



# INDUSTRIAL ORGANICS SUPPLY SURVEY 2017

An In-house Survey of the Buncombe County Region



Report Prepared by  
Waste Reduction Partners  
Land of Sky Regional Council

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## Acknowledgement to our Partners

Waste Reduction Partners is a program of the Land-of-Sky Regional Council (LOSRC), a governmental nonprofit organization that assists local governments with planning and decision-making. The Waste Reduction Partners program works in a special partnership with the N.C. Division of Environmental Assistance and Customer Service, the US Department of Agriculture and other partners.



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# Table of Contents

|   |   |
|---|---|
| Executive Summary .....                                       | 1 |
| 1.0 Background .....  | 2 |
| 2.0 Survey Development Process.....                           | 2 |
| 2.1 Written Questionnaire Development.....                    | 2 |
| 2.2 Survey Databases and Business Identification.....         | 3 |
| 2.3 Local Government – Solid Waste Management Operations..... | 3 |
| 3.0 Industrial Organics Supply Survey - Findings .....        | 4 |
| 3.1 Total Organic Material Generated and Available .....      | 4 |
| 3.2 Review of Organic Material Reported.....                  | 5 |
| 3.3 Business and Local Government Sectors Reporting.....      | 7 |
| 3.4 Organic Material Management Methods.....                  | 7 |
| 3.5 Management Costs Reported .....                           | 8 |
| 3.6 Easy of Material Separation.....                          | 8 |
| Attachment 1 (Survey Tool) .....                              | 9 |

**Industrial Organics Supply Survey 2017**  
**By**  
**Waste Reduction Partners, Land-of-Sky Regional Council**

**Executive Summary**

Survey Objectives

Industrial and related commercial generators of organic by-product waste streams were surveyed in early 2017 to determine the quantity, characteristics and current management practices of organic waste/by-products in the region. This survey was undertaken to augment a commercial and residential Organics Waste Processing Feasibility Study, Phase I and an Organics Management Program, Phase II Study being conducted by CDM Smith consulting by the City of Asheville and Buncombe County. The findings in this survey represent a snapshot for the region from engaged organics generators willing to share data and management practices. Authors did not make attempt to project organic material generation from survey non-participants nor project total potential generation by sector or future trends.

Geography Area: Buncombe and adjacent counties including Haywood, Henderson, Transylvania, Madison, and McDowell.

Numbers Surveyed and Responses: 265 organizations were surveyed, (e-mailed and US mailed), 49 responses received. WRP staff followed-up with all potentially large generators of organic materials.

Example Organic Materials Reported: Brewery residuals, wood waste, wastewater biosolids, cafeteria waste, agricultural food wastes.

Tons of Reported and Management Practices

The WRP survey identified a total of 216,000 tons of annual generation identified. But one large biosolids generator accounted for 156,000 tons (Evergreen Paper's biosolids which are currently landfilled on-site).

Of the remaining 60,000 tons per year reported by all the rest of these generators, the breakdown in generation by weight is as follows:

- 51% Brewers residuals
- 35% Wood waste (but the category is likely under represented)
- 6% Industrial biosolids
- 3.5 % Cafeteria food waste (2,084 tons)
- 1% Ag waste residuals
- 1% Digested wastewater treatment biosolids

Current organics management practices reported in the survey included

- 51% animal feed
- 31% wood product (mulch or fuel)
- 12.5% landfilled
- 5.8% composted

From a physical material properties standpoint, Waste Reduction Partners estimates that 89% of all waste organics reported (60,000 tons) potentially could be anaerobically digested.

## Industrial Organics Supply Survey - 2017

### 1.0 Background:

This organic supply study was undertaken to augment commercial and residential Organics Waste Processing Feasibility Study, Phase I and an Organics Management Program, Phase II Study being conducted by CDM Smith consulting by the City of Asheville and Buncombe County. Better utilization of organic by-products including wood wastes are goals of the NC Division of Environmental Assistance and Customer Service. The NCDEACS is interested in growing markets for recyclables to divert more material from landfilling.

The findings in this survey represent a snapshot for the region from engaged organics generators willing to share data and management practices. Authors did not make attempt to project organic material generation from survey non-participants nor project total potential generation by sector or future trends.

### 2.0 Survey Development Process

Waste Reduction Partners embarked upon the Buncombe County Industrial Organics Supply Survey early 2017. WRP staff engaged City of Asheville and Buncombe County staff to help scope this in-house survey, as to augment study work being conducted by CDM Smith. A WRP work team, which consisted of Niall McCormick, Dave Lowles, Dee Hanak and Terry Albrecht plus participation from Bridget Wlosek with CDM Smith, held various meetings to develop a one-page written survey tool and to assemble various databases for survey outreach. The survey was e-mailed and US Postal Service mailed with a cover letter providing instruction for completion. A link was provide to Survey Monkey <https://www.surveymonkey.com/r/AshevilleOrganicsSurvey> to complete the survey on-line, or the user could complete an attached one-page pdf and provide a scan back to the WRP team. Respondents could also US mail in their response. WRP staff conducted followed-up e-mails and phone calls for all significant non-responders.

### 2.1 Written Questionnaire Development

The WRP survey team developed a simple one-page written survey to be used with all industrial and commercial organic material generating sectors. Definitions of what constituted organic material of interest was included in the survey cover letter and within the survey itself. The survey included questions on annual generation of organics material/waste (including any organic, biodegradable or compostable materials), description of the by-products, ability to pump, present markets, distance hauled to markets, disposal costs and receptiveness to more economic or sustainable management methods. (See Attachment 1: Survey Tool). The survey tool was reviewed by the WRP team and tested with organics stakeholders before distribution.

## 2.2 Survey Databases and Business Identification

The development of the survey database was a time-consuming and challenging task. The WRP team set the geographic region of Buncombe and adjacent counties including Haywood, Henderson, Transylvania, Madison, and McDowell.

The WRP team utilized the following data sources information for contacts:

2016-18 Asheville Metro Business Directory

<http://www.madisoncounty-nc.com/business-directory/>

<http://web.haywoodchamber.com/search>

<http://business.mcdowellchamber.com/list/searchalpha/a>

[http://www.hendersoncountychamber.org/newcw/cw\\_lst.htm](http://www.hendersoncountychamber.org/newcw/cw_lst.htm)

<http://www.brevardncchamber.org/index.php/the-chamber/business-directory>

Waste Reduction Partners past client lists

Mountain Workforce Development contact lists for Region B manufacturers and tourism businesses.

Within the business and industrial directories, the following types of businesses were identified for contact:

Farmer's Markets

Nurseries

Beverage Processing

Breweries

Dairies

Bakeries

Bio industries

Biodiesel manufacturers

Paper manufacturers

Wood products

Colleges and Universities

Any large manufacturers with sizable workforces in Buncombe County

265 organizations were surveyed, (e-mailed and US mailed), 49 responses were received.

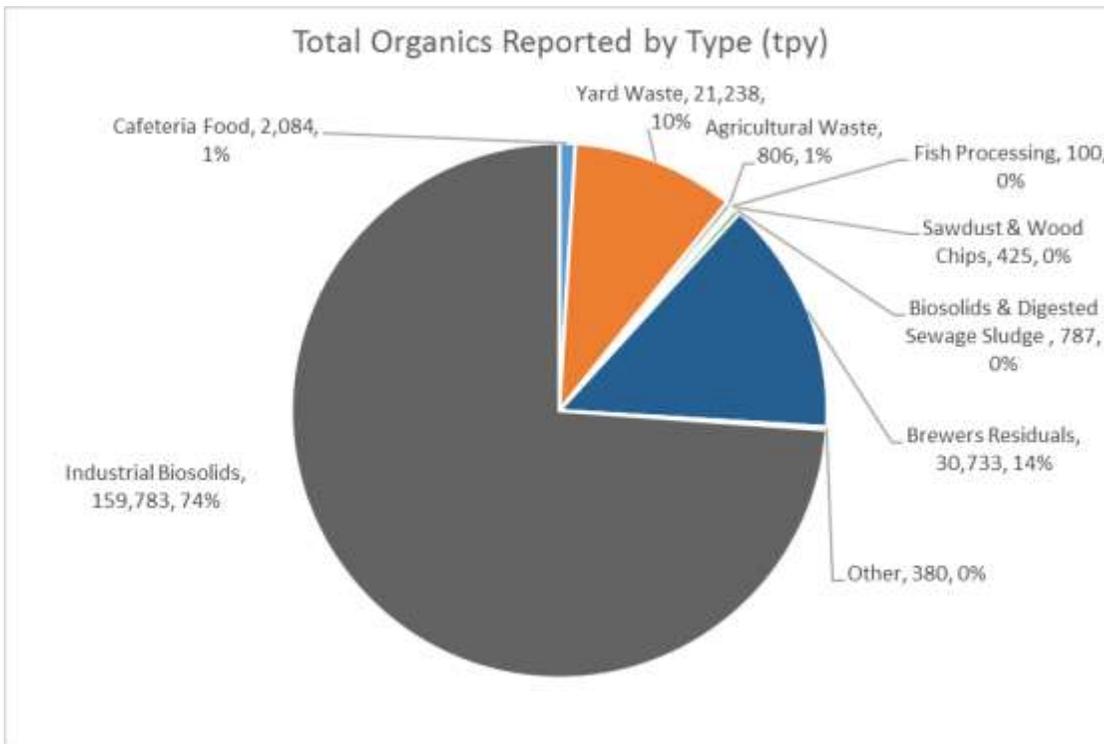
## 2.3 Local Government – Solid Waste Management Operations

Because yard waste and county wood waste collection represents a key carbonaceous feedstock to the composting process, municipal and county managed volumes of these materials are included in this survey. Reported amounts of municipally managed yard and wood were compiled from the 2015-2016 Solid Waste and Materials Management Annual Report issued by the North Carolina Department of Environmental Quality, Division of Waste Management.

### 3.0 Industrial Organics Supply Survey – Primary Findings

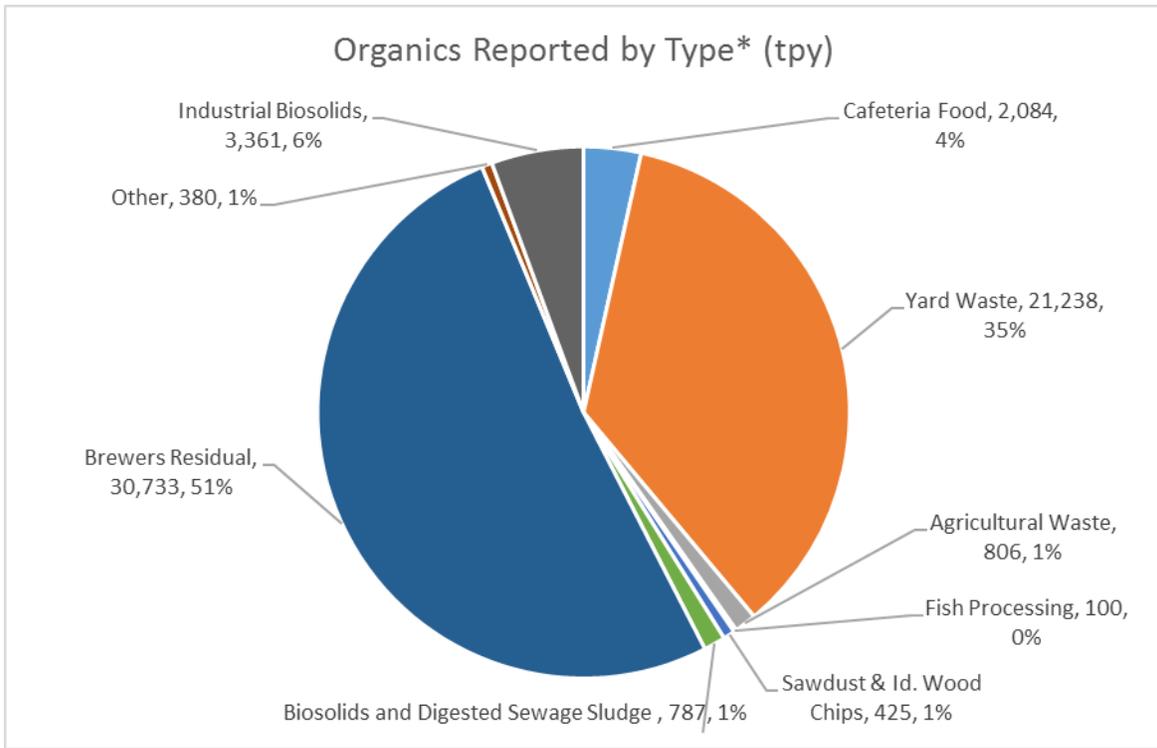
#### 3.1 Total Organic Material Generated and Available:

The following chart shows the total amount of organic material reported, 216,336 tons annually. Of this amount nearly 160,000 tons are generated by Evergreen Packaging in Canton, NC (Haywood County). While this large volume of paper manufacturing biosolids may have alternative management opportunities, for the purposes of this report authors focused on the analysis of the 60,000 ton subset of materials not part of Evergreen waste stream.



### 3.2 Review of Organic Material Reported – omitting Evergreen’s biosolids

The following chart shows reported annual amounts of organic by-products and waste reported by industries, businesses, institutions and local governments.



| Organics Supply Reported by Waste Category* | Tons per Year |
|---|---------------|
| Cafeteria Food                              | 2,084         |
| Yard Waste                                  | 21,238        |
| Agricultural Waste                          | 806           |
| Fish Processing                             | 100           |
| Sawdust & Id. Wood Chips                    | 425           |
| Biosolids and Digested Sewage Sludge        | 787           |
| Brewers Residual                            | 30,733        |
| Other                                       | 380           |
| Industrial Biosolids                        | 3,361         |
| <b>Total</b>                                | <b>59,914</b> |

\* excluding Evergreen Packaging biosolids

**Brewery residuals** represent the largest tonnage in the survey reporting (30,733 ton per year) with five brewers reporting, including the three largest in the region. All breweries reported managing their residual organics as an animal feed supplement. While transportation

arrangements may vary, typically there is not any associated tipping fee cost to the brewery for this end use as it provides value to the region's dairy farmers.

**Yard Waste** is the second largest tonnage reported at 21,238 tons annually. Regional local governments covered in the geography of this study reported generating or managing 77% of this total (16,386 tons per year). One manufacturer reported generating 4,793 tons per year of similar wood material and two colleges reported as well making a minor contribution to the subtotal.

**Industrial Biosolids** are the third largest reported tonnages at 3,361 annually. This reported material is also a paper manufacturing by-product which is typically burned in an on-site wood boiler for energy recovery and thus carries little external management costs.

**Cafeteria Food Waste** is the fourth largest organics generation category reported (2,084 tons per year). Nine organizations reported numbers for food waste generation including an automotive components manufacturer, breweries with restaurants, a tourism destination, two colleges and a leading grocery store chain. About one quarter of these food related organics are reported as already being composted with the other three fourths being landfilled. Except for the grocery chain, these food organics would be categorized as post-commercial in nature. While this food waste category is completely under represented due to limited number of survey respondents, the survey does provide anecdotal insights to the generation rates in these sectors. Because most of these food related organic material is currently being landfilled, they represent a competitive collection category for future compost or anaerobic digestion service offerings.

**Agricultural Wastes** reported including approximately 800 tons of spent growing media from a large nursery. This soil media is mixed with plastic pots and trays. It is currently being managed through a solid waste transfer station with associated fees. The authors of this report are aware of other agricultural organic materials being generated, such as from tomato packaging, which are currently managed on-site but whose oversight staff may have interest in alternative composting outlet if logistics and pricing are favorable.

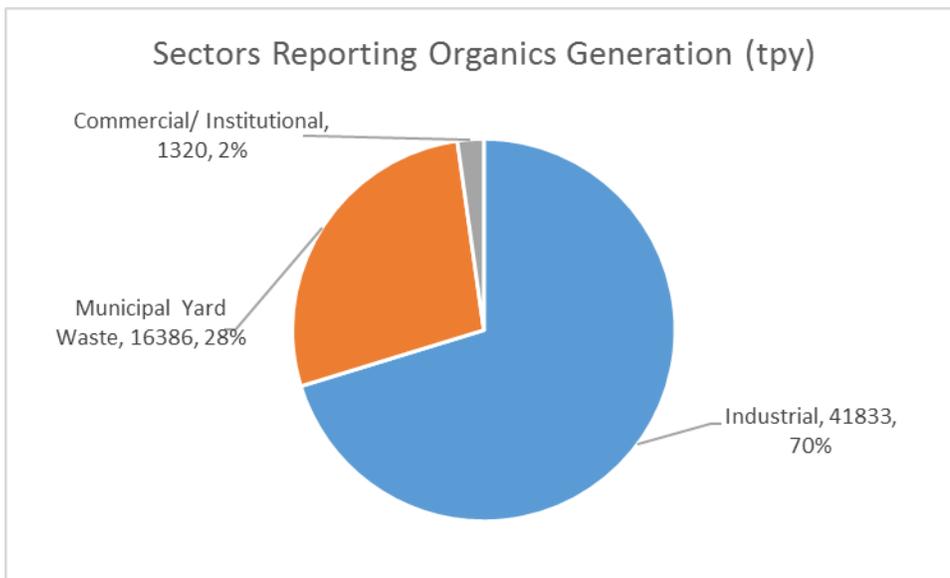
The sixth largest categories includes **wastewater biosolids** reported from brewers, beverage processors, and biofuel manufacturers. Most of this material is composted but still has associated management costs. Some of these de-watered biosolids could be valuable to a municipal composting or anaerobic digestion operation. No municipal wastewater or water treatment biosolids are included in this survey, but these municipally generated biosolids are sizable tonnages and carry related disposal costs.

**Sawdust and Woodchips** generated by wood product manufacturers and millwork companies are presented separately from municipal yard waste volumes. The sawdust and wood residual reported (425 tons per year) were mostly being supplied as an animal bedding material with no associated tipping fees. Only a couple of wood products companies reported their wood residuals in this survey. In 2007, WRP conducted a WNC (wood waste) biomass supply study which identified over 255,000 tons per year of wood waste being generated in North Carolina within a 100-mile radius of Asheville by private sector businesses. See [WNC Biomass Study 2007](#) on the WRP website. While these wood waste generation rates are now substantially

different, the past findings would indicate that significant volumes of wood waste materials are available in WNC for higher value uses.

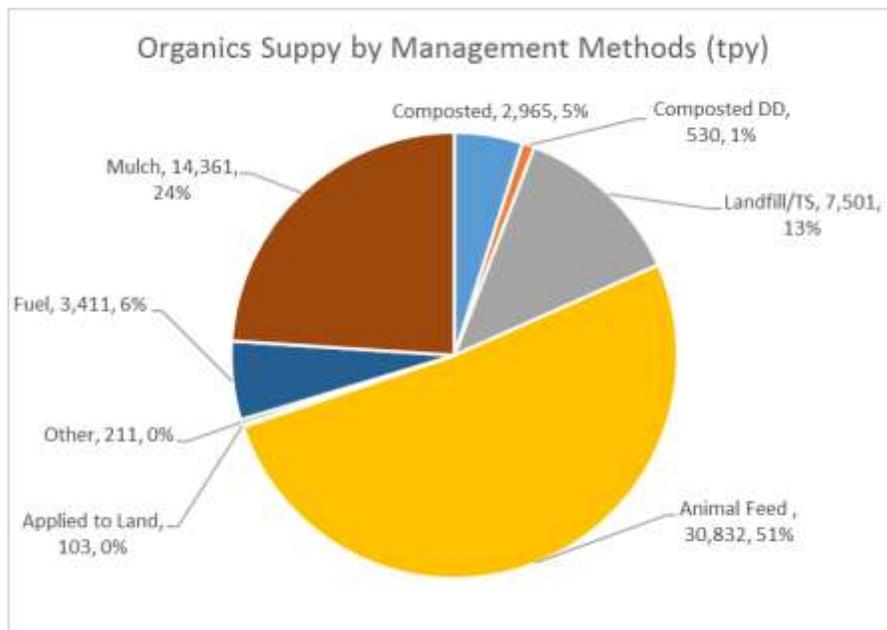
### 3.3 Business and Local Government Sector Reporting

The following chart shows the total amount of organic materials reported by sector of generations.



### 3.4 Organic Material Management Methods

The follow chart shows current management methods for the material reported in this survey.



### **3.5 Management Costs Reported**

While the survey requested information on current management costs for these organic materials, few facilities provided this information. For facilities using existing compost outlets in the region, they report cost in the \$11 – to \$40 range per cubic yard as their tipping fees. Regional municipal solid waste fees can be assumed for organics being landfilled directly, or received at a transfer station and yard waste fees, private or county managed can be assumed for woody material processed as such.

### **3.6 Easy of Material Separation**

Almost all the organization reports noted the organics materials are already separated from other solid waste in their collection system. One manufacturing respondent said they would could easily separate out organics should they choose to.

**Attachment 1: Survey Tool**

## WNC Organics Supply Survey

**1. Do you generate organic / biodegradable / compostable waste at your facility? Organic waste is defined as any material that originates from either plant or animal tissue.**

Yes  No  Maybe

**2. Do you separate this organic waste from the rest of your waste?**  Yes  No

**3. If you are not separating, is it possible to put processes in place to separate the organic waste collection?**

Yes  No  Not sure, need help with this  We already separate

**4. Please estimate and list the annual weight or volume of each type of organic waste that you generate (for example Food Waste, 200 yards/year; Biosolids, 50 tons/year ; Grease Tramp Pump-out, 10,000 gallons/year)**

| Material/Waste Description | Amount per year (please note units) |
|----------------------------|-------------------------------------|
| _____                      | _____                               |
| _____                      | _____                               |
| _____                      | _____                               |
| _____                      | _____                               |

**5. If you are an industrial entity, have you had a laboratory analysis done on this material?**

Yes  No

If yes, note which material and describe the test(s):

**6. Can this organic waste be pumped?**  Yes  No  Not sure

**7. How is this organic waste currently managed? Check all that apply.**

Left on site  Landfill/transfer station  Composted  Land Applied  Animal Feed,  
 Anaerobic Digestion  incineration  Other / Explain \_\_\_\_\_

**8. If you are hauling your organic waste off site, how far is it being transported?** Distance hauled \_\_\_\_\_

**9. Are you receptive to alternative methods to managing your organic waste (for example, composting, anaerobic digestion or more economical or sustainable practices)?**  Yes  No  Maybe

**10. What is the cost you pay per ton (or cubic yard) for disposal of your organic waste?**  \$0  \$1-10  \$11-20  \$21-30  \$31-40  \$51-60  \$60+ **OR** - Approximate waste service charge per month? (For organic portion only) \_\_\_\_\_

|                      |                              |
|----------------------|------------------------------|
| <b>Company Name:</b> | <b>Site Location (City):</b> |
| <b>Contact Name:</b> | <b>Site Address:</b>         |
| <b>Email:</b>        | <b>Phone:</b>                |
| <b>Comments?</b>     |                              |

**Questions? Contact Niall McCormack at nmccormick@wrpnc.org.**

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Mail survey using the self-addressed envelope or send scan to Niall McCormack at [nmccormack@wrpnc.org](mailto:nmccormack@wrpnc.org).