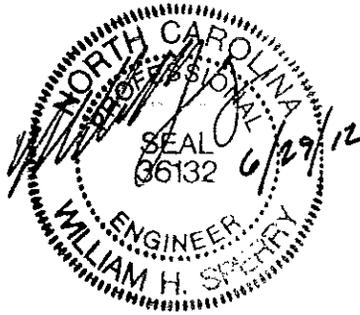


**THREE (3)-YEAR UPDATE  
For  
SOLID WASTE MANAGEMENT  
PLAN  
SWAIN COUNTY PLANNING AREA  
JULY 1, 2012 - JUNE 30, 2022**



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**SWAIN COUNTY, NORTH CAROLINA  
THREE-YEAR UPDATE  
TEN-YEAR SOLID WASTE MANAGEMENT PLAN  
JUNE 2012**

**EXECUTIVE SUMMARY**

The Swain County Solid Waste Department and the Town of Bryson City Management Office in conjunction with McGill Associates, P.A. has prepared this three-year update to the ten-year Solid Waste Management Plan, in accordance with N.C. General Statute 130A-309.09A (b), for the purpose of meeting Swain County's solid waste disposal and waste reduction needs and protecting the public health and environment. The planning area includes Swain County and the Town of Bryson City. The ten-year Solid Waste Management Plan presents a look at recent and current solid waste disposal and waste reduction practices in the County and provides for the future management and reduction of solid waste.

Since the baseline year of FY 1991-92, as defined by the North Carolina Department of Environment and Natural Resources - Division of Waste Management, in which Swain County saw a waste disposal rate of 0.50 tons per person, the per capita rate has risen approximately 24% to 0.62 tons. Many factors influence this increase: 1) the large influx of summer-time temporary residents and visitors; 2) the County has had very little control over the disposal of non-residential wastes; 3) the County is predominantly rural and curbside collection of recyclables is cost prohibitive for areas of the County other than Bryson City, and 4) the baseline year per capita rate was based on an estimation of waste disposed at the landfill, and the County does not consider it to be accurate. The State goal of a 40% reduction in waste disposal is not feasible for Swain County; however, the County still has the aggressive goal of reducing the per capita waste disposal rate by 15.3% in FY 2021-22, based on the FY 2001-02 per capita waste disposal rate of 0.59 tons. This corresponds to a 19.4% waste reduction goal in FY 2021-2022 based on the FY 2010-11 per capita waste disposal rate of 0.62 tons. Swain County recycled approximately 18.5% of its solid waste stream in FY 2010-11, up from 17.3% in FY 2001-02.

Swain County's long-range vision is for a comprehensive waste management program that would provide disposal capacity, waste collection services, and waste reduction programs to all members of the community at an equitable price. The solid waste transfer station owned and operated by the County offers the County a tool for better management of its waste disposal and reduction practices. The vision is for a community that understands the economic and environmental benefits of waste reduction and proper waste disposal.

## INTRODUCTION

This document serves as a three (3)-year update to the ten (10)-year Solid Waste Management Plan that was first prepared in June 1997. This update, as well as the original Solid Waste Management Plan, was prepared in accordance with N.C. General Statute 130A-309.09A (b) for the purpose of meeting local solid waste needs and protecting public health and the environment. The sections of the original plan followed the same order of items listed in the General Statute. This update will follow the same format as the original plan. However, new and/or updated information will be added as necessary for the purpose of comparing current progress with waste reduction goals and developing new goals for the purpose of meeting community needs, local government waste reduction goals, and state waste reduction goals.

Through implementation of this updated comprehensive solid waste management plan and the additional plan updates that will follow every three years, the Swain County planning area provides for the management of solid waste and its reduction for a sustained 7-10 years. The planning area includes Swain County and the Town of Bryson City.

The three (3)-year update was developed through cooperation of Swain County Management Office, the Swain County Solid Waste Department, the Town of Bryson City Management Office, and McGill Associates, P.A. McGill Associates provided both municipalities with a package consisting of the information received from the Solid Waste Section about the three (3)-year Update and a questionnaire for each municipality to complete. The municipalities returned the questionnaires to McGill Associates. The Swain County Solid Waste Department and McGill Associates, P.A. compiled the information from the questionnaires and included it in the three (3)-year Update.

Swain County's long-range vision is for a comprehensive waste management program. This program would provide disposal capacity, waste collection services, and waste reduction programs to all members of the community at an equitable price. The vision includes the elimination of improper disposal of waste and expanded waste reduction opportunities that are convenient for residents. The vision is for a community that understands the economic and environmental benefits of waste reduction and proper waste disposal. The community foresees some additional financial expenditure, but intends to keep it at a reasonable level. This vision is translated into five long-range planning goals listed below.

### Planning Area Goals

- Goal 1.** To provide everyone in the community with waste disposal capacity, waste collection services, and waste reduction opportunities.
- Goal 2.** To increase the efficiency and cost-effectiveness of the solid waste program.
- Goal 3.** To meet the established local waste reduction goals.
- Goal 4.** To decrease improper waste disposal.
- Goal 5.** To protect public health and the environment.

## Part I. GEOGRAPHIC AND SOLID WASTE STREAM EVALUATION

### Geographic Area

This solid waste management plan covers Swain County and the Town of Bryson City. The County is primarily a rural community with a majority of its residents living in unincorporated areas (see Table 1). Swain County has seen a negative annual growth rate of approximately -7.3% over the past 3 years. Both Swain County and Bryson City provide solid waste management and collection services to their residents by in-house staff. Wastes collected by the County and the Town are handled through the County's transfer station before being hauled to Waste Management's R&B landfill in Homer, Georgia for disposal. Unincorporated County residents transport their own waste to a dumpster site located adjacent to the transfer station, while Bryson City residents pay a fee for curbside pickup.

Table 1. Estimated Population, July 2011

MUNICIPALITIES & COUNTY	POPULATION	PERCENT OF COUNTY'S TOTAL POPULATION
Bryson City	1,428	10.7%
Swain County – unincorporated areas	11,892	89.3%
<b>TOTAL</b>	<b>13,320</b>	<b>100%</b>

Source: Populations reported by Swain County.

### Waste Stream Evaluation

In this plan, *residential waste* refers to waste generated by households (individual and multi-family dwellings). The term *non-residential* refers to waste generated from commercial, industrial, and institutional activities. *Construction and demolition waste* is generated from construction activities and is separated from non-residential waste in this plan because it is managed in a different way than most non-residential waste.

In FY 2010-11, Swain County and Bryson City disposed of approximately 8,209.5 tons of waste and recycled 1,859.12 tons, for a total of 10,068.62 tons. An estimate of the total waste disposed by sector is shown in Table 2. These calculations are based on tonnages provided by Swain County.

Table 2. Waste Disposed by Sector in FY 2010-11.

TYPE OF WASTE	TONS	PERCENT OF DISPOSED WASTE STREAM
Residential	5,346.9	65.13%
Non-residential	2,056.5	25.05%
Construction and Demolition	806.1	9.82%
<b>TOTAL</b>	<b>8,209.5</b>	<b>100.0%</b>

Source: data from Swain County

Swain County estimates that 65.13% of the waste disposed is residential waste, 25.05% is non-residential (commercial, industrial, and institutional), and 9.82% is construction and demolition waste from within the planning area.

Land clearing and inert debris (LCID) is not included in the table above. It is estimated that approximately 40 tons of LCID debris is disposed of annually in the Swain County LCID landfill. In addition, an unknown amount of land clearing and inert debris is disposed of in illegal sites in the county.

The County does not have a study, at this time, for the composition of its own residential/municipal waste. Therefore, Table 3 is derived from the EPA Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2007 (Figure 5 on page 4 in the EPA study). This EPA study shows that the most prevalent materials in the waste stream are paper, plastics and organics. Using the 5,346.9 tons

of residential waste, the 2,056.5 tons of non-residential waste, and the 1,859.12 tons of recycled material (9,263 total tons) that Swain County and Bryson City actually disposed of and/or recycled in FY 2010-11, the overall amounts of different materials in the local waste stream can be estimated.

Table 3. Estimate of Residential Waste Composition

MATERIAL	EPA WASTE COMPOSITION ESTIMATE (%)	ESTIMATED FY 2010-11 COUNTY TONS LANDFILLED
Paper	32.7%	3,029
Yard Trimmings	12.8%	1,186
Food Scraps	12.5%	1,158
Plastics	12.1%	1,121
White Goods & Metals	8.2%	760
Rubber, Leather, & other Textiles	7.6%	703
Wood	5.6%	519
Glass	5.3%	491
Other	3.2%	296
<b>TOTAL</b>	<b>100.0%</b>	<b>9,263</b>

Source: EPA Municipal Solid Waste Generation, Recycling, & Disposal in the United States: Facts and Figures for 2007

An examination of the major types of commercial and industrial firms that dispose of waste in the area can help to estimate the composition of non-residential waste. Table 4 lists all non-residential waste generators within Swain County. A review of the non-residential waste generators indicates that the most common non-residential materials disposed are plastics, cardboard and miscellaneous refuse. Some of these materials currently being disposed are potentially recyclable or reusable (see Part V.). Waste tonnages from FY 2010-11 for the non-residential waste generators total 2,056 tons.

Table 4. Non-residential Waste Generators and Estimated Tons, FY 2010-11

SOURCES	TONS	MAJOR MATERIALS
Consolidated Metco	1,789	Plastics, cardboard, pallets
Shaw	124	Cardboard, plastics, treated wood
Motels	41	Miscellaneous refuse
Local Businesses	61	Miscellaneous refuse
Swain Co. Schools	41	Miscellaneous refuse
<b>TOTAL</b>	<b>2,056</b>	

Source: Swain County

## Part II. LOCAL WASTE REDUCTION GOALS

The original Solid Waste Management Plan that was prepared in 1997 established a local goal of 16% waste reduction to be reached by June 30, 2001 and a further goal of 18% to be reached by June 30, 2006. These waste reduction goals were less than the recommended goals of the North Carolina Department of Environment and Natural Resources, Division of Solid Waste Management. The recommended goal was 40% waste reduction by June 30, 2001. Swain County did not feel that a 40% waste reduction was achievable for this time period, due to the high percentage of part-time residents and high volume of out-of-county tourists that visit Swain County. In fact, the per capita rate increased 18% from 0.50 to 0.59 tons during the FY 1991-92 to FY 2001-02 periods and then rose nearly 5.1% more to 0.62 tons between FY 2001-02 and FY 2010-11. If increases follow the trends, projected estimations may be 0.66 tons by FY 2021-22. Economic factors related to the tourism industry have an effect on solid waste generation as the total volume of solid waste will increase or decrease as tourism rises or falls, and the County has seen an increase in tourism over the past decade. Additionally, the base year per capita rate of 0.50 tons is among the lowest in the State. Due to the absence of operational scales, the County did not keep records of waste tonnages during the baseline year of FY 1991-92. Instead, the per capita rate was determined by estimating the waste disposed at the landfill. Therefore, the County feels that the original baseline year per capita waste disposal rate is likely incorrect and continuing to monitor waste reduction efforts against the original baseline year is not beneficial. The County continued to report its waste reduction goals against the FY 1991-92 per capita disposal rate as an appendix to the 2003 update of the Plan, and due to State requirements this section has been calculated for the 1991-92 baseline rate and included as Appendix E. However, it is impossible to speak of "reduction" based on the FY 1991-92 rate because the current waste reduction goals of the County are actually greater than or equal to 0.50. In the body of this update, FY 2001-02 will be considered the baseline year (0.59 tons per capita).

Based on the County's current waste stream and recycling efficiency, the per capita disposal rate increase of 18% realized between FY 1991-92 and FY 2001-02 and the further increase of almost 5.1% from FY 2001-02 to FY 2010-11, Swain County chose modest waste reduction goals of 15.3% by June 30, 2019 compared to the baseline per capita waste disposal rate of 0.59 tons. Swain County feels that the State's recommended 40% waste reduction goal is still not achievable during this time period. However, the County will continue to aggressively pursue waste reduction through such means as recycling, reuse, waste diversion, mulching, composting, and pursuing technological advances in the solid waste industry. The County does not want to set unrealistic goals and feels that the waste reduction goals stated above are realistic and attainable.

The waste reduction goals can be converted from percents to an estimate of tons to be diverted by using population estimates and waste disposal figures. The baseline disposal rate was 0.59 tons per capita (FY 2001-02). Swain County's per capita disposal rate for FY 2010-11 was 0.62 tons. This equates to an increase in the per capita disposal rate of 5.1% between the baseline year (2001-02) and FY 2010-11. Based on the recent increases in the per capita disposal rate and projected future population, Swain County will dispose of approximately 8,509 tons in FY 2013-2015 and 9,123 tons in FY 2021-2022 if they continue to realize the current per capita waste disposal rate of 0.62 tons. (see Table 5).

Table 5. Waste and Population Projections

YEAR	POPULATION	WASTE DISPOSAL	TONS PER CAPITA DISPOSAL RATE
Baseline year, FY 2001-02	13,114	7,769	0.59
FY 2004-05	13,470	8,458	0.63
FY 2007-08	14,373	9,157	0.64
FY 2010-11	13,320	8,209	0.62
YEAR	ESTIMATED POPULATION	ESTIMATED WASTE DISPOSAL	
FY 2014-2015	13,724	8,509	0.62
FY 2021-2022	14,714	9,123	0.62

Source: Swain County and staff projections. Baseline year per capita rate based on FY 2001-02.

The County feels that by aggressively pursuing new recycling and reuse markets for the industrial, commercial, and construction & demolition waste produced by the planning area, and promoting residential recycling through education, it can realistically meet a local goal of 8.5% per capita waste reduction in FY 2014-15 and 15.3% in FY 2021-22 versus the FY 2010-11 per capita waste disposal rate. Swain County must reduce its per capita disposal rate to 0.54 and 0.50 tons per capita, respectively, to meet these goals (see Table 6). Using the target per capita rates, the target annual tonnage remaining for disposal by Swain County would be 8,097 tons in FY 2014-15 and 8,681 tons in FY 2021-22. In other words, 686 tons of future annual waste disposed must be diverted from landfills in FY 2014-15 and 1,324 tons diverted in FY 2021-22, as compared to the FY 2001-02 per capita waste disposal rate of 0.59 tons.

Table 6. Targeted Waste Reduction, FYs 2014-15 and 2021-22

CALCULATIONS	FY 2014-2015	FY 2021-2022
1. FY 2001-02 per capita disposal rate (provided by Swain County)	0.59	0.59
2. Targeted per capita disposal rate for FYs 2014-2015 and 2021-2022 (subtract the percent goal from 1.0, then multiply result by line 1)	0.54	0.50
3. Population for 2014-2015 and 2021-2022 (Based on 1.0% annual population increase)	13,724	14,714
4. Projected tonnage for disposal in FYs 2014-2015 and 2021-2022 at 0.59 tons/yr/capita FY 2010-11 disposal rate (multiplied line 1 by line 3)	8,097	8,681
5. Targeted annual tonnage for disposal in FYs 2014-2015 and 2021-2022 at targeted per capita disposal rate (multiplied line 2 by line 3)	7,411	7,357
6. Targeted annual tonnage to reduce in FYs 2014-2015 and 2021-2022 (subtracted line 5 from line 4)	686	1,324

Source: staff calculations

Considering the fact that the latest per capita disposal rate (from FY 2010-11) is 0.62 tons, more progress will have to be made than suggested by Table 6. In order to accomplish the County's goals, the weight of waste that needs to be diverted from landfills as compared to the last fiscal year is 1,098 tons by FY 2014-15 and 1,766 tons by FY 2021-22. For the purpose of this document, however, last year's data will be used to gauge waste composition and recycling levels, not as a per capita disposal baseline. In other words, the following targeted waste reductions have been calculated relative to how many tons would be disposed if the 2001-02 baseline rate of 0.59 was fixed throughout the planning period.

### Part III. MEETING THE WASTE REDUCTION GOALS

This Plan is designed to reduce Swain County's waste by 686 tons in FY 2014-2015 and 1,324 tons in FY 2021-22. To do this, Swain County will target the types of waste generated by assigning the same waste stream percentages calculated in Table 2. This information is summarized in Table 7. How these wastes will be targeted is addressed below. More detailed descriptions of specific waste reduction activities planned appear in Part V.

Table 7. Approximate Waste Reduction by Sector, FYs 2014-15 and 2021-2022

WASTE TYPE	TARGETED TONS to DIVERT in FY 2014-2015	TARGETED TONS to DIVERT in FY 2021-2022
Residential/municipal	447	862
Non-residential	172	332
Construction & Demolition	67	130
<b>GOAL</b>	<b>686</b>	<b>1324</b>

#### Residential Waste

This Plan proposes the diversion of 447 tons in FY 2014-15 and 862 tons in FY 2021-22 for reduction of residential sector waste. Table 8 summarizes the residential waste reduction methods to be used to meet the local goals. School and community education are not listed because they are expected to affect each of the other waste reduction methods listed. Specific activities planned are described in Part V.

Table 8. Targeted Residential Waste Reduction, FYs 2014-15 and 2021-22

REDUCTION METHOD	TARGETED MATERIALS	EST. TONS FY 2014-2015	EST. TONS FY 2021-2022
Source Reduction	Paper, plastics, Styrofoam	81	157
Recycling	Cardboard, paper, plastics, glass, metals	320	616
Reuse	Clothing, furniture, appliances, household items	4	9
Composting	Yard waste, organics	1	2
Mulching	Brush and other wood materials	1	2
Special Wastes	Other miscellaneous items	40	76
<b>Total</b>		<b>447</b>	<b>862</b>

Source: staff estimates

#### Non-residential Waste

The goal for diverting disposed non-residential waste is approximately 172 tons in FY 2014-15 and 332 tons in FY 2021-22. The largest generators of non-residential waste are specifically targeted in this effort. Table 9 summarizes non-residential waste reduction projections.

Table 9. Targeted Non-residential Waste Reduction, FYs 2014-15 and 2021-22

REDUCTION METHOD	TARGETED MATERIALS	EST. TONS FY 2014-2015	EST. TONS FY 2021-2022
Source Reduction	Plastics	6	10
Recycling	Cardboard, metals, paper and glass	144	279
Reuse	Pallets and paint	3	6
Composting	Applicable materials	0	0
Mulching	Pallets not suitable for reuse	0	1
Special Wastes	Cable	19	36
<b>Total</b>		<b>172</b>	<b>332</b>

Source: staff estimates

**Construction and Demolition Waste**

It is estimated that construction and demolition waste can be reduced by 67 tons in FY 2014-15 and 130 tons in 2021-22. The proposed reduction methods and targeted wastes are shown in Table 10.

Table 10. Targeted Construction and Demolition Waste Reduction, FYs 2014-15 and 2021-22

<b>REDUCTION METHOD</b>	<b>TARGETED MATERIALS</b>	<b>EST. TONS FY 2014-2015</b>	<b>EST. TONS FY 2021 - 2022</b>
Recycling & Reuse	Markets for these materials must be developed	7	14
Source reduction	All materials	53	102
Mulching	Untreated lumber	7	14
<b>Total</b>		<b>67</b>	<b>130</b>

Source: staff estimates

**Current Progress Toward Waste Reduction Goals**

The original Solid Waste Management Plan that was prepared in 1997 established a local goal of 16% waste reduction to be reached by June 30, 2001 and a further goal of 18% to be reached June 30, 2006. The original baseline year (FY 1991-92) disposal rate was 0.50 tons per capita (figure provided by the N.C. Solid Waste Section). Swain County's per capita disposal rate for FY 2001-02 was 0.59 tons and has been used as the subsequent base line year. For FY 2010-11, Swain County's per capita disposal rate was calculated to be 0.62 tons. This equates to a per capita disposal rate increase of 5.1% between the baseline year (2001-02) and 2011. Based on this increase, the County did not achieve the reduction goal of 8.5% by June 30, 2011.

The last update to this Plan (submitted in June 2009) stated waste reduction goals of 8.5% by FY 2010-11 and 15.3% by FY 2021-22 versus the FY 2001-02 baseline. As stated before, the per capita disposal rate actually increased by approximately 5.1% between FY 2001-02 and FY 2010-11. Therefore, the FY 2010-11 goals were not achieved and it is highly unlikely that the goal for FY 2021-22, as given in the 2012 update, will be achieved.

A large obstacle to waste reduction continues to be that the County does not have any direct control over the non-residential waste. Since non-residential waste currently accounts for approximately 25.0% of the waste stream, it is difficult for the County to find methods for reducing waste. The County is also predominantly rural, which makes additional recycling programs such as curbside collection for the unincorporated areas of the County cost prohibitive. The County has to depend on citizens to bring recyclables to the drop-off locations.

However, the County feels that by aggressively pursuing new recycling and reuse markets for the industrial, commercial, and construction & demolition waste produced by the planning area, and continuing to promote residential recycling through education, that they can realistically meet the local goal of 8.5% per capita waste reduction in FY 2014-15 and 15.5% in FY 2021-22 from the FY 2001-02 baseline per capita waste disposal rate of 0.59 tons.

#### **Part IV. THE PLANNING PROCESS AND PUBLIC PARTICIPATION**

A cooperation of representatives from Swain County and Bryson City (see Appendix A) along with McGill Associates, P.A. developed and wrote the plan.

A Swain County Commissioners' Meeting was held on June ??, 2012 at ?? p.m. in the Superior Courtroom of the County Administration Building. The County Commissioners' meeting was a public meeting. One (1) item on the meeting agenda was to discuss the Three-year Update to the Solid Waste Management Plan.

The representatives and the community members that attended discussed setting waste reduction and other goals, establishing different solid waste management programs, and cost and financing estimates. A copy of the plan was kept in the County Administration Building. Notice of the Three-year Update was announced in the Smokey Mountain Times. The plan was reviewed based on public comment. It was submitted to the elected boards of each participating local government for approval (see Appendix A). A copy of the advertisement that was placed in Smokey Mountain Times has been attached as Appendix C.

The public will be invited to read the final version of the plan, which will be placed in the County Administration Building.

**Part V. SOLID WASTE MANAGEMENT METHODS:  
ASSESSMENT OF PROGRAMS AND DESCRIPTION OF  
INTENDED ACTIONS**

Each solid waste management method as required by North Carolina G.S. 130A-309.09A (b) is described below. Each section includes an assessment of the current program and a summary of the intended actions.

**A. Source Reduction**

***Current Program:*** Source reduction is included in the community and school education programs provided by the Recycling Department, but few resources are directed toward this program. All non-residential and construction/demolition waste generators must pay a per-ton fee for disposal at the County transfer station and most (except those within the limits of Bryson City) must also provide their own transportation. It is expected that these conditions continue to encourage businesses to explore source reduction as a way to decrease expenditures.

***Intended Actions:*** Community and school education programs will continue to be provided by the Recycling Department. It is projected that source reduction will reduce 81 tons of residential waste, 6 tons of non-residential waste and 53 tons of construction/demolition waste by FY 2014-15. By FY 2021-2022, residential, non-residential and construction/demolition wastes will be reduced by 157, 10 and 102 tons, respectively.

**B. Collection of Solid Waste**

***Current Program:*** Residents throughout the County transport all solid waste materials to the unmanned collection center at Deals Gap or to a dumpster site located adjacent to the staffed County convenience center. The waste stream includes residential and non-residential solid waste. Construction and demolition materials must be transported to the County convenience center, weighed, and residents charged \$42 per ton. Bryson City performs daily curbside pickup of residential and non-residential solid waste and recyclables, which are then transported to the County convenience center and deposited in an open-top trailer. Construction and demolition materials are handled the same for Bryson City as for unincorporated areas.

***Intended Actions:*** The County solid waste collection program will remain the same.

**C. Recycling and Reuse**

*Recycling*

***Current Program:*** Swain County has been working since 1991 to maintain a stable recycling program. 18.5% of the total waste stream (1,859.12 tons) was recycled last year. The County collection center has a variety of collection bins, including roll-offs and converted dumpsters. Collected materials include newspaper, cardboard, aluminum cans, steel cans, clear, brown and green glass, and plastics (PETE and HDPE). Five special wastes – white goods, lead-acid batteries, waste oil, used antifreeze, and tires – are also accepted. Animal mortality disposal is not a service at this time. The County has begun accepting computers and electronics and stores them inside the Convenience Center. As for the animal mortality disposal residents and farmers in the county are required to bury or dispose of all dead animals themselves. Collection center staff instructs residents on proper sorting and material preparation and are available to answer questions. Brochures containing recyclable material listings, phone numbers and other information are available on-site. The County operates a horizontal baler, which helps make the recycling program more efficient. Finding new markets for recyclables have provided the County with more revenue and shorter transportation routes. Also, the County periodically submits articles to the local newspaper regarding current recycling percentages, current progress and any changes in the items collected.

Most recyclables are sold to various regional markets depending on highest available prices. At the present time, Garbage Disposal Service in Conover, North Carolina, collects the mixed paper and the plastics. Collected cardboard is sold to Jackson Paper Manufacturing in Sylva, North Carolina. Glass is sold to

Reflective Recycling in Pacolet, South Carolina. White goods and metals are sold to the best available market. At the present time Swain County sells the white goods and metals to Mountain Metals in Asheville, North Carolina and/or Dwayne's Industrial Recycling in Denver, North Carolina. Chlorofluorocarbons (CFCs) are removed from appliances on-site by County staff and sold to Envirochem, LLC when a sufficient quantity has been collected. Scrap tires are removed by U.S. Tire of Concord, North Carolina where they are shredded and sold as boiler fuel (175 tons last year). FCC Environmental of Greenville, South Carolina collects used motor oil and antifreeze from the County. Used lead-acid batteries are sold to either Interstate Batteries or to a local dealer. The County does not presently offer household hazardous waste collection.

Table 11 shows the composition of the recycled residential waste from FY 2010-11.

Table 11. Recycling in Tons, FY 2010-11

MATERIAL	COUNTY (TONS)	BRYSON CITY (TONS)
Glass-clear	23.12	18.50
Glass-brown & green	58.02	43.16
Plastic-PETE	20.26	3.25
Plastic-HDPE	33.15	3.87
Aluminum cans	18.43	
Steel cans	4.11	
White goods and other metals	484.03	2.25
Newspaper	104.32	
Corrugated cardboard	869.22	18.43
Magazines	3.95	
Mixed paper	66.05	
Pallets	85	
Electronics	2.96	-
<b>SUB-TOTAL</b>	<b>1,772.62</b>	<b>89.46</b>
<b>TOTAL</b>	<b>1862.02</b>	
Oil	<u>5,680</u> gallons	<u>-</u> gallons
Antifreeze	<u>50</u> gallons	<u>-</u> gallons

Source: Tons recycled derived from Swain County

Table 12 shows that 23.9% of the estimated recyclable residential waste materials were recycled through the County in FY 2010-11. This is a higher percentage than the 16.6% recycling rate reported by the County because there are elements of the waste stream that are not recyclable on a County level such as yard waste, food waste and textiles. Some of these items are handled in different categories such as "reuse" and "mulching/composting".

Table 12. Comparison Between Estimated Residential Tons Disposed and Tons Recycled, FY 2010-11

MATERIALS	EST. TONS DISPOSED	TONS RECYCLED	EST. TOTAL GENERATED	PERCENT RECYCLED	AVAILABLE PROCESSORS OR MARKETS
Paper/Cardboard	3,029	1,062	4,091	26.0%	Cardboard -Jackson Paper, Sylva, NC Paper – Garbage Disposal Service, Conover, NC
Plastics	1,121	61	1,182	5.2%	Garbage Disposal Service
Glass	491	142	633	22.4%	Reflective Recycling, Pacolet, SC
Metals	760	509	1,269	40.1%	Mountain Metals, Asheville, NC or Dwayne’s Industrial Recycling, Denver, NC
Wood Waste	519	85	604	14.1%	Pallets are actually “reused”
<b>TOTAL</b>	<b>5,952</b>	<b>1,859</b>	<b>7,779</b>	<b>23.9%</b>	

Source: Tons disposed taken from Table 3, tons recycled from figures reported on “Update Questionnaire” from County

Please note from Table 12 that while paper/cardboard, glass and metals are recycled at respectable levels, wastes such as plastics and wood waste could be recycled at a higher rate.

**Intended Actions:** The County intends to continue educating the public on the benefits of recycling and encouraging participation in recycling programs.

In order to reach reduction goals, County residents need to increase residential recycling by 320 tons by FY 2014-15 and 616 tons by FY 2021-22 (see Table 13 for projections).

Table 13. Proposed Residential Recycling Increases, FY 2014-15 to FY 2021-22

MATERIAL	2014- 2015 (TONS)	2015- 2016 (TONS)	2016- 2017 (TONS)	2017- 2018 (TONS)	2018- 2019 (TONS)	2019- 2020 (TONS)	2020- 2021 (TONS)	2021- 2022 (TONS)
Glass-clear	7	8	9	10	11	12	13	14
Glass- brown/green	17	20	22	24	27	29	31	34
Plastic-PETE	4	5	5	6	6	7	7	8
Plastic-HDPE	6	7	8	9	10	11	11	12
Aluminum cans	3	4	4	4	5	5	6	6
Steel cans	1	1	1	1	1	1	1	1
White Goods & other metals	84	95	106	117	128	139	150	161
Newspaper	18	20	23	25	27	30	32	35
Corrugated cardboard	153	173	193	213	233	254	274	294
Magazines	1	1	1	1	1	1	1	1
Mixed paper	11	13	14	16	17	19	20	22
Pallets	15	17	19	20	22	24	26	28
<b>TOTAL</b>	<b>320</b>	<b>364</b>	<b>405</b>	<b>446</b>	<b>488</b>	<b>532</b>	<b>572</b>	<b>616</b>

Source: staff projections

It is assumed that residents who currently use the solid waste and recycling collection centers will continue to recycle. Solid Waste staff has been monitoring recycling habits and have seen a steady increase in the number of people who recycle.

Non-residential recycling is targeted to divert 144 tons in FY 2014-15 and 279 tons in FY 2021-22 from being landfilled. Research into potential new recycling markets may prove to be a key to reducing non-

residential waste. The County would like to find a market for the plastics occurring in the Consolidated Metco waste stream but has thus far been unable to do so.

The County does not presently recycle construction and demolition waste due to the type of waste received and does not expect the character of the waste received to change significantly. Therefore there is no expectation for recycling to reduce the volume of construction and demolition waste currently being landfilled.

#### *Reuse*

**Current Program:** Reuse has not been heavily promoted as a waste reduction strategy. The County has discontinued providing a Paint Swap program due to increased regulations from the Division of Solid Waste Management. The County makes used pallets available for a small fee to anyone who wants them via a program at the convenience center. 85 tons of pallets were reused by either residents or businesses in the last year.

**Intended Actions:** Residential waste reuse is targeted to reduce 4 tons of waste, non-residential reuse is targeted to reduce 3 tons of waste, and construction/demolition reuse is targeted to recycle/reuse waste by 7 tons by FY 2014-15. By 2021-22, residential waste reuse is targeted to reduce 9 tons waste, non-residential reuse is targeted to reduce 6 tons of waste and construction & demolition reuse is targeted to reduce waste by 14 tons. The pallet program will be continued and is expected to achieve a majority of the targeted weight reductions.

### **D. Composting and Mulching**

#### *Composting*

**Current Program:** The County, Bryson City, and the Cooperative Extension Service have encouraged residential composting, but the program could be expanded. Literature that explains how individuals can set up their own composting bins is available through the Cooperative Extension Service.

**Intended Actions:** Residential composting is targeted to reduce waste up to 1 ton by FY 2014-15 and 2 tons by 2021-22. According to the estimations shown in Table 3, there were 2,863 tons of organic waste (yard, food and wood waste) in the planning area's waste stream in FY 2010-11. The Town of Bryson City has received a grant to provide backyard composting bins and information to Town residents.

#### *Mulching*

**Current Program:** The County does not currently participate in mulching. Significant quantities of non-residential mulchable waste are not generated in the County except for waste generated by tree trimming services. Approximately 40 tons of this waste is presently disposed of in the County LCID landfill per year.

**Intended Actions:** The County has considered renting a tub grinder to mulch this debris as well as stumps and other materials that are stockpiled at the County LCID landfill. Clean, untreated wood from construction & demolition waste and pallets not suitable for reuse could also be ground. The County is also anticipating that private residential mulching will be able to divert 1 ton of waste by FY 2014-15 and 2 tons by 2021-22 from being disposed at the LCID landfill.

### **E. Incineration with Energy Recovery**

**Current Program:** Incineration with energy recovery is not part of the county's current program. The county considers it an inappropriate waste management option due to the local waste flow, public opinion, and capital/operating costs. There are no regional facilities of this type hosted in nearby counties.

**Intended Actions:** The County does not plan to use incineration with energy recovery.

#### **F. Incineration without Energy Recovery**

***Current Program:*** Incineration is not part of the county's current program. The county considers it an inappropriate waste management option due to the local waste flow, public opinion, and capital/operating costs. There are no regional facilities of this type hosted in nearby counties.

***Intended Actions:*** The County does not plan to use incineration without energy recovery.

#### **G. Transfer of Solid Waste Outside Geographic Area**

***Current Program:*** Swain County and Bryson City currently utilize a transfer station owned by the County. Municipal solid waste (residential, commercial, industrial) is transported from the transfer station to Waste Management's R&B landfill in Homer, Georgia. All of the residential and non-residential waste disposed of by Swain County is delivered to the County's transfer station with the exception of the LCID waste, which is disposed at the Swain County LCID landfill.

***Intended Actions:*** The transfer of solid waste program will remain the same. The County executed its contract with Waste Management at the beginning of calendar year 2012. The Waste Management R&B landfill in Homer, Georgia, has sufficient capacity through the FY2021-2022 10-year planning period.

#### **H. Disposal of Solid Waste**

***Current Program:*** The Swain County Municipal Solid Waste Landfill closed in April 1994. At present the County only operates a Land Clearing and Inert Debris (LCID) landfill. This facility is located on a site leased from the U.S. Forest Service. The LCID landfill is staffed Tuesday through Saturday and can be opened on Monday as needed.

Prior to the current contract, Swain County explored regional public disposal with neighboring counties but failed to reach agreement on costs. A contract was chosen over the option of proceeding with a regional landfill, based on projections of cost savings.

***Intended Actions:*** Swain County's plan is to continue handling the disposal and transfer aspects of the solid waste program in the current manner.

#### **I. Natural Disaster**

Swain County has discussed the scenario of natural disaster with the Cherokee Tribal Utilities and the Town of Bryson City. If the need arises, materials can be taken to the Reservation or the County LCID landfill for temporary storage. County emergency personnel and Bryson City officials have been trained for such a scenario. In case of an emergency or disaster, Charles Bailey, the Solid Waste Director, shall be contacted first. His work phone number is (828) 488-9719 and his home phone number is (828) 488-6015. If he is unavailable, Kevin King, the Swain County Manager, should be contacted. His work phone number is (828) 488-9273 and his home number is (828) 488-9109.

**Part VI. EDUCATION, SPECIAL WASTES, ILLEGAL DISPOSAL, AND PURCHASING:  
ASSESSMENT OF PROGRAMS AND DESCRIPTION OF INTENDED ACTIONS**

**A. Community and School Education**

***Current Program:*** The County's recycling coordinator gives periodic presentations at local elementary schools, and students are provided tours of the County's convenience center. Educational pamphlets describing the recyclable materials accepted and how to prepare materials for recycling have been produced and distributed by Swain County. Twice per year, 3<sup>rd</sup> and 4<sup>th</sup> graders are shown videos entitled "Recycle Guys" and "The Original Recyclers".

***Intended Actions:*** The County intends to encourage more participation in waste reduction programs by addressing community organizations such as local Lions Clubs and Rotary Clubs, as well as exploring new means of communication with the public such as local radio and television.

The County recycling coordinator will hold training sessions for teachers from each area school who wish to become "lead teachers" in developing school recycling programs. Bryson City intends to hold annual classes on composting and mulching for Town citizens.

**B. Special Waste Management**

The management of special wastes is expected to reduce residential and non-residential wastes by 40 and 19 tons by FY 2014-15, and by 76 and 36 tons by FY 2021-22, respectively.

*Tires*

***Current Program:*** Tires are collected free of charge at the County convenience center. They are retrieved by U.S. Tire of Concord, North Carolina and shredded for use as fuel in generators. Tires were collected by the County in FY 2010-11. Money from the statewide tire tax helps pay for the tire recycling program.

***Intended Actions:*** Tire collection and hauling will likely remain unchanged for the duration of the plan. The County renewed its contract with U.S. Tire in January 2009.

*White Goods*

***Current Program:*** White goods are accepted at the County convenience center, and are also transported to the center by Bryson City for town residents. CFCs (chlorofluorocarbons) are removed by County staff as units are received and collected by Envirochem, LLC for recycling. The white good units are stored on-site until a sufficient amount is stockpiled. They are then transported to Mountain Metals in Asheville, NC or Dwayne's Industrial Recycling, Denver, NC depending on market circumstances for recycling. White goods were included in the 486 tons of metal recycled in FY 2010-11.

***Intended Actions:*** The County intends to maintain the white goods collection and recycling program currently used.

A John Deere 310SG backhoe assists with the handling of white goods. It is utilized for both white goods (60%) and general solid waste (40%).

*Lead-acid batteries*

***Current Program:*** Batteries are collected at the County convenience center. Residents can also arrange to drop off batteries at a number of auto parts dealers. Approximately 1,130 batteries were brought to the convenience center in FY 2010-11. When sufficient numbers are collected, Interstate Batteries picks them up for recycling. Bryson City includes battery pickup with the recycling route as needed.

***Intended Actions:*** Battery collection and recycling will remain the same.

*Used Motor Oil*

**Current Program:** Waste oil collection is provided free to all citizens at the County convenience center. Approximately 5,680 gallons were collected in FY 2010-11. The waste oil is collected by FCC Environmental of Greenville, SC. The County presently provides for the collection of used oil filters.

**Intended Actions:** Used oil collection and recycling will remain the same.

*Used Antifreeze*

**Current Program:** The collection of waste antifreeze is provided free to all citizens at the County convenience center. Approximately 50 gallons were collected in FY 2010-11. The antifreeze is collected by FCC Environmental of Greenville, S.C.

**Intended Actions:** Used antifreeze collection and recycling will remain the same.

*Household Hazardous Waste*

**Current Program:** The County does not collect household hazardous waste at this time. However, the Extension Service has an annual collection of household hazardous materials at the County convenience center.

**Intended Actions:** The household hazardous waste program will remain the same.

*Animal Mortality*

**Current Program:** The County does not collect animals for disposal at this time.

**Intended Actions:** Animal mortality collection will remain the same.

*Computers / Electronics*

**Current Program:** The County currently accepts computer equipment, televisions, hard drives, scanners, fax machines, copiers, and other miscellaneous electronic equipment for recycling. Swain County has a contract with EcycleSecure for the collection and processing of electronics collected by the County. EcycleSecure is certified as being in compliance with the requirements of the State of North Carolina as it relates to computer and electronic equipment recycling.

EcycleSecure presently accepts this equipment at no charge to the County and provides the County with a statement that lists the tonnage of material collected. The County is working with EcycleSecure to ensure the statement breaks the collected equipment down by category (computer equipment, televisions, etc.). EcycleSecure also retains copies of the collection statements in its files as well as records of the disposition of the recycled products.

Swain County posts flyers/signs at the County's solid waste convenience center to inform citizens of the electronics recycling program. The County has and will continue to address its Solid Waste Education Program through community and school system education programs. All residents of Swain County have access to the electronic equipment recycling program.

A separate line has been established in the budget for the receipt and disbursement of State funds for the disposal of electronics. All State funds received will be used solely for the purpose of the electronics recycling program.

**Intended Actions:** The County intends to continue the electronic equipment recycling program that is presently in place.

### *Abandoned Manufactured Housing*

**Current Program:** The County does not have a plan for the acceptance and disposal of manufactured housing.

**Intended Actions:** The County does not intend to implement a plan for the acceptance and disposal of manufactured housing.

### **C. Prevention of Illegal Disposal and Management of Litter**

#### *Illegal Disposal - Operated Sites*

**Current Program:** The Sheriff's department and the Swain County Solid Waste Department investigate reports of illegal disposal and attempt to remedy the illegal disposal. Cleanup is required if at all possible. Chronic problems of illegal disposal will be reported to the Asheville Regional Office of the North Carolina Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section. However, illegal disposal of municipal solid waste, construction and demolition waste, and land clearing and inert debris has not been a significant problem in Swain County.

**Intended Actions:** Swain County and the Sheriff's Department will continue to investigate and clean up illegal disposal sites as they are reported and will request the assistance of the NCDENR Solid Waste Section if necessary. Since there is not a significant problem with illegal disposal sites, no additional measures are planned.

#### *Litter Management and Promiscuous Dumping*

**Current Program:** Swain County participates in local clean-up efforts with a volunteer coordinator. There are also joint clean-up projects throughout the year with other agencies such as TVA. The County also utilizes the Haywood County Prisoners periodically to clean up roadsides and water tributaries. The County and Sheriff's department enforce state laws regarding littering and dumping.

**Intended Actions:** The County will continue their current program outlined above with regards to litter or promiscuous dumping prevention program. The County's Solid Waste Department and Sheriff's Department will investigate promiscuous dumping and enforce state laws. If additional assistance is needed, the NCDENR Solid Waste Section will be contacted. The state Adopt-A-Highway program is currently under-utilized, so the County plans to continue promoting the program to encourage additional participation. The County has previously and will continue to apply as needed for a state white goods grant to clean up any white goods illegally dumped.

### **D. Purchase of Recycled Materials and Products**

**Current Program:** No recycled product purchasing program is in place at this time.

Procurement of recycled products could be encouraged more if the County had a policy that County offices purchase supplies with recycled content when possible.

**Intended Actions:** The Solid Waste Department continues to consider adopting a source reduction resolution that will contain language encouraging County departments to use fewer disposable items, purchase products with longer life, double-side all documents, and use recycled content paper for copying and printing documents when possible. This resolution will also encourage the purchase of trash bins and other items made from recycled materials.

**E. Summary of Intended Actions**

The intended actions described on the previous pages are listed chronologically in Table 14.

Table 14. Intended Actions Implementation Schedule

<b>FISCAL YEAR</b>	<b>PROGRAM</b>
2014-15	<ul style="list-style-type: none"> <li>• Industry site visits and commercial/industrial reduction workshops</li> <li>• Continue promotion of Adopt-A-Highway program</li> <li>• Continue program of charging industrial users a per-ton rate</li> <li>• Utilize community service for roadside pick-up (began 1/99)</li> <li>• Continue visiting schools for teacher training seminars (ongoing)</li> <li>• Continue showing videos to 3<sup>rd</sup> &amp; 4<sup>th</sup> graders in schools (on-going)</li> <li>• Continue to research new recycling markets (on-going)</li> <li>• Provide composting demonstrations and provide bins to community at cost (on-going)</li> </ul>
2015-16	<ul style="list-style-type: none"> <li>• Conduct waste management training when requested</li> <li>• Continue backyard composting demonstrations</li> <li>• Enhance municipalities' community education on recycling</li> <li>• Conduct commercial/industrial source reduction workshops</li> <li>• Promote used oil, anti-freeze, and battery collection further by mailings and/or brochures</li> <li>• Consider new process to enhance community education</li> </ul>
2016-17	<ul style="list-style-type: none"> <li>• Hold teacher training workshop</li> <li>• Conduct commercial/industrial source reduction workshops</li> <li>• Prepare 3-year solid waste management plan update</li> </ul>
2017-18	<ul style="list-style-type: none"> <li>• Continue projects in place</li> </ul>
2021-22	<ul style="list-style-type: none"> <li>• Continue projects in place</li> </ul>

Source: staff estimates

The "Plan of Action" worksheets have been attached in Appendix B. These worksheets provide an assessment of the initial plan with current status and give new and/or revised actions to achieve goals set through FY 2021-2022 for each of the 13 elements.

**Part VII. SOLID WASTE COSTS AND FINANCING METHODS**

**Description and Assessment of Costs**

***County Description:***

Both Swain County and Bryson City operate solid waste programs. The County provides for disposal through a contractual arrangement with Waste Management, Inc. Bryson City disposes of waste under contract with the County and under the County's contract with Waste Management, Inc. The County provides recyclable processing and marketing for both County collected materials and materials collected by Bryson City. The solid waste costs shown below are separated by the County-operated program and Town-operated program.

The total budget for the County-operated solid waste program during FY 2010-11 was \$869,741, which included the following: The annual cost of County collection was \$221,505. This includes the operation of the collection centers and collection from government-operated facilities such as schools, town hall, and the courthouse. County disposal costs in the same year were \$480,647. The Town of Bryson City does not pay a tipping fee on waste that is collected by the municipality. Therefore, the county disposal costs include the disposal costs associated with the waste that is collected by Bryson City and transported to the County transfer station. The disposal costs consist of the costs associated with disposal at Waste Management's R&B landfill and the Swain County LCID landfill. Waste reduction program costs, including recycling, reuse, mulching, etc. total \$167,589. Swain County, including Bryson City, managed an estimated total of 10,088 tons of waste, which included 8,226 disposed tons and 1,862 tons of recyclable materials, in FY 2010-11. The County served approximately 13,320 unincorporated residents from approximately 5,990 households in FY 2010-11. A summary of the County-operated solid waste program costs is shown in Table 15.

Table 15. Swain County Solid Waste Program Costs, FY 2010-11

	COLLECTION	DISPOSAL	*WASTE REDUCTION	TOTAL
<b>PROGRAM COST</b>	\$221,505	\$480,647	\$167,589	\$869,741
<b>COST PER TON</b>	\$26.93	\$58.43	\$90.00	\$86.22
<b>COST PER HOUSEHOLD</b>	\$36.97	\$80.24	\$27.98	\$145.20

Source: Swain County Solid Waste Department and Finance Department Records

\*Waste reduction includes all reduction, reuse and recycling, mulching, composting, and other programs.

***County Assessment:***

According to the analysis, based on the cost per household, the cost of collection is much less than the costs of waste disposal and only slightly higher than the cost associated with the cost per household for waste reduction programs. It can be assumed that as participation in waste reduction programs increase, the cost per ton to dispose remaining waste and that of waste reduction will decrease and eventually become more equivalent to the cost of collection. This would be especially true if the County could find paying markets for some of the materials that are not currently recycled and/or generating revenue for the County.

***Bryson City Description:***

Bryson City provides curbside collection and recycling pickup. Waste collection tonnages within Bryson City are not available since these items are co-mingled with those collected by the County. The Town served approximately 1,428 residents from approximately 585 households (based on U.S. Census figure of +2.44 persons per household) in FY 2010-11. A summary of the Town-operated solid waste program costs is shown in Table 16.

Table 16. Bryson City Solid Waste Program Costs, FY 2010-11

	COLLECTION	WASTE REDUCTION	TOTAL
PROGRAM COST	\$171,295	Included in collection cost	\$171,295
COST PER TON	n/a	n/a	n/a
COST PER HOUSEHOLD	\$292.81	n/a	\$292.81

Source: Bryson City records

**Description of Financing Methods**

The current solid waste program is funded through the County household solid waste user fee, property taxes, construction/demolition and industrial weight-based fees, and the sale of recyclables. The tire program is paid for through the tire tax levied by the state. The white goods tax distribution fully supports the white goods and metals recycling program. Swain County residents pay for solid waste management services through property taxes. See Table 17 for a summary of current financing methods.

Table 17. Solid Waste Financing Methods Used By the Planning Area, FY 2010-11

	Total SWM Budget	Tip Fee	Property Taxes-General Fund	Household Charge	Volume or Weight-Based fees	Sale of Recyclables	Grants	Tire & White-Goods Tax	Other
Swain County	\$869,741	0%	17%	50%	15%	10%	0%	8%	0%
Bryson City	\$	0%	44%	56%	0%	0%	0%	0%	0%

Source: Finance Department records plus County and Municipal Solid Waste Management Annual Reports

**Assessment of Financing Methods**

The County's financing methods generate enough revenue for the current solid waste program. As new services and facilities are added to the program, new sources of revenue will need to be found. For example, a small increase in the household fee may be necessary to fund expansion of the recycling materials collected. Other revenue options include increasing tipping fees, going to a per-bag fee system at the collection centers, and applying for one-time grant funds. Below is a description of each financing method.

**Tipping Fees:** Because the County is currently able to weigh incoming waste with scales, a per-load tipping fee was abandoned in favor of weight-based fees.

**General Fund:** General fund (property tax) money was used to finance approximately 17% of the County solid waste budget in FY 2010-11. The County uses general fund monies to make up any shortfall in the solid waste management budget as needed. The County would like to decrease its dependency on the general fund and use a more consumer-visible form of funding, such as the household fee or by obtaining increased revenue from recyclables sales. However, no definite plan to change the current funding methods has been made at this time.

The Town of Bryson City relies on general fund financing for 44% of the collection services provided by the Town. Town residents also pay the per-household fee for collection, which makes up the remaining 56%.

**Household Fee:** The annual household fee contributes approximately 50% of the total revenue that supports the County. This will likely continue to be a major portion of the solid waste budget. In Bryson City, collection fees are \$5 per month for residents and \$10 per month for commercial/industrial users. This contributes to 56% of their annual budget.

***Volume or Weight-based Fees:*** Many direct users of the County transfer station pay a per-ton fee for disposal. Construction and demolition waste generators are charged at a rate of \$40 per ton. The County received 15% of its annual revenue through weight-based fees in FY 2010-11.

***Sale of Recyclables:*** Revenue from the sale of recyclables funded approximately 10% of the County-operated solid waste program in FY 2010-11. This is down from the FY 2007-08 contribution of 17.1%. Although such revenues may be expected to rise with increasing recycling levels, fluctuations in material prices make it difficult to predict how much revenue will be generated by recycling.

***Grants:*** Sources of grant funding are limited, but the County plans to apply for grant funds to cover the implementation of selected new programs.

***Tax Reimbursements:*** The County recognizes that the revenue received from state tax reimbursements will change in the future.

***Franchise Fees:*** There were no private waste haulers operating in the County in FY 2010-11.

**Part VIII. FACILITIES AND RESOURCES AVAILABLE THROUGH PRIVATE ENTERPRISE**

The Swain County planning area considered the use of privately operated facilities and resources in developing this plan. All municipal solid waste disposal is provided through public and private enterprise. All of the waste collection and most of the recycling is operated by Swain County and the Town of Bryson City. The County may utilize private waste disposal companies in the future.

**APPENDIX A. Resolutions to Adopt the Plan**

**STATE OF NORTH CAROLINA  
COUNTY OF SWAIN**

**Resolution # 900-2012-13**

**RESOLUTION OF THE SWAIN COUNTY BOARD OF COMMISSIONERS APPROVING  
THE SWAIN COUNTY SOLID WASTE MANAGEMENT PLAN 2012 UPDATE**

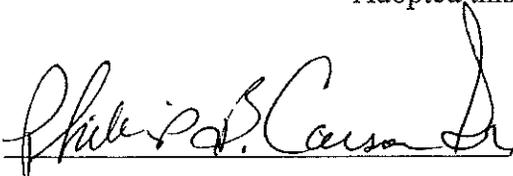
WHEREAS; better planning for solid waste will protect public health and the environment, provide for an improved solid waste management system, better utilize our natural resources, control the cost of solid waste management; and

WHEREAS, NCGS 130A-309.09A(b) requires each unit of local government, either individually or in cooperation with other units of local government, to develop a 3-Year update to the 10-Year Comprehensive Solid Waste Management Plan; and

WHEREAS, Swain County as represented on the Swain County Planning Advisory Committee; and

NOW, THEREFORE, BE IT RESOLVED that the Swain County Board of Commissioners hereby approves the 3-Year update to the 10-Year Comprehensive Solid Waste Management Plan.

Adopted this the 9<sup>th</sup> day of July, 2012.



Phillip Carson, Chairman  
Swain County Board of Commissioners

Attest:

Cindi C. Woodard  
\_\_\_\_\_, Clerk to the Board

(seal)



STATE OF NORTH CAROLINA  
COUNTY OF SWAIN

Resolution # 900-2012-13

RESOLUTION OF THE SWAIN COUNTY BOARD OF COMMISSIONERS APPROVING  
THE SWAIN COUNTY SOLID WASTE MANAGEMENT PLAN 2012 UPDATE

WHEREAS; better planning for solid waste will protect public health and the environment, provide for an improved solid waste management system, better utilize our natural resources, control the cost of solid waste management: and

WHEREAS, NCGS 130A-309.09A(b) requires each unit of local government, either individually or in cooperation with other units of local government, to develop a 3-year update to the 10-year Comprehensive Solid Waste Management Plan; and

WHEREAS, Swain County as represented on the Swain County Planning Advisory Committee; and

NOW, THEREFORE BE IT RESOLVED that the Swain County Board of Commissioners hereby approves the 3-year update to the 10-year Comprehensive Solid Waste Management Plan.

Adopted this the 9th day of July, 2012

  
Phil Carson, Chairman

Attest:

  
Cindi C. Woodard, Clerk to the Board

*Town of Bryson City*

*Municipal Office*

*P.O. Box 726*

*Bryson City, NC 28713*

*Telephone (828) 488-3335*

*Fax (828) 488-9474*

**RESOLUTION # \_\_\_\_\_**

**APPROVING THE SWAIN COUNTY SOLID WASTE  
MANAGEMENT PLAN 2012 UPDATE**

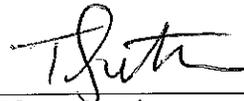
WHEREAS, better planning for solid waste will protect public health and the environment, provide for an improved solid waste management system, better utilize our natural resources, control the cost of solid waste management; and

WHEREAS, NCGS 130A-309.09A(b) requires each unit of local government, either individually or in cooperation with other units of local government, to develop a 10-year Comprehensive Solid Waste Management Plan; and

WHEREAS, THE Town of Bryson City has been actively involved in the planning process;

NOW, THEREFORE, BE IT RESOLVED that the Board of Aldermen of the Town of Bryson City hereby approves the Three-Year update to the Swain County Ten Year Solid Waste Management Plan.

Adopted this the 2nd day of July, 2012.



Tom Sutton, Mayor  
Town of Bryson City

Attest:

  
Larry Callicutt, Town Manager  
Town of Bryson City

(seal)

*Mayor Tom Sutton Board of Aldermen Kate Welch, Stephanie Treadway, Tom Reidmiller, & Jim Gribble  
Larry Callicutt, Town Manager Fred Moody Jr., Town Attorney Carla Passmore, Tax Collector Lynn Thomas, Town Clerk  
Tom Shook, Public Works Supervisor Lamar Williams, Water & Wastewater Plant Superintendent*

## **APPENDIX B. Miscellaneous Forms and Worksheets**

- **Waste Reduction Goal Worksheet**
- **“Plan of Action” Worksheets**

**WASTE REDUCTION GOAL SHEET**  
**NC LOCAL GOVERNMENT TEN YEAR SOLID WASTE MANAGEMENT PLAN**

Local Government Name: Swain County

Previously established waste reduction goal: 15.3 %

After considering your government's current and projected solid waste activities, resources, population, and economic growth have you reached your previously established goal?  Yes  No

Establish a new waste reduction goal: 15.3 %

**WASTE REDUCTION CALCULATION**

To provide 10 years of solid waste management planning, as per G.S. 130A-309.09A(b), waste reduction goals need to be updated. Use the following chart to determine the tonnage needed to be diverted from landfills in order to reach the new waste reduction goal.

**CALCULATION**

**FY 2022**

1. Baseline year per capita disposal rate <i>(FY 1991-1992 unless alternate approved by Section)</i>	0.59
2. Percent waste reduction goal	15.3 %
3. Targeted per capita disposal rate <i>(Subtract line 2 from 1.0 and multiply result by line 1)</i>	0.50
4. Estimated population in the new waste reduction goal year <i>(Available at Office of State Budget and Management website: Projected Annual County Population Totals 2010-2019)</i>	14,714
5. Projected tonnage for disposal at baseline disposal rate <i>(Multiply line 1 by line 4)</i>	8,681
6. Targeted annual tonnage for disposal <i>(Multiply line 3 by line 4)</i>	7,357
7. Targeted annual tonnage to reduce <i>(Subtract line 6 from line 5)</i>	1,324

Population Link: [http://www.osbm.state.nc.us/ncosbm/facts\\_and\\_figures/socioeconomic\\_data/population\\_estimates/demog/cpa2010p.html](http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/cpa2010p.html)

**WASTE REDUCTION PLAN**

Given the targeted annual tonnage amount to be reduced, explain how you plan to reach the goal:

909 tons by increasing recycling 269 tons by source reduction 2 tons by utilizing composting 17 tons by utilizing mulching 15 tons through reuse 112 tons through special/other miscellaneous wastes ===== 1,324 total tons
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- Reduction
- Transfer outside geographic area
- Composting and Mulching
- Disaster Response
- Education with community & through schools
- Incineration with/without energy recovery
- Illegal Disposal/Litter
- Collection of Computer Equipment and Televisions
- Management of Abandoned Manufactured Homes
- Disposal
- Purchasing Recycled Products
- Recycling and Reuse
- Collection
- Special Waste

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS	
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR	
<p>Community and school education programs</p> <p>Per ton fee for all waste disposal should encourage businesses to explore source reduction as a way to decrease expenditures</p>		<p>Continue community and school education programs</p>	<p>Ongoing</p>	<p>Residential - 157</p> <p>Non-Residential - 10</p> <p>C&amp;D Waste - 53</p>	

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- |                                                                      |                                                                     |                                                                           |                                                       |                                        |
|----------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Reduction                                   | <input type="checkbox"/> Disaster Response                          | <input type="checkbox"/> Illegal Disposal/Litter                          | <input type="checkbox"/> Disposal                     | <input type="checkbox"/> Collection    |
| <input checked="" type="checkbox"/> Transfer outside geographic area | <input type="checkbox"/> Education with community & through schools | <input type="checkbox"/> Collection of Computer Equipment and Televisions | <input type="checkbox"/> Purchasing Recycled Products | <input type="checkbox"/> Special Waste |
| <input type="checkbox"/> Composting and Mulching                     | <input type="checkbox"/> Incineration with/without energy recovery  | <input type="checkbox"/> Management of Abandoned Manufactured Homes       | <input type="checkbox"/> Recycling and Reuse          |                                        |

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS	
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR	
County operates a transfer station with all MSW type waste hauled to Advance Disposal R&B landfill in Homer, Georgia				Continue to transfer all MSW type waste to Advance Disposal R&B landfill in Homer, Georgia. Contract in place through 2016	

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**  
**PLANNING YEARS 2012 through 20**

Check appropriate element

- Reduction
- Transfer outside geographic area
- Composting and Mulching
- Disaster Response
- Education with community & through schools
- Incineration with/without energy recovery
- Illegal Disposal/Litter
- Collection of Computer Equipment and Televisions
- Management of Abandoned Manufactured Homes
- Disposal
- Purchasing Recycled Products
- Recycling and Reuse
- Collection
- Special Waste

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS		ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	KEY ACTIONS	DATE DUE	
Composting: The County, Bryson City and the Cooperative Extension Service encourage residential composting  Mulching:				Composting: Work to expand the residential composting program  Mulching: County considering renting a tub grinder to mulch clean wood debris	Ongoing  Future	Residential Composting - 2  Residential Mulching - 2 Non-Residential Mulching - 1

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- Reduction
- Transfer outside geographic area
- Composting and Mulching
- Disaster Response Education with community & through schools
- Incineration with/without energy recovery
- Illegal Disposal/Litter Collection of Computer Equipment and Televisions
- Management of Abandoned Manufactured Homes
- Disposal
- Purchasing Recycled Products
- Recycling and Reuse
- Collection
- Special Waste

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS	
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR	
County has a plan in place to handle a natural disaster relative to the permanent and/or temporary storage or disposal of debris.			No further action planned		

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- |                                                           |                                                                                |                                                                           |                                                       |                                        |
|-----------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Reduction                        | <input type="checkbox"/> Disaster Response                                     | <input type="checkbox"/> Illegal Disposal/Litter                          | <input type="checkbox"/> Disposal                     | <input type="checkbox"/> Collection    |
| <input type="checkbox"/> Transfer outside geographic area | <input checked="" type="checkbox"/> Education with community & through schools | <input type="checkbox"/> Collection of Computer Equipment and Televisions | <input type="checkbox"/> Purchasing Recycled Products | <input type="checkbox"/> Special Waste |
| <input type="checkbox"/> Composting and Mulching          | <input type="checkbox"/> Incineration with/without energy recovery             | <input type="checkbox"/> Management of Abandoned Manufactured Homes       | <input type="checkbox"/> Recycling and Reuse          |                                        |

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS		ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	KEY ACTIONS	DATE DUE	
Community and school education and outreach programs  Promote "Adopt-A-Highway" program				Continue community and school education outreach programs  Continue to promote "Adopt-A-Highway" program	Ongoing  Ongoing	

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- |                                                           |                                                                               |                                                                           |                                                       |                                        |
|-----------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Reduction                        | <input type="checkbox"/> Disaster Response                                    | <input type="checkbox"/> Illegal Disposal/Litter                          | <input type="checkbox"/> Disposal                     | <input type="checkbox"/> Collection    |
| <input type="checkbox"/> Transfer outside geographic area | <input type="checkbox"/> Education with community & through schools           | <input type="checkbox"/> Collection of Computer Equipment and Televisions | <input type="checkbox"/> Purchasing Recycled Products | <input type="checkbox"/> Special Waste |
| <input type="checkbox"/> Composting and Mulching          | <input checked="" type="checkbox"/> Incineration with/without energy recovery | <input type="checkbox"/> Management of Abandoned Manufactured Homes       | <input type="checkbox"/> Recycling and Reuse          |                                        |

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS	
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR	
Not a part of the County's current Solid Waste Management Plan		None Planned		N/A	

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- Reduction
- Transfer outside geographic area
- Composting and Mulching
- Disaster Response
- Education with community & through schools
- Incineration with/without energy recovery
- Illegal Disposal/Litter
- Collection of Computer Equipment and Televisions
- Management of Abandoned Manufactured Homes
- Disposal
- Purchasing Recycled Products
- Recycling and Reuse
- Collection
- Special Waste

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS		ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	
Community Education Programs				Continue to promote community education programs	Ongoing	
Promote "Adopt-A-Highway" program				Continue to promote "Adopt-A-Highway" program	Ongoing	
County Sheriff enforces State litter laws				County Sheriff continues to enforce State litter laws	Ongoing	

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- |                                                           |                                                                     |                                                                                      |                                                       |                                        |
|-----------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Reduction                        | <input type="checkbox"/> Disaster Response                          | <input type="checkbox"/> Illegal Disposal/Litter                                     | <input type="checkbox"/> Disposal                     | <input type="checkbox"/> Collection    |
| <input type="checkbox"/> Transfer outside geographic area | <input type="checkbox"/> Education with community & through schools | <input checked="" type="checkbox"/> Collection of Computer Equipment and Televisions | <input type="checkbox"/> Purchasing Recycled Products | <input type="checkbox"/> Special Waste |
| <input type="checkbox"/> Composting and Mulching          | <input type="checkbox"/> Incineration with/without energy recovery  | <input type="checkbox"/> Management of Abandoned Manufactured Homes                  | <input type="checkbox"/> Recycling and Reuse          |                                        |

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS	
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR	
<p>The County currently collects computer equipment, televisions, hard drives, scanners, fax machines, copiers and other miscellaneous equipment for recycling by a State certified electronics recycler.</p> <p>Flyers/signs are posted at the County's convenience center to inform citizens of the electronic equipment collection program. The County also addresses its solid waste education program through community and school education programs.</p> <p>The County has a collection contract with a State certified electronic equipment recycler.</p>			Ongoing		

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**  
**PLANNING YEARS 2012 through 2022**

Check appropriate element

- Reduction
- Transfer outside geographic area
- Composting and Mulching
- Disaster Response
- Education with community & through schools
- Incineration with/without energy recovery
- Illegal Disposal/Litter
- Collection of Computer Equipment and Televisions
- Management of Abandoned Manufactured Homes
- Disposal
- Purchasing Recycled Products
- Recycling and Reuse
- Collection
- Special Waste

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS		ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	KEY ACTIONS	DATE DUE	
Not a part of the County's Solid Waste Management Plan				None Planned		

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- Reduction
- Transfer outside geographic area
- Composting and Mulching
- Disaster Response
- Education with community & through schools
- Incineration with/without energy recovery
- Illegal Disposal/Litter
- Collection of Computer Equipment and Televisions
- Management of Abandoned Manufactured Homes
- Disposal
- Purchasing Recycled Products
- Recycling and Reuse
- Collection
- Special Waste

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS	
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR	
<p>County operates a Land Clearing and Inert Debris Landfill (LCID) on property leased from the U.S. Forestry Service</p>	<p>Explored a regional public waste disposal facility</p>	<p>Failed to make the anticipated cost saving projections work to the County's advantage</p>	<p>Continue to operate the LCID landfill.</p>		

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- |                                                           |                                                                     |                                                                           |                                                                  |                                        |
|-----------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Reduction                        | <input type="checkbox"/> Disaster Response                          | <input type="checkbox"/> Illegal Disposal/Litter                          | <input type="checkbox"/> Disposal                                | <input type="checkbox"/> Collection    |
| <input type="checkbox"/> Transfer outside geographic area | <input type="checkbox"/> Education with community & through schools | <input type="checkbox"/> Collection of Computer Equipment and Televisions | <input checked="" type="checkbox"/> Purchasing Recycled Products | <input type="checkbox"/> Special Waste |
| <input type="checkbox"/> Composting and Mulching          | <input type="checkbox"/> Incineration with/without energy recovery  | <input type="checkbox"/> Management of Abandoned Manufactured Homes       | <input type="checkbox"/> Recycling and Reuse                     |                                        |

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS		ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	KEY ACTIONS	DATE DUE	
Continue the existing program to encourage employees and departments to purchase recycled products when available and cost effective				Continue to research the purchase of other recycled products of use by the County Departments	Ongoing	

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- Reduction
- Transfer outside geographic area
- Composting and Mulching
- Disaster Response
- Education with community & through schools
- Incineration with/without energy recovery
- Illegal Disposal/Litter
- Collection of Computer Equipment and Televisions
- Management of Abandoned Manufactured Homes
- Disposal
- Purchasing Recycled Products
- Recycling and Reuse
- Collection
- Special Waste

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS		ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	KEY ACTIONS	DATE DUE	
Educate public on the benefits of recycling			Ongoing	Continue to educate public on benefits of recycling	Ongoing	
Research potential recycling markets			Ongoing	Continue to research potential recycling markets	Ongoing	
Purchased and operate a baler to consolidate recyclable material			Ongoing	Continue to operate the baler	Ongoing	
Provide recycling opportunities for residents and businesses			Ongoing	Continue to provide recycling opportunities to residents and businesses	Ongoing	Residential - 616 Non-Residential - 279
Provide limited reuse opportunities			Ongoing	Implement more reuse opportunities	Ongoing	Residential - 9 Non-Residential - 6 C&D Waste - 14

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**

PLANNING YEARS 2012 through 2022

Check appropriate element

- |                                                           |                                                                     |                                                                           |                                                       |                                                |
|-----------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Reduction                        | <input type="checkbox"/> Disaster Response                          | <input type="checkbox"/> Illegal Disposal/Litter                          | <input type="checkbox"/> Disposal                     | <input checked="" type="checkbox"/> Collection |
| <input type="checkbox"/> Transfer outside geographic area | <input type="checkbox"/> Education with community & through schools | <input type="checkbox"/> Collection of Computer Equipment and Televisions | <input type="checkbox"/> Purchasing Recycled Products | <input type="checkbox"/> Special Waste         |
| <input type="checkbox"/> Composting and Mulching          | <input type="checkbox"/> Incineration with/without energy recovery  | <input type="checkbox"/> Management of Abandoned Manufactured Homes       | <input type="checkbox"/> Recycling and Reuse          |                                                |

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS		ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	KEY ACTIONS	DATE DUE	
Operate convenience center sites				Continue to operate convenience center sites	Ongoing	
Bryson City provides curbside collection services				Bryson City will continue to provide curbside collection services	Ongoing	

**PLANNING ELEMENTS**  
**NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN**  
**PLANNING YEARS 2012 through 2022**

Check appropriate element

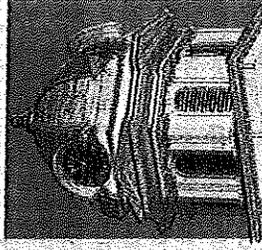
- Reduction
- Transfer outside geographic area
- Composting and Mulching
- Disaster Response Education with community & through schools
- Incineration with/without energy recovery
- Illegal Disposal/Litter Collection of Computer Equipment and Televisions
- Management of Abandoned Manufactured Homes
- Disposal Purchasing Recycled Products
- Recycling and Reuse
- Collection
- Special Waste

COMPLETED ACTIONS		INCOMPLETE ACTIONS		NEW / REVISED ACTIONS		ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	
Continue the operation of existing collection and processing programs				Promote the existing programs through community education and outreach programs	Ongoing	
Extension Service has an annual collection of household hazardous waste program				Continue existing program	Ongoing	

**APPENDIX C. Public Advertisement of Three-Year Update**

SOFTBALL PLAYERS NAMED TO ALL CONFERENCE, P. 9A

# SMOKY MOUNTAIN TIMES



Volume 128, No. 47 Bryson City, NC 28713

Thursday, June 14, 2012

[www.thesmokymountaintimes.com](http://www.thesmokymountaintimes.com)

75¢

MES — Thursday, June 14, 2012 — Page 12A

## Inds come from all over

### SWAIN SHORTS

#### Waste plan on display

An update to the county's solid waste plan will be on display at the main hall of the Swain County Administration Building all day June 20 and 21.

The plan must be updated every three years. The matter will be discussed at a future county commissioners meeting.

#### ABC budget on display

The Bryson City ABC proposed budget for 2012-13 can be viewed at the ABC store.

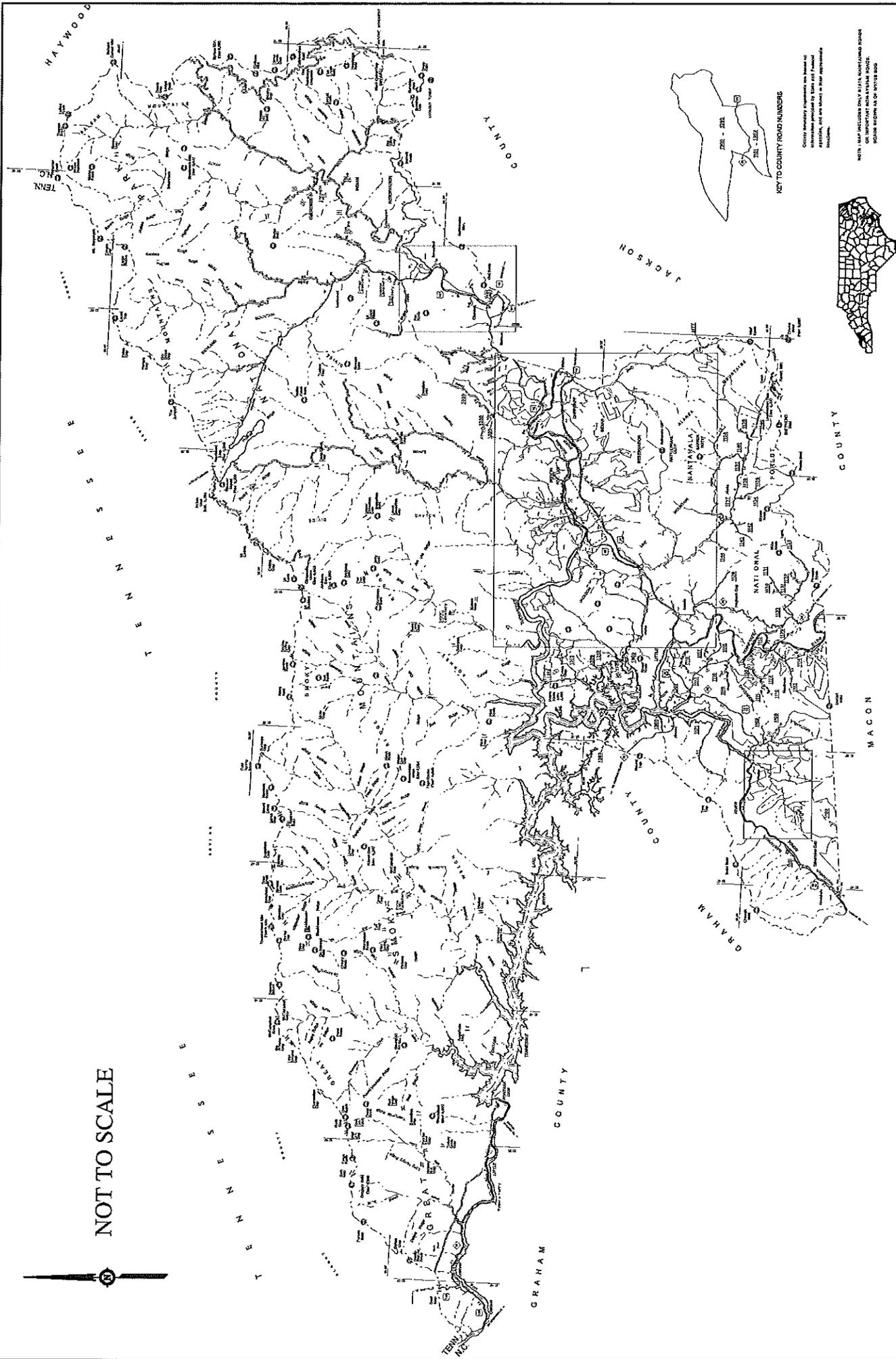
#### Hours for viewing are 9 a.m. to 5 p.m. through June 30.

Hours for viewing are 9 a.m. to 5 p.m. through June 30.

**APPENDIX D. Map of the Planning Area**



NOT TO SCALE



KEY TO COUNTY ROAD NUMBERS

County boundary information was derived from information provided by State GIS. Partial road numbers are shown in grey.

THIS MAP INCLUDES ONLY PLAT MAINTAINING RECORDS ON IMPORTANT HIGHWAY SYSTEM RECORDS. SOME RECORDS AS OF 1975 BOOK.



**FIGURE 1**  
**SWAIN COUNTY SWMP**  
 SWAIN COUNTY, NORTH CAROLINA

**SERVICE AREA**

**McGill**  
 ASSOCIATES  
 ENGINEERING-PLANNING-FINANCE  
 25 IROND STREET ASHEVILLE, NC 28801 PH: (800) 355-9675 PERM LICENSE # C-5409

**APPENDIX E. Baseline FY 1991-92 Reduction Goals**

## Part II. LOCAL WASTE REDUCTION GOALS

The original Solid Waste Management Plan that was prepared in 1997 established a local goal of 16% waste reduction to be reached by June 30, 2001 and a further goal of 18% to be reached by June 30, 2006. These waste reduction goals were less than the recommended goals of the North Carolina Department of Environment and Natural Resources, Division of Solid Waste Management. The recommended goal was 40% waste reduction by June 30, 2001. Swain County did not feel that a 40% waste reduction was achievable for this time period, due to the high percentage of part-time residents and high volume of out-of-county tourists that visit Swain County. In fact, the per capita rate increased 18% from 0.50 to 0.59 tons during the FY 1991-92 to FY 2001-02 periods and then rose nearly 5.1% more to 0.62 tons between FY 2001-02 and FY 2010-11. If increases follow the trends, projected estimations may be 0.66 tons by FY 2021-22. Economic factors related to the tourism industry have an effect on solid waste generation as the total volume of solid waste will increase or decrease as tourism rises or falls, and the County has seen an increase in tourism over the past decade. Additionally, the base year per capita rate of 0.50 tons is among the lowest in the State. Due to the absence of operational scales, the County did not keep records of waste tonnages during the baseline year of FY 1991-92. Instead, the per capita rate was determined by estimating the waste disposed at the landfill. Therefore, the County feels that the original baseline year per capita waste disposal rate is likely incorrect and continuing to monitor waste reduction efforts against the original baseline year is not beneficial. The County continued to report its waste reduction goals against the FY 1991-92 per capita disposal rate as an appendix to the 2003 update of the Plan, and due to State requirements this section has been calculated for the 1991-92 baseline rate and included as Appendix E. However, it is impossible to speak of "reduction" based on the FY 1991-92 rate because the current waste reduction goals of the County are actually greater than or equal to 0.50. In the body of this update, FY 2001-02 will be considered the baseline year (0.59 tons per capita).

Based on the County's current waste stream and recycling efficiency, the per capita disposal rate increase of 18% realized between FY 1991-92 and FY 2001-02 and the further increase of almost 5.1% from FY 2001-02 to FY 2010-11, Swain County chose modest waste reduction goals of 15.3% by June 30, 2019 compared to the baseline per capita waste disposal rate of 0.59 tons. Swain County feels that the State's recommended 40% waste reduction goal is still not achievable during this time period. However, the County will continue to aggressively pursue waste reduction through such means as recycling, reuse, waste diversion, mulching, composting, and pursuing technological advances in the solid waste industry. The County does not want to set unrealistic goals and feels that the waste reduction goals stated above are realistic and attainable.

The waste reduction goals can be converted from percents to an estimate of tons to be diverted by using population estimates and waste disposal figures. The baseline disposal rate was 0.59 tons per capita (FY 2001-02). Swain County's per capita disposal rate for FY 2010-11 was 0.62 tons. This equates to an increase in the per capita disposal rate of 5.1% between the baseline year (2001-02) and FY 2010-11. Based on the recent increases in the per capita disposal rate and projected future population, Swain County will dispose of approximately 8,509 tons in FY 2013-2015 and 9,123 tons in FY 2021-2022 if they continue to realize the current per capita waste disposal rate of 0.62 tons. (See Table 5).

Table 5. Waste and Population Projections

YEAR	POPULATION	WASTE DISPOSAL	TONS PER CAPITA DISPOSAL RATE
Baseline year, FY 2001-02	13,114	7,769	0.59
FY 2004-05	13,470	8,458	0.63
FY 2007-08	14,373	9,157	0.64
FY 2010-11	13,320	8,209	0.62
YEAR	ESTIMATED POPULATION	ESTIMATED WASTE DISPOSAL	
FY 2014-2015	13,724	8,509	0.62
FY 2021-2022	14,714	9,123	0.62

Source: Swain County and staff projections. Baseline year per capita rate based on FY 2001-02.

The County feels that by aggressively pursuing new recycling and reuse markets for the industrial, commercial, and construction & demolition waste produced by the planning area, and promoting residential recycling through education, it can realistically meet a local goal of 8.5% per capita waste reduction in FY 2014-15 and 15.3% in FY 2021-22 versus the FY 2010-11 per capita waste disposal rate. Swain County must reduce its per capita disposal rate to 0.54 and 0.50 tons per capita, respectively, to meet these goals (see Table 6). Using the target per capita rates, the target annual tonnage remaining for disposal by Swain County would be 8,097 tons in FY 2014-15 and 8,681 tons in FY 2021-22. In other words, 686 tons of future annual waste disposed must be diverted from landfills in FY 2014-15 and 1,324 tons diverted in FY 2021-22, as compared to the FY 2001-02 per capita waste disposal rate of 0.59 tons.

Table 6. Targeted Waste Reduction, FYs 2014-15 and 2021-22

CALCULATIONS	FY 2014-2015	FY 2021-2022
1. FY 2001-02 per capita disposal rate (provided by Swain County)	0.59	0.59
2. Targeted per capita disposal rate for FYs 2014-2015 and 2021-2022 (subtract the percentgoal from 1.0, then multiply result by line 1)	0.54	0.50
3. Population for 2014-2015 and 2021-2022 (Based on 1.0% annual population increase)	13,724	14,714
4. Projected tonnage for disposal in FYs 2014-2015 and 2021-2022 at 0.59 tons/yr/capita FY 2010-11 disposal rate (multiplied line 1 by line 3)	8,097	8,681
5. Targeted annual tonnage for disposal in FYs 2014-2015 and 2021-2022 at targeted per capita disposal rate (multiplied line 2 by line 3)	7,411	7,357
6. Targeted annual tonnage to reduce in FYs 2014-2015 and 2021-2022 (subtracted line 5 from line 4)	686	1,324

Source: staff calculations

Considering the fact that the latest per capita disposal rate (from FY 2010-11) is 0.62 tons, more progress will have to be made than suggested by Table 6. In order to accomplish the County's goals, the weight of waste that needs to be diverted from landfills as compared to the last fiscal year is 1,098 tons by FY 2014-15 and 1,766 tons by FY 2021-22. For the purpose of this document, however, last year's data will be used to gauge waste composition and recycling levels, not as a per capita disposal baseline. In other words, the following targeted waste reductions have been calculated relative to how many tons would be disposed if the 2001-02 baseline rate of 0.59 was fixed throughout the planning period.

### Part III. MEETING THE WASTE REDUCTION GOALS

This Plan is designed to reduce Swain County's waste by 686 tons in FY 2014-2015 and 1,324 tons in FY 2021-22. To do this, Swain County will target the types of waste generated by assigning the same waste stream percentages calculated in Table 2. This information is summarized in Table 7. How these wastes will be targeted is addressed below. More detailed descriptions of specific waste reduction activities planned appear in Part V.

Table 7. Approximate Waste Reduction by Sector, FYs 2014-15 and 2021-22

WASTE TYPE	TARGETED TONS to DIVERT in FY 2014-2015	TARGETED TONS to DIVERT in FY 2021-2022
Residential/municipal	447	862
Non-residential	172	332
Construction & Demolition	67	130
<b>GOAL</b>	<b>686</b>	<b>1324</b>

#### Residential Waste

This Plan proposes the diversion of 447 tons in FY 2014-15 and 862 tons in FY 2021-22 for reduction of residential sector waste. Table 8 summarizes the residential waste reduction methods to be used to meet the local goals. School and community education are not listed because they are expected to affect each of the other waste reduction methods listed. Specific activities planned are described in Part V.

Table 8. Targeted Residential Waste Reduction, FYs 2014-15 and 2021-22

REDUCTION METHOD	TARGETED MATERIALS	EST. TONS FY 2014-2015	EST. TONS FY 2021-2022
Source Reduction	Paper, plastics, Styrofoam	81	157
Recycling	Cardboard, paper, plastics, glass, metals	320	616
Reuse	Clothing, furniture, appliances, household items	4	9
Composting	Yard waste, organics	1	2
Mulching	Brush and other wood materials	1	2
Special Wastes	Other miscellaneous items	40	76
<b>Total</b>		<b>447</b>	<b>862</b>

Source: staff estimates

#### Non-residential Waste

The goal for diverting disposed non-residential waste is approximately 172 tons in FY 2014-15 and 332 tons in FY 2021-22. The largest generators of non-residential waste are specifically targeted in this effort. Table 9 summarizes non-residential waste reduction projections.

Table 9. Targeted Non-residential Waste Reduction, FYs 2014-15 and 2021-22

REDUCTION METHOD	TARGETED MATERIALS	EST. TONS FY 2014-2015	EST. TONS FY 2021-2022
Source Reduction	Plastics	6	10
Recycling	Cardboard, metals, paper and glass	144	279
Reuse	Pallets and paint	3	6
Composting	Applicable materials	0	0
Mulching	Pallets not suitable for reuse	0	1
Special Wastes	Cable	19	36
<b>Total</b>		<b>172</b>	<b>332</b>

Source: staff estimates

### Construction and Demolition Waste

It is estimated that construction and demolition waste can be reduced by 67 tons in FY 2014-15 and 130 tons in 2021-22. The proposed reduction methods and targeted wastes are shown in Table 10.

Table 10. Targeted Construction and Demolition Waste Reduction, FYs 2014-15 and 2021-22

<b>REDUCTION METHOD</b>	<b>TARGETED MATERIALS</b>	<b>EST. TONS FY 2014-2015</b>	<b>EST. TONS FY 2021 - 2022</b>
Recycling & Reuse	Markets for these materials must be developed	7	14
Source reduction	All materials	53	102
Mulching	Untreated lumber	7	14
<b>Total</b>		<b>67</b>	<b>130</b>

Source: staff estimates

### Current Progress Toward Waste Reduction Goals

The original Solid Waste Management Plan that was prepared in 1997 established a local goal of 16% waste reduction to be reached by June 30, 2001 and a further goal of 18% to be reached June 30, 2006. The original baseline year (FY 1991-92) disposal rate was 0.50 tons per capita (figure provided by the N.C. Solid Waste Section). Swain County's per capita disposal rate for FY 2001-02 was 0.59 tons and has been used as the subsequent base line year. For FY 2010-11, Swain County's per capita disposal rate was calculated to be 0.62 tons. This equates to a per capita disposal rate increase of 5.1% between the baseline year (2001-02) and 2011. Based on this increase, the County did not achieve the reduction goal of 8.5% by June 30, 2011.

The last update to this Plan (submitted in June 2009) stated waste reduction goals of 8.5% by FY 2010-11 and 15.3% by FY 2021-22 versus the FY 2001-02 baseline. As stated before, the per capita disposal rate actually increased by approximately 5.1% between FY 2001-02 and FY 2010-11. Therefore, the FY 2010-11 goals were not achieved and it is highly unlikely that the goal for FY 2021-22, as given in the 2012 update, will be achieved.

A large obstacle to waste reduction continues to be that the County does not have any direct control over the non-residential waste. Since non-residential waste currently accounts for approximately 25.0% of the waste stream, it is difficult for the County to find methods for reducing waste. The County is also predominantly rural, which makes additional recycling programs such as curbside collection for the unincorporated areas of the County cost prohibitive. The County has to depend on citizens to bring recyclables to the drop-off locations.

However, the County feels that by aggressively pursuing new recycling and reuse markets for the industrial, commercial, and construction & demolition waste produced by the planning area, and continuing to promote residential recycling through education, that they can realistically meet the local goal of 8.5% per capita waste reduction in FY 2014-15 and 15.5% in FY 2021-22 from the FY 2001-02 baseline per capita waste disposal rate of 0.59 tons.