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CITY OF KENNESAW

SOLID WASTE MANAGEMENT REPORT 2007

ADOPTED JUNE 18, 2007

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PLANNING PROCESS AND PURPOSE

This Solid Waste Management Plan has been completed pursuant to the Official Code of Georgia, Annotated, Section 12-8-20 et seq., also known as the Georgia Comprehensive Solid Waste Management Act. The Plan has been prepared according to the Minimum Planning Standards and Procedures promulgated by the Georgia Department of Community Affairs, which are intended to provide a framework to facilitate and encourage integrated, comprehensive solid waste management planning at the local, multi-jurisdictional, and regional levels.

The Plan is organized according to five core-planning elements: waste reduction, collection, disposal, land limitation, and education and public involvement. These core elements are preceded by an introductory waste stream analysis and followed by an implementation schedule. Each element of the Plan provides an inventory and assessment of the current status of solid waste management practices in the planning area, derives needs and goals from that assessment, and determines how an effective and comprehensive solid waste management program will be implemented within the jurisdiction.

The Solid Waste Management Act requires that this plan;

- Provide for the assurance of adequate solid waste collection capability and disposal capacity within the planning area for at least ten years from the date of plan completion.
- Promote a program to reduce by 25 percent the per capita rate of municipal solid waste disposed of statewide in solid waste facilities. (FY 1992 is to be considered the base year.)
- Identify solid waste handling facilities within the plan's area as to size and type.
- Identify land areas in the planning area unsuitable for solid waste handling facilities based on environmental and land use factors.

This plan is submitted to the Department of Community Affairs to fulfill these requirements as well as to provide the citizens of the planning area a guide for future solid waste management.

NOTE: The City is aware that SB 122 repealed the State's 25% Municipal Solid Waste (MSW) reduction goal. That reduction goal remains a part of this plan as a local solid waste management and planning goal.

SECTION 1 INTRODUCTION

The City of Kennesaw, incorporated in 1887, is located in northwest Cobb County. The City is approximately 25 miles northwest of downtown Atlanta. Since its charter the City has experienced continuous expansion and today encompasses approximately 8.4 square miles.

Interstate 75, Highway 293 and U.S. Highway 41 serve the City and provide access for both personal and commercial traffic. Railway systems in the area include freight service provided by CSX Transportation, Inc. from Atlanta to Chattanooga, Tennessee. Hartsfield-Jackson International Airport is located approximately 35 miles southeast of Kennesaw.

Climatic conditions prevailing in the Kennesaw area include an annual average temperature of 59.5 degrees, an average winter temperature of 47.9 degrees, and an average summer temperature of 71.0 degrees. The average annual rainfall is 53.5 inches. Approximately fifty percent of the yearly precipitation occurs between March and August. Humidity is high and averages around 60 percent.

Kennesaw's economy is influenced by that of Cobb County and the City of Atlanta. The Atlanta regional economy is heavily represented by the service sector followed by the retail sector and the finance insurance real estate sector. Other employment includes commercial manufacturing, construction, and educational/social services.

Kennesaw is governed by a Mayor and City Council form of government with a full-time City Manager. Other key administrative positions include the Chief of Police, Director of Cultural Affairs and Director of Public Works. Georgia Power and Cobb Electric Membership Co-Op provide electrical power to both residential and commercial customers in the city. Water and wastewater systems are owned and operated by Cobb Water System providing service to all customers located within the corporate limits of the City. Solid waste collection, recycling and disposal in Kennesaw are provided by the City's Public Works Department. Natural gas service, and local telephone are provided by various services.

There are approximately 41 acres of neighborhood parks located within the city limits of Kennesaw.

Kennesaw's population as reported by the 2000 Census was 21,675. Kennesaw's population figures are presented in Table 1.3. Between 1970 and 1980, Kennesaw experienced a 143 percent increase in population; between 1980 and 1990, Kennesaw experienced a 175 percent increase in population; and between 1990 and 2000, Kennesaw experienced a 242 per cent increase in population. Between 2000 and December 2006, the population increased by an estimated 126 per cent to an estimated population of 27,433.

Based on U.S. Census data, Table 1.4 presents housing/household characteristics for 2000 and earlier decades. Also shown in Table 1.4 are estimates of housing/household characteristics for 2000 as provided by the 2000 census. The total number of housing units available in Kennesaw has increase significantly over the 33- year period of 1970 through 2003. According to the 2000 Census the predominant housing type in Kennesaw was single family, totaling 7,077 or 81% of the total.

TABLE 1.1
Population
City of Kennesaw

Census Year	Population	Per Cent Change
1960	1,507	-
1970	3,548	+135
1980	5,095	+ 44
1990	8,936	+ 75
2000	21,675	+143

TABLE 1.2
Housing/Household Characteristics
City of Kennesaw

Census Year	Total Housing Units	Single Family Units	Persons / Household
1970	884	N/A	N/A
1980	1,719	1,331	N/A
1990	3,558	2,450	N/A

2000
Source: 2000 Census

8,782

6,254

2.64

Kennesaw's future growth is related to the growth of the greater Atlanta metropolitan area and specifically the growth of Cobb County. Previous population projections including those in the City's approved Comprehensive Plan were based on a growth rate of approximately 22% until 2005 and a declining percent increase from 2005 to 2025. Population data and projections are presented in Table 1.5.

TABLE 1.3
Population Projections
City of Kennesaw

Year	Population	Straight Line Annual Per Cent Change
2000	21,675	-
2005	26,540	+ 22
2010	31,405	+ 18
2015	36,270	+ 16
2020	41,135	+ 13
2025	46,000	+ 11

Source: City of Kennesaw Comprehensive Plan.

SECTION 2

WASTE STREAM ANALYSIS

Inventory of Waste Stream Generators

The primary contributors to the overall waste stream in the City of Kennesaw are residential, yard trimmings and residential recyclables. FY2006 quantity collection data by source is reflected in Table 2.1.

TABLE 2.1
Quantity of Municipal Solid Waste and Recyclables Collected
For Fiscal Year 2005-2006
City of Kennesaw

Collection Agency	Waste Handled	Quantity of Solid Waste Collected
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Kennesaw Public Works Department	Residential Waste	Tons/Year 9,883.5
	Residential Recyclables	810.3
	Yard Trimmings	1,405.6
	Metal Recyclables	140.1
Total Tonnage		12,239.5
Source: Public Works Department Records		

There is no local level data as to the composition of the City's waste stream due to residential waste and residential recyclables each being co-mingled. Data from the RW Beck Waste Characterization Study completed in 2004 complied and published at the direction of the Georgia Department of Community Affairs (GA DCA) is utilized for purposes of this document. That infatuation is depicted in Table 2.2. As noted, the composition of the waste stream includes paper, plastic, glass, metal organic, C&D and inorganic materials.

TABLE 2.2
Composition of Solid Waste
City of Kennesaw 2006

Waste Type	Percent of Total MSW
Paper	38.7
Plastic	15.8
Glass	3.7
Metal	5.4
Organic	27.1
C&D	6.0
Inorganic	3.3

Source: R w Beck Waste Characterization Study 2004

Summary population data from the City of Kennesaw's Master Plan is presented in the introduction to this document. A more detailed population estimate which extends thorough (and beyond) the planning period for this document is reflected in Table 2.3.

TABLE 2.3
City of Kennesaw
Solid Waste Management Plan
Population Projections for Ten Year Planning Period 2007-2017

Year	Population
2007	28,486
2008	29,459
2009	30,432
2010	31,405
2011	32,378
2012	33,351
2013	34,324
2014	35,297
2015	36,270
2016	37,243
2017	38,216

Source: City of Kennesaw Comprehensive Plan

Using the information gathered in the inventory phase, anticipated waste amounts without reductions for the planning period have been extrapolated for the period 17Y2005-2006 through 2017 which encompasses the entire planning period. Table 2.4 rejects the projected annual waste stream tonnage generated, disposed of, recycled and per capita pounds per day per person. The population data is from the previously cited population rejections (Table 2.3). The actual tonnage amounts are calculated on an incremental increase in volume basis consistent with the rate of annual population growth.

TABLE 2.4
Annual Projections Without Reductions
Municipal Solid Waste FY2004-2005 Through 2017
City of Kennesaw

Year	Population	Tons Disposed	Tons Recycled	Total Generated	lbs./Person/Day Generated
2004	25,567	10,784.8	868.8	11,653.6	2.50
2005	26,540	10,648.8	922.3	11,571.1	2.39
2006	27,513	11,289.1	950.4	12,239.5	2.44
2007	28,486	11,983.0	1,039.7	12,996.7	2.50
2008	29,459	11,854.7	1,317.2	13,171.9	2.45
2009	30,432	12,218.4	1,666.2	13,884.6	2.50

2010	31,405	12,076.1	1,965.9	14,042.0	2.45
2011	32,378	12,408.9	2,363.6	14,772.5	2.50
2012	33,351	12,227.9	2,684.2	14,912.1	2.45
2013	34,324	12,528.2	3,132.1	15,660.3	2.50
2014	35,297	12,010.1	3,472.1	15,782.2	2.45
2015	35,270	12,229.8	3,862.1	16,091.9	2.50
2016	37,243	12,489.2	4,163.1	16,652.3	2.45
2017	38,216	13,077.1	4,359.0	17,436.1	2.50

To calculate the pounds per person per day the, annual total tons generated was divided by 365 to determine the total tons per day. Next, the total tons per day were multiplied by 2000 (2000 lbs. equals one ton to determine the pounds per day). That total was then divided by the projected population to determine the pounds per person per day of waste generated. This calculation was performed for each year FY2003-2004 through 2017 in Table 2.4.

Annual projections through the planning period for waste generated by composition without reductions are reflected in Table 2.5. This data was calculated by applying the pro rata percentage off each composition type from Table 2. 1 to the projected waste stream generated (exclusive of recyclables) contained in Table 2.4 on an annual basis.

TABLE 2.5
Annual Projections Without Reductions
Municipal Waste Composition By Type FY 2004 -2005 Through 2017
City of Kennesaw

Year	Paper	Plastic	Glass	Metal	Organic	C&D	Inorganic
2005	4,478.0	1,828.2	428.1	624.8	3,135.8	694.3	381.8
2006	4,736.7	1,933.8	452.9	660.9	3,316.9	734.4	403.9
2007	5,029.7	2,053.5	480.9	701.8	3,522.1	779.8	428.9
2008	5,097.5	2,555.2	487.4	711.3	3,555.0	790.3	434.7
2009	5,373.3	2,193.8	513.7	749.8	3,762.7	833.1	458.2
2010	5,434.3	2,218.6	519.6	758.3	3,805.4	842.5	463.4
2011	5,717.0	2,334.1	546.6	797.7	4,003.3	886.4	487.5
2012	5,771.0	2,356.1	551.7	805.3	4,041.2	894.7	492.1
2013	6,060.5	2,474.3	579.4	845.7	4,243.9	939.6	516.8
2014	6,107.7	2,493.6	583.9	852.2	4,277.0	946.9	520.8
2015	6,227.6	2,754.9	645.1	941.5	4,360.9	965.5	531.0

2016	6,444.4	2,631.1	616.1	899.2	4,512.8	999.1	549.5
2017	6,747.8	2,754.9	645.1	941.5	4,725.2	1,046.2	575.4

TABLE 2.6
Waste Reduction Calculations
City of Kennesaw

2007 Base Year

Population	28,486
Waste Landfilled	11,983.0 TPY
Material Recycled	1,039.7 TPY
Per Capita Disposal Rate	2.50 PPD
Per Capita Recycling Rate	.20 PPD

2007 Per Capital Waste Reduction Goal For Kennesaw:

A. $2.50 \text{ PPD} \times 0.25 = .63 \text{ PPD}$ (25% of Base Year Disposal Rate)

B. $.63 \text{ PPD} - 0.20 \text{ PPD} = .43 \text{ PPD}$ (25% Red. - Recycling Rate)

C. $2.50 \text{ PPD} - .43 \text{ PPD} = 2.07 \text{ PPD}$ (Adj. Disposal Rate for 2016)

PPD = Pounds Per Person Per Day

TPY = Tons Per Year

TABLE 2.7
Illustrative Graduated Changes In Disposal And Recycling Rates
To Meet The 25 Percent Reduction Goal
With 2007 As The Base Year And 2017 As The Target Year
City of Kennesaw

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Disposal											
Rate PPD	2.50	2.45	2.50	2.45	2.50	2.45	2.50	2.45	2.50	2.45	2.50
Recycle											
Rate PPD	.20	.25	.30	.34	.40	.44	.50	.54	.60	.61	.62

SECTION 3 WASTE REDUCTION ELEMENT

Inventory Assessment

The City of Kennesaw has maintained in place since June 1995 a residential recycling program. Through 2004 this service was operated by an outside contractor. Due to declining recycle numbers, the city made a decision to terminate the contract and bring that service in house. The program is currently operated by the City's Public Works Department. The department services approximately 9,600 residential accounts with once weekly curbside pick-up utilizing recycling bins. Approved receivables include paper, plastic and aluminum/tin products, etc. The cost of the service is included in each resident's monthly sanitation fee (\$22.00). In FY2005-2006 810.3 tons of recyclables were collected at curbside under this program.

In addition, the Public Works Department operates a twenty and a thirty yard collection bin for citizen drop-off of metal recyclables located in the Public Works yard. The department also does a once per week curbside pickup of metal recyclables; white goods, scrap metal, etc. Disposal is handled through a contracted metal recycling company. The metal recycling contractor handles proper refrigerant collection/disposal as a part of the contract. During the most recent fiscal year this location collected 140.1 tons of metal recyclables.

During the FY2005-2006 year the documented recyclables collected equated 950.4 tons representing approximately 7.8% of the City's total residential collections.

The City began its recycling program in June, 1995 through a contract with BFI who was responsible for promotion and pickup. During the year ending September 2001, recycling accounted for 18.8% of total solid waste picked up in the City. From that high point, BFI's service level began to decline. Our year ending September, 2002, the percentage of recyclables compared to total solid waste picked up had declined to 9.2%; 2003 to 7.4% and 2004 to 7.5%. In July 2004, we terminated our contract with BFI, converted a truck for recycle pickup and began our in-house program. During 2005 our recyclables were 8.0%; in 2006 they were 7.8%.

Even though our in-house program has not yielded the full results we would

desire, we have experienced some positive increase in tonnage. One factor that has held our program back is the unsatisfactory service experienced by citizens under the former program. Another factor in comparing tonnage numbers is the significant decrease in the use of glass containers over the past 3-4 years. While we feel we have made inroads in growing our recycle program, the tonnage numbers do not totally reflect this due to the decline in the weight of glass recycled.

While documentation is limited or lacking there is potential that significant recycling efforts may also be taking place among commercial, institutional and industrial operations within the City who contract directly with a private collection provider for service.

Source Reduction. The City of Kennesaw does not have a formal waste reduction program or reuse programs. It is likely that local commercial/institutional/industrial operations have source reductions programs in place. However, documentation is not readily available to confirm the presence and scope of same.

Yard Trimming Mulching/composting. The City of Kennesaw's Public Works Department operates a yard trimming collection program. Yard trimmings meeting all local and state limitations are bagged in biodegradable bags and picked up curbside once per week. The department also operates a chipper truck for limbs, shrubs, etc. placed a curbside. Approximately one fourth of the city is covered each week on a rotational basis. Trimming collection and chipping are included in the monthly garbage fee. All yard trimmings are currently carried to the transfer station; then are landfilled. Chipped mulch is tracked as a part of the total recycled materials and is provided free to citizens. This program requires that yard trimmings not be placed in or mixed with municipal waste and that yard trimmings be sorted and stored for collection in such a manner as to facilitate collection. Our source to accept trimmings raised acceptance cost to a point where the transfer station was a more attractive option. We are currently searching for another acceptance location.

While the City has no composting program there are numerous individual household composting activities by private citizens within the City but these are not reported and/or registered/permitted by the City so no documentation as to volumes are available. Local utility companies, tree surgeons and landscapers grind limbs, stumps and trees but this volume is not reported to

the City for documentation.

Special Management Items. The City does not provide a formal program for special management items. The Public Works Department does maintain a resource list of qualified firms which handle special management items and will refer citizens upon inquiry regarding the same.

Assessment of Waste Reduction Program and Facilities. The City of Kennesaw operates a valuable waste reduction program for recycling and keeps excellent collection and disposal records. However, gathering data from private commercial/industrial collection companies and programs carried out by private businesses/persons/households has proved very difficult to identify and document. Consequently, it is difficult to ensure accurate data beyond those sources the City controls directly or by contractual agreement.

The absence or unreliability of this "outlier" information notwithstanding, based on substantiated data there has been considerable progress achieved by the current programs even though they have not met the 25% per capita PPD reduction goal. However, it is important to note that the city has assisted in reducing the per capita PPD amount by recycling 7.8% of the City's residential waste stream (during 2005-2006).

Needs and Goals

The assessment demonstrates there is a need to continue and enhance the ongoing successful City recycling programs and make modifications as necessary to support reuse efforts. These enhancements should play a key role for ensuring progress toward the 25% state goal for per capita PPD reduction in landfilled waste. To meet this need the City's goal must be to continue its existing recycling efforts and target yard trimmings as a priority method to further reduce per capita solid waste disposal. The City will seek out a mulching program using a contracted program or participation in a joint regional program. One alternative is to have a mulching operator grind properly stored trimmings on a schedule basis (monthly, quarterly, etc.). The limiting factor currently is the lack of a viable City owned property to set up such an operation. This mulch will be offered to City residents and/or other specified groups for reuse.

The assessment demonstrates a need to encourage and support community-based recycling, reuse and reduction programs. To meet this need the City's goal must be prepared to actively support schools, churches, civic groups and businesses as both catalyst and participants in recycling, reuse and reduction efforts.

SECTION 4 COLLECTION ELEMENT

Inventory and Assessment

The City of Kennesaw currently bills each residential unit a monthly fee of \$22.00 for its garbage and recyclable collection program. Small businesses are billed at the rate of \$30.00 per month. There are no other fee categories. We have recently added an option whereby citizens can pay for eleven months and get the twelfth month free, or pay for twenty two months and get two months free service. Participation in this program has been good and while not a breakeven situation, the citizen is happy and the City's administrative cost are somewhat decreased.

For a single monthly fee, residential and small business collection is provided two (2) times per week (either a Monday/Thursday or Tuesday/Friday based on assigned routes), recyclables collection one (1) time per week (an assigned route is picked up each week day), yard trimmings collected one (1) time per week (Wednesdays), and metal recyclables collection one (1) time per week (Thursday and Friday routes). Residential and small business garbage collection is accomplished by means of dumping city owned 95 gallon garbage containers placed at curbside on designated collection days. Residential and small business recyclables are accomplished by dumping city supplied recycle containers placed at curbside on designated collection days. Yard trimmings and scrap metal are collected by pickup of bags or items placed at curbside on designated collection days. In the most recent completed fiscal year 12,239.6 tons of residential and small business garbage, recyclables, yard trimmings and scrap metal were collected in the City.

All residential MSW collected in the City is transported to the Marble Mill transfer station located in the adjoining City of Marietta. This facility transports the collected MSW to either the Richmond Creek Landfill located in Gwinnett or the Gordon County Landfill by contract haulers.

Additional commercial and industrial MSW collection is available directly by agreement between private collection providers and the respective local user. There is no city-wide contract for these services. Collection methods typically include 2, 4, 6 and 8 yd front-loading "green box" containers and various sized roll off containers. We do not license or otherwise identify or track activities of the commercial haulers nor do we have records of where they dispose of MSW collected.

The City recycle provides curbside pickup of recyclable items. Recyclable materials are co-mingled. All recyclables are delivered to SP Recycling Corporation in the adjoining City of Marietta where they are accepted without charge to the City.

The City provides yard trimmings collection program. Operated by the City's Public Works Department residential yard trimmings meeting local and state limitations are picked up at curbside on Wednesdays of each week. Trimmings should be bagged in biodegradable bags. The City has in place the necessary equipment and manpower to provide this service. During the most recent year, yard trimmings amounted to a total of 1,245.1 tons. The monthly fee for garbage service also includes this service. All trimmings collected are currently disposed of by carrying them to the transfer station. We are seeking an alternative solution to this situation.

The City provides curb side pickup of metal and white goods; included in the one fee. These items are placed in either a 30 or 40 yard container located in the Public Works yard. Citizens may also drop off metal items during normal work hours. Our contract with the recycler requires them to furnish the containers; pickup, dump, and return the containers. Any units with refrigerant are separated; the contractor uses an EPD approved process to reclaim the refrigerant. We are charged a flat rate per refrigerant unit for this service, a flat fee for each container dumped and are paid market rates for metals recovered. Our contract normally produces a small profit after pickup/drop off and refrigerant recovery fees are netted against the market price of metal. During 2006, this profit amounted to \$11,237.00.

The collection programs described herein are collectively adequate to serve the City of Kennesaw. The residential MSW collection system provided by the City ensures the broad spectrum of residences will have safe, reliable and reasonably priced collection services. The system of open market

competition for commercial/industrial MSW collection services, where service demands may be more specialized and customers more familiar with service products, seems appropriately suited to that particular market. Similarly, all residences have access to a City operated curbside recycling program which provides perhaps the most convenient and effective recycling option available while commercial/industrial users with greater volumes and more specialized recyclable products can negotiate for service on the open market.

Overall, appropriate and adequate service is consistently available to the entire population of the City. There are no topographic or similar conditions which adversely effect or limit normal service provisions.

Illegal dumping is an occasional problem in the City of Kennesaw. The City uses two full-time Codes Enforcement Officers as well as Police and Public Works personnel to closely monitor. On the occasions when a significant incident is identified the City takes immediate steps to compel and/or accomplish clean up and compliance.

Current collection programs adequately meet the needs of the City of Kennesaw. The City has no plans to alter current collection methods. Actual costs for the Sanitation Fund in the previous two (2) fiscal years and the current year (FY2007) budget for the Fund are shown in Table 4.3 below:

TABLE 4.1
Sanitation Fund FY2006 - FY2007
City of Kennesaw

<u>YEAR</u>	<u>COLLECTION COST</u>
2005 Actual	\$1,615,132.00
2006 Actual	1,755,941.00
2007 Budget	2,102,857.00

Needs and Goals

Fiscally responsible, efficient, effective and responsive residential collection of MSW and recyclables are critical public services. It is the City's goal to continue current practices for garbage and recyclables collection.

Accurate record keeping is essential to solid waste management and planning. The City of Kennesaw keeps excellent records for both waste disposed and receivables. However, gathering data from private commercial/industrial collection companies that are not contracted with the City is very difficult to impossible. Many of the companies complain that the information is burdensome and difficult to provide because their routes do not stop at jurisdictional boundaries and that the data they would provide would be an estimate at best.

The City has utilized with significant success the services of two full-time Codes Enforcement Officers, the Police Department and Public Works to address illegal dumping, littering, and proper solid waste disposal among other environmental compliance issues. There are no current plans to add a third code enforcement officer.

Contingency Collection Strategy

Should the current primary method for collecting solid waste in the City of Kennesaw be interrupted or become unavailable the City has a two-tiered alternative collection strategy.

There are a number of private solid waste collection providers in the metropolitan Atlanta area capable of assuming solid waste collection duties within the City of Kennesaw. The City maintains an amicable business relationship with these providers and the first alternative collection strategy would be to retain one of these firms to provide the service on an interim basis. The City would invoke emergency procurement authorization to facilitate the commencement of immediate negotiations with available firms to provide collection services on a temporary basis. It is anticipated that these services could be procured and authorized within a week with collection services beginning within that same time period subject to mobilization requirements. It is likely during this interim service period that curbside collections would be reduced to one (1) day per week and curbside recycling temporarily suspended.

During this interim service period the City would expeditiously move to prepare and issue a Request For Proposals (RFP) to seek and evaluate submittals from qualified firms to provide solid waste collection service on a long-term contract basis. It is anticipated that this process could be completed within forty-five (45) to sixty (60) days.

The City uses roll out containers to collect residential solid waste. As a result semi-automatic dumping devices on collection equipment to lift and dump a roll out residential container are highly desirable but not required. No operating technical skills are required of collection personnel with the exception of the collection vehicle driver and operation of the semi-automatic dumping devices. As the second alternative collection strategy City personnel and temporary labor could provide collection services utilizing existing City equipment on a short-term basis. As with alternative one this service could be initiated within a week, collection would be temporarily reduced to once weekly and curbside recycling temporarily suspended.

As with the first alternative the City would proceed immediately with its procurement process to retain a qualified private sector firm to provide solid waste collection services on a long-term contract basis. It is anticipated this process could be completed within forty-five (45) to sixty (60) days.

Natural Disaster/Emergency Situation

The Cobb County Emergency Management Agency (Cobb EMA) was established as the agency responsible for the development and implementation of Emergency Management for the County and its member cities. The City of Kennesaw is a participant in that program as well as the county pre-hazardous mitigation plan. Cobb EMA has an approved Emergency Operation Plan (Cobb EOP). The plan establishes a framework for emergency planning and responses to: prevent emergency situations; reduce vulnerability during disasters; establish capabilities to protect residents from the effects of crisis; respond effectively and efficiently to actual emergencies; and provide for rapid recovery from any emergency or disaster that affects the local jurisdiction. The plan includes a Public Works and Engineering Emergency Support Function which includes plans for addressing the matter of debris collection and disposal. In the event of a disaster rising to the level of a Presidential Disaster Declaration the resources of the Federal Emergency Management Agency (FEMA) and the Georgia Emergency Management Agency I GEMAI would be available to the City to assist with the collection and disposal of waste under a program coordinated with the City by Cobb EMA.

For a disaster or emergency of lesser scope the City would involve its local emergency response plan for its internal use wherein on-call personnel

would be mobilized to operate removal equipment. Private contractors would also be retained under emergency procurement authorization as necessary. The top priority would be to clear emergency facilities and roadways.

Follow this priority activity the City would collect and dispose of vegetative debris such as branches, limbs, trees, leaves, etc. and residential waste at curbside. Dependent upon the volume a temporary chipping operation might be initiated at a central site for the vegetative debris. In extreme circumstances the Georgia Environmental Protection Division (GA EPD) might be contacted to request permission for incineration using on-site air-curtain incinerators. The City would be responsible to find and utilize permitted or otherwise authorized disposal sites for MSW and/or debris.

SECTION 5 DISPOSAL ELEMENT

Inventory and Assessment

According to the Georgia Department of Community Affairs (GA DCA) 2005 Solid Waste Management Update the State of Georgia has over 25 years of MWS landfill disposal capacity and more than 15 years of permitted C&D landfill disposal capacity remaining as of FY 2003.

According to the Georgia Environmental Protection Division (GA EPD) List of 2006 Landfill Remaining Capacity, Appendix 1, there are 15 permitted landfills (5 MSW and 10 C&D) in the ten (10) county ARC area. Table 5.1 below lists those facilities with accompanying details. These landfill facilities have estimated years remaining life ranging front 0 to 78 years and remaining capacity in cubic yards (CY) of 146,111,617.

TABLE 5.1
Permitted Landfills - Remaining Capacity
ARC Counties

ARC COUNTY	NAME	FACILITY TYPE	OWNER TYPE	REMAINING CAPACITY (cy)	YEARS REMAINING	ESTIMATED FILL DATE
CHEROKEE	CHEROKEE CONSTRUCTION & DEMOLITION LANDFILL	C&D	PRIVATE COMMERCIAL	2,935,877	21	6/1/2027
CHEROKEE	CHEROKEE CO.-PINE BLUFF LANDFILL Inc.	msw	PRIVATE COMMERCIAL	50,113,926	29	2/23/2035
CHEROKEE	CHEROKEE CO.-SWIMS-SR 92 PH5	C&D	PRIVATE COMMERCIAL	342,750	2	6/1/2008
DEKALB	APAC/GA-DONZI LN PH 5A(L)	C&D	PRIVATE COMMERCIAL	1,744,722	3	3/1/2009
DEKALB	BFI-EAST DEKALB LANDFILL	C&D	PRIVATE COMMERCIAL	393,090	1	5/1/2007
DEKALB	BFI-HICKORY RIDGE (MSWL)	MSW	PRIVATE COMMERCIAL	563,080	1	1/1/2007
DEKALB	DEKALB CO.-SEMINOLE RD. PH. 2 (SL)	C&D	PUBLIC	358,507	3	4/1/2009
DEKALB	DEKALB CO.-SEMINOLE RD PH 2A, 3&4 (SL)	MSW	PUBLIC	50,214,225	78	6/17/2084
DEKALB	ROGERS LAKE ROAD C&D LANDFILL	C&D	PRIVATE COMMERCIAL	1,291,988	2	8/14/2007
DOUGLAS	DOUGLAS CO-ROME WALKER MTN RD C/D LANDFILL	C&D	PUBLIC	265,577	16	9/20/2022
FULTON	CHADWICK RD LANDFILL, INC.	C&D	PRIVATE COMMERCIAL	3,114,870	8	5/23/2014
FULTON	CHAMBERS-BOLTON RD (SL)	MSW	PRIVATE COMMERCIAL	74,285	3	6/20/2009
FULTON	SAFEGUARD LANDFILL MANAGEMENT C&D	C&D	PRIVATE COMMERCIAL	1,160,418	2	12/28/2007
FULTON	WILLOW OAK C&D LANDFILL	C&D	PRIVATE COMMERCIAL	15,235,685	20	8/10/2026
GWINNETT	BFI-RICHLAND CREEK ROAD MSWL	MSW	PRIVATE COMMERCIAL	18,302,636	13	10/26/2018

Source: Georgia EPD List of 2006 Landfill Remaining Capacity

The City of Kennesaw currently hauls all MSW collected to the Marble Mill transfer station in the City of Marietta operated by Allied Waste/BFI. This facility transports the collected MSW to Redbone Ridges MSW Landfill in Gordon County.

The City of Kennesaw Public Works Department operates a residential yard trimmings collection/disposal program. All trimmings are currently disposed of through the Marble Mill Transfer station where they again are transported to the Redbone Ridges MSW Landfill. We are seeking an option for this disposal location.

Table 5.2 reflects the type, remaining life, ownership, types of wastes accepted in this disposal facility and other pertinent information used by the City.

TABLE 5.2
Landfills Receiving City of Kennesaw Solid Waste

MAME/LOCATION	TYPE	OWNERSHIP	REMAINING LIFE (YEARS)	REMAINING LIFE (CY)
GORDON COUNTY-REDBONE RIDGES ROAD (SL)	PUBLIC	GORDON COUNTY BOARD OF COMMISSIONERS	51	12,218,800

Source: Allied Waste/BFI TLANTA Hauling & Lanfill/Transfer Stations Report of Remaining Capacity

The City of Kennesaw does not have any thermal treatment technologies and none are anticipated during the planning period

Recycle material collected is disposed of by delivery to SP Recycling Corporation in Marietta, Georgia. They accept the material at no charge to the City. We anticipate this agreement to remain intact during the planning period.

The existing disposal facilities and services will be adequate for MSW disposal through the ten (10) year planning period.

Needs and Goals

Our most pressing need is to locate or establish a facility to handle our yard trimmings waste. The City has no viable location to set up such a facility at the present time and former arrangements we have operated under are no longer are available. Efforts and discussions are on going in search of an alternative to use of the transfer facility.

Contingency Disposal Strategy

Should the current disposal practices be interrupted or become unavailable the City has a two-tiered alternative disposal strategy.

There are a number of private solid waste haulers in the metropolitan Atlanta area capable of hauling the City's MSW and with access to one of several permitted MSW landfills in the same general area for disposal purposes. The City maintains an amicable business relationship with these firms and the first alternative disposal strategy would be to retain one of these files to provide the service on an interim basis.

During this interim service period the City would expeditiously move to get the City collection system back in full operation or prepare and issue a Request For Proposals (RFP) to seek and evaluate submittals from qualified firms to provide disposal services on a contract basis. It is anticipated that this process could be completed within forty-five (45) to sixty (60) days.

The City could use existing City equipment and a combination of existing City personnel and temporary labor to haul collected solid waste to one of the several permitted MSW landfills in the area on a short-term basis as a second alternative disposal strategy. As with the first alternative, this approach could be initiated within a week.

As with the first alternative the City would proceed immediately to restore City service or to proceed with its procurement process to retain qualified haulers and/or permitted MSW landfill for disposal on a contract basis.

SECTION 6

LAND LIMITATION ELEMENT

Inventory and Assessment

The purpose of this element is to provide an inventory and assessment of areas in the City of Kennesaw which are unsuitable for solid waste recycling, recovery, composting, or disposal facilities because of natural environmental limitations or land use criteria. Environmental limitations include such items as water supply watersheds, and wetlands. Land use criteria refers to heavily developed areas, zoning, historic resources, and airports.

The City of Kennesaw does not anticipate the locating of a solid waste disposal facility within its jurisdiction in the foreseeable future. It is the intent of Kennesaw to consider the delineated items of this element in determining the location of any solid waste management facility within the City of Kennesaw if necessary.

Maps included in this section identify areas which have a land use or natural environmental limitation. Solid waste handling facilities should be located in areas which are not restricted by existing and planned land uses and are

environmentally conducive to facilities. Map 6.1 provides an overall base map of the city limits, county lines, major roads and other features.

A review of the Specific Natural Environmental Limitations and those applicable to the City of Kennesaw follows:

Water Supply Watersheds: Delineated on Map 6.2. Article V of the City's Zoning Ordinance establishes a Water Supply Watershed District within the City of Kennesaw. The City Water Supply Watershed District comprises the entire City land mass which drains into Lake Allatoona, the City water supply reservoir. The District is further subdivided into the Proctor Creek, Butler Creek, and Noon Day Creek basins. The boundaries of these basins are defined by the ridgelines of the watershed and the boundary of a radius of seven (7) miles upstream of the Lake Allatoona as outlined on the referenced map.

EPD and the City establishes stream buffers; impervious surface setbacks; septic tank setbacks; impervious area percentage limitations; administrative/enforcement procedures; site plans; review procedures and other applicable provisions. A copy of this section is included in this document as Appendix E.

DNR Rule 391-3-16-.01(7)(c) requires that at any location within a small water supply watershed, new solid waste landfills have synthetic liners and leachate collection systems.

Flood Plains: Delineated on Map 6.3. DNR rule 391-3-4-.05 (1)(d) stipulates that any solid waste landfill located in the 100-year flood plain shall not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the flood plain, or result in a washout of solid waste so as to pose a threat to human health or the environment.

Wetlands: Delineated on Map 6.3. DNR Rule 391-3-16-.03(3)(e) establishes that solid waste landfills may constitute an unacceptable use of a wetland.

Groundwater Recharge Areas: The Georgia DNR has mapped all of the recharge areas in the state which are likely to have the greatest vulnerability to pollution. None of the identified groundwater recharge areas are located in the City Of Kennesaw.

Protected Mountains: No lands within the City of Kennesaw fall within

DNR'S definition of a "protected mountain".

River Corridors: The City of Kennesaw is not located in a protected river corridor.

A review of the Specific Land Use Criteria Limitations and those applicable to the City of Kennesaw follows:

Zoning: DNR Rule 391-3-4-.05(1)(a) requires that the site must conform to all local zoning/land use ordinances, and that written verification of such must be submitted to EPD.

Under the provisions of the City of Kennesaw's Zoning Ordinance landfills are permitted only in the H-1, heavy industrial district. Map 6.4, the Official Zoning Map of the City delineates existing H-1 districts in the City. In addition Article VIII, Section 881.4(20) of the Zoning Ordinance establishes specific criteria for information required by the Mayor and Council for consideration of zoning for a landfill. A copy of this section is included in this document under Appendix F.

Proximity to Adjoining County Boundaries: No new or existing solid waste disposal facility should be expanded into the area one-half mile from a county boundary unless the adjoining county approves. The border of Kennesaw is outside this one-half mile area.

Historic Resources: Map 6.6 delineates the historic districts within the City of Kennesaw.

Developed and Built-up Areas: Map 6.5 delineates the developed areas within the City of Kennesaw. These are primarily single family residential areas.

Airport Safety: The City of Kennesaw adjoins a county owned airport accommodating up to corporate size aircraft. Georgia EPD Rules for Solid Waste Management require that solid waste landfill not be located within 5,000 feet of any airport runway end used by only piston-type aircraft (Map 6. 7). Although there are a number of jet powered aircraft using this facility, a high percentage of use is by piston-type aircraft, thus we would maintain the same safety restriction.

To our knowledge, there are no fault areas, seismic impacts zones or otherwise unstable areas in the City not noted above.

The City of Kennesaw has several factors limiting the locations of solid waste handling/disposal facilities. Zoning restrictions reduce the effective useable area and restrictions based on airport, county line setbacks, watershed considerations, etc. reduce the area even further. It is anticipated the City will continue to contract for disposal outside the jurisdiction. Therefore, it is highly unlikely that a solid waste disposal facility will be developed within the City. However, certain sites may lend themselves to handling facilities such as recycling, composting, or material separation/recovery facilities.

Needs and Goals

The City of Kennesaw has a goal to ensure that proposed solid waste handling facilities are located in areas suitable for such developments, are compatible with surrounding uses, and are not considered for locations in areas which have been identified by the community or region as having environmental or other development or land use limitations.

Moving forward the City needs to create rules and procedures regarding solid waste disposal/handling facilities that will be reflective of it's newly updated Solid Waste Management Plan.

One item that should be included, as part of new rules and procedures is a formal application process that is specific to the Solid Waste Plan. In this application process the applicant seeking to use, own and/or operate a solid waste disposal/handling facility or any type of solid waste management facility should be required to submit an application specific to a type of facility, such as municipal solid waste/subtitle D, construction and demolition and/or inert. The City should also request necessary information related to the operation of the landfill. Such requested information could include the following: hours of operation, location and size of facility, capacity, materials accepted, disposal fees, private or public usage and number of employees,

SECTION 7

EDUCATION AND PUBLIC INVOLVEMENT ELEMENT

Inventers and Assessment

Perhaps the most frequent and best-received exchange of information in the City of Kennesaw regarding solid waste education takes place at City Hall and the Public Works Department or at the initiation of City staff through the distribution of informational/educational flyers. These informational/educational flyers on recycling and solid waste collection are provided to all persons opening a utility account with residential garbage pick-up/recycling service. These flyers are also displayed in prominent locations at City Hall and the Public Works Department office for ready access and availability to visitors and guests. One on one contact between City personnel and residents by telephone, fax, e-mail or in person serves as an invaluable and arguably the most effective local communication tool for information sharing on this topic. Additionally, the Code Enforcement Officers have been a growing resource in the area of litter control information.

To emphasize recycling and litter control, we do the following:

1. Publish articles and any schedule changes in the City's quarterly news letter distributed to all residents.
2. Hand out flyers at two major events held in the City each year.
3. Organize community litter pickup days. Prizes are solicited from local businesses for drawings by participants.
4. The Police Department conducts periodic litter pickup utilizing inmates.
5. Light duty Public Works Department employees are often assigned litter pickup duty.
6. During non-mowing season, street department staff are assigned litter pickup duty.

Residential recycling is established in Kennesaw by City Ordinance 74-40. During 2004 the City terminated its contracted recycling collection service and brought the program in-house operated by the Public Works Department. This was done due to declining tonnage collected by the contractor, limited efforts to encourage citizen participation and a cost savings to the City. The recycle material collected by Public Works Staff is carried to SP Recycling Corporation in Marietta, Georgia where it is

accepted at no charge to the City.

Two (2) Public Hearings were conducted for the Kennesaw Solid Waste Management Plan in accordance with the Minimum Planning Standards and Procedures for Solid Waste Management. Refer to Appendix C for a copy of the Public Hearing notices. Numerous opportunities to expand education programs and public involvement related to solid waste management exist in the community. In many cases needed materials are available free of charge. DCA and the U.S. Environmental Protection Agency (US EPA) have a variety of public education/public involvement materials. Examples of involvement pamphlets produced by EPA include: Waste Transfer Stations; A Manual for Decision-Making; Sites for Our Solid Waste; and a Guidebook for Effective Public Involvement.

Needs and Goals

While the City of Kennesaw has a generally adequate education and public involvement program, particularly for recycling activities, there are areas of need and opportunity as it relates to education/public involvement for resource recovery; reuse, reduction at source, composting and additional litter control.

The recycling and other existing, on-going education and public involvement activities should be continued and enhanced. We will seek to enhance Community involvement by involving local civic organizations, church groups and volunteers.

Residents will be made aware, educated and encouraged to take advantage of resource recover opportunities such as obtaining mulch derived from our chipper program being returned to useable organic matter. If we are able to establish a yard trimmings mulch program, the resulting material would also be usable organic matter.

Residents will be made aware that littering, the irresponsible scattering of waste throughout the City particularly along streets, roads and highways carries a high cost of clean-up, the negative impact of visual blight and the potential danger of adversely affecting natural resources such as waterways. The City aggressively enforces litter prohibitions of existing ordinances and makes enforcement a priority of the Code Enforcement Officers.

Education and public involvement in each of these areas can be achieved through a combination of visual aids, pamphlets, videos, newsletters, press releases, workshops, classroom sessions, email messages and website posting to suggest a representative list of potential communication and learning tools.

The City will consider developing a recognition and award program for the community to encourage waste reduction efforts perhaps co-sponsored by private contract providers, civic groups or other interested parties.

Through these and other allied efforts it is the City of Kennesaw's goal to help its community achieve an understanding and awareness of the social and environmental issues with solid waste management, especially in terms of resource recovery, reuse, reduction-at-source, litter control, recycling, composting, energy recovery and endeavor to increase support for effective solid waste management.

SECTION VIII

IMPLEMENTATION STRATEGY

Goals and Strategies

Waste Reduction Element

Goal 1: To assess a mulching and reuse alternative for yard trimmings currently collected and landfilled.

Strategies: 1 Explore effectiveness and costs of a City and/or contractor operated mulching operation for collected yard trimmings including possible participation in cooperative regional program Or periodically scheduled mobile grinding service (monthly, quarterly, etc.).

2. Explore the increased distribution of mulch to City residents and/or possible marketing of product.

Goal 2: To ensure at a minimum a 25% per capital PPD reduction of waste being received at disposal facilities by promotion of source reduction, reuse, composting, recycling and other applicable waste reduction programs.

Strategies: 1. Continue existing citywide curbside residential program.

2. Encourage and promote composting as a means of waste reduction. Encourage individual "backyard" household composting of organic waste such as leaves, yard trimmings and garden reuse. Various public agencies such as DCA, EPD and the UGA Extension Service and private consultants

provide information on this practice.

3. Identify and use incentives to encourage participation in recycling and waste reduction.
4. Encourage and support community-based recycling and waste reduction programs in schools, churches, businesses and civic clubs.
5. Participate in appropriate solid waste related workshops and seminars to educate public officials on developing technologies, methodologies and successful implementation regarding solid waste planning/management.

Collection Element

Goal 1: To continue residential collection and recycling utilizing. This has proven a fiscally responsible, efficient, effective and responsive public service. Continue to have private providers service commercial/industrial customers.

Strategies: 1. Periodically review service efficiency for possible improvements.

2. Periodically review user fees to assure City cost are covered and fees charged are in line with similar size communities and their fees.

Disposal Element

Goal 1: Continue to utilize City staff and equipment to transfer and dispose of solid waste collected within the City in appropriately permitted landfill facilities.

Strategies: 1. Continue to assess the capacity of all landfills utilized by City. As alternatives for handling yard trimmings.

2. Explore potential for grinding and subsequent reuse. Identify alternative C&D landfill facility with adequate disposal capacity for yard trimmings during the planning period.

Land Limitation Element

Goal 1: To create rules and procedures regarding solid waste disposal/handling facilities that will be reflective of the Updated Solid Waste Plan.

Strategies: 1. Develop a formal solid waste disposal/handling facility/solid waste management facility application process that is specific to the Solid Waste Management Plan.

Education and Public Involvement Element

Goal 1: To assist the citizens off Kennesaw in developing an awareness of the social and environmental issues, problems, concerns and opportunities associated with the broad scope of solid waste management including littering, waste reduction, recycling, composting, energy recovery, etc.

Strategies: 1. Continue and enhance current education and public information efforts on solid waste planning and management.

2. Support solid waste educational programs in the schools and the recycle as a family" concept.

3. Hold actual special events/activities regarding solid waste planning/management.

4. Designate a local community group or civic organization to play a lead role in education/public involvement efforts.

5. Continue utilizing local media, email, websites, to highlight the benefits if waste reduction locally.

6. Coordinate the distribution of informational material through various media regarding local recycling and waste reduction programs.

7. Develop an anti-littering program.

CITY OF KENNESAW SOLID WASTE 10-YEAR WORK PLAN PROGRAM 2007-2017

WASTE REDUCTION ELEMENT

PLAN ELEMENT & IMPLEMENTATION ACTIVITY	YEAR TO BE IMPLEMENTED												Responsible Party	Estimated Cost	Funding Source
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017				
Waste Reduction															
Continue In-House Recycle Program	X	X	X	X	X	X	X	X	X	X	X	X	City		User Fees
Evaluate Grinding Yard Trimmnings for Reuse as Mulch	X	X	X	X									City		User Fees
Utilize Incentives to Encourage Recycling			X	X	X	X	X	X	X				City & Community Groups	\$2,500 Per Year	City
Participate in Solid Waste Related Workshops	X	X	X	X	X	X	X	X	X	X	X	X	City Staff & Community	\$500	City

COLLECTION ELEMENT

Plan Element & Implementation Activity	Year to be Implemented												Responsible Party	Estimated Cost	Funding Source
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017				
Collection Element															
Continue Use of Public Works Depart Works Staff	X	X	X	X	X	X	X	X	X	X	X	X	City	\$2M+	User Fees
Periodic Review of Fees for Competitive Service in Surrounding Area	X	X	X	X	X	X	X	X	X	X	X	X	City		city

DISPOSAL ELEMENT

Plan Element & Implementation Activity	Year To Be Implemented												Responsible Party	Estimated Cost	Funding Source	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017					
Disposal Element																
Continue to Use City Staff and City Equipment for Collection	X	X	X	X	X	X	X	X	X	X	X	X	X	City	Included in Collection Cost	User Fees City
Access Capacity of Landfill Sites for Future Use	X	X	X	X	X	X	X	X	X	X	X	X	X	City		City
Identify Alternative C&D Landfill Facility			X	X	X	X	X	X	X	X	X	X	X	City		City

LAND LIMITATION ELEMENT

Plan Element & Implementation Activity	Year To Be Implemented											Responsible Party	Estimated Cost	Funding Source	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017				
Land Implementation Element															
Develop a Formal Solid Waste Disposal Handling Facility Application	X	X	X	X	X								City and Consultant	\$10,000	City
Implementation Application Process						X	X	X	X	X	X		City		City

EDUCATION AND PUBLIC INVOLVEMENT ELEMENT

PLAN ELEMENT & IMPLEMENTATION ACTIVITY													Responsible Party	Estimated Cost	Funding Source
YEAR TO BE IMPLEMENTED															
Education and Public Involvement	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017				
Continue existing education and public information efforts	X	X	X	X	X	X	X	X	X	X	X	City, EPD, DCA	\$1,000/Yr.	City	
Support enhanced and expanded recycling/waste reduction program	X	X	X	X	X	X	X	X	X	X	X	City and community groups	\$2,500/Yr.	City	
Develop an anti-littering program			X	X	X							City and community groups	\$1,000/Yr.	City	