

Harnett County Recycling Task Force

DRAFT Final Report

August 20, 2007

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I. Executive Summary

We'll write the Executive Summary when the rest of the report is done....

II. Introduction

A group of Harnett County residents presented a petition (signed by more than 400 residents) to the Harnett County Board of Commissioners in May 2007 (?) that proposed a course of action to improve the County's recycling programs. Based on this interest, the Board of Commissioners chartered the Harnett County Recycling Task Force (HRTF) in June 2007 (?) to investigate the county's options to improve recycling programs and to reduce the solid waste disposal rate.

Recruiting for the Task Force focused on a diverse mix of residents with an interest in the topic of recycling and waste reduction. A number of elected officials, local government staff and solid waste experts volunteered to serve on the Task Force as well. The group recruited Sustainable Sandhills to facilitate the Task Force through a series of meetings in August and September that have resulted in this Final Report.

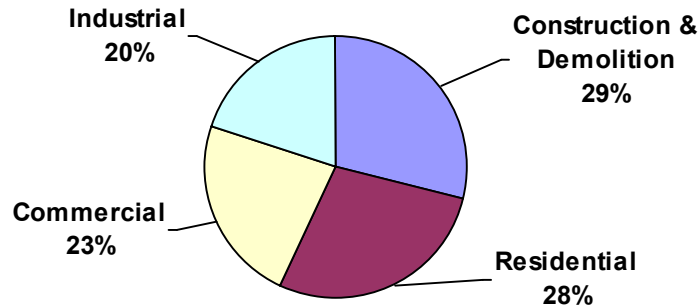
The HRTF process followed these guidelines:

- Base all Task Force recommendations on facts.
- Attempt to address all questions from Commissioners and Task Force members.
- Present information on local and regional landfill capacity.
- Evaluate and present a range of recycling program alternatives.
- Review and present other successful local government recycling programs.
- Whenever possible, recommendations to the Board of Commissioners should include estimates of impact on recovery rates, participation rates and program costs.

The original Harnett County Recycling Petition and HRTF Roster of Participants are included in **Appendix A**.

III. Background Assessment Chapter

While the HRTF’s focus is on the residential solid waste stream, the State’s solid waste stream breakdown highlights opportunities for waste reduction and material recovery in the Commercial, Industrial and Construction and Demolition (C&D) sectors as well.



Examples of model recycling programs in the Commercial, Industrial and C&D sectors are contained in **Appendix B**.

Model Residential Recycling Programs

A group of similar county solid waste and recycling programs were evaluated and **Lee** and **Chatham** County programs were selected as model programs to study. These programs were selected based on the following criteria.

- Similar size/population, character (rural) and proximity to Harnett County.
- Innovative recycling programs have been successfully implemented.
- Reliable data was available.

Lee, Chatham and Harnett County programs are summarized in **Table 3-1**. Detailed summaries of HRTF interviews with the key contacts in all 3 counties are compiled in **Appendix C**.

Some of the highlights of the model program interviews and insights provided by the Task Force Technical Advisors are listed below.

- **No residential recycling program pays for itself.**
- There are 364 local government recycling programs in NC. Of that total, 213 are municipal curbside programs (59% of the total).
- There are as many program variations as there are programs.
- **Public education and outreach** programs have a profound effect on participation and recovery rates. North Carolina Department of Environment and Natural Resources

(NCDENR) figures show that education and outreach programs increase recovery by an average of 110 pounds per household served (lb/HHs).

- Drop-off programs are typical in rural counties and smaller municipalities. The dataset for drop-off program performance is much smaller and less reliable than for curbside. The median recovery rate for municipal drop-off programs is 28 lb/person.
- **Currently there are no local sorting options available for commingled recycling streams in Harnett County.** All recovery in Harnett County and its municipalities is based on residents and businesses source-separating their recyclable materials and bringing them to a County collection center. Single and dual stream sorting facilities located outside the region will offer their services, but transportation and handling costs will offset the revenue from the sale of the recovered materials.

Table 3-1: County Disposal & Recovery Program Summary			
	Harnett	Chatham	Lee
General info (July 2005)			
Total county population	101,608	56,090	53,789
Total households in county	31,500	24,306	21,565
Households in unincorporated county	?	?	11,963
Total county area (square miles)	595	683	257
Unincorporated county area (sq-miles)	?	?	?
Solid Waste			
Total disposal (tons)	90,784	40,117	70,320
Per capita disposal rate (tons)	0.89	0.72	1.31
Solid waste availability fee	\$37.50	\$81.00	\$38.50
Other solid waste-related fees	\$0.00	\$34.00	\$38.50
Total SW fees	\$37.50	\$115.00	\$77.00
Solid Waste program annual cost	\$3,797,519	\$2,259,382	\$1,219,980
Education & outreach	?	?	?
Recovery			
Local government recovery (tons)	1,900	3,111	3,123
Per capita local gov't recovery (pounds)	37	111	116
Private recovery estimate (1.5x) (tons)	2,850	4,667	4,685
Total recovery estimate (tons)	4,787	7,888	7,924
# Collection centers	5	12	5
	news, aluminum, glass	news, aluminum, glass	news, aluminum, glass
	At 2 landfills only: batteries, tires, white goods, metals	mixed paper, plastic, cardboard, oil, batteries, tires, white goods, metals, swap shop	mixed paper, plastic, cardboard, oil, batteries, tires, white goods, metals
Recycled materials accepted			
See Appendix C for interview summaries with the 3 County Solid Waste departments.			

Solid Waste Disposal Section

North Carolina communities disposed of almost 12 million tons of municipal and C&D waste in 2005-06, or 1.36 tons per capita. Per capita disposal rates have risen steadily since the State began tracking solid waste data in 1990-91. These disposal figures do not include yard waste disposal tonnage, which varies widely from year to year depending on weather conditions and natural disasters like hurricanes.

Landfills

From 1991 to 2006, the solid waste disposal landscape in NC changed as more stringent State regulations required the construction of more expensive lined landfills. The current trend is to move away from county-owned landfills and move towards large, regional private landfills. The number of active Municipal Solid Waste (MSW) landfills managed by local governments decreased from 105 in 1991 to 32 in 2006. Of the 11 largest MSW landfills in the State, only three (3) are owned by local governments. Disposal fees (aka tipping fees) in NC averaged \$35 per ton in 2006, and are among the lowest in the nation.

Transfer Stations

As a result of local government landfill closures throughout the 1990's, the number of transfer stations in the State has grown from a total of five in 1991 to 85 in 2006. Many counties now send their waste to a nearby transfer station where it is then sent on to a large, regional and privately-owned landfill. This is the model that Harnett, Chatham and Lee County use.

Table 3-2 lists key information about landfills in or near Harnett County and the County's two transfer stations.

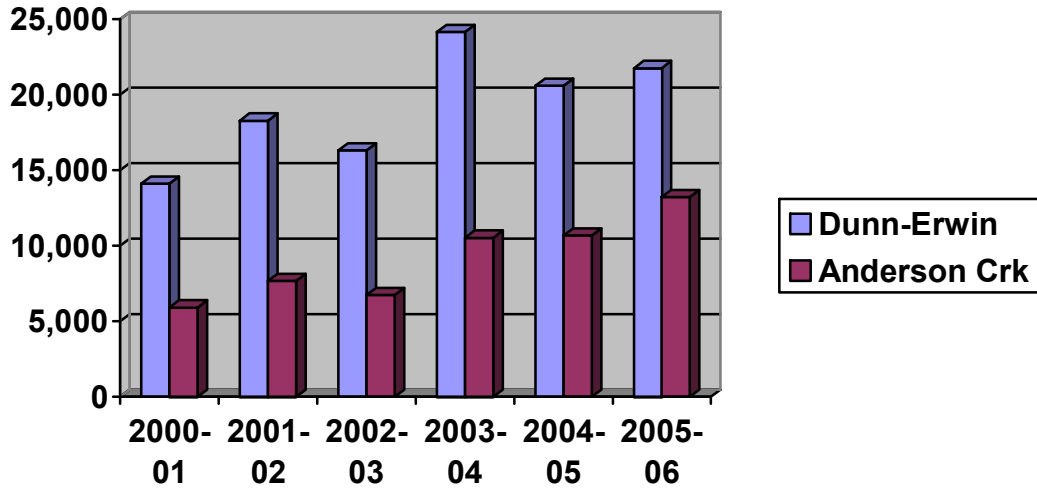
Table 3-2: Regional MSW Landfills and HC Transfer Stations				
LANDFILL NAME	Remaining capacity (years)	Distance from HC (miles)	Tip fee at gate (\$/ton)	2005-06 disposal (tons)
Waste Industries (Sampson County)	42.0	20	\$39	866,528
Uwharrie Env't'l (Montgomery County)	4.9	80?	\$40	760,704
Chambers (Anson)	44.7	100?	\$41.00	262,093
Cumberland County	12.6	20?	\$30.00	171,151
Robeson County	34.9	35?	\$32.50	89,296
HC TRANSFER STATION NAME	Disposal Destination	Distance from HC	Tip fee at TS (\$/ton)	2005-06 MSW disposal (tons)
Dunn-Erwin LF	Uwharrie Env't'l	0	\$30.00	43,187
Anderson Creek LF	Uwharrie Env't'l	0	\$30.00	10,938

Source: Data taken from NCDENR's 2005-06 Solid Waste Annual Report

Harnett County Landfills

Harnett County owns and operates two Construction and Demolition (C&D) landfills. Photographs of both facilities are included in **Appendix D**. The C&D disposal history for both landfills since 2000-2001 is summarized **Figure 3-1**.

Figure 3-1: Disposal History (tons) for HC's C&D Landfills



Harnett County Transfer Stations

Harnett County owns two transfer stations, located at each of the two County-owned C&D landfills. In 2005-06, 60% of the County’s solid waste disposal was handled by these transfer stations (54,125 tons of the 90,784 ton total). **ADD FINANCIAL INFO HERE.** Photographs of the HC Transfer Stations are included in **Appendix D**.

Solid Waste Disposal Fees

The County-wide solid waste disposal fee of \$37.50 per household is assessed on each Harnett County resident’s tax bill. **In principle, this fee covers the cost of residential solid waste disposal throughout the county (Jerry – is this an accurate statement?).** Private haulers that collect trash from HC residents do not pay tipping fees when dropping off at HC transfer stations. The same is true for the private haulers that have **residential** collection contracts with the five municipalities in Harnett County. **Commercial** solid waste disposal is not covered by the County-wide disposal fee – so HC commercial solid waste is subject to tipping fees at the HC landfills and transfer stations.

The flat fee for solid waste disposal assessed by the County, regardless of the amount of disposal, removes a major financial incentive for waste reduction and recovery by the municipalities in Harnett County.

Table 3-3 summarizes the solid waste programs of the five municipalities in Harnett County.

Table 3-3: HC Municipal Solid Waste Program Summary					
	Angier	Coats	Dunn	Erwin	Lillington
Population	4,165	2,059	9,900	4,803	3,171
Collection by	W.I.	W.M.	Republic	Republic	W.I.
Contract expires	July, 2010	July, 2008	2012	August, 2008	???
Monthly fee	\$8.50	\$9.50	NO FEE	\$8.80	\$11.08
Carts owned by	Contractor	Contractor	Contractor	Town	Contractor
Trash pickup	Once/week	Once/week	Once/week	Once/week	Once/week
Other collection by municipal staff	Yard waste, furniture, WG/metals: scheduled	Yard waste, white goods: upon request	Yard waste (request), white goods (Mondays)	Yard waste & white goods: by request	Yard waste & white goods: scheduled
Commercial policy	\$10 monthly fee per cart; two cart max	No commercial service	No commercial service	Fees vary by size of business	\$11.08 for 1 weekly p/u. Rental & disposal by business
Recycling?	5 private sites: news/mags	Town Hall: newspaper	1 private site: newspaper & aluminum	1 site at Triton H.S.: newspaper	5 sites(?): newspaper
All data obtained from phone interviews with municipal officials, August 2007. W.I. – Waste Industries, W.M. – Waste Management					

Recycling Program Cost/Revenue Structure

Various recycling program options were evaluated for the County using the cost analysis structure shown below. Some of the benefits of a recycling program are difficult or impossible to quantify, but they are listed below to remind readers that they do exist.

Program Costs

- **Collection costs**
 - **Drop-off Programs:** Initial site setup costs (land, fencing, lighting, containers); labor to man and maintain the sites.
 - **Curbside Programs:** Costs for trucks, bins/carts and other building and equipment; collection labor; fuel costs; equipment maintenance.
- **Handling, Storage and Transportation Costs**
 - **Drop-off Programs:** Buildings, equipment (compactors, balers) and labor costs to handle and store the separated materials; equipment, fuel and labor costs to transport the materials to markets.
 - **Curbside Programs:** For “curb-sort” programs, the handling/storage/transportation cost list is similar to a drop-off program. The processing of commingled streams is typically a contracted service with handling, storage and transportation costs

included. But, there may be additional building and equipment costs (transfer station) required to store and handle the commingled stream prior to transfer to the processor.

- **Education and Outreach Costs:** Advertising costs (print, radio, television); printing costs (posters, brochures, flyers); website development; develop and maintain speakers' bureau presentations and block leader network; special promotions (weekly cash awards).

Program Revenues and Benefits

- **Recovered Material Revenue:** For source-separated options, such as curb-sort or drop-off, this is the gross revenue from the sale of materials. For commingled stream options there may be a negotiated value (\$/ton) for the mixed stream that is adjusted annually based on the market value of a weight-averaged sample. In Raleigh's case, where several local sorting facilities compete for the City's commingled stream, the value was near \$40/ton in 2005-06. This would not be the case in Harnett County, where there are no local sorting facilities.
- **Avoided Landfill Costs:** These avoided costs are based on the tipping fees (\$37.50/ton) that the County doesn't have to pay for each ton of MSW recovered by a recycling program.
- **Avoided SW Collection Costs:** Labor and fuel cost savings. Labor cost savings may be hard to quantify, but the fuel savings are not. The number of avoided trips to a transfer station due to the 1900 tons of recovery in HC in 2005-06 is easily calculated. Unfortunately, these avoided costs are unlikely to be credited to local governments in Harnett County because no local governments collect solid waste, and the likelihood that private haulers pass this savings along to local governments is low.
- **Benefits That Cannot be Quantified:**
 - Local economic benefits: Jobs created in the collection and processing of the recycled materials. Some of these would be local government jobs, while others would be in the private sector (processing).
 - The continued transformation of Harnett County's image, both internally and externally.
 - Air quality benefits from reduced methane emissions at landfills and the reduced amount of energy used to create products from virgin materials.
 - Extended landfill life: We can document the amount of landfill life extension, but we are unable to quantify the benefit.

Conclusions and Recommendations: Background Assessment Chapter

Conclusion 1

The Task Force will work on this collectively in September.

Recommendation 1

TBD