO) regarding debris removal process, collection times, temporary storage sites use of private contractors, environmental and health issues, etc.

## **2. Increased Readiness**

*( A natural or man-made disaster is threatening the local area)*

Review and update plans, standard operating procedures, generic contracts, and checklists relating to debris removal, storage, reduction, and disposal process.

Alert local departments that have debris removal responsibilities ensuring that personnel, facilities, and equipment are ready and available for emergency use.

Relocate personnel and resources out of harm's way and stage in areas where they can be effectively mobilized.

Review potential local, regional, and debris staging and reduction sites that may be used in the response and recovery phases in the context of the impending threat.

Review resource listing of private contractors who may assist in debris removal process. Make necessary arrangements to ensure their availability in the event of the disaster.

## **3. Response**

Activate debris management plan, coordinate with needs assessment team.

Begin documenting costs.

Coordinate and track resources (public and private).

Establish priorities regarding allocation and use of available resources.

Identify and establish debris temporary storage and disposal sites (local, regional).

Address any legal, environmental, and health issues relating to the debris removal process.

Continue to keep public informed through the PIO.

## **4. Recovery**

Continue to collect, store, reduce, and dispose of debris generated from the event in a Cost-effective and environmentally responsible manner.

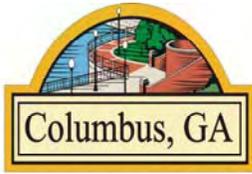
Continue to document costs.

Upon completion of debris removal mission, close out debris storage and reduction sites by developing and implementing the necessary site restoration actions.

Perform necessary audits of operation and submit claim for Federal assistance.

## APPENDIX “C”

### ASSURANCE OF CAPACITY 10 YEAR LETTER



**Columbus, Georgia**  
**Georgia's First Consolidated Government**  
P. O. Box 1340 / Columbus, Georgia 31902-1340

CONSOLIDATED GOVERNMENT  
*What Progress Has Preserved.*

**Department of Public Services**  
**Office of the Deputy Director**

**Phone 706-653-4160**  
**Fax 706-653-4576**

Department of Natural Resources  
Environmental Protection Division  
Solid Waste Management Program  
4244 International Parkway, Suite 104  
Atlanta, GA 30354

RE: Landfill Capacity – Pine Grove MSW  
Permit Number 106-016D

To Whom It May Concern:

This letter serves as a disposal capacity assurance for waste generated by The Columbus Consolidated Government, Columbus, Muscogee County, Georgia. The current capacity of the landfill is estimated to provide disposal space until the year 2034.

Remaining MSW Volume – 6,447,024 cy  
Tons Received Daily - 303.78 tons/ day  
Tons Received Annually - 75,945 tons/ yr  
Compaction Density - 826 lbs/ cy  
Volume Used Annually - 183,888 cy/yr  
Estimated Date of Closure - September 2034

We have the capacity to receive 107,890 tons in year 2018 (reference Table 2-3(A), Waste Disposal Projections).

Therefore the remaining capacity is estimated to be a minimum of 25 years. The assessment of remaining capacity is done annually by Jordan, Jones and Goulding Engineers for the Columbus Consolidated Government. These quoted figures are from July of 2008. An update analysis will be submitted to EPD in July of 2009.

If you have any questions please call me.

Sincerely,

*Ronald E Smith*

Ronald E. Smith, Deputy Director of Public Services

## APPENDIX “D”

### PROGRESS FROM PREVIOUS SHORT TERM GOALS

**Short Term Work Plan  
Report of Accomplishments 2004-2009  
Columbus, Muscogee County, Georgia**

Project of Activity from Previous Short Term Work Plan	Status of Project or Activity			
	Completed	Currently Underway or On-Going	Postponed	Not Accomplished
<b>Solid Waste Reduction</b>				
Encourage the reuse and recycling by our citizens		X		
Encourage reuse and recycling in City Government		X		
Encourage reuse and recycling in the Commercial / Industrial sector			X	
Encourage reuse and recycling in the institutional sector		X		
Continue efforts to expand recycling by adding more materials to the list of recycled		X		
<b>Solid Waste Collection</b>				
Continue to provide an effective solid waste collection service for household waste, recyclables, yard waste and bulk waste		X		
<b>Solid Waste Disposal</b>				
Operate Pine Grove Landfill in compliance with all State and Federal operating standards		X		
Provide post closure care for the Schatulga Road Landfill in full compliance with all State and Federal standards		X		
Operate Ox bow Meadows and Granite Bluff Inert Disposal facilities in accordance with all State and Federal standards		X		
Continue to provide an effective solid waste disposal service		X		
<b>Public Education</b>				
Continue to partner with KCBC to promote educational programs in schools and community groups as well as sponsor community initiatives that educate the public about waste disposal, littering, and the environment		X		

<b>Implementation Strategy</b>				
Continue reduction through recycling and education		X		
Report annually to the citizens the full cost of producing solid waste management services.		X		

C.M. 01-11-2011 (3)

A RESOLUTION

34-11

NO. 34-11

A RESOLUTION AUTHORIZING THE ADOPTION OF THE DOCUMENT TITLES "SOLID WASTE MANAGEMENT PLAN FOR THE COLUMBUS MUSCOGEE COUNTY, GEORGIA, 2008-2018" AS APPROVED BY THE LOWER CHATTAHOOCHEE REGIONAL DEVELOPMENT CENTER AND THE DEPARTMENT OF COMMUNITY AFFAIRS FOR THE STATE OF GEORGIA.

WHEREAS, the Georgia Comprehensive Solid Waste Management Act requires county and municipal governments to prepare a local solid waste management plan and periodic update; and,

WHEREAS, Columbus, Muscogee County, Georgia has compiled, reviewed and modified an update to the Solid Waste Management Plan for the Columbus Consolidated Government including Columbus and Muscogee County; and,

WHEREAS, Columbus, Muscogee County, Georgia has complied with the Rules of the Georgia Department of Community Affairs Minimum Planning Standards and Procedures for Solid Waste Management (chapter 110-4-3) including public participation requirements.

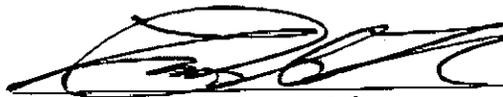
NOW, THEREFORE, THE COUNCIL OF COLUMBUS, GEORGIA, HEREBY RESOLVES AS FOLLOWS:

The document entitled "Solid Waste Management Plan for Columbus, Muscogee County, Georgia, 2008 - 2018" be officially approved and adopted.

Introduced at a regular meeting of the Council of Columbus, Georgia, held the 14th day of January, 2011 and adopted at said meeting by the affirmative vote of nine members of said Council.

- Councilor Allen voting YES
- Councilor Baker voting YES
- Councilor Barnes voting YES
- Councilor Davis voting YES
- Councilor Henderson voting YES
- Councilor Huff voting YES
- Councilor McDaniel voting ABSENT
- Councilor Thomas voting YES
- Councilor Turner Pugh voting YES
- Councilor Woodson voting YES

  
SANDRA T. DAVIS, DEPUTY CLERK

  
Teresa Pike Tomlinson, Mayor