

LANDFILL GAS SUMMARY

Description of Operation

Landfill gas is a natural by-product of the anaerobic decomposition of organic waste in a landfill. By volume, landfill gas is approximately 50 to 55 percent methane, 45 to 50 percent carbon dioxide, less than 5 percent nitrogen, and less than 1 percent non-methane organic compounds (NMOCs). Methane is flammable at 5 to 10 percent in air, by volume. The production of landfill gas creates positive pressure within the landfill that forces gas to migrate. The City of Greensboro operates the landfill gas collection and control system at the White Street Landfill in compliance with state and federal regulations in order to control migration as well as control the emissions of NMOCs.

The landfill gas collection and control system consists of a network of extraction wells and collection piping. Vacuum is provided to the collection system through the use of two blower/flare stations. The landfill gas can be transported via underground piping to International Textile Group (ITG) for use in their operations. The flare is used to combust excess landfill gas. Federal and state regulations require routine monitoring, recordkeeping, and reporting.

4-Year Average Volumes

Year	Phase I/II			Phase III			Total Gas System				
	Flared	To ITG	Total	Flared	To ITG	Total	Flared	To ITG	Overall		
2009	149,265	328,741	478,006	534,493	67,278	601,771	683,758	396,019	1,079,777	37%	to ITG
2010	117,517	467,415	584,932	799,189	1,818	801,007	916,706	469,233	1,385,939	34%	to ITG
2011	68,810	489,651	558,461	595,631	0	595,631	664,441	489,651	1,154,092	42%	to ITG
2012	56,204	491,987	548,191	572,720	0	572,720	628,924	491,987	1,120,911	44%	to ITG
4-yr Avg	97,949	444,449	542,398	625,508	17,274	642,782	723,457	461,723	1,185,180	39%	to ITG

Assumptions/Notes:

LFG output is expressed as standard cubic feet per minute (scfm) / 1,000

4-Year Average Costs of Operations

Fiscal year	Landfill Compliance Net Cost of Operations
2008/2009	\$407,563.68
2009/2010	\$521,062.35
2010/2011	\$525,712.89
2011/2012	\$404,844.76

MUNICIPAL SOLID WASTE (MSW) SUMMARY

Description of MSW Operations

Currently, the City manages its municipal solid waste through a transfer station (N.C. Permit No. 4120T). The transfer station is owned and operated by City Forces. All MSW is transported and disposed of at the Uwharrie Landfill located in Montgomery County, NC. The City contracts for these out of county transportation and disposal services with private entities. The current transportation contract is with Hilco Transport and the disposal contract is with Republic Services.

At the Transfer Station, the city is responsible for loading acceptable waste types and volumes, securing the loads, and having the trailers ready for connection and hauling. The transfer station ranges from 400 to 1,400 tons disposed of daily and averages around 4300 tons disposed of weekly. All waste disposal activities are regulated by the U.S. Environmental Protection Services, N.C. Department of Environmental and Natural Resources, and Guilford County with respect to operations, monitoring, future planning and construction, as well as long term care.

3-Year Average Volumes

MSW Tons Disposed	2009/2010	2010/2011	2011/2012	3-Year Average
Private Haulers	100,070	94,012	92,845	95,642
City Haulers	136,839	129,284	125,445	130,523
Total	236,909	223,296	218,290	226,165

3-Year Total Revenue Breakdown

Hauler	2009/2010	%	2010/2011	%	2011/2012	%
Private Haulers	4,143,241	42%	3,901,444	42%	3,837,897	43%
City Haulers	5,619,181	58%	5,309,182	58%	5,151,436	57%
Total	9,762,422		9,210,626		8,989,333	

3-Year Average Costs of Operations

Fiscal Year	Total Expenditure & Budget	Total Revenue	Net Cost of Operations	Cost Per Ton
2009/2010	10,625,562	-9,762,422	863,140	\$45
2010/2011	10,519,588	-9,210,626	1,308,962	\$47
2011/2012	10,691,430	-8,993,554	1,697,876	\$49
3 Year Avg	10,612,193	-9,322,201	1,289,993	\$47

*Total Revenue = revenue collected from both City haulers and private haulers

*Cost Per Ton = Total Expenditure & Budget / MSW Tons Disposed

White Street Landfill Operations Summary

Description of Yard Waste Composting Operations

Currently, the City manages its yard waste disposal through composting activities at the White Street Landfill (N.C. Permit No. 41-03-Compost). The composting operations manage all of the green waste prohibited from landfill disposal. All operations are performed by City of Greensboro employees. Yard waste, which includes leaves, grass clippings, branches, garden waste and any vegetative waste generated from within Guilford County or from municipalities whose boundaries cross into Guilford County, is directed to the yard waste composting facility.

At the yard waste composting facility, operations performed include receiving, screening (for suitability), grinding, mixing, windrowing, turning, monitoring, curing, blending, loading and/or packaging of the finished product. Yard waste disposal ranges from 200 to 500 tons disposed of daily, and around 30,000 tons disposed of annually. All waste disposal activities are regulated by the U.S. Environmental Protection Services, N.C. Department of Environmental and Natural Resources, and Guilford County with respect to operations, monitoring, future planning and construction, as well as long term care.

Description of Construction and Demolition Disposal Operations

At the White Street Landfill, the City owns, operates, and maintains a fulltime Construction and Demolition (C&D) Landfill (N.C. Permit No. 41-03-CDLF). By definition, the construction and demolition debris waste stream is originated solely from construction, demolition, and remodeling or repair operations on pavement, buildings or other structures. In addition, the NCDENR Division of Waste Management (DWM) has approved other inert wastes (such as land clearing debris, but not yard waste). The C&D disposal area operates within the area of the facility known as Phase II.

At the C&D disposal area, operations performed include receiving, screening (for prohibited materials), placement, and compaction of waste in order to maintain compliance. C&D disposal ranges from 100 to 400 tons disposed of daily, and around 40,000 tons disposed of annually. All waste disposal activities are regulated by the U.S. Environmental Protection Services, N.C. Department of Environmental and Natural Resources, and Guilford County with respect to operations, monitoring, future planning and construction, as well as long term care.

RECYCLING COLLECTION SUMMARY

Description of Recycling Operation

Greensboro's recycling program began in the early 80's with the "Humpty Dumpster" pilot program for newspaper collection. Fully automated curbside collection began in 1993 with 96-gallon automated carts. The program has been single stream from inception and ReCommunity (FCR) has processed our materials since the beginning. Citywide commercial recycling collection for businesses began in 1994. The Household Hazardous Waste drop-off program began in 1994 and is free for all Guilford County residents. Popular Science magazine listed Greensboro as one of the Top 50 Greenest Cities in America in 2008.

Currently, the City of Greensboro offers one of the most comprehensive set of recycling services of any municipality in North Carolina. Our program includes over 80,000 residential collection points ranging from single-family homes, townhomes, condos and over 1,000 commercial business and apartment dumpster customers, 21 public recycling drop sites and Central Business District (CBD) services. Community and business outreach efforts and our processing contract are administered by our Waste Reduction section, including one waste reduction supervisor, one education specialist, one inspector and two business development representatives. Since 2006, Solid Waste has continued to evaluate all collection services to gain more efficiency and reduce collection costs. Our processing contract with ReCommunity was amended in 2007 and reduced processing costs by a million dollars to the current processing cost of \$700,000 and still maintained a revenue share.

Prior to 2007, commercial recycling dumpster customers received services free of charge. Solid Waste implemented a fee structure for commercial recycling and offers multiple collection days for businesses. In January 2008, Solid Waste changed the weekly residential recycling collection to every other week and reduced collection routes from 10 routes to 8 producing \$150,000 first year savings. This change increased set-out rates from 35% to over 60%. Currently, there are seven dumpster collection routes, including a separate multi-family dumpster route. Additional services include fee-based ABC beverage container recycling services for 254 customers, appliance collection and electronic waste (E-Waste) services at no charge. Since 2007, Solid Waste has received over \$358,000 in State and Federal grants to expand our collection programs. Federal funding was received to increase recycling access opportunities for recycling for City facilities, public housing, and additional 300 multi-family complexes.

Solid Waste Recycling Collection FY10-FY12	FY 10		FY 11		FY 12	
	<i>Residential Recycling</i>	<i>Commercial Recycling</i>	<i>Residential Recycling</i>	<i>Commercial Recycling</i>	<i>Residential Recycling</i>	<i>Commercial Recycling</i>
BUDGET	\$2,622,123.00	\$959,712.00	\$2,269,438.00	\$832,077.00	\$2,292,370.00	\$823,747.00
Tonnage Figures						
Total FY Tons	17,486.15	11,359.04	18,268.88	10,840.59	18,123.05	10,374.76
Collection Cost per Ton	\$149.95	\$84.49	\$124.22	\$76.76	\$126.49	\$79.40
Coll. Cost per Ton w/o Rev	\$150.17	\$130.45	\$124.39	\$125.52	\$146.27	\$146.82
Processing Cost Per Ton	\$169.95	\$104.49	\$144.22	\$96.76	\$148.41	\$101.32
Collection Points						
Collection Point	76,764	1,241	80,251	1,187	80,640	1,131
Cost Per Collection Point (Yr)	\$34.16	\$773.34	\$28.28	\$700.99	\$28.43	\$728.34
Cost Per Month	\$2.85	\$64.44	\$2.36	\$58.42	\$2.37	\$60.69
Annual Tons	28,845.19		29,109.47		28,497.81	
Annual Revenue Received	\$249,395		\$566,511		\$561,870	
ABC Collections Revenue	\$65,130		\$75,870		\$82,470	

New Recycling Contract

In January 2013, Greensboro entered into a 5-year contract with ReCommunity for the processing and marketing of the City's recyclable items. This contract eliminated processing fees (\$600k savings) and eliminated residue costs (\$300k savings). The revenue share rate is \$30/ton up to 2,500 tons and \$31/ton over 2,501. The contract also called for an increase in recyclables received including all plastics #1-7, milk/juice cartons, metal pots/pans, and pizza boxes. Facility sorting upgrades will take place later this year and ReCommunity will hire a Recycling Coordinator. Revenue received through May 30 is \$363,000.

Mattress Recycling Project

In December 2012, the City began a one-year pilot program with Mattress GO Round to collect used mattresses and box springs from city residents. Mattress GO Round, 1601-A Yanceyville Street, is a local company that recycles old mattresses and box springs by repairing, sanitizing and rebuilding them for resale. The pilot program is expected to reduce bulk collection, hauling and disposal costs for the City. It also means less bulk waste in the landfill. Mattress Go Round charges \$9 to pick up a mattress and \$4 for mattress drop off at their facility. As of June 30, 3,722 units have been recycled at a cost of \$32,453.

Recycling Grant Updates

From February to May 2013, the City conducted the Participation Pays program that rewarded selected Greensboro residents who recycled properly with \$50 gift cards to local stores. The program was funded by a \$4,000 state grant to promote recycling and 48 winners will receive gift cards.

In May, the City delivered more than 1,400 recycling bins to Greensboro high schools. This High School Recycling Education Project, funded by a \$10,000 Keep America Beautiful/Waste Management Think Green grant, was developed to increase recycling awareness and promote recycling within local high schools. All Greensboro high schools received 200 green, 16-gallon recycling bins made with a minimum of 25 percent recycled content. In addition, Guilford County high schools received blue and green combination recycling units for plastic, paper and cans. These containers were purchased with Federal American Recovery & Reinvestment Act (ARRA) funds.