

Mecklenburg County Solid Waste Management Plan 2009-2019

***“Create recycling infrastructure for
no wasted resources in our County”***

For:

City of Charlotte
Town of Cornelius
Town of Davidson
Town of Huntersville
Town of Matthews
Town of Mint Hill
Town of Pineville
Mecklenburg County

Effective July 1, 2009

Prepared by
Mecklenburg County
Land Use &
Environmental Services Agency

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ATTACHMENT B: Notice of Public Meeting

ATTACHMENT C: Waste Reduction Goal Sheet

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ATTACHMENT K: Assessment of Alternative Solid Waste Management Technologies

Executive Summary

Mecklenburg County is considered a leader in waste reduction and recycling. The County along with its Planning partners have spearheaded innovative programs receiving national attention. In 1986, the City of Charlotte launched one of North Carolina's first curbside recycling programs. At the same time, the County opened one of the first materials processing facilities in North Carolina. More recently, the local governments participating in this plan adopted a commercial paper and cardboard recycling ordinance that has already been instrumental in reducing the waste disposed. In FY08, the County disposed of 1.44 million tons of solid waste; with such large quantities, the County must continue to initiate innovative waste reduction programs.

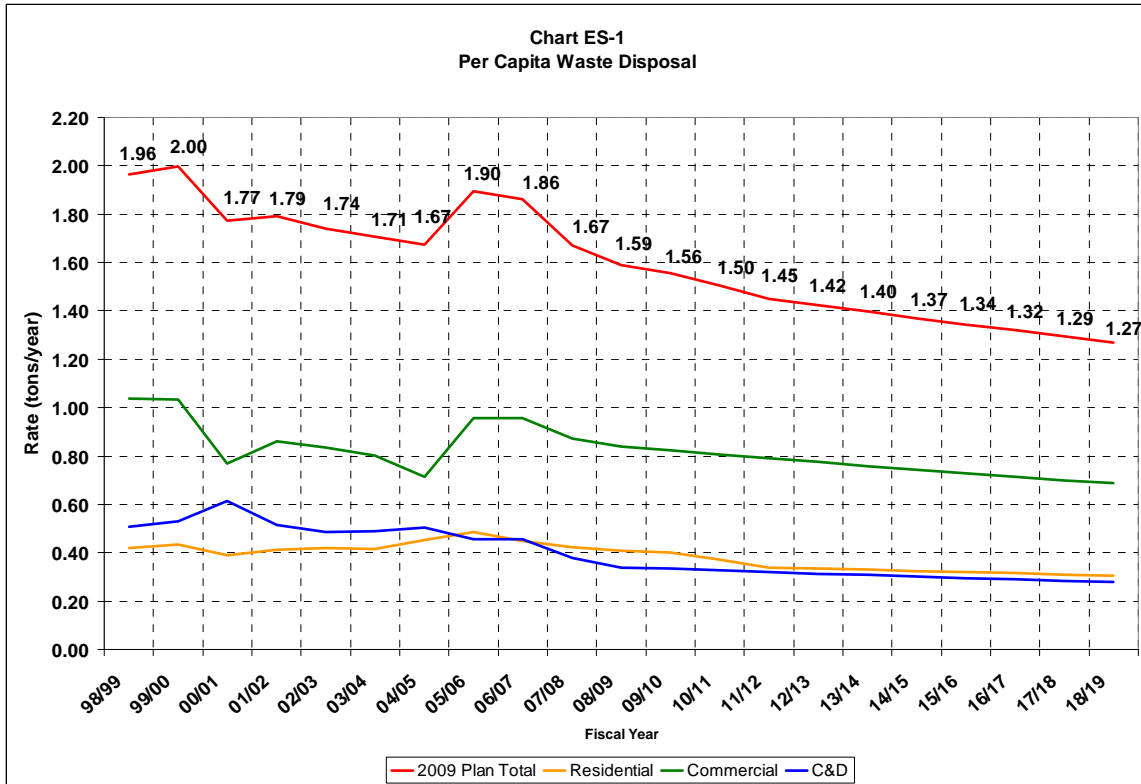
Mecklenburg County has a long history of planning for the management of solid waste. Formal plans are on record beginning in the mid-1980's. The Solid Waste Management Act of 1989 (North Carolina General Statute 130A) formalized this planning process by requiring the preparation of comprehensive solid waste management plans and outlining plan content. The plans are intended to address a ten-year timeframe and must be updated every three years. The initial Mecklenburg County 10-year Plan was delivered June 30, 1997. The 2009 plan represents the fifth plan submitted under the formal requirements of the State of North Carolina.

The 2009 Plan was developed under the direction and guidance of a Steering Committee consisting of at least one representative each from the City of Charlotte and Towns of Cornelius, Davidson, Huntersville, Matthews, Mint Hill and Pineville. These political jurisdictions form the geographic area for the Plan. Additionally, 12 citizen members of the County appointed Waste Management Advisory Board participated in the Steering Committee. The Plan addresses residential, commercial, yard waste and construction and demolition waste.

This Plan covers the period FY2009-2019. Table ES-1 displays population projections and waste disposal levels with and without programs proposed in this plan.

Table ES-1: Overall Waste Reduction Goals Through FY2019					
	Baseline FY98/99	Plan Year* FY07/08	Plan Year FY11/12	Plan Year FY14/15	Plan Year FY18/19
Waste disposed if NO new programs (tons)	1,214,764	N/A	1,618,112	1,742,599	1,913,130
Population	618,853	863,147	967,901	1,042,365	1,144,371
Waste disposed with PROPOSED programs	N/A	1,442,987	1,404,044	1,428,347	1,452,374
Proposed Rate tons/person/year	1.96	1.67	1.45	1.37	1.27
Rate Reduction % of baseline year	N/A	15%	26%	30%	35%
Proposed Tons Diverted	N/A	N/A	214,069	314,253	460,756
* All data beyond FY07/08 are estimates.					

As measured against the “baseline” year, the planning communities have already achieved a 15% reduction. The 1.14 million tons of solid waste disposed in FY18/19 reflect the proposed goal of 35% waste reduction established by the Steering Committee. If no progress had been made since the FY99 baseline level of 1.96 tons per person/year, landfilled solid waste would reach over 1.9 million tons by the end of the ten-year planning period. This waste reduction achievement is the sum of individual programs proposed for implementation throughout the planning period. Chart ES-1 shows the individual contributions of the three components, residential, commercial, and construction and demolition waste.



Following is a discussion of the goals of the three components of the solid waste stream.

Residential Waste Reduction Goals

Residential solid wastes are those wastes collected from curbside collection programs. These address all single-family homes and those multi-family units serviced by local governments and/or their contractors. Table ES-2 displays the goals for residential solid waste.

Table ES-2: Residential Waste Reduction Goals Through FY2019					
	Baseline FY98/99	Plan Year* FY07/08	Plan Year FY11/12	Plan Year FY14/15	Plan Year FY18/19
Waste disposed if NO new programs (tons)	258,558	N/A	408,690	440,132	483,203
Population	618,853	863,147	967,901	1,042,365	1,144,371
Waste disposed with PROPOSED programs	N/A	364,458	329,086	338,769	349,033
Proposed Rate tons/person/year	0.42	0.42	0.34	0.325	0.305
Rate Reduction % of baseline year	N/A	-1%	19%	22%	27%
Proposed Tons Diverted from Disposal	N/A	N/A	79,603	101,363	134,170
* All data beyond FY07/08 are estimates.					

Residential waste had been increasing between 2001 and 2006, in both total tons and on a per capita basis. In 2007, the rate of increase on a per capita basis began declining resulting in this past year's rate of minus 1%. In Section 4.0, the plan discusses the City of Charlotte's implementation of a single stream curbside recycling program expected to significantly increase residential participation and recovery rates.

Commercial Waste Reduction Goal

Commercial wastes are those generated by all non-residential activities except construction and demolition activities. This includes wastes generated by any business, industry, or institution including government buildings, hospitals, churches and schools. Commercial waste represents the largest fraction of solid waste in Mecklenburg County. Table ES-3 displays the commercial waste reduction goals.

Table ES-3: Commercial Waste Reduction Goals Through FY2019					
	Baseline FY98/99	Plan Year* FY07/08	Plan Year FY11/12	Plan Year FY14/15	Plan Year FY18/19
Waste disposed if NO new programs (tons)	641,072	N/A	843,882	908,804	997,740
Population	618,853	863,147	967,901	1,042,365	1,144,371
Waste disposed with PROPOSED programs	N/A	752,550	765,224	775,632	785,429
Proposed Rate tons/person/year	1.04	0.87	0.791	0.744	0.686
Rate Reduction % of baseline year	N/A	16%	24%	28%	34%
Proposed Tons Diverted from Disposal	N/A	N/A	78,658	133,173	212,311
* All data beyond FY07/08 are estimates.					

Construction and Demolition Waste Reduction Goal

Construction and demolition (C&D) waste offers an opportunity at substantial future waste reduction. The generation of C&D waste is, perhaps, more closely tied to the economy than other waste streams. The economy, interest rates and other financial indicators may spur or discourage construction and demolition activities and the resulting wastes. Several studies and pilot projects establish the background for development of programs to divert C&D waste from disposal beginning in FY09/10. Table ES-4 shows the proposed goals and waste diversion for C&D waste.

Table ES-4: C&D Waste Reduction Goals Through FY2019					
	Baseline FY98/99	Plan Year* FY07/08	Plan Year FY11/12	Plan Year FY14/15	Plan Year FY18/19
Waste disposed if NO new programs (tons)	315,134	N/A	365,541	393,663	432,187
Population	618,853	863,147	967,901	1,042,365	1,144,371
Waste disposed with PROPOSED programs	N/A	325,979	309,733	313,946	317,912
Proposed Rate tons/person/year	0.51	0.38	0.32	0.301	0.278
Rate Reduction % of baseline year	N/A	26%	37%	41%	45%
Proposed Tons Diverted from Disposal	N/A	N/A	55,807	79,717	114,275
* All data beyond FY07/08 are estimates.					

Source Reduction and Reuse

While all components of an Integrated Solid Waste Management System are important, reduction of waste at its source should be applied prior to implementation of other techniques creating less waste to be recycled, reused, composted, or landfilled. Section 3 highlights a number of source reduction and reuse programs such as junk mail reduction and PLANT (backyard composting and other landscaping waste reduction programs). It is recommended that these residential source reduction programs be continued while adding more focus on commercial programs.

Recycling

Residential Recycling – Residential curbside recycling represents one of the longest standing comprehensive recycling efforts in the Plan area. With both resident turnover and the long period since the original program was launched, resident participation has decreased and new initiatives are needed to address the downward trend in residential recycling. The Plan anticipates a boost in both participation and recovery levels due to the implementation of *single-stream recycling* by the City of Charlotte.

Single-Stream Recycling – Is an automated collection approach that simultaneously addresses education, convenience, flexibility and collection cost issues. Residents

would receive a larger, 65 or 95-gallon wheeled cart for recycling (compared to the current 16 or 18 gallon container).

In addition, the planning communities will continue to partner with national campaigns such as the Curbside Value Partnership to leverage available resources and maximize educational opportunities.

Commercial Recycling – Commercial waste represents approximately 43% of all solid waste in Mecklenburg County. In FY08, 548,338 tons of commercial solid waste were disposed in area landfills. In 2005, a commercial waste characterization study identified the following recoverable materials as being disposed in significant enough quantities to warrant further study:

- Old Corrugated Cardboard – 54,450 tons
- Mixed Recyclable Paper – 29,960 tons
- High Grade Office Paper – 21,520 tons
- Newsprint – 15,762 tons
- Food Waste – 63,000 tons
- Untreated Wood – 39,200 tons
- Wood Pallets – 15,869
- Other Ferrous Metals – 30,900 tons

Mecklenburg County's programs to date have yielded impressive waste reduction results with per capita commercial waste decreasing steadily. It is recommended that these programs be continued. In addition, studies are recommended to determine the point of generation for the materials discussed in the waste characterization as well as what type of programs would best capture a larger amount of these materials.

Yard Waste

All of the municipalities in Mecklenburg County provide curbside collection of yard waste. These materials are taken to one of the County operated yard waste processing facilities. Yard waste is ground and turned into mulch, compost or boiler fuel. Overall, the yard waste management program is considered a very successful program. There are several issues facing the County's primary processing facility for yard waste. Consequently, it is recommended that a comprehensive analysis of factors affecting Compost Central's ability to meet long-term needs is conducted. The results of this analysis should be used to develop a Master Plan for the facility.

Construction and Demolition Waste

Construction and demolition (C&D) waste is defined as solid waste resulting from construction, remodeling, repair, or demolition operations on pavement, buildings, or structures. In FY 07/08, the amount of C&D waste disposed and reported to the NC Division of Waste Management that originated in Mecklenburg County was 325,979 tons. C&D represents perhaps the greatest single opportunity for waste reduction. Portions of the C&D waste stream in the County are currently being recycled at facilities operated by the County. Reduced tipping fees for these materials are offered as an incentive to recycle. Inert materials such as clean concrete, brick and block that are source separated and delivered to the Foxhole Landfill are ground and used on site for

roadbeds or in erosion control measures. Clean wood waste is also ground and sold as boiler fuel.

This Plan recommends a comprehensive waste characterization study and a residential source separation pilot project conducted in cooperation with a new home/community developer. This study would compare the economics of source separating recyclables in order to realize tipping fee reductions to the cost of traditional disposal. In addition, environmental studies are needed to determine the impacts of beneficial reuse management strategies for select C&D materials. For example, crushed concrete might be used in erosion control measures and ground gypsum as a soil amendment. The Plan communities should also continue to evaluate opportunities and technologies for a cost effective C&D processing facility. This should be on-going throughout the 10-year planning period.

Municipal Solid Waste Collection and Disposal

Section 7.0 of the Plan addresses the management of both residential and commercial solid waste (commonly referred to as “garbage”). Mecklenburg residents receive either curbside garbage and bulky item collection or, for most multifamily units, bulk container service. All solid waste collected in Mecklenburg County is taken to one of eight municipal solid waste (MSW) landfills. None of these landfills are located in Mecklenburg County. The majority of MSW (77%) is taken to the Charlotte Motor Speedway Landfill in Cabarrus County. This will continue to be the case through at least the first year of this Plan period. Subsequent year disposal is dependent on future contract negotiations. In any case, adequate disposal capacity exists to handle Mecklenburg’s MSW disposal needs through this planning period.

Litter Prevention and Management

In FY2000, the Mecklenburg County Board of Commissioners directed solid waste officials to develop a comprehensive litter prevention plan. Subsequently, Litter Prevention and Management became a part of the Solid Waste Management Plan. There are three key program areas addressed in this Plan: clean-up, prevention and enforcement. Clean-up combines a number of resources including contracted services, Adopt-A-Highway, neighborhood improvement and inmate labor. Prevention activities focus on education and the Swat-A-Litterbug program. Litter stings, environmental court and enhanced public policy initiatives make up the enforcement portion of the litter prevention strategy.

The Next Ten Years

The Plan participants possess mature waste reduction programs which are currently addressing the more easily recoverable materials (the proverbial “low-hanging fruit”). Hereafter, new programs will be needed which may include the adoption of proven strategies from other regions, as well as creative new approaches.

1.0 Introduction

The 2009 Mecklenburg County Ten-year Solid Waste Management Plan represents eight local governments: Mecklenburg County, the City of Charlotte, and the Towns of Cornelius, Davidson, Huntersville, Mint Hill, Matthews and Pineville. Throughout this document, the terms Plan, Plan Update, Mecklenburg County Plan, Ten-year Plan, etc. shall mean the 2009 Solid Waste Management Plan representing these governmental entities.

1.1 Planning Purpose

The 2009 Plan, establishes goals and programs for the handling of solid waste in a manner that meets local needs and is consistent with state solid waste management priorities. The Solid Waste Management Act of 1989 (North Carolina General Statute 130A) requires the preparation of a comprehensive solid waste management plan. The initial 10-year Plan was due June 30, 1997. Plan revisions are mandatory and are due every 3 years thereafter. This Plan represents the fourth such update prepared in conformance with the Statute.

Long-range planning is essential for achieving a cost-effective solid waste management system. To this end, the Plan is a publicly endorsed working document that facilitates a cooperative management effort between participating governments, keeps control of solid waste issues in local government hands and provides a framework for budget preparation by anticipating future needs. Direction for both short-term and long-term management of the solid waste system is set by the Plan. It documents the existing conditions of the solid waste handling systems, identifies opportunities to address solid waste system needs, and makes recommendations for future programs and facilities to accomplish the goals. The seven municipalities and Mecklenburg County cooperate to achieve the goals of the adopted Plan through the development and implementation of local programs and services which are consistent with the Plan and State law.

1.2 Planning History

Mecklenburg County has a long history of planning for the management of solid waste. Formal plans are on record beginning in the mid-1980's. In 1984, Mecklenburg County assumed responsibility for the disposal of all municipal solid waste in the County by signing an interlocal agreement with the City of Charlotte which recognized that waste management could be more effective if under the control of a single governmental body. This agreement also allowed the County to respond more effectively to a State law authorizing the NC Department of Human Resources to establish a statewide solid waste management program. Today, that responsibility belongs to the NC Department of Environment and Natural Resources.

Subsequently, the Mecklenburg Board of County Commissioners instructed County staff to develop a comprehensive solid waste management plan. In 1986, the Board of County Commissioners established a goal to recycle 30 percent of the solid waste stream by 2006. Subsequent plans made adjustments for changing information and circumstances.

The Solid Waste Management Act of 1989 (North Carolina General Statute 130A) formalized this planning process by requiring the preparation of comprehensive solid waste management plans and outlining plan content. The initial Mecklenburg County 10-year Plan was delivered June 30, 1997. Subsequently, Mecklenburg County and its partners, the City of Charlotte and Towns of Cornelius, Davidson, Huntersville, Mint Hill and Pineville, have delivered a Plan in June of 2000, 2003 and 2006. The Town of Matthews joined the planning group in July 2008 and is represented in the 2009 Plan. Prior to 2009, the Town of Matthews submitted its own plan.

1.3 The Planning Process and Public Participation

The Mecklenburg County Ten-year Solid Waste Management Plan's 2009 Update, was developed under the direction and guidance of a Steering Committee consisting of a representative from the City and each of the Towns in the Planning Area, as well as twelve members of the Waste Management Advisory Board (WMAB). The Steering Committee formally met two times and communicated via email to develop the plan. The following summarizes the Plan development and submittal process.

- Kick-off Meeting (October 1 and 8, 2008) – First meetings of the internal Working Group. Discussed purpose, roles and responsibilities, the proposed process, schedule, and Plan content. Official kick-off communiqué with the Steering Committee (October 16).
- Presentation of Background/Analysis (Dec. 11, 2008) – Steering Committee presented with the results of the baseline research.
- Presentation of option evaluation and selection of 10-year goals (week of February 9, 2009) – First meeting of the Steering Committee. Staff conducted an analysis and evaluation of options required to achieve further waste reductions and presented these to the Steering Committee. The Committee subsequently established goals for the 10-year Plan.
- Approval of draft final plan by Steering Committee (April 2009) – Second meeting of the Steering Committee. Final review and approval of Plan. Discussion of institutional issues including implementation roles, inter and intra-municipal cooperation and future meetings to evaluate implementation progress (frequency)
- Public Meeting (April 2009)
- Waste Management Advisory Board Approval (April 21, 2009)
- Seek Mecklenburg County Board of Commissioner's approval (May 5, 2009)
- Seek Municipality's Adoption (May and June 2006)
- Submit to State (June 30, 2006)

1.4 Planning Area Description

This Plan is for the Mecklenburg County Planning Area which consists of Mecklenburg County (unincorporated area), the City of Charlotte and the Towns of Cornelius, Davidson, Huntersville, Matthews, Mint Hill, and Pineville. The solid waste tonnage values and waste reduction goals established in this Plan are based on the landfilled tons attributed to Mecklenburg County by the North Carolina Department of the

Environment and Natural Resources (NCDENR). A map of Mecklenburg County appears at the end of this subsection.

The County continues to experience rapid growth in population; the population is expected to grow nearly 27% through this 10-year planning period. Growth in the past has been most rapid in the south and southeast areas of the County. As these areas are now highly developed, growth is accelerating in the northern and eastern portions of the County. The County is projected to have a population of 919,372 at the beginning of the 10-yr. plan period (July 2009) and 1,170,029 at the end of the planning period (July 2019). Approximately 93% of the population lives in the incorporated portions of the County.¹ Table 1.4 presents a breakdown of County population by municipality – 2007 is the most recent available data that presents this information by municipality.

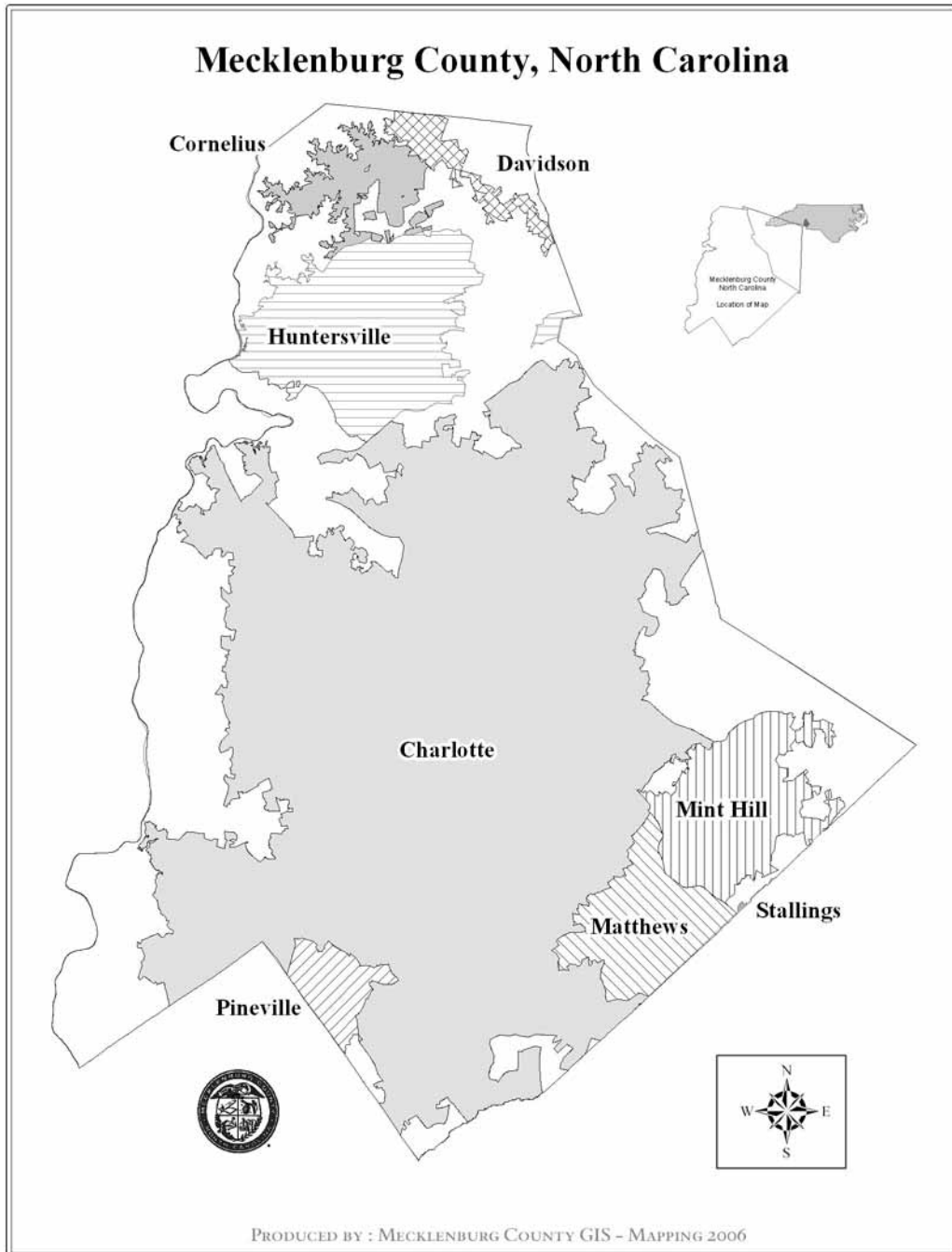
Table 1.4: Mecklenburg County Estimated Population – July 2007	
<u>Municipalities and County</u>	<u>Population</u>
Charlotte	674,658
Cornelius	22,946
Davidson	9,591
Huntersville	39,191
Matthews	28,072
Mint Hill	20,519
Pineville	7,368
Mecklenburg County (unincorporated)	60,802
Mecklenburg County Total	863,147
Source: NC Office of State Budget and Management, State Demographics Center (July 2007).	

All of the municipalities provide residential waste services to their citizens either by self-performing collection or by contracting with private waste management companies. However, residential waste management differs among communities in that some of the municipalities provide a portion of multi-family households with curbside service (counted as residential waste). Multi-family waste collected outside the City/Town curbside service is counted as commercial waste at the landfills. In the unincorporated areas, residents must individually contract for collection with private haulers. All County residents may take their waste and recyclables to one of the County's convenience centers. The County operates four full-service convenience centers which accept residential wastes, residential and commercial recyclables, and household hazardous waste and nine self-service convenience centers that accept recyclables only.

Commercial businesses privately contract with commercial waste and recycling haulers for waste disposal and recycling collection. The County drop centers also accept a limited list of recyclable materials from commercial businesses. In addition to the residential drop centers described previously, there are over 50 County commercial drop

¹ Calculated from data provided by the NC Office of State Budget and Management http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates.shtm

centers that accept corrugated cardboard and office paper.



1.5 Definitions

Throughout this document the term:

- *Mecklenburg County* refers to the Mecklenburg County Planning Area, which consists of Mecklenburg County (unincorporated area), the City of Charlotte and the Towns of Cornelius, Davidson, Huntersville, Matthews, Mint Hill, and Pineville.

- *Municipal Solid Waste* refers to solid waste resulting from the operation of residential, commercial, industrial, institutional or governmental establishments. Municipal solid waste does not include hazardous waste or sludge. NCGS 130-290
- *Construction and Demolition Waste* includes solid waste that is generated from residential and commercial, construction and demolition activities.

1.6 Federal, State, and Local Rules and Regulations

There are a large number of Federal, State, and Local rules, regulations, statutes, codes, ordinances and policies governing how solid waste materials are managed. In general, the Federal Laws have already been incorporated into the State Statutes and the State's Administrative Code making 15A NCAC 13B, "North Carolina Solid Waste Management Rules," the most important regulation governing Mecklenburg County solid waste practices. These regulations, in general, address requirements for various types of solid waste facilities. In April 1984, the North Carolina Solid Waste Division delegated authority to Mecklenburg County to enforce these regulations locally. In 2008, a Memorandum of Agreement updated the delegation to reflect current rules and regulations. The delegation allows the County to more closely monitor solid waste facilities in order to better protect the local environment and the citizens of the County.

Individually, the County, City and each Town has its own codes and ordinances which serve their individual needs. Appendix A lists a selection of legal documents affecting solid waste management in Mecklenburg County. Throughout the Plan, there may be more detailed descriptions of rules and regulations affecting the specific subject area discussed in that section.

1.7 New State Requirements

For the 2009 Plan Update, the State, in response to recent legislation has added the following planning requirements: Animal Mortalities, Management of Abandoned Manufactured Homes and Collection of Discarded Computer Equipment and Televisions.

Animal Mortalities – DENR has asked that poultry producing Counties address a response to a declaration of bird flu and the need to provide capacity for a large number of mortalities. Mecklenburg County has no known poultry farms.

Abandoned Manufactured Homes – The State of NC has a program to reimburse Counties for the management of abandoned manufactured homes. The local governments comprising this Plan agree that there is not a problem with abandoned manufactured homes in this County and we have chosen not to participate in this State program.

Collection of Discarded Computer Equipment and Televisions – The County has a program for addressing these materials as outlined in Section 4.0.

1.8 WMAB Statement of Aspiration for Solid Waste Management in Mecklenburg County

An ad hoc subcommittee of the Waste Management Advisory Board met on March 24, 2009 to develop a statement delineating what Mecklenburg County aspires to in terms of solid waste management in the future. The subcommittee decided on the following statement: “Create recycling infrastructure for no wasted resources in our County”. This statement was reviewed and approved by the SWMP Steering Committee and appears on the cover of this Plan. Notes on the development of the statement of aspiration are included in the appendix.

2.0 Goals

2.1 Solid Waste Stream Analysis

2.1.1 Overview

Municipal solid waste (MSW) as defined in the North Carolina General Statutes (G.S. 130A) means any solid waste resulting from the operation of residential, commercial, industrial, governmental, or institutional establishments that would normally be collected, processed, and disposed of through a public or private solid waste management service. MSW does not include hazardous waste, sludge, or industrial waste managed in a solid waste management facility owned and operated by the generator of the industrial waste for the management of that waste, or solid waste from mining or agricultural operations. In Table 2.1.2-A below, the categories of waste types disposed in Mecklenburg County are provided. Fiscal year 98/99 is shown as it is the Base Year against which future waste reduction is measured.

In addition to MSW, construction and demolition debris (C&D) are also considered part of Mecklenburg's solid waste stream. C&D is defined as solid waste resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings, or other structures, but does not include inert debris, land clearing debris or yard debris.

All annual data in this Plan, unless otherwise specified, is presented in terms of a fiscal year as opposed to a calendar year. For the State of North Carolina and its cities, towns and counties, the fiscal year (FY) begins on July 1 and ends on June 30.

2.1.2 Historical Solid Waste Data

In North Carolina, and as is typical in most states, the only detailed recordkeeping on waste quantities is on waste disposed. Records generally are not required by environmental regulators on waste generated that has been reused or recycled instead of disposed. Table 2.1.2-A shows the historical breakdown of solid waste by type of waste.

	98/99	02/03	03/04	04/05	05/06	06/07	07/08
Residential	258,558	307,161	313,219	348,939	385,577	370,607	364,458
Commercial	641,072	613,230	601,925	548,338	760,428	790,650	752,550
C&D	315,134	357,738	365,744	388,212	362,948	377,120	329,461
Total Waste	1,214,764	1,278,129	1,280,888	1,285,489	1,508,953	1,538,377	1,442,987

In this table, residential solid waste refers to municipal solid waste generated by households (single-family and multi-family dwellings) receiving curbside garbage collection service. All single-family garbage is counted as residential waste. Some of the multi-family waste is counted as commercial depending on whether the local jurisdiction provides service to multi-family dwellings or they are serviced by a private contractor. (A more detailed explanation occurs in Section 4.0). Commercial solid waste refers to municipal solid waste generated from commercial properties (e.g., office

buildings, retail stores, restaurants, manufacturing). Construction and demolition waste includes solid wastes that are generated from both residential and commercial construction and demolition activities. A more detailed discussion of waste quantities and composition is provided in each of the respective sections.

The amount of solid waste disposed in Mecklenburg County is a function of many factors including population, economic activity, and waste reduction efforts. In order to understand Mecklenburg’s waste stream in context, it is useful to discuss the growth in solid waste generated in terms of per-capita data. This is also how the State of North Carolina evaluates progress toward State and Local solid waste management goals and how Mecklenburg County measures its own progress towards achieving these goals.

The FY 2007/08 estimated County solid waste disposal rate was 1.67 tons/person/year. This estimate is based upon the North Carolina Solid Waste Management Annual Report prepared by NCDENR. Total per capita disposal rates and corresponding reduction percentages as compared to the base year of FY98/99 can be found in Table 2.1.2-B.

Table 2.1.2-B: Waste Reduction as Measured Against Baseline Data				
Fiscal Year (FY)	Population	Waste Disposed (tons)	Disposal Rate (tons/person/year)	Waste Reduction % of FY 98/99
1998-99	618,853	1,214,764	1.96	N/A
1999-00	641,796	1,282,196	1.92	2%
2000-01	695,454	1,233,824	1.77	10%
2001-02	713,780	1,279,090	1.79	9%
2002-03	734,390	1,278,129	1.74	11%
2003-04	750,221	1,280,888	1.71	13%
2004-05	768,789	1,285,489	1.67	15%
2005-06	796,232	1,508,953	1.90	3%
2006-07	826,893	1,538,377	1.86	5%
2007-08	863,147	1,442,987	1.67	15%

2.2 Mecklenburg County Goals

In addition to the 10-year Plan quantitative goals discussed in Section 2.3, following are both a mission statement and the more general qualitative goals of the Mecklenburg County solid waste planning area (all local governments).

Mission - Provide for the environmentally sound and economical management of the recyclables and solid waste generated in Mecklenburg County.

Goals

- Provide to our citizens the solid waste management services as outlined in this plan, interlocal agreements and as directed by individual elected council's and board's.
- Maintain a financially secure solid waste management system that fully accounts for the costs of our programs and has funding mechanisms in place to pay for them.
- Reduce the County per capita landfill disposal rate in a manner consistent with the specific waste reduction goals stated below.
- Provide leadership in litter prevention activities in the County per BOCC directive of March 21, 2000.
- Provide leadership in the planning and implementation of programs that protect our environment and fully accommodate emerging community needs.

In progressing towards the goals stated above, Mecklenburg County Solid Waste must furthermore recognize its binding responsibilities to:

- Provide to participating municipalities in this Solid Waste Management Plan the solid waste management services (education, technical assistance, recyclable processing, yard waste composting, and solid waste disposal) necessary to meet our collective obligations under the interlocal agreements.
- Secure and maintain the long term waste disposal capacity necessary to fulfill all of the County's requirements under the Solid Waste Management Plan.
- Provide programs and facilities necessary for the management of discarded white goods and scrap tires as required under NCGS 130.
- Provide the storm debris processing and storage capacity necessary to fulfill our respective obligations under the City/County All Hazards Plan.

2.3 Waste Reduction Goals, 2010-2019

The waste reduction goals are for the Mecklenburg County planning area which consists of Mecklenburg County (unincorporated area), the City of Charlotte and the Towns of Cornelius, Davidson, Huntersville, Matthews, Mint Hill, and Pineville.

In this Plan, the waste stream is broken down into its three functional components, *Residential Solid Waste, Commercial Solid Waste, and Construction and Demolition Waste*. The three components are combined into one waste stream, *Total Municipal Solid Waste*, for determination of the Plan's overall waste reduction goals. Goals are also discussed individually.

2.3.1 Total Municipal Solid Waste Reduction Goal

Solid waste generation is a function of consumption. Individuals and families consume goods and products. Manufacturers, retail stores, builders, schools and other non-residential entities also consume goods and products. The Environmental Protection Agency categorizes these goods as durable goods (furniture, appliances), non-durable goods (mostly paper products), containers and packaging, and other wastes (food, miscellaneous). The goods we consume eventually make their way to a disposal facility. Durable goods, such as furniture and appliances, have a longer useful life than a telephone book or paper cup, and take longer to arrive at a disposal site. It is human activity that generates solid waste and as human activity increases, whether through population or economic growth, so does the solid waste generated. Recognizing that

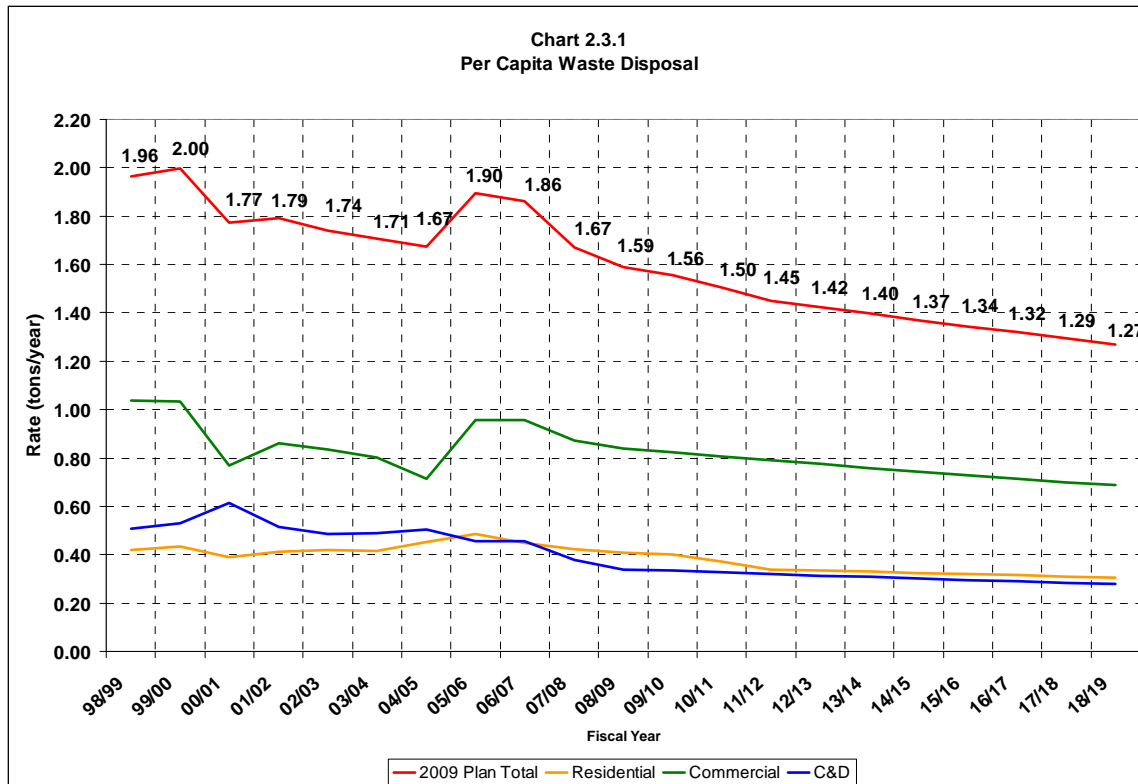
population growth will result in a growth in the total solid waste generated, waste reduction goals are based on reducing the amount of waste each individual generates and are expressed in per capita figures (tons/person/year). Table 2.3.1 displays the “overall” or total waste reduction goals for this planning period.

Table 2.3.1: Overall Waste Reduction Goals Through FY2019					
	Baseline FY98/99*	FY07/08*	Plan Year FY11/12	Plan Year FY14/15	Plan Year FY18/19
Waste disposed if NO new programs (tons)	1,214,764	N/A	1,618,112	1,742,599	1,913,130
Population	618,853	863,147	967,901	1,042,365	1,144,371
Waste disposed with PROPOSED programs	N/A	1,442,987	1,404,044	1,428,347	1,452,374
Proposed Rate tons/person/year	1.96	1.67	1.45	1.37	1.27
Rate Reduction % of baseline year	N/A	15%	26%	30%	35%
Proposed tons diverted	N/A	N/A	214,069	314,253	460,756
* Actual, not proposed or forecasted. N/A = not applicable					

Although population is increasing, the table predicts a drop in total waste disposed with proposed programs from the current 1,442,987 to 1,404,044 in FY11/12 primarily due to the initiation of a single-stream residential recycling program in the City of Charlotte and secondarily to a leveling of the economic growth and related increased waste generation experienced in the preceding decade.

As measured against the FY98/99 “baseline”, the planning communities achieved a 15% reduction rate in the fiscal year ending June 2008. The “waste disposed if NO new programs” in this table reflects holding this 15% or 1.67 tons per person/year level of waste generation. This waste reduction goal forecast is the sum of individual programs proposed for implementation throughout the planning period.

Chart 2.3.1 shows the individual contributions of the three components, residential, commercial, and construction and demolition. The “bump” appearing on the chart around the FY06/07 time period is due to a large one-time construction project. Although the increased rate for that time period appears as “commercial” waste, it was in fact C&D waste delivered to an MSW landfill – an acceptable practice under NC solid waste rules. MSW landfills may accept C&D waste and it is reported to the State as MSW. C&D landfills, however, may not accept MSW.



Following is a discussion of the goals of the three components of the solid waste stream.

2.3.2 Residential Waste Reduction Goal

Residential solid wastes are those wastes collected from curbside collection programs. These address all single-family homes and those multi-family units serviced by local governments or their contractors and delivered to the landfill under the interlocal agreement terms. Table 2.3.2 displays the goals for residential solid waste.

	Baseline FY98/99*	Current FY07/08*	Plan Year FY11/12	Plan Year FY14/15	Plan Year FY18/19
Waste disposed if NO new programs (tons)	258,558	N/A	408,690	440,132	483,203
Population	618,853	863,147	967,901	1,042,365	1,144,371
Waste disposed with PROPOSED programs	N/A	364,458	329,086	338,769	349,033
Proposed Rate tons/person/year	0.42	0.42	0.340	0.325	0.305
Rate Reduction % of baseline year	N/A	-1%	19%	22%	27%
Proposed Tons Diverted from Disposal	N/A	N/A	79,603	101,363	134,170

* Actual, not proposed or forecasted. N/A = not applicable

Currently, residential waste is increasing, both as total tons and on a per capita basis. In Section 4.0, the flat trend in residential recycling is discussed as well as some possible programs to boost participation. The goals laid out in Table 2.3.2 assume that the single-stream residential collection program will be fully implemented to City of Charlotte households. Some Towns may also opt to implement a single stream program during the Plan period.

2.3.3 Commercial Waste Reduction Goal

Commercial wastes are those generated by all non-residential activities except construction and demolition. This includes wastes generated by any business, industry, or institution including government buildings, hospitals, churches and schools. Commercial waste represents the largest fraction of solid waste in Mecklenburg County. Table 2.3.3 displays the commercial waste reduction goals.

Table 2.3.3: Commercial Waste Reduction Goals Through FY2019					
	Baseline FY98/99*	Current FY07/08*	Plan Year FY11/12	Plan Year FY14/15	Plan Year FY18/19
Waste disposed if NO new programs (tons)	641,072	N/A	843,882	908,804	997,740
Population	618,853	863,147	967,901	1,042,365	1,144,371
Waste disposed with PROPOSED programs	N/A	752,550	765,224	775,632	785,429
Proposed Rate tons/person/year	1.04	0.87	0.791	0.744	0.686
Rate Reduction % of baseline year	N/A	16%	24%	28%	34%
Proposed Tons Diverted from Disposal	N/A	N/A	78,658	133,173	212,311
* Actual, not proposed or forecasted. N/A = not applicable					

Section 4.0, Recycling, outlines the multiple programs that will create the waste reduction shown in the table including the continued enforcement of the mandatory paper and corrugated cardboard recycling ordinance.

2.3.4 Construction and Demolition Waste Reduction Goal

Construction and demolition (C&D) waste offers an opportunity at substantial future waste reduction. The generation of C&D waste is, perhaps, more closely tied to the economy and new housing construction than other waste streams. The economy, interest rates and other financial indicators may spur or discourage construction and demolition activities and the resulting wastes. The current downturn in construction has contributed to a reduction in FY08 tonnage by 52,000 tons over FY07 and another drop in tonnage is anticipated for FY09. Several studies and pilot projects establish the background for development of programs to divert C&D waste from disposal beginning in FY09/10. Table 2.3.4 shows the proposed goals and waste diversion for C&D waste.

Table 2.3.4: C&D Waste Reduction Goals Through FY2019					
	Baseline FY98/99*	Current FY07/08*	Plan Year FY11/12	Plan Year FY14/15	Plan Year FY18/19
Waste disposed if NO new programs (tons)	315,134	N/A	365,541	393,663	432,187
Population	618,853	863,147	967,901	1,042,365	1,144,371
Waste disposed with PROPOSED programs	N/A	325,979	309,733	313,946	317,912
Proposed Rate tons/person/year	0.51	0.38	0.32	0.301	0.278
Rate Reduction % of baseline year	N/A	26%	37%	41%	45%
Proposed Tons Diverted from Disposal	N/A	N/A	55,807	79,717	114,275
* Actual, not proposed or forecasted. N/A = not applicable					

The current economic downturn is anticipated to continue to dampen construction activities throughout the first 3 years of this Plan period. The 45% waste reduction goal for 2019 assumes that more aggressive programs will be proposed in the 2012 Plan update including requirements that builders/developers meet certain waste reduction goals for permitted projects. In addition, it is anticipated that a higher number of mixed C&D waste processor/recyclers will be present in the future associated with a reduction in disposal capacity for C&D waste.

3.0 Source Reduction and Reuse of Waste

The Environmental Protection Agency (EPA) places source reduction and reuse at the top of its hierarchy in managing solid waste, followed by recycling and composting and, lastly, disposal in combustion facilities and landfills. Source reduction is defined as a reduction in the amount and/or toxicity of waste entering the waste stream or waste prevention. While all components of an Integrated Solid Waste Management System are important, reduction of waste at its source should be applied prior to implementation of other techniques, creating less waste to be recycled, reused, composted, incinerated, or landfilled. The following paragraphs describe residential and commercial source reduction approaches currently being employed or proposed to be employed in Mecklenburg County.

3.1 Residential Source Reduction and Reuse of Waste

Mecklenburg County currently provides a number of source reduction programs to the residents of Mecklenburg County, including the City of Charlotte and the Towns. The programs are listed below with a description of each. Generally, these programs are designed to provide County residents with the information and tools to minimize the quantity of wastes they generate.

3.1.1 Don't Dispose-Donate It

The Donate-It program provides a service to link residents desiring to discard reusable items with non-profit charitable organizations that accept items on a donated basis. Information found at www.wipeoutwaste.com (see section 3.1.10) provides information to assist residents in donating items. Also, this website directs citizens to Freecycle, a web group where one can network with others looking to give-away or accept items, and provides tips for a successful yard sale. For those involved in business and industry, the website offers a link to NC Waste Trader, a marketplace for usable discarded or surplus materials and products.

3.1.2 Enviroshopping

Enviroshopping is a program used to help consumers recognize that their purchasing decisions play a vital role in decreasing the amount of solid waste generated by them. offers information and “easy-to-accomplish” tips aimed at educating the individual as to what they can do to reduce waste. Citizens may explore websites such as the EPA and greenseal.org. Citizens can use this information to make environmentally wiser choices as they shop for items (such as less packaging, buy items in recyclable containers, and buy non-toxic products for kitchen and bath).

3.1.3 Junk Mail Reduction

More than 100 million trees are used each year in the production of junk mail. It is estimated that the average American adult receives 41 pounds of junk mail per year. In response, the Wipe-Out-Waste website and printed materials offer information and links to the public for junk mail opt-out programs. Some sites offer free opt-out options while a few require a nominal fee. The Solid Waste Reduction team has offered information and advice about junk mail reduction at various speaking engagements and events where educational booths/tables are maintained.

3.1.4 Household Hazardous Waste-Toxicity Reduction

Mecklenburg County's Solid Waste Reduction website, www.wipeoutwaste.com offers comprehensive information about household hazardous waste, its disposal, and more environmentally friendly alternatives. It provides specific information (in both English and Spanish) about safe disposal at full-service recycling centers in the County. Citizens are offered a handy "slide card" brochure with household chemicals and their more environmentally friendly alternative at various speaking engagements and educational events. This information is also included in the Wipe Out Waste Guide. Also, toxicity reduction is covered in Mecklenburg County's Piedmont Landscaping and Naturescaping Training (PLANT.) classes.

3.1.5 Holiday Waste Reduction-Source Reduction Campaign

The Holiday Waste Reduction campaign started as Use Less Stuff Day (ULS), an educational campaign beginning the Thursday before Thanksgiving and continuing through New Year's Day. The campaign focuses on less-waste generating behaviors and activities during the holiday season. Citizens are provided with holiday waste reduction information and tips via the distribution of holiday gift bags printed with recycling and waste reduction information at malls and theatres. Cinema ads, public service announcements, interviews and presentations are examples of other promotional techniques used to reduce waste during the holiday season. A flyer with holiday reduction tips is utilized at speaking engagements and educational booths/tables maintained during the holiday season.

3.1.6 America Recycles Day

America Recycles Day (ARD) is a national event to encourage Americans to increase their recycling activities and purchases of recycled products. On November 15 of each year, millions of people participate by taking a pledge to increase their recycling and to purchase more products made from recycled materials. Mecklenburg County's local colleges and universities have held ARD events. Recycling information, promo items, and the "Litter Critter" Volkswagen (a highly decorated vehicle aimed at catching the attention of young and old alike) have been provided to area nature preserves and colleges. Charlotte-Mecklenburg Schools are becoming more informed and involved with recycling through ARD activities held at individual sites around the county.

3.1.7 PLANT – Piedmont Landscaping and Naturescaping Training

Mecklenburg County began conducting backyard-composting workshops in 1993. In 1998 these workshops were redesigned and titled PLANT (Piedmont Landscape and Naturescape Training). The revised format includes soil testing, hands on composting, erosion control, landscaping with native plants, grasscycling, beneficial insects, organic and habitat gardening and vermicomposting. Other components of the program include the Master Composter Training (MCPLANT) courses; community gardens in urban neighborhoods, a native plant list, demonstration areas and partnerships with other County agencies to incorporate native plants as part of their landscape to conserve water and prevent exotic plants from becoming invasive. Mecklenburg County partners with several local library branches, nature preserves, and the University of North Carolina at Charlotte to provide meeting places for these classes. Mecklenburg County promotes PLANT by print ads, radio spots, news articles, and The WipeOutWaste guide published by Mecklenburg County Solid Waste Reduction. This program educates over 100 people per year with scores on waiting lists. The growth of this training has been significant. In 2008, the County increased the number of MCPLANT classes offered in

response to demand. The Town of Matthews has also provided a compost bin sale utilizing grant funding.

3.1.8 Charlotte-Mecklenburg School Composting

In response to the North Carolina Standard Course of Study, competencies for each grade level and high school course, Mecklenburg County provides schools with instruction and compost bin set-up. Both backyard composting and worm composting are occurring in several schools across the County. Mecklenburg County and the Charlotte-Mecklenburg Schools partner with the North Carolina Wildlife Federation (NCWF) in completing habitat assessments. Free mulch and compost is offered to those schools interested in becoming a NCWF certified habitat area. Also, County Solid Waste staff offer advice and guidance to the schools in planning and maintaining their habitat.

3.1.9 Food Waste

Although accurate waste characterization data is not available, food waste may represent as much as 10 percent of the total MSW in Mecklenburg County. This is an area of much potential here in Mecklenburg County. The County's compost facility is not permitted to accept or process food waste. However, Mecklenburg County has two privately operated options at this time for food waste delivery for composting: 1) Wallace Farms in Mecklenburg County, 2) Tri-County/Stanley Septic in Gaston County. The County responds to numerous requests from the commercial sector in "greening" its events, taking a look at the use of compostable utensils and other waste reduction measures. Current efforts include researching ten successful programs throughout the country on organic waste diversion and how their success could be applied in Mecklenburg County.

3.1.10 Internet Homepage -- www.wipeoutwaste.com

This Internet page has become vital in keeping the public updated about solid waste management programs. Information on the homepage includes: County operated Recycling Centers, County operated composting and mulch facilities, Metrolina Recycling Center, landfill information, business waste reduction and recycling programs and information, school recycling, household hazardous waste management, construction and demolition debris recycling and disposal, Wipe Out Waste Guide, residential waste reduction, classes & workshops, and upcoming events. Visitors can sign up for classes and email staff. The homepage has been on the Internet since May 8, 1996. The effects of the homepage on waste reduction and recycling tonnage increases cannot be assessed, but developers are able to relay the number of hits received on individual pages. Communication links among the City, County, Towns, and State officials are strengthened as information can be accessed and updated immediately. A decrease in the amount of information disseminated in print form is an additional benefit. Mecklenburg County revised and updated the entire City-County government web site in 2002. The new web site is more user friendly and all information continues to be updated. The website will continue to be updated on a regular basis to keep citizens abreast of all the County has to offer.

3.1.11 Publications

Mecklenburg County provides a yearly guide called the Wipe Out Waste Guide. This guide is a printed publication which appears electronically on www.wipeoutwaste.com as well. This guide has been utilized to educate at least two zip codes per year in the City

of Charlotte that have been designated as zones with lower recycling participation. It has also been mailed to Mecklenburg County towns upon request. This guide is also utilized at the Southern Spring Show and given out at all our educational/informational booths/tables. It is comprehensive in its scope. The Guide serves as a good starting point for talks and presentations. It is updated yearly.

3.1.12 Assessment

Source Reduction and Reuse Programs are more difficult to measure on a broad scale than other methods of solid waste management. It is difficult to measure what hasn't been produced, and to discern which reductions are due to prevention, versus which are due to other factors like the economy or seasonal changes. Reduction of waste is typically the most inexpensive cost in the waste hierarchy. These waste reduction programs are in part motivational tools designed to change behaviors of waste generators and are valuable in increasing overall recognition of waste management as an environmental issue.

3.1.13 Recommendations

- Expand composting training programs.
- Revise, reduce, and update www.wipeoutwaste.com to become more user friendly
- Research food diversion programs of other cities (Seattle WA, Portland OR, Orange County NC, Boston MA, Hennepin County, MN, Alameda Co., CA, Swift Co. MN, Mackinac Island, MI, Walnut Creek, CA, Danville, CA) and implement strategies as appropriate
- Conduct pilot projects of organic(food) waste
- Continue to survey the effectiveness of these programs by traditional survey tools and website "hits"

3.2 Commercial Source Reduction and Reuse of Waste

3.2.1 Mecklenburg County Commercial Source Reduction and Reuse Programs

The County offers commercial waste assessments and presentations to businesses and trade associations where source reduction and reuse practices are emphasized. In addition, the County offers "Business Specific Fact Sheets" for many industries including hotels, restaurants, manufacturing, places of worship, etc. These "Fact Sheets" offer many source reduction/reuse opportunities that businesses may utilize.

3.2.2 Source Reduction - Product Stewardship

Growing in importance to the strategic management of the resources we consume and from those resources the waste that we generate is the concept of product stewardship. Underlying the concept is the simple principle that all participants in the life cycle of a product, its production, use, and end-of-life management, should share in the responsibility for managing all of the health and environmental impacts resultant from that product. However, the emphasis of product stewardship initiatives to date has been to encourage manufacturers to produce products with fewer toxics and manage those toxics that remain.

With the production of consumer goods being a global economy, the design of these goods, the toxicity of their content, and the ease of recycling when they reach their end of use, can only be minimally influenced at the local level. Therefore, there is little direct

influence or control that could be exerted by the County to change manufacturing and distribution practices of national or international firm. Recognizing that local governments have little influence on the practices of national companies and that a growing group of state and local governments believe in this product stewardship approach, a coalition was formed called the Product Stewardship Institute. The primary goal of the Product Stewardship Institute is to foster a dialogue with manufacturers at a national level on ways to better manage these wastes, capture and reuse the materials, and improve future product design.

At their meeting on June 1, 2004, the Mecklenburg County Board of Commissioners approved and endorsed the application for Mecklenburg County to become a Coalition Member of the Product Stewardship Institute. As a result, the County has joined with other state and local governments, such as the State of North Carolina, Catawba County, Forsyth County, and Wake County in a national effort to further product stewardship principles. Since that date, the Product Stewardship Institute has been involved in direct discussions and negotiations with several major national industries including consumer electronics and paints over implementing product stewardship approaches.

3.2.3 Recommendations

- Continue to educate businesses on source reduction alternatives,
- Support the enactment (County and Municipalities) of federal and state legislation that recognizes excess packaging as a major source of waste with the burden of the waste management costs placed on local governments and mandates its reduction.

4.0 Recycling

4.1 Overview

The U.S. Environmental Protection Agency (EPA) defines recycling as a series of activities by which discarded materials are collected, sorted, processed, and converted into raw materials and used in the production of new products. With the exception of yard waste and C&D, this section addresses all other known recycling activities in the Plan area. This includes residential curbside recycling, multi-family recycling and commercial recycling activities. This section also addresses public facilities which accept and process recyclables.

4.2 Residential Curbside Recycling

In the Mecklenburg County planning area, residents of the incorporated municipalities receive solid waste services either directly from the local government or through contracted services administered by the local government. For most residents, services include curbside garbage, recycling, yard waste and bulky item collection. The City and Towns all provide these services to single-family households.

For residents of the unincorporated portions of Mecklenburg County, subscription collection services are available through private haulers. A Mecklenburg County Ordinance requires that haulers providing garbage service to subscribers in single-family homes must also offer recycling service at no additional charge.

Following is a more detailed description of recycling services provided to curbside customers. Throughout Mecklenburg County, curbside recycling programs are considered “commingled” systems. This term is used because residents are allowed to place all of their recyclables into the same container or bin. Collection is considered to be “dual stream” because the collector sorts the recyclables at the curb into two compartments on the truck, one for paper and another for all other materials.

4.2.1 Background

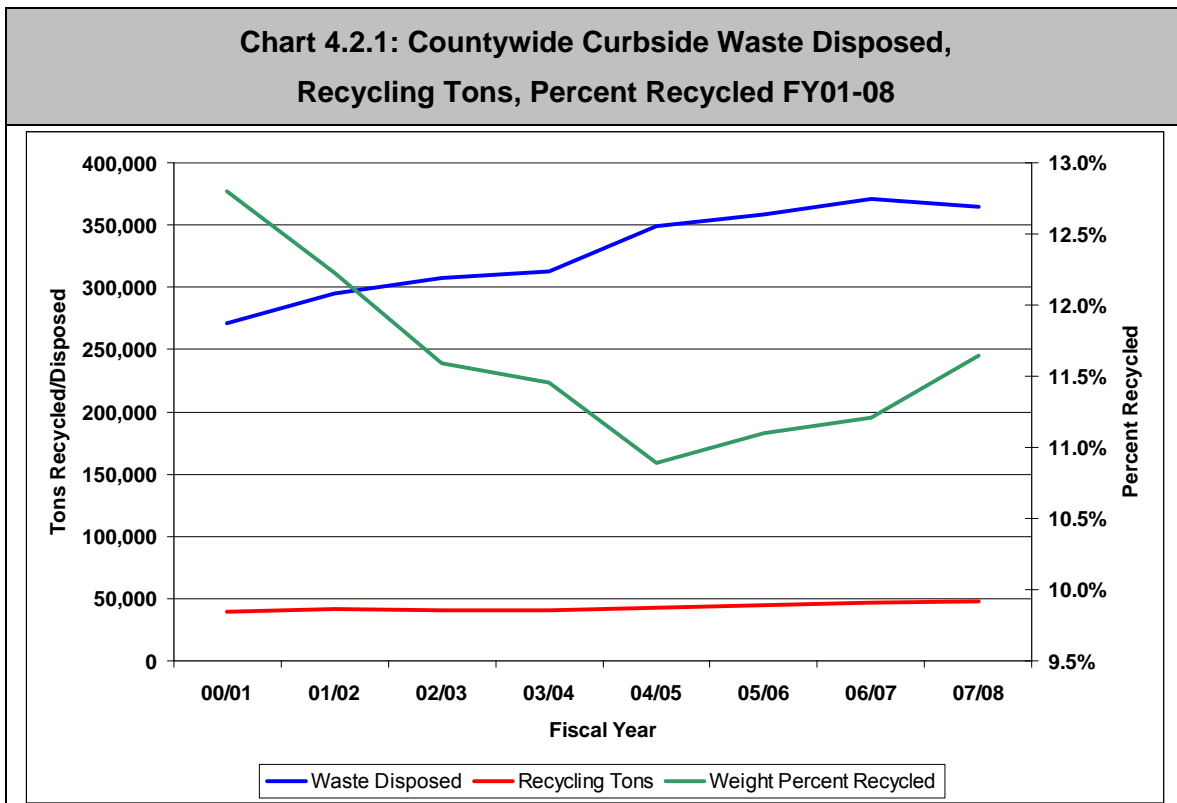
Each of the municipalities in the Plan area provides curbside recycling services to households on a weekly basis. These include single-family homes as well as some multi-family complexes. The City of Charlotte and Towns of Cornelius, Davidson, Matthews and Pineville all include a portion of multi-family households in their curbside program.

Recyclables are collected on the same day as garbage, bulky waste and yard waste. Each household receives a plastic bin of varying size and is instructed as to what materials should be placed in the bins.

Table 4.2.1 shows the materials collected by the various municipalities. Materials are collected using a dual-stream collection method. The collection vehicle has two compartments – one for paper and one for all other containers (plastic, glass, steel and aluminum). Materials are sorted at the curb and are loaded manually into two compartments in the collection vehicle. The materials are then taken to the Metrolina Recycling Facility (MRF) (see Section 4.5 for a description of this facility).

Table 4.2.1: Recycling Materials Collected Curbside, Containers and Frequency.							
Material	Charlotte	Cornelius	Davidson	Huntersville	Matthews	Mint Hill	Pineville
PET/HDPE	√	√	√	√	√	√	√
Glass	√	√	√	√	√	√	√
Spiral Cans	√		√		√	√	
Steel Cans	√	√	√	√	√	√	√
Alum. Cans	√	√	√	√	√	√	√
Mixed Paper	√	√	√	√	√	√	√
Newsprint	√	√	√	√	√	√	√
OCC	√	√	√	√	√		√
Magazines	√	√	√	√	√	√	√
Phone Books	√	√	√	√	√	√	√
Container Size	16/18 gal.	18 gal. 2 max.	18 gal. 2 max.	18 gal. 2 max.	22 gal.	18 gal.	18 gal.
Collection Frequency	1x/wk.	1x/wk.	1x/wk.	1x/wk.	1x/wk.	1x/wk.	1x/wk.
Setout Qty.	Unltd.	2 max.	2 max.	2 max.	3 max.		1 max.

Chart 4.2.1 provides a County-wide perspective on curbside recycling from FY01 to FY08. In that period, the County's residential recycling rate, expressed as a weight percent of the residential tons disposed, declined from 12.8% to 11.6%. A slight increase of .4% has been observed since the last planning period of FY05. These amounts include recyclables deposited at convenience centers.



4.2.2 Analysis

Completed in March 2006, the City of Charlotte Solid Waste Services surveyed their residents on recycling. ¹The main objectives of the survey was to measure the City of Charlotte's recycling participation rate; measure satisfaction with curbside recycling service, explore reasons citizens do not recycle; and to examine citizen awareness, attitudes, and overall knowledge about recycling. Some of the conclusions drawn from the survey suggest that most Charlotte residents have some type of recycling service available to them and most residents recycle. However, only slightly more than one (1) in ten (10) recycle all of the material types that are allowed in their recycling bin. For example, someone may recycle all beverage containers and newsprint, but not mixed paper, junk mail and corrugated cardboard. Of those that indicated that they do not recycle, the primary reasons given were:

- Don't have a bin (18%)
- Inconvenient to clean and separate (16%)
- Don't know (16%)
- Forgot, lazy, no time (12%)
- Accidentally put in trash (6%)
- Other (28%)²

To date, there have been no comprehensive studies measuring household participation or the amount of household recyclables remaining in the solid waste stream in Mecklenburg County or in the Towns. However, a survey of the citizenry of each Mecklenburg County jurisdiction, evaluating residential recycling practices and preferences, is underway at the time of the writing of this Plan and will be completed in 2009.

This survey will provide an opportunity to gain valuable recycling information from the citizens of the Towns and also gauge the following: citizen's receptiveness to exploring alternative recycling collection methods; citizen satisfaction with current service; and overall attitude towards their recycling programs. For the City of Charlotte, the survey will measure its' citizens awareness of and receptiveness to single stream recycling. Survey questions were specifically designed to address questions and concerns associated with that particular jurisdictions current recycling program and that would be of the most valuable in planning their future program efforts. For those municipalities that chose to participate, a representative from their jurisdiction provided input into the the survey questions to be asked of their citizenry.

4.2.3 Assessment

Although a very slight increase in recycling has been achieved over the last planning period, the recycling rate remains relatively flat. Municipalities have made some gains in increasing the types of materials collected in their curbside programs. Opportunities still exist to recover additional types of materials, and increase the amount of materials collected. Specifically:

¹ MarketWise Recycling Survey 2006

² don't know what to recycle, didn't know how I could recycle, not enough to recycle, bins too small, people go through recycling, never thought about it, inconvenient location, no transportation (4% each)

- Additional quantities of materials could be gained from all jurisdictions by collecting all key materials accepted at the MRF.
- Currently, it is not known how many households are participating in the curbside program (participation rate). Of those households that are participating, it is not known how complete their participation is (i.e., are they recycling all of the materials the program accepts). The residential survey and visual observation set out rate study should closely address this unknown.
- Mecklenburg County municipalities are considering some alternative residential recycling options that are deemed to improve residential performance.

4.2.4 Options for Increasing Recycling Levels

In order to achieve the Residential Recycling Goals set forth in Section 2.3.2 significant strides, not small steps are required. While ultimately these goals will only be achieved through a combination of source reduction and recycling programs, the near term emphasis at the County level is most appropriately placed upon increasing the recyclable yield from the residential curbside collection programs.

The prior Mecklenburg County Solid Waste Management Plan of July 2006 identified three basic approaches to increase the yield of recyclable materials in residential curbside collection programs: (1) Increase the number of households participating in the program, (2) Insure that those who are participating are doing so to the full potential allowed (i.e., participants are putting all of the items allowed by the program into the recycling bin), (3) Expand the list of materials collected at the curb.

These three approaches are not mutually exclusive, in fact, the first two, expanding the number of participants and the individual level of participation, are closely intertwined. Success here is dependant upon an educated and motivated public with available, convenient and flexible recyclable collection service options. The third of the basic approaches, an expanded list of recyclable materials, is separate and achievement is preconditioned on processing capability at the County's Metrolina Recycling Center, markets for these additional recovered materials, and cost effective curbside collection options for them.

From these three basic approaches to increasing residential recycling yield, the 2006 Solid Waste Management Plan highlighted three programmatic responses that have been applied by other communities to achieve the desired recycling results; Incentive based systems (Pay-As-You-Throw, RecycleBank), Mandatory Residential Recycling, and Single Stream Recycling Collection with brief descriptions of each following.

Pay-As-You-Throw (PAYT)

These programs are also often referred to as variable-rate or unit-pricing programs. As with other public utility type services such as water and electricity usage, residents only pay for what they use. With PAYT, residents pay for garbage pick-up based on the amount of waste they generate. Households gain control over the amount they pay for garbage service, and local governments or waste haulers can get a secure stream of revenues for covering waste management costs, a reduction in waste and an increase in the recycling rate. Payment for these programs may be based upon a fixed amount for a specific type waste container (e.g. bag, 30 gallon container, 96 gallon container) or on

actual weights from truck based container weighing systems. Where applied, these programs have been highly successful.

RecycleBank

RecycleBank uses a single stream recycling process in which all recyclables can go together in one bin for pick-up. On pick-up day, the hauler collects the bin, scan and weighs the recyclables, measuring the amount of material each home recycles then issues RecycleBank Points based on the amount of materials recycled. These points can be used at participating local and national rewards partners. Ultimately, the materials are transported to a MRF and the unsorted mess of paper, plastic, glass and metal is dumped onto a conveyor belt and the single-stream automated system takes over to separate and bail the items and send them on their way to be recycled.

Mandatory Residential Recycling

Another option to raising participation levels, as well as ensuring that participants use the program fully, is mandatory recycling. Typically “mandatory” results from the adoption of a local ordinance requiring all residents to participate in the recycling program. The UNCC Charlotte Urban Institute Study of 2007 revealed that 80% of those surveyed would support mandatory curbside recycling at their home. The implication of “mandatory” here is both that each resident participates by setting out recyclables for collection and that all of the targeted recyclables are included in the set out. The mandate may also take the form of prohibiting the placement of recyclables in the waste container. Some increases in recycling rates will likely be obtained from residents just doing “the right thing” without any active enforcement. Real gains from mandatory programs however are generally accompanied with real enforcement against non-compliance.

Single Stream Recycling Collection

This Single Stream approach differs from the current and more traditional dual stream recyclable collection now practiced in all of Mecklenburg County. With the current dual stream system the residential recyclables are separated into two streams at the point of collection (fiber and commingled containers) and placed into two separate compartments within the collection vehicle. If the resident sets the recyclables out in a single bin the collection truck operator has the burden to manually separate the recyclables into the two streams prior to placing them in the collection truck. In a Single Stream collection system, no separation of the recyclables is required. All recyclables may be set out in a single container and placed in a single compartment within the collection truck.

4.2.5 The Selected Strategy: Single Stream

In discussions with the Participating Municipalities at the time of the adoption of the 2006 Solid Waste Management Plan and immediately thereafter, the Single Stream approach quickly emerged as the preferred alternative for increasing residential recycling levels in the County. Both PAYT and Mandatory Recycling programs raised enforcement concerns and were additionally perceived as a reduction of solid waste service and punitive of undesired behavior rather than rewarding of positive behavior. To the contrary, Single Stream was perceived as a service improvement and did not present the negative regulatory aspects of the other two.

The conversion of residential recycling collection to Single Stream also presented other opportunities favorable to improved recyclable yields. An alternative recyclable

collection approach becomes a pathway for increased education and a general reengagement of public interest in recycling. Without the curbside separation of commingled containers and fiber, additional materials may be added to the recyclables collected at curbside without increasing the labor burden and therefore the cost of collection. Single Stream also enables the replacement of the current manual collection approach with automated collection in a roll-out container, further improving collection efficiency.

There is, however, a major impediment to the implementation of Single Stream collection, the absence of an appropriate recyclables processing facility. The County's Metrolina Recycling Center was designed for dual stream recyclable processing. Conversion to a Single Stream facility would require a significant capital investment on the part of the County. However, the need for this investment has been recognized and several major steps have already been taken to secure that capital funding commitment, modify the facility, and therefore overcome that impediment.

In June of 2008, the County took two major steps toward Single Stream. First, the County entered into new twenty-year interlocal agreements with the Participating Municipalities, which among other things guaranteed the delivery of the residential recyclables collected by the Participating Municipalities to the County for that period. In these agreements the County agreed to provide a Single Stream recyclable processing facility by July 1, 2010 and the largest of the Participating Municipalities, the City of Charlotte, agreed to collect and deliver Single Stream recyclables on that same date. Second, the Mecklenburg County Board of Commissioners authorized the financing of the Single Stream conversion as a capital project for Fiscal Year 2009.

Single Stream conversion design for the Metrolina Recycling Center is now underway along with negotiations to modify the operating contract. The design parameters include several features in addition to the direct Single Stream conversion that will increase the yield from residential recyclables. Optimization/automation of the PET and glass recovery lines will improve both the quantity and quality on the recovery of these materials. And, as relates to the third approach to increasing recycling yield by expanding the number of materials collected at the curb, changes will be made to the sorting line which should increase the number of plastic resins that can be recovered.

4.2.6 Recommendations for Implementation

Based upon the adopted Single Stream recyclable collection methodology for improving the yield of residential recyclables, the following additional actions are recommended:

- Survey the community to determine service expectations and information needs for both dual stream and Single Stream curbside recyclable collection programs.
- Establish a baseline for current performance against which to measure Single Stream.
- Assess the detailed costs of implementation and the interest of the municipalities in converting from dual stream to single stream.
- Develop and implement an Education Master Plan that incorporates the survey findings and prepares for implementation of Single Stream collection approach.

- Develop a Single Stream transitional program to ensure uninterrupted service to the Participating Municipalities during the conversion of the Metrolina Recycling Center.

4.2.7 Partnering with National Efforts to Increase Curbside Recycling.

The County partnered with the City of Charlotte and Towns of Davidson, Huntersville and Mint Hill in the educational programs offered through Curbside Value Partnership.

Curbside Value Partnership (CVP)

Created in 2004, Curbside Value Partnership is a research-based partnership with communities and recycling stakeholders designed to identify solutions to improving curbside recycling programs and address falling and/or stagnant recycling rates. The long-term goal of the CVP is to increase participation in local curbside recycling programs and make these programs more profitable and sustainable. The program identifies “the best” programs around the country; those with solid leadership and support, as well as those with room to grow, and implements education campaigns in partnership with the community.

Mecklenburg County was selected as the 24th partner in the national Curbside Value Partnership program, sponsored by the aluminum industry. Included in this partnership are the City of Charlotte, and the Towns of Davidson, Huntersville, and Mint Hill. A county-wide education program communicating the importance of recycling at the curb was launched on February 15, 2007.

Our goal was to increase curbside recycling by ten (10) percent during the first year of the campaign. In an effort to reach our goal, we utilized a combination of advertising media that included: radio promotions, utility bill inserts, outdoor billboards, print ads, and public/private partnerships.

Overall, during the first year of the partnership with CVP, there was a 4.5 percent increase in overall tonnage to the MRF from the curbside programs of the participating jurisdictions. Individually, the Town of Davidson saw an increase of 38.7 percent; City of Charlotte an increase of 5.9 percent; the Towns of Mint Hill and Huntersville each experienced a decreased in tonnage to the MRF of 1.1 percent and 10.2 percent respectively.

Recommendation

- Continue to review national opportunities to expand local recycling efforts in Mecklenburg County

4.2.8 City of Charlotte Public Education

The City of Charlotte’s public education program takes Solid Waste Services to the community by offering interactive and customized recycling programs at community festivals, schools, neighborhood and other meetings. Participants learn the value of recycling, how to recycle and the role of recycling in the waste management process through innovative programs that include:

- Wheel of Waste – A Wheel of Fortune-style game that tests participants’ knowledge of recycling. Prizes are awarded for correct responses regarding the overall recycling process, which includes what materials can be made from recyclables and how to recycle motor oil.

- Hot Seat – Participants’ knowledge of recycling is put to the test during a competitive game. Prior to the game participants’ are given a cheat sheet to study and then are put on the hot seat where they have to answer a series of questions regarding recycling. Two or more people compete for a chance to win a prize. The person who answers the most questions correctly wins.
- Recycling Rangers – A elementary education program that provides an overview of the curbside recycling collection program. Participants learn what materials are recyclable in the CURB IT! residential recycling program, and have an opportunity to see a demonstration with a real recycling truck.
- Follow the Bottle – A school-based program that teaches the recycling process from beginning (consumption) to end (new product creation) through the story of a soda bottle. During the program students get to see the recycling process by witnessing the various stages of the process.

4.3 Residential Multi-family Units not Receiving Curbside Solid Waste Services

4.3.1 Background

Multifamily residential units are serviced differently by each of the municipalities. By definition, multi-family units are residential dwellings in which more than one family or household resides on a single real estate parcel. These would include:

- Nursing homes
- Assisted living quarters
- Condominiums
- Patio homes
- Townhouses
- Apartments
- Duplexes/Triplexes

The following describes multi-family services provided by the various municipalities.

The City of Charlotte

The City of Charlotte provides recycling services to multi-family complexes with fewer than thirty (30) units. These multi-family complexes receive curbside recycling services equivalent to that of single-family homes. Currently, 12,333 multi-family units receive curbside recycling services. In addition, the City offers garbage and bulky item collection to more than 99,000 multi-family households that reside in complexes with thirty (30) or more units; of these, nearly 59,006 receive recycling services utilizing a varying number of ninety-six (96) gallon roll carts that are typically stationed in a designated recycling area. No yard waste collection is provided to these multi-family complexes and bulky item collection is arranged by schedule. This subscription service is provided through a private contractor hired and managed by City of Charlotte personnel.

Garbage service is provided with dumpsters or compactors. If a multi-family complex wishes to have roll-cart garbage service, they must utilize another vendor as the City’s contractor only provides garbage service through dumpster or compactor.

Any multi-family complex that subscribes for garbage service from the City has the option of requesting recycling service at no additional charge. However, it is at the

discretion of the multi-family complex management whether to add this service or not. This contracted program accepts the same materials as the City's curbside program and the materials are taken to the Metrolina Recycling Facility.

Multi-family complexes with thirty (30) units or more that choose to participate in the City's recycling program must designate recycling stations where residents of the complex can deposit their recyclables. Each recycling station is composed of at least five (5) ninety-six (96) gallon carts. New multi-family complexes are required to set aside space for one recycling station for every eighty (80) units (example: if a complex is composed of 160 units, then space for two recycling stations is required to be set aside).

Beginning in November 2007, the City of Charlotte along with Mecklenburg County completed a multi-family pilot study aimed at addressing the problem of recycling contamination and assessing and developing the most effective educational tools to reach multi-family residents. A total of twenty (20) multi-family properties participated in the study. Five (5) multi-family complexes in each of the four (4) collection service quadrants made up the pilot communities. A baseline measurement was completed at each of the participating sites.

The measurement parameters included: number of containers, placement (visibility) of containers, contamination levels, signage (instructions), and labeling on/around containers. Subsequent to the completion of the baseline measurement, educational brochures (English and Spanish) explaining the recycling program were distributed to residents of the pilot communities (Phase I). Also, signage with instructions on what materials could be recycled was provided to the managers of each community to be posted in the recycling areas of the complexes (Phase I).

After a few weeks, a second measurement of the properties was conducted to gauge the effectiveness of the print materials and signage. Lastly, on-site presentations were conducted at each of the properties. During these presentations, City of Charlotte and Mecklenburg County recycling information and materials were provided directly to residents of the communities (Phase II). The study concluded in May 2008 with a post study measurement of each of the properties.

The study concluded that distribution of educational materials and the posting of signage had the greatest impact on contamination levels. It was also concluded, that on site presentations, which were costly in staff time and money, did not add a commensurate benefit in reducing contamination levels.

Moving forward, the City of Charlotte and Mecklenburg County will continue to communicate and maintain a relationship with the property managers that participated in the pilot study. City of Charlotte staff will check in regularly with property manager to offer assistance with their recycling efforts; develop tips and articles that property managers can include in community newsletters and/or on their website; and offer recycling presentations to educate new/current residents.

Town of Davidson

The Town of Davidson provides curbside service to single family homes and one set of condominiums from the multi-family sector. The Town contracts for dumpster service for 734 multi-family units that do not receive curbside solid waste service.

Town of Cornelius

Solid waste and recyclable collection is provided in the same way to multi-family homes as it is to single family homes. Some multi-family units have dumpsters instead of rollouts and bins. The Town of Cornelius only provides this service for townhomes; apartment complexes do not receive this service.

Town of Matthews

The Town of Matthews provides curbside recycling services to multi-family complexes with less than 6 units. Multi-family complexes with greater than 6 units must contract for their own recycling services. There are drop-off recycling sites at two (2) of the large apartment complexes in the Town, and a third is being implemented.

Town of Pineville

The Town of Pineville provides curbside recycling services to 611 multi-family units (townhomes and condominiums only).

Town of Mint Hill

The Town of Mint Hill provides recycling services to a limited number of townhomes and two (2) apartment complexes.

Towns of Huntersville

The Town of Huntersville serves single-family and townhouse units, but does not service multi-family apartments. Apartment units may utilize these services, but under separate contract with the private hauler.

Mecklenburg County

Mecklenburg County staff promotes recycling to the management of multi-family complexes and also developed billboard and cinema ads, along with educational material as part of a mini-promotional campaign targeting multi-family residents. Ongoing problems with multi-family recycling include: low participation; litter and trash contamination; and stolen or lost containers. In order to address language barriers, an apartment brochure is available in both English and Spanish and is distributed to complexes.

4.3.2 Analysis

Multifamily housing represents a significant percentage of all households in Mecklenburg County, but only accounts for a small percentage of residential recycling. For this reason, multi-family unit recycling has the potential to increase current recycling levels and assist in reaching waste reduction goals. An analysis of those multi-family units not receiving curbside services may help to determine what resources, if any, should be directed at increasing recycling among multifamily households.

4.3.3 Assessment

An increase in the availability of recycling services to multi-family communities would likely yield higher participation and a higher recovery level. However, the available data was not sufficient to make an accurate assessment of the potential recovery that is available from the multi-family sector.

4.3.4 Recommendations

Based on potential recovery from multifamily units, the following actions are recommended:

- Convene a working group of the various agencies who have stake in tracking housing data, reconcile the differences in the data and determine the actual number of multifamily housing units.
- Conduct a study of multifamily recycling that, at a minimum, achieves the following tasks:
 - Determine the number of multifamily housing units that receive recycling services.
 - Determine to what extent multifamily residents are recycling at complexes receiving this service.
 - Determine the level of awareness about recycling amongst residents at complexes receiving recycling services.
 - Survey and determine the level of interest in having recycling services provided among residents at complexes which do not have recycling service.
 - Propose an educational and marketing strategy to increase participation in complexes receiving recycling service.
 - Propose strategies to deliver recycling services to multifamily units which do not receive service at present.
 - Continue participation in current pilot program for the City of Charlotte and other programs seeking to expand recovery of recyclables.

4.4 Commercial Sector Recycling

The commercial sector, as discussed in this section, includes all non-residential business entities including churches, public and private schools, and governmental units. However, waste generated by the commercial sector as a result of commercial or residential construction or demolition activities is not included and is separately addressed under Section 6.0 Construction and Demolition Waste.

4.4.1 Commercial Waste Quantities and Characterization

The commercial sector is, perhaps, as diverse as any waste-producing part of the economy. Unlike the residential sector, where wastes from households are fairly homogenous, the commercial sector in Mecklenburg County consists of approximately 41,879³ businesses of different sizes and waste outputs. A restaurant produces food waste, corrugated cardboard, plastic, glass, and some paper. A manufacturer may produce large quantities of process wastes (e.g., urethane foam), wooden crates, pallets, stretch wrap, paper, corrugated cardboard, mixed metals, polypropylene strapping, barrels, and even non-hazardous sludges.

Commercially generated solid waste, excluding construction and demolition waste, represents approximately 51% of all solid waste in Mecklenburg County. In FY07, 790,650 tons of commercial solid waste was disposed in area landfills. Table 4.4.1 displays the data on the commercial waste stream over time. Although the actual tons of commercial waste rose in FY99/00 above the baseline year, due to population

³ According to the 2007 *InfoUSA* database.

increases the tons per capita dropped slightly. Otherwise, the commercial waste stream showed decline from FY01-05 as measured against the baseline. In recent years, the quantity of commercial waste may have been skewed upward by increased quantities of construction and demolition (C&D) waste being disposed in MSW landfills. C&D waste disposed in this manner is inseparable from commercial waste and is counted as such.

Table 4.4.1-A: Progress Towards Commercial Reduction Goal			
Fiscal Year	Tons of Commercial Waste	Commercial Waste Generated/Person/Year	% Decrease from Base Year
FY 1998/99 (Base Year)	641,072	1.04 Tons	Base Line
FY1999/00	663,607	1.03 Tons	0.96% Decrease
FY2000/01	535,654	0.77 Tons	26% Decrease
FY 2001/02	615,519	0.86 Tons	17% Decrease
FY 2002/03	613,230	0.84 Tons	19% Decrease
FY 2003/04	601,925	0.80 Tons	23% Decrease
FY 2004/05	548,338	0.73 Tons	30% Decrease
FY 2005/06	760,428	0.96 Tons	8% Decrease
FY 2006/07	790,650	0.96 Tons	8% Decrease
FY 2007/08	752,550	0.87 Tons	16% Decrease

Past Solid Waste Management Plans have used national estimates of commercial waste composition to describe this waste stream. In 2005, a paper study was conducted based on the best available data from detailed analyses performed elsewhere and an approved methodology for projecting that data to fit the business demographics of Mecklenburg County. The commercial waste characterization resulting from that study is presented below.

The study highlighted the following recoverable materials as being significant quantities which are still being disposed in landfills.

- Old Corrugated Cardboard – 54,450 tons
- Mixed Recyclable Paper – 29,960 tons
- High Grade Office Paper – 21,520 tons
- Newsprint – 15,762 tons
- Food Waste – 63,000 tons
- Untreated Wood – 39,200 tons (adjusted to 3,853*)
- Wood Pallets – 15,869 (adjusted to 11,128 tons*)
- Other Ferrous Metals – 30,900 tons

*In 2007, the County funded another study on pallets and untreated wood in the commercial sector. The study, which involved extensive phone surveys and field inspection of commercial dumpsters, revised the untreated wood waste estimate to 3,853 tons and the wood pallet estimate to 11,128 tons annually. Subsequently, untreated wood in the commercial (i.e., non-C&D) waste stream is not considered a “significant quantity”.

Table 4.4.1-B Estimated Commercial Waste Characterization		
Material Categories		Mecklenburg Estimated Tonnage (Mean)
Paper	Newsprint, High Grade Office, Magazines/Catalogs, Corrugated Cardboard, Boxboard, Mixed Paper	182,278
Plastic	PET & HDPE Bottles, PVC, Polystyrene, Film – transport packaging, Other Film, Other Containers, Other Non-containers	77,148
Metals	Aluminum Beverage Containers, Other Aluminum, Ferrous Containers, Other Ferrous, Other Non-Ferrous	45,371
Glass	Containers, Other Glass	16,158
Organic Materials	Yard Waste - Grass and Leaves, Food Waste, Wood Pallets, Treated Wood, Untreated Wood, Diapers, Other Organic Material	185,299
Electronic & Related	Computer Equipment & Peripherals, Electric & Electronic Products, Batteries, Other	12,484
Household Hazardous Waste	Oil Paint, Unused Cleaners and Solvents, Compressed Fuel Containers, Other	2,539
Other Waste	Textiles, Carpet, Rubber, C&D Debris, Sharps & Infectious Waste, Household Bulky Items, Empty, HHW Containers, Misc.	80,590
TOTAL		601,862
Source: RW Beck 2005 OCC = old corrugated cardboard; PET = polyethylene terephthalate; HDPE = high density polyethylene; PVC = polyvinylchloride; HHW = household hazardous waste; C&D = Construction & Demolition		

4.4.2 New State Regulations Relevant to Commercial Waste Reduction

Session Law 2005-362. An Act to Prohibit the Disposal of Motor Vehicle Oil Filters, Rigid Plastic Containers, Wooden Pallets, and Oyster Shells in Landfills.

Amends a previous ban which prohibited landfill disposal of the following materials

- used oil
- yard trash (except in approved facilities)

- white goods
- antifreeze
- aluminum cans
- whole scrap tires
- lead-acid batteries

Effective October 1, 2009, the following materials will also be prohibited from landfill disposal:

- motor vehicle oil filters
- recyclable rigid plastic containers with a neck smaller than the body
- wooden pallets (except in construction & demolition landfills)
- oyster shells

Session Law 2007-146: This law contains several major provisions that will ultimately have an impact on commercial waste reduction. Items of interest include:

- New State landfill permitting standards
- New requirements that future construction & demolition landfills have a synthetic lining
- A fee for the processing of new and renewed permits for a broad range of solid waste facilities (too include solid waste and construction & debris landfills, industrial landfills, tire monofills, transfer stations, incinerators and large compost facilities.)
- A \$2 per ton statewide disposal tax. (Beginning July 01, 2008, all waste coming into MSW and C&D landfills and transfer stations that send waste out-of-state will be taxed.)
- A mandate for the Department of Environment and Natural Resources to conduct a study and make recommendations on the recycling of fluorescent bulbs.

Regarding computers, computer manufacturers are required to adopt producer responsibility plans for the recovery of discarded computer equipment. Under this section, manufacturers will need to register with the state and then implement services that provide free transportation and processing of discarded equipment from collectors, which can include local governments, nonprofits and retailers.

Session Law 2008-208: This law provides for the management of discarded televisions in addition to computer equipment and bans landfill disposal of both effective January 2010.

4.4.3 Private Recyclers

Mecklenburg County has a large number of private recyclers serving the commercial sector. Table 4.4.3 shows the number of different companies providing recycling services for the various material categories. There is no legal requirement for these companies to report the quantity that they recycle and this information is considered proprietary for most of these companies. Consequently, there is no way of knowing how many tons of materials are recycled by these companies each year.

Table 4.4.3: Private Recyclers Serving the Charlotte Marketplace	
Material	Number of businesses accepting the material
Chemicals	13
Electronics	17
Food Waste	11
Glass	4
Metals	40
Pallets, wood crates, yard waste	20
Paper	21
Plastics	37
Textiles	14
Other (toner cartridges, batteries, fluorescent light tubes)	42
Source: www.wipeoutwaste.com recycling vendors list.	

4.4.4 Municipal Commercial Recycling Programs

A majority of municipalities do not have recycling programs or services specifically addressing materials coming from the commercial (non-residential) sector. However, most municipalities have internal recycling programs addressing wastes generated through governmental activities.

Three municipalities that do offer recycling services to small businesses are Davidson, Huntersville and Matthews. The Town of Davidson provides a recycling container in the “downtown area”. All downtown merchants and offices are allowed access to the recycling compactor at no fee. It is estimated approximately (40) businesses and offices take advantage of this service. The Town of Huntersville, in general, does not offer recycling to small businesses. However, a few receive recycling collection under the Town’s current contract with Waste Management of Carolinas, Inc. Huntersville also provides recycling educational material via the Town’s website and hand-outs. The small business recycling program for the Town of Matthews is unique. The Town provides garbage service to about 150 small business locations, using 96-gallon roll-carts. Matthews is offering a voluntary “single stream recycling service” for these “small businesses”. If requested, each business will receive up to two (18-gallon) recycling bins. The bins will accept newspaper, office paper, inserts, magazines, telephone books, catalogs, cardboard, aluminum and steel cans, plastic drink containers, and all glass containers (brown, green and clear). The Town expects (75) businesses to participate.

4.4.5 Mecklenburg County Commercial Recycling Programs

4.4.5.1 Business Recycling Ordinance

Mecklenburg County administers an ordinance requiring businesses generating large quantities of waste materials to recycle. Specifically, the regulation requires that “business entities” which contract for 16 cubic yards or greater per week of garbage service must separate corrugated cardboard and/or office paper from the rest of their garbage for recycling. The one exception is if a business contracts with a Certified Mixed Waste Processor, which will do the sorting for the business. Officially, the

Ordinance is entitled: *Mecklenburg County Ordinance to Require the Source Separation of Designated Materials from the Municipal Solid Waste Stream for the Purpose of Participation in a Recycling Program*. There are several exemptions to the Ordinance as follows:

- If a business generates less than 500 pounds of corrugated cardboard per month, it does not have to separate corrugated cardboard.
- If a business generates less than 500 pounds of office paper per month, it does not have to separate office paper.
- Source separation is not required if doing business from a temporary location.
- If physical space constraints preclude the business entity from complying.
- If the ordinance would require them to violate other codes or regulations.
- If no collection or processing system exists.

“Business Entities” include all commercial, governmental, industrial and institutional entities. The Ordinance targets the entity that contracts for garbage service. Consequently, the rules and regulations provide special provisions for property managed facilities. Non-residential Property Managers must provide a recycling system for their tenants and advise their tenants of the recycling system and how to use it.

The Ordinance became effective January 01, 2002, and was subsequently adopted by all of the local governments within the planning jurisdiction, with the exception of the Town of Matthews. The Town of Matthews did not join the County Plan area until July 2008 and adopted the Ordinance effective January 01, 2009. The County began enforcing the Ordinance on a limited basis in July 2003 with existing staff. A full-time Ordinance compliance inspector was hired and began inspections in January of 2004. The enforcement program is more fully discussed later in this Section.

The County began promoting the Ordinance and educating the business sector before the Ordinance was enacted. This promotion and education campaign continues to this day and includes focus groups, surveys, direct mailings, newspaper, magazine and journal articles and advertisements, billboards, and radio and television spots. Beginning 2009, a new promotional technique will be incorporated; e-mails and websites (see Outreach and Education on Recycling for the Commercial Sector, Section 4.4.5.5).

It was expected that the Ordinance would help to grow the collection infrastructure for recyclable paper fiber in Mecklenburg County. Since its effective date, there has been an increase in market players and, perhaps due to competition, prices for paper fiber collection services have declined. Due to the demand for collection of recyclables, new companies have been started within the County and many recycling collection companies now take a wider range of recyclable materials. Recycling companies have differentiated themselves to fill different market niches – some take only particular grades of paper fiber while others accept a mixed load of all grades. Currently, businesses can recycle newspapers, magazines, catalogs, and boxboard; in addition to the traditional recyclables, white paper, junk mail and corrugated cardboard. Contracting for the collection of the recyclables from a business is the responsibility of the business. However, Mecklenburg County has provided over 50 drop-off locations to-date for the collection of these paper fiber grades.

[The 2008 “Recycling Study Targeting Small Businesses in Mecklenburg County” recommends that to maximize diversions from solid waste landfills that the County consider increasing enforcement, including assessing some fines to re-energize compliance by those programs already covered by the program. The Study also recommends that to make compliance and inspections more feasible, the Established Threshold for Ordinance application be lowered to 8 cubic yards contracted garbage service weekly.]

Assessment/Recommendations

- This program appears to have served as a catalyst for growth in paper fiber recycling in the County. Although many businesses already have paper fiber recycling programs, the Ordinance helps to get non-participating businesses on-board. The Ordinance was reauthorized in 2005, removing its sunset provision. At a minimum, the mandatory component of the commercial program should continue with periodic program evaluation.
- Efforts to promote Commercial Recycling Center programs should be continued. Also, to encourage identification of commercial recycling in the area, the branding of the Commercial Recycling Center program should be investigated and implemented.

Enforcement Program for the Source Separation (Business Recycling) Ordinance

The Source Separation Ordinance Enforcement Program uses inspections, surveys and educational materials to ensure Mecklenburg County businesses, property managers and owners, and the public are aware of and in compliance with the Source Separation Ordinance. In 2009, the County will enforce the Ordinance in the Town of Matthews.

The onsite inspection process is the main educational tool. Businesses that are subject to onsite inspections and/ or visits include private businesses, managed properties, private and public schools, places of worship, city, and County facilities. During the onsite visit, the enforcement officer uses a 2-part NCR paper inspection sheet. Developed in 2007, this sheet includes areas to collect the following information: inspection date; name of the inspected business or property; business contact information to include name, address and phone number; municipal solid waste habits; recycling habits; status of the facility (exempt, compliant, need more data, or non-compliant); observed Ordinance violations; Enforcement officer’s signature; and onsite responsible person’s signature. The enforcement officer will leave a copy of the completed and signed inspection form onsite with the business as a reference guide. For businesses found in need of more data, or non-compliant, there is a scheduled follow up visit. This follow up visit is no less than 7 days and no more than 14 days from the date of the inspection. If the business in question believes they are compliant sooner than the scheduled visit, they may contact the enforcement office with the missing information.

A business found non-compliant may receive a potential notice of violation (PNOV) the day of the “failed” inspection. The PNOV’s is a working tool for the business. It is a reminder of the violations found and suggested remedies. If after the PNOV has expired the business is still out of compliance, the first of four notice of violations (NOV’s) are served, no less than 30 days apart. The NOV’s are the County’s last steps before seeking legal action against the business entity. So far, the County has not needed to take any business to court for continued Ordinance violations.

To reduce paper files, the enforcement officer has the option to use a laptop in the field to collect the same data. The County's enforcement collection computerized program is called SWWeb. In the case of PNOV's and NOV's, the officer uses a portable printer to print a copy of the sheet for the business. The officer synchronizes the computer daily with the County's LAN to save and share the information. In 2007, enhanced data collection software was implemented. This should yield more quantitative information for future planning purposes.

Table 4.4.5.1: Business Inspection Data, FY05-08					
Year	Compliant Initial Inspection	Exempt	Total Initial Inspections	% Initially Compliant	Aware of Ordinance
2004	434	226	792	74%	245 (31%)
2005	338	263	733	72%	277 (38%)
2006	201	244	566	62%	242 (43%)
2007	78	250	490	56%	343 (70%)
2008	272	8	657	42%	445 (68%)

Since its inception in 2002, the program has used various County promotional vehicles to conduct field inspections. In 2007, the enforcement program began using Lenny the Litter Critter VW during inspections. Purchased in 2005 and originally used to advertise the County's Keep Mecklenburg Beautiful program, this car was re-branded in 2008 to show all of the County's waste reduction and recycling programs: commercial, residential, yard waste, construction and demolition and the Keep Mecklenburg Beautiful. The colorful car was also the base for other educational materials such as Litter Critter Billboards, t-shirts, and business recycling handout postcards. These postcards are available in English, Spanish, Korean, Mandarin Chinese, and Vietnamese.

The program uses the *Business Recycling; It's the Law* postcards as mailings to new and established, non-surveyed businesses, such as fast food restaurants and grocery store chains. Since the corporate headquarters of these businesses incorporate recycling as a part of their day to day operations, these postcards serve as a reminder to recycle clean, flattened cardboard and office papers. It provides information needed for more support (www.wipeoutwaste.com and the Business Recycling infoline.)

Another tool for educating the public on the Ordinance requirements is the "*Waste Reduction and Recycling, Take the Responsibility*" brochure which provides answers to FAQ Ordinance questions and picture clues on the commercial recycling program. It works as an aid to the business manager or property owner who wants quick information without many words to read. This book is available in English and Spanish and written on recycled post consumer paper.

The Enforcement program is an exciting and growing program. Businesses are seeing savings in waste collection bills because of their recycling efforts. Customers prefer to visit businesses that recycle. Despite success, recent characterization studies and per capita generation data in the commercial sector demonstrate that there are still opportunities and a need to recover additional corrugated cardboard and office paper from the waste stream.

Recommendations:

It is estimated that the Ordinance is applicable to between 5000 and 6500 businesses in Mecklenburg County. To date, approximately one half of these businesses have been inspected. Businesses have become more aware of the Ordinance and have generally come into compliance without penalties or fees. Based on the success of this program, and the need to recover additional recyclables, it is recommended that it be continued.

4.4.5.2 Recycling Space Allocation in Non-Residential Buildings

The 2000 Solid Waste Management Plan directed staff to address recycling space allocation issues in commercial buildings. Specifically, the Plan stated:

“Local zoning/building codes will be reviewed to see if variances in the codes are needed to allow existing businesses to provide space for recycling containers. The local/building code will also be amended to require space for separation, storage, and collection of recyclables. The amount of space will be at least equal to that provided for waste disposal containers. This requirement will apply to (1) new commercial buildings and (2) additions that increase the size of the building 50% or more.”

A zoning text change was developed and approved by the Charlotte City Council. The text change allowed existing businesses to give up three parking spaces, if needed, to accommodate recycling containers. Future commercial buildings are required to allocate equal space for recycling and garbage containers. The Towns of Cornelius, Pineville, Mint Hill and Davidson have adopted similar text amendments. The Towns of Huntersville and Matthews have not adopted the amendments.

Regarding the zoning requirement addressing enclosures for recycling containers, the application of this requirement is very inconsistent. In addition, some recyclers have noted that enclosures for recycling containers are not consistently designed and some openings are too small to be serviced by standard equipment.

Recommendation

- Continue working with the remaining Towns to get a text amendment approved that meets the intentions of the 2000 Plan.
- Convene a working group to develop zoning code specifications for enclosures (both recycling and solid waste).

4.4.5.3 Business Recognition and Mentor Program

The Wipe Out Waste Business Recognition program recognizes and rewards Mecklenburg County businesses that have made efforts in the workplace to reduce and recycle waste and to buy recycled products. Sponsored by Mecklenburg County Solid Waste, the program is free and voluntary.

Any business in Mecklenburg County that recycles and has a waste reduction program can join this program. Members in this program receive the following; invitation to attend the annual Wipe Out Waste Business Recognition Waste Reduction and Recycling Awards Banquet, networking with other businesses, recognition by elected officials, and opportunity to submit an application to be selected for one of the annual Business Recognition Awards, use of Business Recognition logo for education and promotion materials, a Business Recognition window decal to display at their business, free

technical assistance from the County, free publicity in local media, an e-newsletter, publicity through the Wipe-Out Waste educational events, presentations, and forums.

Twenty-three businesses have joined the program since 2005. Due to businesses closing or moving, the program is maintaining with approximately 180 members. These members have been very active in policy and program development for the commercial recycling efforts in Mecklenburg County.

The Wipe Out Waste logo and symbol, initially established for the Business Recognition program, had lost its identity with the program due to the general usage of the logo by all the waste reduction and recycling programs. Therefore, a new logo was designed in 2008 for the Business Recognition Program. The new logo was used for the window decal and the Business Recognition awards. The Recognition program has expanded to identify and award businesses in the Construction and Demolition program, the Keep Mecklenburg Beautiful program, and the Charlotte-Mecklenburg School program. This has been an effective way to recognize additional programs in the County. This program has also changed its awards categories in order to increase the participation of its membership. Networking opportunities among its members continues to be one of its greatest attributes.

Recommendations

- Continue and expand the program. Opportunities exist to further expand this program to the PaperChase recycling program (see Section 4.4.5.4).
- The program should further expand its outreach through multi-media and increased opportunities for networking and promotion of its membership.
- The vision and purpose of this program should continue to address both voluntary and mandatory recycling efforts.

4.4.5.4 Recycling in Public Schools and PaperChase

The Charlotte-Mecklenburg Schools (CMS), Central Piedmont Community College (CPCC), and the Mecklenburg County Alcohol Beverage Control Board (ABC) each have an Interlocal Agreement with Mecklenburg County for paper and cardboard recycling services. The agreement authorizes Mecklenburg County to administer recycling services to the schools (and garbage, discussed in section 7.3). These entities reimburse Mecklenburg County for recycling collection services rendered. This partnership has allowed for greater economies of scale by combining recycling collection services for Charlotte Mecklenburg Schools, Central Piedmont Community College and Mecklenburg County office buildings and facilities. The internal paper and cardboard recycling program servicing Mecklenburg County buildings is called PaperChase.

Mecklenburg County provides two types of recycling collection systems for its participants, a roll-out cart system and an external dumpster system. It also provides all schools and administrative buildings with internal and external recycling containers, signs, posters and educational materials. Each school is responsible for coordinating how to get the recyclables from inside their school to the outside recycling dumpster. In most schools, students collect the materials from the classrooms using 35-gallon roll carts. In other schools, the custodial staff collects the recyclable materials.

There is a dedicated paper and cardboard recycling truck servicing the CMS, CPCC and PaperChase recycling programs. All programs receive recycling pickup services once or twice a week depending on site specific needs. Programs can report missed pickups or request extra pickups for special events to designated staff.

Mecklenburg County's Recycling Rollout Program is an established program that has been in existence for many years. Approximately, 66 locations are serviced by this method of recycling collection. Currently, the County offers rollout recycling services to buildings where government employees work, where, due to space limitations, limited number of government employees at the location, or other variables, the facility cannot be serviced with a bulk recycling container.

Mecklenburg County created and manages a web site (www.wipeoutwaste.com) that provides information specific to the CMS Recycling Program. The web site includes information on how to implement a successful school recycling program, fact sheets for recycling coordinators, students, custodians and cafeteria managers, a list of acceptable and unacceptable items, and information on how to minimize and prevent contamination problems. In 2006, CMS established a direct link from their Teacher's Resource website to the Wipe Out Waste webpage for the CMS recycling program. Tours of the County's Material Recovery Facility are also available, allowing the students to learn what happens to their materials after they are collected.

The CMS Recycling Program is recognized as a model for school recycling in North Carolina. The CMS Recycling Program won an Award for Excellence in Waste Reduction and Recycling from the Carolina Recycling Association. The NC Division of Pollution Prevention and Environmental Assistance has recognized the CMS as a leader in recycling school programs and is in the process of including the program in its Best Management Practices materials. Mecklenburg County is currently providing information and tours to other school systems to assist them set up and/or increase effectiveness and efficiency of their recycling efforts.

During FY07-08, Charlotte-Mecklenburg Schools and the participants in the PaperChase program recycled 2,418 tons of paper and cardboard. CMS elected to sell their surplus computers in FY 06/07 and 07/08; therefore we do not have tonnage figures for those years. However, in FY05/06 they recycled 24.3 tons of computer equipment.

The County, the City of Charlotte, CPCC, CMS, and some of the municipalities are developing environmental action plans. Within their respective plans,, all groups are declaring increased recycling as one of their goals.

Table 4.4.5.4: PaperChase and CMS Program Corrugated Cardboard and Mixed Office Paper Program, Recycled vs. Disposed.

Fiscal Year	Recycling (Tons)	Trash (Tons)	Total Tons	Recycling Rate
FY00/01	856	4,256	5,112	17%
FY01/02	1,271	8,944	10,215	12%
FY02/03	1,550	8,251	9,801	16%
FY03/04	1,506	10,456	11,962	13%
FY04/05	1,658	12,595	14,253	12%
FY05/06	1,792	13,599	15,391	11.6%
FY06/07	2,064	14,352	16,416	12.6%
FY07/08	2,418	14,790	17,208	14.1%

An audit performed during the 2004-2005 school year estimated that 85 tons of recoverable paper materials (73 tons of paper and 12 tons of corrugated cardboard) per week remained in the CMS waste stream at that time. According to this same study, approximately 21 tons of recoverable paper materials per week remained in the PaperChase City/County waste stream.

Efforts are underway to recover additional materials from the CMS/PaperChase waste stream. A team of County and CMS employees work jointly to ensure adequate and appropriate pickup of recyclables and garbage, reduce contamination of recyclables, provide education and promotion to students and staff, and reward and recognize participants. The County has decided to begin enforcement of the Business Recycling Ordinance with CMS facilities and Paperchase facilities.

A pilot beverage container recycling program was developed in FY2006/07 to increase the recovery of glass, plastic and aluminum beverage containers from CMS, County, City of Charlotte, and the Public Library of Charlotte and Mecklenburg County (PLCMC) facilities. The pilot was highly successful the first year. During 06-07, there were 40 pilot sites producing 28,023 pounds. During 07-08, the program increased to 80 sites producing 93,753 tons. The beverage container program could be expanded to all 167 schools and County facilities with little or no promotion. Currently, the main obstacle to expansion is funding.

The County pilot project includes all County Recreation Centers; however it does not include the parks. Mecklenburg County Parks & Recreation Department has taken several steps to begin recycling at the County Parks and Nature Centers. They are converting 200 of their trash containers into recycling containers. Recycling will begin at five parks where Solid Waste has self-service drop-off centers which will be used to deposit beverage containers collected within the park. Parks & Recreation hopes to expand the program to all the parks. Solid Waste has committed to establishing one new drop-off center per year in a park without drop-off convenience for the next three years.

The challenge remains to develop and maintain recycling contacts within each school and City of Charlotte/County facility, educate City of Charlotte/County employees during employment orientation sessions, maintain contracted collection services, and to develop a sustainable rewards/recognition program for participants. The Green Guardian program was established by Mecklenburg County to reward its employees that are environmental advocates. Waste reduction and recycling are a component of the program; however the need still exists to have a unique reward system for waste reduction and recycling for County employees.

The Towns of Cornelius, Huntersville, Pineville, Matthews, and Mint Hill all have recycling within their office areas. Most are serviced by their local collection service provider.

Recommendations

- Continue and expand CMS and City of Charlotte/County facility recycling programs. When single-stream recycling is available, collection of cardboard/paper and beverage containers will become simplified and far less expensive. Container recycling can then be expanded to all CMS and County facilities at that time.
- Seek alternative funding sources in order to grow programs.
- Identify and develop contacts at collection sites to assist in sustaining the waste reduction and recycling program.
- Annually review the collection frequency of garbage and recycling dumpsters.
- Develop a reward system for County program participants.
- Enforcement of Source Separation Ordinance at CMS/City of Charlotte/County facilities.
- Work with the Park & Recreation Department to expand recycling of beverage containers at the Parks.
- Work with the City of Charlotte and all the municipalities to expand recycling programs.

4.4.5.5 Outreach and Education on Recycling for the Commercial Sector

Mecklenburg County develops and implements many different types of promotional and educational programs and pieces to promote the voluntary and mandatory commercial recycling program. Initially, the County launched a marketing/outreach program that included public service announcements, workshops, and print ads. This was followed by an initiative to determine the awareness of area businesses to the commercial recycling ordinance and to detect trends in the compliance of the recycling ordinance.

Ongoing public relations and educational campaigns are developed to promote commercial waste reduction, reuse, recycling and buy recycled for the Mecklenburg County business community. Information is provided in a variety of formats and will be continuously maintained to meet the needs of the business community and the County. Included in the past and current outreach program are; newspaper articles and

advertisements, television commercials, elevator advertisements, surveys with prize opportunities, direct mail, brochures, informational phone line, billboard and radio ads, e-newsletter, a website and speaking engagements to business groups.

This program has been awarded for its outstanding efforts and success by the Solid Waste Association of North America, Carolina Recycling Association and received the Communicator's Award. Most recently, the Solid Waste Association of North America awarded Mecklenburg County a 2008 Silver Marketing Award.

The challenge remains each year to reach and affect the disposal and recycling behavior of area businesses.

Recommendations

- Continue to educate Mecklenburg County businesses on commercial waste reduction, reuse and recycling.
- Suggested future programs include promotion through business licensing, Chamber of Commerce for all Mecklenburg Towns, highlighting specific businesses or materials, grants for promotion, targeted mailings, adequate and appropriate signage, and standardized presentations

4.4.5.6 Purchase of Recycled Materials and Products

Mecklenburg County adopted an Environmental Leadership Policy (ELP) Action Plan in 2007. This ELP Action Plan includes both short-term and long-term measures and targets with regard to inclusion of environmental considerations in purchasing decisions for goods and services. The purpose of this policy is to support markets for recycled and other environmentally preferable products by encouraging County agencies and contractors to buy such products wherever practicable and to outline operating standards for waste reduction and recycling. This policy builds on the previous "Recycled Product and Waste Reduction Policy" adopted by the Mecklenburg County Board of Commissioners.

Initiating development of short and long-term goals was the development of a Mecklenburg County Environmentally Preferable Purchasing Guide (EPPG). Mecklenburg County works closely with the City of Charlotte Procurement Services Division who is examining a similar EPPG guide for City procurement. Several items within the EPPG have been identified with specific short and long-term goals as demonstrated in the table below:

Table 4.4.5.6: Environmental Considerations In Purchasing Decisions for Goods and Services (Short and Long-term Goals).	
2008 Goal	Long-Term Goal (2020)
Environmentally Preferable Purchasing Guide implementation	100% compliance with revised policy (effective implementation)
Purchasing/ RFP language requiring environmental stewardship of bidder per this County Policy; 100% compliance in all documents	100% compliance
Purchase printer/copy paper products that contain 100% recycled material with a minimum 20% post-consumer content; 50% compliance	100% compliance
Purchase Green office supplies: Paper (other than printer/copier), metal or plastic products that contain a minimum 10% recycled materials and/or meet the Green Seal standard; 10% compliance	100% compliance
Purchase Park and Playground Equipment made with a minimum 20% recycled content (steel, rubber, aluminum, plastic) ; 100% compliance	70% compliance
Purchase Park and Playground Equipment made with a minimum 20% recycled content (steel, rubber, aluminum, plastic) ; 100% compliance	Purchase Park and Playground Equipment made with a minimum 70% recycled content (steel, rubber, aluminum, plastic) ; 100% compliance
Purchase Park and Playground Surfacing made from a minimum 50% recycled content materials (rubber) ; 100% compliance	Purchase Park and Playground Surfacing made from a minimum 90% recycled content materials (rubber) ; 100% compliance
Purchase Remanufactured Inkjet, laser and toner cartridges ; 50% compliance	90% compliance
Purchase Green Carpet > 2000 sq. ft; 100% compliance	100% compliance
Purchase Cleaning products that meet the Green Seal standards; 25% compliance	70% compliance
Purchase Computers and Monitors that are Energy Star® certified; 60% compliance	100% compliance
Purchase Paint with low level of VOCs; 40% compliance	100% compliance

As mentioned in the 2006 Solid Waste Management Plan, tracking the purchase of items with recycled-content remains a barrier to implementing “easy-to-use” purchasing tools as well as realizing success of measures toward meeting our goals.

Recommendations:

- Widespread education and training of purchasing staff within Mecklenburg County is needed, not only on the purpose and vision of the program but on the practical implementation of environmentally preferable purchasing processes.
- All municipalities of Mecklenburg County should consider the adoption and implementation of programs and policies that support the recycling infrastructure through environmentally responsible purchasing and waste reduction and recycling programs.
- A study of both the environmental savings as well as the financial savings for following the EPPG recommendations will be accomplished by the County in 2009. Study results should be utilized to help educate and promote policy development within municipalities throughout the County.

4.4.5.7 Drop-Off Recycling Centers

Mecklenburg County operates 61 drop-off recycling centers; 4 Full-Service, 9 Self-Service and over 50 Commercial (see a complete description under Section 4.5.1). Businesses (and residents) may deliver mixed office paper and beverage containers to 13 of the sites (Full-Service and Self-Service). The remaining locations are for businesses only and accept only cardboard and mixed paper.

Recommendations

Continue to expand services and promotion of all Mecklenburg County Drop Off Recycling Centers.

4.4.5.8 Other Mecklenburg County Commercial Waste Reduction Programs

In addition to the programs addressed above, Mecklenburg County maintains a hotline, The Business Recycling Infoline (704-432-3200), to assist commercial businesses with their solid waste issues. The County offers waste assessments, maintains a list of recycling vendors on its website, conducts studies as needed, and prepares programs and policies to reduce the amount of solid waste disposed by the commercial sector. Also, the County offers a "Waste Reduction 101" class to Mecklenburg County businesses. This class reviews the 11 Steps to establish and implement a successful Waste Reduction Program and conduct a waste audit.

Recommendations

Continue to expand services: design and provide programs that assist and encourage recycling, and promote throughout Mecklenburg County.

4.4.6 Food Waste

The commercial waste characterization study performed for Mecklenburg County in 2005 estimates that there are 63,000 tons of food waste left in Mecklenburg's commercial waste stream. Food waste composting is an element of many programs achieving a high level of waste reduction in the commercial waste stream in such cities as San Francisco, and Portland. It is estimated that food waste may represent as much as 10.5 percent of the total municipal solid waste stream in Mecklenburg County.

Prior to 2006, the County partnered with a privately owned compost facility to conduct a pilot program for food waste diversion from a local grocery store chain. The project was successful in that the food waste was diverted and composted. However, the cost of

hauling the waste materials from the store and processing it into compost was significantly higher than sending the same material to a landfill. In spite of the higher costs, the retailer has continued to pursue options for food waste composting and has diverted several tons of materials to one of the local permitted facilities.

The current trends for food waste composting is currently being driven by those hosting large-scale events seeking to divert food and compostable utensils. The current “green” movement has led to a new audience seeking both education and diversion opportunities. Large scale food composting continues at a local university and serves as an educational program for many seeking to learn about and participate in food composting opportunities. Several municipalities in North Carolina, such as Orange County, are seeking to divert organic waste by offering collection programs for food waste and serve as an educational example for local governments.

The challenge remains in the lack of infrastructure for food waste collection and processing in this area. Currently, there are two firms permitted to accept commercial quantities of food waste. However, only one of the two will provide and/or assist with transportation. To-date, collection of food waste materials remains almost non-existent.

Recommendations

- Research successful programs across the country to gain knowledge of the infrastructure needed to develop a successful food waste composting program for this County.
- Gain greater knowledge of food waste disposal practices through field studies to support estimated food waste characterization quantities.
- Investigate and identify barriers to the development and implementation of food waste reduction and composting programs in this county.
- Increased education on food waste reduction, reuse and composting are needed in the commercial sector.

4.4.7 Wood Waste

Beginning in 2007, and continuing through fall 2008, the County commissioned a Wooden Pallet and Untreated Wood Waste study (Wood Waste Study). The study looked at pallets and untreated wood waste generated from commercial and construction/demolition (C&D) sources. Although waste reduction activities and most solid waste management operations and planning strategies address commercial wastes and C&D wastes separately, wooden pallets and untreated wood waste share the same processing and marketing infrastructure. As displayed in Table 4.4.7, untreated wood is primarily generated from C&D activities and will be addressed in section 6.0. The small amount generated in the commercial sector is believed to be from wooden crates, small scale sporadic construction and renovation activities.

Table 4.4.7 – Disposition of Wooden Pallets and Untreated Wood Waste					
Current Disposition	Pallets			Untreated Wood	
	Number	Tons	Percent	Tons	Percent
Disposed in MSW LF	445,102	11,128	5.8%	3,853	5.7%
Disposed in C&D LF	310,593	7,765	4.1%	62,252	91.3%
Recycled (including grind)	2,594,894	64,872	34.1%	2,084	3.1%
Backhaul for Recycle	4,263,106	106,578	56.0%	N/A	N/A
Total	7,613,695	190,342	100.0%	68,189	100.0%

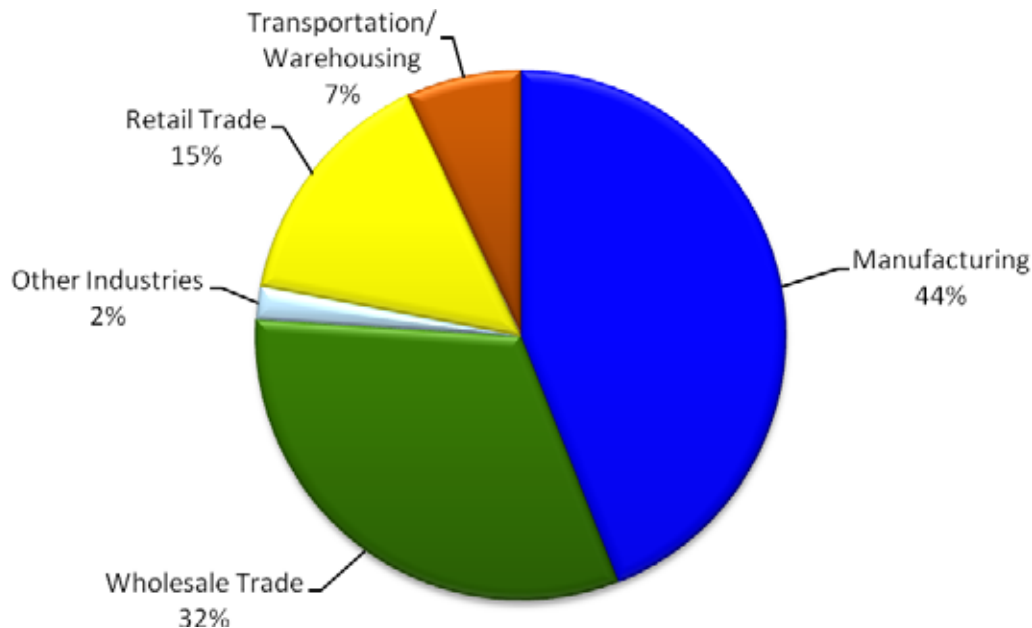
4.4.7.1 Wood Pallets

Wooden pallets are a critical part of product transportation. A pallet consists of deck boards and runners. Deck boards are the boards that comprise the tops and bottoms of pallets (usually 3/4" or 5/8" thick). Runners are usually two-by-four (2"x4") inch boards positioned between the top and bottom deck boards. The runners support the deck boards like floor joists and are usually spaced with one on each end and one in the center. This configuration provides a space for the forks of a forklift to enter the pallet to lift it as needed.

The industry standard for wood pallets is a 4-way 48" by 40" pallet. It is estimated that this size represents at least 80% of reused pallets. Other standard sizes are 40" by 48" and 48" by 48". As a general rule, pallets that are not these sizes or are 2-way pallets have less market value if any. Less common sized pallets are often ground for mulch or their wood is used to rebuild other pallets.

The recent Wood Waste Study estimated 11,128 tons of wooden pallets are in Mecklenburg County's commercial waste stream (for disposal) and another 7,765 tons are taken to a C&D landfill (for a total of 18,893 tons). The average pallet weighs 50 pounds, so this represents a total of 755,695 pallets disposed. Amazingly, this represents only 10% of all pallets. These results are shown above in table 4.4.7. All of the other 6.8 million pallets are recovered for reuse, or recycling. Since pallets generated by construction activities are often damaged, there is almost no pallet recovery effort in the C&D industry. What this means is that only 6% of pallets generated from non-C&D commercial activities (retail, manufacturing, etc) are disposed. Figure 4.4.7.1 graphically displays where pallets are generated in the commercial sector.

**Figure 4.4.7.1 Commercial Sector Wood Pallet Generation by Industry
75,960 tons (excludes backhauled pallets)**



Reuse and Recycling Opportunities

Pallets that are standard industry size and whole (not in need of repair) are saleable to the private sector via the pallet remanufacturing industry. Mecklenburg County is home to 16 pallet remanufacturing/recycling businesses. These establishments sort, grade, rebuild, and resell pallets to a wide range of customers spanning many industries. These pallet remanufactures are currently estimated to manage roughly 7 million pallets (over 4 million of which are from distribution centers and warehouses that backhaul pallets and employ the pallet remanufacture directly). Generally, these private recyclers will pick-up pallets by placing a flat-bed trailer at the location and asking the business (generator of the pallets) to load the trailer. Pallet recyclers usually want a half trailer-load (200 pallets) before they will place a trailer on-site. The largest numbers of pallets (about 80%) are delivered to the pallet recyclers by commercial hauling companies.

Businesses which generate small quantities of pallets are serviced by an extensive network of unregulated scavengers. These scavengers most often use pickup trucks with raised sides to the truck bed that haul small loads to a pallet recycler for cash (\$1-2 for a reusable pallet). At maximum, a pickup truck may hold 25-30 pallets (with extended sides). These “independents” are also seen in the corrugated cardboard market.

Pallet recyclers repair damaged pallets and generate scrap wood from this repair process. In addition, pallet recyclers receive unusable pallets along with the good ones. These materials are addressed as “untreated wood waste” under section 6.0 of the Plan.

Session Law 2005-362, enacted in the 2005 legislative session, prohibits the disposal of wooden pallets in MSW landfills (disposal in construction & demolition landfills is still

allowed). The ban is effective October 1, 2009. If aggressively enforced, the ban could have an impact on small quantity generators of pallets because they typically place unwanted pallets into their garbage containers destined for a MSW landfill.

All of the pallet remanufacturers surveyed indicated having the capacity for taking on additional pallets of suitable dimension. The relatively small percentage of pallets not being recovered from commercial generators at the current time – roughly 11,000 tons – are those generated by small quantity generators that are not targeted by the scavenging community because they are highly damaged and/or smaller in size than “standard” pallets.⁴

Given the already high recycling rate of reusable pallets, as well as the record for limited enforcement of disposal bans on other materials, it is not expected that an MSW landfill disposal ban on pallets will markedly change the current flow of used pallets. In other words, roughly the same number of wood pallets will continue to be disposed after the ban is implemented. However, if enforcement of the disposal ban is strictly enforced, it will impose additional costs on small quantity generators of wood pallets, as well as on businesses that generate primarily small and/or damaged pallets. Scavengers do not take such pallets, but currently these generators can dispose of small/damaged pallets in their commercial waste. Strict enforcement might require such generators to incur extra cost for separate collection service for pallets. It is likely that the existing network of commercial haulers and unregulated scavengers would develop appropriate service rates to provide the required collection services.

As stated above, the existing pallet recycling infrastructure can absorb as many standard pallets as become available to the system. Further, even if every one of the 445,000 pallets (11,000 tons) currently being disposed in MSW landfills were too small or damaged for reuse, and were therefore diverted and delivered to local grinders, our research indicates that there are sufficient markets to absorb this volume of wood chips.

Recommendations

- Mecklenburg County is home to an extensive infrastructure for the collection, remanufacture and recycling of wood pallets. This infrastructure already achieves extremely high recycling/reuse rates for pallets. In the absence of strict enforcement of the pallet ban when it goes into effect, it is unlikely there will be any material changes to the flow of pallets. For this reason, it is recommended that the County take no action in advance of the pallet ban beyond its customary role of recycling advocacy and public education.

4.4.8 Metals

Metals comprise one of the highest valued commodities in the local recycling market. In spite of this; it is estimated by the commercial waste characterization study that 45,371

⁴ One of the medium sized pallet recyclers in the study reported that they recycle the following size pallets (in inches): 48x40, 48x48, 44x44, 45x45, and 36x36. Because the “standard” pallet (often called a “GMA” pallet because it is the standard size for Grocery Manufacturers Association stores) is typically a 48x40 inch pallet, any pallet with one dimension equal to, or longer than, 40 inches can generally be used to refurbish other pallets – especially the standard pallet. As these sizes listed above indicate, pieces from a 48x48 pallet can be used to refurbish all of the pallet sizes that this pallet recycler refurbishes, while a 36x36 pallet can only be used to refurbish the same or a smaller pallet. For this reason, pallets smaller than 48x40 are the most difficult to recycle, and therefore are the pallets most likely to be thrown away.

tons of metals (aluminum, ferrous and non-ferrous) entered into the MSW waste stream from the commercial sector.

Commercial entities generating large quantities of metal waste generally recycle their metal independently. The County maintains an informational website (www.wipeoutwaste.com), providing companies with money saving ideas and information regarding metal recycling. The website lists over (40) metal hauling and processing companies in the region for the convenience of commercial generators. In addition, there are County owned drop-off facilities serving Mecklenburg County residential and commercial sectors for recycling metal. There is no fee for delivering metal to the County operated facilities.

In summary, processing facilities and commercial hauling options are adequate for large quantity generators and small quantity generators able to haul their metal wastes to one of the county drop-off facilities. Inadequate information is available to indicate the reason for landfilling large quantities of potentially recyclable metals.

Recommendations

- Further research is necessary to determine which segments of the commercial sector are landfilling metal wastes. After the research is analyzed, a focus of attention can be given to alleviating the obstacles for those segments.

4.4.9 Small Business Recycling Program

In 2002, when the Source Separation Ordinance became effective in Mecklenburg County, the County implemented a Commercial Recycling Center program designed to assist small businesses to recycle. Generally, these small businesses generate insufficient quantities of waste to be governed under the Ordinance. The materials designated are cardboard and office paper.

Since the Ordinance has been in place, both the City and County continue to receive requests from the commercial sector to provide collection services to small businesses. It is widely believed by small businesses that the municipalities provide for the collection of recyclables from businesses in a manner similar to residential curbside programs.

Since the inception of the Ordinance, local recyclers have changed their “acceptance mix” of materials to allow the mixing of paper and cardboard. This allows businesses to only need one container to capture both materials for recycling.

4.4.9.1 Small Business Study

Although all Mecklenburg County programs do not specifically target small businesses, the County does recognize the need to take into consideration the unique needs and requirements of this group when dealing with waste generation and developing recycling strategies. As a result, in 2007, the County contracted with a consultant to conduct a small business study. The “Recycling Study Targeting Small Businesses in Mecklenburg County” was complete in October 2008. Forty-percent of the small businesses surveyed responded, an extremely high participation rate for this type of study.

The main objectives of the study required the consultant to:

- Distinguish between large and small businesses.

- Determine demographics associated with the small businesses.
- Determine estimated recyclable generation.
- Determine potential for diversion of recyclables from the businesses.
- Determine if Source Separation Ordinance “Established Threshold”, 16-cubic yards MSW per week, should be maintained and/or adjusted to include a greater number of smaller businesses.
- Develop and implement “Small Business” survey that will determine:
 - Willingness-to-pay for recycling.
 - Recycling wants and needs.
 - Most effective means to communicate with small business.
- General attitudes and feeling of small business towards recycling.
- List strategies for recovering more recyclables.
- Examine unincorporated areas of Mecklenburg County and determine how best to improve recycling services in these areas.

Information gathered during the study allowed the consultant to infer the following:

- Recycling:
 - Although 50% of the businesses reported some sort of recycling program, 50% surveyed do not recycle at all. Only 20% reported that they have a robust recycling program.
 - The average small business recycling rate, as computed through the survey responses was reported as 22%.
 - There is ample room to expand and increase waste diversion activities in the County, particularly when it comes to Source Reduction, Composting, Bulk Buying, etc.

- Materials:
 - The most often recycled materials are paper, cardboard, plastic, and glass. However, the largest materials remaining in the trash were reported as paper and cardboard.
 - The majority of small businesses reported that they generated food waste and very few are composting. Fewer are aware that they are able to compost.

- Cost and Willingness to Pay
 - Operating cost for disposal/recycling is very important to a small business
 - The average monthly bill for trash is \$527.00
 - The average monthly bill for recycling is \$207.00
 - Businesses are willing to pay \$20.00 per month for expanded recycling services
 - Less than 10% of businesses reported that they would not be in favor of a program in which they would pay more for trash services with recycling fees embedded.

- Gaps and Outreach
 - There is a large opportunity to increase the education and outreach regarding recycling and diversion option.

- Outreach should target religious groups, business owners, property managers and corporate decision makers.
- Although the County has a number of outreach programs, the website is the only one a majority of businesses are aware of. Most businesses do not know about diversion outreach programs offered by the County.

The results of the “Recycling Study Targeting Small Businesses in Mecklenburg County” will allow Mecklenburg County the ability to make recycling more feasible for small business.

Recommendations

- Local governments should continue to pursue mechanisms for collecting materials from businesses where contracting with private haulers would be uneconomical.
- Consider the expansion of the mandatory commercial recycling program. Reduce the threshold for Source Separation Ordinance requirements to 8 cubic yards of service weekly. Expand the list of eligible or required materials to include plastic and packaging or items accepted at the Metrolina Recycling Facility. (Study Recommendation)
- Consider requiring all permit applications for construction & demolition or significant remodels to submit a diversion plan to each project and pay diversion deposit. (Study Recommendation)
- Consider requiring all businesses that contract 8-cubic yards of garbage service per week, even small businesses, to submit a recycling plan to the County. (Study Recommendation)
- Consider assessing upon all improved properties a generator fee per unit to fund recycling in Mecklenburg County. (Study Recommendation)
- Grant recycling space allocation for commercial buildings throughout the County. (Study Recommendation)
- Studies should be performed to project the potential recovery rates and anticipated participation levels of small businesses in a single-stream recycling system.

4.4.10 Event Recycling

Street fairs, concerts, sporting events, and other special events are frequent and important occasions for Mecklenburg County. One element of these events that is often overlooked is the amount of recyclables generated in the days leading up to, during, and at the close of the event. As a result, Mecklenburg County has developed a program to collect and recover cardboard, plastic bottles, glass bottles, and aluminum cans from the waste stream during special events.

The Event Recycling program provides website information, educational materials, presentations, and hands-on training in an effort to be a resource for organizers who want to increase the recycle rate and sustainability at their event. The program also offers the Event Recycling Toolkit. This is a refundable deposit program that provides a predetermined number of *Clear Stream* recycling containers and collections bags, signs

that direct and educate the public on the proper separation of recyclables and trash, and tongs to help volunteers sort and collect recyclables out of the trash and/or remove trash from collected recyclables.

In 2008, the State enacted legislation that required some businesses to recycle their beverage containers. This legislation had a positive impact on event recycling. With more businesses aware that recycling beverage containers was not only necessary to save the environment, but also required by law, there became an expectation on the part of organizers to provide for recycling during special events, even though the law did not address special event recycling.

In that same year, over 37 events contacted the County requesting assistance with recycling. Blues, Brews and BBQ, Yiassou Greek Festival, and the Latin American Festival were repeat recyclers. Each event more than doubled the amount of resources recovered from 2007.

In the sporting arena, the County continued work with NASCAR for the Lowe's 500, the Carolina's Panthers and the Wachovia Golf Championship. In fact, the Championship, which recovered five tons of recyclables in 2007, recovered over fourteen tons of recyclables in 2008.

Festival in the Park, and Matthews Alive incorporated recycling for the first time in 2008, and with an average crowd of 125,000 people, each recovered a little over one ton of recyclable materials. One event in particular, Pride Charlotte, showed the potential and the impact of event recycling. This event brought together key players from Mecklenburg County Event Recycling, City of Charlotte Special Event Solid Waste Services, Cousins Properties Management and Pride Charlotte Inc, the event host. The results were impressive. During its first attempt at recycling, this event boasted a 33% recycle rate. For 2009, the Taste of Charlotte, Food Lion Speed Street, and the Carolinas Renaissance Festival have pledged to incorporate recycling into their venue. The Event Recycling program has encouraged other organizations to improve their recycling programs. The City of Charlotte's Solid Waste department, in an effort to keep up with the demands of events held in and around the uptown/downtown/center city area, purchased 100 *Clear Stream* containers to use parallel with their event trash containers. Mecklenburg County's Park and Recreation Department has budgeted for the purchase of *Clear Stream* containers for resource recovery during park held events.

Recommendations:

- Revise toolkit and educational pieces
- Develop and maintain a tracking tool that lists event's name, contact, and other relevant information
- Share information with the Towns on the resources available from this program
- Study the viability of composting options for food and compostable utensils as it relates to event recycling
- Work with the private sector on recyclable collections methods (be it providing the large roll offs or smaller, individual containers)
- Continue to explore ways to expand and improve the program
- Develop stronger partnerships with Mecklenburg County's Park and Recreation Department and Health Department to pinpoint and service upcoming events in the area

4.4.11 Beverage Containers

The “2008 Recycling Study Targeting Small Businesses in Mecklenburg County” estimates that 24,934 tons of the commercial municipal solid waste streams may be composed of recyclable beverage containers (Glass - 16,158 tons, Aluminum Beverage Containers – 3,046 tons, PET & HDPE Bottles – 5,730 tons).

The Metrolina Recycling Facility processes aluminum and steel cans, PET and HDPE plastic bottles, and glass bottles (all colors). The facility is currently operating at 60% of capacity. In a (10) hour day, the site is currently budgeted to process 6.9 tons of commingled material and 14.9 tons of fiber materials per hour (218 tons of material processed per day). It is theorized that with additional processing capacity at the MRF, and potentially other private sector processors, the infrastructure exists to process these un-recovered materials.

Regarding government sponsored collection services; to-date there is only one County sponsored collection center, the NoDa Commercial Aluminum/Glass/Plastic Recycling Center, and, this is a pilot study. The recycling center, serviced once per week, is sponsored by the NoDa Business District. Although extremely popular and utilized by almost every area business and resident, the major issue with this public recycling center is maintenance of the premises.

Regarding the recycling of containers, Mecklenburg County businesses have three options. The first, they may contract, at their expense, with a limited number of “collection companies” to collect the containers and transport them to a recycling facility. (It should be noted that the number of “collection companies” has increased since the inception of the State’s Mandatory ABC Recycling Law effective January 01, 2008.) A second option available to businesses is to “self-haul” the containers to one of the thirteen County operated “Full-Service” or “Self-Service” recycling drop-off centers. The County does not levy a fee for businesses opting to use this opportunity. The third option allows a business to “self-haul” their containers to the Metrolina Recycling Center; a County owned recycling facility. The Center charges \$40.00 per ton for firms delivering to this site.

Information regarding collection companies and commodity markets is available to the business community through www.wipeoutwaste.com.

In short, there are adequate processing facilities in Mecklenburg County for aluminum, steel, PET, HDPE, and glass, however the collection system is very limited and either expensive or inconvenient for small to moderate generators.

Although aluminum cans have been banned from North Carolina MSW landfills since July 1, 1994 (NC G.S. 130A-309.10), participation in beverage container recycling is currently voluntary in Mecklenburg County and the disposal ban is not enforced. Education regarding the ban has been inadequate and most citizens are not aware of the statute. In addition, House Bill 1465 bans plastic bottles from disposal effective October 2009.

4.4.11.1 Recycling Requirements for Businesses with ABC Permits

On January 01, 2008, House Bill 1518 became effective. House Bill 1518 requires holders of certain Alcohol Beverage Control permits to recycle all beverage containers

sold at retail for on-premise consumption. There are approximately 1,400 businesses in Mecklenburg County which are affected by this law.

To prepare for the implementation of HB 1518, a significant public education campaign was developed and implemented, and the County's commercial recycling program made suitable preparations in order to provide an appropriate level of assistance to businesses as they endeavor to comply with the new regulation.

The State is currently processing information to determine the consequences of the law. However, based on the number of businesses attending "ABC Town Hall Meetings"; the substantial number of businesses contacting the Business Recycling Infoline requesting assistance; and, the fact that the ABC Commission was required to revise the ABC application process as a result of the educating participants in Mecklenburg County's "Self-Haul" alternative, the County believes the ABC Mandatory Recycling law to be successfully diverting substantial quantities of beverage containers.

Recommendations

- The County continues to educate and encourage ABC permit holders regarding permit requirements and methods to meet the recycling requirements of the law.

4.5 Recycling Facilities

This section addresses government operated recycling facilities within the Plan area. For a discussion of private facilities, see Section 4.4.3)

4.5.1 Mecklenburg County Recycling Drop-off Centers

4.5.1.1 Background

The County operates thirteen (13) recycling centers consisting of, four (4) full-service recycling centers, which are staffed, and nine (9) self-service recycling centers, which are unstaffed. In addition, there are over 50 commercial recyclable drop-off locations which accept only paper from commercial sources. The full-service centers accept a large variety of materials including materials that are banned from landfill disposal such as lead-acid batteries, scrap-tires, and white goods. The self-service recycling centers accept the same materials that are collected in the curbside residential recycling programs. An additional staffed facility shown on the preceding map is the Metal and Tire Recovery Facility. Its function is further discussed later in this section.

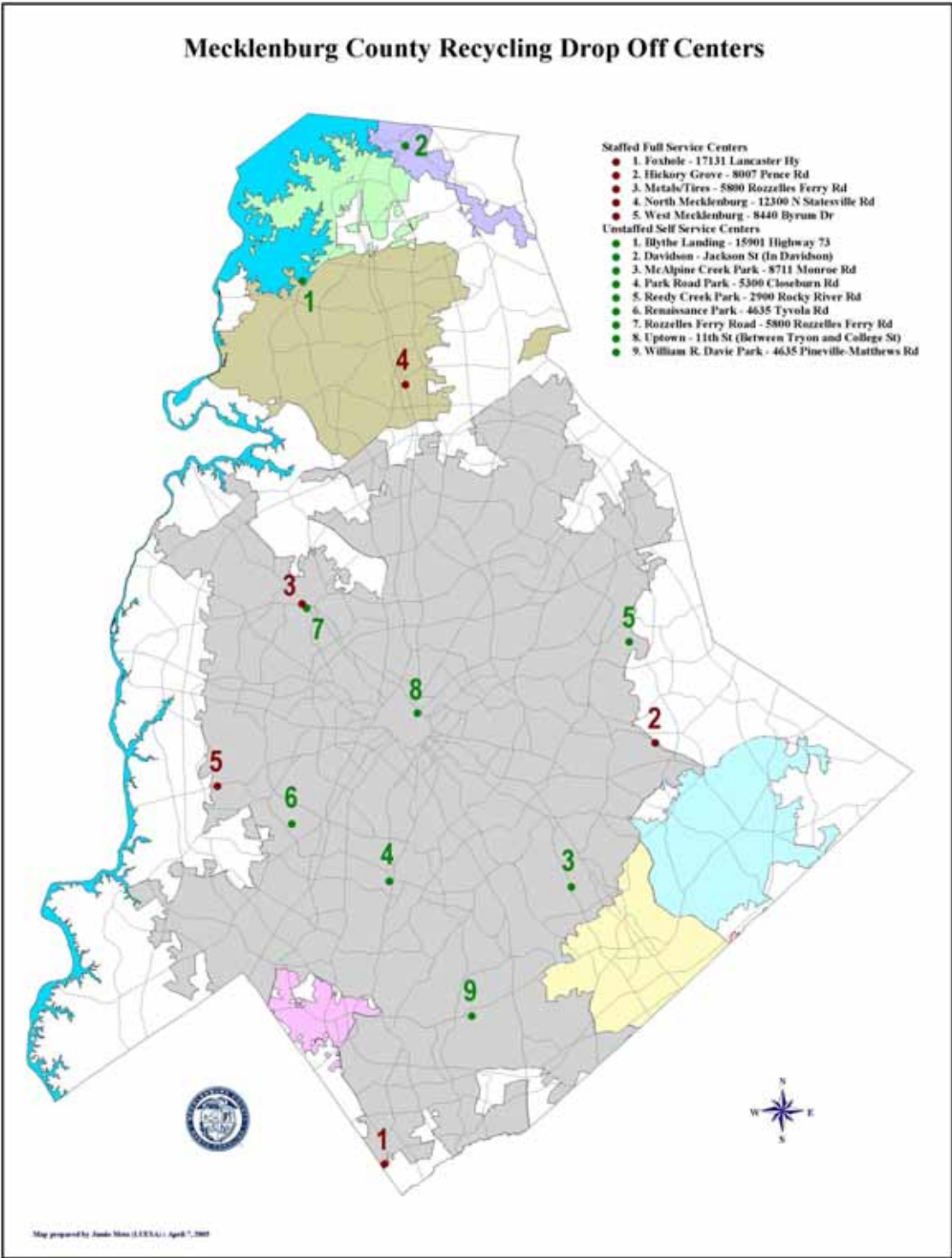
4.5.1.2 Self Service Centers

All but three of the nine self service centers (highlighted in green on the map) are located in County parks. Of the remaining, the Uptown Recycling Center is adjacent to the County's Hal Marshall Service Center, the Davidson Recycle Center is in the downtown business area, and the Rozzelle's Ferry Road site is adjacent to the County's Metal and Tire Recovery Center. The County Park locations are as follows:

- Park Road Park
- Uptown Recycling Center
- McAlpine Creek Park Recycling Center.
- William R. Davie Park

- Blythe Landing
- Davidson Recycle Center
- Reedy Creek Park
- Renaissance Park
- Rozzelle's Ferry Road

Initially, the role of the self-service centers was to provide an outlet for recycled materials for residents that did not have curbside recycling. Specific locations for placing the centers were selected based on visibility and accessibility of the site to the public. Containers were placed in areas that were frequented by the public for other reasons, including parks, recreation areas, and municipal office buildings. All of the centers include a concrete pad with multiple roll-off containers, each having a capacity of 20 to 40 cubic yards. The containers are serviced weekly resulting in an estimated 1,000 hauls annually.



4.5.1.3 Commercial Recycling Centers

The commercial recycling drop center program is designed to provide waste paper drop-off points for businesses that do not generate enough waste paper to meet the minimum waste generation rates to subject them to the Source Separation Ordinance. These

businesses are often too small to contract for recycling services. Currently, there are over 50 commercial paper-only recycling drop centers, strategically placed throughout the County.

4.5.1.4 Full Service Recycling Centers

The four (4) full-service recycling centers (highlighted in red on the map and listed below) are strategically located in the four quadrants of the county

- North Mecklenburg Recycling Center
- West Mecklenburg Recycling Center
- Hickory Grove Recycling Center (East)
- Foxhole Recycling Center (South)

Full-service centers are operated by County staff Monday -Saturday 7 AM- 4 PM.
Each of the four full-service recycling centers accepts the following materials:

- Aluminum cans
- Steel/tin cans
- #1 plastic bottles
- #2 plastic bottles
- Phonebooks
- Spiral paper cans
- White goods (appliances)
- Scrap aluminum
- Ferrous metal
- Lead Acid Batteries
- Household Batteries
- Rechargeable (Ni-Cad) batteries
- Tires
- Motor oil
- Household Hazardous Waste
- Construction/Demolition waste
- Magazines/catalogs
- Newspapers
- Glass bottles and jars
- Corrugated cardboard
- Mixed paper (office paper, junk mail, boxboard).
- Antifreeze and transmission fluid
- Oil filters
- Eyeglasses
- Plastic 6-pack rings
- Bagged MSW
- Bulky MSW
- Scrap electronics

The full-service recycling centers have been a critical component of the County's integrated Solid Waste Program for over twenty years. Combined they service an estimated 450,000 customers annually delivering an estimated 27,489 tons of material; including but not limited to household hazardous waste, yard waste, fiber recyclables, co-mingled bottles-cans-jars, tires, white goods, batteries and construction/demolition debris. County personnel receive, sort, process and transport the materials to the respected recycling or disposal facilities.

4.5.1.5 Household Hazardous Waste

Household Hazardous Wastes (HHW) are collected at the County's full service recycling centers. The collection is not event based as is the case with many communities, but is a full-time service of each center. The HHW portion of each full service recycling center is operated by a private contractor properly trained and licensed to handle such materials. The contractor takes title to the waste as it is collected from the residents. The waste is then categorized according to five major classifications: paint, flammables, cleaners, batteries, and other.

Information on waste collected is stored in a database, along with the corresponding weights and total weights. Resident's addresses are also included in the database. The County has entered into an interlocal agreement with Union County, NC, and Lancaster County, SC, allowing their residents to deliver HHW to Mecklenburg County's staffed collection centers. The appropriate county is billed for the HHW materials delivered. The County provided for the disposal and/or recycling of approximately 392 tons of household hazardous waste in FY 2008. The cost of the program was \$0.58 per pound or approximately \$515,588.00 for FY 2008. The current program is adequate.

4.5.1.6 Electronic Scrap

County residents can deliver electronics free of charge to the four Full-Service Recycling Centers. As with HHW, this is a full-time service of the center. The County has contracted with a vendor to transport, process and recycle all electronic equipment received at the centers. The following items are accepted in the program:

- Monitors
- Printers
- Computers
- Keyboards
- Scanners
- CD-ROM's
- Dumb terminals
- Assemblies
- Speakers
- Mouse units
- Fax machines
- copiers
- Telephone equipment
- Cables
- Cards
- Power supplies
- Electronic typewriters
- Televisions
- VCR's
- Stereos
- Projection equipment
- Headphones
- Digital cameras

In FY 2008, 211 tons of electronics were recycled at a cost of \$19,344.00.

4.5.1.7 Scrap Tires

The County administers a comprehensive program to manage scrap tires. This program prevents illegal dumping of tires by providing an infrastructure to safely collect, store, and recycle scrap tires. County residents have two options for the disposal of scrap tires. The first is the County's full-service recycling centers and the County's Metal and Tire Recovery Facility. The second is through the County's Rebate Program, which is provided to tire retailers to reimburse disposal cost accrued through private disposers. Tires are collected at the County's full-service recycling centers and the County's Metal and Tire Collection Facility.

There is no charge for disposal of scrap tires generated within Mecklenburg County for loads containing less than five tires or loads accompanied by a scrap tire certification form. Scrap tires that are being disposed of by manufacturers because they do not meet the manufacturer's standards for sellable tires or scrap tires delivered without a certification form are charged a per tire fee.

The County provided for the disposal of approximately 18,134 tons of tires in FY 2008 at a cost of \$1,325,150.00. Of this amount, the State of North Carolina provided \$1,075,371.00 reimbursement through its Scrap Tire Disposal Fund. The County had to fund the remaining \$249,779.48.

4.5.1.8 White Goods

Discarded white goods (primarily appliances) are collected at no charge at the County's full-service recycling centers and the County's Metal and Tire Recovery Facility. The Metals Recovery Facility is primarily for commercial deliveries (large loads) while the full-service recycling centers handle residential deliveries (small loads). Upon removal of the freon by County personnel, the white goods are baled and sold as scrap metal. In FY 2008, the County provided for the disposal of 1,243 tons of white goods. Funding for the program was provided by, (1) the sale of 1820 tons of scrap metal (including ferrous metals, whole air conditioners, iron aluminum and White Goods) to scrap metal contractor Southern Metals and Metals Recycling and (2) \$155,012 from the State of North Carolina, provided through the White Goods Disposal Fund.

4.5.1.9 Special Household Waste Provision

Household waste from residences located outside the Designated Geographic Area will be accepted at Mecklenburg County Household Waste Convenience Centers upon payment of an annual fiscal year payment of \$50.00 per residence provided that the disposal of such waste in Mecklenburg County disposal facilities is not inconsistent with provisions contained in any solid waste management plan adopted by the local government within whose jurisdiction the household waste is generated.

"Household waste" as used herein shall be defined as residential trash, garbage, and home furnishings such as furniture and carpets. "Non-household waste" as used herein shall be defined as waste other than household waste, which are acceptable under the provisions of the North Carolina Solid Waste Management Rules, 10 NCAC 10G. Non-household wastes include such wastes as demolition or construction material, shingles, pallets, commercial and industrial wastes, split tires, rubble, and special handling wastes.

4.5.1.10 Fleet Operations

Mecklenburg County Solid Waste directly services the recycling containers located at the staffed and un-staffed recycling centers with its own vehicles and personnel. The County's recycling fleet consists of seven (7) roll-off trucks and one (1) tractor-trailer. County staff hauled 6,040 forty cubic-yard containers totaling 27,489 tons in FY 2008.

4.5.1.11 Contracted Operations

For more effective and efficient handling of materials, Recycling Operations has outsourced a portion of services that support the staffed recycling centers. The contractors and services are listed below:

Table 4.5.1.1: Contracted Operations	
<u>Material</u>	<u>Contractor/Vendor</u>
Garbage	Republic Waste
Scrap Tires	US Tire
Household Hazardous Waste	Ecoflo
Electronic Recycling	Computel
Cooking oil/Grease	Valley Protein
Oil Filters	Clean Green
Lead-acid Batteries	Interstate Battery
Propane Cylinders	Heritage Recycling
Donated Items	Goodwill Industry
Motor Oil/Antifreeze	Safety Kleen

4.5.1.12 Growth and Capacity Issues at Staffed Recycling Centers

Hickory Grove Recycling Center

To meet the customer demand of a rapidly growing population in the northeastern portion of the County, the Hickory Grove Recycling Center went through an extensive remodel in 2006. The improvements included a larger asphalt surface area for recycling containers, a new fee collection booth, and drop walls. These modifications allow for a safer and more user-friendly recycling center. The facility will be sufficient for the remainder of this 10-year plan.

North Mecklenburg Recycling Center

In an effort to prepare for Mecklenburg's significant population growth anticipated in the northern area of the County, Solid Waste has enhanced our full-service recycling center located in that area. Improvements included resurfacing damaged asphalt, installing a concrete pad for recycling containers, and creating a more effective traffic pattern.

West Mecklenburg Recycling Center

A Lease Agreement between Mecklenburg County and Charlotte-Douglas Airport allows for the County to operate its full service recycling center on a portion of the airport property. Due to a potential airport expansion and a realignment of West Boulevard, the major arterial street in the area, the County is planning on a relocation of its full-service recycling center. The recycling center is currently located adjacent to the County's

Compost Central operation and it will continue to be part of the overall facility layout. The timing and final siting of the relocation is dependent upon the development of City airport plans and West Boulevard reconfiguration.

Foxhole Recycling Center

Construction of the Foxhole Recycling Landfill/Recycling Center was completed in 2001. Being the most recent addition of our full-staffed centers, this facility is outfitted with the newest and most up to date technology, including platform truck scales, and security cameras. Although Southern Mecklenburg County is a fast growing community, the current layout and size of the site is inadequate and enhancements need to be made in the next 1-2 years. A reconfiguration of the site with drop walls will greatly improve the site.

Self Service Recycling Centers

The County currently operates nine (9) self-service recycling centers strategically located throughout the County. To meet the increasing demand the County is constantly evaluating new locations for self service recycling centers. These centers have become less significant in the overall planning as municipal annexation has taken all but a small portion of the County, thus providing curbside recyclable collection to nearly all of the County residents.

4.5.1.13 Analysis

In assessing the ability of the full-service centers to meet the County's current and future recycling needs, a number of factors are considered;

- Location of the Center
- The size and layout of the site
- Condition of infrastructure on the site
- Ability to handle the large number of customers
- Ability to efficiently receive, sort, and transport materials
- Condition of equipment used to store and transport materials

4.5.1.14 Recommendations for Full Service Centers

- The Foxhole needs to be re-configured with drop walls to increase both the safety and the efficiency of the site.
- In the later part of this plan, a feasibility study should be conducted to evaluate adding the use of drop walls for a more efficient handling of materials.
- In first three years of this plan, the County should establish a comprehensive marketing program to promote the full service centers to potential users located in the area of the service center.

4.5.2 Metrolina Recycling Facility

The Metrolina Recycling Facility (MRF) was constructed by the County in 1995 at which time the County entered in to a contract with FCR, Inc., a subsidiary of Casella Waste Systems, Inc., to operate the facility. The contract was amended in 1999 to include a lease provision in order to manufacture recycled paper derived cellulose insulation on site. The contract expires June 30, 2009.

In FY08, in excess of 59,000 tons of recyclables were processed by the MRF. Residential recyclables account for approximately 97% of the material processed, while the remaining 3% is material received from the public schools and government office buildings collection contract. Fiber represented approximately 70% of the commodities and the remaining 30% was commingled containers. In addition to Mecklenburg County and its municipalities, the facility currently receives material from portions of Cabarrus, Gaston, Union, and Stanly counties. In addition, the commercial sector is allowed to use the County's drop centers to deposit the basic materials accepted at the MRF. These drop-center containers are then brought to the MRF for processing.

The recyclables are source separated (separated at point of pick up) into two categories: commingled materials and fiber.

<u>Commingled Material</u>	<u>Fiber Materials</u>
Glass (Flint, Green, Amber, and Mixed)	Old newspaper (ONP)
Plastic - PET	Old corrugated cardboard (OCC)
Plastic - HDPE Natural	Office Mix
Plastics - HDPE Pigmented	Magazines
Aluminum	Junk Mail
Ferrous Metals	

It is estimated that the facility is currently operating at 75% of capacity. Over the past ten years, dating to FY99, the facility has increased the annual material processed by an average of 2% per year. Straight-lining this growth indicates that the facility could reach capacity in 2024.

The Education Center contained within the MRF is utilized to educate approximately 10,000 people per year. Primarily school children, both public and private schools, utilize the Center. The full-time educator is an employee of FCR, Inc. as required under the contract.

Maintenance costs at the facility increased significantly from FY99 to FY00, but then stabilized at about \$120,000 per year until FY03, when it reached approximately \$160,000 per year. It has again stabilized at approximately \$120,000 per year. In FY03, the equipment was seven years old and investment in belt replacements, baler liner, and electrical motors was necessary, contributing to the peak. In FY06, maintenance decreased to \$80,000, but has increased since to an average of \$150,000 per year. This increase is due to the age of the existing equipment and the ability to obtain parts. It should also be noted that in FY07 the commingle baler was replaced with a used baler. It should be noted that this cyclical nature to maintenance cost should peak again sometime around FY 2010, which would be after the expiration of the current contract.

Conversations with FCR continue concerning contract modifications needed to secure commercial material. In order to attract commercial material, an acquisition mechanism might be required to share revenue with the provider of the material. Because the facility is primarily a residential MRF, the cost to operate the facility may result in the County/FCR partnership not being competitive in the commercial market place.

The current operating contract for the facility is being renegotiated to extend the term and to facilitate the conversion of the MRF from a dual stream to a single stream facility.

This project will be a major retrofit of the MRF, the processing system will be modified to receive single stream materials that combine commingled containers and fiber in a single feedstock. The modifications are also anticipated to; add additional materials to the list of acceptable materials at the facility and to include a glass sorting system that will provide a higher value in product. Conversion of the facility is scheduled to be complete by July 1, 2010.

5.0 Yard Waste Management

5.1 Overview

As defined by G.S.130A-290, “yard waste” means solid waste resulting from landscaping and yard maintenance such as brush, grass, tree limbs, and similar vegetative material, and “Land-clearing Debris,” including stumps, limbs, leaves, grass and untreated woods.

Yard waste is generated by the development and maintenance of lawns by single-family households, multi-family households, businesses and governmental entities. It is also generated as a result of changes in land use and storm debris. In addition to the permitted yard waste sites, the County maintains several locations to handle vegetative debris from storm events.

Nationally, it is estimated that yard waste represents 19-21% of the total municipal solid waste stream. During FY 08, Mecklenburg County processed approximately 79,000 tons of yard waste. In addition, through education and compost bin sales, as many as 25,000 households may be composting at home, potentially reducing the annual yard waste and food waste stream by a ton per year per household.

5.2 Residential Curbside Yard Waste Collection

All of the municipalities provide weekly curbside yard waste collection service to the same set of households that receive other curbside solid waste services. Materials accepted and guidelines for setting out yard waste in the City and Towns are provided by each municipality.

Most of the collected yard waste is taken to the Mecklenburg County Compost Central facility. Small amounts are also received at the North Mecklenburg and Hickory Grove Recycling Centers. Yard waste is made into mulch or compost for resale.

The yard waste program is diverting a large quantity of materials from disposal. Lot size, weather (rainfall), wind and storm activity all influence the amount and kind of yard waste materials generated. For this reason, as well as possible data reporting deficiencies, it is not known if more can be diverted or not. The residential yard waste diversion program is generally regarded as a very successful program.

Table 5.2 displays annual pounds per household for each community within the Plan area. The table also shows where each community delivers its collected yard waste material.

Table 5.2: Residential Curbside Yard Waste Collection Information							
	Charlotte	Cornelius	Davidson	Huntersville	Matthews	Mint Hill	Pineville
Container Provided?/ (Size)	No	No	No	Yes 96 gal.	No	No	No
YW Delivered to:	CC	CC, NMRC	NMRC	CC, NMRC	CC	HG	CC
Exceptions		Leaves (Nov-Feb)	See note below.				
N/A = Not applicable; YW = Yard Waste; CC = Compost Central; NMRC = North Mecklenburg Recycling Center HG = Hickory Grove Recycling Center Davidson also gives loose leaves to residents to use as mulch.							

5.3 Commercial Sector Yard Waste

Generally, multi-family households and businesses receive yard waste services through private contractors (landscapers) that may use County facilities or private processing facilities in the county. Private contractors utilizing non-county facilities for yard waste management are not required to report tonnage to the County. Likewise, private processors of yard waste are not required to report their tonnage to the County.

Most commercial properties with significant grounds utilize landscaping contractors to cut grass, and trim bushes and trees. Property management companies often have their own staff that provide these functions.

These landscapers and facility staff, who cut the grass, trim bushes and trees are not required to report the quantities of yard waste that they generate or where it is taken. Consequently, data regarding commercial sector generation of yard waste is incomplete. Some of the landscaping materials end up in dumpsters at the location where the landscaping takes place. Some landscapers bring materials to Compost Central or one of Mecklenburg County's three other staffed drop-off centers.

5.4 Yard Waste Processing Facilities

There are a total of four County owned facilities serving the residential yard waste management needs of Mecklenburg County. Of these, three are small yard waste collection and grinding points only, integrated into the full-service recycling center operations. These yard waste operations include the Foxhole, Hickory Grove, and North Mecklenburg facilities and are all classified by NCDENR as Small Type I facilities, requiring only notification and operation within the rules. The fourth and primary residential yard waste management facility is Compost Central.

In assessing the ability of Compost Central to meet the County's current and future yard waste management needs, a number of factors must be considered. Among these factors are the adequacies of:

- facility permit
- customer accessibility to the site
- the size and layout of the site
- condition of infrastructure on the site
- capacity and condition of processing equipment
- markets for the various landscaping products produced

Compost Central is currently adequate to the task in all of the above areas. The facility is properly permitted by NCDENR as a Type I composting facility. Discounting debris from major storm events, the annual quantity of yard waste handled has leveled off above 50,000 tons per year, but well below the permitted capacity of 100,000 tons per year.

The County has recently completed a Compost Facility Design Master Plan, Process Optimization and Market Analysis. The purpose was to meet the goals listed above, notably assessing the ability of Compost Central to meet the County's current and future yard waste management needs.

The report highlighted several areas:

Equipment needs: Over the past several years, significant improvements have been made in reducing the age and improving the condition of the mobile and processing equipment at Compost Central. A new windrow turner was delivered in December 2008. Two new, higher capacity tub grinders have been purchased along with tracked backhoes to feed them. These purchases, coupled with the replacement of several wheeled loaders, have increased the facility's grinding capacity to easily meet peak demands. With these replacements and the implementation of a regular equipment replacement schedule, the mobile and processing equipment aspect of the operation is in good condition for the planning period.

Facility location: Several other factors gives rise to some concern on the adequacy of Compost Central in the long term. As noted, Compost Central is located on approximately 86 acres of land leased from Charlotte-Douglas International Airport (CDIA). The airport is currently expanding its facilities in a manner that will have a long term impact on both customer access to the site and its size and layout. While the exact configuration of the expansion and the construction schedule is yet to be established, the addition of a new parallel runway on the west side of the airport, the extension of the existing Runway 18R/36L, and the addition of a railway freight yard likely will result in the closure of the existing West Boulevard recycling center and infringe on the current footprint of the Compost Central site. The County is currently in negotiations with CDIA to secure a long-term lease for the composting operation.

Existing infrastructure: The existing physical infrastructure of Compost Central (e.g., buildings and paving) is showing its age. Most of this infrastructure was constructed about 18 years ago with only patchwork repairs occurring since that time. Both the scale house and crew quarters are modular structures in need of upgrading. Large areas of the concrete and asphalt paving are also overdue for reconstruction. Additionally, the customer flow between Compost Central and the collocated West Mecklenburg Recycling Center is cumbersome, with an increased volume of customers having to exit

and re-enter the site anytime a fee payment is made. The facility master plan provides for the rehabilitation and addition of existing paved area, the replacement, relocation and construction of the existing modular buildings on site, and the relocation of the recycling drop center (to provide a common customer entrance with Compost Central). It is anticipated that the proposed modifications will meet the communities yard waste management needs through 2015

Market Analysis: The marketplace for the various landscaping products produced from yard waste at Compost Central is also changing and the facility capabilities need to adapt to those changes. This changing marketplace dictates a future Compost Central facility that has the processing and product storage capacity to quickly adjust and successfully adapt to these changing markets. Based on the market research data the 100 mile radius surrounding Compost Central is sufficient to absorb the total volume of production should the facility commit to 100% of the yard waste collected being turned into mulch and compost.

In summary, while Compost Central is meeting the current yard waste management needs, the potential site changes will help assure the long term effectiveness and efficiency of the operation.

While Compost Central and the three feeder yard waste operations at the Full Service Recycling Centers primarily service residential needs, they additionally provide service to some commercial landscaping contractors. Most of the yard waste from the landscaping contractors, in addition to the land clearing debris is managed at one of the ten Land Clearing and Inert Debris (LCID) landfills, two LCID treatment and processing facilities or two commercial composting facilities located in Mecklenburg County.

6.0 Construction & Demolition Waste

Construction and demolition (C&D) waste is defined as solid waste resulting from construction, remodeling, repair, or demolition operations on pavement, buildings, or structures, but does not include inert, land clearing, yard waste, hazardous or liquid waste, friable asbestos and appliances.

6.1 Background

Currently, most C&D waste generated in Mecklenburg County is disposed in landfills. There are two landfills within Mecklenburg County accepting C&D waste. The North Mecklenburg Landfill is owned and operated by the private sector. The Foxhole, a permitted sanitary (MSW) landfill in Mecklenburg County, owned and operated by the County, is currently accepting only C&D waste. Some C&D waste generated in Mecklenburg County is disposed in out-of-county landfills.

Approved C&D landfill sites are required by N.C.G.S. 130A-309 to measure and report the weight of waste entering the landfill and to provide groundwater monitoring. Table 6.1 provides tons disposed per fiscal year since FY1997/98.

Table 6.1 Construction and Demolition Waste Disposed over Time		
Fiscal Year	Tons Disposed	Tons per Capita
FY97/98	297,762	0.489
FY98/99 ¹	315,134	0.509
FY99/00	340,762	0.531
FY00/01	426,871	0.614
FY01/02	368,228	0.516
FY02/03	357,738	0.487
FY03/04	365,744	0.488
FY04/05	388,212	0.505
FY05/06	362,948	0.456
FY06/07	377,120	0.456
FY07/08	329,461	0.382

¹FY 98/99 is the baseline year from which waste reduction goals are measured (State of NC requirement).

In FY2007/08, the amount of C&D waste disposed and reported to the NC Division of Waste Management that originated in Mecklenburg County was 329,461 tons. This figure is based on NCDENR reported tonnage for permitted C&D facilities. The FY2007/08 estimated County construction and demolition disposal rate was 0.38 tons per person/per year, which was a 14.5% decrease from the base year of FY 1998/99. There is an unknown quantity of C&D waste disposed in MSW landfills each year since

MSW landfills are allowed to accept C&D waste (the reciprocal is not true). This waste would then show up under the “commercial” waste tonnage figures. Although increased recycling and green building practices may account for some of this decrease, changes in the level of construction and demolition activity are also likely to affect this measurement. As Mecklenburg County becomes denser (housing units per acre), housing and retail construction shifts to bordering Counties and the C&D waste is no longer counted as Mecklenburg’s. In addition, the economic downturn which began in 2007 has decreased construction activity especially in the residential sector.

6.2 Waste Characterization Study Results

Table 6.2 shows the estimated composition of the C&D waste based on a study prepared for Mecklenburg County in 2007. The study revealed significant quantities of materials are being disposed for which alternative recycling options exist. For example, metals (26,000 annual tons) and corrugated cardboard (14,300 annual tons) both have appreciable market value relative to disposal costs. Although untreated wood (62,252 annual tons) is not as lucrative as metal and paper, it can be sold as boiler fuel thus avoiding the tipping fees associated with disposal. In addition, pallets and crates (9,621 annual tons) are considered untreated wood and can be reused or ground for fuel or colorized mulch. The table below provides a list of “potentially recoverable” and “currently unrecoverable” items in the C&D waste stream.

Potentially Recoverable
Corrugated Cardboard, Appliances, Other Ferrous Metals, HVAC Ducting, Other Non-ferrous Metal, Land Clearing/Limbs/Stumps, Other Yard Waste, Concrete/Block/Brick/Stone/Tile, Pallets, Drywall – Unpainted, Untreated Wood
Currently Unrecoverable
PVC Pipe, Vinyl Siding, Dirt/Sand/Gravel, Asphalt Roofing, Ceiling Tiles, Carpet and Carpet Backing, Electronics, Bulky Wastes/Furniture, Other Paper, Film Plastic, Other Plastic, All Glass, Oriented Strandboard (OSB), Treated/Painted/Processed Wood, Drywall – Painted, Insulation, Mixed MSW, Mixed C&D/Other Unclassified

Potentially Recoverable materials are recyclable in their entirety and currently have existing markets in the Mecklenburg County region.

Currently Unrecoverable: These are materials that do not appear to have near term potential for recycling in existing markets in or near the Mecklenburg County region or that occur in such small quantities in the C&D waste stream that it is unlikely they will ever be recycled.

Table 6.2 Characterization of C&D Waste in Mecklenburg County, 2007

Material Categories	Mean	Standard Deviation	90% Conf. Interval		Annual Quantity (tons)
			Lower	Upper	
OCC/Kraft	3.8%	0.4%	3.1%	4.5%	14,302
Other Paper	0.7%	0.1%	0.6%	0.9%	2,817
Paper Subtotal	4.5%	0.5%	3.7%	5.3%	17,119
PVC Pipe	0.1%	0.0%	0.1%	0.2%	457
Plastic Film	0.3%	0.1%	0.2%	0.4%	1,283
Vinyl Siding	0.1%	0.0%	0.0%	0.1%	194
Other Plastic	0.6%	0.1%	0.5%	0.7%	2,191
Plastic Subtotal	1.1%	0.1%	0.9%	1.3%	4,125
Glass	0.9%	0.1%	0.7%	1.1%	3,420
Glass Subtotal	0.9%	0.1%	0.7%	1.1%	3,420
Appliances	0.1%	0.0%	0.0%	0.1%	217
Other Ferrous Metals	5.6%	0.7%	4.4%	6.8%	21,174
HVAC Ducting	0.1%	0.0%	0.0%	0.1%	290
Other Non-Ferrous Metals	1.1%	0.1%	0.9%	1.4%	4,321
Metal Subtotal	6.9%	0.8%	5.6%	8.2%	26,003
Land Clearing / Limbs / Stumps	0.9%	0.3%	0.4%	1.4%	3,514
Other Yard Waste	1.1%	0.2%	0.7%	1.5%	4,162
Green Waste Subtotal	2.0%	0.4%	1.4%	2.7%	7,676
Concrete/ Block/ Brick/ Stone/ Tile	23.3%	3.1%	18.2%	28.4%	87,846
Dirt/Sand/Gravel	6.1%	1.3%	4.0%	8.2%	23,046
Inerts Subtotal	29.4%	3.4%	23.9%	34.9%	110,892
Pallets	2.1%	0.3%	1.6%	2.5%	7,765
Crates	0.5%	0.3%	0.0%	0.9%	1,856
Untreated Wood	16.5%	1.4%	14.2%	18.8%	62,252
Oriented Strandboard (OSB)	6.0%	0.8%	4.7%	7.3%	22,488
Treated/ Painted/ Processed Wood	6.8%	0.7%	5.7%	7.8%	25,505
Wood Subtotal	31.8%	2.2%	28.2%	35.4%	119,865
Drywall – Unpainted	6.8%	1.1%	5.0%	8.7%	25,806
Drywall – Painted	0.4%	0.2%	0.1%	0.7%	1,613
Asphalt Roofing	6.4%	1.2%	4.4%	8.4%	24,084
Insulation	0.8%	0.2%	0.5%	1.0%	2,888
Ceiling Tiles	0.1%	0.0%	0.0%	0.1%	292
Carpet & Carpet Backing	5.3%	1.0%	3.7%	7.0%	20,167
C&D Materials Subtotal	19.8%	1.9%	16.7%	23.0%	74,850
Bagged MSW	1.3%	0.2%	1.0%	1.6%	4,867
Electronics	0.0%	0.0%	0.0%	0.1%	173
Bulky Wastes/ Furniture	0.9%	0.2%	0.6%	1.2%	3,344
Mixed C&D/ Other Unclassified	1.3%	0.2%	1.0%	1.6%	4,784
Bulky/Other Subtotal	3.5%	0.4%	2.9%	4.1%	13,168
TOTAL	100.0%				377,120

Although the “potentially recoverable” portion represents 62% (233,506 annual tons) of the C&D waste stream, this high recovery level is not readily achievable. These materials are technically recyclable, but only under any number of qualifying conditions:

- they must be available in significant quantity to be acceptable to the end market;
- they must be clean enough to recover;
- they must be further sorted into subcomponents prior to delivery to market; and
- aggregate transportation and recycling costs must be competitive with disposal costs.

Cost, convenience, necessity and values are the motivating factors for C&D recycling. Concrete recycling occurs because it is much cheaper to recycle this material than it is to dispose of it. Note that the study found over 62,000 tons of untreated wood currently disposed. The Foxhole charges less than half normal disposal costs for untreated wood, yet received only 1227 tons in FY08. This is because the wood must be kept separate on the job site, which presents both cost and convenience issues for the builder. Gypsum drywall offers no real price incentive for recycling, however since drywall contractors often are asked to manage their own waste on jobsites, this material is delivered to landfills clean and separated and can be easily recycled (convenience). Necessity to recycle comes largely from the green building movement and the advent of LEED certified projects.

LEED, which stands for Leadership in Energy and Environmental Design, is a voluntary consensus-based national standard for developing high performance or sustainable buildings. Waste reduction and recycling of C&D debris is a component of these projects and the waste management analysis performed is beneficial to all concerned. The level of LEED certification a project acquires (standard, silver, gold, or platinum), depends on the number of points accrued. Builders receive one point for recycling 50% of construction waste and two for 75%. There are a number of LEED projects currently underway in the area including the new Bank of America and Wachovia buildings and the national headquarters for Lowes (home improvement stores).

There is a large interest in recycling among the building community (values). If the costs are not too high and the process not too inconvenient, many builders will recycle. If the project is a LEED project, they will recycle out of necessity.

6.3 Current Waste Reduction and Recycling Programs and Opportunities

6.3.1 Foxhole Landfill.

Portions of the C&D waste stream in the County are currently being recycled at facilities operated by the County.

Concrete, brick and block that are source separated and delivered to the Foxhole Landfill are ground and used on site for roadbeds or in erosion control measures. A reduced tipping fee of \$5/ton is charged as an incentive to recycle (if the concrete is commingled with other waste, the charge is \$39/ton). In FY 2007/08, the Foxhole received 17,485 tons of concrete, brick and block which represents a 40% increase over the previous year.

Gypsum drywall (wallboard) is currently being accepted for recycling at the Foxhole landfill as a pilot project. The drywall must be from new construction and kept separate (not mixed with other construction wastes). The pilot project began in June 2008. In the four months for which complete data are available, the landfill received on average 121 tons per month. The gypsum drywall is stored in a pile near the working face of the landfill until approximately 100 cubic yards are accumulated. A recycler near Marshville is then contacted for pickup. The recycler charges \$20/ton which is paid by the County. The pilot is funded through FY09 and is expected to become a permanent program.

Untreated, unpainted wood waste, if separated and delivered to the Foxhole landfill is ground and sold primarily as boiler fuel. The County charges \$16.50/ton as an incentive to recycle (as opposed to \$39/ton for mixed C&D waste). In FY 2007/08, the Foxhole received 1,227 tons of untreated, unpainted wood waste which represents a 13% increase from the previous year.

6.3.2 Outreach, Promotion, Recognition and Annual Survey

Mecklenburg County maintains a program of outreach to the construction and demolition industry. In the past this has included recycling promotional materials, radio spots, and various sized ads in the Charlotte Business Journal. In FY08/09, the County plans to promote the markets for C&D materials directly to the building community through direct mail.

The County provides publicity and recognition for key projects that achieve high levels of waste reduction and recycling. For example, the County took out a full page color ad in the Charlotte Business Journal thanking the project team that demolished the old Charlotte Coliseum for recycling 90% of the materials.

Annually, the C&D waste reduction program honors construction and demolition projects at its annual Business Recognition Awards Ceremony. Projects achieving outstanding waste reduction goals, green building innovations and LEED certifications receive awards.

The Mecklenburg County Building Development Commission (BDC) along side of Mecklenburg County Code Enforcement proposed the language ratified by the NC State Legislature in Session Law 2007-381 allowing provision for building permit fee reduction or partial rebates to encourage construction of buildings using sustainable design principles. Mecklenburg County then began implementing a Green Permit Rebate (GPR) program with the intent to encourage building projects and practices that support development projects that minimize impact on our natural resources through the use of environmentally responsible certification programs such as LEED & Green Globes. Through the GPR, development permit fee rebates are available from 10% up to 25% of the Net Permit Fee to a maximum of \$100,000 for eligible projects. More information can be found at <http://www.charmeck.org/Departments/LUESA/GreenPermitRebate/Home.htm> .

County staff provide on-going technical assistance to businesses seeking to recycle a part of their construction and/or demolition wastes. These include renovations and new construction, residential and commercial projects as well as demolition of small and large facilities.

Each year, the County surveys the building community to measure awareness of recycling programs, gauge the degree of recycling and the materials recycled and other

information. As measured against the baseline year, both awareness of recycling opportunities and actual recycling have increased.

6.3.3 Recycling Infrastructure: Collectors, Processors and Material Recyclers

The recycling of construction and demolition waste requires that an adequate supply of collectors, processors and material recyclers exists to meet the demand for recycling by the building community. It all begins with the demand for the material. Some entity, private or public, must have a use for the material before it can be diverted from a landfill.

6.3.3.1 Material Recyclers

Asphalt

Source separated asphalt pavement can be recycled into a new pavement product. Scrap asphalt or recycled asphalt pavement (RAP) is mixed with virgin materials in percentages ranging from 5 to 25 percent. Some asphalt-producing companies accept asphalt scrap from their own operations as well as from demolition contractors and other sources willing to deliver to their facilities. Materials delivered to the site typically are accepted at no charge, provided they are free of contaminants.

Asphalt pavement reclamation is a well-established practice used mostly by asphalt plants because of cost savings over virgin materials. Since almost all asphalt pavement is recovered it may be true that asphalt is the number one recycled product in the country. There are 5 asphalt recyclers serving the County operating at least 11 recovery locations.

[Note: this does not include asphalt shingles for which no recycling opportunity currently exists in this region]

Ceiling Tile

Mineral fiber ceilings can be efficiently reclaimed through the Armstrong Ceilings Recycling Program. Since the program began in 1999, more than 10 million square feet of ceilings have been recycled. Armstrong's new ceilings contain up to 78% recycled content.

Armstrong's recycling program is for large quantities, 30,000 sq ft or trailer loads. For projects that generate smaller amounts, builders can store and combine with material from other jobs. They can also check with the local Habitat ReStore to see if they can accept this material.

Concrete

Material to be recycled is normally delivered to the processor in large pieces and is broken up into aggregates by heavy crushing equipment. Some equipment is portable and can be set up on-site for immediate use of the product. A "crushing plant" may include a hopper for receipt of the material, a jaw to break it into more manageable pieces, a cone or impact crusher to further reduce size, a vibrating screen to sort to required specifications and a conveyor belt with a rotating magnet for metal removal.

Much of the reconditioned stone produced in our area is used on construction sites, as backfill, by landscapers and for building pads when approved for use. There are 9 entities providing concrete recycling in Mecklenburg County (8 private companies and

the Foxhole Landfill). In addition, there are 6 companies offering portable crushing services.

Corrugated Cardboard

The fact that corrugated cardboard is used primarily as a packaging material makes it a prime target for separation on the job site. There is an abundance of OCC processors in our area. Market prices paid for OCC fluctuate as with any commodity and are even affected by global conditions.

Many waste haulers have established routes for pick up of OCC in what is termed “front-end-loader containers” from their commercial and industrial customers. This option can be extended to the C&D customer as well. “Roll-off containers” are also offered for collection of larger quantities of loose cardboard on the job site. These containers are normally picked up and the contents delivered to the processor when the contractor calls for a pickup.

Gypsum Drywall

Drywall is also referred to as sheetrock and wallboard. Some scrap drywall from the manufacturing process, from new residential, including the manufactured housing industry, and commercial construction are currently being recovered for recycling (see discussion above under “Foxhole Landfill”). Drywall from renovation and demolition projects is not typically recycled in the region since most of the material is painted or treated.

In order to be recycled, scrap drywall must be separate from other waste materials and should be dry. On many construction sites in our area, the scrap drywall recycling is being managed by the drywall contractor rather than the general contractor. Having a drywall recycler come onto the jobsite and remove the scrap creates opportunities for recycling since this material is already separated and clean.

The only gypsum drywall recycler in the region is located in Marshville. Materials can be taken directly to the recycler or delivered to the Foxhole landfill. The Marshville location charges a \$20/ton delivery fee and represents about a 2-3 hour roundtrip from the center of Mecklenburg County (plus the transportation costs this represents). The Foxhole Landfill is convenient to southern Mecklenburg County and charges customers the regular mixed C&D rate of \$39/ton. The County then pays the Marshville recycler \$20/ton to collect the material from the Foxhole. Since the Foxhole program is still a pilot project, it has not been advertised, but still manages to average 120 tons per month of material. Since there is not a real cost incentive to travel far to recycle this material, a northern Mecklenburg County drop-off location may increase recycling of Gypsum. In addition, a cost incentive in terms of decreased tip fee and promoting the recycling of Gypsum may all increase recovery levels.

Land Clearing Debris

There are many opportunities to consider environmentally responsible design and management practices during the planning phase of development that minimize the loss of trees, natural features and topsoil. When land must be cleared for construction, erosion control is critical from an environmental standpoint as well as regulatory compliance. Organic mulch, compost and straw bales are now being used in some erosion control applications. The use of these materials on job sites helps to provide markets for waste we generate during the land clearing process.

In most instances, a land clearing contractor, perhaps in cooperation with a contract logger, will initiate the land clearing process by doing an assessment of the timber on the property. Trees that have value are logged and removed from the site. The smaller trees and brush are cleared and placed in piles along with the stumps that have been removed. This material is normally ground into mulch using large tub-grinders either by the land clearing contractor or a contract grinding operation. The mulch/chips generated can be used on-site in many cases or may be hauled off-site to market.

On-site applications for the organic mulch and chips generated include erosion control and landscaping. Off-site markets include compost operations and landscape supply facilities. In addition, a large portion of wood chips are sold as fuel for boilers generating electricity or steam. There are currently three companies that will accept these materials.

Metals

Source separated metals are typically the highest value material in the C&D waste stream and are more commonly recovered than disposed. The scrap metal recycling industry is well-established and has been around a long time.

Steel, aluminum and copper are the most common metals found in C&D debris. These materials are typically accepted at all salvage/scrap yards directly from the contractor. If large enough volumes are being generated and/or the market price for the metal is high, metal recyclers will sometimes site containers for free or at a minimal cost to cover transportation. Additionally, generators are normally paid for the metals they recycle based on current market prices. There are approximately 20 metals recyclers serving the County.

Untreated, Unpainted Wood Waste

To be suitable for reuse or recycling, wood waste from C&D activities must be separate from other waste materials and must be untreated and free of paint or stain (clean). This includes scrap dimensional (framing) lumber, plywood, and shipping pallet scrap.

Some of the clean wood waste in the C&D stream is suitable for reuse, and can be accepted by groups such as Habitat for Humanity. Many such groups operate resale stores selling donated building materials and other items back to the public. Revenues from their sales are used to finance the building of homes for those in need. Some area demolition contractors also salvage wood and other items suitable for resale.

When reuse is not an option, clean wood waste can be recycled. In our area the wood is ground into mulch for landscaping projects or into chips and sold as fuel for boilers generating electricity or steam. The quality standards are lower for the boiler fuel product, and much of our material is marketed in this way. There are currently three known places to take untreated, unpainted wood waste.

The consultants reported that over 62,000 tons of untreated wood from C&D activities are currently disposed in Mecklenburg County while only 12,500 tons of excess market capacity exist. The study suggests that source separation would yield more wood for recycling than a commingled C&D processing facility. This is due to the difficulty to distinguish stained and treated wood in a mix of new construction materials and

demolition waste. The study concludes that additional market infrastructure is needed before much more untreated wood waste is diverted for recovery.

6.3.3.2 C&D Collection and Processing Infrastructure

Currently, there are an abundant number of hauling companies willing to haul recyclable C&D materials to a market. In the current marketplace, recyclers only want “source separated” materials relatively free of contaminants. This requires that builders place multiple containers on job sites, train employees and subcontractors to sort the materials and provide some cleanup and policing of the containers to insure that the container will not be rejected by the recycler upon delivery. Some collection/hauling companies have broadened services to include some of this quality control.

Commercial construction projects are almost always fenced and less space constrained, this provides both the opportunity to place multiple containers and eliminates the risk of the containers being contaminated by “neighbors” dumping couches and all sorts of other wastes after hours and on weekends. Residential builders cite the inability to control access to the dumpsters after hours as a major impediment to recycling in single family home construction sites. Most builders would like to be able to commingle C&D waste into one container and have someone else sort the material later for recycling. The industry refers to such an operation as a “C&D mixed waste processing facility”.

Such operations range from low capital investment operations involving persons sorting dumped materials into individual dumpsters from the floor of a facility to large capital mechanical operations involving shredders, crushers, magnets and conveyor systems. The low capital systems are still labor intensive while having a low throughput capacity. Such low capital operations are appearing in Mecklenburg County in response to the numerous LEED projects. Large capital systems do not currently exist in the region. It is generally believed that such facilities are not cost competitive in the South due to low disposal fees.

Any mixed waste processing system operating in North Carolina requires a treatment and processing permit from the State unless the processing is taking place in an enclosed building. There is currently only one small facility in Mecklenburg County which is permitted to sort mixed C&D waste.

6.4 Construction & Demolition (C&D) Waste Landfills

Construction and demolition (C&D) waste is solid waste resulting from construction, remodeling, repair, or demolition operations on pavement, buildings, or structures, but does not include inert, land clearing, yard waste, hazardous or liquid waste, friable asbestos and appliances. Approved C&D landfill sites are required by law to measure the weight of waste entering the landfill and provide groundwater monitoring. The only C&D landfill (North Mecklenburg Landfill) permitted in Mecklenburg County is owned and operated by the private sector. The Foxhole, a permitted MSW landfill in Mecklenburg County, is currently accepting only C&D waste.

Table 6.3 below displays the facilities that received C&D waste generated in Mecklenburg County and the corresponding tonnage for FY 2007/08.

Table 6.3: Facilities Receiving Mecklenburg C&D Waste in FY 2007/08		
Landfill	Tonnage	% of Waste Stream
BFI Lake Norman C&D Landfill	70,190	21
Foxhole MSW/C&D Landfill	124,253	38
Gaston County C&D Landfill	109	<1.0
Griffin C&D Landfill	8,127	2.5
Highway 49 C&D Landfill	8,717	2.6
North Mecklenburg C&D Landfill	115,678	35
Cabarrus	2,374	<1.0
Rowan	12	<1.0
Total	329,461	100.0

Note that only the Foxhole and North Mecklenburg facilities are located within the County.

6.5 Analysis

Although the waste characterization study revealed a lot of potential recyclable materials in the C&D waste stream, there are barriers to increasing recycling levels.

Market Barriers

Market barriers exist when the amount of material available for recycling exceeds the demand for the material by the marketplace. Another market barrier would be the proximity of the market and the economic viability of transporting materials to the market. The Wood Waste Study revealed a gap between the amount of untreated wood waste being disposed and the availability of markets and recommended market development before trying to divert more of this material.

The current Gypsum wallboard market is in Marshville (Union County) with an approximate roundtrip time of 3 hours. The County set up a gypsum wallboard recycling area at the Foxhole Landfill which makes it more convenient for projects on the South and East sides of Mecklenburg County.

Processing Infrastructure and Separation Requirements

There are no large-scale mixed C&D processing facilities near Mecklenburg County. There are some small-scale hand sorting operations in the County. Consequently, most C&D recycling requires the sorting of materials at the job site. This is a deterrent to recycling at job sites where no security fencing exists and where space constraints make it difficult or impossible to place multiple containers on-site.

At unsecured sites (without fencing), people enter the site after hours to use the dumpsters making it difficult and costly to keep separated loads from becoming contaminated. This is especially relevant in single-family home sites which are always open to allow pre-selling of lots and showing of model houses.

Incentive and Disincentive to Recycle

For some materials, the builder is economically rewarded for recycling. Concrete for example is much cheaper to recycle than it is to dispose in a landfill. Not only is it accepted for free or for a very low fee (relative to landfill fees), but there are nine locations to deliver materials making it both convenient and cost effective from a transportation perspective. Metals are also much cheaper to recycle than to dispose.

The gypsum drywall recycler is located in Marshville. The 3-hour roundtrip travel time is rewarded by a \$20/ton tip fee. Since a landfill disposal fee is about twice this cost, the builder saves on disposal fees but incurs additional transportation costs and costs to separate the material for recycling. Gypsum drywall delivered to the Foxhole landfill incurs a tipping fee equal to the disposal cost.

As mentioned previously, most LEED and green building projects have recycling goals which are a requirement of the project. In these cases, inconvenience, space constraints, and cost are accommodated to make recycling happen. Although not from a government regulatory standpoint, these projects have a lot in common with mandatory programs in that there is a requirement to recycle and a penalty for not succeeding.

Voluntary recycling can be facilitated by government promotion of the available recycling opportunities, appealing to the environmental stewardship element of recycling, and, to the extent that government can influence such things, development of markets for new materials, and enhancing convenience and economic factors (e.g., subsidies). Voluntary recycling requires either economic advantage to the waste generator or a willingness to incur additional expense to achieve recycling.

Most, if not all, communities with high C&D recycling rates also have some form of mandatory recycling. Table 6.4 highlights the communities with exceptional policies with a brief description of the policy elements. Note that many of the high-yield programs are in California where strict State laws provide incentive for local governments to adopt progressive programs. All of the programs profiled had some level of required recycling activity – either percentage or material based.

Table 6.4 US Programs with Exceptional C&D Waste Reduction Policies.	
Program	Program Description
Orange County, NC	<ul style="list-style-type: none"> • Ordinance that requires all new developments larger than a single-family house to have an approved waste management plan. • Requires recycling of OCC, clean wood and scrap metal
San Francisco, CA	<ul style="list-style-type: none"> • All mixed C&D waste must be taken to a facility that recycles a minimum of 65% of waste. Facilities are permitted and regulated. • Source separated recycling must be taken to approved facilities
Santa Monica, CA	<ul style="list-style-type: none"> • All C&D projects which are, or are projected to be, \$50,000 or greater, or are 1,000 square feet or greater are required to divert at least sixty (60) percent of all project-related C&D waste.
Chicago, IL	<ul style="list-style-type: none"> • Beginning with permits applied for January 1, 2007, contractors must recycle 50% of the C&D debris generated at a job site. • Contractors must file a form at the end of each project, together with an affidavit from the waste hauler or recycler.
San Jose, CA	<ul style="list-style-type: none"> • C&D activities must pay a deposit fee. Fee is returned if they recycle 50% of waste
Portland, OR	<ul style="list-style-type: none"> • All building projects with a permit value of \$50,000 or more (including C&D phases) are required to separate and recycle concrete/asphalt, land clearing debris, corrugated cardboard, metals and wood • Pre-construction Recycling Plan Forms must be submitted. City reviews forms and inspects onsite recycling and waste systems.
El Dorado County, CA	<ul style="list-style-type: none"> • Permittee reduces, recycles, and/or reuses on site at minimum fifty percent (50%) by weight of the total debris generated by the Project. • Security Deposit
Oakland, CA	<ul style="list-style-type: none"> • Must submit waste reduction and recycling plan showing how they will recycle 100% of asphalt & concrete and 65%, or more, of all other debris in (tons). • Must submit documentation showing that goal was achieved before receiving occupancy permit.
San Mateo County, CA	<ul style="list-style-type: none"> • One hundred percent (100%) of inert solids, and at least fifty percent (50%) of the remaining C&D tonnage must be diverted. • SWMP submittal, reporting requirements.
Concord, MA	<ul style="list-style-type: none"> • At least 50% of the C&D waste generated must be diverted from the landfill through options such as reuse or recycling. At least 75% of all inert debris generated by a C&D project must be diverted from the landfill. Inert debris includes concrete, asphalt, brick and similar masonry products.
San Diego, CA	<ul style="list-style-type: none"> • Majority of C&D and remodeling projects requiring permits pay a refundable C&D Debris Recycling Deposit and divert at least 50% of their debris by recycling, reusing or donating usable materials.

Recommendations

The 2019 Plan goals set a 45% per capita waste reduction goal for C&D by 2019 – to meet this goal, the following recommendations are offered.

- Work with the private sector and regulatory agencies to create opportunities for asphalt shingle recycling. Promote any such opportunities through outreach and promotional activities.
- Despite a robust marketplace for concrete, brick and block; and an economic incentive to recycle these items, the recent waste characterization study indicated that nearly 88,000 tons per year of these materials are still landfilled. More emphasis will be placed on promoting recycling opportunities for these materials as well as evaluating why they are still being landfilled.
- Mixed waste processing capabilities offer greater recycling opportunities in the future. Continue to support the development of processing infrastructure and promotion of the permitted operators to the construction community.
- In the second phase of this plan cycle (beginning 2012/13), begin to evaluate and lay the foundation for a consideration of a mandatory recycling requirement in order to meet the 2019 goal of 45% waste reduction.

7.0 Municipal Solid Waste Collection and Disposal

Municipal solid waste (MSW) as defined in the North Carolina General Statutes (G.S. 130A) means any solid waste resulting from the operation of residential, commercial, industrial, governmental, or institutional establishments that would normally be collected, processed, and disposed of through a public or private solid waste management service. MSW does not include hazardous waste, sludge, or industrial waste managed in a solid waste management facility owned and operated by the generator of the industrial waste for the management of that waste, or solid waste from mining or agricultural operations. This section addresses the collection and disposal of MSW within Mecklenburg County. It includes MSW generated from the residential housing, as well as from the commercial sector. It does not address construction and demolition (C&D) waste as this is not classified as MSW by the State of North Carolina. C&D waste is addressed in Section 6.0.

7.1 Residential Curbside MSW Services

Overview

In Mecklenburg County, residents living in single-family homes located within a local government's jurisdiction receive solid waste collection services either directly from the local government or through contracted services administered by the local government. For most of these customers, MSW services include curbside garbage and bulky waste collection (the Town of Cornelius no longer provides bulky item collection services). The City of Charlotte and Towns of Cornelius, Davidson, Matthews, Mint Hill and Pineville all include a portion of multi-family households in their curbside program.

The City of Charlotte provides curbside solid waste service to multi-family complexes with fewer than 30 units. The Town of Mint Hill extends this service to a few town home units. The Town of Pineville extends this service to 611 multi-family units. In The Town of Davidson, sites are collected in dumpsters by contract. In the Town of Matthews, complexes with 6 units are less receives services. The Town of Cornelius does not break out single and multi-family units, thereby servicing both, and dumpster service is provided for some units.

For customers residing in the unincorporated portions of Mecklenburg County, subscription collection services are available through private haulers. In FY07, 370,607 tons of MSW were collected from residential sources.

Table 7.1: Historical Mecklenburg County MSW Disposed (tons/yr.)							
	98/99	01/02	02/03	03/04	04/05	05/06	06/07
Residential	258,558	295,343	307,161	313,219	348,939	385,577	370,607

The data in Table 7.1 includes all waste collected from residential curbside accounts as well as those multifamily units under the City of Charlotte's subscription service (see Section 7.2). Curbside solid waste collection consists of either containerized weekly collection or bulky waste pickup.

7.1.1 Bulky Waste Collection

Bulky waste is defined as waste items that a household generates which are too large to place into the garbage containers. These include, but are not limited to, items such as household furnishings, household appliances, mattresses, box springs, and lawn equipment. Table 7.1.1 shows bulky waste services provided by local governments in the Plan area.

Table 7.1.1: Bulky Waste Collection Services Offered by Local Governments.			
Local Government	Service Provided by Local Government or Its Contractor	Collection by Appointment Only	Separate Usage Fee Charged?
Charlotte	Yes	Yes	No
Cornelius	No	No	N/A
Davidson	Yes	Yes	No
Huntersville	Yes	Yes	Yes
Mint Hill ¹	White Goods Only	Yes	No
Pineville	Yes	Yes	No
Matthews	Yes	Yes	No
¹ Mint Hill residents are provided the collection of white goods only, for no additional charges. All other items, such as furniture, construction materials must be scheduled from waste collection services from the private sector.			

Bulky items are often collected on the same day as regular garbage collection; however, a household must schedule a pick-up in order to have these items removed. Household appliances, also called white goods, are banned from disposal under North Carolina Solid Waste Rules and are taken to Mecklenburg County's Metal and Tire Recovery Facility (see section 4.5). Examples of white goods include washers, dryers, refrigerators, and water heaters. All other bulky items collected are taken to the BFI Charlotte Motor Speedway Landfill. This discussion applies to the City and Towns in the SWMP area. It is not known how private haulers manage bulky waste in the unincorporated areas of Mecklenburg County or in the Town of Mint Hill which does not provide the service. Bulky waste is reported as part of curbside garbage tonnages (see Table 7.1.2). Consequently, it is not known how much bulky waste is generated in the county.

Assessment

Mecklenburg County has a successful white goods recycling program. Both the local governments and private sector collect these items.

7.1.2 Curbside Solid Waste Collection Service

The City and all of the Towns except Matthews collect garbage curbside using a fully automated truck paired with one or more 96-gallon carts. They also all provide, on a limited basis, semi-automated and manual collection to address special needs and circumstances. For example, the Town of Mint Hill utilizes a semi-automated system for curbside collection and continues to provide backyard services for special circumstances, such as customers with physical disabilities. The Town of Matthews uses a semi-automated collection system as its normal operating system. All of the garbage collected from municipal curbside customers is taken to the BFI Charlotte Motor Speedway Landfill under a contract with the County.

With the exception of Charlotte and Matthews, Towns do not generally track the quantity of garbage disposed. There is currently no requirement in their contracts with their respective haulers to report this data in a verifiable way. Annually, the Towns must complete a Solid Waste Annual Report (SWAR) and submit this data to the State of North Carolina. For this data, the Towns are dependent upon their contracted hauler.

Assessment

Collection service is adequate.

Recommendation

- Continue and expand collection service. Develop verifiable data collection and tracking protocols for all of the governmental entities within the Planning Area.

7.2 Residential Multifamily MSW (non-curbside) Collection

As noted in the above discussion, the City and certain Towns provide curbside service to a portion of the multi-family complexes within Mecklenburg County. The balance of MSW collected from multifamily complexes is collected in bulk, either in front-load containers, often called “dumpsters”, (usually 8 cubic-yards each) or with roll-off containers or compactors (usually 20, 30, or 40 cubic-yards).

Due to how the weight data is reported, the balance of multi-family units which receive non-curbside collection service are divided between those subscribing to the City of Charlotte and those receiving private service.

The City has a program which provides garbage, recycling, and bulky item collection, but not yard waste collection to multi-family complexes with thirty (30) or more units. This subscription service is provided to approximately 111,000 multi-family units. The MSW from these locations is taken to the BFI Speedway landfill.

For the balance of multifamily units which receive private service, the MSW is taken to a landfill or transfer station of the haulers choosing and this waste is counted as “commercial” waste and appears in the total in Table 7.3. The reason is that the hauler which services these multifamily accounts incorporates them into a route which includes other commercial pickups. The landfill or transfer station scale-house counts these vehicles as commercial waste as they pass over the scales.

Assessment:

System for multi-family garbage collection is adequately provided by the public and private sectors. Challenges remain in providing services that divert waste from landfills (e.g., recycling).

Recommendations

Private and public sectors should continue MSW collection to multi-family units while increasing efforts to provide recycling and waste reduction programs.

7.3 Commercial Sector Municipal Solid Waste Collection

With the exception of the small businesses serviced by the City of Charlotte and Towns of Davidson, Huntersville and Matthews, all commercial solid waste in the County is collected by one or more of the private garbage companies servicing the area. Mecklenburg County has 34 permitted haulers who provide garbage collection service for the commercial sector. All haulers must be permitted annually by Mecklenburg County. Table 7.3 provides historical commercial waste data.

Table 7.3: Historical Mecklenburg County Waste Disposed (tons/yr.)							
	98/99	01/02	02/03	03/04	04/05	05/06	06/07
Commercial	641,072	615,519	613,230	601,925	548,338	760,428	790,650

City of Charlotte

The City of Charlotte provides limited garbage service to some businesses within the Central Business District (CBD). In addition, businesses generating 512 gallons or less of waste per week may apply with the City for garbage collection service. Approximately 2,300 businesses subscribe to this service. These businesses must provide their own garbage containers. The same crews that service these small business containers also service public litter containers throughout Charlotte. In addition, for a fee of \$3 per animal with a minimum \$15 charge, dead animals are collected from veterinarian hospitals.

Town of Davidson

Davidson provides a stationary compactor that serves approximately 40 businesses in the downtown area. The compactor is paid for with ad valorem tax revenue. The Town also will pick up from a business at curbside if they can operate with no more than 2 rollout carts.

Town of Huntersville

A few small businesses receive collection under the current contract, but overall the Town does not offer this service to the non-residential sector.

Town of Matthews

The town provides garbage service to about 150 small business locations, using 96-gallon roll-outs. They can obtain up to 3 roll-outs. These are scattered throughout the town and generally do not generate enough waste to justify a dumpster. The town is also in the process of establishing a voluntary recycling program for these same locations and estimate that 75 locations may take advantage of the service.

Mecklenburg County

Garbage Collection in Public Schools and Government Buildings

The Charlotte-Mecklenburg Schools (CMS), Mecklenburg County Alcohol Beverage Control Board (ABC) and Central Piedmont Community College each have an Interlocal Agreement with Mecklenburg County for garbage collection services. The agreement authorizes Mecklenburg County to administer garbage collection services to these programs. This partnership has allowed for greater economies of scale by combining

collection services for CMS, ABC, Central Piedmont Community College, and Mecklenburg County office buildings and facilities.

7.4 MSW Disposal Facilities

Since the closing of the County’s University City Resource Recovery Facility (the incinerator) in October 1995, all Mecklenburg County MSW has been disposed of in landfills. The County currently has a contract with Allied Waste, Incorporated (Allied) for the use of the BFI Charlotte Motor Speedway Landfill in Cabarrus County for disposal of residential wastes generated within the Mecklenburg Planning Area. The contract with Allied is effective through June 30, 2012.

The County opened the US521 Landfill (called the “Foxhole” Landfill) in the spring of 2000. The Foxhole Landfill is permitted to dispose MSW. But, due to the contract with Allied, the Foxhole will be limited to the disposal and recycling of construction and demolition waste and as a public convenience center for solid waste management through the contract period, or until such earlier time as the contract may be terminated by some unforeseen event. At the projected rates of waste generation, the Foxhole Landfill could provide disposal capacity for residential waste until 2030 with the cessation of C&D deliveries and conversion to solely receiving residential waste. The Foxhole Landfill is an ISO 140001 certified facility.

Mecklenburg County will continue to work on long term, cost-effective alternatives for municipal solid waste disposal through the private sector for the period following the termination of the BFI Charlotte Motor Speedway Landfill contract; and if agreements can be worked out would limit the use of the Foxhole during the terms of the agreements to the disposal and recycling of construction and demolition waste and as a public convenience center for solid waste management.

Table 7.4-A below lists the landfills that received MSW generated in Mecklenburg County and the corresponding tonnage for FY 2006/07. Not all waste was directly hauled to these facilities.

Table 7.4-A: Landfills Receiving Mecklenburg MSW in FY 2006/07		
Landfill	Tonnage	% of Waste Stream
BFI Charlotte Motor Speedway Landfill	749,124	75%
Chambers Development MSWLF	5,298	<1%
Gaston County Landfill	286	<1%
Foothills	55,237	5%
Lee (SC)	6,050	<1%
Rowan County Landfill	98	<1%
Palmetto	55,192	5%
Union County Regional MSWLF (SC)	123,466	12%
Uwharrie Env. Reg. Landfill	4,608	<1%
Total	999,359	100%

Table 7.4-B below shows the transfer stations that received MSW generated in Mecklenburg County and the corresponding tonnage for FY 2006/07. These facilities transported waste to landfills listed above. Note that the Queen City Transfer Station waste is already counted in Table 7.4-A. The other two transfer stations are outside of Mecklenburg County, so their waste needs to be added to the total in table 7.4-A in order to equal the total MSW disposed in Mecklenburg County.

Table 7.4-B: Transfer Stations Receiving Mecklenburg MSW in FY 2006/07		
Transfer Stations	Tonnage	% of Waste Stream
Container Company of Carolina MSW TS (Fort Mill)	113,360	28%
Queen City Transfer Station	237,347	59%
Waste Management of Carolinas	48,537	12%
Total	399,244	100.0

The BFI Charlotte Motor Speedway Landfill and the Foxhole Landfill, both have recently received permits for modifications. The permit modifications provide for disposal capacity to handle current waste generation rates beyond this planning horizon. In addition, private sanitary landfills are available to provide additional disposal capacity for Mecklenburg County via transfer stations.

8.0 Litter Prevention and Management

Litter was once described as “one of the most neglected and obvious forms of environmental degradation” (Anon)

Litter, refers to roadside litter such as category and volume unique to: interstate and county road systems, construction sites, commercial areas, illegal dump sites, parks, cars, trucks, and litter in general.

8.1 Background

In FY1999/2000, Mecklenburg Board of County Commissioners directed solid waste officials to develop a comprehensive litter prevention plan. The plan was completed in 2001 and contained specific modules addressing litter issues. Primary components of the plan include clean up, prevention, promotion, enforcement, and legislation, all directed towards making litter prevention a priority. Litter Prevention was first included in the 2003 Solid Waste Management Plan and established FY 2001/02 as the base year for the litter reduction goals.

The Litter Prevention Program is designed to address cleanup, enforcement, prevention, and legislation.

- Clean up: Local and State funding for cleanups diminished and increasingly the responsibility shifted to the municipalities to meet political and citizenry expectations. In FY05, the City of Charlotte Special Services Division of Solid Waste Services retired their litter removal agreement with the NC Department of Transportation for I-277 and interstate exit ramps (State highways) within the uptown radius due to budget restrictions. The City of Charlotte spent \$2 million dollars in 2008 on cleaning the streets of Charlotte.
- In July 2007, NCDOT signed a maintenance contract with a private company for a five year term (with an option for another five year renewal) which covered all the interstates in Mecklenburg County (to include Gaston and Cleveland counties). This in effect helped the local NCDOT concentrate on the County roads and highways, and the areas in the County that needed attention. The new NCDOT interstate contract spent over \$1 million on litter pick up in the first year (this figure also includes both Gaston and Cleveland counties).
- Enforcement: In order for litter prevention to be meaningful and influential, behavior modification and enforcement must be enacted. Currently, because of other high priority issues such as violent crime, drugs and burglary, litter enforcement has not been as effective as it could be. Education has therefore become a major focus to make behavioral and cultural changes.
- Prevention: Activities are multi-faceted and designed to focus on materials and messages to reach a diverse audience. Partnerships with other governments, departments, agencies and groups will be necessary to enhance the educational process to forge a private/public relationship with a shared goal of a litter free environment.

- Legislation: A key element to the program. Enacted litter laws have advanced the cause. However, the intent is for local governments to develop ordinances to reflect specific issues within their domain. A renewed emphasis must be placed on tarps, both the use and condition of, for contractors and their sub-contractors in the construction and demolition industry and for loaded pick up trucks in general.

The current North Carolina anti-litter law, General Statute § 14-399 (2001-2002), includes both fines and community service time for both intentional and unintentional littering. The text below is only a sample excerpt; please view the law in its entirety for a better understanding of the law and the penalties for intentional and unintentional littering.

§ 14-399. Littering. (a1) No person, including any firm, organization, private corporation, or governing body, agents, or employees of any municipal corporation shall scatter, spill, or place or cause to be blown, scattered, spilled, or placed or otherwise dispose of any litter upon any public property or private property not owned by the person within this State or in the waters of this State including any public highway, public park, lake, river, ocean, beach, campground, forestland, recreational area, trailer park, highway, road, street, or alley...

(c1) Any person who violates subsection (a1) of this section in an amount not exceeding 15 pounds is guilty of an infraction punishable by a fine of not more than one hundred dollars (\$100.00). In addition, the court may require the violator to perform community service of not less than four hours or more than 12 hours. The community service required shall be to pick up litter if feasible and if not feasible, to perform other labor commensurate with the offense committed. Any second or subsequent violation of subsection (a1) of this section in an amount not exceeding 15 pounds within three years after the date of a prior violation is an infraction punishable by a fine of not more than two hundred dollars (\$200.00). In addition, the court may require the violator to perform community service of not less than eight hours or more than 24 hours. The community service required shall be to pick up litter if feasible and if not feasible, to perform other labor commensurate with the offense committed. For purposes of this subsection, the term "litter" shall not include nontoxic and biodegradable agricultural or garden products or supplies, including mulch, tree bark, and wood chips....

8.1.1 Litter Composition

In July 2007, an analysis of visible litter was conducted by a private consulting firm. The state and year of the survey is shown on the left axis. The categories are shown across the top of Table 8.1.1. Interestingly, "miscellaneous papers" ranked highest in the State of North Carolina's composition study.

Table 8.1.1 Composition of Litter: IAR-Based Surveys (1993-2006)

State/Year	Take Out Food Packaging	Snack Wrappers	Misc Papers	Misc Plastic	Vehicle Debris	Beverage Containers	Napkins Bags Tissues	Misc Metal & Glass	Other Beverage Related	Construction Debris
TN 06	6.7%	9.7%	18.0%	21.1%	14.5%	5.2%	1.8%	9.2%	3.9%	4.0%
GA 06	9.7%	9.4%	18.6%	22.3%	9.1%	4.4%	4.6%	8.2%	2.8%	1.3%
NJ 04	14.3%	9.3%	12.9%	7.7%	4.4%	9.2%	6.9%	8.0%	5.0%	1.9%
NC 01	11.1%	14.5%	16.2%	7.4%	7.5%	11.1%	6.3%	2.5%	4.2%	4.3%
MS 00	19.7%	9.3%	9.1%	6.7%	7.4%	13.1%	7.0%	3.1%	4.4%	5.4%
PA 99	n/a	21.0%	7.0%	n/a	13.0%	5.1%	n/a	n/a	3.6%	6.0%
OK 98	n/a	15.0%	n/a	n/a	n/a	12.4%	n/a	n/a	n/a	n/a
KY 98	15.7%	12.7%	8.3%	7.9%	12.1%	8.6%	4.2%	1.7%	4.6%	7.5%
HI 93	14.4%	15.1%	7.0%	10.8%	2.5%	7.3%	13.4%	2.2%	5.3%	3.2%
Avg:	13.1%	12.9%	12.1%	12.0%	8.8%	8.5%	6.3%	5.0%	4.2%	4.2%

(Source: Survey RW Beck for Keep America Beautiful July 2007)

8.1.2 Goals

The Litter Index (*a measurement tool developed by Keep America Beautiful, Inc is currently under review*) is a “windshield survey” which is applied annually, at approximately the same time each year. Over time, comparisons of the Litter Index data are used to evaluate results and identify problem areas and develop strategies and programs that will change attitudes and behaviors regarding litter and related community improvement issues. The Plan establishes the following litter reduction goals, summarized in Table 8.1.2:

Table 8.1.2: Summary of Litter Index Rating	
<i>Year</i>	Litter Index Value
2003: Base Year	2.3
FY04-07: First Goal	2.2
FY08-10: Second Goal	2.1
FY11-13: Third Goal	2.0
<i>(Rankings: 1 = No Litter; 2 = Slightly Littered; 3 = Littered; and 4 = Extremely Littered)</i>	

8.1.3 Litter Index Scores

The first Litter Index was conducted prior to the 2004 certification into the Keep America Beautiful organization. The scores of FY01 and FY02 (see Table 8.1.3) were based upon more complex criteria than necessary to achieve a valid score. Therefore, FY03 serves as the base year indicator.

Table 8.1.3: Litter Index Scores	
Year	Score
FY01	2.6
FY02	2.3
FY03	2.3
FY04	2.3
FY05	2.1
FY06	1.6
FY07	1.9
FY08	1.6

8.2 Clean up Programs

Beginning July 1, 2005, in an effort to reduce costs, City of Charlotte Special Services was mandated to cease removal of roadside litter from these roads, thereby transferring the responsibility back to the North Carolina Department of Transportation. NC DOT operates on a monthly cleanup schedule and is authorized to use only Department of Correction inmate labor.

The City provides on-going litter clean-up services along public rights-of-way, including illegal dumping sites, and provides specialized neighborhood support services to assist communities in cleaning up their neighborhoods. The City provides support services for the County's "Adopt-A-Stream" program. The City also manages an "Adopt-A-Street" program, supports the local Keep America Beautiful chapter, and conducts litter prevention training in the elementary schools. The City supports the Keep America Beautiful Annual Litter Assessment to measure year-to-year progress in reducing litter. Specific targets are included in the City's Solid Waste Services Strategic Operating Plan. The City manages a Neighborhood Gardening Program to help neighborhoods transform untended vacant lots into useful neighborhood vegetable gardens. The City Police Department participates, along with the NC State Police, in at least 2 "Litter Stings" each year to elevate enforcement of littering laws and to raise public awareness. Litter enforcement is included in the City Health and Sanitation Ordinance and NC State Statutes. Illegal dumping is included. The Code Enforcement Division has achieved a number of successful prosecutions for illegal dumping and public nuisance violations. The Police Department (CMPD) has issued numerous littering citations. Additionally, residential streets are swept for leaves in the fall. Leaf sweeping is performed twice between November and January each year.

Several Towns in the County participate in Litter specific clean up programs.

The Town of Matthews participates in the semi annual litter sweep and has a number of adopt a highway and street programs in effect, and occasionally utilizes the Sheriff's department inmate labor to clean specific areas.

The Town of Cornelius participates in the Big Sweep and neighborhood clean ups and has a code ordinance department which deals with all aspects of litter to include industrial and commercial.

The remaining towns of Davidson, Huntersville, Pineville and Mint Hill reported that they either partnered with Mecklenburg County programs or had local ordinances in place but were not specific.

8.2.1 Contracted Services

The most significant change has occurred with the signing of the private maintenance contract for the interstates with the NCDOT in July 2007. The scope of work in regards to litter is based on a performance criteria and encompasses a sweeping program once a month, large debris removal once a week and mowing services (7 cycles per year) this in conjunction with a litter pick up at least once a month, with a daily litter patrol to identify and act upon areas in need of immediate action.

The local NCDOT for Mecklenburg County (divided into two sections east/west) utilizes the Department of Correctional Services workforce (State wide contract) to remove the litter on County highways. This includes sweeping the major County highways at least once a month, and litter pick up twice a month. The private contract for the maintenance on the Interstates has enabled the local NCDOT to become more effective dealing with the litter issues on our local highways/roads.

A private contractor has also been provided by the County through Keep Mecklenburg Beautiful to provide litter removal services from schools and roadsides with a labor crew of 8, generally working 8 hours per person per day. In addition, the County provides equipment and tools to support the service agreement such as bags, vests, and litter grabbers. Because inmate labor cannot be situated on or around school premises selected schools are scheduled for a monthly clean up.

State roads that NC DOT cannot service within a reasonable timeframe or roads that receive multiple public complaints regarding littered conditions are also given consideration by this program. This program is utilizing labor provided by Urban Ministries and the County is looking to expand this program to include other scopes of work as the program grows.

Cleanup projects are evaluated and assigned based upon severity of conditions, safety concerns and the inability for the proper agency to perform cleanup operations within a reasonable period of time

Recommendation

- Continue removal and disposal of school and roadside litter, track and monitor work performed. Coordinate with the NC DOT to identify schools and roads targeted for cleanup. Ensure adequate budgeting allocations for annual work load and other cleanups as the program evolves.

8.2.2 Adopt-A-Highway

Created in 1988, by the NC DOT, Office of Beautification, the volunteer-based program has saved taxpayers million of dollars annually in roadside cleanup costs. Each section of adopted highway is approximately two miles long and requires cleaning four times per year. FY 07/08 data from NC DOT reports that 1028.95 miles of state maintained roads in Mecklenburg County (as reflected in Table-8.2.2) are available for adoption in the

County. Roads can be adopted by businesses, churches, civic organizations, schools, professional organizations, individuals, and family groups.

Table 8.2.2: State Maintained Road Miles in Mecklenburg County	
Type	Miles
Primary Roads	282.00
Secondary Roads	746.95
Total	1028.95

This information is for the current calendar year 2008. NCDOT has 89 active contracts with 154.6 miles being adopted. Of those 89 contracts 10 have expired.

NCDOT has processed 47 applications since July 1, 2008. Of those 47, 8 are under contract (13.3 miles), 33 have been sent an agreement contract for signing, and 6 are pending waiting for information from the applicant.

Since January 2008, only 33 of the contracts have had a litter pickup for a total of 59.2 miles. NCDOT has sent out flyers, postcards, and reminder letters for upcoming events such as the Litter Sweep.

Of the 1028.95 miles of primary and secondary roads available, only 154.6 miles or 15% have been adopted.

Mecklenburg County is allocated one NCDOT Adopt-A-Highway (AAH) Coordinator to manage the program locally. For safety reasons, interstate highways are excluded from the program.

Keep Mecklenburg Beautiful began a partnership with the local AAH Coordinator to assist in promotion of the program and to conduct outreach efforts to encourage renewed interest in participation.

Recommendation

- Manage maintenance components of the program by annual review of contracts. Encourage more frequent cleanups and promote program on a semi-annual basis. Provide inventory of supplies, such as bags, gloves and vests. Investigate feasibility of the County and/or City collecting bags after cleanups to supplement NC DOT removal schedules.
- If NCDOT funding allows an interactive Arc GIS map is planned to be part of the program, to allow the public to view what is current and available for adoption.

8.2.3 Adopt-A-City-Street

The program referred to in this section of the Mecklenburg County Solid Waste Plan is called "Adopt-A-City Street". It is wholly coordinated and managed by Keep Charlotte Beautiful. There are currently 83 actively adopted City streets and City street clusters. Upon approval by the Keep Charlotte Beautiful Executive Director, Charlotte DOT posts two signs for each street adopted in excess of one mile. The signs have the Keep

Charlotte Beautiful logo along with the name of the group or individuals adopting the street. According to their agreements with Keep Charlotte Beautiful, participants clean their adopted street or cluster once every quarter. Keep Charlotte Beautiful provides supplies such as bags, gloves, vests, and trash grabbers. Participants are also given signed authority by the City's Code Enforcement Division Manager to remove signs posted in violation of the City's Health and Sanitation Ordinance. Recently, Adopt-A-City-Street sub-committee chairpersons successfully updated the program's database, and are working on plans to further market the program to more Charlotte neighborhoods.

Recommendation

Continue and expand program

8.2.4 Big Sweep

Started in 1987, NC Big Sweep is committed to the removal of trash from waterways the first Saturday in October. Failure to remove litter from waterways contaminates drinking water and can cause damage to wildlife and property. The local program operates out of the Water Quality Section of LUESA. It has a very strong volunteer base and a history of successful events. In 2008, over 735 volunteers removed 17,000 pounds of trash from Mecklenburg County waterways.

Recommendation

- Investigate partnership with Keep Mecklenburg Beautiful, Keep Charlotte Beautiful and the Big Sweep volunteers to expand litter removal activities during Big Sweep during the first week of October.
- Encourage all the participation of all municipalities in the Big Sweep program

8.2.5 Neighborhood Improvement

The City of Charlotte Code Enforcement Division is responsible for enforcing the City's Health and Sanitation Ordinance, Zoning, Minimum Housing Standards and other local ordinances. The City's Health and Sanitation Ordinance addresses the abatement of nuisance issues within City limits, such as junk and hazardous vehicles, illegal dumping, graffiti, unauthorized accumulations of litter, illegal curbside bulky items, signs placed in the City right of way, tall weeds and grass, and others. Keep Charlotte Beautiful is a part of Charlotte Code Enforcement Division. Charlotte Code Enforcement Officials and Keep Charlotte Beautiful have established networks and resources for nuisance abatement within City limits. Mecklenburg County does not provide dumpsters, labor and promotional material for Charlotte Code Enforcement.

Recommendation

- Investigate partnerships with inspectors to further litter prevention efforts and to expand the resource base.

8.2.6 Inmate Labor

Operating out of the Mecklenburg County Sheriff's Office (MCSO), inmates provide labor services for a variety of community services including litter removal from roadsides. Crews consist of 12 prisoners and 3 officers. Due to numerous agencies competing for services, demand exceeds supply. These are the figures for 2007/2008:

<u>Location Worked</u>	<u># Hours</u>	<u>\$ Savings</u>
Community	8,969	\$91,035.35
Roadside	1,681	\$17,062.15
MCSO	11,748	\$119,242.20
Garage	6,688	\$67,883.20
Totals	29,086	\$295,222.90

Recommendation

- Develop a “request for services” schedule to facilitate routine clean ups to avoid competitive requests for services from other city and county agencies. Recognize work preformed by the Inmate Labor Program to help reverse negative public opinion that inmates are not utilized for litter removal.
- Develop relationship with NCDOT so that the bags from the litter removal are picked up in a timely manner.

8.2.7 Litter Sweep

Conducted bi annually by the NCDOT (in conjunction with the North Carolina Office of Beautification.) These statewide events are scheduled for the spring and fall and are for a period of two weeks each. The local County offices supply vest gloves and bags for those that volunteer and in addition labor is provided by the NCDOC (North Carolina Department of Corrections) to participate in this program. NCDOC has a statewide contract to provide inmate labor for litter removal.

Recommendations

- To promote the participation of volunteers in the bi annual Litter Sweep in partnership with NCDOT.

8.3 Prevention

8.3.1 Keep Mecklenburg Beautiful

Certified in 2004, Keep Mecklenburg Beautiful (KMB) meets monthly and has an active board of directors of 20 members. In addition to required Keep America Beautiful, Inc. program participation, KMB develops signature programs such as removal of campaign election signs. KMB is funded by County funds with an approximate operating budget of \$126,000.

Prior to certification, the Litter Prevention Program initiated its “branding” (promotional) campaign which was greatly intensified beginning in 2004. An annual marketing plan is activated utilizing television, radio and print media. Television and radio spots are aired strategically and run throughout the budget year. Print ads and billboards are featured as warranted.

Annually, KMB participates in the Great American Cleanup™ (GAC) from March 1 through May 31, involving an estimated 2.8 million volunteers and attendees. The hardworking volunteers donated more than 7.7 million hours in 2007 to clean, beautify and improve more than 17,000 communities during more than 30,000 events in all 50 states and beyond. The GAC is the signature program of Keep America Beautiful. KMB

is able to glean supplies and promotional products through the GAC™ sponsorships which enable greater participation from the citizenry of Mecklenburg County.

KMB staffs booths at public venues speaks to civic groups and private sector audiences; and works closely with all organizations in designing and implementing year-long litter prevention activities.

Recommendations:

Pursue more public/private partnerships to expand the Keep Mecklenburg Beautiful message. Existing local relationships with Coca Cola Consolidated and Harris Teeter need to be expanded to encapsulate the message of litter prevention and the whole Wipe Out Waste concept. Current activities include initiatives to boost curb side recycling rates with both entities for inception in early 2009. Coke is also bringing an education and awareness pilot program to 6 CMS middle schools starting in 2009 and looking at recycling possibilities with Mecklenburg County Park and Rec.

Harris Teeter has also implemented a highly successful plastic bag recycling competition which we are hoping to have a higher participation of CMS Schools in the scheduled events for 2009.

Continue the successful Candidate pledge sign removal campaign. In conjunction with the city's enforcement of illegal signs, this awareness program has seen significantly improved visual results for 2008.

Continue, in association with NCKAB to participate in the Annual Tarp day event held in October. In 2007, 1000 tarps were distributed with educational material from 4 full service recycling locations, the figure for 2008 was 250 tarps in one location due to an availability issue with the tarps. This is an effective education program and will be actively pursued in 2009.

Maintain certification status. Develop sustainable programs to engage greater public participation. Build volunteer base and increase participation of Board members.

Build a strong relationship between Keep Mecklenburg and Keep Charlotte Beautiful.

8.3.2 Keep Charlotte Beautiful

Founded in 1974, Keep Charlotte Beautiful (KCB) is one of the nation's first Keep America Beautiful affiliates. The KCB committee is comprised of 20 volunteers appointed by the City of Charlotte's Mayor and City Council. The administrative and staff support is provided by the City of Charlotte's Neighborhood Development Department with additional assistance from City of Charlotte Solid Waste Services, City of Charlotte Corporate Communications and the Charlotte-Mecklenburg Police Department.

KCB operates within the City of Charlotte Neighborhood Development Key Business Unit. It has an active 20-member Board of Directors and meets monthly. In addition to participation in required KAB, Inc. program, they manage several signature programs, such as Adopt-A-City-Neighborhood, Adopt-A-City-Street, Graffiti Abatement and Education, Quarterly Litter Stings, Recycling Projects, annual Litter Index, and various cleanup and beautification projects associated with the Great American Cleanup.

Recommendation

- Investigate partnership opportunities with Keep Charlotte Beautiful and coordinate efforts to maximize clean up, beautification and promotional activities.

8.3.3 Swat-A-Litterbug

Keep Mecklenburg Beautiful administers this program. It is an effective tool whereby individuals can report incidents of litter law violations from vehicles to KMB by calling 704-432-1772, mailing the Swat cards or submitting them electronically through www.swatalitterbug.com. A letter is sent to the owner stating that littering violations can result in a monetary penalty. Included in the letter, signed by the Executive Director of KMB, are a litterbag and a pocket ashtray depending on the violation.

KMB reports that more than 3,500 letters are sent to litter offenders annually. All pertinent information must be an exact match before a letter can be sent. In accordance with NC stalking laws, information is not shared nor retained. All records are destroyed at month end. This program empowers the public to take action in a non-confrontational manner and it has a strong participation history.

Recommendation

- Continue to grow the program through www.swatalitterbug.com
- Link Swat calls to 311 in order speak to a 'live' person, to eliminate errors in reporting and receive the exact information required to send the violator a 'swat.'

8.3.4 Promotion

Promotional strategies include a Volkswagen Beetle the 'Litter Critter' that serves as a mobile sign carrying the "Keep Mecklenburg Beautiful" and "Swat a Litterbug" message that citizens should take responsibility for improving their environment. In addition to media outlets, miscellaneous materials such as pencils, activity books, fact sheets, educational kits, litter bags, pocket ashtrays and signage convey the desired message. Staffed display booths and presentations are key components to program promotion.

Recommendations

- Develop long-term communication strategies. Develop and disseminate multi-language materials.
- Promotion to schools. Develop a program with objectives that address recycling, litter abatement, beautification, preservation of the earth, and natural resource conservation in conjunction with the present programs offered by the County.
- Recommend promotional programs to reach out to the commercial sector regarding recycling and litter awareness.

8.4 Enforcement

8.4.1 Environmental Court

Environmental Court was established in January of 1995 by administrators of the 26th Judicial District and representatives from City and County regulatory agencies. The

court provides a docket whereas the same judge consistently presides and the same assistant district attorney prosecutes. This provides officials with a vital tool to deal with noncompliance of local and state codes pertaining to environmental issues and the subsequent community quality of life.

8.4.2 Litter Stings

An annual event that began in July 2000. It was conducted by the Charlotte-Mecklenburg Police Department. Although the officers were looking for all kinds of littering, the primary focus was on uncovered vehicles and unsecured truckloads and cigarettes. Following the initial sting, the Keep Charlotte Beautiful Committee has taken ownership of the project. The spring litter sting of 2008 reported 110 violations; 10 for litter, 3 intentional and 7 unintentional.

Litter “Stings” increase litter awareness and solving the litter problem. The media is generally very interested and it created a promotional opportunity for print and TV exposure. Additionally, the public perceives this as a positive action and a vital service in dispelling their belief that nothing is being done. The number of “Stings” to be conducted is determined by the Police Department based upon their work-load and conditions at specific times.

Recommendation

- Investigate feasibility of conducting stings in township in conjunction with Charlotte-Mecklenburg Police Department and Keep Charlotte Beautiful.
- NCKAB to investigate a state wide ‘sting’ with local, county and state enforcement agencies.
- Build relationship with CMPD to link to www.swatalitterbug.com

8.4.3 Township Police Involvement

Keep Mecklenburg Beautiful, in partnership with the Police Chiefs of Cornelius, Davidson, Huntersville, Matthews, Mint Hill and Pineville need to develop programs and special events to bring awareness to litter laws and to encourage the issuance of citations for littering offenses.

8.4.4 Commercial Sector

Mismanagement of wastes on construction/demolition sites and improper containment of waste materials being hauled from job sites contribute to the litter problem in our County. Much of this littering is “unintentional,” a significant amount of litter is “blown not thrown,” but it is still a factor and there are steps that can be taken to address the problem. In most cases, the general contractor has responsibility for a job site and can set policy and require cooperation regarding litter prevention by employees, sub-contractors and vendors. The contractor can respond to violations of this policy in the same way they respond to non-compliance of other contract requirements.

Recommendation

- Develop educational tools for distribution to the construction community.
- Pickup Truck Tarp Ordinance. Research and consider an ordinance requiring pickup trucks to be covered and/or secured much in the same manner as commercial waste hauler trucks. Require that mulch purchases must be tarped before leaving the compost facilities.

8.4.5 Other Recommendations

- Conduct research regarding litter related ordinances/laws and methods for encouraging the writing of litter citations from law enforcement officers. Review litter enforcement-related ordinances/laws for effectiveness.
- Education. The need to change the attitude and culture towards littering. To include and not limited to public education, all enforcement agencies and the courts on the seriousness and cost to clean up after littering offenders.

9.0 Regulatory Activities

In 1984, the County received Delegation of Authority to enforce the North Carolina Solid Waste Management Rules administered through the Mecklenburg County Land Use and Environmental Services Agency (LUESA). In 2008, a Memorandum of Agreement updated the Delegation to reflect current rules and regulations. This Delegation provided the County authority to administer State rules countywide, including limited permitting and citing of violators. The County does not have the authority to permit sanitary landfills, C&D landfills, composting facilities, and treatment and processing facilities, or to permit and inspect County-owned facilities. The Delegation allows the County to more closely monitor solid waste facilities in order to better protect the local environment and the citizens of the County.

LUESA currently inspects the following sites and appraises the NC Solid Waste Section and site owners/operators of compliance status.

Facility Type	Number	Frequency
Sanitary Landfill	1	Monthly
C&D Landfill	1	Monthly
LCID Landfill	10	Monthly
Treatment and Processing	4	Monthly
Compost	2	Monthly
Transfer Station	1	Monthly
Medical Waste Incinerator	1	Monthly

The County may cite open dumping violations throughout the county. The City of Charlotte has additional tools, through its Code Enforcement Department, that it utilizes when it is deemed that those tools will result in a quicker resolution to the problem situation. Failure to comply may result in referral of the case to NCDENR for civil penalties or could be pursued criminally under NCGS 130A-25. The County may criminally cite violations under NCGS 14.399 "Littering" if persons depositing the waste can be identified.

The Mecklenburg County Health Department (MCHD) may cite open dumping violations under the Mecklenburg County Solid Waste Regulations. MCHD may also cite violations for rodent infestation and providing mosquito-breeding conditions.

In addition to the recently improved administrative penalties enacted by the State of North Carolina, the 26th Judicial District Environmental Court can assist local agencies in resolving solid waste non-compliance situations. Environmental Court was established in January 1995 by administrators of the 26th Judicial District and representatives from City and County regulatory agencies. The court provides a docket where the same judge consistently presides and the same assistant district attorney prosecutes. This provides officials with a vital tool to deal with noncompliance of local and state codes pertaining to environmental issues and affect the subsequent community quality of life. Initially, it was believed that the court had the potential to handle an estimated 3,000 cases per year. On an average, approximately 85 cases per year (this figure does not include Environmental Health violations) are brought before the court for action.

Within the City of Charlotte, the Community Improvement Division/Code Enforcement Section may cite open dumping violations under the local litter control ordinance Section 10-70.

The primary local ordinance that addresses commercial waste reduction activities in the Mecklenburg County Planning Area is the “MECKLENBURG COUNTY ORDINANCE TO REQUIRE THE SOURCE SEPARATION OF DESIGNATED MATERIALS FROM THE MUNICIPAL SOLID WASTE STREAM FOR THE PURPOSE OF PARTICIPATION IN A RECYCLING PROGRAM.” The Ordinance requires any business that generates 16 cubic yards or greater of trash per week, unless the business qualifies under one or more of the exemptions, to keep corrugated cardboard and office paper separate from their trash for the purpose of recycling. Enforcement activities under this Ordinance are addressed previously in this Plan.

Recommendation:

Litter and illegal dumping; especially of construction and demolition waste, is a problem in the County. Continue the current enforcement program, which includes aggressive enforcement, clean up, and education. Provide litter prevention workshops at job sites and to contractors and sub-contractors transporting supplies and materials to and from job sites. It will be necessary to evaluate feasibility of referring all littering related citations to the Environmental Court. LUESA has established a litter control program that is described previously in this Plan.

10.0 Solid Waste System Financing

The Mecklenburg County solid waste management system is truly county-wide, including all of the incorporated jurisdictions and the unincorporated areas in the County. The system is bound together by a series of interlocal agreements between the County and the various political jurisdictions and is funded through a series of fees, revenues, tax levies and state reimbursements. The following generally provides an overview of the funding mechanisms of each participant in the Mecklenburg County solid waste system.

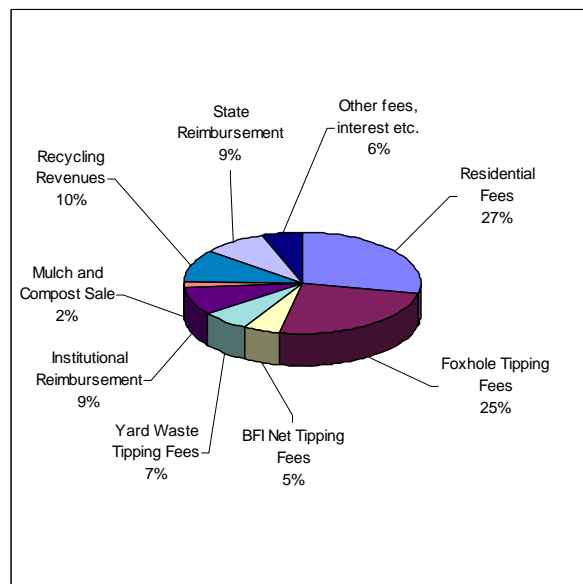
10.1 Mecklenburg County

Mecklenburg County Solid Waste is a unit of the Mecklenburg County Government and is organized as part of the Land Use and Environmental Services Agency. However, for budget purposes, it is established as a unique entity within the County Government and called the Solid Waste Enterprise Fund. This fund is a Proprietary Fund in the County's Comprehensive Annual Financial Report and is not funded through taxes collected into the County's General Fund. It is the only such enterprise fund in Mecklenburg County Government. The Solid Waste Enterprise fund is intended to be self-supporting through user fees and recyclable materials sales, and financially it accounts for all activities relating to recycling and disposal.

There are several relevant and subordinate funds that account for portions of Solid Waste's operations. These include Capital Reserve Funds for the purchase of capital equipment, future Landfill Construction, Final Development and Post Closure. Additionally, there are two Fiduciary Funds, the Scrap Tire Special Revenue Fund and the Discarded White Goods Special Revenue Fund. The Reserve Funds receive their monies from contributions from the Solid Waste Enterprise Fund. The two Special Revenue Funds receive disbursements from the North Carolina Department of Environment and Natural Resources from advance disposal fees collected by retailers at the point of sale for new tires and appliances.

With annual expenditures equaling annual revenues, County Solid Waste has a Fiscal Year 2009 operating budget of \$19.2 Million. A breakdown of revenue sources into the Solid Waste Enterprise Fund are shown below in Figure 10.1

Figure 10.1



Within the Fiscal Year 2009 operating budget, tipping fees collected at the County's facilities are anticipated to be the largest revenue source by category. In aggregate, tipping fee revenue is estimated at \$7 Million, accounting for approximately 37% of total revenues. Greatest of these are the tipping fees paid by private haulers depositing construction and demolition waste at the County owned Foxhole Landfill. These fees amount to about \$4.8 Million annually, or about 25% of total revenues.

The second largest revenue component is Residential Fees, which account for about \$5.4 Million, or about 27% of total revenues. These Residential Fees come from an "availability" fee assessed each residence in the County. The current fee is \$15 per year and the fee is collected as a separately itemized fee in the annual County property tax bill.

Of increasing importance, and now third as a revenue source, is the revenue obtained from the sale of recycled products. These recycled products are obtained from processing residential recyclables at the County's Metrolina Recycling Center and from selling scrap metal received at the County's four full-service recycling centers. At approximately \$2 Million, recycled product revenues now represent about 10% of total revenues. In the case of the Metrolina Recycling Center, the revenues shown are net of the operating costs paid FCR, the operating contractor for that facility

Direct reimbursements are received by County Solid Waste from a number of other governmental institutions for the actual costs of services provided. These services are recyclable and solid waste collection provided to the Charlotte Mecklenburg Schools, Central Piedmont Community College and other City and County governmental entities. The institutional reimbursements account for approximately \$1.7 Million or about 9% of total revenues. Other minor sources of revenue include interest on operating account balances and fees charged for private hauler licenses and certain educational classes provided by County Solid Waste.

10.2 City of Charlotte

All solid waste activities in the City of Charlotte are handled by Solid Waste Services (SWS), which is a Key Business Unit (KBU) of the City. The annual operating budget for SWS in the current fiscal year is approximately \$31.5 Million. All of SWS's activities are funded through the City of Charlotte's General Fund with monies being derived from two sources. Costs for the collection of solid waste, recyclables, yard waste and bulky waste are included in the City's ad valorem property tax levy which is collected annually. The approximate costs for solid waste disposal are recovered through a separately itemized and assessed annual Residential Solid Waste Fee of \$45. This fee is assessed on all residential units annually along with the property tax bill.

Other than those amounts described above, no additional fees are assessed for solid waste related services whether the service is directly provided by the City or by a private firm under contract to the City.

On average for the current fiscal year, the monthly cost per household for the various solid waste services breaks down as follows:

<u>Service</u>	<u>Monthly Cost</u>
Solid Waste Collection	\$4.41
Recyclable Collection	\$2.63
Yard Waste Collection	\$2.41
Bulky Waste Collection	<u>\$0.75</u>
TOTAL	\$10.20

The above amounts do not include the disposal costs associated with any service. In the City's accounting approach, these are broken out and billed separately as the Residential Solid Waste Fee. The City directly pays disposal costs even for those services provided by a private contractor.

10.3 Town of Cornelius

Solid waste services in the Town of Cornelius are managed by the Town's Public Works Department. The services are provided through a private contractor. The annual operating budget for the Town's solid waste services in the current fiscal year is approximately \$1.76 Million. The costs for all of the solid waste services are included in the Town's ad valorem property tax levy which is collected annually.

On average for the current fiscal year, the monthly cost per household for the various solid waste services breaks down as follows:

<u>Service</u>	<u>Monthly Cost</u>
Solid Waste Collection	\$7.65
Recyclable Collection	\$4.29
Yard Waste Collection	\$3.43
Bulky Waste Collection	<u>\$N/A</u>
TOTAL	\$15.37

The above amounts include all disposal costs. Disposal fees are paid directly by the private contractor providing the service and are billed to the Town along with the collection costs as a combined fee.

10.4 Town of Davidson

Solid waste services in the Town of Davidson are managed by the Town's Public Works Department. The services are provided through a private contractor. The annual operating budget for the Town's solid waste services in the current fiscal year is approximately \$678,000. The costs for all of the solid waste services are included in the Town's ad valorem property tax levy which is collected annually.

On average for the current fiscal year, the monthly cost per household for the various solid waste services breaks down as follows:

<u>Service</u>	<u>Monthly Cost</u>
Solid Waste Collection (incl. yard waste and bulky)	\$11.69
Recyclable Collection	<u>\$3.11</u>
TOTAL	\$14.80

The above amounts include all disposal costs. Disposal fees are paid directly by the private contractor providing the service and are billed to the Town along with the collection costs as a combined fee.

10.5 Town of Huntersville

Solid waste services in the Town of Huntersville are managed by the Town's Engineering and Public Works Department. The services are provided through a private contractor. The annual operating budget for the Town's solid waste services in Fiscal Year 2009 is approximately \$2.73 Million. The costs for all of the solid waste services are included in the Town's ad valorem property tax levy which is collected annually. The approximate costs for solid waste disposal are recovered through a separately itemized and assessed annual Residential Solid Waste Fee of \$54. This fee is assessed on all residential units annually along with the property tax bill.

On average for Fiscal Year 2009 the monthly cost per household for the various solid waste services breaks down as follows:

<u>Service</u>	<u>Monthly Cost</u>
Solid Waste Collection	\$7.78
Recyclable Collection	\$2.99
Yard Waste Collection	<u>\$4.43</u>
TOTAL	\$15.20

The above amounts include all disposal costs. A separate fee of \$40 is charged to a household requesting a bulky waste collection. Disposal fees are paid directly by the private contractor providing the service and are billed to the Town along with the collection costs as a combined fee.

10.6 Town of Matthews

Solid waste services in the Town of Matthews are managed by the Town's Public Works Department. The services are provided through a private contractor. The annual operating budget for the Town's solid waste services in the current fiscal year is approximately \$1.8 Million. The costs for all of the solid waste services are included in the Town's ad valorem property tax levy which is collected annually.

On average for the current fiscal year, the monthly cost per household for the various solid waste services breaks down as follows:

<u>Service</u>	<u>Monthly Cost</u>
Solid Waste Collection (incl. bulky waste)	\$6.83
Recyclable Collection	\$2.70
Yard Waste Collection	\$4.49
TOTAL	\$14.49

The amounts shown above for Matthews do not include disposal costs. Disposal fees are separately billed to the Town by the Speedway Landfill or by the County in the case of yard waste.

10.7 Town of Mint Hill

Solid waste services in the Town of Mint Hill are managed by the Town's Public Works Department. The services are provided through a private contractor. The annual operating budget for the Town's solid waste services in the current fiscal year is approximately \$1.8 Million. The costs for all of the solid waste services are included in the Town's ad valorem property tax levy which is collected annually. On average for the current fiscal Year, the monthly cost per household for all of solid waste services provided, including solid waste, recyclable yard waste and bulky waste collection was \$15.85. This amount includes all disposal costs. Disposal fees are paid directly by the private contractor providing the service and are billed to the Town along with the collection costs as a combined fee.

10.8 Town of Pineville

Solid waste services in the Town of Pineville are managed by the Town's Public Works Department. The services are provided through a private contractor. The annual operating budget for the Town's solid waste services in the current fiscal year is approximately \$282,000. The costs for all of the solid waste services are included in the Town's ad valorem property tax levy which is collected annually. On average for the current fiscal year, the monthly cost per household for the various solid waste services breaks down as follows:

<u>Service</u>	<u>Monthly Cost</u>
Solid Waste Collection	\$9.10
Recyclable Collection	\$3.08
Yard Waste Collection (incl. bulky waste)	\$4.83
TOTAL	\$17.01

The above amounts include all disposal costs. Disposal fees are paid directly by the private contractor providing the service and are billed to the Town along with the collection costs as a combined fee.

10.9 Interlocal Agreements

The relationships among the various parties to Mecklenburg County's solid waste system are underpinned by a series of interlocal agreements between the County and the partnered jurisdictions. Primary among these agreements are those between the County and the seven municipalities included within its borders. Of those agreements, the six with the Towns of Cornelius, Davidson, Huntersville, Matthews, Mint Hill and Pineville are essentially identical. All require the County to provide facilities to handle the solid wastes generated and likewise require the Town to deliver the wastes to those facilities. All of the Town interlocal agreements, with the exception of the Town of Matthews, commenced in 1989. The Town of Matthews entered into a new interlocal agreement, and the remaining Towns revised and extended their respective agreements, in July 2008. The term of all current interlocal agreements is for twenty years and they expire on June 30, 2028.

The interlocal agreement between the City of Charlotte and Mecklenburg County is somewhat different and more complex, in that it requires the County to receive "single stream" collected residential recyclables from the City. It also requires the City to commence "single stream" residential recyclable collection in July 2010. Provisions are made for phasing the transition.

There are also a number of interlocal agreements with non-municipal government entities located within Mecklenburg County. Specifically, the Charlotte Mecklenburg Schools, Central Piedmont Community College and the Mecklenburg County Alcoholic Beverage Commission each contract with Mecklenburg County Solid Waste to provide recyclable and solid waste collection services and to reimburse the County for the cost of the services provided.

In addition to the in-County agreements, Mecklenburg County entered into a Regional Solid Waste Agreement with Union County, North Carolina and Lancaster County, South Carolina in 1996. In return for Union and Lancaster Counties support in permitting the construction of a new landfill (ultimately the Foxhole Landfill), Mecklenburg County granted both counties disposal access to that landfill. Both counties were to encourage recycling with similar waste reduction goals to those adopted by Mecklenburg County. In addition to the Regional Solid Waste Agreement, Mecklenburg County has also entered into separate interlocal agreements with Union and Lancaster Counties allowing their residents to dispose of household hazardous wastes (HHW) at the Mecklenburg County Recycling Centers providing such services. Under the agreements, the two counties reimburse Mecklenburg County for the direct cost of providing this HHW management service.

11.0 Disaster Response

The County has a comprehensive Disaster Management/All Hazards Plan, portions of which cover incident debris management. The plan is maintained and updated by the Mecklenburg County Office of Emergency Management. Copies of the plan are available upon request.

The debris management plan identifies several locations as the primary locations for debris management:

- The Hickory Grove Recycling Center in the eastern section of the County,
- The North Mecklenburg Recycling Center in the northern section of the County,
- The Foxhole Landfill in the southern section of the County, and
- Compost Central in the western section of the County.

In addition to the sites maintained by the County, the Town of Matthews has a debris management site.

The County solid waste department participated in the development of a revised all hazards plan for the Mecklenburg County Planning area. Mecklenburg County solid waste role is primarily providing the debris management sites noted above.

The plan development process included a comprehensive analysis of factors affecting the identified debris disposal sites ability to meet long-term needs of the community and identified the need to develop a master plan(s) for the operation of the sites.

Recommendation

Continue to monitor and develop the County wide and site specific planning documents.