

MCINTOSH COUNTY

SOLID WASTE MANAGEMENT PLAN 2022



**McIntosh
County**
GEORGIA

JUNE 2022

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Solid Waste Management Definitions

Banned Item - Item prohibited from disposal in municipal solid waste landfills such as used motor oil, discarded batteries and scrap tires, all of which must be disposed of separately as special wastes.

Construction and Demolition Waste (C & D) – Waste from building materials, construction, remodeling, repair, demolition and other non-putrescible waste.

Curbside Collection - The collection of any type of waste by schedule pick up at the curb or driveway of participating property owners.

Mulch - The product resulting from the reduction of selected organic wastes into a landscaping cover used primarily for protecting plants from moisture loss and freezing and for weed control.

Municipal Solid Waste (MSW) - Any solid waste derived from households, including garbage, trash, and solid waste from single family and multi-family residences, hotel and motels, bunkhouses, campgrounds, picnic grounds, and day use recreation areas. The term includes yard trimmings and commercial solid waste, but does not include recovered materials, or solid waste from mining, agricultural, or industrial processes or operations. C & D landfills are a subset of municipal solid waste landfills per Georgia EPD and the Georgia Attorney General's office by letter to EPD dated June 16, 2004.

Recyclables - A term used to describe item that can be extracted or separated from the waste stream and processed for delivery to end markets. Typical items include paper, cardboard, aluminum, plastic, glass, and various metals.

Refuse Derived Fuel (RDF) - A fuel produced from various types of waste such as municipal solid waste, industrial waste, commercial waste, and C & D waste.

Solid Waste - A term which describes all types of non-liquid and non-hazardous wastes to be disposed of including, but not limited to, those wastes defined as garbage, rubbish, trash, and refuse. Construction and demolition materials are solid wastes.

Solid Waste Handling Facility - Any facility, the primary purpose of which is the storage, collection, transportation, treatment, utilization, processing, or disposal, or any combination thereof, of solid waste. This includes municipal solid waste handling and disposal facilities, and C & D (construction and demolition) handling and disposal facilities.

Solid Waste Management Plan (SWMP) Service Area – The planning and service area for the SWMP is Unincorporated McIntosh County.

Thermal Conversion of Waste – A process utilizing endothermic or exothermic heat to reduce waste volume and to convert materials into higher value products such as energy, alternative fuels, solvents, or other products.

Transfer Station - A facility specifically designed to facilitate the transfer of solid waste from a local waste collection system to vehicles for hauling such waste over long distances to disposal facilities. Compaction of the waste at transfer is an option.

Acronyms

C&D Landfill - Construction and Demolition Landfill

DCA - Georgia Department of Community Affairs

DNR - Georgia Department of Natural Resources

EPD - Georgia Department of Natural Resources, Environmental Protection Division

MSWL - Municipal Solid Waste Landfill

RDC - Regional Development Center

SECTION 1 – INTRODUCTION

1.1 PURPOSE OF THE PLAN

The purpose of this plan is to meet the requirements of the Georgia Comprehensive Solid Waste Management Act of 1990, as it pertains to unincorporated areas within McIntosh County. The five basic goals of the Act are stated below:

1. To ensure that McIntosh County has an adequate solid waste management system to meet collection, handling and disposal needs for the next decade and beyond.
2. To identify the size and type of solid waste handling facilities within McIntosh County.
3. To identify land areas within McIntosh County which are unsuitable for solid waste handling facilities.
4. To plan and provide that waste reduction efforts for unincorporated McIntosh County regarding the amount of solid waste being recycled, reduced, reused and disposed, are compatible with State reduction goals.
5. To provide a complete assessment of solid waste assets, solid waste liabilities, solid waste needs and strategies for meeting those needs and requirements.

The Act also requires that each local or multi-jurisdictional solid waste management plan be prepared in accordance with the Department of Community Affairs's Minimum Planning Standards and Procedures for Solid Waste Management, which lists seven basic planning elements that must be addressed in all Solid Waste Management Plans. These elements are:

1. The amount of waste element
2. The collection element
3. The waste reduction element
4. The disposal element
5. The land limitation element
6. The public educational and involvement element
7. The implementation and financing element

Each of these planning elements will be fully addressed in this Comprehensive Solid Waste Management Plan. The Solid Waste Management Plan has 8 sections. Sections 1, 2, 3, 4, 5, 6, 7 and 8 address the required areas, which are, the plan's introduction, waste stream analysis, collection operations, waste reduction, disposal operations, land limitations, education and public involvement, and implementation and financing.

Possibly the most practical goal of a Solid Waste Management Plan is that by providing an assessment of solid waste assets and solid waste needs, the SWMP is a vital tool for County officials, staff and residents to use for evaluation of current systems, establish long range goals and plan possible implementation strategies to achieve those goals.

1.2 DEFINITION OF THE STUDY AREA

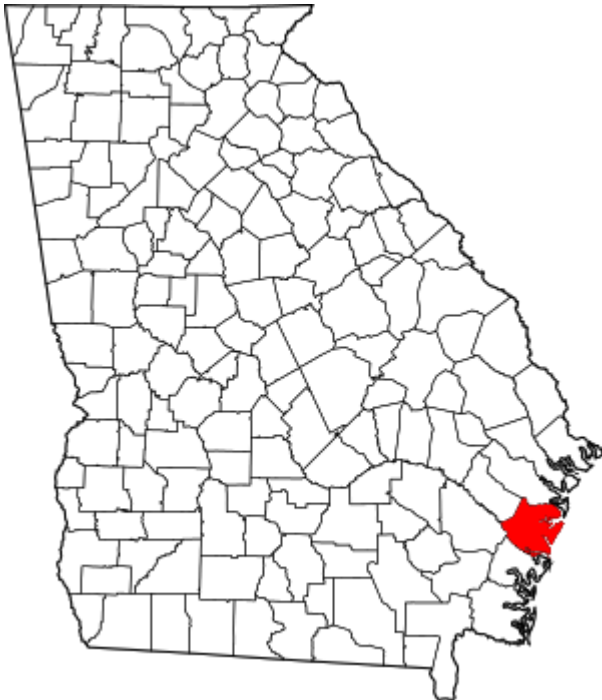
The primary focus of this plan will be all the areas within unincorporated McIntosh County which are served by the McIntosh County solid waste management operation. These areas include the communities of Townsend, Crescent, Eulonia, Jones, Valona, and the unincorporated portion of McIntosh County. The City of Darien which is the county seat, is included in the McIntosh County solid waste collection agreement; however, the City of Darien is not a part of the McIntosh County Solid Waste Management Plan and is therefore only briefly mentioned in this plan.

1.3 GENERAL DESCRIPTION OF THE STUDY AREA

McIntosh County is located in southeast Georgia in the Coastal Plain Region. It is bordered by Liberty County on the north, Long and Wayne Counties to the west, and Glynn County on the south. The County's southwest border is the Altamaha River and eastern border is the Atlantic Ocean. The County has an area of 574 square miles with the majority located in the Ogeechee Coastal Basin.

Interstate 95, which is the predominate eastern seaboard interstate highway from Maine to Miami, runs through the center of the County. The County is located between major cities of Savannah 60 miles to the north, Jacksonville 80 miles south, with the City of Brunswick being 15 miles south.

The land area is characterized by coastal marsh lands with many barrier islands, cultural settlements and historic sites such as Fort King George. The county has an average elevation of 75 to 80 feet above sea level.



McIntosh County, Georgia

1.4 POPULATION AND SERVICE AREA

According to 2020 U.S. Census data, the population of McIntosh County is 10,975, with 6,042 households and 4,065 families. Over three fourths of the total population reside in the unincorporated areas of McIntosh County, with Darien's population being 2,230. It is important to note that portions of the population of McIntosh County are seasonal residents which may not be counted accurately in statistical data, yet solid waste management programs must provide for seasonal increases in residents and waste streams.

Growth projections by the U.S. Census Bureau predict a shrinking population over the next three decades; however, it is incumbent upon McIntosh County to prepare for population curves to remain level or potentially increase. Failure to prepare for adequate solid waste management would be detrimental to present and future residents, business, and industry.

TABLE 1-1. POPULATION PROJECTIONS FOR MCINTOSH COUNTY

YEAR 2020	BY 2025	BY 2030	BY 2040	BY 2050
10,975	13,025	12,778	11,361	9,958

Source: U.S. Census Bureau and Georgia Governor's Office of Planning and Budget

1.5 IMPACT OF SOLID WASTE MANAGEMENT ACT OF 1990

The Solid Waste Management Act of 1990 was passed during the 1990 session of the Georgia General Assembly. The Act required that each city and county within the State develop, or be included in, a Comprehensive Solid Waste Management Plan by July 1, 1992. By entering into a planning process, it was the goal of the Act to minimize the cost of solid waste disposal while providing for the public health, environmental protection, and the long-term conservation of natural and material resources. Development of, or inclusion in such a plan was required of all cities and counties by that date in order to receive future permits, grants or loans for a solid waste facility. The mandate for every city and county to be included in a SWMP has been removed, but each city and county being part of a SWMP is still strongly encouraged, and still a necessary part of the Georgia solid waste permitting process. Georgia EPD requires that every application for landfill permit or major modification to a permit must include a letter from the local governing authority declaring that the solid waste permit application or modification is compatible with a SWMP and is participating in a waste reduction strategy.

1.6 RESPONSIBILITY FOR SOLID WASTE MANAGEMENT

McIntosh County is responsible for planning, operating, managing, and financing all solid waste programs on behalf of McIntosh County. The County owns and manages all solid waste disposal facilities and contracts with a private company for county-wide residential collection, commercial collection, and recycling services. Currently the residential and commercial collection contract is with Waste Management. As part of the County service delivery strategy, solid waste collection and disposal for the City of Darien are included in the McIntosh County collection and disposal agreement.

SECTION 2 - WASTE STREAM ANALYSIS

2.1 BASIC INVENTORY AND ASSESSMENT

The goal of waste stream inventory and assessment is to determine the amount and composition of solid waste generated within McIntosh County, as well as a general assessment of waste streams from other sources.

Waste Generation Rates

Although the City of Darien is not a part of the McIntosh County Solid Waste Management Plan, Darien is included in the McIntosh County Curbside Collection program, therefore the population, waste generation rates and recycling streams are included in the Waste Stream Analysis. The populations for McIntosh County's service areas are: Unincorporated McIntosh County 8,745 and the City of Darien 2,230 with the total population for the service area being 10,975. The 2020 waste generation and recycling disposal volumes are as follows, and reflect tonnages for both unincorporated McIntosh County and the City of Darien.

2020 MSW and Recycling Waste Volumes:

Residential Curbside MSW	4,420 Tons per Year
Residential Curbside Recycling	558 Tons per Year
Commercial MSW	2,236 Tons per Year
Landfill MSW	3,120 Tons per Year
Landfill Recycling	<u>127 Tons per Year</u>
Total Waste Stream	10,461 Tons per Year

2020 Total MSW and Recycling Waste Stream

10,461 Tons per Year with 10,975 Population = .953 Tons per Year per Person
.953 Tons / Person / Year = **5.22 Pounds / Person / Day Generated**

2020 Tons Disposed

9,776 Tons per Year with 10,975 Population = .89 Tons per Year per Person
.89 Tons / Person / Year = **4.88 Pounds / Person / Day Disposed**

2020 Tons Recycled (Recycling tonnage is detailed in Section 4 Waste Reduction)

685 Tons with 10,975 Population = .0624 Tons per Year per Person
.0624 Tons / Person / Year = .34 Pounds/ Person/ Day Recycled
685 Tons Recycled / 10,461 Tons = **6.5% Recycling Rate**

McIntosh County currently generates approximately 28.7 tons of municipal solid waste per day. Based on the population and the daily waste tonnage noted above, this yields a MSW waste generation rate of 5.22 pounds per person per day and recycling rate of 6.5%.

Waste Composition

Waste composition is determined by waste characterization studies. These studies separate and weigh waste categories from representative samples in order to determine the types, amounts, and percentages of the various components of the MSW waste stream. In 2005 the State of Georgia commissioned a statewide waste characterization study which was conducted by R. W. Beck, Inc. Within that study, individual characterization studies were conducted at each of 13 Regional Development Centers (RDC's), which provides a regional view of waste stream composition as well as allows a state wide comparison of regional MSW streams.

Waste stream composition in each region may be considered representative of the counties within that region. Thus, the Coastal region characterization is assumed to be similar to that of McIntosh County. The waste composition percentages for the Coastal region and Georgia averages are shown below.

<u>Material</u>	<u>Coastal Region</u>	<u>Georgia Average</u>
Paper	39.0%	38.7%
Plastic	15.9%	15.8%
Glass	3.5%	3.7%
Metal	4.3%	5.4%
Organics	28.2%	27.1%
C&D	6.4%	6.0%
Inorganics	2.6%	3.3%
TOTAL	100%	100%

Table 2-7 from the 2006 Georgia Solid Waste Management Plan shows the data for each of the 13 RDC's with Coastal Georgia Regional Development Center's data highlighted. Table 2-7 gives a regional comparison of waste streams and also reveals the similarities of waste streams across Georgia.

The characterization of McIntosh County's municipal solid waste is not expected to change significantly over the next ten years; however, the percentages of waste components that will be landfilled will change due to potential changes in recycling, conversion to refuse derived fuel (RDF), thermal conversion and other waste reduction efforts.

Table 2-7
Composition of Waste Disposed in MSW Landfills in Georgia, by RDC

Material	Central Savannah River		Coastal Georgia	Coosa Valley		Georgia Mountains	Heart of Georgia	Lower Chatt.	McIntosh Trail	Middle Georgia	Northeast Georgia	South Georgia	Southeast Georgia
	Atlanta	Chert. Flint		Chert. Flint									
Paper	40.0%	36.0%	39.0%	34.6%	41.6%	32.3%	38.7%	28.5%	35.5%	40.3%	32.4%	35.3%	
Plastic	15.8%	17.5%	15.8%	16.4%	14.7%	14.9%	14.0%	13.4%	18.4%	16.2%	17.9%	14.5%	
Glass	3.8%	5.1%	3.5%	4.4%	2.5%	3.1%	3.0%	4.1%	1.7%	4.6%	5.1%	3.3%	
Metal	5.8%	4.9%	4.3%	4.4%	4.4%	5.8%	5.2%	7.8%	5.3%	5.7%	6.2%	5.3%	
Organic	26.2%	31.2%	28.2%	33.0%	23.6%	30.9%	29.5%	33.5%	27.2%	26.6%	27.3%	33.1%	
C&D	5.5%	9.2%	6.4%	4.8%	10.0%	8.1%	8.8%	5.1%	8.0%	3.1%	8.6%	4.8%	
Inorganics	3.2%	2.1%	2.6%	2.4%	3.2%	4.9%	1.7%	7.6%	5.8%	3.4%	2.6%	3.5%	
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Adapted by DCA Board 5/96

Table 2-7 Georgia Waste Characterization Study

Waste Generator Types

Waste Generator

Types of Waste

Residential

Municipal Solid Waste (MSW), Household Garbage, Yard Waste, Scrap Metal, Inert, Recyclables

Commercial/Institutional/Industrial

Municipal Solid Waste (MSW), Construction & Demolition, Scrap Metal, Inert, Recyclables

Waste Stream Impacts

Being an attractive coastal location, the population of McIntosh County fluctuates with seasonal residents and consequently the waste streams are impacted. The county wide curbside collection program, recycling program, and landfills have been effective in handling the seasonal fluctuations in waste generation and recycling streams.

2.2 NEEDS AND GOALS

The inventory and assessment of the amount and composition of solid waste provides a database upon which to make sound solid waste management decisions. McIntosh County's goal is to keep this database current and accurate with data provided by the curbside contractor and landfill tonnage records. The amounts and types of waste streams including MSW, C&D, Curbside Recycling, and recycling at the King Road landfill should continue to be recorded and classified.

2.3 IMPLEMENTATION STRATEGY

The McIntosh County curbside contractor will maintain records of waste collected, disposed, and recycled under the curbside contract. Waste disposed at McIntosh County landfills will be weighed and records maintained. As new programs or technologies are implemented such as reclamation and thermal conversion, records should be maintained for all programs, waste streams and technologies. This data will be used for future solid waste planning and program development. Attention should also be given to anticipated changes in the waste stream due to future changes in population, business and industry.

TABLE 2-1. POPULATION AND WASTE GENERATION PROJECTIONS FOR MCINTOSH COUNTY (Estimated Tons Generated are projections using 5 pounds to 7 pounds of waste generated per person per day)

Year	Population	Estimated
		Tons Generated 5# - 7#
2020	10,975	10,379 - 14,021
2025	13,025	11,885 - 16,639
2030	12,778	11,660 - 16,324
2040	11,361	10,367 - 14,514
2050	9,958	9,087 - 12,721

Source: U.S. Census Bureau Georgia Governor's office of Planning and Budget

SECTION 3 - COLLECTION OPERATIONS

3.1 BASIC INVENTORY AND ASSESSMENT

Collection Programs

Residential and commercial solid waste collection services are contracted by a county wide curbside collection program which was initiated August 16th, 2011. The agreement for collection services is an exclusive franchise agreement between McIntosh County, the City of Darien and Waste Management of Georgia (“Contractor”), with service area being unincorporated McIntosh County and Darien. The agreement has been amended 4 times to adjust price, services and term. The amendments are dated January 1,2013, February 10,2015, July 1, 2016 and April 13,2021. The collection agreement provides for once per week curbside collection of household garbage from each residence and light commercial business with 96 gallon roll out cart provided by the contractor. Commercial customers are defined as those that are served by utilizing a 4-yard, 6-yard or 8-yard front end loaded (FEL) container.

There are 8,745 residents currently within unincorporated McIntosh County and 2,230 residents in the City of Darien. According to the current contracted hauler, the existing solid waste management curbside collection system serves approximately 6,520 units per week in the curbside garbage collection program and approximately 157 commercial customers. The average weekly waste collection from the 6520 residential customers is 85 tons per week with 43 tons per week collected from the 157 commercial customers. Curbside recycling generates 10.74 tons per week from the 959 voluntary participants.

The collection contract also provides service for Sapelo Island and the barrier islands. For Sapelo Island, the contractor provides a self-contained compactor at a county approved location on the island with one pull per month at no charge unless the free barge service to the island is discontinued. In the event the free barge service is discontinued or additional pulls are needed, the contractor will service the island for mutually agreed fees. The contract provides commercial customers on the island with the same rates as established in the contract for the County and Darien commercial customers.

Two 8-yard FEL containers are located at the Blue-N-Hall Docks for barrier island use. Additional containers may be provided upon mutual agreement with the County.

Solid waste collection service to the Courthouse and City Hall by roll out cart or FEL container is provided by the contractor at no charge to the County.

Included in the collection contract are provisions for residential curbside recycling and a recycling container placed at the landfill for residential use. Recycling and waste reduction are discussed in more detail in Section 4-Waste Reduction.

Revenue Sources

A solid waste assessment of \$152.40 is included on the McIntosh County property tax bills for each property with a dwelling or structure. These funds are forwarded to the County and used as a funding source for solid waste services. Commercial customers are billed individually for FEL services they require.

The collection agreement also provides that 5% of the monthly charges collected from commercial customers in unincorporated McIntosh County is paid to the County as a franchise fee.

Elements and features of the Curbside Collection System currently are summarized below.

- A) The collection system provides for residential and commercial collection services for the McIntosh County, City of Darien, Sapelo Island and the barrier islands.
- B) Residential services are billed and paid annually through the McIntosh County Tax Bills.
- C) Commercial services are billed to individual businesses.
- D) A 96 Gallon roll out cart is provided for residential customers.
- E) Curbside recycling is available to residents upon request.
- F) To further encourage recycling, the contractor provides a recycling container for residential use at the landfill. Appliances, scrap metal, tires and inert material are recycled at the landfill.
- G) Residents may bring waste to the King Road Landfill at no charge. This feature allows residents to bring trash, furniture, appliances, and other general “clean up” type wastes to the landfill, reduces the incentive for illegal dumping, and eliminates the need for the County to provide costly personnel and equipment to collect bulk items county-wide.
- H) Billing annually via tax bills simplifies the process for collecting revenues and provides for greater efficiency as compared to monthly or quarterly billing systems.
- I) Residential customers may request additional roll out carts for an additional fee per cart.

Waste Collection Companies

The following is a list of current waste collection companies serving McIntosh County.

Company and Location	Residential	Commercial / Industrial	C & D
Waste Management Inc. Brunswick, Ga.	X	X	X
Liberty Roll Offs & Recycling Brunswick, Ga.		X	X
Green Acres Recycling Savannah, Ga.		X	X
Sapelo Waste, Inc. Darien, Ga.		X	X

3.2 NEEDS AND GOALS

One of the difficulties county governments have in providing solid waste collection services is being able to provide the redundancy of personnel and equipment to maintain consistent collection schedules and services. Counties handling their own collection operations must carry enough personnel to cover driver sickness and vacation, as well as carry additional trucks, parts, carts, dumpsters and mobile repair equipment in order to maintain services.

Privatization of collection has proven to provide all needed services with a professional waste management company which has sufficient resources for management, equipment, drivers and waste collection expertise. McIntosh County's needs for collection services are being met through private contract and although the contracted hauler may change, there is no apparent need to change the privatized collection system. New collection contracts may be negotiated with Contractors as the need arises.

There is currently no apparent need to change funding mechanisms; however, the County may implement changes as seems appropriate in the future.

3.3 IMPLEMENTATION STRATEGY

Collection via private contract shall be continued as it provides for an efficient and cost-effective system for the collection of residential and commercial solid waste in the service area. If it is deemed necessary, the County could acquire its own trucks and personnel to provide collection services itself and not through a private carrier; however, this option has advantages and disadvantages. It may provide better control over the services provided, but would require a significantly greater capital investment, maintenance, personnel, management, and would bring a large increase in insurance liability and costs.

3.4 CONTINGENCY COLLECTION STRATEGY

Should the current collection practices become interrupted or unavailable, McIntosh County will seek other haulers to begin collection as soon as possible to minimize any interruption in service. In the event of an interruption of collection service, the County could temporarily provide additional dumpsters through other private carriers at strategic locations including the King Road Landfill. Residents would be able to take their waste to the temporary locations and the King Road Landfill until a backup contractor could be in service.

SECTION 4 - WASTE REDUCTION

4.1 BACKGROUND, BASIC INVENTORY, AND ASSESSMENT

Waste reduction has been an international, national, state and local initiative for decades. Although recycling has impacted the waste stream it has not been the “ultimate solution” that it was hoped to be for waste reduction to landfills. According to EPA data, in 2018 the United States recycled only 23.6% of its waste stream with another 8.5% being composted, for a total recycled and composted volume of 32.1%. It is important to note that this data was collected before international markets for some recyclables were diminished or closed completely - so the current recycling rate today is even less. Figure 4-1, shows that although we as a nation are “recycling” roughly one third of our waste stream, our volume of waste has grown by that same amount, which means that as a nation, we continue to landfill the same amount of waste today that we did four decades ago in 1980!

Sadly, all of our recycling and reduction efforts have not made a notable dent in the volume of waste being landfilled, and it is now widely acknowledged that due to the volatility and unreliability of recycling markets, landfills continue to provide an essential function and waste reduction will require more innovative solutions in addition to traditional recycling.

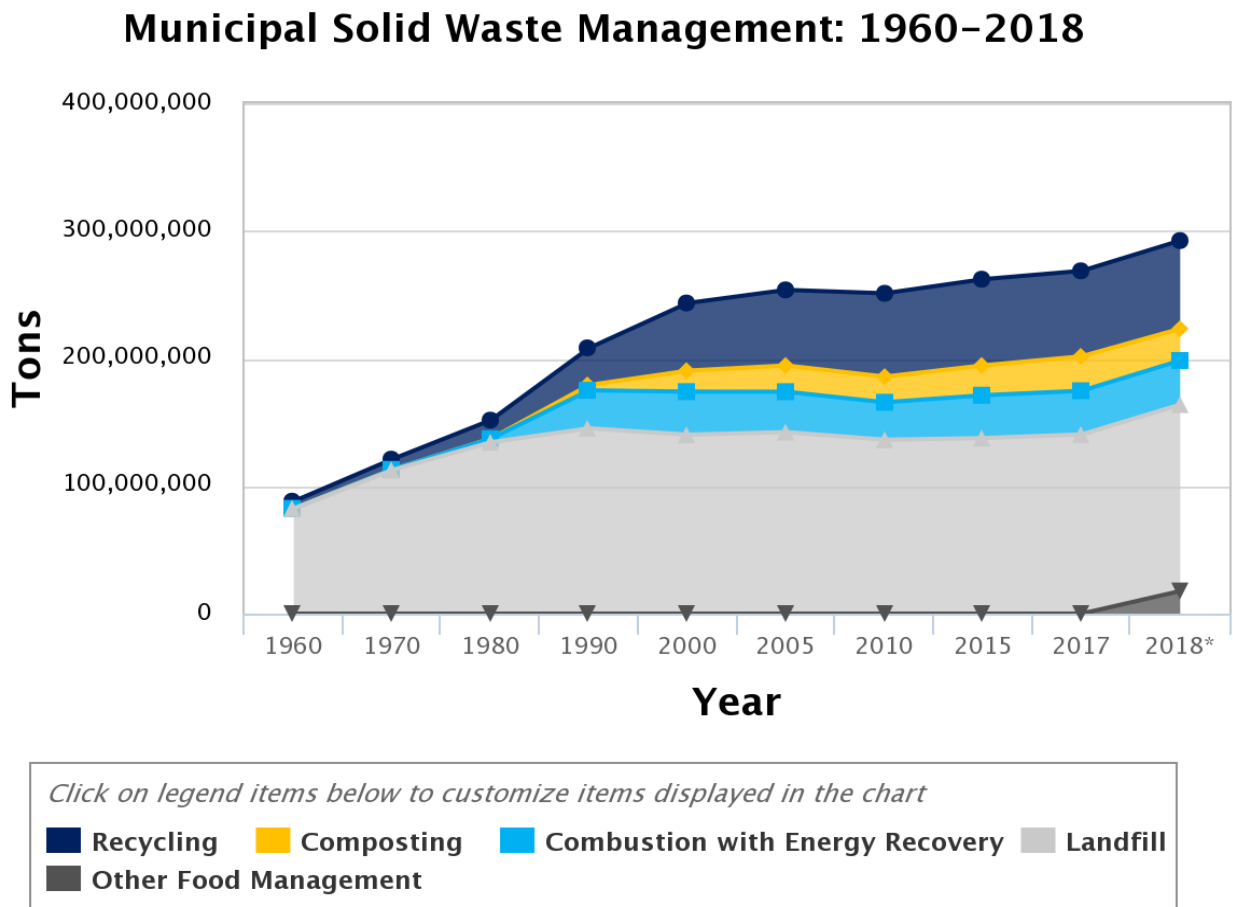


Figure 4-1 EPA Recycling, Waste to Energy and Landfill Chart

Recycling and Waste Reduction

McIntosh County has several initiatives targeting waste reduction and encourages waste reduction and recycling by business, industry and residents. The current contracted hauler offers recycling services to all residents in the County and the City of Darien. Recycling containers for residents are provided by the contracted hauler upon request. There is no additional charge to the residents for recycling services. In 2021 there were 959 residential customers utilizing the bi-weekly recycling program offer by McIntosh County through its contracted waste carrier. The curbside recycling residents averaged 10.74 tons per week.

McIntosh County also offers recycling at the King Road Landfill for materials such as scrap metal, tires, some inert materials and traditional recyclables.

The County's landfill recycling program is described as follows:

- Metal collected at the landfill is sold for scrap metal.
- Inert materials such as concrete and asphalt which are appropriate for rip rap or roadbed materials are recycled for use in check dams for water control and for roadbed material for building roads in the landfill.
- A scrap tire container is provided at the landfill for recycling tires from McIntosh County residents. Tires are taken to a recycling plant, where they are shredded for TDF (tire derived fuel) and used as fuel in industrial furnaces.
- The McIntosh County curbside collection hauler provides a single source roll off at the landfill for residential recycling. The container is located inside the MSW landfill entrance and is a receptacle for traditional items of paper, cardboard, aluminum and plastic.

As noted in Section 3 of this plan, the County's curbside collection program encourages recycling by making these services available at no additional charge. Also, residents are not charged for recycling materials brought to the landfill. When a resident brings recycling items to the landfill, the scale operator can direct the resident to drop the tires off at the tire container, place the metal in the scrap metal bins, direct inert to the respective area and place traditional recycling materials in the recycling roll off container. This system allows residents to recycle, guides the placement of them in the proper area, creates a sense of recycling awareness, and avoids the costly expense of paying for county wide collection personnel and equipment.

The 2020 recycling and reduction tonnages for McIntosh County are as follows:

2020 REDUCTION / RECYCLING	
Inert Material	10 Tons
Scrap metal	71 Tons
Tires	30 Tons
Curbside Recycling	558 Tons
Landfill Recycling Roll Off	16 Tons
TOTAL RECYCLED	685 Tons*
TOTAL WASTE	10,461 Tons
RECYCLED MATERIAL	6.5 %*

* This data only includes the recycling and reduction tons diverted at the King Road Landfills and residential recycling which is collected by the County's contracted hauler. Not included are recycling tons from local businesses, industries or other sources.

4.2 NEEDS AND GOALS

The previous section highlights the facts that on a national level, decades of effort, funding, programs and education have produced recycling rates of only 32.1%. The U.S. EPA waste reduction hierarchy is Reduce, Reuse, Recycle, Waste to Energy and Landfilling as shown in the inverted pyramid illustrated in Figure 4-2.

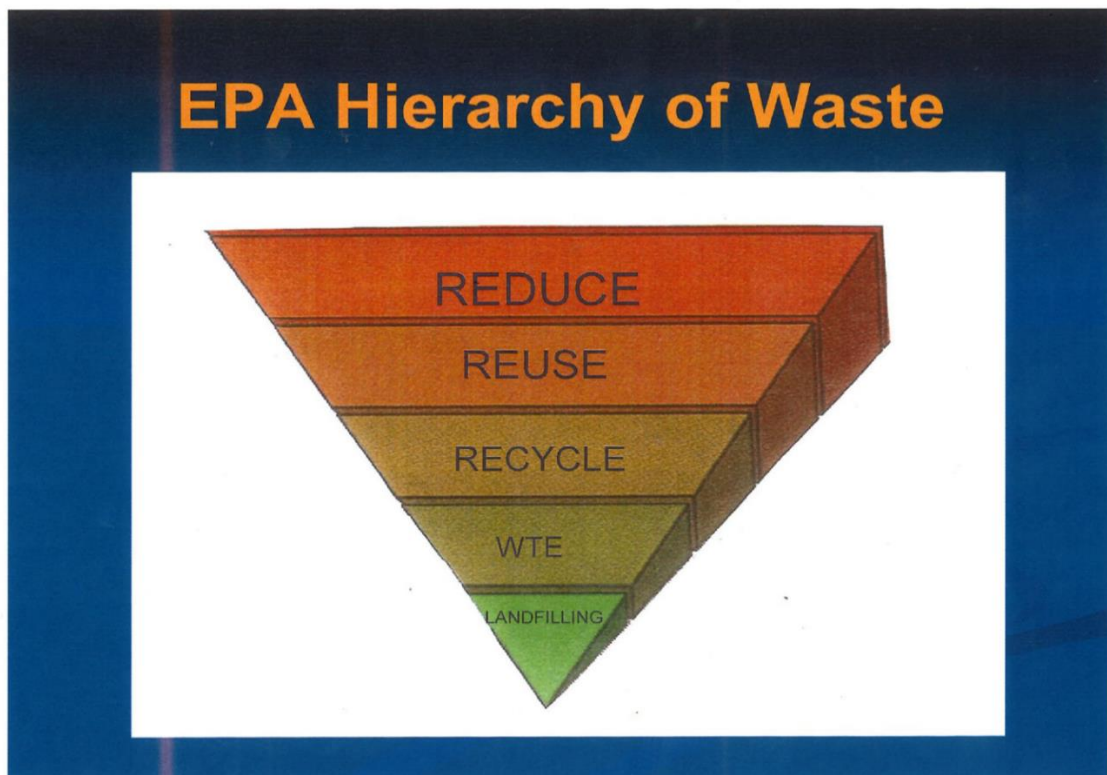


Figure 4-2 EPA Waste Reduction Hierarchy

It is the goal of McIntosh County that waste reduction efforts reflect the EPA hierarchy of waste reduction. The County's goal is to continue and improve recycling efforts in order to achieve maximum waste reduction through traditional recycling avenues, as well as, to increase waste reduction and better utilization of waste by other practical methods.

Waste reduction methods may include but are not limited to thermal conversion technologies and landfill reclamation. Thermal conversion and reclamation are discussed in further detail in section 4.3 Implementation Strategy. Thermal conversion technologies would greatly enhance waste reduction and meet the need of extracting energy from waste while landfill reclamation reduces the previously disposed waste, provides a means to "recycle retroactively" and is an effective environmental remediation methodology.

The goal of the County is to determine the most practical and effective waste reduction methods and technologies and to find more and better utilizations for all waste streams other than landfilling. However, as waste reduction needs and goals are developed, the need for waste disposal continues. The County recognizes that landfilling is still a significant necessity as waste reduction markets and technologies develop.

4.3 IMPLEMENTATION STRATEGY

The phrase "All Politics is Local" could be re coined to read that "All Waste Reduction is Local". Waste reduction efforts can be encouraged on a national or state level, but the implementation and effectiveness happen locally whether "locally" is a community, city, county, industry or family. The County recognizes that the complex and conjoined problems of waste generation and waste reduction will require comprehensive long range environmentally sustainable solutions which may include source reduction, recycling, thermal conversion, landfill reclamation and other. McIntosh County is committed to examining and implementing waste reduction methods and technologies that are economically sustainable and environmentally friendly. New methods and technologies will be explored and adopted as deemed practical for McIntosh County.

Recycling

McIntosh County plans to continue to encourage and improve recycling efforts by including recycling provisions in waste collection agreements which will provide residential recycling and recycling at the landfill. Recycling commodities are internationally marketed and subject to great market instability. Traditional recycling has proven to be unreliable and economically unstable, therefore it is expected that "recycling and waste reduction" will need to be expanded beyond traditional curbside and landfill recycling options. New methods and technologies will be explored and adopted as appropriate, including but not limited to, county wide single bin collection systems that recycle a much higher percentage of the waste stream than traditional source separation recycling.

Thermal Conversion, Waste Reduction, Upgrading and Utilization

It has been determined that although recycling is a good first step which needs to be encouraged and enhanced where possible, more advanced waste reduction and utilization methods should be sought. McIntosh County has begun exploring waste reduction methods and technologies

beyond recycling. This search includes the examination of many thermal conversion technologies such as anerobic digestion, gasification, carbonization and pyrolysis.

Thermal conversion is the utilization of heat to convert waste material to useful products. Some technologies use heat in an oxygen starved environment to convert waste material into energy (gas) and carbon (char). The oxygen starved environment and elevated processing temperatures allow the waste material to “cook” without a flame which produces usable gas and leaves a sterile carbon char.

One of the thermal conversion technologies explored by County officials and staff is called “carbonization”. This process of electrically cooking the waste at over 1000 degrees F, shrinks the waste volume, makes the waste benign, and prevents greenhouse gases from being produced by the waste. Waste reductions of 70% by weight and 90% by volume have been consistently achieved. The gas that is extracted from the waste is captured as a heat source and can be utilized to make steam for industrial application utilizing steam such as drying, evaporation, steam to power, carbon activation and more. Research has shown the resultant carbon char can be steam activated to commercial market grade activated carbon which may be used for filtration in air and water applications. The carbon char has also been developed as an additive and filler for composite injection grade plastics with successful commercial application trials in making plastic products. The injection plastics made with char added has been used to make 3D printer filament. The trial 3D printer filament, called ‘Landfilament’ has been marketed commercially in trial markets on the internet and has been used successfully by major international manufacturers. A nationally renowned third-party engineering firm has reviewed the technology and found it to be effective and robust. This system, permitted by Georgia EPD, is under construction for commercial application to process 200 tons per day with construction plans and permit approval to increase processing to 400 tons per day. County officials will consider this technology, as well as any other which seem appropriate and applicable for McIntosh County. Thermal conversion technologies are currently the most promising waste reduction and energy extraction methods.

Landfill Reclamation

Landfill reclamation was implemented in Collier County Florida in 1990 and has been used in Georgia since 2001. It has been used as a means of landfill remediation, increasing landfill capacity and also part of waste reduction programs. Reclamation is discussed in more detail in Section 5 of the SWMP, but part of the considerations for utilizing reclamation is its benefit in recycling and waste reduction. Reclamation gives access to recyclable materials that were buried decades earlier. White goods, scrap metal, scrap tires, inert materials and yard waste can be reclaimed and recycled. The most valuable commodities that may be recycled are the cover dirt which can be re-used on the landfill itself as well as the reuse of the landfill airspace. Thus, landfill reclamation can provide a means to recycle materials from the past, reclaim cover dirt to reuse, and the ability to recycle and better utilize the landfill space using current landfill design standards and greater compaction methods. That is, the landfill may be “recycled”. McIntosh County will continue to explore landfill reclamation as a potential solution for landfill remediation, landfill expansion and reuse, and part of its waste reduction strategy.

Incineration

Although incineration is a long-standing thermal conversion technology, it is not a technology being considered and is not an acceptable solution for McIntosh County because of extremely high capital costs, pollution concerns, permitting and public perceptions. Incineration of waste by burning waste material in oxygen is not a waste reduction strategy compatible with this Solid Waste Management Plan.

Landfilling and Waste Reduction Strategy

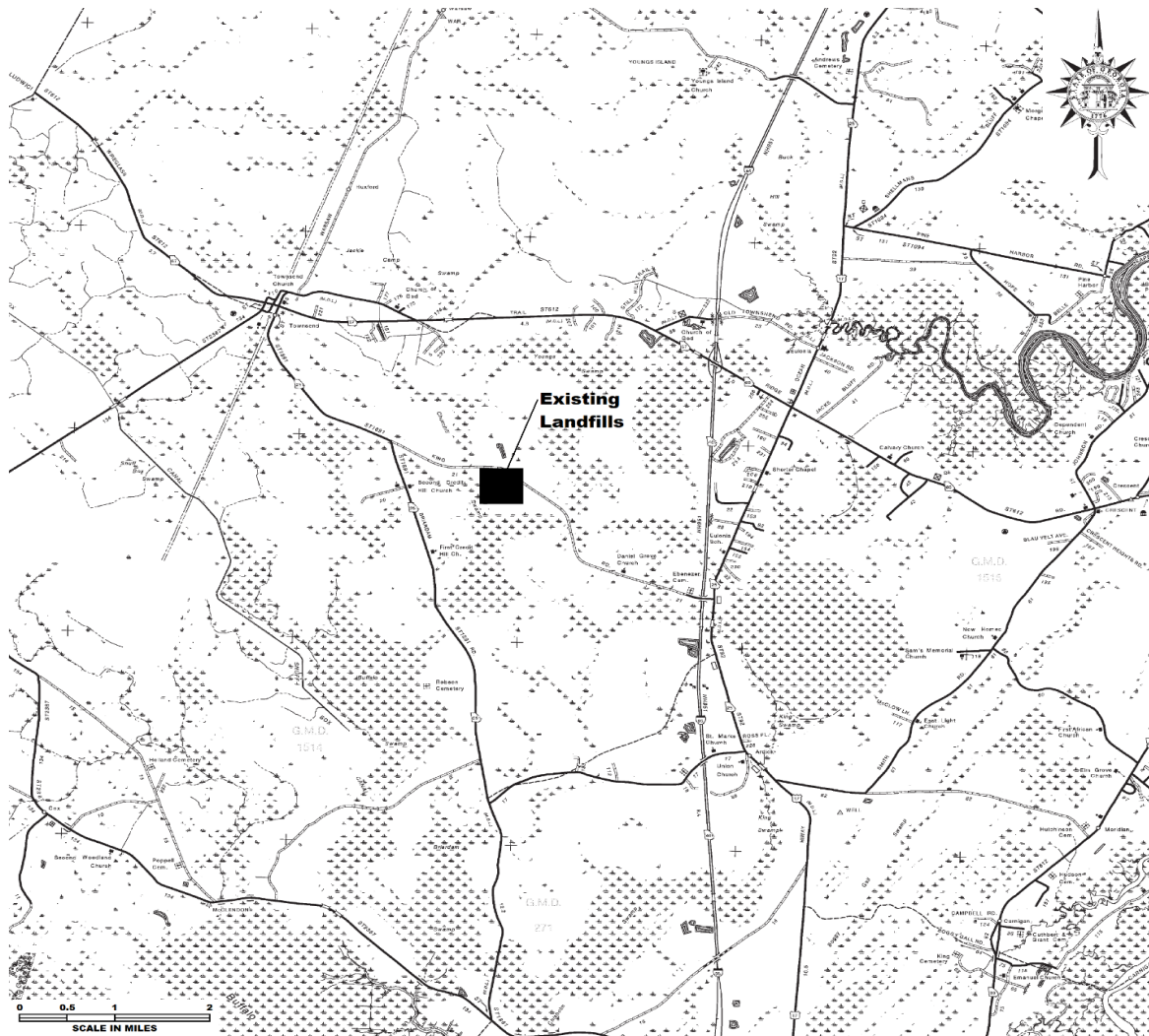
Waste generation and handling needs are expressed in Tons Per Day (tpd); however, waste generation tonnages vary greatly from day to day. A facility that averages handling 300 tpd may experience waste loads from below 100 tons to above 600 tons on any given day, therefore waste reduction, waste processing, and waste disposal strategies must provide for multilevel facilities and ample capacities to handle wide fluctuations in volumes. Because of these wide fluctuations, landfilling will remain a necessity for waste volumes that exceed thermal conversion daily processing capacity. Landfill capacity is a vital part of a waste reduction strategy as landfilling is necessary to buffer the variations in waste volumes and dispose of waste streams which cannot be converted or recycled. Landfill space is also necessary to provide redundancy for contracted waste streams. Waste processing contracts require landfill space as back up disposal option in order to guarantee performance of the contract. It is anticipated that landfill expansion will be necessary over the next decade and beyond in order to provide buffering space and underlying financial stability for the waste reduction efforts which will have positive waste reduction impacts locally and regionally.

Revenues from multiple sources including but not limited to property tax solid waste fees, recycling income, thermal conversion, fuel extraction, waste upgrading, char utilization, and fees derived from the landfill are all part of the County's funding and implementation strategy for waste programs and waste reduction. These programs and strategies mirror the national EPA strategy of "Reduce, Reuse, Recycle, Waste to Energy and Landfilling" shown in Figure 4-2.

SECTION 5 - DISPOSAL OPERATIONS

5.1 BASIC INVENTORY AND ASSESSMENT

The solid waste disposal needs of McIntosh County are met through multiple disposal sites. McIntosh County owns and operates three permitted landfills on adjacent parcels on King Road shown on Figure 5-1. This landfill “complex” is located in west central McIntosh County and the landfills are the King Road Municipal Solid Waste Landfill, the King Road Construction and Demolition (C&D) Landfill, and the King Road Inert Landfill. As described in a previous section, waste collected under the county’s collection contract is currently disposed in the contracted carrier’s private landfill.



This figure adapted from the
GENERAL HIGHWAY MAP
MCINTOSH COUNTY
GEORGIA

PREPARED BY THE
DEPARTMENT OF TRANSPORTATION
DIVISION OF PLANNING AND PROGRAMMING
OFFICE OF INFORMATION SERVICES



Figure 5-1 Landfill Location Map

McIntosh County King Road MSW Landfill Permit # 098-003D (SL):

The McIntosh County King Road MSW landfill is an unlined MSW landfill with a waste footprint of 34.15 acres. It has a net remaining volume of 38,011 cubic yards and fill rate of 12 tons per day which yields a remaining capacity of 6.5 years, per the October 2021 Remaining Capacity Report.

The landfill is bordered by a series of groundwater monitoring wells which are monitored semi-annually and methane monitoring wells which are monitored quarterly. The monitoring reports are submitted to Georgia EPD and maintained as part of the facility's operating record. Two of the landfills groundwater monitoring wells have registered some constituents that exceed groundwater monitoring standards with the result being the site placed on the Georgia Hazardous Site Inventory (HSI). Placement on the Georgia HSI list makes state funds of up to \$2 million dollars available for remediation assistance. Due to elevated volatile organic compound (VOC) detections in the groundwater at the site, an Assessment of Corrective Measures (ACM) was approved on January 9, 2007. Groundwater monitoring is currently conducted in accordance with the facility's Corrective Action Plan (CAP) approved by EPD on February 5, 2009.

Closure and post closure costs for the landfills are listed in Section 5.2 - Needs and Goals.

McIntosh County King Road Construction and Demolition (C&D) Landfill Permit # 098-006 (C&D):

The McIntosh County C&D Landfill is due south of the MSW landfill and has a total land area of 111 acres with a footprint of 30.2 acres for waste disposal. Per the October 2021 Remaining Capacity Report, the net remaining volume is 1,134,098 cubic yards. The landfill's current fill rate of 235 tons per day yields a remaining capacity of 9.7 years.

The MSW and C&D Landfills share the same entrance, scale house and maintenance facility.

McIntosh County Inert Landfill:

The McIntosh County Inert Landfill is located on the north side of King Road. It ceased operation on or before January 1, 2020 and a closure certification report was submitted to EPD in 2021. The site contains the inert landfill area and borrow area. The Churchill Cemetery is located adjacent to the closed inert landfill property.

The three landfills in the King Road landfill complex are all owned and operated by McIntosh County under the McIntosh County Board of Commissioners and are directly supervised by McIntosh County personnel. These landfills have served the disposal needs of McIntosh County for over three decades.

5.2 NEEDS AND GOALS

Disposal Capacity and Remediation

As a result of the existing MSW landfill being unlined, with limited remaining capacity, having groundwater wells showing contaminants, and being on the Georgia HSI list, there is a need to address this landfill as well as to continue planning for McIntosh County's long term solid waste disposal needs. McIntosh County will have continuing needs for disposal capability for MSW and C&D materials as well as the need to conduct environmental remediation as necessary, and provide for financial assurance for closure and post closure of its facilities.

Closure / Post Closure Costs

There is a need to establish a funding mechanism for landfill Closure and Post Closure costs. Closure and Post Closure Costs of the McIntosh County MSW and C&D Landfills are documented in the Financial Assurance filings which are submitted annually to Georgia EPD. These costs include the cost of capping and closing a facility as well as the cost of monitoring and maintaining the facility for a minimum of 30 years after closure. The closure process involves the installation of a protective capping system engineered to prevent water infiltration into the waste. Grassing and surface water control structures are installed to control and direct surface water off of the landfill to sediment ponds. Post closure costs are the cost to quarterly monitor methane, semi-annually sample groundwater wells, and maintain the site including mowing, sediment pond cleaning, and inspections all which must be funded for 30 years after the closure date.

According to the 2021 McIntosh County Financial Assurance submittal, the closure and post closure costs of the McIntosh landfills are as follows:

Closure Costs of:

King Road MSW Landfill Permit # 098-003D (SL) and	
King Road C&D Landfill Permit # 098-008D (C&D)	\$ 849,275

Post Closure Costs of:

King Road MSW Landfill Permit #098-003D (SL)	
King Road C&D Landfill Permit #098-008D (C&D)	<u>\$3,331,991</u>

Total Closure & Post Closure Costs	\$4,181,266
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5.3 IMPLEMENTATION STRATEGY

The County has been investigating methods, technologies, and solid waste systems that may be utilized and may implement landfill reclamation, landfill expansions, thermal conversion technology, or other systems or methods that may provide a means to achieve its goals of an environmentally sound, long term solid waste disposal system. The County believes that the solution for long term waste disposal may include multiple layers and strategies including but not limited to landfill reclamation, waste to energy by thermal conversion, expansion of McIntosh County disposal sites and development of new disposal sites.

Reclamation

The unlined King Road MSW landfill may be reclaimed with usable recyclables removed and the recovered soil re-used for landfill cover. Recovered soil for which can be reused for landfill cover has averaged 65% in landfill reclamation projects. The reclaimed landfill areas may then be re-permitted and brought to Subtitle D standards with liner and leachate collection system or the land may be used as a part of a landfill expansion or part of a new landfill permit. This landfill remediation and reclamation method has been successfully utilized in Lamar County Georgia as the Lamar County Regional Solid Waste Authority's new Cedar Grove Subtitle D Landfill (Permit # 085-007 MSWL) has repurposed, reused, and re-permitted the unlined Lamar County Landfill (Permit # 085-004 SL). This project in Lamar County also has proven the effectiveness of reclamation to restore groundwater to EPA drinking water standards by the removal of waste from an unlined area. Thus, as landfill reclamation progresses, the King Road MSW Landfill may be absorbed into another permit and the unlined MSW landfill areas may be eliminated.

The reclamation process could:

- (A) remove the source of potential groundwater contamination from unlined areas
- (B) increase capacity for disposal
- (C) allow for recycling certain recyclables buried decades ago (such as tires, appliances, stumps, ferrous metals, etc.)
- (D) allow the recovery and reuse use of soil for daily cover
- (E) incorporate the wasted space between or around waste areas for new disposal space
- (F) allow for the recycling of the old unlined landfill with the space being redesigned for future disposal which would protect the health and safety of the citizens and protect the environment with state-of-the-art landfill design.

All Georgia landfills are presently assessed 75 cents per ton of waste disposed to fund the Georgia Hazardous Waste Trust Fund. The purpose of this fund is to assist local governments in remediating publicly owned sites which are placed on the Hazardous Site Inventory. The Hazardous Waste Division of Georgia EPD makes up to \$2 million dollars per site available for reimbursement of costs for remediation of sites on the HSI list. McIntosh County plans to access these funds for remediation which may include reclamation of the King Road MSW landfill.

Achieving clean ground water, a safer environment, and creating future landfill capacity is an important need and goal of McIntosh County and implementation of landfill reclamation will be considered as a proven strategy to accomplish these goals.

Waste to Energy / Thermal Conversion / Landfill

As described in Section 4, a comprehensive solid waste management system requires disposal space as well as waste reduction and recycling. The possible addition of a Waste to Energy - thermal conversion technology like one described in Section 4 - would create more opportunities for better waste utilization, but additional disposal capacity is also needed. The implementation of a waste conversion project would require expansions to the King Road Landfill to provide "buffer" space for fluctuations in waste flow and residual disposal space for portions of the waste streams that are not suitable for thermal conversion. Contracts for waste handling, processing, thermal conversion and disposal will require additional landfill space in order to guarantee backup capacity and absorb the variations in volumes inherent in the waste streams.

It is also important to note that McIntosh County would need additional disposal space or disposal options regardless of the implementation of a waste conversion project or programs. The County will consider all options for landfill disposal capacity including but not limited to landfill reclamation, landfill expansion via King Road lateral expansion, new permit, thermal conversion, or other disposal options that may become available.

Privatization of the county wide curbside collection program has been a successful operational strategy for solid waste collection. The County may consider privatization of disposal operations via long term operating agreements as a possible strategy to provide professional management, future disposal space, funding for closure and post closure, and a possible revenue source for the County. Land acquisitions for landfill expansions and soil borrow needs are anticipated to fulfill the McIntosh County disposal needs and goals.

5.4 EMERGENCY SOLID WASTE MANAGEMENT

In the case of emergency, the county's first response agency is the McIntosh County Emergency Management Agency (EMA), which would be charged with devising a waste management disaster plan in coordination with the County. A disaster such as hurricane or tornado could generate large amounts of waste in a short time period. The degree and nature of the disaster would dictate the extent of EMA action. The most likely scenario is that high winds, storm surge or flooding could produce extensive amounts of construction and demolition debris and vast amounts of tree and limb debris.

The EMA and County Public Works department will determine staging areas for debris, with the King Road Landfill serving as the main staging area and disposal site for these abnormally large amounts of refuse.

The EMA will coordinate preparation, communication and solid waste disaster procedures with the Commissioner's office and the Public Works department. EMA and McIntosh County will be responsible for disseminating information regarding solid waste disposal through web sites, available radio stations, local news outlets, internet news services, and social media.

In the event the King Road Landfill cannot receive waste due to any emergency, waste disposal needs will be redirected to other nearby solid waste handling facilities. The facilities which may be used are:

Broadhurst Landfill, Screven, Georgia.
Superior Landfill, Savannah, Georgia.
Camden County Landfill, Woodbine, Georgia.

The public will be notified of alternate disposal sites via the same procedures as outlined above.

SECTION 6 - LAND LIMITATIONS

6.1 BASIC INVENTORY AND ASSESSMENT

Because of the potential for environmental impacts, it is extremely important that landfills and waste handling facilities be located only in areas which are suitable for solid waste handling or disposal.

This section is to provide an inventory and assessment of land areas which, due to natural environmental limitations or land use factors, contain areas which are considered unsuitable for development for solid waste handling, processing or disposal facilities, including, but not limited to recycling, recovery, composting, biomedical incinerators, incinerators and all other types of waste handling or disposal facilities. All state and federal rules and regulations pertaining to siting solid waste handling and disposal facilities, including but not limited to Georgia DNR Rules and Regulations 391-3; Georgia DNR Rules and Regulations Subject 391-3-4 Solid Waste Management; and Georgia DNR Rules and Regulations Subject 391-3-16 Rules for Environmental Planning Criteria are hereby adopted into this Solid Waste Management Plan as land limitations and siting criteria for solid waste handling and disposal facilities in McIntosh County.

The following maps show some of the areas determined to be unsuitable for the location of such facilities. These maps are provided by the Coastal Regional commission and are copies of official State maps of the following areas.

- Map 6-1 McIntosh County FEMA Flood Zones
- Map 6-2 McIntosh County Significant Groundwater Recharge Areas
- Map 6-3 McIntosh County National Wetlands Inventory
- Map 6-4 McIntosh County Watersheds
- Map 6-5 McIntosh County All Water Areas

EPD Rules and the Georgia Solid Waste Management Plan of 2006 also list other specific items and areas that must be considered in site suitability determinations. The following natural limitations on siting are taken from the Georgia Solid Waste Management Plan of 2006, Section 6.1.1, and are adopted as land limitations under this Solid Waste Management Plan.

Natural Limitations on Siting:

- I) **Water supply Watersheds:** DNR Rule 391-3-16-.10(7)(c) requires that at any location within a small water supply watershed, new solid waste landfills must have synthetic liners and leachate collection systems.
- II) **Significant Groundwater recharge areas:** DNR Rule 391-3-4-.05(1)(j) requires new solid waste landfills or expansions of existing facilities within two miles of a significant groundwater recharge area to have liners and leachate collection systems, with the exception of facilities accepting waste generated from outside the county in which the facility is located. In that case, the facility must

be totally outside of any area designated as a significant groundwater recharge area.

- III) **Wetlands:** DNR Rule 391-3-4-.05(l)(e) establishes that solid waste landfills shall not be located in wetlands.
- IV) **River corridors:** DNR Rule 391-3-16-.04(4)fl-1) prohibits the development of new solid waste landfills within protected river corridors.

Other items and areas unsuitable for solid waste disposal facilities and areas that must be avoided, as per Georgia EPD Rules and Regulations, are as follows:

Flood Plains	DNR Rule 391-3-4-.05(1)(d)
Airports including private airstrips	DNR Rule 391-3-4-.05(1)(c)
Fault Areas	DNR Rule 391-3-4-.05(1)(f)
Unstable Areas	DNR Rule 391-3-4-.05(1)(h)
Seismic Impact Zones	DNR Rule 391-3 -4-.05(1)(g)
Areas Not Zoned M-2 Heavy Industry	DNR Rule 391-3 -4-.05(1)(a)
Areas within 500 ft. of drinking water wells	DNR Rule 391-3-4-.07(1)(b)
Areas within 2 miles of restricted airspace	DNR Rule 391-3-4-.05(1)(k)

6.2 NEEDS AND GOALS

Because of the need for additional landfill capacity, McIntosh County anticipates planned expansions or new permitted disposal space at, adjacent to, or near the King Road Landfill. The County may consider other locations that are compatible with State law and regulations.

The goal of McIntosh County is to ensure that proposed solid waste handling facilities are located in areas which are suitable for such developments, that they are compatible with surrounding uses, and are NOT to be located in areas which have been identified in this plan as being unsuitable or having environmental or land use limitations.

This McIntosh County Solid Waste Management Plan hereby adopts the siting restrictions identified in the Georgia Solid Waste Management Plan of 2006, Section 6.1.1, Natural Limitations on Siting, regarding land limitations for siting solid waste handling facilities as outlined above in Section 6.1 of this plan. Additionally, the McIntosh County Solid Waste Management Plan hereby adopts all siting criteria and limitations identified in Georgia Law and Georgia DNR Rules and Regulations.

6.3 IMPLEMENTATION STRATEGY

The McIntosh County King Road Landfill complies with all Natural Limitations on Siting and the County's King Road Landfill and possible expansions and projects as described in this SWMP are compatible with the SWMP, therefore, the requirements for new facilities shall not apply to the County.

The purpose of this section is to outline the requirements that the developer of a new solid waste management facility, other than McIntosh County, must fulfill in order to demonstrate that the facility they wish to build in McIntosh County is consistent with this Solid Waste Management Plan. It is the responsibility of a new facility owner to prove consistency with the SWMP based on the requirements outlined in the Solid Waste Management Plan.

No new proposed facility will be sited in the planning area without a letter from the McIntosh County Board of Commissioners stating that the facility is consistent with the Solid Waste Management Plan. To determine if a proposed facility is consistent with the Plan, an owner/operator of the proposed facility shall:

A) At least 60 days prior to filing for a solid waste handling permit, or notifying EPD in the case of a solid waste handling facility that is permitted by rule, submit to the local governing boards, a "Written Statement of Consistency" documenting the following:

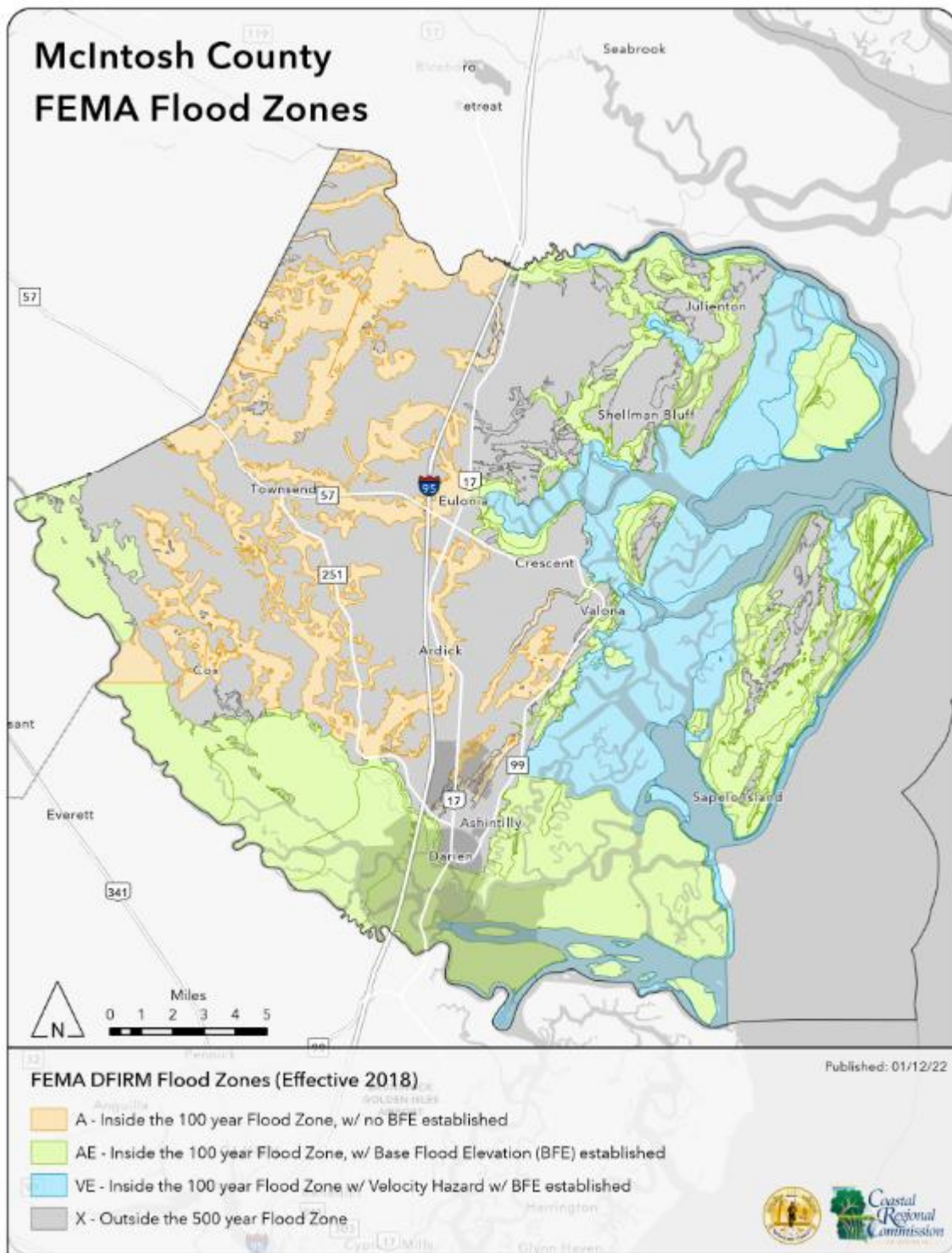
1. How the proposed new facility will meet the specific goals and /or needs identified in the Solid Waste Management Plan, specifically what will be:
 - a. The impact upon the collection capability within the planning area.
 - b. The impact upon disposal capacity identified in the planning area.
 - c. The impact to the waste reduction and recycling efforts within the planning area.
2. How the proposed new facility and its operation will impact the community. This demonstration must show that any proposed solid waste handling facility will not negatively impact the natural environment and/or will not negatively impact public health and safety.
3. How the proposed new facility and its operation will impact the financial viability of existing solid waste management systems and facilities in the planning area.
4. How the proposed new facility and its operation will impact vehicle traffic and public safety around the proposed facility and throughout the planning area;
5. How the proposed new facility its operation will:
 - a. impact individual and business solid waste management rates;
 - b. impact other natural or cultural resources within the planning area;

- c. impact the current solid waste management infrastructure within the planning area, both public and private.
- 6. How the owner/ operator of the proposed new facility (and any subsequent owner/ operators if sold) will satisfy the financial assurance provisions of the facility, and provide proof of the ability to provide financial assurance.

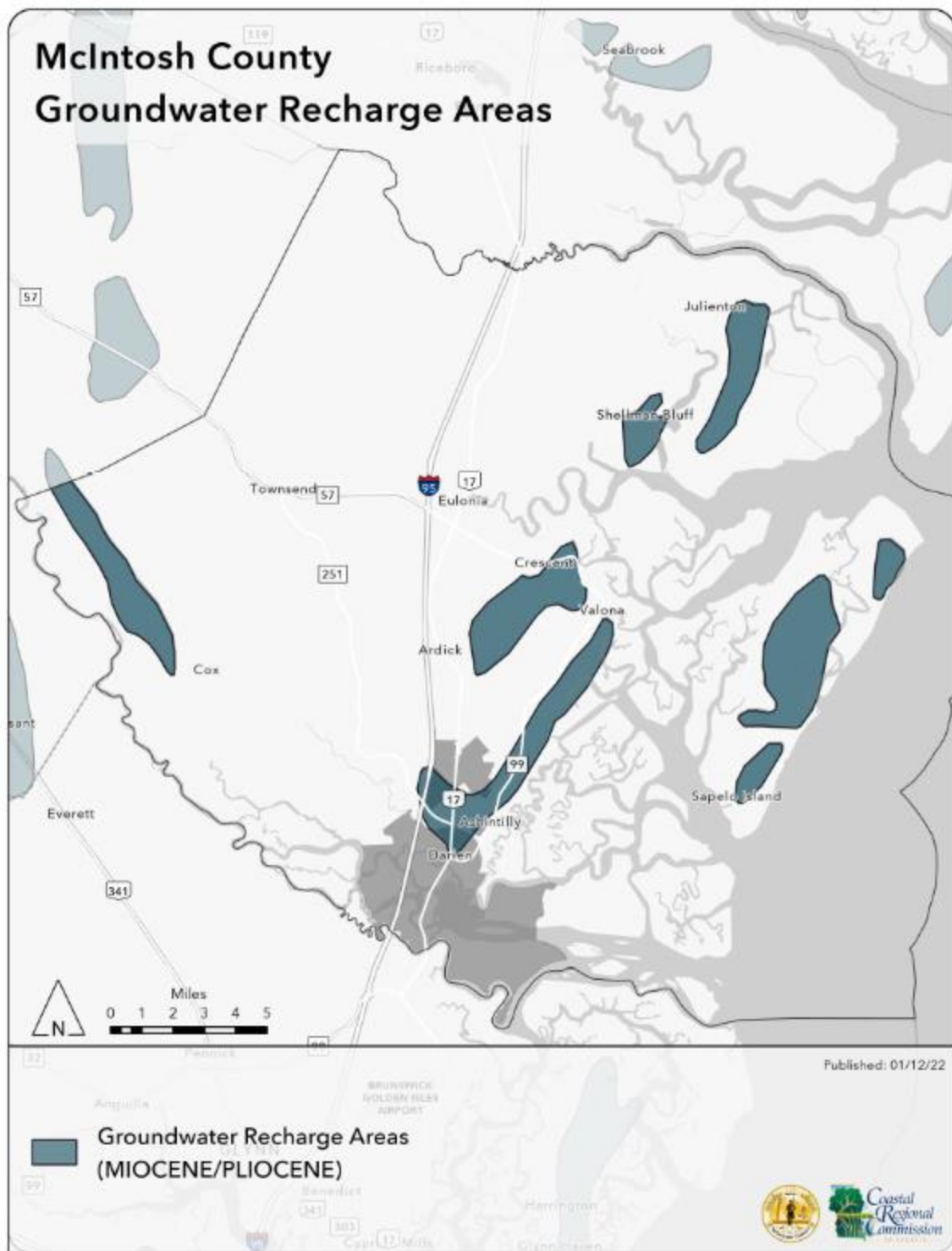
B) The owner / operator of a proposed new facility shall hold a minimum of two public hearings with a minimum of 30 days between the hearings to present the plans to the public, receive input, and show compatibility with the Solid Waste Management Plan. These public hearings must be advertised in the legal organ for fifteen days prior to the hearings, and the governing boards notified of the hearings via certified letter fifteen days prior to the hearing date. All adjacent property owners must be notified via certified letter at least fifteen days prior to the hearing dates. Signage showing notification of the hearings, including date, time, and location, must be placed on the property on all public roads that border the proposed site, at least 30 days prior to the hearings. These public hearing notification signs must be visible from and legible from the public roadways. Documentation that the proper public notification process was followed must be presented to the governing boards within fifteen days of the hearing dates.

The County shall have 60 days after submittal of the “Written Statement of Consistency” to conduct studies and determine compatibility with the Solid Waste Management Plan.

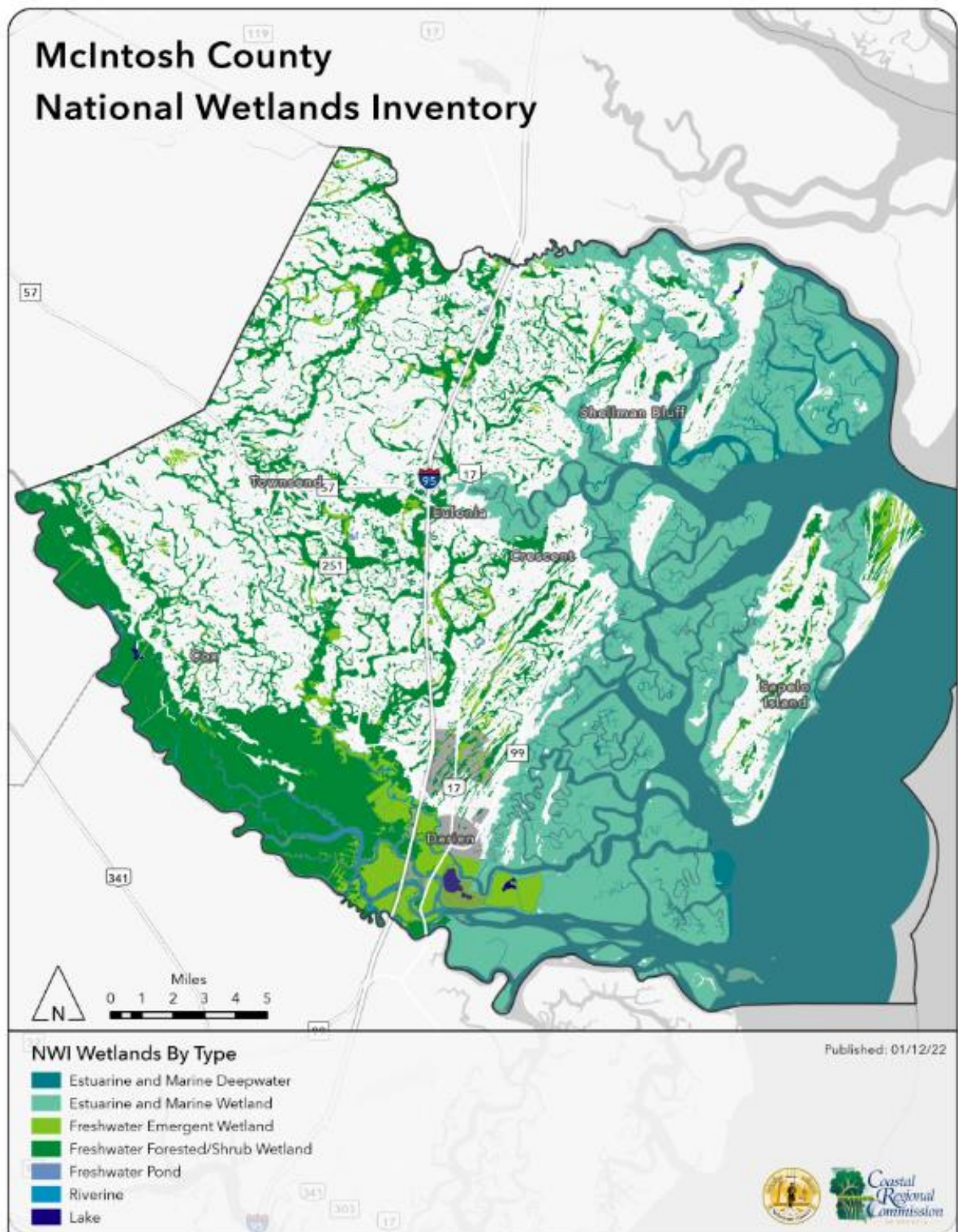
The McIntosh Board of Commissioners shall review the “Written Statement of Consistency” and other findings within 60 days of submittal, and shall determine if the proposed facility or facility expansion is consistent with the Solid Waste Management Plan. Within 15 days of making their determination, the Board of Commissioners shall notify the developer whether or not the proposed facility is consistent with the SWMP. If the proposed facility is not consistent with the Plan, the developer may address the inconsistencies and resubmit their request for another review.



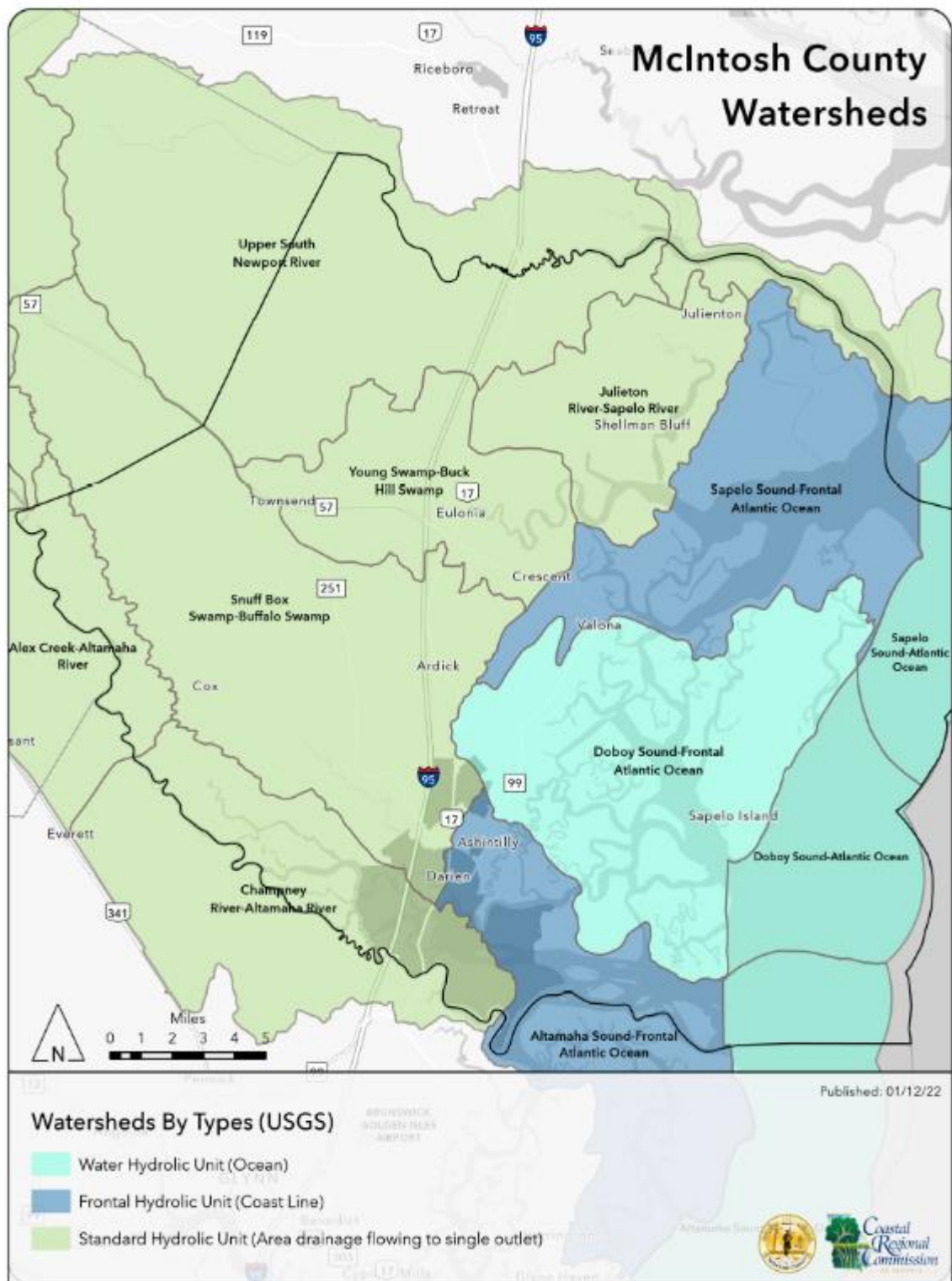
MAP 6-1



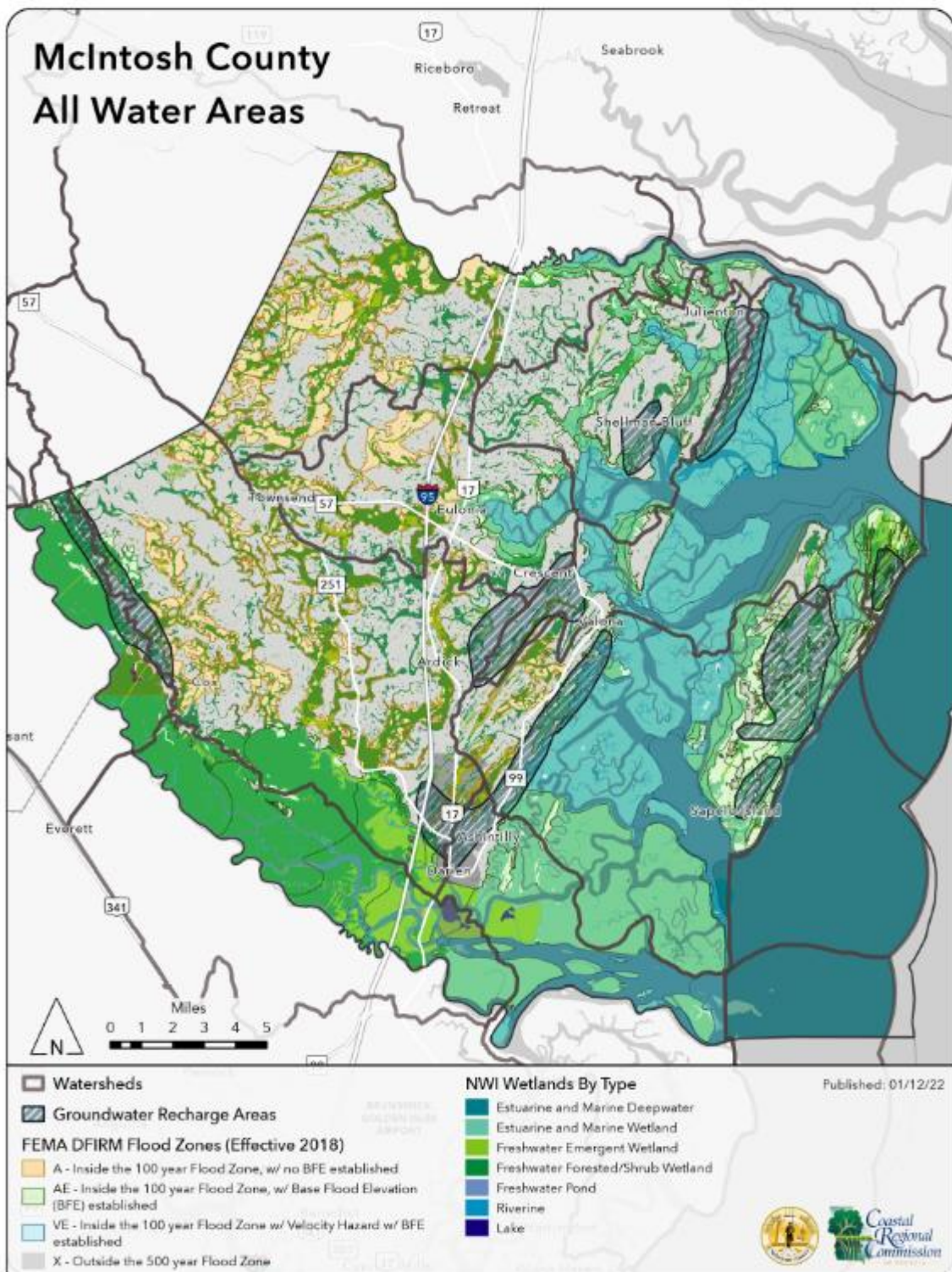
MAP 6-2



MAP 6-3



MAP 6-4



MAP 6-5

SECTION 7 - EDUCATION AND PUBLIC INVOLVEMENT

7.1 BASIC INVENTORY AND ASSESSMENT

Education

Educational and public awareness programs help the residents of a community become more aware and conscious of the social and environmental issues and needs associated with solid waste management. Educational programs can be especially effective in educating the public on the subjects of littering, composting, recycling, waste reduction, thermal conversion, waste repurposing and landfilling.

The county wide waste collection contract discussed in Section 4 requires the contractor to place advertisements in the local paper or magazine at least four times per year regarding recycling education or other related issues.

Public Involvement

Public meetings held for solid waste permits, solid waste management plans and programs are used to inform and educate the public on solid waste planning needs and goals, and facilitate public involvement in developing solid waste solutions.

As part of the McIntosh County Solid Waste Program and public involvement, the countywide curbside waste collection contract requires the contractor to sponsor or to contribute up to \$10,000 annually to the “Blessing of the Fleet” or the “Darien Fall Festival” and an additional contribution of \$5,000 annually to the Chamber of Commerce.

7.2 NEEDS, GOALS, AND IMPLEMENTATION STRATEGY

McIntosh County recognizes the need for education and community involvement regarding solid waste management, recycling and waste reduction. This SWMP has identified multiple approaches that are being considered to accomplish the goals for solid waste management. As recycling, waste reduction, waste conversion or other solid waste programs and projects are developed, one of the goals of this plan is that parallel educational efforts should be developed to explain the processes, their benefits, and inspire public support and involvement. Avenues for educational efforts could be school groups, field trips, facility tours, civic club programs, news articles, published literature and other. Subjects of educational efforts will develop as solid waste programs are adopted and may be Subtitle D landfill construction, environmental protections, operation of landfills, recycling, landfill reclamation, thermal conversion and other programs as they are developed.

SECTION 8 - IMPLEMENTATION AND FINANCING

8.1 BASIC INVENTORY AND ASSESSMENT

Implementation of McIntosh County's Solid Waste Management Plan has been discussed in each of the previous sections of this report. The solid waste program has been funded by fees from the solid waste assessments included on the McIntosh County tax bills as well as income from landfill revenues.

The status of the landfills as discussed in Section 5 reveal that there is limited disposal space as presently permitted which means limited site life and limited revenue.

The Closure and Post Closure costs for the landfills are significant, currently projected at \$4,181,266 and expected to increase each year.

Full cost accounting measures as recommended by DCA are implemented and annual auditing is conducted by independent auditors.

8.2 NEEDS AND GOALS

Landfill usefulness is measured in terms of "site life". The site life of a given location is a derived number of years based on the remaining capacity of cubic yards of air space, a given amount of waste disposed per day, a compaction ratio for the waste disposed, and the number of days waste is received. According to the latest reports which are based on current disposal amounts and compaction, the MSW landfill currently has 6.5 years of site life and the C&D landfill has 9.7 years of site life.

The needs and goals of McIntosh County are summarized as follows:

The current MSW landfill is close to its capacity, it is unlined and has groundwater contaminants that must be addressed through permitted corrective actions

The existing MSW landfill must be either closed or it must be reclaimed, however closing the landfill does not remove the requirement for corrective action.

Closing the landfill brings the expense of capping the landfill, and initiates the 30-year post closure care period and its associated costs.

Reclamation of the landfill requires significant financial expenditures which can be offset up to \$2 million dollars by reimbursement through the Georgia Hazardous Waste Trust Fund.

Efforts are being made through the Georgia legislature to increase the \$2 million dollar cap on HSI Trust Fund reimbursements. Increasing the available funds from HSI would make landfill reclamation even more economically viable.

Reclamation requires a location for the reclaimed waste to be redispersed. Transportation and disposal costs mean that reclamation becomes cost prohibitive if the residual reclaimed waste has to be disposed at a distant landfill with costly disposal fees. Thus,

reclamation is a useful strategy if the re-disposal of reclaimed waste is economically viable.

Since only a small amount of airspace remains in the MSW landfill and there is limited airspace remaining in the C&D landfill, there is a need for future disposal capacity for McIntosh County.

The curbside collection program, landfill operations, recycling, waste to energy and waste reduction programs shall be funded through revenues from curbside fees, landfill operation fees, and revenues from Waste to Energy product enterprises and other funding sources that may be developed.

McIntosh County will continue to accept out of county waste as needed to fund or support landfill new cell construction, expansions and landfill reclamation. The County anticipates continuing to contract with private companies for curbside collection services, and may contract for landfill management, landfill reclamation, Waste to Energy projects, and may contract for operational services for any of its programs, projects or services including landfill operations, waste to energy operations and other enterprises that may be developed.

8.3 IMPLEMENTATION STRATEGY AND FINANCING

Implementation

McIntosh County is investigating and considering all available options for long term solid waste planning. The courses of action are being evaluated and may include a number of actions to achieve the goals listed in section 8.2. The implementation strategy may include but are not limited to the following courses of action.

- Reclamation of the MSW landfill.
- Expansion of the existing MSW and/or C&D landfills.
- Developing new sites for MSW and C&D.
- Re-permitting of the unlined area after reclamation.
- Closure of the landfill.
- Construction of a Transfer Station and contracting for disposal.
- Applying for HSI Funds to address corrective actions.
- Privatization of landfills (similar to the privatization of countywide curbside collection) to fund the remediation of the landfill, fund closure and post closure costs, generate income for the County and construct long term disposal capacity for McIntosh County.
- Addition of Waste to Energy technology (WTE).
- Addition of technologies and revenue generating projects related to WTE.

Financing

McIntosh County plans to be innovative and creative in enterprise endeavors and will assess all viable sources and alternatives for revenues associated with solid waste collection, disposal, recycling, reclamation, waste to energy and its by-product utilization.

A host fee of \$3.00 per ton may be required from all privately owned solid waste handling facilities in McIntosh County, including landfills and transfer stations. This fee shall be used to assist the County in meeting its solid waste management obligations. All host fees shall be used to help achieve the SWMP goals and objectives.

The asset of airspace can provide additional income for the County and may be monetized by direct usage and filling, pre-selling of airspace, or long-term contract for landfill management.

The County may consider the creation of a Solid Waste Authority (SWA) under the provisions of Georgia law to be assigned authority and responsibility for solid waste management for McIntosh County. The McIntosh County Board of Commissioners and staff must evaluate the benefit and utility of creating a SWA. An Authority may be considered for limited purposes such as being an agent for reclamation or as a long-term contracting entity.

Solid waste management programs are long term strategies that require significant planning and investment. The County's plans to utilize all available resources to determine the best long-term solutions for solid waste management and fund its existing and future solid waste programs to the benefit of the County and its citizens. Funding mechanisms for solid waste management may include but are not limited to utilization of County funds, SPLOST, Bond Issues, borrowed funds, joint ventures, public private partnerships, contracts for management, contracts for services, user fees, host fees, Georgia HSI funds or other.

The McIntosh County Solid Waste Management Plan is intended to be an informational, educational, planning and management instrument. It may be amended from time to time and should remain flexible and sensitive to changes and innovation in the solid waste industry.