

INFRASTRUCTURE DATA AND ANALYSIS

SOLID WASTE

INTRODUCTION

The following is the Data and Analysis necessary to support the adopted Charlotte 2050 Plan goals, objectives and policies.

The purpose of the Solid Waste section is to ensure that necessary sanitation facilities and services are in place to provide for the needs of future populations in Charlotte County. This section identifies and describes the operations of landfill sites and waste collection companies within the County, and outlines a course for solid waste disposal over the life of the Comprehensive Plan.

Solid waste in Charlotte County is handled through an “Integrated Municipal Solid Waste Management System,” a complete system that addresses the solid waste needs of the community and is economically viable. The system encompasses source reduction, collection, handling, and disposal of solid waste. It includes programs and services that provide community education. It addresses special solid waste disposal issues such as illegal dumping, hazardous waste, community clean-ups, composting, and recycling. It deals with the proper design and operation of facilities such as landfill design, operational methods including waste acceptance and screening, leachate and landfill gas management, closure, and long-term care measures. It addresses environmental and groundwater protection and it addresses safety and emergency planning measures. All of these issues are connected to Charlotte County’s municipal solid waste (MSW) needs, and all of them are part of the County’s Integrated Municipal Solid Waste Management System.

Municipal Solid Waste includes all materials discarded from residential, commercial, institutional, industrial, and community activity sources, including garbage, refuse, yard waste, and similar solid waste materials. The collection of MSW is a very important aspect of Charlotte County’s service to its citizens. Proper and timely collection and disposal of waste assures protection of the general public’s health, safety, and welfare. In order to provide suitable service, the County utilizes a public-private partnership in which the County owns and operates a landfill, while depending upon private companies to collect and transport waste products to the landfill.

A host of Federal, State, and local laws and rules regulate solid waste disposal in Charlotte County. These include the Federal Resource Conservation and Recovery Act (RCRA), Florida’s 1988 Solid Waste Management Act (Chapter 403, Part IV, *Florida Statutes*), and the 2008 Florida Energy Bill.

State regulations, including Chapter 62-701, *Florida Administrative Code (F.A.C.)*, outline specific State requirements regarding the operation and closure of landfills, the issuance of solid waste permits, and the handling of special wastes. Charlotte County has adopted its own local regulations to govern solid waste in order to be consistent with Federal, State, and regional guidelines and implementing the programs required by the Federal and State governments, as well as the Comprehensive Plan.

The Zemel Road Landfill is Charlotte County's only operational Class I landfill; it is located in South County approximately ten miles south of the City of Punta Gorda and one mile north of the Lee County line. The landfill property spans an entire section of 640 acres, and operates under a Class I permit issued by the Florida Department of Environmental Protection. It has sufficient capacity to serve Charlotte County until the year 2027, and there is ample space at the site to expand the landfill and extend its operational life well past 2050. Charlotte County will enforce its Land Development Regulations to assure that the County is able to collect and dispose of 7.2 pounds of solid waste generated by permanent residents daily, of which 5.0 pounds may be landfilled. Additionally, Charlotte County will continue to recycle. The department will perform periodic waste generation analysis to determine waste generation rates and to ensure that levels of service capacities are maintained. These levels of service (LOS) standards will apply throughout the County, regardless of Urban Service Area designation.

RELATIONSHIP TO 2050 PLAN

The Solid Waste section ensures that infrastructure and services for the collection and disposal of solid waste are in place to serve existing and new development. Florida laws and regulations require that, prior to issuance of certificates of occupancy for new homes and other buildings, solid waste facilities and services are in place and able to manage waste generation. In this respect, this section is closely linked to the Future Land Use and Capital Improvements Elements since the Future Land Use Element designates the locations and intensities of development which will generate solid waste and the Capital Improvements Element lists funding which assures that the necessary solid waste infrastructure and services will be in place to serve development.

LEGISLATION

Numerous Federal, State, and local laws and rules regulate solid waste disposal in Charlotte County. In addition to mandates, organizations such as the Southwest Florida Regional Planning Council have guidelines and policies with which Charlotte County's solid waste operations are consistent. Among these rules and plans are chapters 187 and 403 *Florida Statutes*, the Federal Resource Conservation and Recovery Act, Rules 9J-5 and 62-701, the *Florida Administrative Code*, and the Regional Strategic Regional Policy Plan.

FEDERAL

- **The Resource Conservation and Recovery Act (RCRA)** was adopted by Congress in 1976 and serves as the Federal legislation which regulates the disposal of municipal solid waste by setting minimum standards for waste disposal facilities. It also established resource recovery as a national priority and mandated that efforts to better utilize and manage the recycling of wastes were needed.

STATE

- **House Bill 7135, the 2008 Florida Energy Bill**, was passed by the Florida Legislature on April 30, 2008. This bill is comprehensive recycling legislation that identifies and requires a statewide average goal of 75 percent recycling by the year 2020. Under this bill, the Florida Department of Environmental Protection (FDEP) will develop this comprehensive recycling program and submit it to the Legislature by January 1, 2010, and the program may not be implemented until approved by the Legislature. Materials covered by this program include, but are not limited to, metals, paper, glass, plastic, textile, rubber materials, and mulch.

The bill requires FDEP to analyze “particular recyclable materials” such as auxiliary containers, wrappings, or disposable plastic bags used by consumers to carry products from retail establishments, and to report on this analysis to the Legislature by February 1, 2010. Until the Legislature adopts the FDEP recommendations, however, no local government shall enact any rule, regulation, or ordinance regarding its use, disposition, sale, prohibition, or tax of any such auxiliary containers, wrappings, or disposable plastic bags.

The bill requires every County to implement a recyclable materials recycling program, and counties are encouraged to form cooperative arrangements for implementing recycling programs. Such programs shall be designed to recover a significant portion of all newspaper, cardboard, and office paper; aluminum and steel cans, glass and plastic bottles, and yard trash that enter the waste stream, although these recycling programs shall not be required to be limited to collecting and recycling only these materials.

Finally, the bill encourages local governments to separate all plastics, metal, and all grades of paper for recycling prior to final disposal, and to recycle yard trash and other mechanically-treated solid waste into compost available for agricultural and other acceptable uses.

The bill also requires that by July 1, 2010, each County shall develop and implement a plan to achieve a goal to compost organic materials that would otherwise be disposed of in a landfill. The goal shall provide that up to ten percent and no less than five percent of organic material would be composted within the County and municipalities within its boundaries.

Florida Administrative Code:

- **Rule 9J-5, F.A.C.**, specifies the requirements for local government comprehensive plans. It requires Charlotte County to include an infrastructure element with a solid waste section and goals, objectives, and policies relating to solid waste. The Rule requires adoption of minimum level of service standards and concurrency requirements indicating that Charlotte County will not issue development orders or building permits unless facilities and services are in place to manage a development's impact.
- **Chapter 62-701, F.A.C.**, outlines specific State requirements regarding the operation and closure of landfills, solid waste permits, and the handling of special wastes. This rule also regulates the disposal and classification of waste, and prohibits the disposal of yard wastes in landfills with liners.

Florida Statutes:

- **Chapter 187 of the Florida Statutes (F.S.)**, is the State's comprehensive plan. A goal of the plan is that all solid and hazardous wastes, as well as wastewater, be managed properly. Its policies call for the reduction of landfilled wastes by 30 percent by 1994; County-wide solid waste collection systems which discourage littering and illegal dumping; initiation of programs to develop or expand recyclable material markets; strengthening and enforcement of regulations regarding generation, storage, treatment, disposal, and transportation of hazardous wastes; establishment of systems for identifying the location, type, and quantity of hazardous materials; encouraging coordination of intergovernmental and interstate waste management efforts: identification, development, and encouragement of environmentally sound wastewater treatment and disposal methods: and encouragement of strict enforcement of hazardous waste laws and swift prosecution of violators.
- **Chapter 403, Part IV, F.S.**, is known as the 1988 Solid Waste Management Act. It requires local governments to start recycling programs in order to divert at least 30 percent of all municipal solid waste collected to recycling, rather than disposal in a landfill. The act also addresses the disposal of various other wastes such as lead-acid batteries, used oil, and tires. HB 851, passed by the 2002 Florida Legislature and signed by the Governor on May 30, 2002, modifies the solid waste management goals found in Section 403.706, F.S. to require recycling programs to be designed to recover a significant portion of at least four of the following materials from the waste stream prior to final disposal: newspaper, aluminum cans, steel cans, glass, plastic bottles, cardboard, office paper, and yard trash.

LOCAL

- The Southwest Florida Regional Planning Council adopted a Strategic Regional Policy Plan (SRPP) in August 1995, with which this Comprehensive Plan must be consistent. The SRPP indicates that local governments within the region should support and establish recycling and hazardous waste disposal programs; transportation of hazardous waste

products be regulated, personnel working with hazardous wastes be trained and properly protected, and local governments properly collect solid wastes and operate disposal facilities.

- Charlotte County has adopted local regulations which govern solid waste in order to be consistent with these Federal, State, and regional guidelines. Chapter 4-4 of the Charlotte County Code established sanitation franchise districts for all of unincorporated Charlotte County. One district has been established for all of unincorporated Charlotte County. Chapter 1-12 regulates the operation of the landfill and service collectors within the County; in effect, it implements the programs required by the Federal and State governments, as well as the Comprehensive Plan.

EXISTING CONDITIONS

INVENTORY

Waste collection is a very important aspect of Charlotte County's service to its citizens. Proper and timely collection and disposal of waste assures protection of the general public's health, safety, and welfare. In order to provide suitable service, the County utilizes a public-private partnership. The County owns and operates a landfill located south of the City of Punta Gorda while private companies collect and transport waste products to the landfill.

Zemel Road Landfill

Charlotte County's only operational Class I landfill is the Zemel Road Landfill located in the South County area, approximately ten miles south of Punta Gorda and one mile north of Lee County. The landfill spans an entire section of 640 acres (Township 42S, Range 23E, Section 25), and operates under a Class I permit issued by the Department of Environmental Protection. These permits are issued for five-year periods and are renewed on an ongoing basis to ensure the continuous operation of the facility. This permit allows Charlotte County to use 102 acres for disposal cells. The remaining 538 acres are devoted to wetlands mitigation, future disposal cells, temporary holding areas for specific wastes, and an administration building and other facilities.

Landfill Design Capacity: According to the most recent Landfill Life Report, the Zemel Road Landfill has a remaining capacity of 4,674,295 cubic yards, which is deemed sufficient to serve Charlotte County until the year 2027. This is below the planning horizon of 2050, but the County has identified 170 acres within the existing 640-acre Zemel Road site for future use as disposal cells. It is estimated that these 170 additional acres will provide disposal capacity beyond the year 2050. The projection of landfill site life is based on engineering design, operational techniques, projected population, the size of the site, average per capita solid waste generation, and the type of lining being used as reported in the landfill's closure application. The Landfill Life Report is updated annually, as required by 62-701, F.A.C. This report identifies capacity based on population projections and the report estimates the remaining disposal capacity of the facility.

Landfill Operations: Charlotte County's landfill consists of a shallow excavation into which a layer of solid waste is deposited. The waste accumulates over time and is formed into a mound. Upon reaching its established design height, the solid waste receives a final cover of soil in accordance with Rule 62-701, F.A.C. which governs landfill site closures.

A County's solid waste management and recycling programs are designed to provide for sufficient reduction of the amount of solid waste generated within the County. The goals provide, at a minimum, that at least 30 percent of the amount of municipal solid waste collected within its boundaries is diverted from the landfill to recycling programs. The County's program is designed to recover a significant portion of all newspaper, aluminum cans, steel cans, glass plastic bottles, cardboard, office paper, and yard trash from the solid waste stream prior to final disposal at a solid waste disposal facility.

The landfill also has holding sites for used automobile tires, white goods, clean construction debris, other construction and demolition debris, and household hazardous waste. Used tires and white goods, such as refrigerators, hot water heaters, stoves and similar appliances, and scrap metals from construction activities are recycled. White goods are divided into two groups: those containing Freon (CFC) refrigerants and those without.

Clean debris, such as concrete, brick, rock, and ceramic tile, is stored at the clean debris holding site and is used as a foundation for service roads within the landfill. Trees, branches, brush, and yard wastes are accepted at the landfill. This material is mulched and then used for erosion control, blended with soils for use as daily cover. The County has begun a composting operation using shredded yard wastes, landscape debris, and vegetative land-clearing debris and mixing it with domestic waste water sludge from the County's utility facilities. Wood and lumber is shredded into chips and used at the landfill for grading and wet weather operations.

Household hazardous waste, such as paint and potentially hazardous chemicals, are stored at the landfill until picked up by a contractor who removes the material. The County also operates two regional Mini-Transfer and Recycling Facilities, in Murdock and Englewood East, where citizens can drop off household hazardous waste.

The primary function of the landfill is disposing of waste products. However, another major function for landfill personnel is public education. In order to implement proper waste handling and promote recycling of wastes, the County's Solid Waste Resource Division implements recycling and special waste programs, business waste and monitoring assessments, and educates the public about recycling opportunities. The education program includes presentations made to schools, businesses and civic groups and displays set up at the County fair, shopping malls, and other attractions or events. Additionally, brochures and newspaper advertisements are published, and radio and television stations run public service broadcasts and commercials.

The County has two Mini-Transfer and Recycling Facilities, one in West County, located on Environmental Way, Englewood East and one on Kenilworth Boulevard, in Murdock. These facilities provide residents convenient solid waste services, promote proper handling and disposal of wastes and recyclables, and help eliminate illegal dumping activities. The facilities are open to the residential public and they accept landscaping debris, debris from minor household repairs, waste tires, appliances, furniture, household hazardous wastes, special wastes such as motor oil, lead-acid batteries, and oil filters, and recyclables. Food wastes are prohibited, as is the disposal of wastes from non-residential establishments.

Recycling

Charlotte County began a pilot voluntary curbside recycling program in 1989, and expanded it to a permanent County-wide program in 1991. The program provides curbside collection of newspaper, aluminum beverage cans, steel cans, No. 1 and 2 plastics, clear, green, and brown glass, mixed paper, and cardboard. The County's franchised solid waste hauler collects recyclables once each week and then transports the recyclables for marketing.

The program also includes used oil, used oil filters, lead-acid batteries, waste tires and yard waste. Used oil is stored at the landfill's Used Oil Storage Tank until it is recycled. Lead acid batteries, oil filters and tires are stored at the landfill until picked up for recycling. Yard waste is deposited at the landfill's mulch site where it is chipped by a contractor.

In 1995, Charlotte County began a voluntary commercial recycling program to supplement its residential program. Businesses throughout the County are asked to recycle their recyclable wastes.

Solid Waste Collectors

Two entities currently collect solid waste within Charlotte County. Waste Management Inc., of Florida collects solid waste in the unincorporated areas of Charlotte County and, through an interlocal agreement that provides for disposal, the Lee County area of Gasparilla Island. Out-of-County solid waste deposited in the Zemel Road Landfill, including that collected from the Lee County portion of Boca Grande, amounts to no more than 2 percent of the total volume deposited. The City of Punta Gorda's Public Works Division provides collection within the city limits. Solid waste collection for those areas within the unincorporated areas of Charlotte County, and within the Urban Service Area, is arranged through Charlotte County. Although outside the Urban Service Area, the bridgeless barrier islands of Knight Island and Don Pedro Island are served by a vehicle ferry, and receive regular solid waste collection through the County. Residents of the other bridgeless barrier islands must arrange for collection and removal of their household solid waste by transporting it to the mainland and securing legal disposal. Properties designated as agricultural by the County Property Appraiser, pursuant to Section 193.461, F.S., are generally excluded from the Sanitary District, although properties with residences are included and subject to sanitation assessments. Currently, there are fewer than 300 such properties in the County.

The predominant waste generators served by the landfill and collection services are residential, commercial, and limited industrial. Residential wastes are generated primarily by single-family homes. Commercial wastes are primarily generated by retail businesses.

Fees

County residents pay into one Municipal Services Benefit Unit (MSBU) for their collection service. The MSBU provides service to all unincorporated Charlotte County. As defined in Charlotte County Code, Chapter 4-4, the solid waste residential sanitation district rates are established during annual public budget hearings. The Solid Waste Management Division receives a portion of the fees for the operation of the department's programs and landfill operations, a portion is used for administrative costs, and the remainder is for collection costs.

Tipping fees at the landfill, which include the cost of the Solid Waste Management Division's programs, such as household hazardous wastes and resource management, are set by the Charlotte County Board of County Commissioners through a public hearing process. The landfill charges an out-of-County fee which is double the Charlotte County resident's fee on a per ton formula. There is an inter-local agreement for Gasparilla Island's Lee County residents, which includes a \$15.00 surcharge per ton.

Hazardous Waste

The Zemel Road Landfill and the County's Mini-Transfer and Recycling Facilities serve as the County's temporary storage facilities for household hazardous waste and "sharps" used hypodermic needles. These facilities provide residents convenient solid waste services and promote proper handling and disposal of household hazardous wastes. The facilities are open to the residential public where they can bring household hazardous wastes and special wastes such as motor oil, lead-acid batteries, and oil filters. The disposal of hazardous wastes from non-residential establishments is prohibited.

Charlotte County operates a Small Quantity Waste Generators program whereby non-residential producers of less than 2,200 pounds of hazardous waste are monitored. The County's Solid Waste Resource Division inspects these producers in order to ensure compliance with hazardous waste regulations. The Solid Waste Resource Division performs annual assessments based on occupational licenses to identify potential generators and these operations are regularly inspected. These small producers include dry cleaning establishments, automotive repair shops, gas stations, and various other businesses.

FUTURE CONDITIONS

EXISTING AND PROJECTED SOLID WASTE NEEDS

Existing Needs

There are no major development impacts which would adversely affect solid waste collection within Charlotte County. The landfill has modern buildings and equipment and a leachate treatment plant and injection well, facilities that will serve well for the foreseeable future. Projections indicate that it has sufficient capacity to dispose of solid waste until 2024, and available space at the site to expand so that the life of the landfill will extend well beyond the year 2050. Solid waste collection within the County is franchised to Waste Management Inc., of Florida, and they continue to meet the adopted level of service standards. The franchisee collection system is expected to continue to provide more than an adequate level of service through the planning horizon of 2050.

The County will continue to recycle wastes to the greatest extent possible, thereby increasing the lifespan of the landfill and its associated infrastructure.

Solid Waste Projections

As Charlotte County’s population continues to grow, so will the amount of solid waste that needs to be disposed of. Table MSW-1 displays the projection of solid waste through the year 2050. The projection of landfill site life is based on engineering design, operational techniques, projected population, the size of the site, average per capita solid waste generation, and the type of lining being used as reported in the landfill’s closure application. Each year the Environmental and Extension Services Department secures the services of an engineering firm to perform a “landfill life report” as required by 62-701 F.A.C. This report identifies remaining capacity based on population projections and the report estimates the remaining disposal capacity of the facility. Using the 2008 disposal tonnage of 126,452 and a population estimate of 163,245, the landfill life report calculated a per-capita disposal rate of 0.77 tons of solid waste per person in Charlotte County. This per capita rate was used to project solid waste generation to the year 2050. Given this rate, in 2050 the estimated population of 329,832 persons will generate 255,224 tons of solid waste.

The landfill life report also projects remaining space for disposal. The landfill’s current estimated remaining capacity is 4,875,770 cubic yards. These projections only include solid wastes that will be landfilled. In order to more accurately project the life expectancy of the Zemel Road Landfill, recycled waste is not accounted for because it will not take up space in the landfill. Given the projected solid waste generation rates, it is estimated that the existing disposal cell at the Zemel Road Landfill will reach capacity some time during the year 2027. Charlotte County will need to have prepared for that eventuality, either through the expansion of the Zemel Road site, a decrease in the per capita solid waste generation rate, or other means.

Table MSW-1 Solid Waste Projections			
Year	Population	Solid Waste Tonnage	Daily Solid Waste Tonnage
2008	163,245	126,452	346
2010	163,011	126,138	346
2015	177,529	137,372	376

2020	195,427	151,221	414
2025	217,007	167,920	460
2030	241,543	186,906	512
2040	291,360	225,454	618
2050	329,832	255,224	699

Source: 2009 Landfill Life Report, Charlotte County Solid Waste Management Division, 2009

The recycling program does not currently project the amount of recyclable materials collected. The 2008 Florida Energy Bill has increased targeted recycling rates to 75 percent by 2020, however, and this will have profound effects upon recycling State-wide. Such a large increase in the targeted rate of recycling will require many changes in policy and regulations, including the likely implementation of mandatory recycling programs in place of the voluntary programs that now exist. In addition, the 75 percent recycling target will have a significant impact upon the amount of solid waste disposed of in the landfill. As recycling rates increase, the amount of solid waste annually deposited in the landfill will decrease, extending the life of the existing landfill disposal cell.

IMPLEMENTATION

Although the landfill and solid waste collection should be sufficient to serve Charlotte County’s needs for approximately fifteen more years, the issue of landfill site expansion is of importance. Through the Conservation and Recreation Lands (CARL) program, the State and County have acquired portions of the Charlotte Flatwoods which adjoin the landfill. With this acquisition, the landfill has become landlocked. Charlotte County has plans to continue operating a landfill in South County past the year 2027 and within the existing 640 acre site there is approximately 170 acres, above the existing 102 acres, available for new disposal cells. It is estimated these additional 170 acres will provide at least an additional 30 years of disposal space beyond 2027. Future disposal needs beyond this capacity require investigating and acquiring additional land by 2027. The County plans to complete a needs analysis and financial analysis which would be performed seven or eight years prior to the time the permitted facility reaches capacity. This would present sufficient time for purchasing, permitting, and development of disposal sites. Another issue that can be resolved in the future is the use of the landfill site after it is closed. Potential uses include use of the site for recreational activities, preservation as open space, or limited development. Possible recreational uses include a passive park with nature trails, a golf course or driving range, an active park, or other similar uses. Development uses would be limited since structures would be inappropriate.