

HOUSTON COUNTY SOLID WASTE
NEEDS ASSESSMENT

FY 2014



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Item 1: Demographic Information & Projections

Historic Population - Houston County’s population growth has fluctuated over the last decade, seeing slight growth overall. Between 2000 and 2010, Houston County’s total population grew from 8,088 to 8,426, a 4.2% growth rate. Population growth in Houston County is difficult to forecast. Job creation and job loss often result in spikes and drops in population growth. New industry may help maintain this growth. An unusual trend shows the number of citizens in unincorporated areas growing, while the populations within the municipalities are decreasing (in Erin’s case) or remaining stagnant.

Houston County has two cities, Erin and Tennessee Ridge. Tennessee Ridge lies primarily within Houston County. See Table 1 and Figure 1 showing historic population change in both the county and cities.

Table 1: HOUSTON COUNTY HISTORIC POPULATION 2005-2014										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Erin	1,406	1,390	1,372	1,356	1,340	1,324	1,311	1,331	1,316	1,311
Tennessee Ridge (pt.)	1,352	1,355	1,358	1,362	1,365	1,368	1,353	1,370	1,350	1,347
Unincorp.	5,303	5,311	5,321	5,328	5,336	5,734	5,669	5,722	5,629	5,609
HOUSTON COUNTY TOTAL	8,061	8,056	8,051	8,046	8,041	8,426	8,346	8,423	8,295	8,267

Source: U.S. Census Bureau-2010\ACS, GNRC Linear Trend Analysis 2000-2008

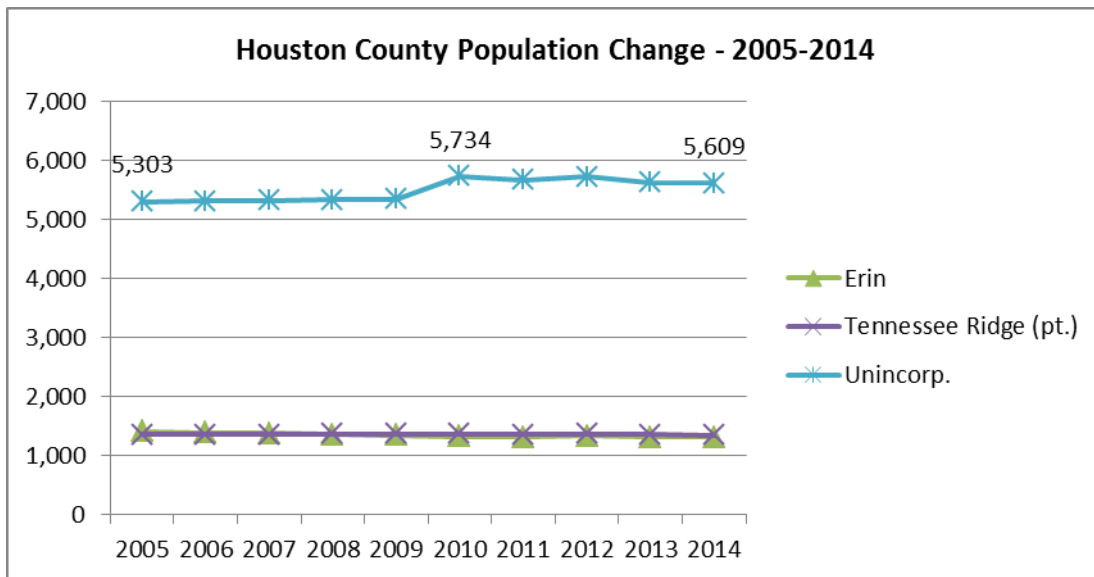


Figure 1-Houston County Historic Population, 2005-2014

Population Projections - Population projections are estimates of future possibilities based on current and past trends, and do not always capture short-term influences on growth, such as economic downturns or major industry relocations. Still, projections are the best estimate, and the expectation for Houston County is for slightly continued growth. To gain insight, growth projections from Woods & Poole’s 2015 State Profile were utilized.

For purposes of this report, the population projections from Woods & Poole will be used. (see Table 2 and Figures 2 and 3 below).

Table 2: HOUSTON COUNTY POPULATION PROJECTIONS						
	2015	2016	2017	2018	2019	2020
Erin	1,340	1,364	1,387	1,407	1,428	1,450
TN Ridge	1,400	1,405	1,411	1,420	1,428	1,435
Unincorporated Areas of Houston County	5,700	5,760	5,820	5,880	5,940	6,000
HOUSTON COUNTY TOTAL	8,440	8,529	8,618	8,707	8,796	8,885

Source: 2015 Woods & Poole, *GNRC Linear Trend Analysis 2015-2020*.

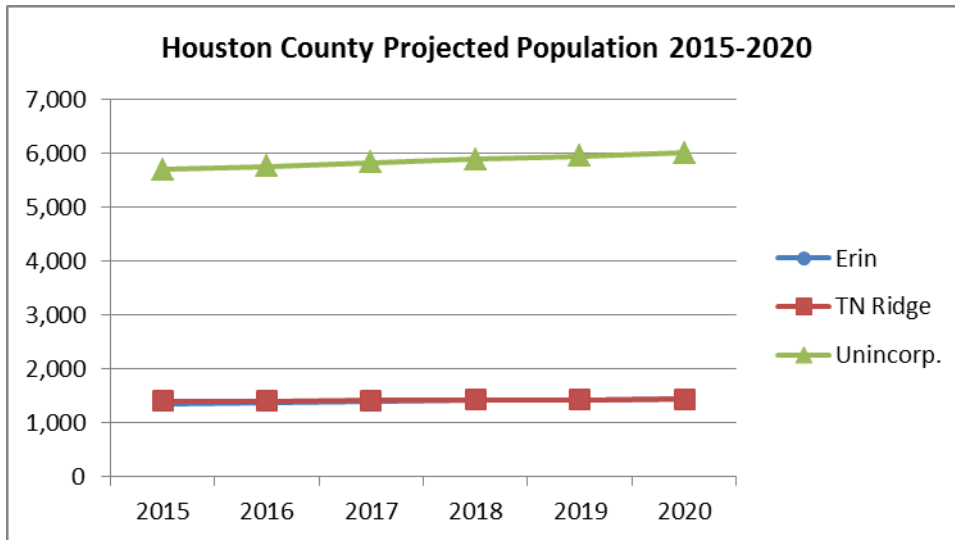


Figure 2-Houston

County Population Projections, 2015-2020

theFigure 3-Houston County Population Projections, 2015-2020

The benefits of solid waste planning are to help address the potential added waste stream volume, ensure adequate convenience center numbers and locations, and forecast transportation needs and costs as best as possible, given the variable of price fluctuation. The best use of these numbers for solid waste planning may be in their ability to project the number of households in future years. By dividing the projected population by the average household size (2.46, as of the 2010 Census), we can project the number of new households that could be added and will contribute to the waste stream. The number of

potential new households in Houston County is shown below in Table 3, using Woods & Poole population projections to examine the most aggressive projections of new residential solid-waste generators.

Table 3

2014 U.S. Census Population Houston County	2020 Projected Population	Population Increase 2014-2020	Average Household Size	Potential New Houston County Households, 2020
8,267	8,885	618	2.46	252

Houston County does not issue residential building permits, making it impossible to track growth and decline trends with that method. Even with the city permit numbers, water taps, or any other data, a picture of growth for the entire county would be inaccurate.

While Houston County is predicted to have increased growth, census estimates indicate the rate of growth has fluctuated over the last five years. Unincorporated areas seem to have the most potential for an increase in population, which is an unusual trend. However, it indicates that most of the new solid waste needs in relation to growth will be in the rural portions of the county.

Item 2: Analysis of Economic Activity within the Region

Table 4: HOUSTON COUNTY ECONOMIC DATA, HISTORIC AND PROJECTED 2005 - 2020						
YEAR	LABOR FORCE	UNEMPLOYMENT	UNEMPLOYMENT RATE	PER CAPITA INCOME	PROPERTY TAX	RETAIL SALES
2005	3,810	320	8.5%	\$25,900	\$3,300,000	\$38,200,000
2006	3,890	290	7.4%	\$27,800	\$3,350,000	\$38,500,000
2007	3,900	220	5.5%	\$28,700	\$3,000,000	\$38,000,000
2008	3,870	320	8.2%	\$28,600	\$2,850,000	\$37,100,000
2009	3,900	480	12.2%	\$28,500	\$2,800,000	\$37,000,000
2010	4,040	430	10.7%	\$28,455	\$2,877,102	\$37,520,000
2011	4,110	410	10.1%	\$29,500	\$2,899,664	\$37,900,000
2012	4,090	410	9.9%	\$30,500	\$3,279,759	\$38,100,000
2013	3,970	390	9.7%	\$31,456	\$3,279,895	\$39,930,000
2014	3,290	330	9.9%	\$32,900	\$4,123,035	\$40,700,000
2015	3,040	260	7.9%	\$34,201	\$4,350,000	\$41,730,000
2016	3,060	230	7.5%	\$35,750	\$4,400,000	\$42,456,000
2017	3,130	250	8.0%	\$36,948	\$4,650,000	\$43,182,000
2018	3,300	270	8.2%	\$38,250	\$4,700,000	\$43,908,000
2019	3,510	260	7.4%	\$40,000	\$4,850,000	\$44,634,000
2020	3,690	280	7.6%	\$41,503	\$4,900,000	\$45,360,000

Sources: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S; TN Dept of Revenue, Houston County Trustee, TACIR, [Woods & Poole 2015 State Profile](#), [GNRC Estimates](#)

Houston County has a labor market dependent on a few major employers, making the labor market somewhat unsteady. Property tax collections also decreased throughout the economic downturn. Retail sales slowed and as a result, sales tax revenue decreased. Both property tax and retail sales are projected to increase until at least 2020. In 2014, property tax surpassed a 10 year high with \$4,123,035. And in 2013, retail sales surpassed a 10 year high with \$39,930,000.

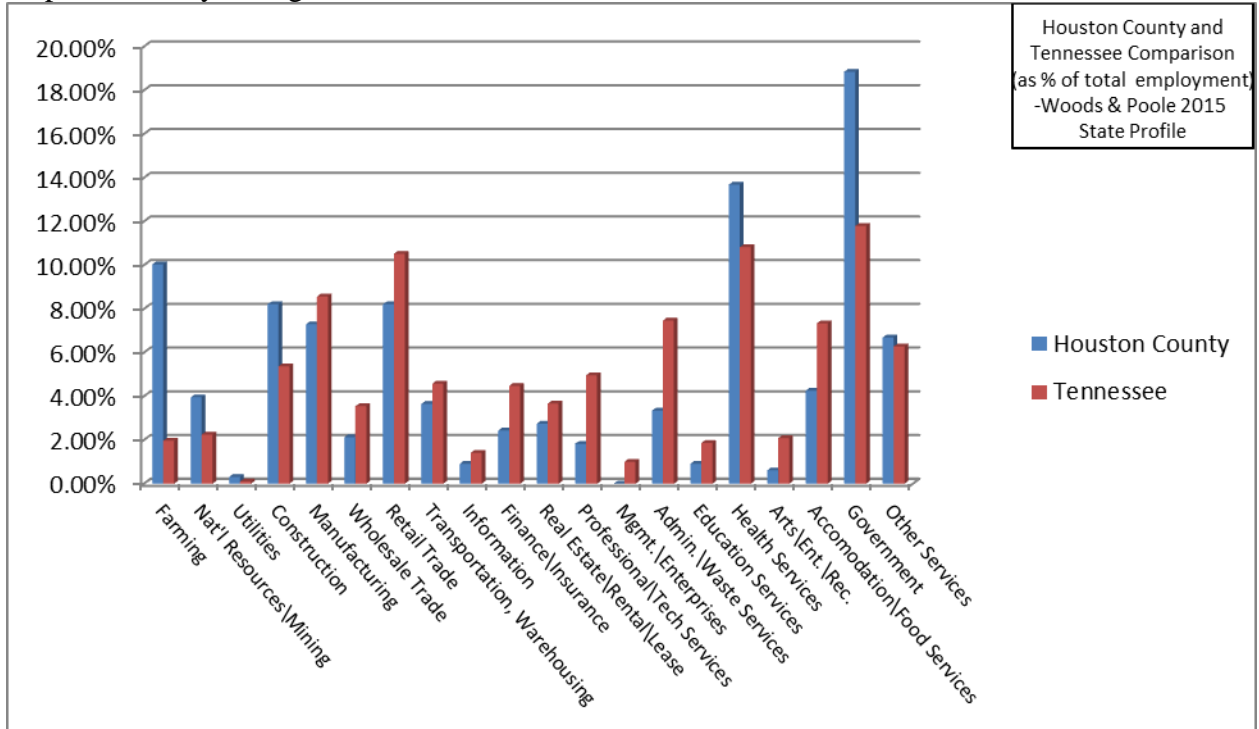


Chart 3 – Houston County Employment vs. State of Tennessee Source: Woods & Poole, 2015 TN State Profile

Houston County’s sector employment does not follow State of Tennessee trends, as shown above from the *Woods & Poole, 2015 TN State Profile*. Houston County far exceeds the State averages for employment in farming, government, and health services. In fact, farming employs approximately 8 percent more than state average, as well as government at 7 percent higher. However, the retail, professional/technical services, and administrative/waste services categories are significantly lower than state averages. Administrative/waste services is approximately 4 percent less, and several occupations are 3 percent less than average. Houston County, along with Cheatham, Dickson, Humphreys, Montgomery, Robertson, Stewart, Sumner, and Williamson Counties, are included under the State of Tennessee Department of Labor and Workforce Development in Labor and Workforce Investment Area (LWIA) #8. According to the Tennessee Department of Labor, the LWIA’s are “area clusters of counties whose labor markets and other employment related factors are similar” and provide workforce development and career services based on local needs.

Item 3: Characterization of the Solid Waste Stream

Elaborate on the region’s solid waste stream. Compare the current waste stream with trend anticipated over the next five (5) years, and discuss how this new total will be handled. Include in this discussion how problem wastes like waste tires, used oil, latex paint, electronics and other problem wastes are currently handled and are projected to be handled in the next five (5) years. What other waste types generated in this region require special attention? Discuss disposal options and management of these waste streams as well as how these waste streams will be handled in the future. Include in this discussion how commercial and industrial wastes are managed. Also, provide an analysis of any wastes entering or leaving the region, noting the source and amounts of such wastes.

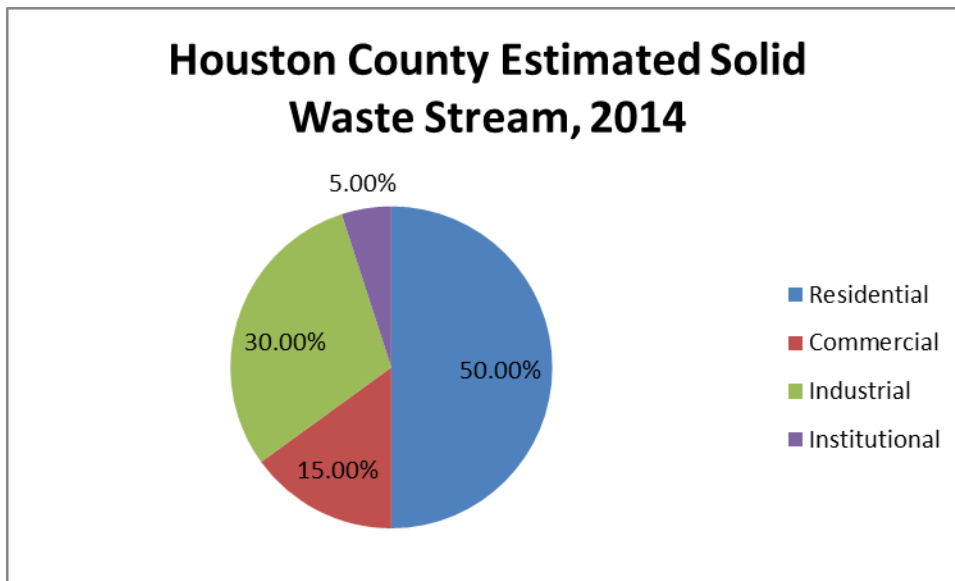


Chart 4 – Houston County Estimated Solid Waste Stream, 2014
Source: 2014 Houston County Annual Progress Report

As of 2014’s *Annual Progress Report (APR)*, Houston’s County’s waste stream is primarily residential waste, which comprises half of the total. Industrial waste contributed 30%. Commercial and institutional waste are the remainder of the sources, at 15% and 5%, respectively. This is a typical breakdown for rural counties.

The specific composition of the waste stream specific to Houston County has not been measured. A report prepared in 2008 by Tennessee State University for the Tennessee Department of Environment and Conservation conducted a municipal solid waste characterization study of waste being handled at two facilities in Tennessee: Cedar Ridge Landfill in Lewisburg (Marshall County), and Bi-County Landfill in Montgomery County. Samples were taken and weighed, and results categorized. The report, ***2008 Tennessee Waste Characterization Study***, noted that the two Middle Tennessee landfills surveyed had statistically significant differences in waste stream composition than the United States at large. As shown below, the two studied landfills had larger percentages of paper and plastics, but smaller percentages of food scraps, rubber, leather, textiles, and wood. All county waste streams will vary dependent on the mix of residential and commercial contributors, as well as the level of recycling efforts, however, the results of the TDEC/TSU study can be points of comparison for future measurement specific to Houston County.

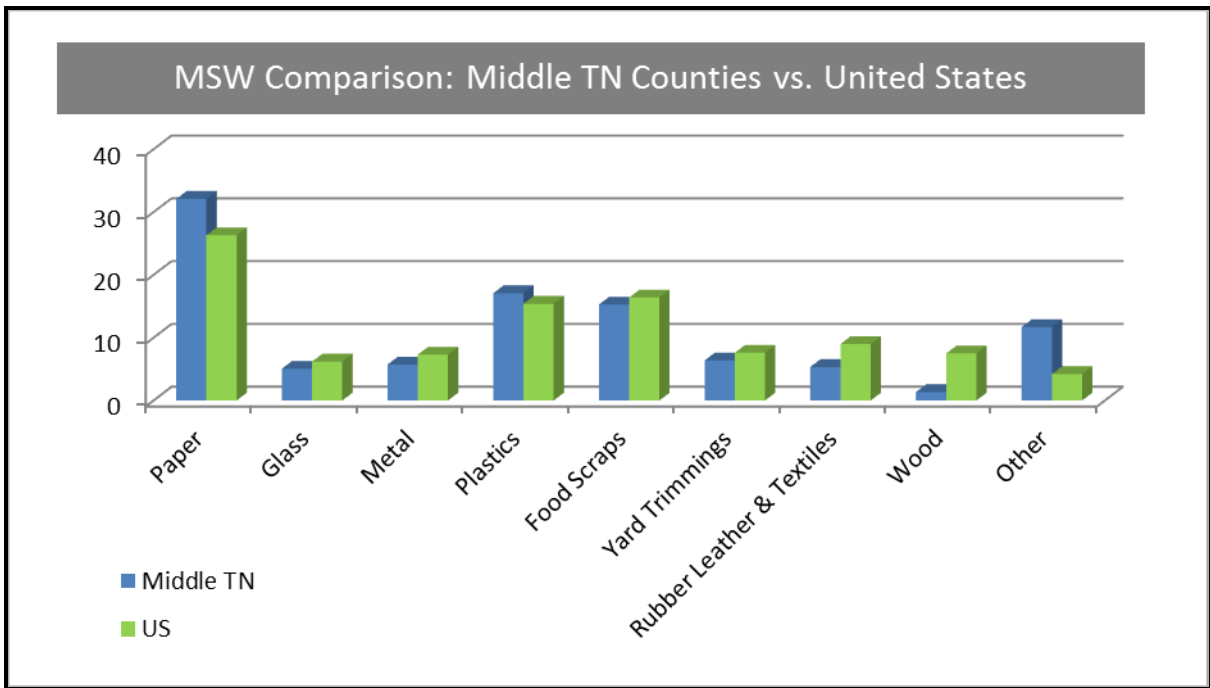


Chart 5

Houston County does not handle problem wastes, such as batteries, oil, tires, and antifreeze through its recycling program. Metals, plastic, paper, and textiles are collected at the Houston County Convenience Center. To assist with diversion efforts, and to help reduce the amount of recyclables going to the landfill, Houston County utilizes the TDOT Earth Day program to educate the county's youth on the importance of recycling, and the county provides educational materials to the students. Used printer ink cartridges, old cellphones and eyeglasses, and documents to be shredded are an example of what is collected at the event. Newspaper PSA's are sent to the media from the county to stress the importance of recycling. In addition, the Chamber of Commerce works with businesses to increase recycling by promoting recycling efforts.

Future efforts Houston County could or plan to implement:

- A new oil recycling program.
- The addition of a paint disposal and recycling program.
- Collection of other recyclables, such as e-scrap, batteries, and antifreeze.

Item 4: Solid Waste Collection System

Provide a detailed description of the waste collection system in the county and each municipality, including a narrative of the life cycle of solid waste from the moment it becomes waste (loses value) until it ceases to be a waste by becoming a useful product, residual landfill material or an emission to air or water. Label all major steps in this cycle noting all locations where wastes are collected, stored or processed, along with the name of operators and transporters for these sites.

Houston County has one centrally located convenience center located on Fire Tower Road that serves the County and cities. The County and cities of Erin and Tennessee Ridge do not provide solid waste collection service. Their residents have the option to contract directly with local private haulers, whose closest disposal options are also the convenience center/transfer station. These haulers include Tennessee Disposal Company, Jean's Trash Service, and Terry Waste Services. It is unknown how many citizens use private haulers; many choose to transport their waste directly to the County Convenience Center and Landfill. Due to the small geographic size, predominantly rural population, and budget feasibility, the County has no plans to add additional convenience centers. Any type of curb side collection must be done by companies that contract directly with citizens; increasing taxes to accommodate curbside collection would not be cost-effective.

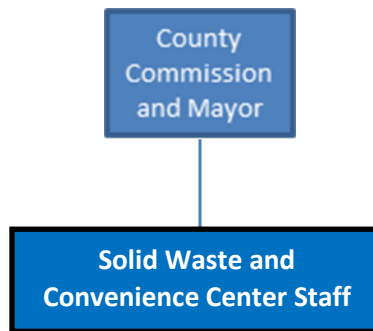
With the County projected to have a little to no population growth, the present system will remain adequate for several years. The County transports its municipal waste from the convenience center/transfer station to the Bi-County Solid Waste Landfill in Montgomery County. Bi-County and Houston County have a good relationship, and Bi-County has enough potential capacity to last well over eighty years (Table 8). However, at this time, their current capacity only permitted for approximately 2 more years. The County plans to continue using Bi-County for waste disposal for the foreseeable future, unless they are unable to expand.

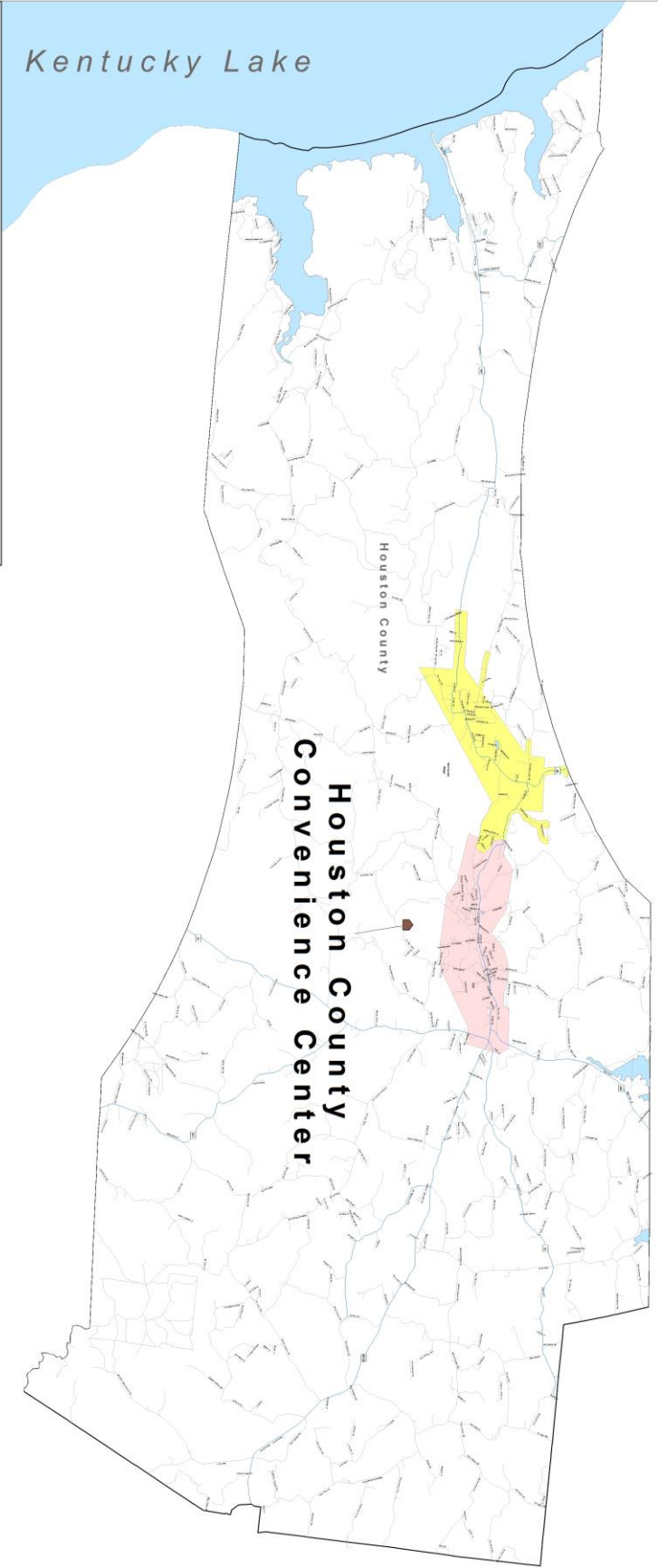
Item 5: Analysis of Existing Solid Waste System in the Region

*Provide organizational charts of each county and municipality's solid waste program and staff arrangement. Identify needed positions, facilities, and equipment that a fully integrated solid waste system would have to provide at a full level of service. **Provide a page-size, scaled county map indicating the location of all solid waste facilities, including convenience centers, transfer stations, recycling centers, waste tire drop-off sites, used oil collection sites, paint recycling centers, all landfills, etc.** Identify any short comings in service and note what might be needed to fill this need.*

Item 5: Analysis of Existing Solid Waste System in the Region

The County Commission and Mayor oversee the Solid Waste and Convenience Center staff. The Solid Waste and Convenience Center staff has two full time employees and one part-time employee working at the county's only location.





Houston County, Tennessee
Convenience Center

Houston Convenience Center
Classification
 Interstate
 U.S. Route
 State Route
 Local Road
 Railroad
 ERIN
 TENNESSEE RIDGE
 Parks/Public Land

Map Prepared by the Greater Nashville
 Regional Council
 501 Union Street, 7th
 Nashville, TN 37219-1705
 The data used for this map was provided
 by the Tennessee Department of
 Natural Resources. Regional Council makes no
 guarantee of the accuracy thereof.


 GREATER NASHVILLE
 REGIONAL COUNCIL

0 1 2 3 4 5 Miles
 0 1 2 3 4 5 Kilometers

9

Item 6: Analysis of Public Attitude of Solid Waste Management Program and Public Outreach/Education

Houston County wishes to grow the recycling program, and continues to take steps forward in reducing the amount of recyclable material sent to landfills. The County has worked over the last several years to increase diversion efforts by increasing recycling drop-off options. Continued education will assist in modifying the public's behavior over time, and eventually attitudes will follow once it becomes the standard. Education efforts are conducted with Houston County students, including an Earth Day program and flyers. Newspaper ads are provided for the general public. Recycling, composting, and littering are main topics covered by these numerous programs.

The overall effects of education and outreach programs should be measured over time, as receptiveness to new initiatives is not typically immediate. Examining the recycling rate in a temporal study (one done over time) is a way this can be measured. Encouraging the public to make environmentally conscious decisions is the goal of education and outreach. More visible options for recycling, as well as changes in policies and mandates, place those opportunities to the forefront. Measurable success comes from an increase in the amount diverted each year.

Item 7: Evaluation of the Waste Reduction Systems for Counties & Municipalities in Region

The Solid Waste Management Act of 1991 states that all regions must reduce the amount of waste going into Class I landfills by 25%. Amendments to the Act allow for consideration of economic growth, and a “qualitative” method in which the reduction rate is compared on a yearly basis with the amount of Class I disposal. Provide a table showing reduction rate by each goal calculation methodology. Discuss how the region made the goal by each methodology or why they did not. If the Region did not meet the 25% waste reduction goal, what steps or infrastructure improvements should be taken to attain the goal and to sustain this goal into the future.

Utilizing the two methods authorized by amendments to the Solid Waste Management Act of 1991 tends to show very different diversion outcomes.

Base Year Diversion, Houston County

Table 6

Year	Tons Disposed	Population	Tons Per Capita Diverted
1995	3,829	7,579	0.50
2009	3,982	7,855	0.51
2014	3,983	8,267	0.48

The per capita diversion rate increased from 1995 and 2009, however it decreased in 2014. The latest numbers does not reflect the increase in the rate of recycling, only the amount diverted due to the additional population. In 1995, the reported tonnage of waste disposed may be inaccurate due to possible overestimation or underestimation. However, the impact of diversion efforts since should not be discounted.

Real Time Diversion, Houston County

Table 7

	Tons Disposed	Waste Diverted (Tons)	Total Waste (Tons)	% Diverted
2009	3,982	25,883	29,865	86.7
2010	4,839	24,651	29,490	83.6
2011	4,597	24,621	29,218	84.3
2012	6,267	13,223	19,490	67.8
2013	4,839	12,585	17,424	72.2
2014	3,983	83	4,066	02.0

The county’s diversion rate has decreased during this period, but has exceeded 25% reduction each of the last five years, except for 2014. A major industrial recycler no longer reports to Houston County.

Item 8: Collection/Disposal Capacity and Projected Life of Solid Waste Sites

Table 8

Site Name	Current Capacity (tons/day)	Maximum Capacity (tons/day)	Projected Life of Facility (years)
Bi-County (Class I)	550 tons	1,000+ tons	2yrs permitted, 80+ years capacity

Houston County sends all of its waste to the Bi-County Landfill in Montgomery County. However, if private haulers utilize other landfills, it is not indicated on the origin report. Bi-County Landfill is an excellent option, providing it is permitted to utilize its very large capacity and a long projected life. Currently, however, the permitted capacity does not allow for much additional trash. If more space is not allowed, Houston and other counties will have to find another facility to send their solid waste.

Evaluation of the Waste Reduction Systems for Counties & Municipalities in Region

Table 9

Service Provider	Service Area	Population Served	Service Frequency	Tonnage Capacity	Service Type
Houston County	Unincorporated	8,440	7 Days/Wk	4,350	Convenience Center

The citizens of Erin and Tennessee Ridge have the option of contracting directly with private haulers for curbside pick-up or using the County Convenience Center. It is unknown how many use either method. The private haulers do not focus on recycling options. All municipal waste is transported to Bi-County for disposal. Due to the county having a small, predominantly rural, population, the County has no plans to expand their collection system. The County will likely continue to use Bi-County for disposal for its municipal waste, unless it is no longer available.

Item 9: Unmet Financial Needs and Cost Summary

Table 10 below details the current budget, as well as suggested feasible needs. An additional staffperson at approximately \$50,000 could be helpful to make the system operate more smoothly and provide more assistance. Additional recycling equipment could be added to increase diversion efforts by providing more options at the county's convenience center. Education could be bolstered by adding \$20,000 for programs to educate youth and local business of the importance of recycling.

Table 10: Expenditures and Revenues			
EXPENDITURES			
Description	Present Need \$/year (2013 APR)	Unmet Needs \$/year	Total Needs(Present + Unmet) \$/year**
Salary and Benefits		50,000*	50,000*
Waste Pickup			
Collection and Disposal Systems			
Equipment		100,000**	100,000**
Sites			
Convenience Center	309,922	\$50,000*	359,922*
Transfer Station			
Recycling Center			
Problem Waste Ctr.			
Compost Center			
Other Collection			
Landfills			
Site			
Operation			
Closure			
Post Closure Care			
Other Waste Disposal			
Administration (supplies, communication costs, etc.)			
Education		20,000*	20,000*
Public			
Continuing Education			
Capital Projects			
REVENUE			
Host agreement fee			
Tipping fees			
Property taxes	186,186		
Sales tax			
Surcharges			
Disposal Fees			
Collection charges			
Industrial or commercial charges			
Residential charges			
Convenience Center charges			
Transfer Station charges			
Sale of Methane Gas			
Sale of Recycled Materials			
Solid Waste Grants			
Other Governments and Citizens Groups	75,206		
Other sources: (Grants, bonds, interest, sales, etc.)			
Transfer from General Fund			
*Running Annual Cost; **One Time Purchase			

Item 10: Revenue Sources/Needs

Compare Revenue Sources for the Region's Current Solid Waste Programs with Projected Future Demands. Identify Any Potential Shortfalls in that Capacity

Identify all current revenue sources by county and municipality that are used for materials and solid waste management. Project future revenue needs from these categories and discuss how these needs will be met. *(Use Chart 9 as an example to present data)*

The primary source of revenue is from the general fund which is funded by county property tax and government special revenue. The solid waste program relies on these to fund its operations. The cities rely on the county to fund this service. Houston County remains conservative in its approach for funding new items based on what its budget allows. New initiatives, staffing, and equipment would need to be addressed in the future to make the solid waste program more effective.

Houston County does not currently offer a large array of solid waste services to its residents. Given the size of the county, one convenience center would seem to be adequate in addressing the needs of the residents. However, due to geography and logistics, it would be more efficient to have the center located on SR 147, SR 49, or Mobley Lane between Erin and Tennessee Ridge.

The main item of note involves lack of availability of recycling options (providing more bins and other recycling options and associated transport), including upgrading the operations with equipment and staff. The county could increase these if funds are made available. Grants would be needed to subsidize the initial purchases. However, a tax increase to support running costs of increased services tends to be unpopular, therefore a tax increase would not be a viable option. Unless some sort of direct incentive to county citizens is offered, a tax increase to fund additional programs would be difficult to pass on to taxpayers.

Item 11: Sustainable Goals Consistent with the State Plan

Discuss the region's plan for managing its solid waste system over the next five (5) years. Identify any deficiencies in that plan and offer recommendations for eliminating these deficiencies. Suggest and list the specific ways in which the region can improve its solid waste program to reach a level of waste reduction above that of the goal and provide long term sustainability to the current solid waste collection system. Show how the region's plan supports the statewide Solid Waste Management Plan.

No major changes are expected in the Region's Solid Waste Management Plan. Houston County's government reviews needs that are planned, along with other budgetary items. The County will continue its current education programs on appropriate waste reduction, management, and disposal. Education encourages positive waste management habits by the public, and provides them knowledge of the available options.

The efforts put forth by Houston County support the Statewide Solid Waste Management Plan. Objective 2, which is to increase recycling access and participation, and Objective 6, expanding and focus education and outreach, are two goals in particular that the county is working toward. Waste reduction and diversion is a common goal that their Solid Waste program intends to continually improve. This is dependent on funding from the County budget and TDEC grants to carry out existing activities, as well as add new initiatives. The challenge of balancing a budget with additional running annual costs to keep the program running would seem to be the biggest challenge, particularly with staffing facilities. Adding new services creates this budget issue many times, as well. County provided countywide waste and recycling pickup would be a difficult to impossible goal, and one that would require a tax increase, which would likely make it an unpopular decision. Ensuring that the current program has up-to-date equipment, continuing education, and working toward making the use of recycling more prevalent overall is recommended for Houston County in the next five years.

Sources:

- Re-trac Annual Progress Reports, 1995 and 2009-2014
- 2010 Solid Waste Needs Assessment, by Phil Armor, GNRC
- 2015 Woods & Poole Annual State Profile
- Tennessee Dept. of Labor and Workforce Development <https://www.tn.gov/workforce>
- Lisa LaRusch, Houston County Mayor's Office
- Jimmy Lowery, Houston County Trustee
- Tennessee Department of Revenue <https://www.tn.gov/revenue/>