

# **SOLID WASTE MASTER PLAN UPDATE**

**Henderson County, North Carolina**

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**February 2020**

**18.00706**

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## **EXECUTIVE SUMMARY**

Solid waste management is an essential service provided by Henderson County to its respective citizens. In Henderson County, this service is managed by the Solid Waste Division operating under the leadership of the County Engineering Department. The Solid Waste Division is charged with the task of protecting human health and the environment by providing environmentally sound, cost efficient waste disposal. Effective solid waste management is also essential for the County to continue to grow and expand as new businesses and residents move into the area.

The Henderson County Solid Waste Division operates as an enterprise fund, separate from the general fund and property taxes. For the Division to continue to operate as a viable economic operation, it must provide excellent customer service, safe efficient access to all solid waste services, as well as value to its rate payers and the citizens of the County. The County must continually review and upgrade services and facilities to meet new challenges as well as continue to conform to new and ever-changing environmental regulations.

The center of the Division's operation is the Stoney Mountain Road Landfill Facility located on Stoney Mountain Road. This facility presently operates as a transfer facility for waste collected within the County as well as providing collection and processing for various other components of the waste stream. Recyclable material collection is also provided. The facility is utilized by permitted private haulers as well as citizens transporting their own residential waste and recyclable material to the facility for disposal and/or processing. The addition of the separate citizens convenience in 2011 was key in improving safe and efficient service to County citizens. The center accommodates nearly 800 vehicles/day on average. The number of customers and citizens accessing the Stoney Mountain Road Facility continues to grow, resulting in a need to provide new and/or expanded services in the future, to manage traffic congestion at the facility. Several capital improvement projects have been proposed to expand/improve services as well as enhance the safe and efficient access to the site for the commercial customers and the citizens of the County. The proposed improvements should also enhance the flow of traffic along Stoney Mountain Road, as well as within the landfill itself.

Collection of solid waste within the unincorporated areas of the County is handled by a network of private haulers licensed to provide these services by the Solid Waste Division. Some of these permitted haulers provide residential waste collection services for a fee to residents as an alternative to transporting their own waste to the Stoney Mountain Road Landfill Facility for disposal. Several incorporated municipalities within the County already provide residential waste collection services to their citizens. The County presently works in general partnership with these private haulers to ensure a general level of service is provided to the citizens in a cost effective manner. These permitted haulers provide a steady source of income for the Solid Waste Division. This partnership must be continued and expanded to enhance the opportunity for efficient cost effective collection of residential waste for all citizens in the unincorporated areas of the County.

The financial assessment portion of this Study is essential to understanding the implications of future regulatory compliance issues, proposed capital expenditures and other aspects of the overall solid waste management program. The assessment complements the County's ability to evaluate programmatic and technical alternatives prior to actual implementation. Several capital improvement projects were recommended as a part of this Solid Waste Master Plan. Based on this assessment, the County should be able to implement the proposed capital improvements to enhance the overall operational efficiency and effectiveness of the solid waste management program.

# INTRODUCTION

Henderson County is a vibrant community facing challenges and opportunities brought on by continued growth and diversity. To be successful as a government entity, the County must respond strategically to the needs of its citizens in this ever-changing environment. The Solid Waste Division is an integral part of this process as it provides waste disposal services for the citizens of the County. The overall goal of the Solid Waste Division is defined in its mission statement as follows:

## **Mission Statement:**

**The mission of the Henderson County Solid Waste Division is to protect human health and the environment by providing environmentally sound, cost efficient waste disposal.**

The Henderson County Solid Waste Division presently operates a transfer station facility and other critical solid waste services at the Stoney Mountain Road Landfill Facility off Stoney Mountain Road just north of the City of Hendersonville. The Solid Waste Division operates under the supervision of the Henderson County Engineering Department. The Division operates as an enterprise fund and does not receive monies from the general fund or property taxes. In order to continue to provide environmentally sound and cost-effective waste disposal services to its citizens, the Division must continually evolve to address the ever changing challenges of higher operating costs and more aggressive regulatory requirements.

Henderson County retained McGill Associates in 2009 to perform a Solid Waste Feasibility Study. The study was performed in conjunction with the Solid Waste Division with input from the SWAC and was charged with addressing the Stoney Mountain Road Landfill Facility's current operation, as well as providing recommendations for future use and/or upgrades to the facilities and programs to assist the County in meeting its long term goals of providing efficient and environmentally sound waste disposal services for its citizens. The Feasibility Study primarily focused on the following major topics with applicable appendices.

- Existing Waste Stream and Vehicular Traffic Review
- Current Facility Operations and Procedures
- Population Growth and Projected Waste Stream
- Proposed Facility Upgrades and Improvements
- Countywide Collection Services
- Recycling
- Financial Assessment
- Summary and Recommendations
- Appendices

This update to the Solid Waste Master Plan is an update of the Solid Waste Feasibility Study discussed in the previous paragraph. We have evaluated the same basic components of the solid waste division operations that we evaluated during the 2009 study. Of course, many of the improvements recommended by the 2009 study have been implemented, including the comprehensive solid waste improvements project completed in 2011, which included the Citizens Convenience Center, new entrance, and scale house & scale. There have been several other capital projects and key operational efficiencies realized, such as the addition of the automated waste wizard scale and connection to municipal sewer which have tremendously improved the overall health and efficiency of the Solid Waste Division operations at the Stoney Mountain Road facility since 2009.

The Solid Waste Master Plan evaluates a 10-year planning period from 2020 to 2030. We have worked closely with the County to identify and prioritize needed improvements for this planning period. We have estimated capital costs for facility improvements and equipment based on several meetings between McGill staff and Henderson County Solid Waste staff. We have also participated in an iterative process of updating the financial evaluation with Henderson County Solid Waste staff.

McGill Associates provided preliminary projective cost estimates for a list of identified capital improvement projects, along with an initial recommended prioritization, based on several site visits to observe current operations. Henderson County Solid Waste staff used this information to prepare an initial cash flow model, which was then reviewed by McGill Associates for accuracy. Our final recommendations shown in Appendix G is our collective best offering to balance immediate/short-term/long-term needs against available annual revenues, while maintaining a reasonable and responsible level of revenue reserve to manage future unknown changes resulting in a significant reduction in revenue (recession, recycling market fluctuations, etc.) or increase in operating costs (equipment failure, compliance issues, unfunded mandates, etc.)

McGill Associates wishes to thank the County's staff for their support, recommendations and valuable input during the preparation of this Master Plan. We look forward to continuing to work with the County to assist with the implementation of the proposed recommendations.

## **PERMIT AND CONSTRUCTION SUBMITTALS REVIEW**

The Henderson County Solid Waste Transfer station is located at 191 Transfer Station Drive off Stoney Mountain Road (SR 1383). The property is comprised of approximately 136.55 acres. There are three (3) active permits for the facility from the Solid Waste Section, Division of Waste Management, North Carolina Department of Environmental Quality. The Transfer Station Facility operates under Permit No. 4504T-Transfer-1998. The permit was issued as a "Life of Site" permit on October 30, 2018.

The Household Hazardous Waste Facility operates under Permit No. 4504-HHW-2011. The latest 5-year operational permit was issued on August 30, 2016. The County also operates a Small Type 1 Composting Facility under notified site rules of 15A NCAC 13B .1402. A copy of the Permit to Operate for both facilities is included in Appendix A.

There are two (2) closed permits from the Solid Waste Section for the for the Facility. The Municipal Solid Waste Landfill has a closure permit (Permit No. 4501-MSWLF-1980) dated April 11, 2006. The Construction and Demolition Debris Landfill has closure permit (Permit 4501-CDLF-1998) dated August 30, 2016.

The County property also operates under a general stormwater permit NCG120000 from the Stormwater Section, Division of Energy, Mineral and Land Resources, North Carolina Department of Environmental Quality.

Based on review, there are no outstanding Notice of Violations and the County is compliance with their current permits.

# CURRENT OPERATIONS

## Facilities

On Friday, September 6, 2019, Tuesday, September 24, 2019, and Tuesday, October 1, 2019, McGill Associates visited the Henderson County Solid Waste Transfer Station facility to visually observe the ongoing operations and tour the various facilities presently in use. Emphasis was placed on the ingress and egress traffic patterns associated with the various services and the capacity of the existing facility to meet the future needs of the County and on the potential future availability of the Henderson County School Bus Garage property to be utilized for solid waste operations.

Below is a summary from our most recent observations incorporated into information from the 2009 study.

### Entrance Facility/Scale House:

The primary entrance for the Henderson County Solid Waste Transfer Station is located at 191 Transfer Station Drive off Stoney Mountain Road (SR 1383), approximately 800 feet southeast of the intersection with Mountain Road (SR 1381). This access road and scale house were constructed as part of the 2010 Solid Waste Capital Improvements project. This access is for all commercial customers and citizens utilizing the solid waste transfer station, recycling transfer area, tire drop-off, and the yard waste and wood processing area. The entrance road is approximately 1000 feet long providing queuing for inbound traffic on high volume customer days. An additional in-bound lane begins approximately 500 feet from Stoney Mountain Road. The left inbound lane is generally used for residential customers and commercial customers that do not have a Waste Wizard account with the County. The right lane is dedicated for commercial customers that have a Waste Wizard account. Waste Wizard is the county's waste management software, which tracts all inbound waste into the facility. An average of 385 vehicles entered the facility on a daily basis during 2019. In 2009, convenience center customers and transfer station customers both used the same entrance and the daily average was 700 vehicles per day. A new Convenience Center was constructed as part of the 2010 Solid Waste Capital Improvements project with a separate entrance. A more detailed discussion of vehicular traffic is included in a later section of this report.

All vehicles using the left inbound lane stop at the scale house to check in with the scale attendant. The attendant evaluates the waste load and determines the disposal charge. The disposal fee charged for the load is generally dependent on the size/type of vehicle delivering the waste (i.e., car, pickup truck, vehicle with trailer, etc.). Larger loads are weighed and must return to the outbound scale to weigh again and are charged a tip fee based on the difference in their inbound and outbound weights. A copy of the Approved FY 18-19 Fee Schedule is included in Appendix B. Customers are then directed to the appropriate disposal area. Residential customers are either directed to the transfer

station Bay 2 or Area 3 depending on the type of load or how busy the facility is at the time. Commercial customers are generally directed to Bay 1.

Commercial customers with a Waste Wizard account can use the bypass lane and enter facility without stopping at the scale house. These customers proceed to the remote scales and enter their specific customer/ truck code and get weighed for their gross vehicle weight. The Waste Wizard customers already have a tare weight on record for their vehicle. A tare weight is the officially accepted weight of an empty car, vehicle, or container that when subtracted from gross weight yields the net weight of the cargo upon which charges can be calculated. The collection truck then proceeds to Shed 1 for disposal of the solid waste. If the commercial vehicle is carrying both solid waste and recycled materials, the customer first proceeds to the recycling drop off in Area 4. After dropping off the recycled material, the customers must re-weigh at the remote scales to determine the weight of solid waste disposal. The commercial customer then proceeds to Shed 1 to dispose of the solid waste. They can then exit the facility through the outbound by-pass and avoid stopping at the scale house.

#### Transfer Station:

The existing transfer station currently consists of two independent two-level, three-sided, pre-engineered steel buildings, identified as Shed 1 and Shed 2. Shed 1 is used primarily for commercial waste collection trucks, whereas, Shed 2 is primarily used for residential users and the recycled materials. Shed 2 is divided into two areas using concrete “jersey” barriers. Approximately 2/3 of the building is dedicated to solid waste and 1/3 is dedicated to transferring recycled materials. The transfer station operation collects and processes all materials coming to the facility except for household hazardous waste, recycled glass, yard waste, and wood waste, which are handled through one of the other operations.

The buildings are orientated in a general northwest to southeast orientation with the hauler entrance on the northwest. The buildings are metal frame buildings with an open front and are of sufficient height to allow internal dumping of roll-off containers and/or tipping of front loader type collection vehicles. Each structure consists of an upper level concrete tipping floor with a floor opening against the back wall for top loading of the transfer trailers located on the lower level below the tipping floor. Entrance drains are in place across the front of the buildings to help prevent run-off from draining from the tip floor and into the storm water run-off system. Access to the transfer station bays from the main facility entrance is an asphalt paved access road providing all weather operations. Concrete retaining walls are constructed along each side of the tip floors and just inside the outer side and back walls of the buildings. These walls are used to contain the waste and prevent damage to the building structure. The back wall also serves as a stop for directing the waste, as it is being pushed by the loader into the transfer trailer located below. The fronts of the buildings are generally in line with each other while the back of the buildings are staggered to allow access to either transfer station independently of the other. The newer building, Shed 1, (located west of the original building) was constructed with a drive through tunnel system to allow access to the floor opening in the older building, Shed 2. The landing area for the transfer trailers is concrete

with floor drains to capture any contaminated liquids that escape from the trailers during loading operations. The back walls of the transfer stations are covered to the ground level generally providing for a fully enclosed loading area.

Stormwater and leachate that is generated from the waste disposal is collected through grate inlets along the entrance to the transfer station and through floor grates in the lower level. The grates are connected by pipe to the existing grit chamber. The grit chamber helps separate trash and grit from the wastewater prior to being discharged into the public sewer system.

Waste is deposited onto the tip floor of the transfer station. The transfer station operator utilizes a rubber-tired articulating loader to maneuver the deposited waste from the tip floor into the open-top trailers through the steel trash chutes. The loader is equipped with an integrated quick connect adapter to allow interchanging of various implements. The main implement consists of a general loader bucket with a rubber cutting edge to limit damage to the concrete floor. This bucket is used to push waste within from the tip floor to the floor opening to top loading the transfer trailers. The operator must carefully maneuver the waste into the trailers to minimize damage to the trailers while evenly distributing the waste throughout the trailer and maximizing the amount of waste in each trailer without exceeding North Carolina Department of Motor Vehicles requirements (legal load weight). The other loader implement is a site-specific fabricated tamping device for positioning and compacting the waste once it is pushed into the trailer.

The transfer trailers are maneuvered on site with a small specialized truck known as a "spotter truck". The transfer trailers are pulled into the lower level of each transfer station bay by the spotter truck and are positioned below the openings in the tipping floor. Side clearance in the trailer loading area is adequate with a curb system to help ensure proper alignment. However, the vertical clearance between the trailer and the ceiling is minimal and care must be taken when staging a trailer to ensure that it does not damage the ceiling or become damaged in the process.

Under the present operation of the facility, a full trailer is pulled by the spotter truck out from under the transfer station to the remote scale for weighing. If the trailer meets the minimum load weight requirement per the hauling contract with the off-site disposal company and does not exceed the legal load weight, it is then parked in a staging area for tarping and removal by the private contract hauler. The staging area is a gravel parking area just west of the remote scale. The staging area is graded and bermed such that any liquids draining from the trailers is directed and captured at the low end and piped to the sanitary sewer.

Should a trailer not contain sufficient weight to meet the minimum contract amount, then it is returned to the transfer station and additional waste added until the required load weight is achieved, or the trailer is completely full. If a trailer exceeds the legal load weight, then waste must be removed until the trailer meets the legal load weight. Overweight trailers are hauled to a small retaining wall just northwest of the transfer station buildings and partially unloaded by a track backhoe operating over the top of the

trailer. The trailers are reweighed, and the process repeated until such time as the trailer meets the legal load weight. The removed waste is placed in a roll-off box and later dumped back on the tipping floor. While the use of the track backhoe, equipped only with a bucket, works for this process, it is not designed for this type of material removal and generally results in waste material being spilled over the side of the trailer and deposited in the space between the trailer and roll-off box. The scattered material must then be cleaned up by hand by the County's staff.

Signage is in place to control the area in which vehicles are allowed to dump. Citizens and other vehicle drivers are prohibited from approaching too close to the floor opening located against the back wall of the transfer station. Supervision is in place to ensure this policy is adhered to.

The commercial haulers and larger loads of other materials or construction/demolition debris loaded on a trailer or truck with tipping capability, generally utilize Shed 1. This allows them to deposit their load and exit the facility in a timelier fashion. The citizens bringing their personal household waste and smaller commercial loads that require unloading by hand generally utilize Shed 2, the smaller transfer station building. The drive area between the two buildings is separated by a movable concrete barrier to keep cross traffic at a minimum.

In general, the facility accepts commercially collected municipal waste, household waste brought in by citizens, and construction and demolition waste. During 2019, the transfer station averaged more than 360 tons per day, with peak days greater than 550 tons per day. Based on the waste tonnage received, the County loads an average of 18 transfer trailers per day, with peak days of 25 loaded transfer trailers. An average of 385 customer vehicles per day are handled at the transfer station. In comparison, in 2009, the average was 270 vehicles per day at the transfer station.

### *Summary*

The transfer stations appear to be in generally good condition and are operated in a professional manner given the amount of waste/traffic that is run through them on a daily basis. The following items should be monitored and replaced or repaired, as needed:

#### Tipping Floor/ Concrete Walls

The concrete tipping floor in each building is beginning to show some deterioration and may need repair and/or resurfacing in the near future. The edges of the floor opening are beginning to show the effects of heavy use as they are becoming rounded by the abrasion of the waste being pushed by the loader. The floors should be repaired before the rebar becomes exposed, corrodes and causes further deterioration. The back retaining wall in Shed 2 is a concrete wall that has taken some abuse over the years and has become ragged along the lower edge. Some gaps are forming that could allow waste to miss the trailer and fall onto the trailer staging lane area. This area should be monitored carefully, and repairs made as necessary to prevent further deterioration of the back push wall.

These walls should be evaluated by a structural engineer as part of the process for planning and designing these improvements, to confirm the structural integrity.

#### Floor Drains/ Grit Chamber

The trench grate drains at the entrance to the transfer stations and floor drains in the lower level and below the transfer trailers, appear to become periodically clogged with waste thereby not allowing collected liquid to properly drain to the grit chamber. This situation should be monitored carefully and cleaned out on a routine basis to keep the system functioning as intended. Repairs and/or modifications may be required to upgrade the trench drain system to keep it functioning properly. The grit chamber has deteriorated to a point that is impacting the effectiveness and needs to be replaced.

#### Transfer Trailer Tunnels

The transfer station tunnels have been in operation for many years and have not been repaired since initial construction. The tunnels are vital to continued operation of the buildings and their condition needs to be closely monitored and rehabilitated to address problems as needed.

#### Exit Ramp from Transfer Station

The condition of the exit ramp from the transfer stations has suffered from the number and weight of the transfer trailers exiting the transfer station. The ramp is constructed as a tight curve on an approximate 6.5% grade. The fully loaded trailers are pulled up the ramp by the spotter truck. This is a crucial element of the transfer station operation. Minor repairs to the ramp have been made through the years, but the ramp must be replaced soon to maintain efficient transfer station operation.

#### General Operations

As for general operations, the staff should instruct the vehicle drivers, especially those operating vehicles with tipping capability, to discharge their load in as small an area as possible. There is a tendency at times to tip the truck body or trailer, start and stop the vehicle in a jerking motion and then drive out of the transfer station tipping floor area while lowering the truck body, with the operator thinking the entire load has been discharged. This practice has a tendency to scatter waste material outside the tipping floor area and onto the asphalt approaches. This scattered waste must then be immediately cleaned up by County staff.

The major problem presently affecting the operation of the transfer facility is the volume of traffic utilizing the transfer station. In 2009, the convenience center was located adjacent to the transfer station. All vehicles utilizing the convenience had to pass by the transfer station in route to the citizen's convenience/recycling center (430± vehicles per day). In 2010, the new convenience center with a dedicated entrance was constructed. The new entrance was constructed further south on Stoney Mountain Road. The new

dedicated entrance alleviated convenience center traffic flow through the transfer station area. However, due to an increase in the amount of overall waste, the vehicles utilizing the transfer station has increased from an average of 270 vehicles per day in 2009 to more than 385 vehicles per day in FY 2019.

#### Recycling Transfer Area:

The drop-off of recycled material is handled in several ways at the facility. As mentioned earlier, Shed 2 of the transfer station is divided by jersey barriers into two areas. The right-side area is for disposal of municipal solid waste and construction demolition debris. The left side is dedicated to handling recycled materials.

Citizens using the Convenience Center dispose of their recycled materials at the center into roll-off containers. Once the containers are full, County personnel transport the roll-off containers to Shed 2 and unload on to the tipping floor of the recycled material side of the station. Commercial haulers that have a dedicated truck for recycled materials also unload directly into the Shed 2 recycled material area. Commercial haulers that hand unload recycling material may also use the single stream compactor located in Area 3.

Most of the commercial haulers do not have a dedicated truck for recycled materials. These haulers pick-up and transport both solid waste and recycled materials on the same truck and must utilize the recycled material drop-off area located in Area 4. Haulers drop-off their recycled materials into a roll-off container. Once the containers are full, County personnel transport the roll-off to Shed 2 and unload on to the tipping floor of the recycled material side of the station.

During normal operation, a solid waste transfer trailer is located on the lower level to accept waste from the receiving side of the tip floor. There is space for only one transfer trailer to be loaded at a time. Recycled material is held on the left side of the tip floor until the tip floor is full. Once the tip floor dedicated to recycled material is full, a transfer trailer dedicated to recycled material, is pulled into the lower level of Shed 2. The recycled material is then pushed from the tip floor into the transfer trailer below.

In FY 2019, the County processed an average 483 tons per month of recycled material through the transfer station. This compares to an average of 175 tons per month in 2009. This facility is presently meeting the County's needs; however, numerous improvements could facilitate the operation. Additional transfer trailer loading space would be required to process additional recyclable materials.

#### *Summary*

The recycling material drop-off in Area #4 generally consists of an old retaining wall system. This area is off limits to the general public as there are no protective measures in place to ensure their safety. There is a relatively small concrete pad at the top of the retaining wall. The outer edge of this wall is broken and chipped with rebar exposed along most of the edge. Maneuvering room for the roll-off trucks hauling the recycling

containers from Area 4 is at a minimum. There is no backstop or other load directing structures in place over the top of the roll-off trailer to direct recyclable material into the trailer. This results in a general spillage of recyclable material over the side of the trailer and onto the ground. Wind blown litter from the dumping of the recyclable material is also a problem. The generally muddy site conditions due to poor drainage make the cleanup of spilled material a problem as it easily becomes contaminated with soil.

A new area should be established to provide an all-weather facility for drop-off of recyclable material. The new area would consist of a covered upper level concrete pad to receive recycling vehicles, a new concrete retaining wall, and a concrete pad for the recyclable material transfer trailer. The County is already in the planning stages for this project and a new facility should be constructed during the current fiscal year.

#### Yard Trash and Wood Waste Processing Area:

The yard trash and wood waste processing operation is located in the northeast corner of the facility property. This operation occupies approximately 1.5 acres in area. The site is accessed through the main entrance off Stoney Mountain Road and the scales. Once past the scales, vehicles come to the stop sign in front of the transfer station and turn left in front of the transfer station operation following a gravel access road approximately 1,500 feet to the drop-off area. The gravel road is sufficiently wide enough to allow two-way traffic and is well maintained. This gravel surface provides reasonable all-weather access around the side of the old landfill. However, as customers near the disposal site, the gravel surfacing ends and the road surface changes to a soil material. During periods of inclement weather this portion of the access road becomes relatively impassable thereby limiting access to the yard trash and wood waste disposal areas. As for the disposal area itself, the surface is comprised of a relatively thick mixture of soil and mulch material. This surface is uneven, has poor drainage and the mulch material tends to retain large amounts of moisture. Access to and the ability to maneuver within the disposal area is difficult even under the best of conditions. Because of this, customers have a tendency to dump their waste material at or near the entrance to the site. This inhibits subsequent customers from gaining access to the more central areas of the site. As a result, the facility staff must continually separate and consolidate the material into specific piles and rework the site access.

Yard trash and leaves, which are placed in separate piles, are periodically processed into mulch by a subcontractor to the County. The area appears to be adequate in size for the present operations as long as the material is processed and stacked in a timely manner and subsequently removed from the site.

Monitoring of the disposal of material at this site can be a problem due to the distance from the main facility operations area. Since this disposal area is not staffed on a full time basis, landfill personnel must make periodic trips to the site to ensure the site remains accessible and waste material is properly separated and consolidated by material type. Staff must also remove any contaminants that may have been inadvertently left by a customer. The length of the gravel portion of the access road also presents maintenance

problems for the landfill staff as it must be periodically graded to restore the driving surface.

### *Summary*

The yard trash/wood waste processing area appears to meet the County's needs as they are presently operating. The disadvantage to the present location is the distance from the facilities main operation's area. Landfill staff must make periodic trips to the area to ensure compliance with the disposal requirements.

The access road to the yard waste and wood waste area is challenging during inclement weather. When the county expands their composting operation and the yard waste and wood waste drop-off increases, the vehicle traffic will increase. A long-term low maintenance roadway should be considered to reduce the frequent maintenance required to keep this access open.

### Convenience Center:

In 2010, the County constructed a new convenience center with a dedicated entrance located at 265 Convenience Center Drive. The entrance to the new Convenience Center is located approximately 1/3 mile southeast of the transfer station entrance. The convenience center encompasses approximately 1.5 acres of paved drop-off area for residential customers only. The center operates Monday through Saturday from 7 a.m. to 4 p.m.

The convenience center is comprised of 13 separate drop-off points with a concrete wall and handrail, that separate the drop-off area from the disposal containers. Below each drop-off point is a roll-off container for the various accepted materials. In addition, there is a stand-alone area for used oil, antifreeze, electronics, and battery drop-off. Citizens using the center are separated from the disposal container service area to avoid conflicts with vehicles servicing the roll-off containers.

In addition to household municipal waste, Henderson County accepts the following items at the convenience center:

- **Aluminum and steel cans** (rinsed, dry, plastic tops/lids off)
- **Antifreeze**
- **Batteries** (rechargeable and non-rechargeable; tape over positive terminals of household batteries)
- **Cardboard** (flattened, packing material removed)
- **Cooking oil**
- **Food waste**
- **Gable top/carton containers** (rinsed, dry, plastic tops/lids on)
- **Glass containers** (rinsed, dry, plastic/metal tops off)

- **Mercury-containing products**
- **Mixed paper:** (including junk mail, books, magazines, newspaper, office paper)
- **White goods** (upright, doors removed)
- **Scrap Metal**
- **Peripheral electronics:** small office equipment (scanners, printers, etc.), telephones, stereos, compact discs, keyboards, game consoles, etc.
- **Plastic food, beverage, and laundry/kitchen containers:** #1, 2, 4, 5 (rinsed, dry, plastic tops/lids on)
- **Used motor oil and used oil filters**

The center does not accept the following items:

- **Beneficial fill**
- **Carpet, linoleum, other types of flooring**
- **Construction & masonry debris**
- **Dried paint** (must be in solid form for Transfer Station to accept)
- **Garden hose reels or other large rigid plastics**
- **Mattresses & furniture**
- **Plastic bags or film**
- **Sliding glass doors and windows**
- **Tires**
- **TVs and computer monitors**
- **Yard debris**
- **Yard waste**

The center is operated as a “bag for a bag” program. This means that one bag of trash is allowed for an equal bag of recycled materials that is dropped off. Henderson County published a flyer entitled “Henderson County Recycles” that outlines the recycling practices at both the transfer station and the convenience center. The current flyer is included in Appendix C and is available on the Henderson County website ([www.hendersoncountync.gov/engineering/page/solid-waste-division](http://www.hendersoncountync.gov/engineering/page/solid-waste-division)).

#### White Goods and Scrap Metal Disposal Area:

The white goods and scrap metal storage and disposal area is also located at the Convenience Center. This area occupies approximately 0.5 acre and provides an area for the disposal of scrap metal as well as those white goods containing some type of refrigerant (refrigerators, air-conditioners, etc.). In 2019, the County collected and processed approximately 550 tons of white goods and scrap metal. The area appears to be adequate for the collection and processing of white goods and scrap metal presently received by the County.

Once the refrigerant is removed, the appliances can be moved to the scrap metal pile or crushed and removed from the site by a subcontractor to the County. The staff must also remove any contaminants that may have been inadvertently left by a customer. Periodically, equipment must be sent to the area to consolidate the scrap metal pile until such time as it is removed from the site by the subcontractor. Access to the area is through the Convenience Center

### *Summary*

The convenience center is in overall good shape. At one location within the convenience center itself, a depression has developed in the asphalt paving. In another location along the access road to the center, a dip in the roadway has developed. Both locations were located in areas of previously closed landfills. Both areas should be repaired before additional damage occurs.

The service area below the concrete wall is gravel. The County utilizes this area to store empty roll-off containers and full containers ready for processing. During inclement weather, access to these storage areas becomes challenging resulting in potential damage to equipment. Concrete container storage pads should be considered as a future improvement, to provide an all-weather storage area for these containers.

### Household Hazardous Waste

The County operates a Household Hazardous Waste (HHW) Collection Facility located at the Convenience Center under Permit NO. 4504-HHW-2011. The facility operates only on specific dates, on average at six (6) events per year. HHW is only accepted from homeowners living in Henderson County. Waste is collected and stored in a special HHW building until a licensed contractor collects and transports the waste off-site.

### *Summary*

The current location of the HHW facility causes backups at the convenience center during operation. In addition, the size of the facility limits the amount and variety of material that can be collected. Development of an HHW Facility in the area of the Solid Waste Center with a covered drive through would allow the County to expand the collection operation and offer additional collection events during the year.

### Used Tire Drop-Off

The waste tire disposal area is located in Area 4 and is comprised of two rear loading semi-trailers. Citizens and businesses drop their scrap tires off at the site where an employee stacks the tires in the trailer. The use of closed type trailers keeps rainwater from collecting in the tires thereby reducing the breeding of insects.

## *Summary*

The used tire drop-off area appears to be adequate for the current and projected operation.

### Staffing

The landfill operation is under the general direction of the County Engineering Department and has a staff of approximately fourteen (14) employees. The staff classifications basically include the Solid Waste Manager who is in charge of and responsible for all phases of the County's solid waste operations and supervises the solid waste staff. Operating under the supervision of the Solid Waste Manager is the: Administrative staff, Equipment Operators, Code Enforcement Officer, and Laborers. The Solid Waste Manager and Environmental Programs Coordinator reports directly to the County Engineer. The Code Enforcement Officer reports directly to the County Code Enforcement Director. The administrative staff classification covers the secretarial personnel and the scale operations and performs general clerical and administrative duties. The equipment operators are responsible for the operation of the motorized heavy equipment and trucks used in the daily operations to dispose of waste material and perform general site maintenance. Laborers are responsible for the routine maintenance and care of the facility and perform such duties as grounds maintenance, litter collection, etc.

In general, the present staff level appears to be adequate for the normal daily operations being performed at the facility. Field employees are generally proficient in operating various types of heavy equipment and perform various duties throughout the day as the need arises. In addition to the laborer, there are times when additional temporary or part time staff could be utilized by the facility for various maintenance tasks (cleanup of wind blown and scattered debris, etc.). However, this would only be on a temporary or as needed basis and would not justify the hiring of additional full time staff.

If additional facilities are added, such as a new transfer station shed or composting operation, additional personnel would have to be added.

## **ADDITIONAL HENDERSON COUNTY OWNED/OPERATED FACILITIES**

### Solid Waste Center:

The administrative operations of the Henderson County Solid Waste Department presently operates out of the former recreation activity center at 800 Stoney Mountain Road. The facility fronts Stoney Mountain Road and is more specifically located just east of the main entrance to the waste disposal facility. Access to the building is through the scale house entrance. Through the years, additional gravel areas have been added to facilitate parking, the building's electrical system has been upgraded, and the window structures have been replaced with more energy efficient models. The Solid Waste Division utilizes a portion of the southern wing for its administrative operations. The

center is located in the middle of one of the last developable areas of the County-owned property. As solid waste operational facilities expand, the County should continue to evaluate whether demolition of the center should be considered for expanding operations.

#### School Bus Maintenance Shop:

This facility consists of approximately 3.0± acres and fronts Stoney Mountain Road. The property is located immediately east of the main transfer station entrance road. The facility is owned by the Henderson County School Board and is used for the maintenance and upkeep of the County's school bus fleet. The building and bus parking areas sit approximately 30 vertical feet higher than the elevation of Stoney Mountain Road with ingress and egress to the site consisting of a single entrance approximately four hundred feet (400') east of the main entrance to the scale house. The present entrance drive to the facility is relatively steep with an approximate slope of 11-12%. The main building is approximately 8,000± square feet and is a single-story building with a general maintenance shop layout. There are two other smaller outbuildings also located on the site.

The main building is old and its configuration and available square footage (±50'x±160') are not conducive for conversion to other service type activities. The facility has a relatively low ceiling height and appears to lack adequate insulation and heating and air-conditioning systems. The concrete floor appears to have a relatively high degree of fuel/oil contamination as is characteristic of an older maintenance shop operation. A general review of the site revealed some areas of possible fuel/oil contamination due to possible spillage and/or runoff. Care should also be taken to review other sources of possible contamination such as buried fuel/oil tanks, etc. As for the site itself, approximately two (2) acres (with the buildings removed) are level enough for use as another type of operation with some regrading and/or rearrangement of the existing point of access.

There have been discussions in recent years of relocating this facility and deeding the land to the landfill. This area could be used to develop a third solid waste transfer station as waste disposal tonnages continue to increase.

## **VEHICULAR TRAFFIC**

### **ENTRANCE/ TRANSFER STATION**

The access road for the Henderson County Transfer Station is located off Stoney Mountain Road (SR 1383), approximately 800 feet southeast of the intersection with Mountain Road (SR 1381). This access road and scale house were constructed as part of the 2010 Solid Waste Capital Improvements project. This is the access for all commercial customers and citizens utilizing the solid waste transfer station, recycling transfer area, and theyard waste and wood processing area. The entrance road is approximately 1000 feet long providing queuing for inbound traffic on high volume

customer days. An additional in-bound lane begins approximately 500 feet from Stoney Mountain Road. The left lane is for generally for residential customers and commercial customers that do not have a Waste Wizard account with the County. The right lane is for commercial customers that have a Waste Wizard account. Even with the relatively long access road and the dedicated Waste Wizard lane, traffic still backs up to Stoney Mountain Road on busy days.

The vehicles in the left lane must stop short of the scale platform until such time as the vehicle in front has been cleared for entrance into the facility. Upon leaving the scales the vehicles enter the lanes for either Shed 1 or Shed 2 and pull up to a Stop sign in front of the transfer station. Residential customers are usually directed to the left lane for access to either Shed 2 or Area 3. Commercial customers are usually directed to Shed 1 and must merge into the Waste Wizard lane before reaching the Stop sign. Residential traffic and non-Waste Wizard commercial traffic then proceed to the transfer station staging area and maneuver for a spot to begin discharging their loads.

Waste Wizard traffic must turn right and proceed to the remote scale for initial weigh in. After initial weigh in, the Waste Wizard traffic must return to the transfer station staging area and wait their turn to maneuver into the transfer station to discharge their loads. If the commercial vehicle is carrying both solid waste and recycling materials, the commercial customer must proceed to the recycling drop off in Area 4. After dropping off the recycling material, the customers must return to the remote scales and re-weigh to determine the weight of the recycled material and to establish an initial weight for solid waste disposal. The commercial customer then proceeds to Shed 1 to dispose of the solid waste. All of the vehicle maneuvering to drop-off recycled material in Area 4, must pass in front of the transfer station, through the transfer station staging area.

In addition to customers utilizing the transfer station to dispose of solid waste and construction demolition waste, other vehicles hauling wood waste, recycling materials, tires, etc. must navigate through the same intersection in front of the transfer station.

This area in front of the two transfer station buildings (staging area) is an area of concern due to high traffic volume and the general lack of an overall uniform traffic pattern. In 2009, the average daily customer vehicle count through the transfer station staging area was 700 vehicles per day. Since then, the County has constructed a new convenience center with a separate entrance. In 2019, the daily vehicle count has been reduced to 385 customer vehicles per day, with maximum days up to 570 vehicles per day. Not included in these customer vehicle counts, is the commercial customers with recyclable material, and Henderson County personnel servicing the transfer trailers from the transfer station, containers from recycling drop-off areas (Areas 3 and 4), and the containers from the convenience center. The high volume of traffic in the staging area forces traffic to back up at the stop sign between the scale house and the transfer station staging area. When this occurs, traffic attempting to access the other operational areas (Areas 3 and 4 and wood/yard waste drop-off, etc.) have a tendency to pull out of traffic flow and proceed through the general area with little regard for other traffic operating in the area. This creates an unsafe condition as these vehicles, generally personal cars and pickup trucks,

cut through the transfer station maneuvering/staging area where the larger commercial traffic, with limited rear and side visibility, is attempting to maneuver into position to discharge their load of waste. The traffic congestion problem is compounded when loaded transfer trailers must be pulled from the loading bay below the transfer station.

Once the customers are complete with waste drop-off, all traffic must merge back together in the area in front of the transfer stations and proceed out the exit. Commercial traffic exiting the transfer stations must cross the inbound traffic pattern in order to enter the outbound traffic flow. The general randomness of the traffic patterns in this area is an area of major safety concern for all traffic, as well as the County's employees.

Depending on their classification, vehicles either exit through the by-pass lane at the scale house or stop at the scale. Flat fee and Waste Wizard vehicles can utilize the outbound by-pass lane. Vehicles that require outbound weighing, must stop at scale house and settle their account.

In general, the high volume of vehicles operating within the facility on a daily basis creates an inordinate amount of congestion and inhibits the overall efficiency of the operation. This is in addition to the safety concerns brought on by the large volume of citizen traffic operating in conjunction with the County's heavy equipment (loaders, trucks, etc.) and the commercial haulers and customers disposing of their waste loads at the transfer station facilities.

#### Traffic Counts: September 2018-September 2019

In conjunction with the waste tonnage data, the County also provided information relative to the vehicle counts associated with the type of entry for September 8, 2018 through September 7, 2019. The two categories are vehicles that come to the window and those that traveled through the Waste Wizard by-pass lane. The total number of vehicles for each category that entered the Solid Waste Transfer Facility for the period of September 2018 through September 2019 is shown in Table 1 below:

Table 1: Transfer Station Vehicle Counts by Month

<b>Month</b>	<b>Window Average Traffic Count Per Day</b>	<b>Wizard Average Traffic Count Per Day</b>	<b>Average Traffic Count Per Day</b>
<b>September 2018</b>	311	70	381
<b>October 2018</b>	308	66	374
<b>November 2018</b>	290	65	355
<b>December 2018</b>	244	60	304
<b>January 2019</b>	288	68	356
<b>February 2019</b>	295	62	357
<b>March 2019</b>	342	62	404
<b>April 2019</b>	353	70	423
<b>May 2019</b>	357	63	420
<b>June 2019</b>	361	61	422
<b>July 2019</b>	360	62	422
<b>August 2019</b>	346	52	398

\* Due to traffic count data starting September 8, 2018 and ending September 7, 2019 the two sets of data were added together for the monthly total. September 2018 count was 7,240 vehicles, and the first 8 days of September 2019 was 2,384 vehicles.

As shown in the table, the average window traffic counts varied from 244 vehicles to 361 vehicles per day, with the least number of vehicles during the cooler weathered months (November through February) and peak window traffic counts in June. The Waste Wizard traffic counts were consistent except for August 2019 being low with an average of 52 vehicles. The maximum vehicle count per day for window was 508 in June and for Waste Wizard was 119 in September.

The vehicles counted each day were those that crossed the scales regardless or whether they were flat fee loads or weighed loads. On average the transfer station received a combined traffic count of averaging approximately 385 vehicles per day during an eight and one-half hour (8 ½ hr.) operating period for an average hourly vehicle count of 45 vehicles accessing the transfer station.

On a daily basis for the period, the busiest day for the transfer facility continues to be Saturday. On average 414 vehicles visit the facility on Saturdays, followed by Tuesdays (403 vehicles), Wednesday (393 Vehicles), and Monday (380 vehicles). Friday and Thursday have the lowest average vehicle count with a daily average of 368 vehicles and 356 vehicles respectively. The following Table summarizes the daily averages:

Table 2: Calendar Year Weighed Vehicle Counts by Day of Week

<b>Month</b>	<b>Average Traffic Count Per Day</b>
<b>Monday</b>	380
<b>Tuesday</b>	403
<b>Wednesday</b>	393
<b>Thursday</b>	356
<b>Friday</b>	368
<b>Saturday</b>	414

While Saturdays see the highest volume of traffic, it has significantly fewer Waste Wizard counts and more window counts. As Saturday is generally a day off for the majority of citizens, this accounts for the increase in small load traffic, and a decrease in large Waste Wizard load traffic.

## **CONVENIENCE CENTER**

In 2010, the County constructed a new convenience center with a dedicated entrance located at 265 Convenience Center Drive. The entrance to the new convenience center is located approximately 1/3 mile southeast of the transfer station entrance. The convenience center only accepts waste from customers that can verify that they have a residence in Henderson County. Table 3 summarizes the actual vehicle count entering the convenience center on a monthly basis.

Table 3: Convenience Center Vehicle Counts by Month

<b>Month</b>	<b>Monthly Traffic Count</b>
<b>January 2019</b>	17,383
<b>February 2019</b>	16,721
<b>March 2019</b>	18,981
<b>April 2019</b>	18,690
<b>May 2019</b>	19,264
<b>June 2019</b>	19,510
<b>July 2019</b>	21,527
<b>August 2019</b>	21,342
<b>September 2019</b>	19,463
<b>October 2019</b>	12,102
<b>November 2019</b>	20,599
<b>December 2019</b>	20,235

Source: Henderson County Solid Waste Department

As shown in the table, the monthly vehicle counts at the convenience center varied from 12,102 to 21,527 counts with an average of 18,818 vehicles. These lower vehicle counts in October, January, and February correlates well with when part-time residents are typically out of the County.

The daily average is approximately 779 vehicles per day.

### *Summary*

In 2009, approximately 700 vehicles entered the combined entrance on a daily basis for the transfer station and the convenience center. By comparison, in 2019, the daily average for the convenience was 779 and the daily average for the transfer station was 385. The combined total daily average is 1,164 vehicles visiting the Henderson County solid waste facilities. The additional daily average of 464 vehicles represents an increase of 66% for total traffic from 2009 to 2019. The development of the separate convenience center has removed 779 vehicles per day from the transfer station staging area. This reduction has provided some relief to the vehicle traffic around the transfer station and a safer and more efficient operation.

## **SOLID WASTE COLLECTION SYSTEMS**

Disposal or tipping fees are charged to and/or collected from the permitted haulers, business operations and residents each time they enter the facility to dispose of a load of waste. The amount of the disposal or tipping fee is dependent on the size or weight of the load. Large loads and those loads delivered by permitted haulers and other business operations are weighed as they enter the facility. The charges are based on the weight of the load multiplied by the per ton disposal fee. At the convenience center, residential waste and recycling can be brought. Residential customers, bring their own personal household waste for disposal, participate in the bag for bag program where bags of household trash may be disposed of at no charge when an equal number and size bags of recycling are recycled. The monies collected by the County basically offset the cost of operating the Solid Waste Division.

### Current Residential Solid Waste Collection Practices and Policies:

Presently Henderson County does not engage in or provide solid waste collection services to the County other than the permitting of private haulers. Residential customers have the option of transporting their household waste to the Transfer Station or the Convenience Center at the Stoney Mountain Road facility in their own personal vehicle or contracting with one of the permitted haulers presently operating within the County. Haulers are required via permit to offer recycling, therefore residential customers also have access to recycling either via transporting of recycling to Transfer Station/Convenience Center or contracting with permitting hauler. Some subdivisions and/or developments, especially those with organized homeowner's associations (HOA) have opted to sign an agreement with one particular permitted hauler to collect, transport and dispose of all household waste generated within that particular community. Others may leave household waste disposal up to the individual homeowners. Commercial, industrial and institutional properties are required to provide collection services for their operation and generally contract with one of the larger permitted commercial haulers operating within the area. Construction and demolition (C&D) debris is generally collected by and brought to the transfer facility by employees of the construction company or through contracted services with one of the permitted commercial haulers.

Within the County, the City of Hendersonville and the Town of Fletcher have public works departments that provide curbside garbage and recycling collection for all residents. The City of Hendersonville's waste is brought to the Henderson County transfer station for processing. The Town of Fletcher hauls their waste out of County for disposal. The Town of Laurel Park contracts with a permitted private hauler (Waste Pro) for solid waste management services for all residential homes within town limits. The Town of Laurel Park also provides brush and leaf collection during specific times of the year or by special arrangement for the residents of the Town. The Town of Mills River and the Village of Flat Rock do not provide organized or community sponsored residential waste collection.

The County continues to evaluate various options for the collection of residential waste and recycling in unincorporated portions of the of the County. Appendix D includes a

memorandum from Mr. Marcus Jones, Director, Henderson County Engineering which summarizes their latest evaluation. The evaluation compares the current collection system, constructing new convenience centers, and offering curbside county-wide collection. Currently, County staff recommends continuing the current collection system, monitoring the capacity of the existing collection systems, and studying the transition to curbside collection in the future.

#### Current Residential Recycling Practices and Policies:

Recycling within Henderson County is presently handled in a variety of ways. The County does not engage in or presently participate in a County wide recycling collection program in the unincorporated areas. However, the County does provide a convenience center and the Solid Waste Transfer Station located on Stoney Mountain Road.

All permitted haulers of residential waste also provide for the collection of recyclable material in the unincorporated area of the County through the “blue bag” or recycle bin collection program. However, the present recycling collection service is generally limited to those areas or communities/developments that are served as a unit through the residential waste collection services.

The City of Hendersonville provides weekly curbside recycling collection to its residents as a part of its overall waste collection services. The items collected are generally the same as collected under the aforementioned “blue bag” or recycle bin collection program. The Town of Fletcher provides bi-weekly recycling collection through a contract with Curbside Management. The items collected coincide with the aforementioned “blue bag” or recycle bin collection program. The Town of Laurel Park has a contract with Waste Pro, as a part of its residential waste collection program, to collect recyclable materials. The recyclable items collected are similar to those mentioned above.

Therefore, all County citizens have access to recycling through permitted haulers or at the Citizens Convenience Center.

#### Henderson County Code:

The ordinances that govern the various aspects of solid waste collection, disposal and recycling are contained in the Henderson County Code, Part II: General Legislation, Chapter 95, Solid Waste. The Chapter, included by reference to the Henderson County Code, is divided into two articles: Article I Incinerators (§ 95-1 - § 95-8) and Article II Collection and Recycling (§ 95-9 - § 95-40). A copy of Chapter 95, Solid Waste, of the Henderson County Code is included for reference in Appendix E. Article I, known as the “Henderson County Ordinance for the Regulation of Incineration Facilities” covers the various rules and regulations pertaining to siting, permitting and operating an incinerator in all unincorporated areas of Henderson County and to those incorporated areas of any city or town specifically requesting its enforcement by Henderson County upon the consent of the Henderson County Board of Commissioners. Article II, known as the “Henderson County Solid Waste Ordinance”, is intended to protect human health and the

environment by regulating the storage, collection, transportation and disposal of solid waste in Henderson County. This particular ordinance applies to publicly owned municipal solid waste management facilities and to all unincorporated areas within the County. This article may also apply to those incorporated areas of any city or town that has specifically requested its enforcement by Henderson County upon the consent of the Henderson County Board of Commissioners.

Article II, the Henderson County Solid Waste Ordinance, is of primary importance relative to the discussions and findings of this Solid Waste Master Plan. This Article defines how residential and other noncommercial property, as well as commercial, industrial and institutional property will handle their solid waste. Specific requirements are set forth for the storage, collection, transportation and disposal of solid waste. Section 95-15, Storage, specifies the type and number of containers where as Section 95-16, Collection, specifically states how and at what minimum frequency all solid waste shall be removed from any property upon which it is stored. Removal of solid waste may be by the owner, occupant, tenant or lessee or through the services of a permitted collector serving the relevant area. Of particular importance is the requirement that all private haulers who collect solid waste for a fee will be required to establish a program to collect and recycle aluminum cans and corrugated cardboard and they may not accept the aforementioned products if commingled with the solid waste they collect. Section 95-17, Transportation, governs the transportation of solid waste from the point of collection to the approved disposal location. Section 95-18, Disposal, governs how solid waste will be disposed of in Henderson County. Presently, the County utilizes a transfer station that has been approved by the North Carolina Department of Environment and Natural Resources and operates under Permit No. 45-04-T. Section 95-19, Facility Regulations, sets forth the rules and regulations under which the processing and disposal facility shall operate. This section also defines the waste items that may not be disposed of through the County owned and operated disposal facility. Section 95-20 through Section 95-22 governs the disposal of tires, white goods, metals, used motor oil and antifreeze. Recycling is governed by Section 95-23 through Section 165-95. Commercial haulers desiring to operate in Henderson County are regulated by Section 95-27 through Section 195-35. These sections outline the requirements that must be met and specifically state that no person shall engage in solid waste collection for a fee without first being issued a permit by the Solid Waste Director. Individuals transporting their own solid waste or recyclables are not required to hold a permit. The method for resolving violations for noncompliance with Chapter 95 are defined in Section 95-36. Section 95-37 covers the disposition of delinquent accounts that may be owed the Solid Waste Division for the disposal of solid waste. Responsibility for managing any object of refuse, found outside the authorized disposal facility, is covered by Section 95-38. Those individuals or businesses receiving a notice of violation, relative to the rules and regulations as set forth in Chapter 95 of the Henderson County Code, may request the assistance of the Solid Waste Division in remedying the situation in accordance with Section 95-39.

While the majority of the Ordinance does apply, an update should be completed to bring the Ordinance to reflect the operations of the Stoney Mountain Road Facility. This includes updating 95-19 Facility Regulations to mention the Waste Wizard and its

operation, updating tipping fees, separate the convenience center discussion from transfer station discussion, and revise the prohibited waste list. Chapter 95-24 Recyclable Materials section should also be updated as recycling is now collected as single stream with glass kept separate, and this section should reflect that change. Section 95-26 shall be updated to remove information about classifying waste, as all waste is totaled as a single tonnage rather than separating into categories. Lastly, Sections 95-27 to 95-33 should be updated to confirm current practices of the designated haulers and to detail the process by which the County contracts with companies for transferring waste from the transfer facility to the final disposal facility.

# WASTE DISPOSAL TRENDS

## Existing Waste

### WASTE STREAM REVIEW: 2009 to 2019

Each county within the State is required to prepare and submit a Facility Annual Report to the Division of Waste Management of North Carolina Department Environmental Quality. This report details the amount of solid waste that has been disposed of and recycled material that has been processed by the County on an annual basis. The information presented below was collected by reviewing these annual reports. With the closure of the C&D landfill in 2008, waste was no longer separated and instead lumped together for disposal offsite. At the Convenience Center the waste can be disposed of free of charge on a bag for bag basis where trash bags are free when accompanied by the same number and size of recycling bags.

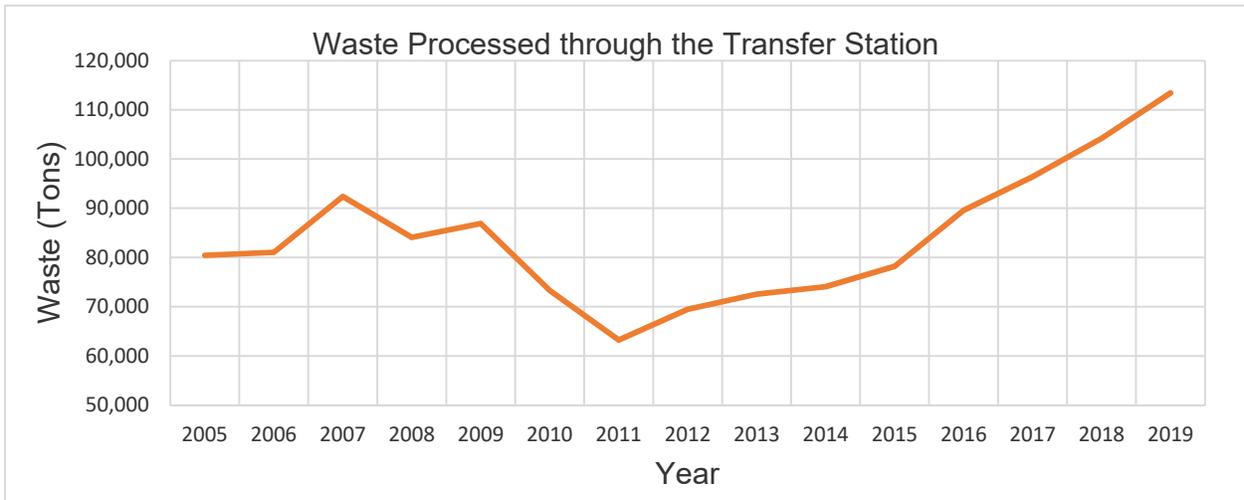
The County also receives various other loads, some of which are processed on-site, some are recycled, and some are processed through the transfer station operation. Waste brought to the transfer station is brought across the scales and weighed to determine required fee, which is calculated on a per ton basis being \$60/ton with a minimum fee of \$10.

Evaluation was divided into the following categories for analysis: municipal solid waste (MSW), yard wood recycle, beneficial fill concrete, and single stream recycling.

### Municipal Waste

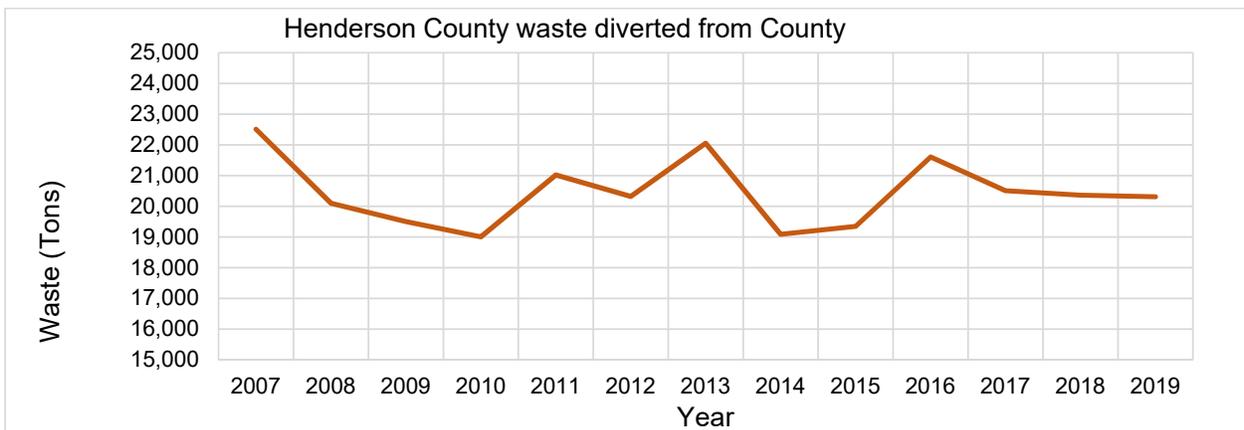
With the existing municipal solid waste landfill and the construction/ demolition landfill closed and no longer accepting waste for disposal, all waste material that is received at the transfer facility for processing and must be shipped out of the County for disposal. In 2005, approximately 80,440 tons of waste was processed through the transfer station. From 2007 through the 2011, the County experienced a general decline in the amount of waste received at the transfer station. This decline was contributed to the economic recession in 2008. By comparison the amount of waste processed through the transfer station has increased to 113,428 tons in 2019.

The following graph depicts the pattern of waste managed by Henderson County at the Solid Waste Transfer Station and shipped out of the County for disposal for calendar years 2009 through 2019:

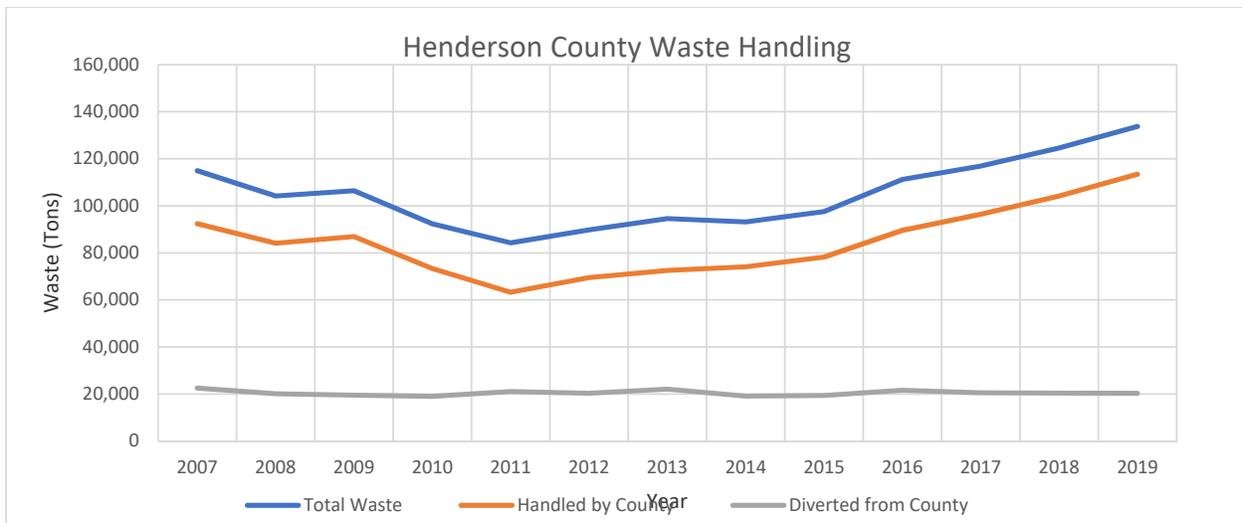


Utilizing the reports produced by the State, it was possible to quantify the tonnage of Henderson County waste that is not handled through the Stoney Mountain Road facility, and instead transported outside the County for processing or disposal. In general, each year there is an average of 20,440 tons of waste diverted from the County and transferred by others (with a minimum of 19,089 and maximum of 22,508 tons). The waste does not follow a single trend and instead fluctuates. This is thought to be due to the fact that private commercial haulers that bring the waste to Stoney Mountain Road Transfer Station or other locations do so on a random basis based on the day/time/schedule or even traffic and it is not consistent from day to day. The diverted waste represents almost 18% of the transfer station’s current waste stream. The challenge to the County is that this diverted waste could be diverted back to the County facilities at any time, with no notice.

The below graph details the quantity of diverted waste per year.



Together, the waste handled by the County and the waste diverted from the County ranged from a low of 84,263 tons in 2011 to a high of 133,741 tons in 2019. Since 2011 the waste has increased at an average annual rate of 7.6%.



The following table summarizes the data discussed in the aforementioned paragraphs relative to the waste handling as quantified by the Stoney Mountain Road Landfill Facility.

Table 4: Existing Waste Stream for Fiscal Years 2009 through 2019

<b>Fiscal Year</b>	<b>Transferred by County (tons)</b>	<b>Diverted from County (tons)</b>	<b>Total County-Wide (tons)</b>
<b>2007</b>	92,412	22,508	114,920
<b>2008</b>	84,101	20,907	104,198
<b>2009</b>	86,908	19,500	106,408
<b>2010</b>	73,309	19,005	92,314
<b>2011</b>	63,241	21,022	84,263
<b>2012</b>	69,484	20,321	89,805
<b>2013</b>	72,555	22,049	94,604
<b>2014</b>	74,078	19,089	93,167
<b>2015</b>	78,213	19,348	97,561
<b>2016</b>	89,581	21,605	111,186
<b>2017</b>	96,412	20,505	116,917
<b>2018</b>	104,217	20,364	124,581
<b>2019</b>	113,429	20,312	133,741

## Recycling

The County offers recycling collection facilities at the Solid Waste Transfer Station facility and at the Convenience Center. Presently, all permitted haulers are required to offer recycling collection services to their customers. Permitted haulers offer their recycling in two different scenarios. The predominant scenario is that hauler has an agreement for recycling where waste collection for a more concentrated clientele, such as through a homeowners association. Some permitted haulers offer recycling collection services to their customers through collection stations strategically located within their general collection service areas. The City of Hendersonville offers its citizens curbside recycling collection services on a weekly basis through a contract with Curbside Management headquartered in Asheville, NC. The Town of Fletcher offers its residents curbside recycling collection on a bi-weekly basis through a contract with Curbside Management. The Town of Laurel Park offers curbside recycling collection services through its contracted residential waste collector. These municipalities provide a bin type collection service.

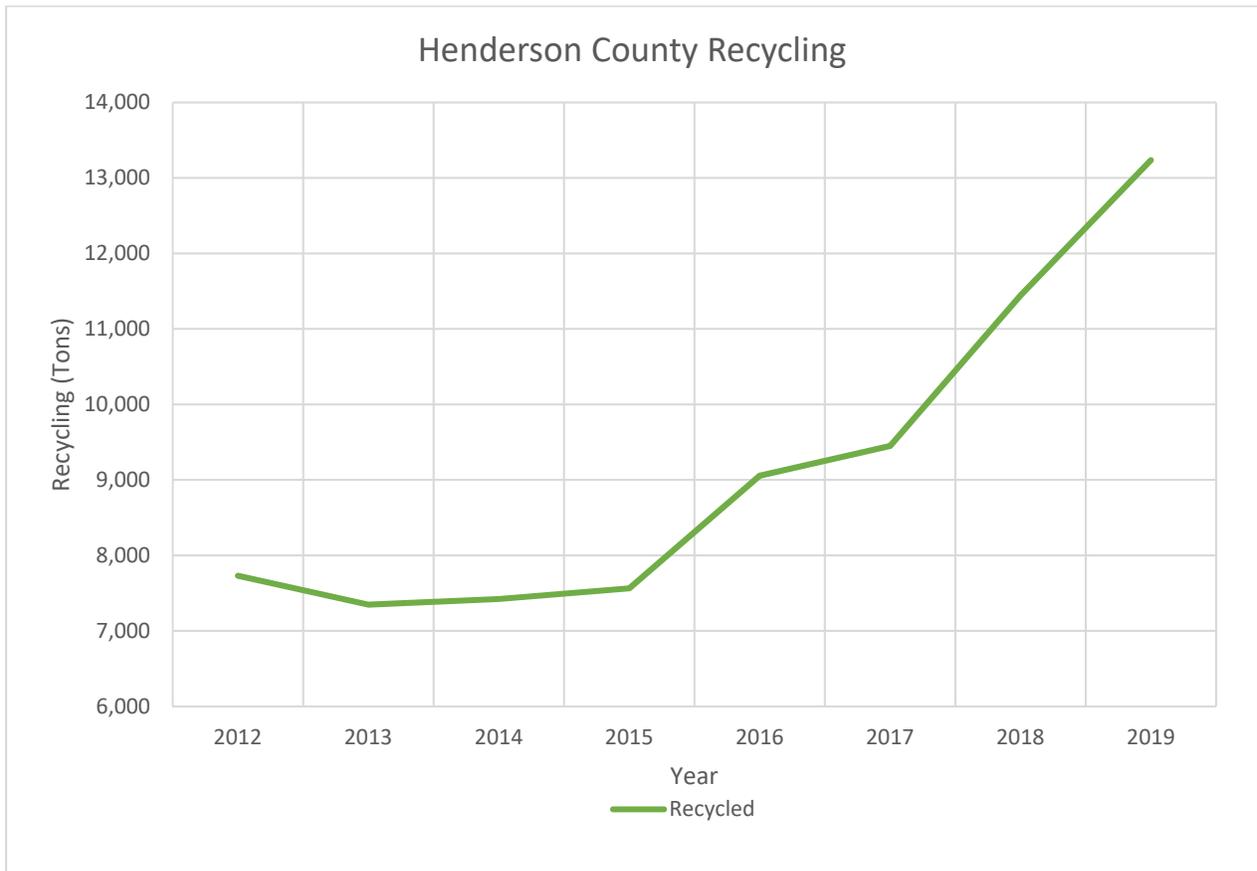
A summary of the waste diversion program is included in a memorandum from Christine Wittmeier, Environmental Programs Coordinator with Henderson County and is included in Appendix F.

Recycling is available at both the hauler's facility entrance as well as the Convenience Center. Recycling at Convenience Center requires glass to be separated from single stream, whereas it is not separated at the hauler's facility. Recycling quantities were reported for years 2010 and 2012 to 2019. For fiscal year 2010, the County shipped out 6,624 tons of recycling to certified recyclers (which is an average of 552 tons per month). For fiscal year 2019, the County shipped out approximately 13,236 tons of recycling to certified recyclers (which is an average of 1,103 tons per month). This shows a doubling of the amount reported to be recycled between 2010 and 2019. The sudden increase in recycling waste in 2015 shows that the change to single stream recycling increased the amount of recycling as it is easier for the consumer, as well as the hauler.

As noted above, the County presently operates recycling material collection at the Convenience Center and the Transfer Station. The drop off of recycled material is provided free of charge to the citizens. The consolidation of the material and hauling off-site for further processing is provided by the County. The recycling is completed as single stream recycling with glass separated at the Convenience Center. The following table provides a summary of the total tons of recyclable materials collected for 2010, and 2012 through 2019.

Table 5: Recyclable Material Collected at Transfer Station and Citizens Convenience Center

Fiscal Year	Recycled by County (tons)	Recycled by Others (tons)
2010	6,624	0
2012	7,730	29
2013	7,347	38
2014	7,422	25
2015	7,564	30
2016	9,054	59.23
2017	9,449	40
2018	10,310	38.66
2019	13,236	26.82



A review of the aforementioned data reveals some fluctuations in the tons of material collected from year to year; however, the total tonnage of material collected for recycling has increased each year since 2010. The volume of recycling being handled by the County has rapidly increased since 2015. This shift to an upward trend of an additional 1,500-2,000 tons of recyclables processed per year is assumed to be due to the switch

to single stream recycling which allows consumers to more easily participate in the recycling program.

Yard Trash / Wood Waste:

Yard Trash/Wood Waste tonnage records were maintained from 2012 through 2019, averaging approximately 1,380 tons per year for 2012 through 2016. After 2016, there was an increase in the tonnage of yard trash/wood waste processed at the facility, increasing from 2,056 tons to 3,575 tons over the three years. On average, yard waste/wood waste accounts for only 1.9% of all processed waste.

The following graph and associated yearly tonnage depicts the pattern of Yard Trash/Wood Waste received for processing at the Stoney Mountain Road Landfill Facility:

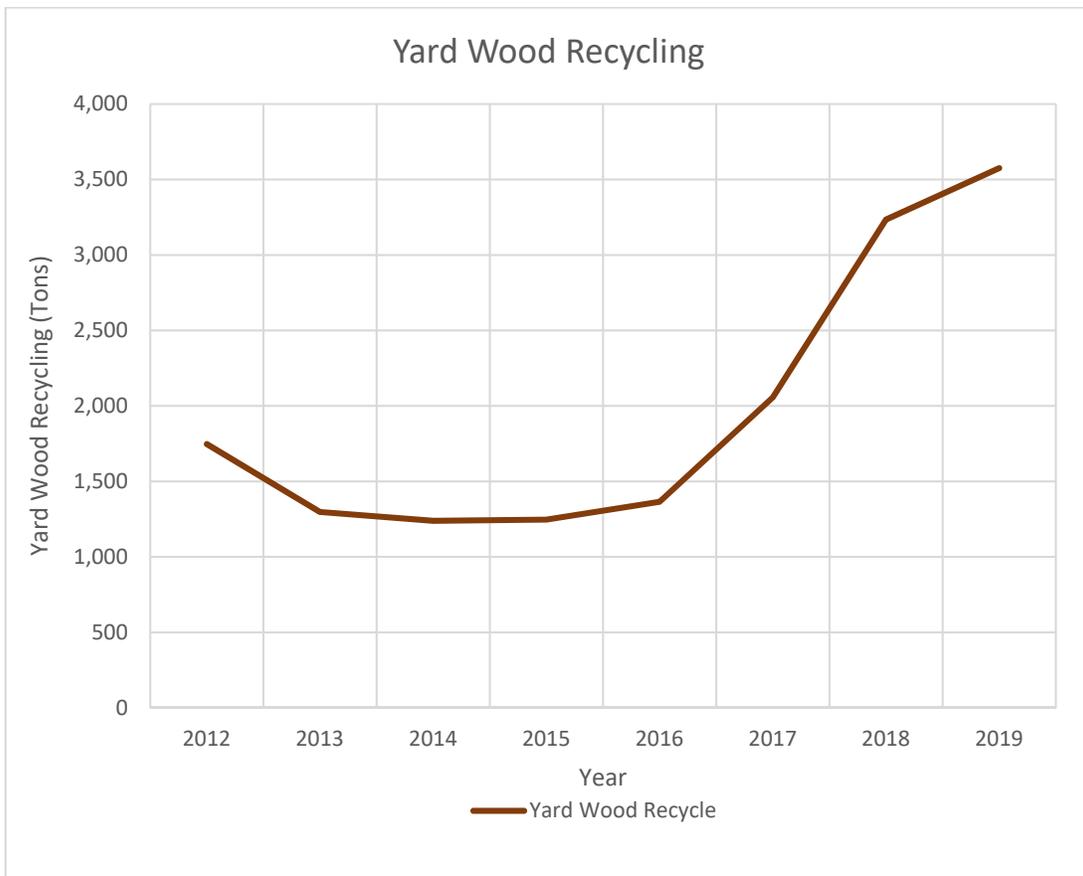


Table 6: Existing Yard Trash/Wood Waste Stream for Calendar Years 2012 through 2019

<b>Calendar Year</b>	<b>Yard Waste/ Wood Waste (tons)</b>
<b>2012</b>	1,747
<b>2013</b>	1,298
<b>2014</b>	1,239
<b>2015</b>	1,247
<b>2016</b>	1,365
<b>2017</b>	2,057
<b>2018</b>	3,234
<b>2019</b>	3,575

Beneficial Fill:

Beneficial Fill tonnage records were maintained from 2012 through 2019, averaging at approximately 490 tons per year for 2012 through 2017. After 2017 there was sudden increase in the beneficial fill processed at the facility increasing from 520 tons to 1,013 tons over the three years. On average, beneficial fill waste accounts for a very small portion of the facilities operation at only 0.60% of all processed waste.

The following graph and associated yearly tonnage depicts the pattern of beneficial fill received for processing at the Stoney Mountain Road Landfill Facility:

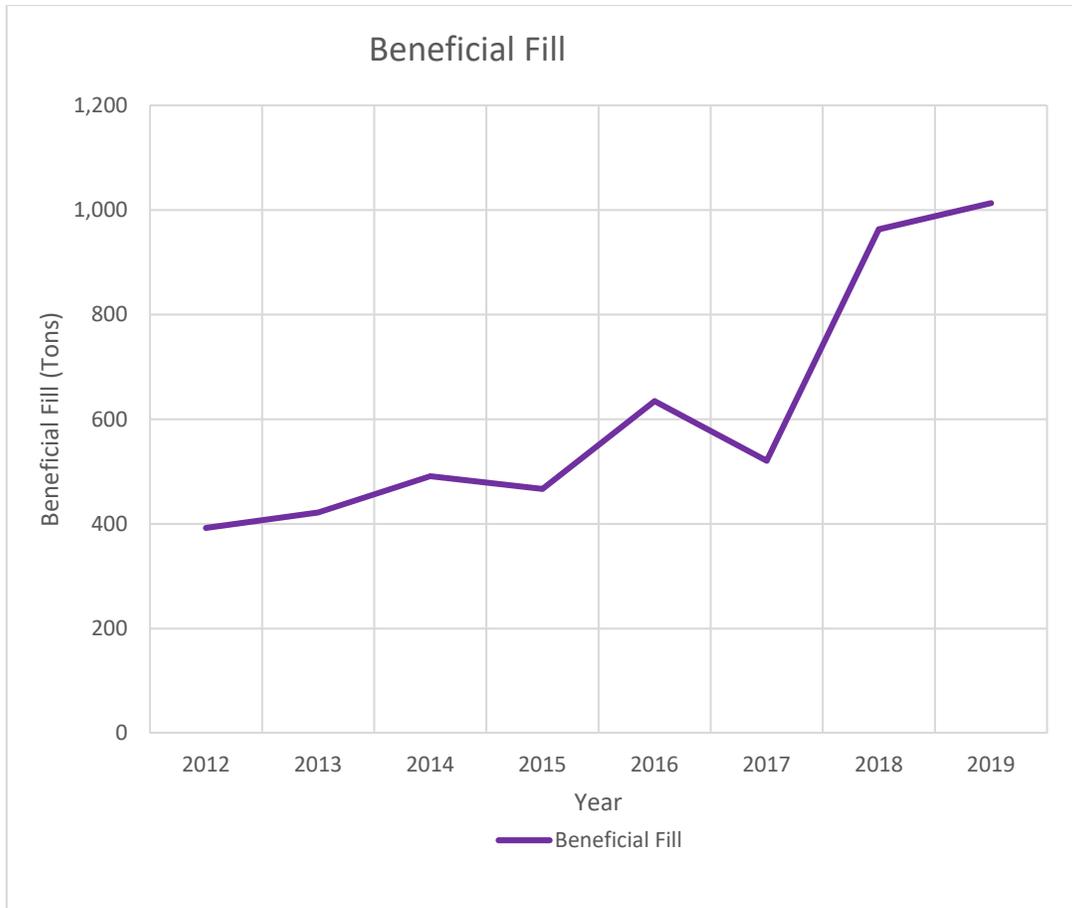


Table 7: Existing Beneficial Fill Waste Stream for Calendar Years 2012 through 2019

<b>Calendar Year</b>	<b>Yard Waste/ Wood Waste (tons)</b>
<b>2012</b>	392
<b>2013</b>	422
<b>2014</b>	491
<b>2015</b>	467
<b>2016</b>	635
<b>2017</b>	521
<b>2018</b>	963
<b>2019</b>	1,013

# Population

## Population Growth:

Henderson County, located in the southwest portion of North Carolina, encompasses an area of approximately 375.1 square miles with a total estimated population of 116,478 persons as of 2018. The County is bordered on the north by Buncombe County; on the south by the State of South Carolina; on the southeast by Polk County; on the northeast by Rutherford County; and on the west by Transylvania County. Interstate 26 and US Route 25 and 74 run generally north-south through the center of the County and US Route 64 traverses generally east-west through the northern half of the County. The County seat is located in the City of Hendersonville which is centrally located in the County just west of Interstate 26 and encompasses approximately 6.91 square miles. The County also includes four additional incorporated local government entities. The Town of Mills River, located in the northwestern portion of the County encompasses approximately 22.5 square miles of incorporated area. The Town of Fletcher is located in the north central portion of the County bordering on Buncombe County. The Town of Fletcher incorporates approximately 6.1 square miles. The Village of Flat Rock, located just south of the City of Hendersonville encompasses approximately 8.13 square miles. The Town of Laurel Park, located just west of the City of Hendersonville, incorporates approximately 2.87 square miles.

Henderson County is a dynamic location with a modest potential for growth as defined by the State Demographics Branch of the Office of State Budget and Management. The County has realized and is projected to see a generally steady rate of growth over the next twenty years. Henderson County data tracked an increase between 0.44% through 1.60% per annum, with an average population increase of 1.10% annum between 2010 and 2018. For the projected population of 2019 through 2029, Henderson County used the average increase of 1.10%, to predict that by 2029 the population will be an estimated 131,678 persons.

The historical populations from 2010 through 2018, in addition to the projected populations for 2019 through 2029, are summarized below in Table 9.

Table 9: Past and Projected Annual Population Growth

<b>Calendar Year</b>	<b>Population<sup>1,2</sup></b>	<b>Calendar Year</b>	<b>Projected Population<sup>1,3</sup></b>
2010	106,887	2020	119,331
2011	107,359	2021	120,643
2012	107,768	2022	121,970
2013	108,885	2023	123,312
2014	110,270	2024	124,668
2015	111,926	2025	126,040
2016	113,723	2026	127,426
2017	115,457	2027	128,828
2018	116,748	2028	130,245
2019	118,032	2029	131,678
		2030	133,126

- Notes: 1. Population totals and projections based on data provided by Henderson County.  
 2. 2010-2018 population increase was 1.10% per year.  
 3. 2019-2029 population increase is projected 1.10% per year.

In summary, Henderson County is projected to see an average annual increase in population of approximately 1.10% for the period 2019 through 2029. Associated with this growth should be an increase in the volume of waste and recycling material required to be processed and/or disposed of by the Solid Waste Division. The projected average percent annual increase in waste produced within the County should generally correlate with the projected percent population increases on a County wide basis.

**Per Capita Disposal Rates:**

Calculation of per capita disposal rates for the waste collection scenario, such as presently in place in Henderson County is somewhat difficult. This is due in part to the fact that there is no County wide collection operation or policy governing where the waste will be processed and/or disposed. Basically, the commercial haulers and/or citizens have the option on where to take the waste for processing, whether it is the County’s transfer station, or a facility located in a different county. Some commercially collected waste, especially along the areas bordering neighboring counties, may be transported out of the County for processing. This is verified by the County Waste Disposal Report compiled by the State and presented earlier in this report. Based on available population and waste disposal data at the County, the average per capita disposal rate for 2007 through 2019 was 0.95 tons/year. The lowest year was 2011 at 0.78 tons/year and the highest was 1.13 tons/year in 2007 and 2019. The following Table summarizes the per capita disposal rates for the County for calendar years 2007 through 2019:

Table 10: Per Capita Disposal Rates

<b>Fiscal Year</b>	<b>Annual County-Wide Disposal (tons)</b>	<b>Population</b>	<b>Calculated Per Capita Disposal Rate (tons/person/year)</b>
2007	114,920	102,242	1.13
2008	104,198	104,293	1.00
2009	106,408	106,214	1.00
2010	92,314	106,887	0.86
2011	84,263	107,359	0.78
2012	89,805	107,768	0.83
2013	94,604	108,885	0.87
2014	93,166	110,270	0.84
2015	97,560	111,926	0.87
2016	111,186	113,723	0.98
2017	116,916	115,457	1.01
2018	124,581	116,748	1.07
2019	133,741	118,044	1.13

## **Projected Waste**

### **Projected Waste Stream:**

There are several different methods for projecting waste disposal. One method is to use the historical per capita disposal rate combined with the projected population. A second method is to use an average increase in the historical waste of recent years. A third method is to use economic indicators such as impact of tourism.

#### ***Per Capita Disposal Rate***

As presented earlier, the per capita disposal rate for Henderson County has fluctuated from 0.78 to 1.13 tons per year per capita, with an average of 0.95 tons per year per capita.

#### ***Historical Waste Trends***

Henderson County has realized an average annual 7.61% increase in waste disposal since 2011. The 2011 disposal number included a drastic drop in waste disposal from the previous years, as presented earlier. Looking back to 2005, the average annual disposal rate has only increased by 2.91%.

#### ***Economic Impacts***

Henderson County has a very robust tourism economy. Estimates from the U.S. Travel Association indicate that more than \$313 million was credited to County tourism in 2018. This was an increase of more than 6.3% from 2017. While this is not a direct correlation to waste disposal, the increase in the amount of visitors to Henderson County definitely impacted the waste generated at the Transfer Station through commercial haulers. A conservative estimate is that tourism may have contributed to an increase in waste disposal by 3%.

#### ***Recommended Method***

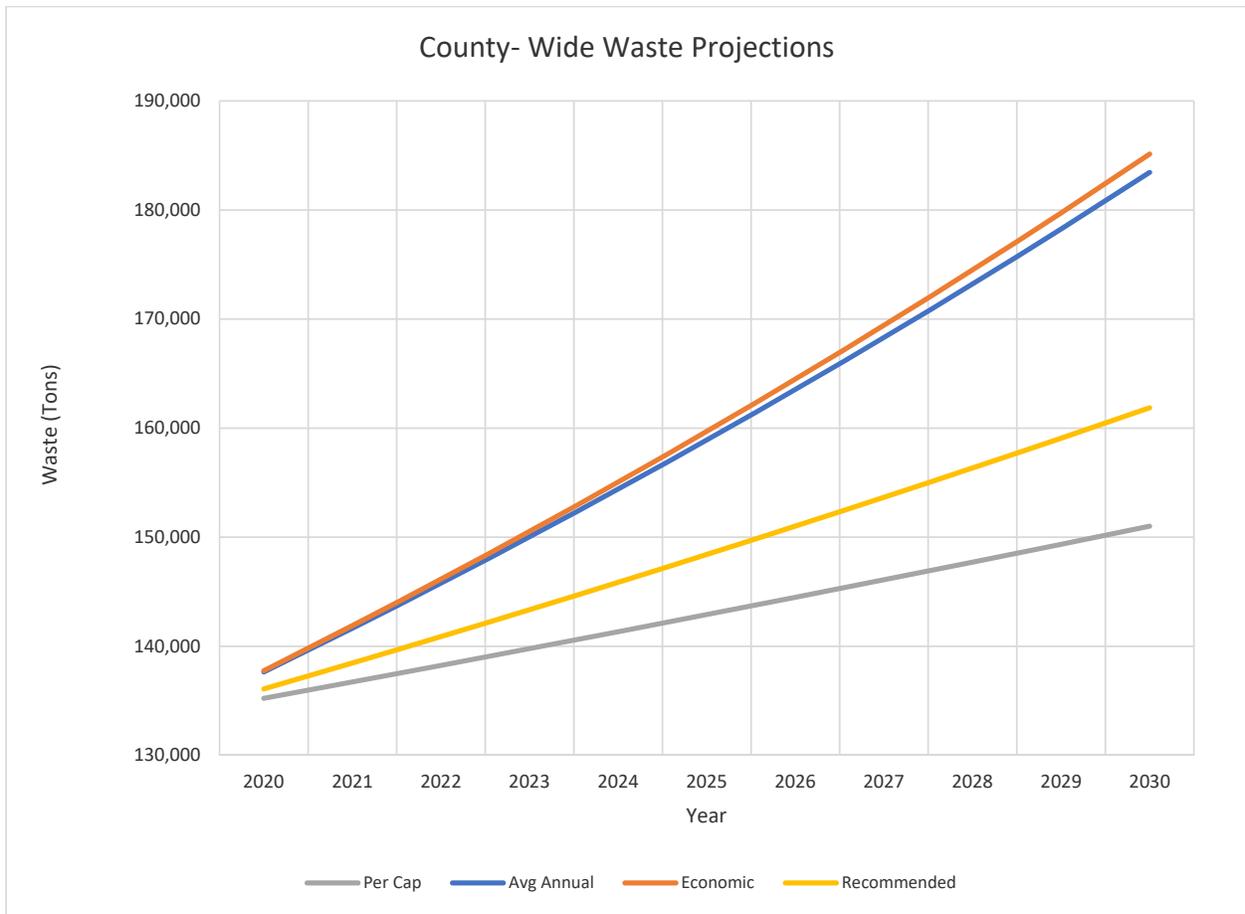
McGill met with Henderson County staff to discuss waste projection methods outlined above. We agreed that the 1.1% annual population growth rate combined with a 0.95 Tons/year/ capita disposal rate was too conservative, based on recent years annual increase in waste disposal. We agreed that the 2.91% annual growth and 3% increase due to tourism economic impact was too substantial of a projection. We settled on an annual projected waste disposal growth rate of 1.75%.

#### ***County- Wide Waste Disposal Projections***

Based on the above projection strategies, the following table depicts the projected County-wide waste disposal.

Table 11: Projected County-Wide Waste Disposal, Tons per Year

Fiscal Year	Historical Trends 2.91%	Per Capita Disposal Rate (0.95 Tons/Yr/ Cap)	Economic Impact (3%)	Recommended Projection (1.75%)
2020	135,226	137,639	137,753	136,082
2021	136,727	141,651	141,886	138,463
2022	138,244	145,779	146,142	140,886
2023	139,779	150,028	150,527	143,352
2024	141,330	154,401	155,043	145,860
2025	142,899	158,901	159,694	148,413
2026	144,485	163,533	164,485	151,010
2027	146,089	168,299	169,419	153,653
2028	147,711	173,205	174,502	156,342
2029	149,350	178,253	179,737	159,078
2030	151,008	183,448	185,129	161,861



### **Waste Projections Processed through Transfer Station**

As presented earlier, an average 20,440 tons per year of the county-wide waste is being diverted outside of the County by private haulers. The challenge to the County is that this diverted waste could be diverted back to the County facilities at any time, with no notice. Table 12 illustrates the projected waste processed through the transfer station without the diverted waste.

Table 12: Projected Waste Disposal Processed through Transfer, Tons per Year

<b>Fiscal Year</b>	<b>Recommended Projection (1.75%)</b>
2020	115,414
2021	117,433
2022	119,489
2023	121,580
2024	123,707
2025	125,872
2026	128,075
2027	130,316
2028	132,597
2029	134,917
2030	137,278

# FINANCIAL INFORMATION REVIEW

## FINANCIAL ASSESSMENT

Disposal or tipping fees are charged to and/or collected from the permitted haulers, business operations and residents each time they enter the facility to dispose of a load of waste. The amount of the disposal or tipping fee is dependent on the size or weight of the load. Large loads and those loads delivered by permitted haulers and other business operations are weighed as they enter the facility. The charges are based on the weight of the load multiplied by the per ton disposal fee. At the convenience center, residential waste and recycling can be brought. Residential customers, bring their own personal household waste for disposal, participate in the bag for bag program where bags of household trash may be disposed of at no charge when an equal number and size bags of recycling are collected. The monies collected by the County basically offset the cost of operating the Solid Waste Division.

An integral component of the planning methodology is the work elements that make up the long-term financial assessment for the solid waste program. This component is essential to understanding the implications of future regulatory compliance, capital investments, and other aspects of the County's solid waste program. Further, it complements the County's capacity to evaluate programmatic and technical alternatives and it facilitates compliance with financial assurance elements of the governing regulations.

### Program Revenues:

The Solid Waste Division revenues are primarily generated from tipping fees received at the point of collection, which is the Stoney Mountain Road Facility. Other sources of revenue include grants, asset liquidation, and interest income. The projected annual revenue for the 10-year planning period is estimated at \$7,621,000 for FY 2020. Using an inflation rate of 2%, total revenues are estimated to be \$9,150,000 by 2030, at the end of the planning period.

### Program Expenditures

Expenditures include operations, salaries and benefits, maintenance and repairs, annual capital overlay for ongoing projects, capital funds for new projects, and associated debt service. The projected annual expenditures for FY 2020 is equal to the projected revenue of \$7,146,000. Total expenditures by 2013 are estimated to be \$8,484,000.

### Capital Improvements:

With the assistance of McGill Associates, Henderson County Solid Waste staff updated the Solid Waste Division's Capital Improvements Plan. Equipment needs and proposed capital projects were considered in this analysis. Careful consideration of the cash flows

associated with these proposed projects and equipment needs were also part of this effort. The resulting summary of the cost estimates for capital improvements and equipment, for each of the identified improvements, is included in Appendix G and H. It should be noted, that the planned capital projects reflect Henderson County's current understanding and expectations concerning the regulatory requirements pertaining to solid waste programs. No attempt has been made to account for the many variables and unknowns that could influence the future of such requirements. The solid waste cash flow analysis spreadsheet was provided by Mr. Marcus Jones, Henderson County's Director of Engineering and has been included as Appendix I.

#### Revenue Requirement:

The yearly, required revenue for the solid waste program is comprised of all the expenditures necessary to ensure consistent, quality service to all users. These expenditures ensure proper operation and maintenance of equipment, development and perpetuation of the system, and maintenance of the utilities' financial integrity.

The revenues generated from solid waste customers should meet or exceed the above revenue requirements in order to avoid subsidies from other funds. A copy of the present Disposal Rate Fee Schedule is included in Appendix B. The FY 2019 solid waste revenues totaled \$7,856,085, yielding a net revenue of \$451,988. This margin should be closely monitored because growth in expenditures due to inflation and capital needs could decrease this margin, possibly resulting in operating losses or the spending of the program's fund balance and reserves.

#### Cash Flow Analysis:

The Financial Analysis was provided by Mr. Marcus Jones and is included in Appendix I. These analyses provide a summary of projections for the entire Solid Waste Enterprise Fund, including the capital improvements program.

The Financial Analysis has been developed with audit information from FY2004 to FY2019, an estimate of FY20 from actual second quarter information, and the proposed budget for FY21. The following assumptions were developed for the analysis through the examination of financial data and information from Solid Waste operations:

- Revenues are projected to be \$7,621,000 in FY2020, \$7,358,000 in FY2021, and maintain an average growth rate of 2% thereafter. The growth rate is derived from historical growth trends and inflation.
- The County has a 10-year contract with Republic Services for hauling and disposal of waste which is incorporated into the annual expenses. The contract starts July 1, 2020.

- The drop in revenues and expense in FY2021 is due to the separation of the Cane Creek Sewer System from operations and the budget. The system is scheduled to be merged with MSD of Buncombe at the beginning of FY2021.
- At the end of FY2020, the Solid Waste Enterprise Fund balance is projected to be \$1,010,305 and after FY2020, the balance grows to maintain an average of approximately 20% of the balance to annual expenses. This balance covers post closure reserves and unrestricted balance. The post closure reserves are a regulatory requirement for our closed, permitted landfills. Note, the reserves requirement is amortized and decreases about \$100,000 per year. The unrestricted balance is available for equipment purchases, large projects and contingency for unanticipated events. This contingency is what allowed the fund to survive the 2008 recession.
- An average of \$250,000 for projects was included in audits from FY14 to FY20. Therefore, for years FY21 to FY2030 only CIP cost over \$250,000 is shown. The project are listed in the Planned Project Schedule.
- Capital Outlay is primarily equipment purchases from the Equipment Replacement Schedule.
- The debt proposed for FY2023 of \$3,000,000 will provided funding for the Transfer Station's 3rd bay project and about \$500,000 to payoff the FY2012 debt. The FY2012 debt is scheduled to be completed in FY2027 if not paid off in FY2023 debt. The proposed FY2023 debt would be paid by 2040.

### Conclusion

- Tipping Fees for Municipal Solid Waste and Construction and Demolition Waste will need to increase in FY2022 to \$63:
  - The current tipping fee is \$60 per ton which was implemented in FY2016 (July 1, 2016).
  - The model does not anticipate another increase through FY2030.
  - Of course, the later years of the financial analysis (FY2025 to FY2030) are much less dependable information than the initial years.
- The fund balance for the Solid Waste Enterprise fund should be adequate to provide for the required post closure reserves, capital improvements and a healthy contingency for unanticipated events.

## **PROPOSED FACILITY UPGRADES AND IMPROVEMENTS**

A review of the existing Stoney Mountain Road Landfill Facility's services in conjunction with past and present waste stream flows and characteristics was performed. In addition to the review of the existing services and waste stream, an analysis of the vehicular traffic utilizing the various services was performed. Based on this review, the following capital improvements to the Stoney Mountain Road Landfill Facility are recommended to enhance the efficiency of the present operations and provide a safe environment for the citizens, customers and employees of the County.

The implementation of these recommended capital improvements has been prioritized and spaced throughout the ten-year planning period in order to reduce or minimize the affect on future budgets, but also to be able to maintain peak operational status. The recommended projects are presented below and in the schedule in Appendix G.

## **CAPITAL IMPROVEMENTS**

### Transfer Station Shed 1 Tipping Floor Replacement (FY 2022, FY 2030)

Numerous cracks and damaged sections of concrete have been identified by Henderson County staff within the slab in Shed 1 of the Transfer Station facility. The concrete floor has been repaired several times since initial installation. A detailed structural evaluation needs to be conducted to evaluate the subbase and the subgrade of the concrete floor to determine if the substructure is contributing to the problem or if the problem in durability of the concrete floor is related to thickness specs or curing conditions. The existing floor should then be evaluated by a structural engineer and concrete floor coating manufacturers to determine a long-term solution. In order to estimate a cost for the Shed 1 floor replacement, it was assumed that all the existing concrete tipping floor would be demolished and removed and replaced with a new concrete slab with 1½ -inch hardened concrete floor on top. Based on historical data, the concrete surface needs to be removed and replaced on an 8-year cycle. New concrete floor toppings are frequently introduced to the market and should be evaluated during each repair cycle.

### Transfer Station Shed 2 Rehabilitation (FY 2027)

The concrete floor in Bay 2 was replaced in 2018. Based on historical data, the concrete surface needs to be removed and replaced on an 8-year cycle. The cost estimate includes demolishing and replacing the concrete floor with new concrete slab with 1½ -inch hardened concrete floor on top. Additionally, the cost estimate includes miscellaneous repairs to push walls and metal trash chute. New concrete floor toppings are frequently introduced to the market and should be evaluated during each repair cycle.

### Transfer Station Shed 1 and 2 Tunnel Rehabilitation (FY2029, FY2030)

The lower level of both bays of the transfer station are currently in fair/good condition. It is projected that in the latter part of the planning period, the concrete and drainage system in the tunnels will have to be replaced. Our estimated cost includes demolition and removal of the existing concrete slab, concrete curb, drain inlets and piping. New concrete drainage piping and grate inlets, concrete curbing, and concrete slab will be installed. Drains will be piped to the new grit chamber. The Shed 2 Tunnel Rehabilitation also includes replacement of the access tunnel under Shed 1 that provides access to Shed 2.

### Commercial Hauler By-Pass Road (FY 2023)

Currently, the commercial haulers that need to access Area 3 to drop off recycled material must drive across the staging area in front of the transfer station to get from the remote (Waste Wizard) scale to Area 3. This adds to the already congested area in front of the transfer station. The commercial hauler by-pass road will provide access around the Solid Waste Center and approach Area 3 from the south. The haulers can also use the by-pass road to return to the remote scales. The cost estimate includes grading and gravel to establish a 24-foot all-weather access road.

#### Multipurpose Waste Diversion Building (FY 2026)

Henderson County already has a successful Household Hazardous Waste (HHW) Collection program. Henderson County Environmental Programs hosts events at the Convenience Center dedicated to HHW collection. The events are currently limited by the area in the convenience center and the increased vehicle traffic. A dedicated structure, away from the convenience center, could help alleviate the additional burden of traffic and provide an all-weather access, drive-through building to serve a dedicated HHW traffic stream, even during inclement weather. The building could also be used for other collection programs, such as a Hard-to-Recycle event. Our estimated cost includes development of a 6,000 square foot drive-through building, grading, gravel access road and a concrete floor. The proposed location is between the commercial haulers by-pass road and the Solid Waste Center.

#### Transfer Station Grit Chamber Replacement (FY 2021)

The existing grit chamber has been in service since 1998 when the first transfer station was constructed. Through the years, the grit chamber has become inefficient and needs to be replaced. A grit chamber will be installed in the location of the existing sanitary sewer manhole where the drains from various portions of the transfer station are currently discharging.

#### Truck Turnaround Completion (FY 2028)

The area around the remote scales is used primarily by commercial haulers and Henderson County staff to turn around and maneuver large vehicles and trailers. To address the failing conditions of the existing pavement near the remote scales, the scope of work of this improvement will involve removal of the existing pavement and subgrade in order to place 8 inches of compacted aggregate base course and 8 inches of reinforced concrete paving. The area will also be widened to allow for a greater turning radius.

#### Transfer Station Exit Ramp Refurbishment (FY 2021)

The condition of the exit ramp from the transfer station has suffered from the number and weight of the transfer trailers exiting the transfer station. The ramp is constructed of asphalt, in a tight curve, and constructed at an approximate 6.5% grade. The fully loaded trailers are pulled up the ramp by the spotter truck. This is a crucial element of the transfer station operation. Minor repairs to the ramp have been made through the years, but the ramp must be replaced soon to maintain efficient transfer station operation. The Transfer Station Exit Ramp Refurbishment involves the complete replacement of the ramp and expanding paving of the by-pass lane behind the transfer station. The expanded by-pass lane will provide transfer station operators flexibility during peak operations and flexibility when the exit ramp is being replaced. Our estimated cost includes removal and replacement with concrete slab of the existing exit ramp, new drainage structures, and widening and concrete paving of the by-pass lane.

### Convenience Center Concrete Slabs (FY 2028)

The gravel paving at the Convenience Center is becoming a maintenance issue where the dumpsters are being unloaded and moved along the surface. Concrete pads are proposed to provide a more durable surface for operations. In order for the pads to be flush with the surrounding grades, a total of 14 inches of existing stone and railroad ballast will be removed with 6 inches of compacted aggregate base course and 8 inches of reinforced concrete installed. A turned down slab edge with steel reinforcement will be used to protect the perimeter of the concrete from deterioration caused by truck and equipment traffic, as well as protect against freeze/thaw cycles.

### Transfer Station Shed 3 Development (FY 2023)

Currently, an average of 385 vehicles per day access the two existing transfer sheds. This vehicle count does not include the Henderson County vehicles serving the convenience center and Area 3. On peak traffic days, the vehicle count has reached 570 per day. Henderson County staff fill and service an average 18 transfer trailers per day. On peak days, this average expands to 25 transfer trailers per day. Henderson County is averaging 363 tons/ day of waste processed through the transfer station with peak days reaching more than 550 tons/day. On these peak waste processing days, traffic congestion is the primary hindrance to the overall safe and efficient operation of the transfer station facilities. The high volume of traffic in and around the transfer station creates a potential safety concerns for the citizens and customers as well as the County's staff.

The projected combined capacity of both bays of the transfer station is estimated at approximately 500 tons per day or 156,000 tons per year. This projection is based on the amount of transfer trailers that can feasibly be serviced through the station on a continuous basis. A review of the daily waste records show that the station was at capacity more than 5% of the time in 2019.

Based on the projected waste presented earlier the report, if the County does not receive any of the waste now being diverted from the transfer station, the current transfer station configuration should have the adequate capacity to meet the County's disposal needs through the year 2030. However, the percentage of operating days exceeding the daily capacity of the transfer station will continue to increase. If the waste currently diverted to Buncombe County is brought back to the transfer station, then the station is estimated to full capacity by FY 2025.

The challenge with delaying the development of the Transfer Station Shed 3, is the fact that diverted waste could return to the transfer station at any time with little to no notice. The recommendation of beginning development of Shed 3 in FY 2023 will allow time to evaluate options for development, design and permitting of the facility, and ultimately constructing the new transfer station.

The proposed location of the new transfer station shed would be on the current school bus maintenance site just south of the scale house. We understand that this property may become available if the school relocates the maintenance facility. This location

would allow the development of a stand-alone shed that could serve commercial or residential waste streams. If the shed was developed to accommodate the commercial Waste Wizard customers, this would eliminate this traffic from the Shed 1 and 2 area and provide better traffic flow efficiency and reduce the amount of disposal time for the commercial customers. Fully dedicated traffic lanes could be implemented that would provide a much safer environment for the entire transfer facility. The cost estimate for the Shed 3 development includes a new metal building with a two-level transfer station, new access roads, a remote scale, and associated grading and erosion control.

#### Waste Wizard By-Pass Lane (FY 2024)

Currently, the Waste Wizard haulers must merge into the right-hand vehicle lane from the scale and cross paths with other vehicles accessing Shed 2 of the transfer station. In order to bypass the transfer station and reduce traffic along the main route, a bypass lane should be implemented to allow Waste Wizard customers direct access to the remote scale. Combining this new by-pass lane with the Commercial Hauler By-Pass Road to access Area 3, and the traffic passing in front the transfer station can be reduced dramatically.

#### Scale Entrance Road Widening (FY 2024)

On peak days, the vehicles waiting to cross the scale can sometimes back up all the way to Stoney Mountain Road. This back up can potentially cause delays with traffic flow on Stoney Mountain Road. The County has already added an additional by-pass lane on a portion of the entrance road for the Waste Wizard customers. By extending this by-pass lane all the way to Stoney Mountain Road, the Waste Wizard traffic can be moved through the scale area and regular scale traffic can have more queuing area. The cost estimate includes extending the by-pass approximately 500 feet.

#### Convenience Center Asphalt Resurfacing (FY 2029)

The convenience center was constructed in 2009 and averages almost 800 vehicles per day. This is a high traffic area with vehicles making turning and backing maneuvers to use the site. This type of vehicle movement creates more wear on asphalt paving. Based on the age and the vehicle usage, the convenience center should be resurfaced after 20 years of service in 2029. Our estimated cost includes milling 2" of asphalt and resurfacing with 2" of new asphalt.

#### Compost/ Mulch Area Paved Access Road (FY 2025)

The compost area, mulch area, beneficial fill drop-off, and wood waste disposal has realized a significant increase in traffic in recent years. The access road to this service area is challenging during inclement weather due to grades and the number of vehicles using the area. In addition, when the County expands their composting operation and the yard waste and wood waste drop-off increases, the vehicle traffic will increase even more. As the compost area is further developed and the vehicle counts increase, this access road should be developed into a permanent asphalt paved road. An asphalt road will provide all-weather access and reduce required maintenance.

#### Staff Parking Area (FY 2024)

With all the improvements that have been implemented at the facility over the years, available parking for employees has become a premium. A new 20-space gravel parking area is proposed behind the transfer station.

#### Stormwater – Gas Storage Area (FY 2026)

Excessive stormwater is bypassing an existing collapsed drainage pipe below the access road to the wood waste area. The bypass water has caused erosion issues near the Gas Storage Area. The solution is to replace the existing collapsed pipe with a larger pipe.

#### Stormwater – Sediment Basin to Water Quality Basin (FY 2026)

There are four (4) sediment basins on the County property that were installed as part of various construction projects. Now that the construction sites are stabilized, these basins could be removed or converted to water quality basins. Since the property is still a working operation and the nature of solid waste facilities does generate potential sediment laden run-off, it is recommended that these basins be converted to long term water quality basins. The conversions will include replacement of the outlet structures and removal of any old baffling. The water quality basins will also require reduced maintenance.

#### Stormwater – Convenience Center Access Road (FY 2029)

The existing drainage pattern that begins east of the Convenience Center Access Road and travels west towards the Solid Waste Center has been experiencing significant erosion. In an effort to provide long term stabilization and water quality improvements, an area just east of the access road will be improved. A pre-cast concrete junction box will be installed where runoff is free falling from stable ground into the washout. A 36-inch pipe and pre-cast concrete endwall will then be installed downstream of the junction box near the current elevation of the flow towards the existing rip rap apron, as well as a 36 inch pipe installed upstream of the junction box with a pre-cast concrete headwall to intercept the flow. The eroded area can then be backfilled over the new pipe and sloped to match existing grades, utilizing imported material brought to the landfill site or from borrow areas onsite. Slope stabilization matting will be installed to establish immediate ground cover and prevent surface erosion. Additional rip rap and non-woven geotextile fabric will be added at the pipe endwall and on the opposite side of the access road to provide additional stabilization. Within this drainage basin, there is also an old sediment basin that will be converted to a water quality basin similar to the previous project in FY 2026.

#### Convenience Center Paving Repair (FY 2024)

A small hole has developed in the convenience center paved area. This section of the center was constructed on top of an old landfill. As such, the subgrade has likely settled locally and resulted in the damage. The repair should include removal of a section of pavement and reworking the gravel subgrade and repaving the area.

### Convenience Center Access Road Repair (FY 2022)

Over the course of 10 years since the convenience center access road was constructed, a dip on the pavement has developed approximately 800 feet from Stoney Mountain Road. The dip is approximately 100 feet long and is the probable result of the road being constructed above an old waste disposal area. The landfill settles more significantly than the surrounding ground and has resulted in differential settlement of the road. The only way to repair is to remove the damaged section of pavement and rework the subgrade with new soil, geogrid fabric, and gravel before repaving.

### **EQUIPMENT**

Equipment needs and planned purchase schedule was provided by Henderson County Solid Waste staff and is included as Appendix H.

## RECOMMENDATIONS

- Implement the proposed phased Capital Improvement Plan (CIP)
- Due to the significant number of solid waste projects proposed in the Capital Improvements Plan, we recommend the County consider issuing a Request for Qualifications (RFQ) to secure a Master Services Agreement for solid waste services for a three (3) to five (5) year service period with one or more consultants that provide the technical services needed by the County to complete these projects.
- Assemble a team including a structural engineer, product representatives, professional association representative (ACI), solid waste consultant, and contractor to study construction, rehabilitation, and maintenance of the transfer station floor systems.
- Study feasibility of implementing a County-wide Curbside Collection System, to determine impact on future MSW and recycling tonnages and associated costs.
- Continue to investigate feasibility and opportunities to pursue composting of organic waste streams and wood materials
- It is recommended that the status of the fund be reviewed annually to evaluate tonnage trends, hauling and disposal fees, changing needs in capital improvements and equipment and their impacts on the financial status of the fund. Particular consideration must be given to assessing the impact of lower tonnages upon the future operating and capital needs of the program.
- Update Solid Waste ordinance to reflect current operations and policies and keep current when changes to policies occur.
- Increase Tipping Fees for Municipal Solid Waste and Construction and Demolition Waste to \$63 per ton in FY2022.

APPENDIX A  
Permit to Operate  
Solid Waste Transfer Station



ROY COOPER  
*Governor*  
MICHAEL S. REGAN  
*Secretary*  
MICHAEL SCOTT  
*Director*

STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WASTE MANAGEMENT  
SOLID WASTE SECTION

**SOLID WASTE MANAGEMENT FACILITY**

**Permit No.'s 4501 and 4504**

HENDERSON COUNTY

is hereby issued a

**PERMIT TO CONSTRUCT**

*Not Applicable*

**PERMIT TO OPERATE**

4504T-TRANSFER-1998, Henderson County Transfer Facility

4504-HHW-2011, Henderson County HHW Unit

(Generator ID No. NCPH0450801))

**PERMIT FOR CLOSURE**

4501-MSWLF-1980, Henderson County Landfill

4501-CDLF-1998, Henderson County C&D Landfill

Located at *191 Transfer Station Drive, near the City of Hendersonville, Henderson County, North Carolina*, in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit. The legal description of the site is identified on the deeds recorded for this property listed in Attachment 1 of this permit.

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Sherri Stanley, Supervisor  
Permitting Branch, Solid Waste Section  
Division of Waste Management, NCDEQ



**ATTACHMENT 1**  
**GENERAL PERMIT CONDITIONS/INFORMATION**

**PART I: GENERAL FACILITY**

Permit to Operate Date Table

Permit	Status	Issuance	Expiration	DIN/FID
4504T-TRANSFER-1998, Henderson County Transfer Facility	Active	October 30, 2018	July 29, 2057	1257402
4504-HHW-2011, Henderson County HHW Unit (Generator ID No. NCPH0450801)	Active	August 30, 2016	April 12, 2021	26611
4501-MSWLF-1980, Henderson County Landfill	Closed	<i>Not Applicable</i>	<i>Not Applicable</i>	472
4501-CDLF-1998, Henderson County C&D Landfill	Closed	<i>Not Applicable</i>	<i>Not Applicable</i>	26611

General Conditions

1. This Permit is issued by the North Carolina Department of Environmental Quality, Division of Waste Management, Solid Waste Section (Section). In accordance with North Carolina General Statute 130A-294(a2), Permits for sanitary landfills and transfer stations shall be issued for the life-of-site of the facility unless revoked as otherwise provided or upon the expiration of any local government franchise. In accordance with North Carolina Solid Waste Management Rule 15A NCAC 13B .0201(d), a solid waste management facility Permit shall have two parts: a Permit Approval to Construct and a Permit Approval to Operate. The Permit Approval to Construct must be implemented in accordance with Attachment 2 of this Permit. The Permit Approval to Operate must be implemented in accordance with Attachment 3 of this Permit.
2. The persons to whom this permit is issued (“permittee”) are the owners and operators of the solid waste management facility.
3. The Letter of Closure for the Henderson County Landfill dated April 11, 2006, was recorded in the Henderson County Register of Deeds on April 20, 2012, in Deed Book 1270, Pages 751-757. DIN 26635.
4. When this property is sold, leased, conveyed, or transferred in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument, a statement that the property has been used as a solid waste management facility and a reference by book and page to the recordation of the permit.
5. By receiving waste at this facility, the permittee shall be considered to have accepted the terms and conditions of this permit.
6. Operation of this solid waste management facility shall be in accordance with the Solid Waste Management Rules, 15A NCAC 13B, Article 9 of the Chapter 130A of the North Carolina

General Statutes (NCGS 130A-290, et seq.), the conditions contained in this permit; and the approved plan. Should the approved plan and the rules conflict, the Solid Waste Management Rules shall take precedence unless specifically addressed by permit condition. Failure to comply may result in compliance action or permit revocation.

7. This permit is issued based on the documents submitted in support of the application for permitting the facility including those identified in Attachment 1, "List of Documents for Approved Plan," and which constitute the approved plan for the facility. Where discrepancies exist, the most recent submittals and the Conditions of Permit shall govern.
8. This permit may be transferred only with the approval of the Section, through the issuance of a new or substantially amended permit in accordance with applicable statutes and rules. In accordance with NCGS 130A-295.2(g) the permittee must notify the Section thirty (30) days prior to any significant change in the identity or business structure of either the owner or the operator, including but not limited to a proposed transfer of ownership of the facility or a change in the parent company of the owner or operator of the facility.
9. The permittee is responsible for obtaining all permits and approvals necessary for the development of this project including approval from appropriate agencies for a General or Individual NPDES Stormwater Discharge Permit. Issuance of this permit does not remove the permittee's responsibilities for compliance with any other local, state or federal rule, regulation or statute.

Properties Approved for the Solid Waste Management Facility

Henderson County, NC Register of Deeds			
Book	Page	Property Owner	Acres
1029	073	Henderson County	5.21±
613	175	Henderson County	5.78±
554	171	Henderson County	6.40±
450	127	Henderson County	0.41±
1381	308	Henderson County	6.96±
660	017	Henderson County	37.60±
218	159	Henderson County	61.89±
894	311	Henderson County	12.03±
			Total Site Acreage: 136.55± acres

PART II: MUNICIPAL SOLID WASTE LANDFILL UNIT(S)

4501-MSWLF-1980, Henderson County Landfill Permitting History  
 Permitting History

Permit Type	Date Issued	DIN
Permit to Operate, Original Issuance	December 11, 1980	26627
Permit to Operate, Addendum	May 7, 1982	26628
Permit to Operate, Amendment Demolition Disposal Area	October 24, 1991	26629
Letter of Closure	April 11, 2006	472

List of Documents for Approved Plan

*The descriptions of previous/historical documents may be found in the Letter of Closure issued April 11, 2006 (DIN 472).*

DIN	Description
17440	<i>Nature and Extent Study: Detections of Volatile Organic Compounds in Groundwater, Henderson County Closed Municipal Solid Waste Landfill Permit No. 45-01. Prepared for Henderson County. Prepared by Golder Associates. July 2012.</i>
17731	<i>Request for Extension for Submittal of Assessment of Corrective Measures for the MSW Landfill, Closed Henderson County Municipal Solid Waste Landfill Permit No. 45-01, Henderson County, North Carolina. Prepared for Henderson County. Prepared by Golder Associates. November 2012.</i>
19943	<i>Landfill Gas Remediation Plan – Phase 2, Closed Henderson County Municipal Solid Waste Landfill Permit No. 45-01, Henderson County, North Carolina. Prepared for Henderson County. Prepared by Golder Associates. September 2013.</i>
22936	<i>Landfill Gas Remediation Plan – Phase 2, Closed Henderson County Municipal Solid Waste Landfill Permit No. 45-01, Henderson County, North Carolina. Prepared for Henderson County. Prepared by Golder Associates. August 2015.</i>
23909	<i>Groundwater Corrective Action Permit Modification Application, Henderson County Closed MSW Landfill, Permit No. 45-01, Hendersonville, North Carolina. Prepared for Henderson County. Prepared by Golder Associates. March 2015.</i>
24715	<i>Corrective Action Plan, Henderson County Closed Municipal Solid Waste Landfill, Permit No. 45-01. Prepared for Henderson County. Prepared by Golder Associates. June 2015.</i>

PART III: CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL UNIT(S)

4501-CDLF-1998, Henderson County C&D Landfill  
 Permitting History

Permit Type	Date Issued	DIN
Permit to Operate, Original Issuance	September 17, 1998	26631
Permit to Operate, Amendment	October 27, 1999	26632
Permit to Operate, Amendment	June 12, 2001	26634
Permit to Operate, Amendment	October 4, 2001	26633
Permit to Operate, Amendment	August 22, 2006	442

Permit for Closure	August 30, 2016	26611
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List of Documents for Approved Plan

*The descriptions of previous/historical documents may be found in the Permit to Operate issued August 22, 2006 (DIN 442).*

DIN	Description
5068	<i>Closure Plan, Construction &amp; Demolition Landfill Phase 1, Henderson County Landfill, Henderson County, North Carolina, Permit # 45-01. Prepared for Henderson County. Prepared by McGill Associates. June 2008.</i>
8938	<i>Closure Documentation, Henderson County Construction/Demolition Landfill, Permit #45-01, Henderson County, North Carolina. Prepared for Henderson County. Prepared by McGill Associates. November 2009.</i>
15231	<i>Assessment Monitoring Work Plan, Closed Henderson County Landfill, Permit No. 45-01, Henderson County, North Carolina. Prepared for Henderson County. Prepared by Golder Associates. January 2012.</i>
16100	<i>Landfill Gas Monitoring Plan for the Closed Construction and Demolition Landfill, Closed Henderson County Landfill, Permit No. 45-01, Henderson County, North Carolina. Prepared for Henderson County. Prepared by Golder Associates. January 2012.</i>

PART IV: INDUSTRIAL LANDFILL UNIT(S)  
*Not Applicable*

PART V: LAND CLEARING AND INERT DEBRIS LANDFILL UNIT(S)  
*Not Applicable*

PART VI: TRANSFER STATION/TREATMENT & PROCESSING UNIT(S)

4504T-TRANSFER-1998, Henderson County Transfer Facility

Permitting History

Permit Type	Date Issued	DIN/FID
Permit to Construct/Permit to Operate, original issuance	July 29, 1997	5447
Commencement of Operations	May 1, 1998	5448
Permit to Operate, amendment	August 22, 2003	5449
Permit to Operate, amendment	March 21, 2006	5450
Permit to Operate, modification addition HHW	September 2, 2008	5491
Permit to Operate, modification improvements and expansion of on-site services	July 26, 2010	11096
Permit to Operate, modification of existing plans	November 30, 2010	12319
Permit to Operate, modification to approved disposal sites	December 14, 2010	12378
Permit to Operate, amendment five (5) year renewal	April 12, 2011	13594
Permit to Operate, amendment five (5) year renewal	August 30, 2016	26611

Permit Approval to Operate, Life of Site and modification to existing plans	October 30, 2018	1257402
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List of Documents for Approved Plan

The descriptions of previous/historical documents may be found in the Permit to Operate issued April 12, 2011 (DIN 13594).

DIN/FID	Description
5454	<i>Operations Plan.</i> Prepared by CDM. Prepared for Henderson County. February 2006.
11095	<i>Request for Permit Modification, Capital Improvement Project, Stoney Mountain Road Landfill, Henderson County, North Carolina, Permit # 45-04-T.</i> Prepared for Henderson County. Prepared by McGill. June 2010.
11970	<i>Request for Permit Modification, Capital Improvement Project, Stoney Mountain Road Landfill, Henderson County, North Carolina, Permit # 45-04-T.</i> Prepared for Henderson County. Prepared by McGill. October 2010.
12377	<i>Permit modification for 45-04T Attachment 3, Part I, Condition No. 4 of the permit.</i> Prepared by Henderson County. December 2010.
13593	<i>Permit Renewal, Stoney Mountain Road Landfill, Solid Waste Transfer Station, Permit No. 45-04T, Henderson County, North Carolina.</i> Prepared for Henderson County. Prepared by McGill Associates. Including Operation Plan Revisions December 2010 and April 2011.
25938	<i>Henderson County Solid Waste Facility, Permit no. 45-04t, Permit Renewal Submission.</i> Prepared by Henderson County. March 2016.
26139	<i>Temporary location of material from Waste Stream Innovation to Henderson County Transfer Station, Permit # 4504T-Transfer-1998.</i> Prepared by Henderson County. May 2016.
1236211	<i>Henderson County, North Carolina, Operations Plan, Henderson County Solid Waste Facility, Permit # 45-04T, Revised August 2018.</i> Prepared by Henderson County. August 2018.

4504-HHW-2011, Henderson County HHW Unit (Generator ID No. NCPH0450801)

Permitting History

Permit Type	Date Issued	DIN
Permit to Operate, original issuance	September 2, 2008	5491
Permit to Operate, amendment five (5) year renewal	August 30, 2016	26611

List of Documents for Approved Plan

DIN	Description
4620	<i>Site Specific Health and Safety Plan for Henderson County Household Hazardous Waste Facility.</i> Prepared by Mountain Environmental Group. Prepared for Henderson County. January 2008.
4622	<i>Application for Household Hazardous Waste Identification Number.</i> Prepared by Mountain Environmental Group. Prepared for Henderson County. May 2008.

5453	<i>Henderson County Household Hazardous Waste Facility, Operations Plan. Prepared by Mountain Environmental Group. Prepared for Henderson County. July 2008.</i>
25938	<i>Henderson County Solid Waste Facility, Permit no. 45-04t, Permit Renewal Submission. Prepared by Henderson County. March 2016.</i>

PART VII: MISCELLANEOUS SOLID WASTE MANAGEMENT

*Not Applicable*

*- End of Section-*

**ATTACHMENT 2**

**CONDITIONS OF A PERMIT APPROVAL TO CONSTRUCT**

PART I: GENERAL FACILITY

*Not Applicable*

PART II: MUNICIPAL SOLID WASTE LANDFILL UNIT(S)

*Not Applicable*

PART III: CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL UNIT(S)

*Not Applicable*

PART IV: INDUSTRIAL LANDFILL UNIT(S)

*Not Applicable*

PART V: LAND CLEARING AND INERT DEBRIS LANDFILL UNIT(S)

*Not Applicable*

PART VI: TRANSFER STATION/TREATMENT & PROCESSING UNIT(S)

*Not Applicable*

PART VII: MISCELLANEOUS SOLID WASTE MANAGEMENT

*Not Applicable*

*- End of Section -*

**ATTACHMENT 3**  
**CONDITIONS OF A PERMIT APPROVAL TO OPERATE**

**PART I: GENERAL FACILITY**

1. All sedimentation and erosion control activities must be conducted in accordance with the Sedimentation Control Act NCGS 113A-50, et seq., and rules promulgated under 15A NCAC 4. All required sedimentation and erosion control measures must be installed and operable to mitigate excessive on-site erosion and to prevent silt from leaving the area of the landfill unit during the service life of the facility.
2. Facility construction, operations or practices must not cause or result in a discharge of pollution, dredged material, and/or fill material into waters of the state in violation of the requirements under Sections 401 and 404 of the Clean Water Act, as amended.
3. Copies of this permit, the approved plans, and all records required to be maintained in the operating record by the permittee must be maintained at the facility, unless otherwise approved by the Section, and made available to the Section upon request during normal business hours.
4. All forms, reports, maps, plans, and data submitted to the Section must include an electronic (pdf) copy.
5. Open burning of solid waste is prohibited. Fires must be reported to the Regional Waste Management Specialist within twenty-four (24) hours of the occurrence with a written notification to be submitted within fifteen (15) calendar days of the occurrence. Fire lanes must be maintained and passable at all times. Dimensions of the fire lanes must be coordinated with the Fire Marshall having jurisdiction over the site.
6. Processing of materials, shredding, or grinding must not take place at the facility unless approval has been granted under the special use permit and a revised operations plan has been submitted to the Solid Waste Section.
7. The facility must be adequately secured by means of gates, chains, berms, fences, or other security measures approved by the Section to prevent unauthorized entry.
8. Interior roadways must be of all-weather construction and maintained in good condition.
9. Signs must be posted at the entrance to the facility that state that no hazardous waste or liquid waste can be received at the facility; and provide information on handling procedures, hours of operation, the permit number, and other pertinent information. Traffic or markers must be provided as necessary to promote an orderly traffic pattern to maintain efficient operating conditions.
10. The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

11. In the event of noncompliance with the permit, the permittee must take all reasonable steps to minimize releases to the environment and must carry out such measures as are reasonable to prevent adverse impacts on human health or the environment.

PART II: MUNICIPAL SOLID WASTE LANDFILL UNIT(S)

*Not Applicable*

PART III: CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL UNIT(S)

*Not Applicable*

PART IV: INDUSTRIAL LANDFILL UNIT(S)

*Not Applicable*

PART V: LAND CLEARING AND INERT DEBRIS LANDFILL UNIT(S)

*Not Applicable*

PART VI: TRANSFER STATION/TREATMENT & PROCESSING UNIT(S)

General

12. A responsible individual trained and certified in facility operations must be on-site at all times during all operating hours of the facility, in accordance with G.S. 130A-309.25.
13. Those wastes listed in 15A NCAC 13B .1626 (l)(b-e) are prohibited from disposal at the facility and include at a minimum hazardous waste, yard trash, liquid wastes, regulated medical waste, sharps not properly packaged, regulated asbestos containing material as defined in 40 CFR 61, PCB waste as defined in 40 CFR 761, and wastes banned from disposal in North Carolina by G.S. 130A-309.10(f).
14. The permittee must not knowingly dispose of, or accept for transfer for subsequent disposal, municipal solid waste that is generated within the boundaries of a unit of local government that by ordinance:
  - a. Prohibits generators or collectors of municipal solid waste from disposing of that type or form of municipal solid waste.
  - b. Requires generators or collectors of municipal solid waste to recycle that type or form of municipal solid waste.
15. The permittee must develop and implement, a training and screening program at the facility for detecting and preventing unauthorized wastes from being accepted at the facility. At a minimum, the program must include:
  - a. Random inspections of incoming loads or other comparable procedures.
  - b. Records of all inspections.
  - c. Training of personnel to recognize hazardous, liquid and other excluded waste types.
  - d. Development of a contingency plan to properly manage any identified hazardous, liquid, asbestos or other excluded or unauthorized wastes. The plan must address identification, removal, storage and final disposition of these wastes.

16. The facility must not cause nuisance conditions.
  - a. The tipping floor and transfer trailer loading area must be maintained in a clean, sanitary condition at all times and must be cleaned at least daily in accordance with the approved Operational Plan.
  - b. Waste must only be deposited on a “tipping floor” or directly into a transfer container. Waste must not be stored on the “tipping floor” after operating hours.
  - c. Waste may be stored on-site, in leak proof transfer trailers, with watertight covers, a maximum of 24 hours except that a minimal amount of waste may be stored for a maximum of 72 hours when the facility is closed during a weekend or holiday. Storage of the waste must not cause any nuisance, such as odor or attraction of vectors.
  - d. Effective vector control measures must be applied at all times to control any potential vectors including flies, rodents, insects, and other vermin.
  - e. Control measures must be utilized to minimize and eliminate visible dust emissions and blowing litter.
    - i) Fugitive dust emissions are prohibited.
    - ii) Windblown materials must be collected by the end of the day and no windblown material may be allowed to leave the facility boundary.
17. All water or liquid that comes in contact with solid waste, including vehicle wash-down water, is leachate and must be captured and properly treated before release to the environment.
  - a. The leachate control system, such as floor drains, leachate collection devices, sanitary sewer connections, and leachate storage tanks, must be operational during facility operations.
  - b. The tipping floor must drain away from the building entrance and into the leachate collection system.
  - c. Waste must not be placed in ponded water.
18. The permittee must maintain a record of the amount of solid waste received at the facility, including daily records of waste received and origins of the loads. The permittee must maintain a record of the amounts of waste transported out of the facility for disposal and amounts of waste or material with any other final disposition to be compiled on a monthly basis. The daily records are to be summarized into a monthly report for use in the required annual reports.
19. On or before August 1 annually, the Permittee must submit an annual facility report to the Solid Waste Section, on forms prescribed by the Section.
  - a. The reporting period shall be for the previous year beginning July 1 and ending June 30.
  - b. The annual facility report must list the amount of waste received in tons and be compiled:
    - i) On a monthly basis.
    - ii) By county, city or transfer station of origin.
    - iii) By specific waste type.
    - iv) By receiving disposal facility.
    - v) By diversion to alternative management facilities.
  - c. The completed report must be forwarded to the Section Environmental Senior Specialist for the facility by the date due on the prescribed annual facility report form.

- d. A copy of the completed report must be forwarded to the county manager for each county from which waste was received the facility. Documentation that a copy of the report has been forwarded to the county managers must be sent to the Regional Environmental Specialist by the date due on the prescribed annual facility report form.

4504T-TRANSFER-1998, Henderson County Transfer Facility

20. This Permit to Operate approves the continued operation of the current facility. The facility must be operated in accordance with the List of Documents for Approved Plan.
21. The transfer facility is permitted to receive "Municipal solid waste" as defined in NCGS 130A-290 (a)(18a).
22. The facility is permitted to receive (waste types) generated within areas consistent with the service area of the receiving landfill.
23. Waste must only be transported to facilities that are properly permitted to receive the waste.

4504-HHW-2011, Henderson County HHW Unit (Generator ID No. NCPH0450801)

24. This permit is for operation of a Permanent Household Hazardous Waste Collection Unit.
25. This permanent household hazardous waste collection unit is permitted to receive household hazardous waste (HHW) generated by homeowners and conditionally exempt small quantity generators of Henderson County. Unacceptable HHW that shall not be collected at this facility includes radioactive waste, explosives, and infectious waste.
26. Any revisions to the approved plan shall be approved by the North Carolina Division of Waste Management (DWM), Solid Waste Section, prior to implementation.
27. This facility shall conform to all operating procedures in the approved plan, 15A NCAC 13B .0400, and the current Section policies and guidelines for HHW Collection Facilities.
28. Household Hazardous Waste Identification Number shall be used to ship wastes off site for recycling, treatment or disposal.
29. The permittee shall maintain records for the amount of HHW received at the facility and the amounts shipped off-site for recycling, treatment, and disposal. Records must be compiled on a monthly basis and maintained at the facility for inspection upon request by Solid Waste Section personnel.
30. On or before August 1 of each year, the permittee shall report to the Solid Waste Section, the amount of HHW waste (in pounds) received at this facility and the amounts shipped off-site for recycling, reuse, and/or disposal. The reporting period shall be for the previous year, beginning July 1 and ending June 30.
31. A copy of this permit and the approved plan shall be maintained at the facility. Copies of this permit shall be forwarded to the local fire department, local hospitals, and other appropriate emergency agencies.

PART VII: MISCELLANEOUS SOLID WASTE MANAGEMENT

#### General Conditions

62. Wastes received, and product stored shall be maintained in reasonably sized piles with adequate fire breaks and lanes in accordance with the approved operational plans and the pertinent rules.
63. Surface water shall be diverted from all operational and storage areas to prevent standing water in operational areas and under or around storage piles. Water that comes in contact with solid waste shall be contained on-site or properly treated prior to discharge.
64. These areas shall be operated and maintained with sufficient dust control measures to minimize airborne emissions and to prevent dust from becoming a nuisance or safety hazard.
65. These areas shall be operated and maintained in a manner so as to minimize odors, prevent the creation of a nuisance, potential health hazard, or a potential fire hazard.
66. Effective vector control measures shall be applied as necessary to control flies, rodents, insects, or vermin.
67. All miscellaneous solid waste management activities must be managed within the facility in the areas identified in the approved plans. Management of solid waste in areas of the facility other than that referenced above, require written permission of the Solid Waste Section.

#### Type 1 Composting

68. This unit may receive only yard waste, silvicultural waste, untreated and unpainted wood waste.
69. This unit shall be operated in accordance with the approved plan and the operational requirements of 15A NCAC 13B .1406
70. Final product shall meet the label requirements of 15A NCAC 13B .1407(g).

#### White Goods

71. The facility is permitted to receive white goods as defined in North Carolina General Statute Article 9, Chapter 130A-290(44).
72. The facility must manage white goods according to the Operation Plan included in the List of Documents for the Approved Plan. Any revisions to the approved plan shall be approved by the Section, prior to implementation.
73. White goods collection areas shall provide for the proper removal of chlorofluorocarbon refrigerants.

#### Tires

74. The facility is permitted to receive tires and scrap tires as defined in North Carolina General Statute Article 9, Chapter 130A-309.53(6) & (7).
75. Scrap tire collection areas shall be operated in accordance with the requirements of 15A NCAC 13B, Rule .1107, except that Cleveland County may store up to 25,000 scrap tires as provided in 15A NCAC 13B .1105(g).

76. The facility must manage tires according to the Operation Plan included in the List of Documents for the Approved Plan. This document is included in the approved plan. Any revisions to the approved plan shall be approved by the Section, prior to implementation.
77. The facility must manage tires according to all applicable statutes and rules of the State of North Carolina.

Treatment & Processing (Wood Grinding)

78. The facility is permitted to operate a treatment and processing facility as defined in 15A NCAC 13B, Rule .0101(49).
79. The facility is permitted to receive land clearing waste as defined in 15A NCAC 13B, Rule .0101(23).
80. The facility is permitted to receive wooden pallets constructed of unpainted and untreated natural wood.
81. The facility is permitted to receive yard trash as defined in 15A NCAC 13B, Rule .0101(55). However, this ground material containing yard trash may not be distributed to the public unless it has been composted in accordance with Rule .1400.
82. The facility must manage the treatment and processing according to the Operation Plan included in the List of Documents for the Approved Plan. Any revisions to the approved plan shall be approved by the Section, prior to implementation.

- End of Section -

## ATTACHMENT 4 CONDITIONS OF PERMIT FOR CLOSURE

### PART I: GENERAL FACILITY

1. The landfill owner must maintain the integrity and effectiveness of the cap system, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and prevent surface water from impounding over waste and run-on and run-off from eroding or otherwise damaging the cap system. Mowing of vegetation on the landfill cover is required at least once per year. Trees on the final cover must be removed at least once per year.
2. The owner must maintain permanent markers that accurately identify the edge of the waste disposal boundary.
3. Public access to the landfill must be prevented by gates, fences, and/or other measures. The owner must maintain the public access preventive measures during the post-closure period.
4. Any post-closure uses of the property, including but not limited to, residential, commercial, industrial, agricultural, or recreational use, is subject to review and approval by the Section and must not disturb the integrity of the cap system, or the function of the monitoring systems. The Section may approve any other disturbance if the owner or operator submits a modified post-closure plan which describes the planned use of the property and demonstrates that disturbance of the cap system, including any removal of waste, will not increase the potential threat to human health or the environment. Post-closure uses approved by the Section will be included in the List of Approved Documents.
5. All sedimentation and erosion control activities must be conducted in accordance with the Sedimentation Control Act N.C.G.S. 113A-50, et seq., and rules promulgated under 15A NCAC 4. All required sedimentation and erosion control measures must be installed and operable to mitigate excessive on-site erosion and to prevent silt from leaving the area of the landfill unit.
6. The owner or operator must ensure that the landfill units do not violate any applicable requirements developed under a State Implementation Plan approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.

### Monitoring and Reporting Requirements

7. Groundwater quality at the facility is subject to "Classifications and Water Quality Standards Applicable to the Ground waters of North Carolina," 15A NCAC 2L. This includes, but is not limited to, the provisions for detection monitoring, assessment, and corrective action.
8. Ground water monitoring wells and surface water sampling location(s) must be sampled on a semi-annual basis, in accordance with the current policies and guidelines of the Section in effect at the time of sampling, unless otherwise specified by the Section. Any proposed modification to an approved plan must be submitted to the Section and approved prior to implementation. Sampling equipment and methods must conform to specifications in the

“Solid Waste Section Guidelines for Groundwater, Soil, and Surface Water Sampling,” dated April 2008, available on the Section website.

9. Monitoring reports of the analytical results for surface water and groundwater monitoring sampling events must be submitted to the Section within 120 days of the sample collection date. The monitoring report must be submitted in electronic format (pdf or tiff) and the analytical data must be submitted in a spreadsheet format in an Electronic Data Deliverable (EDD) Template. All monitoring reports must contain at a minimum:
  - a. a USGS topographic map,
  - b. a potentiometric surface map for the current sampling event that also includes surface water sampling locations,
  - c. analytical NC certified laboratory reports with QA/QC information and summary tables,
  - d. a completed Solid Waste Environment Monitoring Data Form, and
  - e. laboratory data and field data submitted in accordance with the EDD Template.
10. The owner must monitor landfill gas to ensure that the closed site continues to meet the design standards for landfill gas found in 15A NCAC 13B .0503(2)(a). The concentration of explosive gases generated by the site must not exceed:
  - a. twenty-five percent of the limit for the gases in site structures (excluding gas control or recovery system components); and
  - b. the lower explosive limit for the gases at the property boundary.
11. Landfill gas monitoring must be conducted quarterly, unless otherwise specified by the Section. Landfill gas monitoring should follow “Landfill Gas Monitoring Guidance Document,” as provided on the Section webpage. Any proposed modification to an approved landfill gas monitoring plan must be submitted to the Section and approved prior to implementation.
12. All landfill gas monitoring must be conducted by properly trained personnel and must include monitoring for hydrogen sulfide. Landfill gas monitoring must include interior monitoring of onsite buildings. Landfill gas monitoring equipment must be calibrated according to the manufacturer’s specifications. Verification of the calibration of the landfill gas monitoring equipment is required. Landfill gas monitoring results must be recorded on forms provided by the Section and must be maintained within the facility’s operating record.
13. The owner must maintain the integrity of all groundwater and landfill gas monitoring wells, including making repairs to well heads, covers, and surface pads and make sure all wells are locked, during the post-closure period.
14. A readily accessible unobstructed path must be maintained so that groundwater and landfill gas monitoring wells and surface water sampling locations are accessible using four-wheel drive vehicles.
15. Each groundwater monitoring well and landfill gas well must be surveyed for location and elevation. Each groundwater monitoring well and landfill gas monitoring well must have an identification plate permanently attached to the well, in accordance with 15A NCAC 2C .0108(o).

16. If a new well is required to be installed, either to add to the network or to replace an existing well, or if a well is required to be abandoned:
  - a. The permittee must obtain approval from the Section for the design, installation, and abandonment of any groundwater or landfill gas monitoring well. A licensed geologist must be present to supervise the installation of groundwater monitoring wells and landfill gas monitoring wells. The exact locations, screened intervals, and nesting of the wells must be established after consultation with the Section Hydrogeologist at the time of well installation.
  - b. Within 30 days of completed construction of each new groundwater and landfill gas monitoring well, a well construction record, well schematic, boring log, field log and notes, and description of well development activities must be submitted to the Section. Form GW-1 must be used for both groundwater and landfill gas wells. The submittal must also include a scaled topographic map, showing the location and identification of new, existing, and abandoned wells and piezometers, and hydraulic conductivity and effective porosity values.
  - c. Hydraulic conductivity and effective porosity values must be established for each screened interval at each monitoring well in order to develop groundwater flow characteristics.
  - d. Within thirty (30) days of the abandonment of any groundwater monitoring well, the well abandonment record (GW-30 form) and any additional information included in the abandonment record must be certified by a Licensed Geologist, and submitted to the Section. A copy of the well abandonment records submitted to the Division of Water Quality, consistent with 15A NCAC 2C .0114(b), must be submitted to the Section.
  - e. Within thirty (30) days of the abandonment of a landfill gas monitoring well, an abandonment record must be submitted to the Section. The boring must be abandoned in accordance with 15A NCAC 2C .0113(d) and be certified by a Licensed Geologist.

#### Reporting and Recordkeeping

17. Documentation of well completion, development details, repair, abandonment, and all other pertinent activities associated with each groundwater and landfill gas monitoring well must be maintained in the facility operating record. The permittee must maintain a record of all groundwater, surface water, and landfill gas monitoring events and analytical data in the operating record.
18. Copies of this permit, the approved plans, and all records required to be maintained in the operating record by the permittee must be maintained at a location approved by the Section and made available to the Section upon request during normal business hours.
19. All forms, reports, maps, plans, and data submitted to the Section must include an electronic (pdf) copy.

#### PART II: MUNICIPAL SOLID WASTE LANDFILL UNIT(S)

4501-MSWLF-1980, Henderson County Landfill Permitting History

Specific Conditions

20. The owner must provide post-closure care and monitoring for the landfill. The post-closure period began December 2004. After at least five years of post-closure care and monitoring, the landfill owner may submit a written request to modify or discontinue post-closure care and monitoring, depending upon the results of the previous monitoring. However, the owner must continue to conduct water quality monitoring, landfill gas monitoring, and post-closure care until the Section provides written approval to discontinue monitoring and/or post-closure care.
21. The MSW landfill stopped receiving waste on December 1997.

**PART III: CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL UNIT(S)**

4501-CDLF-1998, Henderson County C&D Landfill

**Specific Conditions**

22. The owner must provide post-closure care and monitoring for the landfill. The post-closure period began November 17, 2009. After at least five years of post-closure care and monitoring, the landfill owner may submit a written request to modify or discontinue post-closure care and monitoring, depending upon the results of the previous monitoring. However, the owner must continue to conduct water quality monitoring, landfill gas monitoring, and post-closure care until the Section provides written approval to discontinue monitoring and/or post-closure care.
23. The C&D landfill stopped receiving waste on June 30, 2008.
24. Any proposed expansion to the closed C&D landfill unit will be considered a new landfill for purposes of Solid Waste Management permitting.

**PART IV: INDUSTRIAL LANDFILL UNIT(S)**

*Not Applicable*

**PART V: LAND CLEARING AND INERT DEBRIS LANDFILL UNIT(S)**

*Not Applicable*

**PART VI: TRANSFER STATION/TREATMENT & PROCESSING UNIT(S)**

*Not Applicable*

**PART VII: MISCELLANEOUS SOLID WASTE MANAGEMENT**

*Not Applicable*

- End of Conditions -

APPENDIX B  
Approved FY 18-19 Fee Schedule



# Rates

Published on Henderson County North Carolina (<https://www.hendersoncountync.gov>)

## Rates

### FY 18-19 Approved Fee Schedule, effective July 1, 2018

#### Transfer Station

Municipal Solid Waste (MSW)	\$60.00/ton
Construction and Demolition debris	\$60.00/ton
Clean, unpainted concrete and masonry debris	\$45.00/ton
Yard debris ("Yard Waste" per DEQ)	\$45.00/ton
Bulk debagged leaves ("Yard Trash" per DEQ)	\$45.00/ton
White Goods/Scrap Metal	No Charge
Minimum scale fee	\$10.00/load
Bagged Single Stream Recycling (from within County)	\$0/ton
Loose Single Stream Recycling (from within County)	\$0/ton
Televisions/Monitors	\$15.00
Use of Transfer Station by Non-Solid Waste Operations	\$20.00/ton
Overdue Accountant Balances Not Paid within 60 days	1.5% /month

#### Tires

Scrap tires eligible for free disposal (5 per year)	No Charge
Scrap tires ineligible for free disposal	\$90.00/ton

#### Household Hazardous Waste (during events only)

Pesticides / Fertilizers	No Charge
Liquid Paint (latex & oil-based; 30 gal. per individual per event limit)	\$2.00/gallon contain
CESQG HHW Event	Price Per vendor

#### Convenience Center Recyclables

Bag for Bag Program (1)	Bag for Bag, No Charge
Household Trash (2)	Bag for Bag, No Charge
Recycling: Single Stream (plastic bottles/containers, corrugated cardboard, aluminum/steel cans; mixed paper)	Bag for Bag, No Charge
Recycling: Corrugated Cardboard	Bag for Bag, No Charge
Recycling: Paper	Bag for Bag, No Charge
Recycling: Glass	Bag for Bag, No Charge
Organic Material	No Charge
All other Electronics	No Charge
Batteries	No Charge
Oil and Oil Filters	No Charge
Cooking Oil	No Charge
Bagged Leaves/5 per day (must empty bags)	No Charge
Mercury products and mercury-containing devices	No Charge
White Goods / Scrap Metal	No Charge

(1) Bag for Bag Program: Bags of household trash may be disposed of at no charge when an equal number/ sized bags of recyclable materials are brought for recycling

(2) Household trash is typically generated in a residential kitchen or bathroom

APPENDIX C  
Henderson County Recycles Flyer

## Did You Know?

- ◆ In fiscal year 2016-2017, Henderson County residents & staff recycled 4,836 tons of recyclable materials.
- ◆ The main Henderson County landfill for municipal solid waste officially stopped accepting trash just before 1998. The adjacent construction and demolition (C&D) landfill was fully capped in 2009.
- ◆ The NC General Assembly has banned a number of items from landfill disposal and incineration (See G.S. 130A-309.10(f)). More information is listed at [deq.nc.gov/about/divisions/waste-management](http://deq.nc.gov/about/divisions/waste-management). Henderson County Solid Waste Division provides options for alternative processing of many of these items at the Convenience Center for residents of the county at no charge.
- ◆ Many large grocery stores encourage the recycling of used plastic bags and typically provide containers near the entrance for collection.
- ◆ Recycling aluminum cans saves 95% of the energy needed to make aluminum cans from scratch.
- ◆ In a year, North Carolinians throw away enough plastic bottles to line the Blue Ridge Parkway 642 times.
- ◆ By recycling one ton of paper, we can save 17 trees, 7,000 gallons of water, 380 gallons of oil, 3 cubic yards of landfill space, and enough energy to heat an average size home for 6 months.



**HENDERSON COUNTY RECYCLES**



### Henderson County Convenience Center

265 Convenience Center Drive  
Hendersonville, NC 28791  
Monday-Saturday 7:00am — 4:00pm

### Henderson County Transfer Station

191 Transfer Station Drive  
Hendersonville, NC 28791  
Monday-Saturday  
*Self un-loaders:* 7:00am — 4:00pm  
*Hydraulic dump vehicles:* 7:00am — 4:00pm

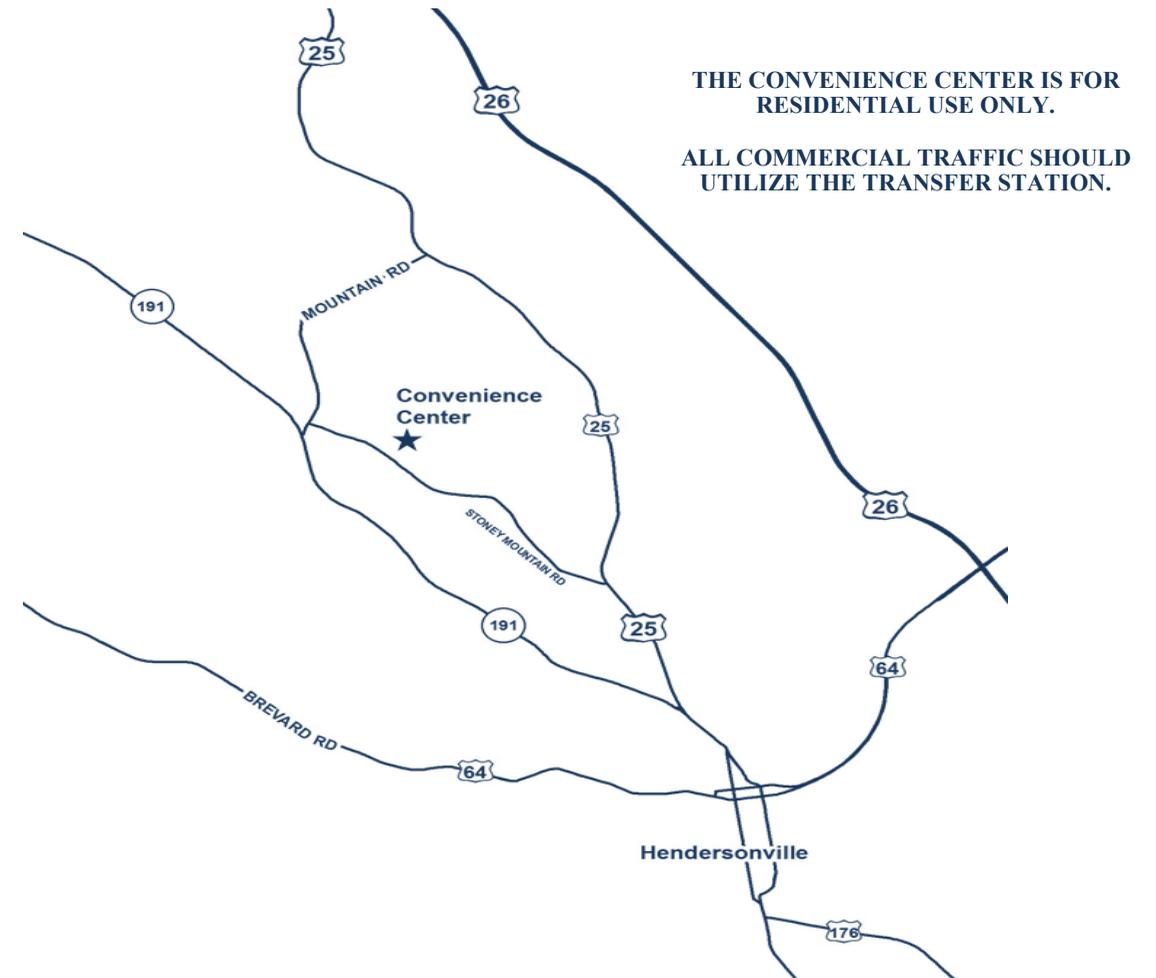
**828-697-4505 or 828-694-6524**

[www.hendersoncountync.gov/  
engineering/page/solid-waste-division](http://www.hendersoncountync.gov/engineering/page/solid-waste-division)

[www.hcrecycles.org](http://www.hcrecycles.org)

### Driving Directions from Downtown Hendersonville to Solid Waste Facilities:

1. From the Historic Courthouse, drive 2.0 miles down Hwy. 25 towards Mountain Home to Stoney Mountain Road.
2. Turn left onto Stoney Mountain Road at the stoplight near the Pardee Home Health Care Building.
3. Travel 1.6 miles. 265 Convenience Center Drive will be on your right, 191 Transfer Station Drive is past this entrance also on your right.



**All solid waste and recyclables being transported must be encased by a tarpaulin, camper cover, metal cover, rigid cover, plastic or suitable material secured to prevent leakage or blowing of materials from the vehicle. This includes adequate coverage for bagged garbage. Please bag all solid waste. Bulky waste consisting of large items such as large appliances, furniture, large auto parts, trees and other oversized waste must be secured on vehicle with rope or tie-down cords.**

## SINGLE STREAM RECYCLING

at the Convenience Center, home, or office

**Plastic Containers** (caps on, labels on, rinsed/dry)



**Aluminum & Steel Cans** (caps off, labels on, rinsed/dry)

**Beverage Cartons & Containers** (caps on, labels on, rinsed/dry)

### **Mixed Paper Products**

Newspaper      Magazines  
Junk mail      Telephone books  
Cardboard tubes      Greeting/postcards  
Shredded paper      Soft & hardcover books  
Cardboard boxes (flattened)

**Mixed Glass Containers** (all colors, caps/lids off, rinsed/dry, labels on, no corks)

## Recycling at the Convenience Center Only

### **White Goods/Scrap Metal**

Washing machines, dryers  
Refrigerators, freezers (remove doors)  
Stoves      Air conditioners  
Metal bed frames      Dehumidifiers



### **Electronic Waste**

\*all electronics must be intact to be recycled  
Stereo sets, speakers, radios  
Telephones, cell phones, and chargers  
VHS cassette tapes  
Microwaves



### **Used Cooking Oil**

### **Food Waste Drop-Off**



### **Automotive Products**

Antifreeze      Motor oil  
Oil filters      Batteries

**Batteries** (please tape over terminals of all non auto-batteries; leaky batteries must be in sealed bag)

### **Sharps**

\* Must be contained in hard plastic with taped lid  
\* Find attendant to recycle

### **Mercury Products**

\* Monday-Friday ONLY  
\* Residential ONLY  
\* Find attendant to recycle  
\* Fluorescent tubes, CFLs, wall-mounted thermostats



visit [www.hcrecycles.org](http://www.hcrecycles.org) for recyclable item preparation

## What is NOT recyclable?

Plastic grocery & sandwich bags, wrap  
Animal food bags  
Soiled aluminum foil  
Bubble wrap, Styrofoam or polystyrene (including packing peanuts)  
Window, mirror glass  
Dishes, cookware, drinking glasses  
Gardening pots/planters, landscaping border  
Used paper towels or tissue  
Greasy pizza boxes  
Vacuum cleaners, electric brooms  
Textiles, mattresses, sheets, fabric  
Smoke, CO detectors (return to manufacturer)  
Medicines (must go to Sheriff's Department for disposal, call 828-697-4596)

## Special Recycling Programs

### Bag for Bag Program



Bags of household trash, typically generated in the bathroom or kitchen, may be disposed of at no charge when an equal number or sized bags of *recyclable materials* are brought for recycling to the Convenience Center. No furniture, yard waste, Styrofoam, or construction debris. Otherwise, household trash should be disposed of at the Transfer Station. Scale fees apply.



### Household Hazardous Waste Collection

Household Hazardous Waste (HHW) is accepted for free during designated collection days for residential disposal only. Solid Waste permit require HHW events to conclude by noon. Special disposal rules apply for HHW. See website for more information and annual event schedules at [www.hcrecycles.org](http://www.hcrecycles.org). *Items accepted include:* pesticides, insecticides, fertilizers, household cleaning products, pool chemicals.

\* Henderson County Solid Waste retains discretion to refuse certain types of household hazardous waste.

### Year-round Bagged Leaves Recycling

◆ Bagged residential leaves only, no charge  
◆ 5 bags per day per household\*  
◆ Empty bags into dumpster, dispose of bags  
*Larger loads of leaves must be taken to the Transfer Station at the regular scale fee.*

## Tips for Easy Recycling

- ◆ Please make sure to rinse and dry all food containers before recycling.
- ◆ Plastic lids and labels can be left on plastic bottles and cartons for recycling.
- ◆ Many items can be repaired or reused to extend useful life before being landfilled. Check out local repair shops or reuse stores as a responsible option.
- ◆ Recycle clean, dry plastic bags and film at local big box stores. Visit [www.plasticfilmrecycling.org/](http://www.plasticfilmrecycling.org/) for more information.

Keep up with program changes and additions online at [www.hcrecycles.org](http://www.hcrecycles.org)



## Facility Hours

### **Convenience Center**

7:00am to 4:00pm  
Monday through Saturday, except on holidays

### **Transfer Station**

*Self un-loaders:* 7:00am to 4:00pm  
*Hydraulic dump vehicles:* 7:00am to 4:00pm  
Monday through Saturday, except on holidays

## Holidays

New Year's Day	MLK Day
Good Friday	Memorial Day
Independence Day	Labor Day
Veteran's Day	Thanksgiving
Christmas Eve	Christmas Day

More detailed recycling information and special programs are online at [www.hcrecycles.org](http://www.hcrecycles.org)



## Disposal at the Transfer Station

*Self un-loaders:* 7:00am to 4:00pm  
*Hydraulic dump vehicles:* 7:00am to 4:00pm

### **MSW (Municipal Solid Waste)**

### **Household Items & Bulky Waste**

Large household items  
Carpet  
Foam backing  
Large plastic toys  
Mattresses  
Box springs  
Furniture



### **Construction Debris**

Household wood construction  
Remodeling debris  
Asphalt shingles

The following items are accepted for recycling at the Transfer Station. Loads must be free of paint or metal:

*Self un-loaders:* 7:00am to 4:00pm  
*Hydraulic dump vehicles:* 7:00am to 4:00pm

### **Wooden Pallets**

### **Construction Debris**

Bricks, cement blocks



### **Yard Waste**

Clippings  
Leaves  
Tree Limbs



### **Tires**

Clean truck and car tires\*

\*special disposal rules & fees apply (see website)



### **TVs & Computer Monitors**

\$15 per item recycling fee applies\*

### **Paint & Paint-Related Materials**

\*Schedule varies, visit [www.hcrecycles.org](http://www.hcrecycles.org) for annual schedule

- ◆ \$2 per liquid gallon container recycling fee applies, regardless of amount within
- ◆ 30 gallon per individual/ event limit

\* **Solid Waste Fee Schedule is approved annually and can be viewed online at**

[www.hendersoncountync.gov/engineering/page/transfer-station-waste-disposal](http://www.hendersoncountync.gov/engineering/page/transfer-station-waste-disposal)

APPENDIX D  
Memorandum from Marcus Jones, PE  
Solid Waste Collections



**Henderson County Engineering**  
1 Historic Courthouse Square, Suite 6  
Hendersonville, North Carolina 28792  
(828) 694-6526 | [www.hendersoncountync.gov](http://www.hendersoncountync.gov)

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*Memorandum To:* *McGill and Associates*

*From:* *Marcus A. Jones, P.E.*  
*Director*

***Subject:* *Solid Waste Collections***  
***2020 Solid Waste Master Plan***

*Date:* *November 8, 2019*

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The collection system is an important aspect of the County's Solid Waste program and has been successful at providing waste disposal options for all Citizens within the County including several of its Municipalities. Importantly, the current options allow Solid Waste to be a self-supporting enterprise fund. In other words, the revenues collected at the scales house pay for all the solid waste expenses the County incurs. Currently, there are two options for residents to choose: the convenience center or a private hauler providing curbside pick-up.

#### Current Collection System

The County has one convenience center located at the Stoney Mountain Transfer Station. The center offers trash drop-off, recycling, and other programs. The trash and recycling program is called "Bag for Bag" where a County citizen can drop-off household trash at no charge as long as it accompanies equal bags of recycling. Note, the recycling at the center is co-mingled and no longer bagged. Glass recycling is the only material separated from household recycling. The other programs at the center are mercury, household hazardous waste, leaves, oil, batteries, scrap metal, white goods, electronics, and food scraps. There is no revenue generated at the center; it is an operating expense of approximately \$300,000 per year. This is popular option for our Citizens with over 250,000 customer trips per year, 830 per day on average, or close to 100 per hour. Obviously, the volume of traffic at the Center is approaching maximum capacity to provide proper safety and customer service. While not an immediate concern, it will likely need to be addressed during the ten year planning period.

The private haulers in the County are permitted to operate by the County and required to meet regulations that include: operating compliant equipment, offering recycling, etc. There are residential haulers serving households and commercial haulers serving business and industry. The number of haulers is typically around twenty in total with about ten offering commercial service, fifteen offering residential, and about five offering both. Approximately half of the haulers are local businesses based within the County. With 70% of the user fee revenue generated from the haulers, the impact to the budget from the haulers is significant and critical to the operational budget.

### Possible Collection System Improvements

In general, the public perception of the County's collection processes is positive with little recommendations for change. However, there is one input that while infrequent does occur more than any others. It is the request for additional Convenience Centers. Another alternative worth consideration is to serve all parcels in the County with curbside service. Neither of these two options are possible under a self-supporting enterprise fund and would require a new solid waste funding policy. Regardless, these two options are worthy of a closer look.

### Additional Convenience Centers

Additional centers is an expansion of our current collection system by adding new centers. This will allow Citizens in the outer areas of the County to access a center with less travel. This very preliminary analysis does not identify specific locations for additional centers beyond general locations: northern, southern, eastern and western areas of the County. With the improvement of less travel, there are limitations to the new centers as follows:

- Should not be too close to the County borders to avoid noncompliant use from other Counties.
- Likely would not be full service like the Stoney Mountain center offering waste and basic recycling.
- Will require Citizens to haul their own waste and recycling; it is not a new service but will require a new fee or funding source.
- Locating within the community will require political capital to overcome the "not in my backyard" opposition.
- Expansion of a collection system that is oriented to rural jurisdiction not a County that is growing into a more urban area.
- Expansion will take business away from the private haulers negatively impacting existing, local businesses.

As mentioned, additional centers are not possible under the current funding policy due to the tremendous expense of constructing and operating centers. The preliminary cost information in the appendix estimates the capital cost of four additional centers at almost \$2,000,000. The operating costs (including debt service for the capital cost) would be \$3,000,000 annually which is almost 50% of the current solid waste budget. The annual availability fee for this option would be about \$50 per parcel. This is a high cost option with limited value to the Citizens.

### County Curbside Service

This collection option would provide curbside service to every developed parcel in the County and would be a significant change in the County's solid waste operations. Where additional convenience centers would be a step backwards for the County, Curbside collection is a logical progression for a County with our demographics: somewhat urban and growing. This step could be achieved in phases by implementing flow control and / or exclusive franchising on the

existing haulers. However in the past, this options have not been received well from the Citizens possibly because they impose regulation and cost without significant benefits. However, implementing curbside service to all households, businesses and industry would return an important and significant benefit for the cost.

The obvious way to implement would be to transition all the current, permitted haulers in the County to contractors of the County Solid Waste Department. The County would provide billing to the Citizens via a fee on the tax bill. The haulers would simply invoice the County for their service. The transfer station would only have to charge a tipping fee for waste not collected under the haulers contract. The following are some points of consideration:

- Will capture some of the flow that is leaving the County and bring in more revenue
- With service to all citizens, illegal dumping will be less of a problem
- No more neighborhoods with multiple haulers
- Ability to increase the value of recycling by replacing blue bags with bins, eliminating an additional expense to citizens and increasing the value of our recycling by decreasing contamination of plastic bags
- Businesses and industry would be able to contract separately for dumpster service and waive the collection fee
- Could apply to towns without collection service
- Significantly more efficient and compliant collection system
- Ability to make policy and operational changes more effectively
- This option would have been a good option to consider during the last recision when the Board was exploring alternative funding policies.

The cost of this option could be covered by a fee of approximately \$180 collected on the annual tax bill. This fee could be waived for commercial and industrial customers with dumpster service. Also, Citizens of limited means could be waived with eligibility information from the Dept of Social Services. This fee is conservatively estimated from the fee other jurisdictions charge but would need to be studied in more detail. The primary calculations and assumptions are located in the appendix and show that this option can generate the necessary revenue to cover Solid Waste expenses.

An additional benefit of this option is the ability for the tipping fee to be set at a more competitive rate. More tonnage would be brought to the County facility capturing some of the flow currently leaving the County. More tonnage could allow for a lower tipping fee. On the expense side, the County will need to add additional administrative and customer service resources with a likely cost of \$100,000 to \$150,000 annually. Another expense consideration is the schedule for construction of a third transfer station bay could be accelerated with increased flow.

**Recommendation: Staff recommends continuing with the current collection system, monitoring the capacity of the existing collections sytem, and studying the transition to County Curbside Collection in the future.**

## Appendix: Collection Cost Calculation Data

### Cost Calculations

- These calculations are appropriate for long range planning and to provide relative accuracy. However, more detailed analysis would be necessary to provide budgetary costs.
- Additional Convenience Centers Cost:

Scope: Add four or one more convenience centers throughout the County					
<b>4 Additional Centers</b>					
Capital Costs		Quantity	Unit Cost	Item Total	Totals
Convenience Center *		4	\$400,000	\$ 1,600,000	
Roll-off Truck		2	\$175,000	\$ 350,000	
Pick up Truck		1	\$ 30,000	\$ 30,000	
					<b>\$ 1,980,000</b>
Annual Operation Costs					
Debt Service for Capital from above (20 yrs)		1	\$130,000	\$ 130,000	
Trash		24,000	\$ 45	\$ 1,080,000	
Recycling at		24,000	\$ 20	\$ 480,000	
Fuel		1	\$300,000	\$ 300,000	
Center Attendants		10	\$ 30,000	\$ 300,000	
Roll-off Drivers		2	\$ 40,000	\$ 80,000	
Mechanic		1	\$ 50,000	\$ 50,000	
Center Supervisor / Driver		1	\$ 60,000	\$ 60,000	
Contingency			20%	\$ 496,000	
Total Annual Cost					<b>\$ 2,976,000</b>
Notes					
1	* Convenience Center cost includes the following:				
	land purchase (approximately 2 acres)				
	concrete retaining wall				
	asphalt paving				
	site attendant building				
	concrete slab for containers with septic sewer drain				
	septic system / sewer connection (required by Permit)				
	two compactors with four containers				
	40 yard containers for metal, yard debris, glass, and extra				
	shed for material collection (oil, electronics, batteries, etc)				
2	Debt Service after 20 years will represent repair and maintenance of centers and equipment				
3	Fuel cost: 87,000 miles / year at \$4				
4	Equipment is additional to the existing equipment for the current Center				
5	Current Center does almost 5k tons of trash and recycling. 24,000 tons above is 5 times current volume				
6	Note: Expanding centers will take business from permitted haulers				
7	Current funding policy for Solid Waste (tipping fees only) will not support any additional Convenience Centers without charging a fee at the Centers which will in turn greatly reduce the use of the center.				

Appendix: Collection Cost Calculation Data

- Curbside Collection Cost:
  - Curbside Collection Fee: about \$180 / year
  - \$15 / month x 12 months = \$180 / year / parcel
    - approximately \$180 per parcel with curbside service
    - Buncombe’s franchise fee is \$15/month, note WastePro has to bill customers so will likely be less.
    - Hendersonville charges about \$18/month and includes special services like wood debris pick up
    - The private haulers in Henderson County currently charge about \$25/month
    - Additional fee for backdoor (waived with Doctors note)
    - Waiver of fee for citizens that qualify for a certain level of service from DSS
    - Additional fees for TVs and special loads

<b>Data:</b>			
Total Parcels in County	68,222	GIS	
Residential Parcels:	43,911	GIS	
Commerical Parcels:	2,597	GIS	
Undeveloped Parcels:	21,714	GIS	
Commerical Parcels:	2,597	GIS	
FY19 MSW tonnage	79,096	actual	
FY19 C&D tonnage	34,332	actual	
Percent of MSW Commerical	35%	estimate from SW data	
Tonnage of MSW Com	27,684	calculated	
Percent of Curside fee Disposal	50%	estimate from data	
FY19 User Fee Generated	\$7,000,000	actual	
<b>Annual Revenue from Curbside</b>			
Residential	\$ 3,951,990	(50% x \$180) x 43,911	
Commerical w Curbside	\$ 116,865	(50% x \$180) x (50% x 2,597)	
Commerical w Dumpster	\$ 3,720,960	\$60 x (34,332 + 27,684)	
	\$ 7,789,815		

APPENDIX E  
Henderson County Solid Waste Ordinance



## Article II - Collection and Recycling

### [95-9. Purpose; Statutory Authority; Jurisdiction.](#)

- A. The purpose of this article is to protect human health and the environment by regulating the storage, collection, transportation and disposal of solid waste in Henderson County, to provide environmentally sound, cost-efficient solid waste disposal and to provide for the safe operations at the County facility.
- B. This article is adopted under the authority of [N.C.G.S. 153A-121](#), [153A-132.1](#), [153A-136](#), [153A. Article 15](#) and [130A-309.09A](#), [130A-309.09B](#), [130A-309.09C](#) and [130A-309.09D](#).
- C. Unless otherwise indicated, the ordinance applies to publicly owned municipal solid waste management facilities located in Henderson County and to all unincorporated areas of the County. Additionally, this article shall apply to those incorporated areas of any city or town specifically requesting its enforcement by Henderson County upon the consent of the Henderson County Board of Commissioners. (In making such a request, the city or town must comply with the requirements of [N.C.G.S. 153A-122](#).)

### [95-10. Administration and Enforcement.](#)

The Henderson County Board of Commissioners shall administer, interpret and enforce the provisions of this article by and through the Solid Waste Director or his representatives. For the purpose of this article, "representative" shall mean any employee within the Solid Waste Department unless otherwise designated by this article.

### [95-11. Title.](#)

This article shall be known and be cited as the "Henderson County Solid Waste Ordinance."

### [95-12. Word Usage and Definitions.](#)

- A. For purposes of this article, the following terms, phrases, words and their derivatives shall have the meanings given herein. When not consistent with the context, words used in the present tense include the future tense; words used in the plural include the singular, and words in the singular include the plural. The word "shall" is always mandatory and not merely directive.
- B. The following terms are defined for purposes of this chapter:
  - 1. Board - The Board of Commissioners of Henderson County, North Carolina.
  - 2. Bulky Waste - Large items of solid waste, such as white goods, furniture (excluding cushions), large auto parts, trees, large blocks of concrete and asphalt, stumps and other oversize waste whose large size precludes or complicates their handling by normal solid waste collection, processing or disposal methods.
  - 3. Civil Penalty - A monetary fine assessed according to a schedule adopted by the Henderson County Solid Waste Department due to a violation of this article.
  - 4. Collector - Any person who picks up or hauls solid waste or recyclable materials for a fee.
  - 5. Commercial Establishment - Any retail, wholesale, institutional, religious, governmental, service establishment or other nonresidential establishment which



## Article II - Collection and Recycling

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- may generate garbage, litter or other solid waste.
6. Commission - The Environmental Management Commission.
  7. Composting - The controlled decomposition of organic waste by naturally occurring bacteria, yielding a stable, humus-like, pathogen-free final product.
  8. Construction or Demolition - When used in connection with waste or debris means solid waste resulting solely from construction, remodeling, repair or demolition operations on pavement, buildings or other structures.
  9. Corrugated Cardboard - Non waxed paper boxes and other thick layered brown paper, formed with grooves and ridges, used in shipping or in which shipped goods are received.
  10. County - Henderson County.
  11. Covered - Encased by a tarpaulin, camper cover, metal cover, rigid cover, plastic, canvas or other suitable material, which is secured to prevent spillage, leakage or materials from blowing from the vehicle. Solid waste in plastic bags shall not be considered covered.
  12. Department - The North Carolina Department of Environment, Health and Natural Resources.
  13. Dwelling - Any residential unit housed in a building used for residential purposes or manufactured homes or a structure used for residential purposes on any property.
  14. EPA - The United States Environmental Protection Agency.
  15. Facility - Solid waste management facility, including the landfill, transfer station, recycling center, wood waste mulching area and other designated areas located at 191 Transfer Station Drive, Hendersonville, NC. 28791.
  16. Garbage - All putrescible wastes, including animal offal and carcasses, and recognizable industrial by-products, but excluding sewage and human waste.
  17. Hauler - Any person, permitted or not, who collects and transports refuse or other solid wastes or recyclable materials on public or private streets in Henderson County.
  18. Hazardous Refuse - Includes any rusted, jagged appliances or machinery, specifically, iceboxes and refrigerators, whose doors have not been properly dismantled, or which has been determined by the Solid Waste Director to constitute a health or safety hazard.
  19. Hazardous Waste
    - a. A solid waste or combination of solid wastes which, because of its quantity, concentration or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in mortality or increase in serious irreversible or incapacitating reversible illness or pose a substantial problem or potential hazard to human health or the environment if improperly treated, stored, transported or disposed of or otherwise managed.
    - b. Any substance classified as a hazardous waste by the EPA.
  20. Individual - Any person, organization, business or other entity generally capable of owning real estate.
  21. Industrial Waste - All waste, including garbage, solids, semisolids, sludge and liquids created or generated by factories, processing plants or other manufacturing enterprises.
  22. Microbiological Waste - Cultures and stocks of infectious agents, including but not limited to specimens from medical, pathological, pharmaceutical, research, commercial and industrial laboratories.
  23. Mixed Paper - Envelopes, catalogs, bulk mail, magazines, computer paper, copy paper, file folders, phone books, gray cartons, adding machine tapes, letters, scratch pads, soft-covered books and other material as defined by the Recycling Center Manager.
  24. Open Burning - Any fire whose products of combustion are emitted directly into the outdoor atmosphere without passing through a stack or chimney, approved incinerator or other similar device.
  25. Open Dump - The consolidation or collection of solid waste from 1 or more sources at a disposal site which has unsanitary conditions, insignificant or no cover or insignificant or no management. This term shall include any disposal area which has not been approved by the Department.
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26. Pathological Waste - Human tissues, organs and body parts and the carcasses and body parts of all animals that were known to have been exposed to pathogens that are potentially dangerous to humans during research, were used in the production of biologicals or in vivo testing of pharmaceuticals or that died with a known or suspected disease transmissible to humans.
27. Permit - Written authorization from the Solid Waste Director to haul solid waste or recyclable material in Henderson County for hire or compensation.
28. Permitted Hauler - Any solid waste or recyclable material hauler authorized by the Solid Waste Director to transport refuse, solid waste or recyclable material for hire or compensation.
29. Person - Any individual, firm, organization, partnership, corporation, company or unincorporated association.
30. Putrescible Waste - Solid waste capable of being decomposed by microorganisms with sufficient rapidity as to cause nuisance from odors and gases, such as kitchen wastes, offal and carcasses.
31. Radioactive Material - Any material which emits ionizing radiation spontaneously.
32. Recycle, Recyclables Or Recyclable Material - Those materials or that process by which solid waste, or materials which would otherwise become solid waste, are collected, separated or processed and reused or returned to use in the form of raw materials or products.
33. Refuse - All nonputrescible waste.
34. Refuse Receptacle or Receptacle -- A metal or plastic container or other material approved by the Solid Waste Director.
35. Regulated Medical Waste - Blood and body fluids in individual containers in volumes greater than 20 milliliters, microbiological waste and pathological waste that have not been treated.
36. Rubbish - Solid or liquid waste from residences, commercial establishments or institutions.
37. Sharps - Needles, syringes with attached needles, capillary tubes, slides and cover slips, scalpel blades, test tubes and blood collection tubes.
38. Solid Waste - Any hazardous or nonhazardous garbage or other refuse, rubbish, litter, trash, tires and other discarded solid materials and solid or semisolid waste materials resulting from industrial, commercial and agricultural operations and from community activities, but does not include solids or dissolved materials in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluent, dissolved materials in irrigation return flows or other common water pollutants. As used herein, "solid waste" shall refer collectively to any or all of the aforementioned waste materials, unless otherwise specified.
39. Transfer Station - A permanent structure with mechanical equipment used for the collection or compaction of solid waste prior to the transportation of solid waste for final disposal.
40. Unsanitary Accumulation - Any amount of solid waste which is odoriferous, pestiferous or otherwise threatening to human health as determined by the Solid Waste Department.
41. Used Motor Oil - Any oil that has been refined from crude oil or synthetic oil and, as a result of use, storage or handling, has become unsuitable for its original purpose.
42. White Goods - Inoperative or discarded refrigerators, ranges, water heaters, freezers and other similar domestic and commercial large appliances.
43. Yard Waste - Solid waste consisting solely of vegetative matter, such as leaves, grass, limbs and trimmings, resulting from landscaping maintenance.

### 95-13. Residential and Other Noncommercial Property.

- A. Improper storage of waste prohibited. No owner, occupant, tenant or lessee of any property, jointly or severally, may deposit, store or permit to accumulate any solid or hazardous waste



## Article II - Collection and Recycling

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upon such property that is not stored or disposed of in a manner prescribed by this article. Further, it shall be the duty of each owner, occupant, tenant or lessee to provide approved receptacles as specified in §95-15A., of this Chapter.

- B. Open dumps prohibited. No person shall permit on any land owned, occupied or leased by him or her any open dump.
- C. Responsibility for removal. It shall be the duty of any owner, occupant, tenant or lessee of any property, jointly or severally, to remove or properly dispose of any of the conditions described in subsection A above. This section shall also apply to refuse and other solid waste deposited on any property through the action of streams, creeks, rivers, lakes or other waterways or through the runoff of any such waterways. In removing such conditions, persons may seek the guidance of the Henderson County Solid Waste Director and shall follow the procedures set forth in §95-18 below.

### 95-14. Commercial, Industrial and Institutional Property.

- A. Proper maintenance of premises. The owner, proprietor or person in charge of any commercial, industrial or institutional building, parking lot or other site shall be obligated, both jointly and severally, to keep driveways, yards, parking lots and areas adjacent thereto and under his control clean at all times and to place sweepings, litter, refuse and other debris in an approved receptacle to prevent dispersal by wind, rain, animals and other causes. Further, no crate, box or similar container liable to deterioration by sun, wind, rain, animals or other causes shall be kept on any street or sidewalk, parking lot or other area, except that such containers may be placed out for collection on the day of such collection.
- B. Solid waste receptacles required. The owner, proprietor or person in charge of any commercial, industrial or institutional building, parking lot or other site shall be obligated, jointly and severally, to provide solid waste receptacles of sufficient size and quantity as specified in §95-15 of this article. Specifically, but not exclusively, the requirement for such containers shall apply to shopping centers, supermarkets, convenience stores, fast-food and other restaurants, service stations and other similar establishments and shall likewise apply to industries, commercial establishments, schools, manufactured home parks, recreational vehicle parks, summer camps, churches and other institutions. Spillage and overflow from such containers shall be cleaned up by the owner, proprietor or person in charge immediately and as it occurs.

### 95-15. Storage.

- A. Storage container requirements. Solid waste shall be stored in a container that is durable, rust resistant, nonabsorbent, watertight and easily cleaned, with a close-fitting, fly tight cover in place. The number of containers shall be adequate to store 1 week's accumulation of solid waste. Containers shall be limited to 32 gallons maximum capacity. Containers shall be kept clean so that no insect breeding, odor or other nuisance will exist.
- B. Rodents. Solid waste shall be stored in a manner that will not harbor rodents and vermin and will not create a fire hazard.
- C. Storage of other refuses. Other refuse may be stored as in §95-15 above but shall be stored in such manner that it will not provide harborage to rats, cause a fire or safety hazard or become windblown.
- D. Cardboard boxes as receptacles. Cardboard boxes, cartons and crates may be used as refuse receptacles only when used to contain other refuse and when properly secured by tying or taping. Cardboard boxes, crates or cartons used as refuse receptacles shall have a 1 time use only and shall be collected along with the refuse contained in them.
- E. Airtight containers prohibited. No person shall leave outside of the building or dwelling or in any place accessible to children, any abandoned, unattended or discarded ice box, refrigerator or other container of any kind which has an airtight door without first removing



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the door from such icebox or refrigerator.

### 95-16. Collection.

- A. Frequency of removal. All solid waste shall be removed from any property upon which it is stored at least once a week.
- B. Hiring of permitted collector allowed. The owner, occupant, tenant or lessee may remove such solid wastes in accordance with §95-17 and 95-18 below or may contract with a permitted collector serving the relevant area.
- C. Spillage prohibited. These permitted collectors shall be responsible for removing any solid waste spilled during the collection process, shall leave the premises in a clean condition and shall conform to the provisions of any County ordinance in effect regulating the collection and disposal of solid waste by private collectors in Henderson County.
- D. Recycling program required. All private haulers who collect solid waste for a fee will be required to establish a program to collect and recycle aluminum cans and corrugated cardboard. Private haulers may not accept said material if commingled with the solid waste they collect.

### 95-17. Transportation.

- A. Conformity with ordinance required. No solid waste shall be transported except in conformance with this section which applies to permitted haulers and individuals hauling their own solid waste.
- B. Spillage prohibited. The vehicles or containers used for the collection and transportation of solid wastes shall be loaded and removed in such a manner that the contents will not fall, leak or spill therefrom. Materials spilled by the hauler shall be picked up immediately by the hauler and returned to the vehicle or container and the area properly cleaned.
- C. Cover requirements. Vehicles shall be covered by effective means during transportation to prevent blowing of materials from out of the vehicle. "Effective means" shall include, but not be limited to; durable, heavy plastic or canvas tied down or secured to cover the entire load. Loads consisting of bulky waste, white goods, lumber, pallets and crates do not have to be covered but shall be secured with rope or tie-downs to assure spillage does not occur. Upon entrance to the facility gate, any removal of tarps or similar covers on solid waste shall be prohibited until the destination is reached in a designated facility disposal area.
- D. Display of permit numbers. All vehicles, except those owned by individuals transporting their own solid waste, shall display their permit number issued by the Solid Waste Director.

### 95-18. Disposal.

- A. No disposal except as provided. Solid waste shall be disposed of only by one of the following methods:
  - 1. Sanitary landfill that has been approved by the Department.
  - 2. Incinerator that meets all requirements of the local, state and federal air pollution standards and control permits.
  - 3. Transfer station that has been approved by the Department.
  - 4. Any other method, including reclaiming, composting or recycling processes, that has been approved by the Solid Waste Director.
- B. Disposal of hazardous regulated medical, radioactive waste. Hazardous, regulated medical and radioactive wastes shall be disposed of according to written procedures approved by the



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Department.

- C. Littering prohibited. No person may intentionally or negligently discard, dispose, leave or dump any solid waste on or along any street or highway or on public or private property unless such solid waste is placed in a receptacle or at a location designated for the deposit of solid waste.
- D. Disposal of tires. The disposal of tires on publicly or privately owned property is strictly prohibited. Nothing in this article shall be interpreted to preclude the use of tires in an accepted agricultural practice.
- E. Disposal of sharps. Sharps shall be placed in an approved, sealed, puncture proof container prior to disposal.
- F. Burning of solid waste. The purpose of this subsection is for preventing, abating and controlling air pollution resulting from air contaminants released in the open burning of refuse and other combustible materials. While recognizing that open burning contributes to air pollution, certain types of open burning may reasonably be allowed in the public interest. Therefore, there shall be no burning of solid waste in Henderson County except as authorized by state burning laws.
- G. Private disposal of solid waste. This section shall not be construed to prevent any person from properly disposing of solid waste from his own residence on his property in a safe and sanitary manner and at a depth and distance from any body of water to prevent contamination. All such private disposal sites must receive prior approval by the Solid Waste Director, and all solid wastes deposited must be covered with at least six inches of compacted dirt daily.
- H. Other disposal of solid waste prohibited. Any other disposal of solid waste is expressly prohibited.

### 95-19. Facility Regulations.

- A. Conformity with facility procedures required. Solid waste shall be disposed of at the Henderson County facility in the manner and according to procedures established by the Solid Waste Director.
- B. Facility tours. Facility tours or visitors to the facility must be accompanied by an employee of the Solid Waste Department.
- C. Affiliation with County required. The County facility may be used for the disposal of solid waste generated in Henderson County by County residents and nonresident owners of property in Henderson County.
- D. Hours of Operation. The facility shall be open during business hours as established by the Board. The facility holiday schedule will be determined by the County Manager and revised annually and will be posted in the scale house. In emergencies, the facility may be opened and closed for additional hours as directed by the County Manager or the Manager's representative.
- E. Security of facility. Except when open during regular business hours, the facility shall be kept locked, and entry shall not be permitted.
- F. Tipping fee. A tipping fee or per vehicle fee shall be charged to all users of the facility. This tipping fee shall be based on the number of tons of material brought for disposal, except that there may be a minimum fee. There will be no fee charged for acceptable recyclable materials that have been separated and properly prepared. The Board shall adopt a schedule of fees from time to time which shall be effective until amended or replaced. Fees shall not be waived for nonprofit organizations.
- G. Use by multiple-dwelling properties, parks and camps. Where there is more than one premises located in a residential building, manufactured home park, recreational vehicle park, summer camp or campground, it shall be the responsibility of the owner or person in charge of each building, park or camp to contract with a permitted hauler and to pay for the regular collection of all solid waste from each premises. An owner of a multipremises building, park or camp may apply to the Solid Waste Director for an exemption if it can be shown that he is now disposing of solid waste in a safe and sanitary manner as outlined in this article. In the case where the owner of a multipremises building, park or camp hauls his



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own solid waste, said waste must be weighed at the scale house, and the hauler may not use the boxes set aside for household solid waste.

- H. Loitering and rummaging prohibited. No person may loiter or rummage about the facility or remove articles therefrom.
- I. Speed limit within facility. All persons entering or traveling on facility property shall observe posted speed limits and shall operate their vehicles in a safe and courteous manner.
- J. Vehicles which are not self-unloading will not be allowed in the transfer station. All vehicles which do not use the household containers and are not self-unloading shall arrive at the County facility no later than 30 minutes before the close of the normal operating day. Vehicles which are not self-unloading will be subject to control by the Facility Foreman so as to minimize vehicle congestion and provide easy access to the designated disposal site for self-unloading vehicles.
- K. Only authorized Henderson County personnel will be allowed on the tipping floor of the transfer station, except that a waste hauler may exit his or her truck for mechanical adjustment of his or her vehicle.
- L. Uncovered waste prohibited. No vehicle shall be allowed to deposit waste at the County facility unless the waste is enclosed in the vehicle or secured by methods stated in §95- 17C. The Solid Waste Director shall determine the adequacy of the covering, and his decision shall be final.
- M. Deposit waste only in authorized areas. No person may deposit material at any point in the facility except where indicated by authorized employees of the facility or by official signs.
- N. Discharge of firearms, explosives and fireworks prohibited. No person may discharge firearms, fireworks or explosives on facility property.
- O. Solid waste subject to inspection. Solid waste shall be observed and inspected for prohibited materials. Persons disposing of unacceptable material may be required to remove such materials at the discretion of the Solid Waste Director or Facility Foreman.
- P. Prohibited waste. The following waste may not be disposed of in the County facility:
  - 1. Burning or smoldering materials or any other materials that would create a fire hazard.
  - 2. Hazardous waste.
  - 3. Used motor oil (except for recycling).
  - 4. Lead-acid batteries.
  - 5. Liquid waste.
  - 6. White goods (except for recycling).
  - 7. Radioactive waste.
  - 8. Sharps not properly contained.
  - 9. Whole tires which may not be co disposed with solid waste.
  - 10. Sludge's.
  - 11. Dead animals.
  - 12. Yard waste, except in the wood waste grinding area.
  - 13. Metal drums of 50 gallons or more capacity unless drain holes are provided to prevent containers from holding liquid or unless filled with identifiable solid waste which is otherwise acceptable.
  - 14. Stumps, brush, limbs, yard waste, landscape waste and construction and demolition material mixed with solid waste unless separated prior to disposal.
  - 15. Automobiles, truck or other motor vehicle bodies or large pieces of metal, such as manufactured homes and farm equipment.
  - 16. Wood waste greater than 10 inches in diameter at the butt end and greater than 4 feet in length. Wood waste greater than 2 inches in diameter shall not be greater than 4 feet in length.
  - 17. No ash, fly ash or incinerator ash.
  - 18. Regulated medical waste.
  - 19. Friable asbestos.
  - 20. Sawdust.
  - 21. Dirt or soil products (may be reviewed on a load-by-load basis).
  - 22. Corrugated cardboard generated from commercial, industrial and institutional sources, unless there are no materials recovery facilities located in Henderson County. Residential sources of corrugated containers will be allowed in de minimis



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amounts only. The following items shall not be considered corrugated cardboard:

- a. Wax coated cardboard.
  - b. Cardboard soiled with grease, oils, food waste, chemicals, poisons or pesticides.
  - c. Cardboard adhered to polystyrene or other plastic.
  - d. Poster board, pasteboard tubing or chipboard, such as cereal boxes. This is mixed paper and can be recycled.
23. Aluminum cans.
24. Antifreeze (ethylene glycol).

### [95-20. Tires.](#)

Whole automobile and truck tires will be accepted at the designated tire recycling site. Tires must be removed from their rims and be free of water, dirt and debris. Anyone bringing in 6 or more tires must call in advance and will be required to fill out a tire certification form. Specialized tires, such as large, off-road and heavy equipment tires, will be accepted only if arrangements are made in advance by calling the recycling center. Persons bringing loads containing truck tires or specialized tires will be required to assist in the unloading of such tires and should call in advance.

### [95-21. White Goods and Metals.](#)

White goods and large pieces of metal may be deposited at the designated area for recycling.

### [95-22. Used Motor Oil; Antifreeze](#)

Used motor oil may be deposited in the tank at the Recycling Center. This tank is for residential users only. No used motor oil will be accepted from commercial or industrial users. Antifreeze is also accepted at this location.

### [95-23. Recycling Encouraged.](#)

Each person who owns, leases or manages a residence, residential unit or place of business, industry, commerce or other place providing goods or services, or institution, church, camp or school is strongly encouraged to remove recyclable materials from the solid waste generated and make them available for recycling.

### [95-24. Recyclable Materials.](#)

Recyclable material shall consist of the following items and shall be prepared for recycling at the County drop-off sites as directed:

- A. Glass [all brown, clear and green container (bottles and jars) glass]: rinsed and caps removed. Labels do not have to be removed.
- B. Aluminum beverage and bimetal (tin or steel) food cans: rinse. Labels do not have to be removed.
- C. Plastic containers No. 1 PETE (soda containers) and No. 2 HDPE (milk and shampoo containers) and Nos. 3, 5 and 7 (mixed plastic): rinse, and step on containers to flatten them.



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Labels do not have to be removed.

- D. Corrugated containers: flatten.
- E. Mixed paper: See definition.
- F. Newspaper: bundle with string or leave loose. Inserts may remain.
- G. Other material: as it is added to the recycling program.

### 95-25. Removal Of Recyclable Materials Prohibited.

No person, other than a County employee or the County's authorized agent, may remove recyclable material from a recycling collection center.

### 95-26. Solid Waste Classification System

The Solid Waste Advisory Committee shall establish a system of classification for classes of solid waste that shall be consistent with a system of classification in the Solid Waste Management Plan. The classification system shall be used as a basis for requiring that solid waste be delivered to an appropriate County disposal facility in accordance with the Solid Waste Management Plan.

### 95-27. Permit Required; Exceptions.

- A. For the purpose of providing for the proper collection, transportation, recycling and/or disposal of solid waste within Henderson County, the Board may grant the right to collect, transport, recycle and/or dispose of solid waste for compensation.
- B. No person shall engage in commercial or industrial solid waste collection, residential household garbage or recyclable material collection for a fee without a permit issued from the Solid Waste Director pursuant to this article. Individuals transporting their own solid waste or recyclables are not required to hold a permit.

### 95-28. Permit Application.

- A. Application for a permit to engage in solid waste, residential household garbage or recyclable material collection shall be filed with the Solid Waste Director on forms approved by the Solid Waste Director. There shall be no fee charged to an applicant for a solid waste collection permit.
- B. Application information required. The applicant shall furnish the following information:
  - 1. Name, address and telephone number of the applicant and whether a sole proprietorship, corporation or partnership, with disclosure of the ownership interest.
  - 2. A list of the equipment possessed, available or to be obtained by the applicant, including the number and type of solid waste receptacles or other containers used for the storage or collection of solid waste, residential household garbage or recyclable material, and the number and type of vehicles used for the transportation and disposal of solid waste, residential household garbage or recyclable material. Each vehicle shall be identified by make, model and license tag number.
  - 3. Number of employees the applicant expects to use in the business.
  - 4. Experience of the applicant in solid waste, residential household garbage or recyclable material collection.
  - 5. Other pertinent information as the Board may hereafter request.



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### [95-29. Inspections.](#)

The Solid Waste Director shall issue such permit only when upon inspection he finds that the facilities, equipment and proposed operating methods of the applicant are in compliance with the requirements of this article.

### [95-30. Equipment Standards.](#)

All trucks and other equipment used by the collector must meet minimum standards prescribed by the Henderson County Solid Waste Management Department. These standards shall require, at a minimum, that truck beds be covered. Vehicles shall be leak proof, durable and easily cleaned to prevent insect breeding, odor or other nuisance and shall be maintained in good repair as determined by the Solid Waste Director. Each collector shall provide the Solid Waste Director with a plan for the regular and sufficient collection of solid waste and recyclable materials of its customers, and shall operate in regular compliance with such plan.

### [95-31. Display of Permit Number.](#)

The permit number of the collector shall be visible on both sides of each of the collector's trucks in numbers not less than three inches high, the color of the numbers to contrast with the color of the truck, and shall be kept clean and legible at all times.

### [95-32. Existing Collectors.](#)

The Solid Waste Director will issue permits to existing collectors who are in business in Henderson County upon the effective date of this article upon assurance of their compliance with the above sections.

### [95-33. Appeals.](#)

When any person has made application for a permit to collect or transport solid waste or recyclable materials and the Solid Waste Director has refused to issue said permit to the applicant, the applicant may appeal the refusal by submitting a notice of appeal to the Solid Waste Director. The appeal shall be heard by the Henderson County Board of Commissioners. The notice of appeal must be filed within 10 days after the refusal of the Solid Waste Director to issue the permit.

### [95-34. Permit Renewal And Term: Permits Not Assignable.](#)

- A. Permits will be issued upon successful completion of the permit application and inspection by the Solid Waste Director or his authorized agent.
- B. All permits, regardless of the date issued, must be renewed every January and will be valid for a period of one year.
- C. No permit issued pursuant to this article shall be assignable.



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### [95-35. Revocation of Permit: Appeals.](#)

A. Whenever, upon inspection of the facilities, equipment or operating methods of any person collecting, transporting or disposing of solid waste or recyclable materials, the Solid Waste Director finds that conditions or practices exist which are in violation of the provisions of this article, the Solid Waste Director shall give notice in writing to such person that unless such conditions or practices are corrected within 30 days the operating permit of such person shall be revoked. Haulers will be allowed to collect, transport and dispose of solid waste or recyclable materials during this thirty-day period. Immediately upon the receipt of the notice of the Solid Waste Director as provided above in this section, the permit-holder shall provide to the Solid Waste Director a list of the permit-holder's customers within Henderson County. Such list of customers shall not be a public record so long as the permit-holder complies with [N.C. Gen. Stat. §132-1.2](#), and shall be used by the Solid Waste Director only to notify customers of the permit-holder of the revocation of the permit-holder's permit, and for no other purpose. In the event a revoked permit is reinstated by either the Solid Waste Director or by the Board of Commissioners pursuant to this section, the list of customers shall be destroyed.

No such permit shall be reinstated by the Solid Waste Director until he finds, upon reinspection and other proof satisfactory to the Solid Waste Director of operations in compliance with this Chapter, that all provisions of these regulations have been complied with, except that following a hearing as hereinafter provided such permit may be reinstated by order of the Solid Waste Department. The Solid Waste Director shall be the only person authorized to enforce this subsection.

B. Any revocation of a solid waste hauler's permit may be appealed to the Henderson County Board of Commissioners by the submission of a notice of appeal to the Solid Waste Director within 10 days of the effective date of the revocation. If a notice of appeal is not filed within 10 days, the permit shall be deemed to have been automatically revoked.

### [95-36. Violations and Penalties.](#)

A. This article may be enforced by any methods authorized by [N.C.G.S. 153A-123](#) or [N.C.G.S. 153A-277](#). Such methods shall be carried out in accordance with the procedures outlined in Henderson County Code, Chapter 1, General Provisions, Article II, and as provided below.

B. Violations of this article by a permitted hauler may subject the hauler to a revocation of his permit in accordance with §95-35 and may, in addition, subject the hauler to any actions specified in Henderson County Code, Chapter 1, General Provisions, Article II.

### [95-37. Delinquent Accounts.](#)

Section 95-19 of this Article provides the payment of a tipping fee by users of the facility. The Solid Waste Department shall have the authority to set up accounts with regular users of the facility to be billed on a monthly basis. When any account becomes more than 10 days past due, the Solid Waste Department and its billing and collecting agent shall be authorized to discontinue service to the holder of the delinquent account until such time as the account is paid in full. Further, the Solid Waste Department shall be authorized to use any means that a private citizen could use to collect a debt, including, but not limited to, the institution of a civil action to collect the moneys owed.

### [95-38. Responsibility for Refuse Found Outside Sanitary Landfill.](#)



## Article II - Collection and Recycling

Published on Henderson County North Carolina (<https://www.hendersoncountync.gov>)

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- A. If any object of refuse is discovered upon any lands or waters in any areas of Henderson County other than an approved sanitary landfill or other proper receptacle and said refuse bears the name, address or other means of identification of a person or persons, the person(s) so identified shall be presumed to have disposed of said refuse in violation of this article.
- B. Bags, boxes, bins, cartons and other containers used to carry food, clothing and other goods and printed matter purchased, rented or otherwise obtained from a restaurant, supermarket, store or other place of business or organization, which container or printed matter bears the logo, name and address or other means of identification of the place from which the goods were obtained, shall not be considered as a means of identification for purposes of this section.

### [95-39. Assistance for Correction of Violation.](#)

On receipt of a notice of a violation, a person may request the aid of the Solid Waste Department in correcting the violation and shall pay to the Solid Waste Department any costs incurred by the Solid Waste Department in removing or otherwise correcting the violation.

### [95-40. Through 95-65. \(Reserved\)](#)

**Source URL:** <https://www.hendersoncountync.gov/code-document/article-ii-collection-and-recycling>

APPENDIX F  
Memorandum from Christine Wittmeier  
Waste Diversion Programs



## Henderson County Engineering

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**Memorandum To:** *2020 Solid Waste Master Plan  
McGill and Associates*

**From:** *Christine Wittmeier  
Environmental Programs Coordinator*

**Subject:** *2020 Solid Waste Master Plan – Waste Diversion Programs*

**Date:** *January 24, 2020*

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Henderson County Solid Waste is dedicated to managing the County's solid waste responsibly per our permit to operate with the State and by diverting materials from the landfill. In FY19, Henderson County diverted 16,730.62 tons of material from the Transfer Station and Convenience Center. The two locations allow Solid Waste to separate the material into two locations: materials collected at no charge from residents (Convenience Center) and materials collected for a fee from both residents and businesses (Transfer Station), creating an efficient and safe system for all customers. Waste diversion occurs at both locations.

### **Convenience Center**

The Convenience Center collects automotive products, cooking oil, peripheral electronics, food waste, household garbage from the Bag for Bag program, single stream recycling (except glass is source separated), unbagged leaves, white goods, scrap metal, mercury products and is the location for the Household Hazardous Waste annual events.

#### **Automotive Products:**

The Convenience Center collects a variety of automotive products including motor oil, motor oil filters, lead acid batteries and antifreeze.

#### **Motor oil filters**

Motor oil filters are collected in a labeled container, crushed and sold for scrap metal.



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### **Motor oil**

Motor oil is collected in a labeled barrel and picked up by a contracted oil company. The oil is recycled as a fuel for energy recovery and meets the EPA "on- specification" standard. Henderson County collected 14,830 gallons of motor oil in FY19.

### **Lead Acid batteries**

Lead acid batteries are collected by staff and stored in a secure area until they are picked up by a local automotive battery company. The company ships them to a smelter in South Carolina where the lead and plastic are separated, and the materials are recycled. Henderson County collected 13,655 pounds in FY19.

### **Antifreeze**

Antifreeze is collected from residents in a designated container. The antifreeze is picked up by a contracted oil company. The oil company takes it to an antifreeze recycler where it is recycled into more antifreeze. Henderson County collected 180 gallons of antifreeze in FY19.

### **Cooking Oil**

Used cooking oil is collected in a designated container provided by Blue Ridge Biofuels and is processed into biodiesel. Henderson County collected 1,251 gallons of cooking oil in FY19.

### **Peripheral electronics**

Peripheral electronics are collected on pallets (printers, laptops) or in gaylords (cables, mice, keyboards, etc.). Electronic materials accepted include hard drives, printers, laptops, scanners, fax machines, copiers, and other miscellaneous electronic equipment. Electronics are periodically collected by an authorized eWaste vendor for processing where they are disassembled into metals, plastics and glass. The metal is sold to a metal recycler, the plastic is bailed and sold on the market and the circuit boards are sent to a precious metal recycler. The County collected 93,532 pounds of electronic waste of in FY19.



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### **Dry cell batteries**

Dry cell batteries that have been taped or bagged are accepted in a designated metal drum. A contracted eWaste vendor picks up the batteries and separates them so the materials can be shipped to a smelter. Henderson County collected 10,113 pounds of dry cell batteries in FY19.

### **Food Waste**

Food waste is collected in six 65-gallon carts at the Convenience Center. Henderson County Solid Waste contracts with a Type III private compost company to haul and process the material to create nutrient rich compost. Organics collected include post-consumer food waste, paper products and compostable plastic products. The County diverted 25.8 tons of organic waste at the Convenience Center drop off, Detention Center and special events (Apple Festival, Pumpkin Collection) in FY19.

### **Single Stream Recycling (except for glass)**

Multiple dumpsters and a compactor are available for residents to drop off single stream recycling (except for glass). Bottles, tubs, jugs, jars, cans, cardboard and mixed paper are accepted. The recycling is taken to a local Material Recovery Facility where the material is sorted and sold to market to create a variety of products. Henderson County collected 5,241 tons of recycling in FY19.

### **Glass**

Glass bottles and jars are source separated at the Convenience Center. The glass is transported to a glass recycler for processing and turned into various glass products including bottles and fiberglass. Henderson County collected 414 tons of glass from the Convenience Center in FY19.

### **Leaves**

Unbagged leaves are collected in a designated dumpster. Residents may drop off five bags of leaves a day. The leaves are used onsite as needed for erosion control of the landfill cap. Henderson County collected 366 tons of unbagged leaves in FY19.

### **White Goods/Scrap Metal**

White Goods, scrap metal and empty propane tanks are collected at the Convenience Center. Refrigerator doors must be removed by the customer and the Freon is removed by a private company. Local metal recyclers bid on the material each



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month and the metal recycler sorts and prepares the material to be shipped to various mills across the Southeast. The County recycled 844 small cylinder propane tanks, 212 large propane tanks, 405 tons of white goods, 193 pounds of refrigerant and 135 tons of scrap metal in FY19.

### **Mercury Products**

Mercury bulbs, tubes and thermostats are collected from residents at the Convenience Center by staff and stored in a designated secure shed. The mercury bulbs are sorted and picked up by a vendor where they are weighed and processed. The bulbs are crushed by a machine and the mercury-powder, glass and metals are separated via screens. The mercury-powder is heated at high temperatures to remove the mercury.

The thermostats are collected and shipped annually to a thermostat recycling company. The thermostat recycling company identifies and sorts the contents into a 55-gallon drum and then ships the materials to Veolia's mercury recovery facility. At the facility, the mercury bulbs are removed from the plastic housing and placed in a vessel that is processed in an oven. Henderson County collected 4,690 fluorescent bulbs and 0.12 pounds of thermostats in FY19.

### **Sharps**

Sharps are accepted from the public in labeled plastic containers and collected by a medical waste company. Most of the material is autoclaved and some of the material is incinerated. Henderson County collected 27 cubic feet of sharps in FY19.

### **Household Hazardous Waste Events**

Henderson County Environmental Programs hosts six Household Hazardous Waste collection events at the Henderson County Convenience Center that accept cleaning agents, pesticides, fertilizers, insecticides and other household chemicals at no charge from residents. The County contracts with a certified hazardous waste vendor, 3RC, to collect, test and pack the waste for shipping. The material is stored in DOT certified drums or containers and shipped to 3RC's facility after a season of events.

The flammable gases, liquids and solids are recycled as a supplemental fuel for energy recovery. The acids and bases are treated, and the oxidizers are incinerated.



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Henderson County also partners with the North Carolina Department of Agriculture & Consumer Services to collect pesticides from the public where they are incinerated. Henderson County collected 7.4 tons of Household Hazardous Material in FY19.

### **Transfer Station**

The Transfer Station collects and diverts televisions, computer monitors, yard waste, yard trash, pallets, beneficial fill, tires and is the location for the annual Paint Collection events. The Transfer station is available for residents and commercial customers. Material requiring a fee is charged by the ton, a set disposal fee, or a minimum scale fee of \$10.

### **TV and Computer monitors:**

Televisions and computer monitors are accepted for a \$15 recycling fee in Area 4 at the Transfer Station. The televisions and computer monitors are palletized and shipped to a certified eWaste vendor for processing. The televisions and computer monitors are disassembled into metals, plastics and glass. The metal is sold to a metal recycler, the plastic is bailed and sold on the market and the glass is shipped to a certified CRT glass processor. Henderson County accepted 219,2020 pounds of televisions and 1,665 pounds of computer monitors in FY19.

### **Yard debris**

Yard waste, yard trash (exposed to the ground and could contain animal feces) and pallets are accepted at the Transfer Station for \$45/ton and stored in Area 5. The pallets and yard waste are mulched and hauled to a boiler for fuel. The yard trash (mainly leaves) is used on-site as needed for erosion control of the landfill cap. Henderson County collected 4,426.92 tons of yard debris (wood waste, yard waste, yard trash) in FY19.

### **Mixed tires**

Rimless, mixed tires that are free of mud and water are collected at no charge and "laced" in a trailer in Area 4 at the Henderson County Transfer Station. Henderson County residents may deposit five tires per year at no charge with proof of residency. Residents that are ineligible for the free tire disposal are charged 90\$/ton for scrap tires. The tires are shipped to a scrap tire recycler and are processed into tire derived fuel and tire derived aggregate. The aggregate can be used for septic systems and drainage. Henderson County disposed of 1,481.6 tons of tires in FY19.



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### **Beneficial fill**

Clean concrete that can be used onsite is deposited in Area 5. The material is used as riprap and gravel onsite for the roads. Henderson County collected 1,013 tons of clean concrete in FY19.

### **Paint collection**

Six paint collection events are scheduled annually in the Spring and Fall and are held at the Henderson County Transfer Station in Area 4. Paint and paint related material are collected from residents including latex paint, oil paint, stains, solvents, thinners and other paint-related materials. Henderson County charges \$2/gallon for paint based on the size of the container, not by how full. The paint is placed in a certified DOT gaylord, palletized and shipped to 3RC in Winston-Salem. The oil-based paint is recycled as a supplemental fuel for energy recovery. The latex paint is preferably recycled into a Posi-Shell or landfilled as a secondary alternative. Henderson County collected 23.9 tons of paint and paint related material in FY19.

### **Education and Outreach**

Henderson County works to provide education and outreach to the public in a variety of methods, including but not limited to:

- Maintain an accurate recycling website ([www.hcrecycles.org](http://www.hcrecycles.org)).
- Distribute brochures on recycling, disposal and special events/programs.
- Provide free recycling and composting education programs to the community.
- Work to develop and implement an annual marketing plan.
- “Recyclopedia” database helps residents quickly look up proper waste disposal.
- Work closely with the PIO to distribute information via social media and news.
- Participate in Land of Sky’s Waste Reduction Education program.

### **Future Materials for Diversion**

Henderson County continues to be a leader in WNC by seeking innovative opportunities to improve operations and divert new materials from the waste stream. Below are potential programs and recommendations that Henderson County is exploring.

### **Special Collection Events**

Henderson County is interested in partnering with local environmental organizations to host Hard-to-Recycle events that divert new materials and provide



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a convenient option for residents. Potential materials to divert includes: books of all kinds, shredded paper, electronics, appliances (including vacuums), batteries, metals, Styrofoam (food grade and packaging), toner and printer cartridges, personal care and beauty items, donations for the ReStore, animal sanctuary items, fencing material and used eyewear.

### **Styrofoam**

Henderson County Environmental Programs is currently investigating the feasibility of the County owning a densifier funded by grant opportunities. A densifier compresses or melts Styrofoam allowing the shipping of the material to be economically feasible for the county and a potential revenue source. The lack of convenient outlets for Styrofoam is one of the most common complaints received at the Convenience Center.

### **Multipurpose Waste Diversion Building**

A multipurpose waste diversion building would provide residents of Henderson County an environmentally safe way to properly dispose or recycle household hazardous waste and other hard to recycle materials. The building would allow Solid Waste to offer more HHW events than six times a year by expanding hazardous waste storage and create a safer work environment by accepting materials inside a permanent structure. More frequent and convenient options for residents will help prevent improper disposal of these wastes that can pollute the environment and pose a threat to human health. The building could also accommodate a densifier, store hard to recycle materials and improve the overall efficiency of waste diversion operations.

### **Organics Diversion**

Henderson County is a leader in WNC for organics diversion. In FY19, the County diverted 25.8 tons of organic waste at the Convenience Center, Detention Center and special events (Apple Festival and Pumpkin Collection). Staff is working to pilot on-site processing of the food waste collected at the Convenience Center with the yard debris collected at the Transfer Station via a Type III compost pilot. The compost operations could offset the fees associated with processing the yard debris.

APPENDIX G  
Solid Waste Planned Projects Schedule

**Solid Waste Planned Projects Schedule:**

Projects	Estimates	Fiscal Year (3% annual cost increase)									
		1 2021	2 2022	3 2023	4 2024	5 2025	6 2026	7 2027	8 2028	9 2029	10 2030
Transfer Station Bay 2 Floor Replacement (8 yr cycle)	\$ 338,900							\$ 410,069			
Transfer Station Bay 1 Floor Replacement (8 yr cycle)	\$ 366,300		\$ 388,278								\$ 476,190
Transfer Station Tunnel #1 Rehabilitation	\$ 274,740									\$ 348,920	
Transfer Station Tunnel #2 Rehabilitation	\$ 116,660										\$ 144,658
Commercial Hauler By-pass Road	\$ 105,500			\$ 114,995							
Multipurpose Waste Diversion Building	\$ 437,280						\$ 515,990				
Transfer Station Grit Chamber Replacement	\$ 34,939	\$ 35,987									
Truck Turnaround Completion	\$ 303,442								\$ 376,268		
Refurbish Exit Ramp from Transfer Station	\$ 267,410	\$ 275,432									
Convenience Center Slabs	\$ 198,180								\$ 245,743		
Transfer Station #3 Development	\$ 2,357,540			\$ 2,569,719							
Waste Wizard By-Pass Lane	\$ 59,300				\$ 66,416						
Scale Entrance Road Widening	\$ 72,300				\$ 80,976						
Convenience Center Asphalt Resurfacing	\$ 145,580									\$ 184,887	
Compost / Mulch Area Access Road Paving	\$ 388,000					\$ 446,200					
Staff Parking Lot	\$ 21,660				\$ 24,259						
Stormwater - Gas Storage Area	\$ 46,972						\$ 55,427				
Stormwater - Sediment Basin to Water Quality Basins	\$ 79,680						\$ 94,022				
Stormwater - Convenience Center Access Road	\$ 203,380									\$ 258,293	
Convenience Center Paving Repair	\$ 28,806				\$ 32,263						
Convenience Center Access Road Repair	\$ 36,839	\$ 39,049									
Demo Old County Home Building (place holder)	\$ 107,080										
Property Acquisition (place holder)	\$ 250,000										
	\$ 6,240,488	\$ 311,419	\$ 427,327	\$ 2,684,714	\$ 203,914	\$ 446,200	\$ 665,440	\$ 410,069	\$ 622,011	\$ 792,099	\$ 620,848

APPENDIX H  
Solid Waste Planned Equipment Purchase

**Solid Waste Equipment Replacement Schedule:**

		Fiscal Year (2% annual cost increase)									
Equipment	Replacement Cost	1 2021	2 2022	3 2023	4 2024	5 2025	6 2026	7 2027	8 2028	9 2029	10 2030
Loader, track	15 \$ 120,000						\$ 134,400				
Bulldozer, medium duty	15 \$ 125,000						\$ 140,000				
Grapple, tired	15 \$ 225,000				\$ 243,000						
Excavator, track	10 \$ 225,000					\$ 247,500					
Mower, slope	10 \$ 135,000									\$ 159,300	
Mower, slope (back up)	10 surplus										
Mower, light duty	5 \$ 10,000			\$ 10,600							
Skid Steerer w/ attachments	10 \$ 60,000										\$ 72,000
Loader, tired, #1	10 \$ 225,000			\$ 238,500							
Loader, tired, #2	10 \$ 225,000							\$ 256,500			
Loader, tired, #3	10 \$ 225,000			\$ 238,500							
Compactor SS, Convenience Center	15 \$ 40,000								\$ 46,400		
Compacto MSW, Convenience Center	15 \$ 40,000	\$ 40,800									
Compactor, Drop-off	15 \$ 40,000							\$ 46,400			
Scales, Inbound	20 \$ 75,000										\$ 90,000
Scales, Outbound	20 \$ 75,000									\$ 88,500	
Scales, Remote	20 \$ 75,000						\$ 84,000				
Truck, Water (City Surplus)	15 \$ 30,000		\$ 31,200								
Truck, Dump (used)	15 \$ 90,000										\$ 108,000
Truck, Dump (back up)	surplus surplus										
Truck, Spotter #1	10 \$ 120,000									\$ 141,600	
Truck, Spotter #2	10 \$ 120,000	\$ 120,000									
Truck, Spotter #3	10 \$ 120,000	\$ 120,000									
Truck, roll off #1	10 \$ 190,000		\$ 197,600								
Truck, roll off #2	10 \$ 190,000										\$ 228,000
Truck, roll off #3	10 \$ 190,000		\$ 197,600								
Truck, Box	10 \$ 40,000								\$ 46,400		
Truck, Sweeper (City Surplus)	10 \$ 20,000								\$ 23,200		
Generator, Scales House	10 \$ 30,000								\$ 34,800		
SUV (off site travel)	10 \$ 25,000			\$ 26,500							
Truck, light duty F350 Diesel, Crane	10 \$ 80,000				\$ 86,400						
Truck, light duty F250	10 \$ 30,000								\$ 34,800		
Truck, light duty F250	10 \$ 30,000							\$ 34,200			
Truck, light duty F250	10 \$ 30,000					\$ 33,000					
Truck, light duty F250	10 \$ 30,000										\$ 36,000
Walking Floor Trailer	10 \$ 75,000										
Walking Floor Trailer	10 \$ 75,000										
Road Tractor	10 \$ 150,000										
	\$ 3,285,000	\$ 280,800	\$ 426,400	\$ 514,100	\$ 329,400	\$ 280,500	\$ 358,400	\$ 290,700	\$ 232,000	\$ 389,400	\$ 534,000

APPENDIX I  
Solid Waste Cash Flow Analysis

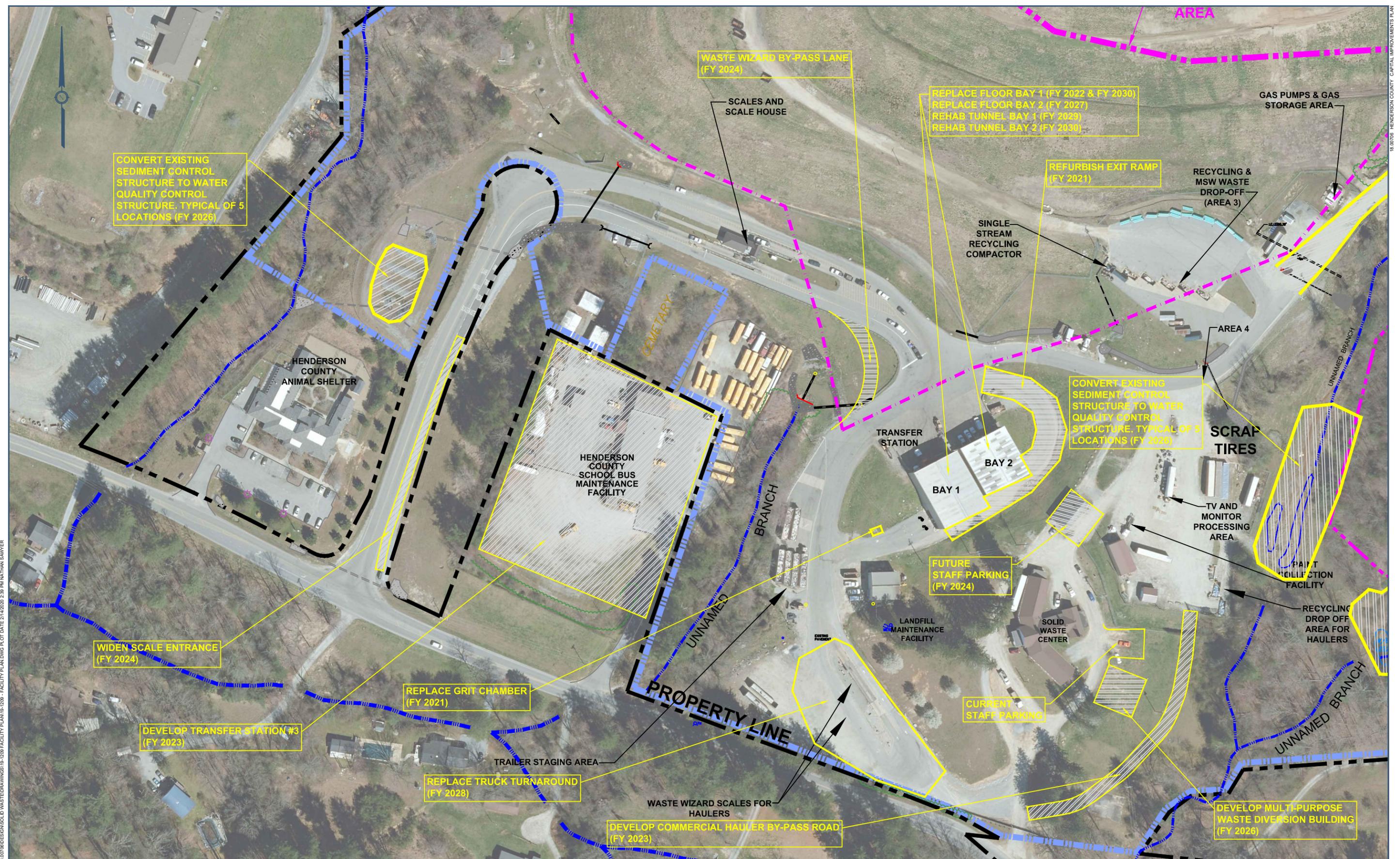


APPENDIX J  
Capital Improvements Overall Master Plan



LIBROADSTREETDRAWINGS201810.07706DESIGNSOLID WASTEDRAWINGS19-1208 FACILITY PLANNING DATE 2/14/2020 2:30 PM NATHAN SAWYER

18.00706 HENDERSON COUNTY CAPITAL IMPROVEMENTS PLAN



55 Broad Street  
Asheville, NC 28801  
828.252.0575  
NC Firm License # C-0459  
mcgillassociates.com

NO.	DATE	BY	DESCRIPTION

SOLID WASTE MASTER PLAN UPDATE  
**HENDERSON COUNTY**  
NORTH CAROLINA

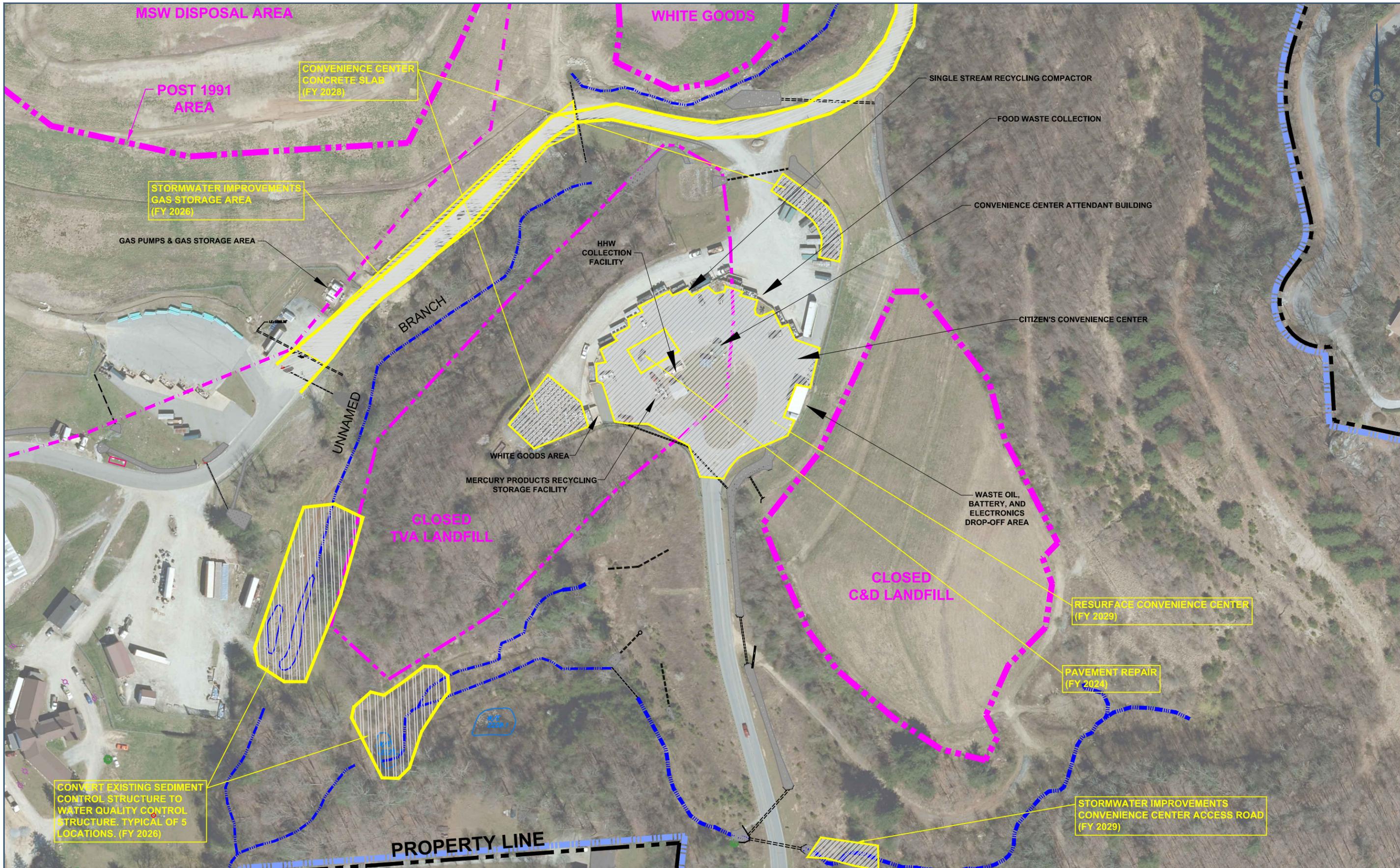
60 0 30 60 120 GRAPHIC SCALE DIVISION VALUE = 60 FEET	
OFFICE MANAGER M. CATHEY	DESIGNER S. BURWELL
PROJECT MANAGER J. BISHOP	REVIEWER Z. ROMAN

DATE JANUARY 2020	PROJECT # 18.00706	FUNDING # -
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FIGURE  
**2**

LIBROADSTREETDRAWINGS201810.07706DESIGNOLID WASTERDRAWINGS19-1208 FACILITY PLAN19-1208 - FACILITY PLAN DWG PLOT DATE 2/14/2020 2:40 PM NATHAN SAWYER

18.00706 HENDERSON COUNTY CAPITAL IMPROVEMENTS PLAN




55 Broad Street  
Asheville, NC 28801  
828.252.0575  
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NO.	DATE	BY	DESCRIPTION

SOLID WASTE MASTER PLAN UPDATE  
**HENDERSON COUNTY**  
NORTH CAROLINA

GRAPHIC SCALE 0 30 60 120 DIVISION VALUE = 60 FEET	
OFFICE MANAGER M. CATHEY	DESIGNER S. BURWELL
PROJECT MANAGER J. BISHOP	REVIEWER Z. ROMAN

CONVENIENCE CENTER AREA PLAN	
DATE JANUARY 2020	PROJECT # 18.00706
FUNDING # -	

FIGURE  
**3**