



Henderson County Stoney Mountain Road Landfill Solid Waste Master Plan



Permit and Construction Submittals Review

- Permits to Operate
 - Transfer Station
 - Permit No 4504T-Transfer-1998
 - Issued October 30, 2018
 - Good for the “Life of Site”
 - Household Hazardous Waste (5 year)
 - Permit no 4504-HHW-2011
 - Issued August 30, 2016
 - Good for 5 years
 - Small Type 1 Compost (notified site)
 - Operates under Notified Site Rule 15A NCAC 13B.1402
 - General Stormwater Permit
 - NCG120000 for landfill footprint



Current Facilities

- Entrance Facility/ Scale House
 - Transfer Station
 - Recycling Transfer Areas
 - Yard Trash/ Wood Waste Processing Area
 - Convenience Center
 - Household Hazardous Waste Area
 - Used Tire Drop-Off
 - Staffing
 - Additional County Owned/Operated Facilities
 - Solid Waste Center
 - School Bus Maintenance Shop
- 



Vehicular Traffic

- Entrance/Transfer Station/Convenience Center
 - 2009 – Average 700 vehicles per day entered combined site
 - 2019 – Average 1164 vehicles enter combined site per day (66% increase)
 - 779 enter convenience center
 - 385 use transfer station
- Peak Window Counts – June
- Cooler Months not as busy
- Saturday is busiest day
- Thursday is least busy day

Henderson County Engineering

County Collection System

- Existing Collection System
 - Convenience Center
 - Permitted, Private Haulers
 - Commercial
 - Residential
- Why Change? (Capacity / Funding)
- Options to Expand Collection
 - More Convenience Centers
 - Countywide Curbside
- Recommendation: No change but study feasibility and implementation of Countywide Curbside Collection




Henderson County
2020 Solid Waste Master Plan

Waste Diversion Programs





Current Programs – Convenience Center

- 
- Automotive Products
 - Motor oil, motor oil filters, antifreeze, lead acid batteries
 - Cooking Oil
 - Peripheral Electronics
 - Dry cell batteries
 - Food Waste
 - Single stream recycling
 - Glass bottles and jars
 - Leaves
 - White goods/scrap metal
 - Mercury products
 - Sharps
 - Household Hazardous Waste Events

Convenience Center





Current Programs – Transfer Station

Area 4:

- TVs and CRTs
- Mixed tires
- Paint Collection events

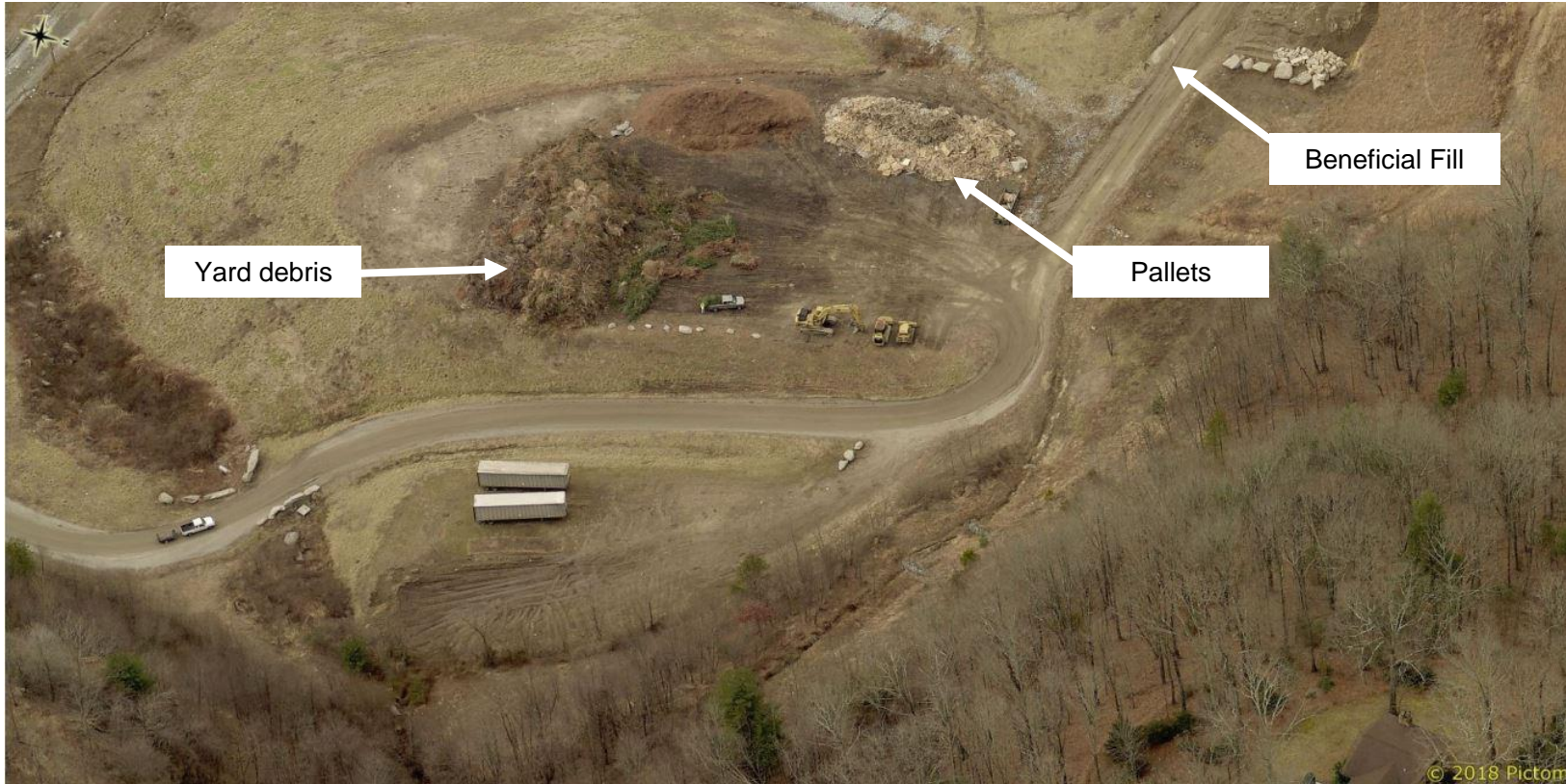
Area 5:

- Yard debris
- Beneficial fill

Area 4




Area 5






Future Waste Diversion Programs

- Multipurpose Waste Diversion Building
 - Special Collection Events
 - Ex: Hard to Recycle
 - Styrofoam
 - Organics Diversion
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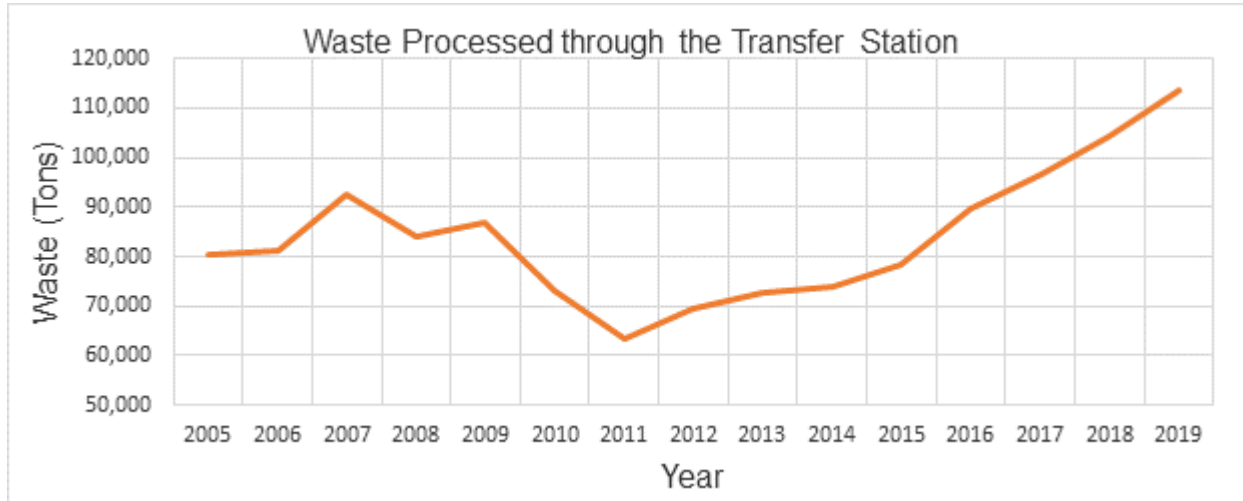


Education and Outreach

- 
- Maintain website (www.hcrecycles.org).
 - Brochures
 - Waste reduction workshops and programs
 - Annual marketing plan
 - “Recyclopedia” database
 - Work closely with the PIO
 - Land of Sky’s Waste Reduction Education program

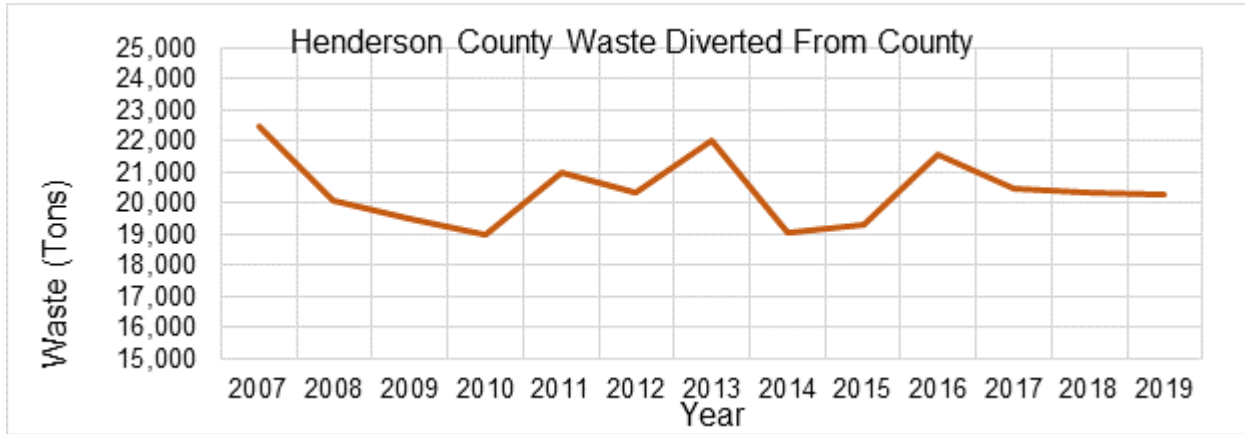
Waste Disposal Trends – Existing Waste

- Municipal Waste



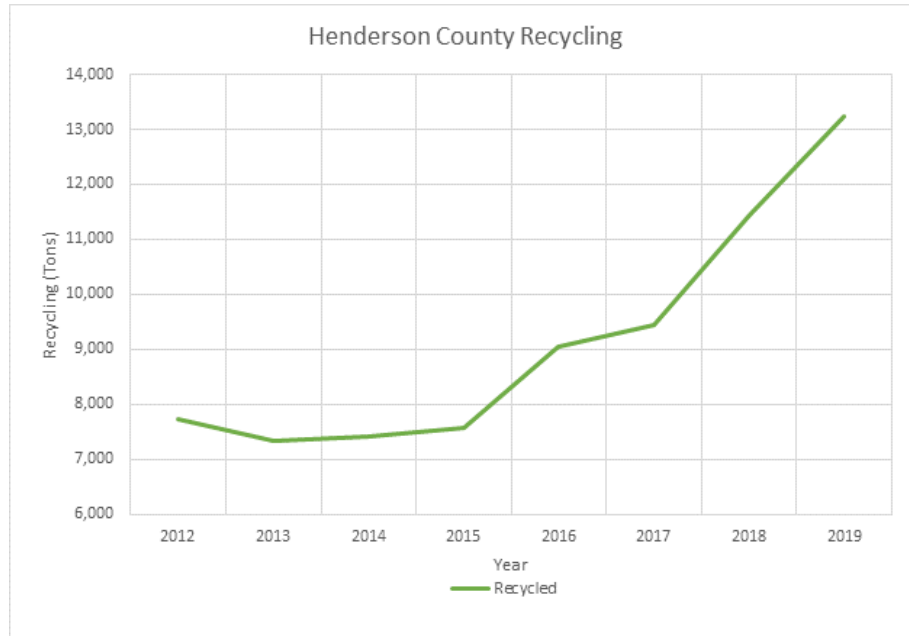
Waste Disposal Trends – Diverted from County

- 18% of total transfer station current waste stream diverted



Waste Disposal Trends – Existing Waste

- Recycling – Shift noticed when Single Stream implemented



Waste Disposal Trends – Existing Waste

- Yard Waste/Wood Waste
 - Increasing Trend since 2016



Population Growth – 2007 to 2019

- 1.1% projected growth rate

Table 10: Per Capita Disposal Rates

Fiscal Year	Annual County-Wide Disposal (tons)	Population	Calculated Per Capita Disposal Rate (tons/person/year)
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

Population Growth – Projected (2020-2030)

- Methods:
 - Per Capita
 - Historical Trends
 - Economic Impacts
 - Recommended

Table 11: Projected 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



Financial Information Review

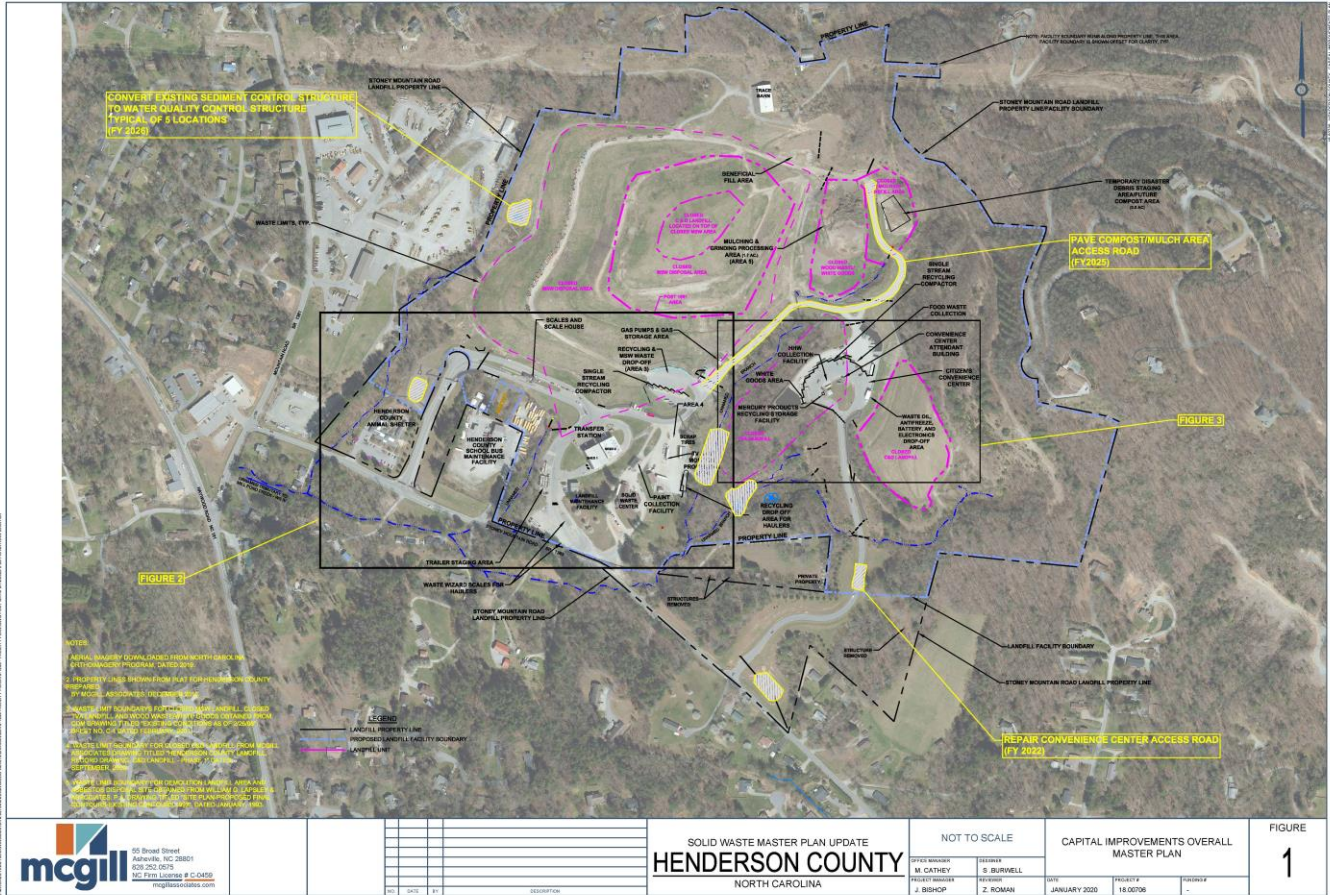
- **Revenue**

- Tipping fees – Grants – Asset Liquidation – Interest Income
- FY 2020 Estimated Revenue is \$7,621,000
- FY 2030 Estimated Revenue is \$9,150,000

- **Expenditures**

- Operations– Salaries – Benefits – Maintenance – Repairs – New Projects – Ongoing Projects – Debt Services
- FY 2020 estimate \$7,401,543
- FY 2030 estimate is \$8,997,553

Capital Improvements Projects Overall Site Plan



NO	DATE	BY	DESCRIPTION

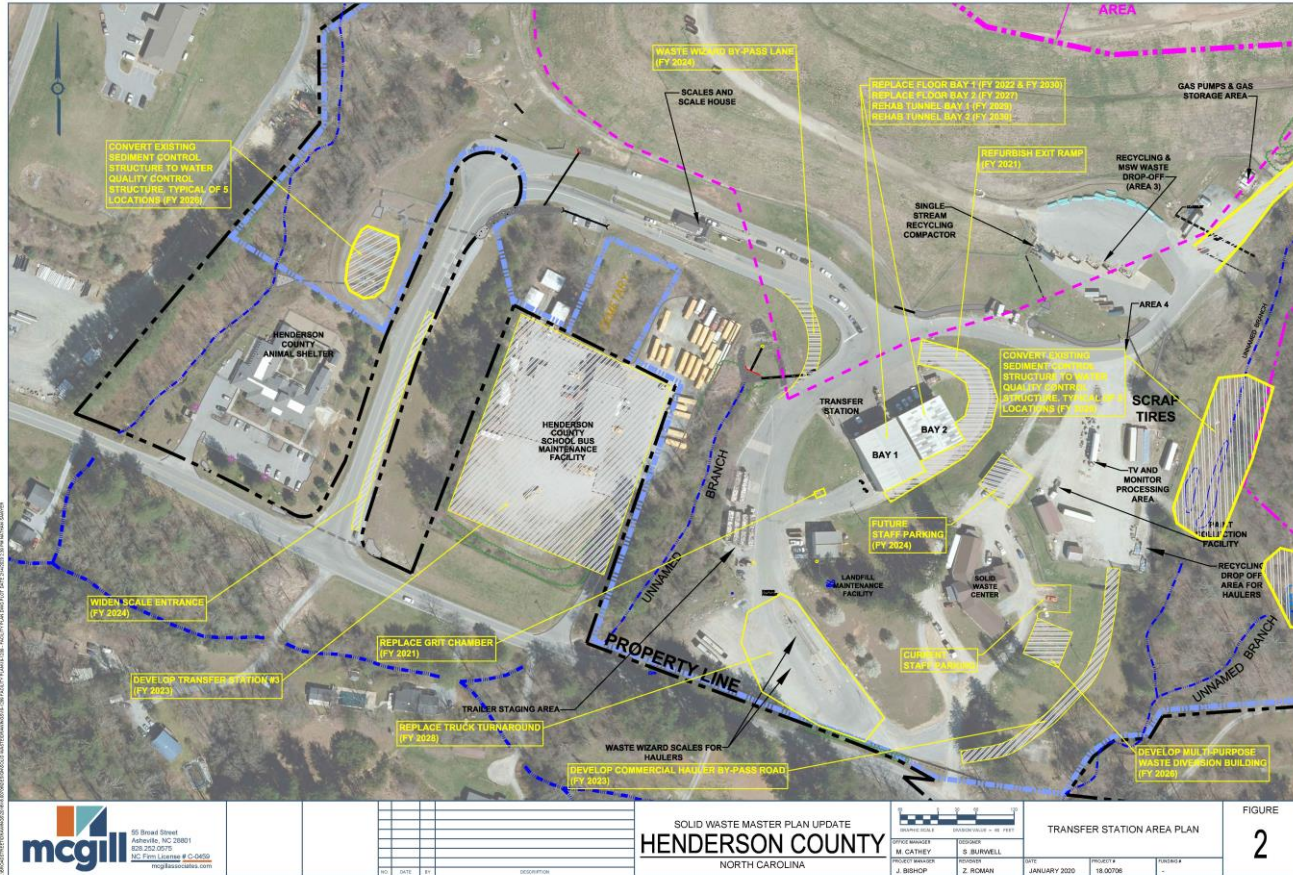


Capital Improvements Projects

- **Transfer Station**

- Transfer Station Grit Chamber Replacement (FY 2021)
- Transfer Station Exit Ramp Refurbishment (FY 2021)
- Transfer Station Shed 1 Tipping Floor Replacement (FY 2022, FY 2030)
- Commercial Hauler By-Pass Road (FY 2023)
- Transfer Station Shed 3 Development (FY 2023)
- Waste Wizard By-Pass Lane (FY 2024)
- Scale Entrance Road Widening (FY 2024)
- Multipurpose Waste Diversion Building (FY 2026)
- Transfer Station Shed 2 Rehabilitation (FY 2027)
- Truck Turn Around Completion (FY 2028)
- Transfer Station Shed 1 and 2 Tunnel Rehabilitation (FY 2029, 2030)

Capital Improvements Projects Transfer Station

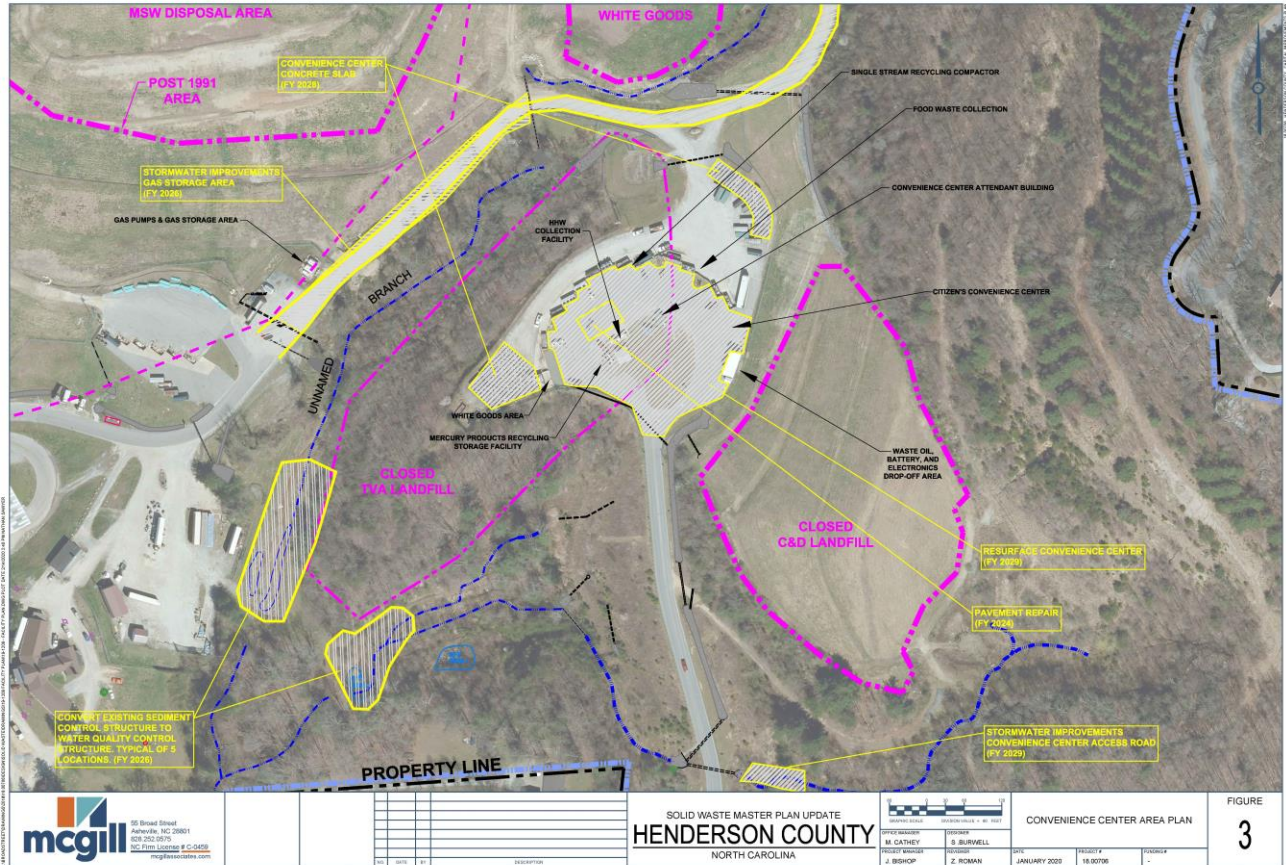




Capital Improvements Projects

- **Convenience Center**
 - Convenience Center Access Road Repair (FY 2022)
 - Convenience Center Paving Repair (FY 2024)
 - Convenience Center Concrete Slabs (FY 2028)
 - Convenience Center Asphalt Resurfacing (FY 2029)
- **Other**
 - Staff Parking Area (FY 2024)
 - Compost/Mulch Area Paved Access Road (FY 2025)
 - Stormwater – Gas Storage Area (FY 2026)
 - Stormwater – Sediment Basin to Water Quality Basin (FY 2026)
 - Stormwater – Convenience Center Access Road (FY 2029)

Capital Improvements Projects Convenience Center





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.



Questions?

