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In general, there are three classifications for landfills in South Carolina:

- Class 1 landfills accept land-clearing debris;
- Class 2 landfills accept construction and demolition debris; and
- Class 3 landfills accept household garbage – or MSW.

Source: South Carolina Solid Waste Management Annual Report FY 2010

5.1 Waste Stream Projections

5.1.1 Class One Waste (Land Clearing Debris and Yard Trash) – Yard trimmings are defined as less than four feet in length and less than six inches in diameter. The county currently sends yard trimmings to a facility where it is ground into mulch and sold as boiler fuel. This practice is classified as recycling according to the state of South Carolina. The County recycled 6,627 tons of Yard Trimmings in this manner in FY2010.

5.1.2 Class Two Waste (Construction, Demolition, and Land Clearing and Industrial) - According to the 2010 South Carolina Solid Waste Annual Report, the amount of Class Two Waste generated within Beaufort County for disposal in Class Two landfills was 20,201 tons.

Beaufort County's average Class Two waste generation rate of 3.21 pounds per person per day (p/p/d) was calculated based upon the five year period between FY06 - FY10. There is some expectation that changes in the South Carolina state landfill regulations might shift some Class Two waste from the Class Three landfills (where it is currently being disposed of) to the new Class Two landfills. However it will require a few years to measure the impact.

5.1.3 Class Three Waste (Municipal, Industrial, Sludge, Incinerator Ash) - According to the 2010 South Carolina Solid Waste Management Annual Report, the amount of Class Three waste generated within Beaufort County for disposal at Hickory Hill landfill was 148,470 tons.

Beaufort County's average municipal solid waste generation rate of 5.94 p/p/d was calculated based upon the five year period between FY06 - FY10. As previously described, changes to the South Carolina state landfill regulation will likely result in a slight decline in the Class Three waste stream. Some waste streams (including

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industrial wastes previously prohibited from C&D landfills) will be allowed to be disposed of in new Class Two landfills. However, it will require a few years to measure the impact.

Table 5 illustrates the Class Two and Class Three waste generation projections for the coming years (based on the average generation rate from FY06 - FY10, and the projected population).

Table 1 – Beaufort County Waste Generation Projections (2015-2035)
(tons/total population per year)

Year	Population	Waste Generation (tons)	
		Class Three	Class Two
2015	170,640	184,982	99,965
2020	185,220	200,788	108,507
2025	199,780	216,572	117,036
2030	215,270	233,363	126,111
2035	230,240	249,592	134,880

Source: Population Projections - SC Budget & Control Board, Office of Research & Statistics

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5.2 Collection, Temporary Storage, and Transportation of Solid Waste

All solid waste facilities and equipment in Beaufort County are planned, designed, and operated as an integral function of this Plan. All facilities and equipment must be selected to ensure maximum efficiency for operations, proper locations for use by citizens and transportation cost, safety, and the lowest possible purchase price.

Beaufort County will strive to improve solid waste management and recycling technologies to minimize the amount of waste disposed of in landfills. Beaufort County will continue to utilize its convenience/recycling drop-off centers for the collection of Class Two (as previously described) and Class Three waste and recyclables. In Beaufort County the garbage trucks transport the waste to Hickory Hill Landfill. Most garbage trucks are designed for operation on paved roads. When full, they must either dump the solid waste at a landfill or a local transfer station. Due to the lack of a transfer station in Beaufort County, they must transit the dirt road at the landfill site to the top of the hill where garbage is dumped and then compacted into the landfill. Transiting the roads to the top is rough on chassis and truck tires. In wet weather the road is often so muddy and slick that each truck must be winched to the top of the landfill to dump. All of these conditions result in increased maintenance costs for hauling companies and also increased hauling time. In comparison, a transfer station has a concrete tipping floor where trucks can drive in and dump in just a few minutes in all weather conditions. Haulers are generally willing to pay a premium of several dollars per ton to tip at a transfer station.

5.3 Solid Waste Transfer Stations

A transfer station, as defined by the S.C. Solid Waste Policy and Management Act of 1991 (Act), is a combination of structures, machinery or devices at a facility where solid waste is taken from collection vehicles and placed in other transportation units, with or without reduction in volume, for movement to another solid waste facility. A transfer station can be designed to transfer or process recyclables as well as collect and properly manage materials that may be better managed outside the solid waste stream such as household hazardous waste,

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tires, used oil, and electronics. Beaufort County does not have access to a transfer station.

Currently, the County can only access a single landfill in an economically feasible way given the distance to all other disposal facilities and that landfill, Hickory Hill, has a limited capacity based on both permitted disposal rate (5.3 years) and estimated remaining life of facility (8.3 years) (SCSWM Annual Report FY2010). Without a transfer station to consolidate waste for longer distance transport, the only option for Beaufort County solid waste disposal is the Hickory Hill Landfill. Beaufort County has authorized several investigations into solutions for this issue. In 2004 R. W. Beck evaluated disposal options for the County including a cost analysis for transferring, hauling, and disposing of waste under each option. In 2010, the same firm performed an update of these activities:

Identify and interview potential facilities

Nine of fourteen landfills contacted expressed an interest in accepting solid waste from Beaufort County. One of the nine is Three Rivers Solid Waste Authority located near Aiken, SC. The Three Rivers Solid Waste Authority currently provides solid waste management services to local governments in Aiken, Allendale, Bamberg, Barnwell, Calhoun, Edgefield, Orangeburg, and Saluda counties (SCSWM Annual Report FY2010).

Estimate range of capital costs associated with a 500 ton per day transfer station (182,500 T/yr)

Estimated total capital cost: High \$6,025,000; Low \$4,896,700 If financed over 20 years at 4 % interest, the annual cost of debt retirement at the high capital cost estimate would be \$443,330, or \$2.84/ton. The annual cost of debt retirement at the low capital cost estimate of \$4,896,700 at the same terms would be \$360,308 or \$2.31/ton.

Estimate range of cost per ton for a transfer, haul, and disposal scenario, including financing costs of capital.

Projected costs associated with development and operation of a single 500 ton/day facility, including transportation to and disposal at the Three Rivers Solid Waste Authority landfill and payback on the loan for capital costs. High estimate is \$53.09/ton and the low estimate results in a cost of \$46.24/ton.

Full-cost disclosure is defined as the local government's total cost for operating a solid waste program. Costs reported include expenditures for all activities related to collecting, disposing of and recycling solid waste. Utilization of Beck's transfer station cost estimates and Beaufort County's FY10 Full Cost Disclosure shows that the addition of a transfer station would increase the total cost per capita by approximately \$3.76. Total cost per capita was \$28.59 in FY10.

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The addition of a transfer station would give Beaufort County flexibility regarding disposal of solid waste and offer haulers a more efficient way to dump their loads in inclement weather. This would result in a 13% increase in cost per capita for solid waste disposal, but solve some serious environmental problems that will be coming within a twenty year time frame.

5.4 Solid Waste Processing Facilities

According to SCHEC, a “solid waste processing facility”, means a combination of structures, machinery, or devices utilized to reduce or alter the volume, chemical, or physical characteristics of solid waste through processes, such as baling or shredding, prior to delivery of such waste to a recycling or resource recovery facility or to a solid waste treatment, storage, or disposal facility and excludes collection vehicles. Beaufort County does not have any existing facilities or plans to install one within the next 20 years.

5.5 Class One Landfills (Land-Clearing Debris and Yard Trash)

As described in Section 4.6, there are no Class One Landfills (Land-Clearing Debris and Yard Waste) operating in Beaufort County. Land-clearing debris and yard waste generated within the County either goes to existing Class Two landfills or is ground and sold as boiler fuel or mulch. There are no plans to construct a class one landfill within the next 20 years.

5.6 Class Two Landfills (Construction, Demolition, and Land-Clearing Debris and Industrial Waste)

As described in section 4.7, Beaufort County hosts one privately owned Class Two Landfill. That landfill, Barnwell Resources, has an estimated 50 years of additional operational life. The County also disposes of Class 2 waste at the Oakwood Landfill located in Jasper County. No new facilities are needed for this 20 year master plan.

5.7 Class Three Landfills (Municipal, Industrial, Sludge, Incinerator Ash)

Currently Beaufort County’s Class 3 waste is disposed of at the Hickory Hill Landfill located in Jasper County. According to the 2010 SCDHEC Solid Waste

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Management Annual Report, the estimated remaining life of the Hickory Hill Landfill based on permitted and current disposal rate is 5.3 to 8.3 years. Because of this, Beaufort County needs to secure another outlet for waste disposal within a short timeframe (2 to 3 years).

As mentioned previously in Section 5.3, Solid Waste Transfer Station, Beaufort County can only access a single landfill in an economically feasible way given the distance to all other disposal facilities and that landfill, Hickory Hill, has a limited capacity based on both permitted disposal rate (5.3 years) and estimated remaining life of facility (8.3 years) (*SCSWM Annual Report FY2010*). Without a transfer station to consolidate waste for longer distance transport, the only option for Beaufort County solid waste disposal is the Hickory Hill Landfill.

The Act states that a county has “the responsibility and authority to provide for the operation of solid waste management facilities to meet the needs of all incorporated or unincorporated areas of the county.” The stated purpose of the Act is to provide for solid waste management in the “most environmentally safe, economically feasible and cost-effective manner.” To this end the County has concluded that the most prudent long range plan is to site a transfer station either in Beaufort County, if possible, or a neighboring county. A transfer station is safe environmentally, because garbage trucks will be able to dump their loads in all types of weather, allow for year round collection of household hazardous wastes, and add flexibility to utilize more than one landfill that has a limited remaining life. The cost analysis will require a cost increase of approximately 13% more per capita which is reasonable when the alternative is no disposal options. In order to address the potential lack of Class Three Landfill space, Beaufort County’s best option is to create access to a transfer station.

5.8 Solid Waste Incinerators

Beaufort County currently has no operating solid waste incinerators except for a very small privately owned facility on Daufuskie Island. Because of both environmental and cost concerns relating to solid waste incinerators, the County has concluded that a better solution to our limited disposal capacity at the Hickory Hill Landfill, is to create access to a transfer station. Therefore, no new solid waste incinerators will be necessary to fulfill the capacity requirements of the County.

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5.9 Composting and Wood Chipping/Shredding Facilities

Four (4) permitted wood grinding facilities are located in Beaufort County. In FY10 the facilities accepted approximately 78,490 tons. These facilities provide sufficient capacity to the County for the planning period and beyond. Therefore, no new wood chipping and composting facilities will be necessary to fulfill the capacity requirements of the County.

5.10 Used Oil Collection and Processing Facilities

Used oil, oil filters, and oil bottles generated by residents of Beaufort County are collected at each of the County's convenience/recycling drop-off centers. The used oil collected at these sites is collected in tanks for Santee Cooper's Give Oil for Energy Recovery (GOFER) program. Santee Cooper collects the used oil when the tanks reach capacity and transports it to Santee Cooper's Jefferies Generating Station where the recycled oil is used for fuel to generate electricity. A private contractor collects the used oil filters from the collection facilities. The County intends to manage this waste in the same or a similar manner in the future.

No new permitted Used Oil Collection and Processing Facilities will be necessary to fulfill the capacity requirements of the County.

5.11 Waste Tire Haulers, Collectors, Processing Facilities, and Disposal Facilities

Waste tires generated in Beaufort County are accepted at County Convenience Centers. The waste tires are collected at the centers and transported to a central collection site. The waste tires are then transported for recycling by SCDHEC registered haulers. The county intends to continue to manage waste tires in this manner. No permitted waste tire collection facilities, processing facilities, or disposal facilities are currently located in Beaufort County. With sufficient management capacity, no new Waste Tire Collectors, Waste Tire Processing Facilities, or Waste Tire Disposal Facilities will be necessary to fulfill the capacity requirements of the County for the planning period and beyond.

5.12 Research, Development, and Demonstration (RD&D) Permits

RD&D projects will be unnecessary to meet the county's solid waste

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management requirements during the planning period.

5.13 Land Application of Solid Waste Permits

Beaufort County currently has no operating Land Application from Solid Waste Facilities. None will be needed to fulfill the solid waste management requirements of the County during the planning period.

5.14 Recycling Programs

Beaufort County plans to continue its recycling programs through the use of its convenience/recycling drop-off centers. A curbside recycling program exists in the City of Beaufort, Town of Port Royal, Town of Bluffton, and The Town of Hilton Head offers a franchised hauler as a curbside recycling option. Because curbside pick-up is the most convenient method of recycling, and the public is more likely to recycle based on convenience, in areas where the population density is high enough, the County would like to see mandatory curbside recycling initiated. Beaufort County will continue to educate its residents on the importance of recycling.

For FY10, citizens of the County disposed of 4.1 p/p/d of defined MSW compared to the statewide average of 3.7 p/p/d. Additional recycling would be desirable since the current disposal rate must be decreased 0.6 p/p/d in order to meet the state goal of 3.5 p/p/d.

The County has recently implemented an in-house recycling program that includes 38 stops and yielded 4 tons of material in November of 2011. Beaufort County will seek to expand its public education programs to make citizens, commercial businesses, retailers, etc. more aware of the need to reduce waste and about the opportunities that exist for recycling. Access to a transfer station will not only allow for more flexibility in waste handling and disposal options, but will also enable workers to screen incoming wastes to separate out readily recyclable materials. The option of including a Materials Recycling Facility to be is a possibility for inclusion with a transfer station. This would enable the County to market it's recyclables according to the most economical practices available.

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5.15 Special Wastes

As mentioned in Chapter 4, Special Waste is defined as commercial or nonresidential solid waste, other than regulated hazardous wastes, that are either difficult or dangerous to handle and require unusual management at MSW landfills. Special Waste includes but is not limited to pesticide wastes, liquid wastes, sludge, industrial process wastes, wastes from pollution control processes, residue or debris from chemical cleanups, contaminated soil from a chemical cleanup, containers and drums, and animal carcasses. Beaufort County does not accept special waste. Special waste is not currently accepted at the County's convenience/recycling drop-off centers.

5.16 Household Hazardous Materials (HHM)

Beaufort County's Public Works department currently works with local citizen's groups to hold one-day events each year to collect HHM from residents. In addition to the yearly one-day events, approximately 800 gallons of paint/week are collected at the convenience centers. The addition of a Transfer Station with HHM collection facilities would allow for year round collection of materials such as paint, pesticides, cleaning supplies, and batteries.

5.17 Import and Export of Waste

Per the Beaufort County Code (ARTICLE III, Section 62-28), the County does not accept waste generated outside of Beaufort County at County operated facilities.

5.18 Storm Debris Management

Beaufort County has a Debris Management Plan to guide the County during major storm events. Due to the size of the document it is not included in this Plan.