

Clay County, Tennessee Solid Waste Planning Region



Solid Waste Needs Assessment

**Prepared by:
The Upper Cumberland County Development District
June 2013**

as required by The Solid Waste Management Act (T.C.A. §68-211-811).

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Solid Waste Management
401 Church Street, 8th Floor
Nashville, TN 37243-1533

INTRODUCTION

The *Solid Waste Management Act of 1991* requires Tennessee local governments to prepare and maintain a comprehensive plan for managing their solid waste efficiently. To ensure that such planning is based on a solid foundation of relevant and objective knowledge of local conditions, the Act requires that the Development District staff coordinate, conduct and maintain an assessment of the solid waste needs for each municipal solid waste planning region. This assessment shall be revised every five years (*T.C.A. 68-211-811*).

CATEGORIES OF INFORMATION REQUIRED:

- Demographic information and projections
- An analysis of economic activity within the region
- A characterization of the waste stream
- Projections of solid waste generation
- An evaluation of the collection systems within the region
- An evaluation of existing solid waste management facilities and capacities, and of any new or expanded facilities planned
- A statement of solid waste management goals that are consistent with the state plan
- An analysis of existing or potential waste flows within the region and between adjacent regions
- A comparison of the projected volume of generated and imported waste, with available and projected capacity to manage it, and identification of potential shortfalls in that capacity
- Any additional information the commissioner may require

ITEM 1

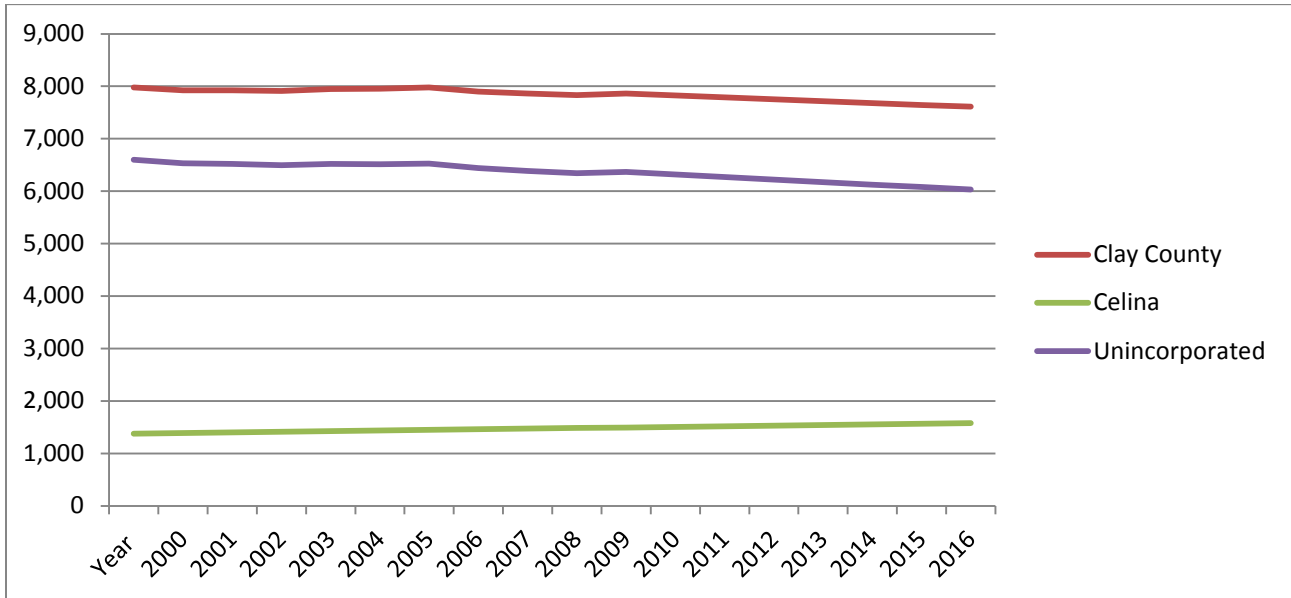
Provide a table and chart of the region's population during the past ten (10) years with a projection for the next five (5) years. Provide a breakdown by sub-table and sub-chart, or some similar method to detail county and municipal populations. Considering the trends, discuss the effect on the solid waste infrastructure needs over the next five (5) years.

Located on the Tennessee/Kentucky border, Clay County is unmatched in natural beauty and southern charm. Clay County is home to approximately 7,750 residents and has one incorporated city and county seat, Celina, TN. Dale Hallow Lake, stretching over portions of Clay, Pickett and Overton counties in TN and Cumberland and Clinton counties of Kentucky, is a key economic driver for Clay County and the entire Upper Cumberland. This incredible tourist destination combined with the variety of driving tours, Civil War Trails and local shops and restaurants in the Historic Downtown district help create the purest form of economic development, tourism.

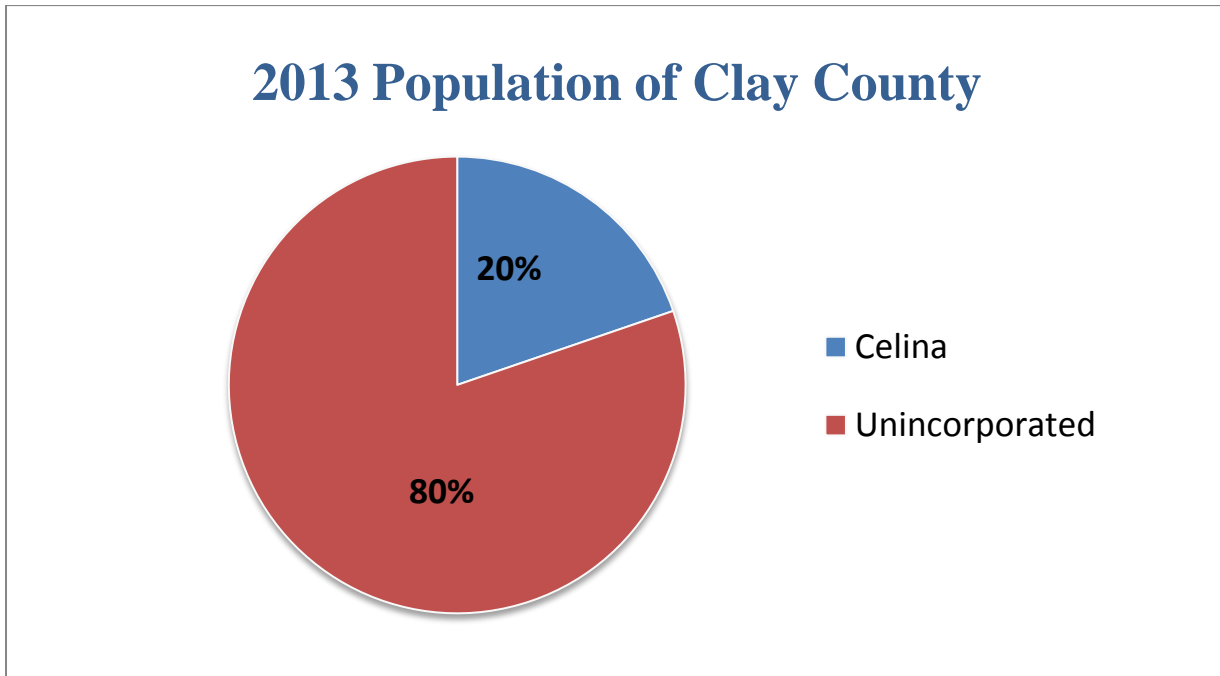
As you can see in the exhibits below, Clay County has experienced a slow but steady decrease in population between 2000 and 2013. Clay is the only county in the Upper Cumberland whose population has declined, and is expected to continue declining to an estimated 7,609 by 2017. Although tourism is increasing, it remains a seasonal activity. With the decreasing population of Clay County, it is anticipated that the solid waste infrastructure in place will be sufficient to meet their needs for the next five years.

CLAY COUNTY HISTORIC AND PROJECTED POPULATION TRENDS			
Year	Clay County	Celina	Unincorporated
2000	7,976	1,379	6,597
2001	7,921	1,391	6,530
2002	7,924	1,403	6,521
2003	7,909	1,415	6,494
2004	7,947	1,427	6,520
2005	7,954	1,439	6,515
2006	7,977	1,451	6,526
2007	7,901	1,463	6,438
2008	7,862	1,475	6,387
2009	7,830	1,487	6,343
2010	7,861	1,495	6,366
2011	7,825	1,507	6,318
2012	7,789	1,519	6,270
2013	7,753	1,531	6,222
2014	7,717	1,543	6,174
2015	7,681	1,555	6,126
2016	7,645	1,567	6,078
2017	7,609	1,579	6,030

Clay County Historic and Projected Population



The city of Celina has seen moderate population growth from 2000 to 2013 culminating to 1,531 residents in 2013 despite the overall decline in County population. Celina now accounts for 20% of the county’s total population, an increase from 17% in 2000.



Sources: Historic data – U.S. Census Bureau
 Projections: Data from the University of TN CBER.

ITEM 2

Provide a table and chart showing the region’s economic profile for the county and its municipalities for the last ten (10) years with a projection for the next five (5) years. This can be accomplished by using the following economic indicators:

- Taxable sales, property tax generation and per capita income
- Evaluation by break down of each economic sector
- County or municipal budgeting information
- Other commonly accepted economic indicators

Clay County has suffered significant setbacks in recent years. The table below reflects significant changes in the unemployment rate. Data on manufacturing jobs provides one potential cause to these drastic changes. In 2000 Clay county had 690 manufacturing jobs (down from 1900 in 1992) and only 200 in 2012. The demise of the apparel industry has accounted for the majority of this decline. It is projected that the unemployment rate, currently at 14.6%, will steadily decline to 9.5% by 2017.

Additional economic indicators such as retail sales and bank deposits, shown below in Exhibit 2, also support slow growth. A steadily increasing per capita income proves, that despite the current unemployment rate, residents’ quality of life is continually improving year-over-year. Clay County may capitalize on retiree recruitment and tourism developments relating to Dale Hollow Lake.

CLAY COUNTY HISTORIC AND PROJECTED ECONOMIC INDICATORS																	
Year	Labor Force Data				Non-farm Wage and Salary Employment									Per Capita Income (\$'s)	Property Tax Collections (\$'s)	Taxable Sales (\$000's)	Total Bank Deposits (\$000's)
	Total	Emp.	Unemployed		Total	Goods Producing			Service Producing								
			Total	Rate(%)		Total	Total	Mfg	Other	Total	Trade	Health	Gvt				
2000	3,750	3,240	510	13.6	2,860	1,410	1,370	40	1,450	240	380	650	180	\$15,113	NA	\$29,577	\$57,585
2001	3,250	2,350	900	27.7	2,120	690	680	30	1,430	220	350	660	200	15,324	NA	29,761	60,308
2002	2,710	2,350	360	13.3	2,060	680	640	40	1,380	210	290	690	190	15,985	NA	33,973	65,228
2003	2,720	2,400	320	11.8	2,130	770	710	60	1,360	240	180	690	250	16,565	NA	35,618	66,754
2004	3,720	3,470	250	6.6	2,170	800	690	110	1,370	230	230	700	210	18,445	\$1,859,083	36,304	66,028
2005	3,570	3,320	250	6.9	2,030	640	590	50	1,390	210	240	710	230	20,292	\$1,924,903	37,220	69,142
2006	3,770	3,470	300	7.3	2,140	630	580	50	1,510	210	250	710	340	19,951	\$2,145,904	39,710	73,635
2007	3,840	3,500	340	8.9	2,140	600	520	80	1,540	230	260	690	360	20,843	\$2,152,611	39,536	75,390
2008	3,640	3,310	340	9.2	1,960	480	450	30	1,480	240	260	640	340	21,974	\$2,209,907	42,077	75,654
2009	3,600	3,180	420	11.6	1,850	460	400	60	1,400	270	270	530	330	22,685	\$2,235,537	45,110	79,771
2010	3,630	3,230	400	11.0	1,810	430	380	70	1,380	300	290	480	310	22,803	\$2,363,234	42,674	82,952
2011	3,490	3,200	290	8.3	1,780	390	360	30	1,390	280	340	470	300	23,738	\$2,345,348	48,089	88,378
2012	3,480	3,110	370	10.7	1,710	290	250	50	1,420	250	410	490	270	24,459	\$2,452,651	47,388	91,734
2013	3,340	2,850	490	14.6	1,510	230	180	50	1,280	220	350	480	230	24,417	\$3,135,846	43,961	93,273
2014	3,390	2,980	410	12.0	1,550	260	200	50	1,290	230	350	480	230	25,986	\$3,227,623	45,885	97,785
2015	3,470	3,100	370	10.8	1,650	250	180	50	1,400	290	360	480	270	27,358	\$3,206,084	50,037	96,481
2016	3,460	3,120	340	9.9	1,660	270	200	50	1,390	310	330	480	270	28,168	\$3,276,322	51,337	96,951
2017	3,490	3,160	330	9.5	1,690	280	210	70	1,410	320	340	480	270	28,978	\$3,346,560	52,590	98,255

Sources: Historic employment data is from the TN Department of Labor and Workforce Development, per capita income data is from the U.S. Bureau of Economic Analysis, retail data is from TN Department of Revenue, bank deposits are from the FDIC, and property tax collections are locally derived. All projects are made by the UCDD staff.

ITEM 3

Elaborate on the region's solid waste stream. Compare the current waste stream with the 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.

Most of the solid waste produced in Clay County is produced from residential sources. The current infrastructure is in place to handle this waste stream, now and in the near future. Clay County recently installed a four-yard trash compactor. This is an improvement over dumpsters because the waste never gets wet, thus reducing the weight and cutting tonnage. Customers bring compacted trash to the dry receiver box, which holds 10-12 tons. Customers are pleased because they don't have to haul over as much trash. It also results in savings for the county—since the compactor was installed in 2010, the total tonnage has been reduced by 1,000 tons each year. Their plan is to place another dry receiver box in the county in the next year. This plan is conditioned upon the county's purchase of land to place the new box. Another positive result of using the dry receiver box is that the citizens interact with the attendants when throwing their trash away. This interaction seems to improve the citizens' recycling habits.

Since October of 2010 each household in Clay County may bring ten passenger tires a year to the tire trailer without paying a fee. Any amount over ten tires and the customer must pay a \$1.00 fee for each tire. Although 90 % of customers bringing waste tires won't have over ten, the policy keeps people who would be bringing in excessive numbers of tires from a tire shop or business to the sanitation department. The downside of this policy is that it creates a situation where these folks dump their tires rather than pay the fee. Clay County utilizes 90 % of the used oil it collects to heat their sanitation building. Customers bring the oil to the site and the county will also go to individuals and businesses to pick up their used oil, which it stores for the winter to heat their facility. Clay County receives little paint generally and very little latex paint. What little latex paint the county collects, it does through a hazardous waste event each year in the spring. The county advertises for the public to bring their oil-based paint and cleaners to their site, where a hazardous waste team from the State picks up the material and disposes of it. Clay County takes all its electronic waste to Scott's Recycling in Knoxville and receives no income for its sale. Insulin needles have become a matter of concern, since some physicians have stopped the practice of accepting old needles brought to them by patients because it costs the physicians to dispose of them. Sometimes these needles become mixed in with trash and present a safety issue for staff handling the waste. Another problem waste is an occasional plastic *Mountain Dew* bottle which has been used in a "shake and bake" method to make methamphetamine. These bottles have a cloudy, burnt appearance and the staff has been instructed in how to safely collect them. Generally, when waste is brought in a trash bag, it stays in the trash bag. The Clay County Sanitation

Department does not separate every piece of trash. They recycle all they can at their facility but if waste comes in a bag, it stays in the bag.

Regarding improvements over the next five years, Clay County plans to continue to slow down the illegal tire flow in the county, sending its employees to pick up dumped tires. Clay County expressed hope that the State could do something about the Liberty Tire Company, which it perceives has monopolized the waste tire industry and raised prices accordingly.

Regarding commercial and industrial waste, no business in Clay County is permitted to bring trash to the CCSD, which accepts household waste only. Businesses are required to take their waste to the landfill. The county makes available dumpsters or roll-off containers to any business which requests them. The business pays a \$60 fee each time the county empties the dumpster. If a business does not want a dumpster, it is their responsibility to take their waste to the landfill or arrange to have it picked up by a private hauler, like Trace Disposal Service (TDS), the business which operates the private landfill. TDS offers the same type of services regarding dumpsters to businesses and individuals in Clay County that the CCSD provides. TDS does contract work for the county, which has saved the county revenues of \$29,000 on trucks and their maintenance and \$12,000 in fuel. CCSD plans to conduct a three-month trial period to measure the results of hiring local contractors to bring waste to the CCSD, rather than hauling it to the landfill on the west end of the county.

Regarding wastes entering or leaving the region, Celina Recycling is a local business which buys metal in the region and then sells over 1,000 tons a year at Cooper's Recycling in Overton County. Sawmill wastes (dust, chips, etc.) come into Clay County and then go out, entering from mills from the entire region. These wastes are not accepted at the CCSD. These wastes go out via chips, mulch and sawdust.

ITEM 4

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.

The Clay County Solid Waste Department goes to each green box site twice a week to pick up recyclables and bring them back to the convenience center to be sorted and stored for shipment. The solid waste is picked up twice a week or more if needed and taken to the landfill.

Solid waste loses value when bagged and brought to the CCSD, which does not separate bagged trash. Bagged waste therefore never regains its value. CCSD does separate recyclables brought to its facility and stores them for shipment. The remaining solid waste is transported to the Upper Cumberland Landfill operated by Trace Disposal Service, a privately-owned landfill. The major site where waste is collected is at the Clay County Sanitation Department. The county operates Green Box sites at Free Hills, Hermitage Springs, Milestown, Moss, Pea Ridge and Willow Grove.

The Clay County Sanitation Department recycles. The City of Celina currently does not recycle; however, many citizens of Celina do bring their recyclables to the CCSD. Celina does provide a waste pick-up service to its residents. CCSD has offered to pick up recycling trailers within Celina if the City would purchase them. CCSD goes to every business in Clay County to pick up their recyclables. CCSD sets out wire bins to stabilize the boxes which businesses use to store recyclables, until the CCSD can come and pick them up. CCSD provides this service within Celina and throughout Clay County.



Clay County Sanitation Department (CCSD)



CCSD Receiver Box and Trash Compactor



Free Hills Green Box Site



Hermitage Springs Green Box Site



Milestown Green Box Site



Moss Green Box Site



Pea Ridge Green Box Site



Willow Grove Green Box Site



Upper Cumberland Landfill (TDS Disposal)



Working on New Cell at Upper Cumberland Landfill

ITEM 5

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 shortcomings in service and note what might be needed to fill this need.

The Clay County Solid Waste Department has seven full-time and eight part-time employees. The Town of Celina provides curbside trash pick-up for its citizens. The Green Box sites at Hermitage Springs, Milestown and Willow Grove each have one part-time employee who works 20 hours per week. The sites at Pea Ridge and Moss each have two part-time employees who work 20 hours per week, resulting in a full-time presence at those two sites. The Free Hills site currently has no attendant. The CCSD would like to provide an attendant there as part of its plan for the next five years. The CCSD does not currently accept brush waste because it does not have a chipper. If it had a chipper, it would be able to process wood waste for the county. Clay County needs another four-yard trash compactor and forty-yard receiver box. The plan is to place the new receiver box at either Moss or Pea Ridge, as these are the two busiest trash receptacles in the county after the Convenience Center.

Clay County

County Mayor



Solid Waste Director



Drivers / Workers

Celina

Board of Mayor & Aldermen

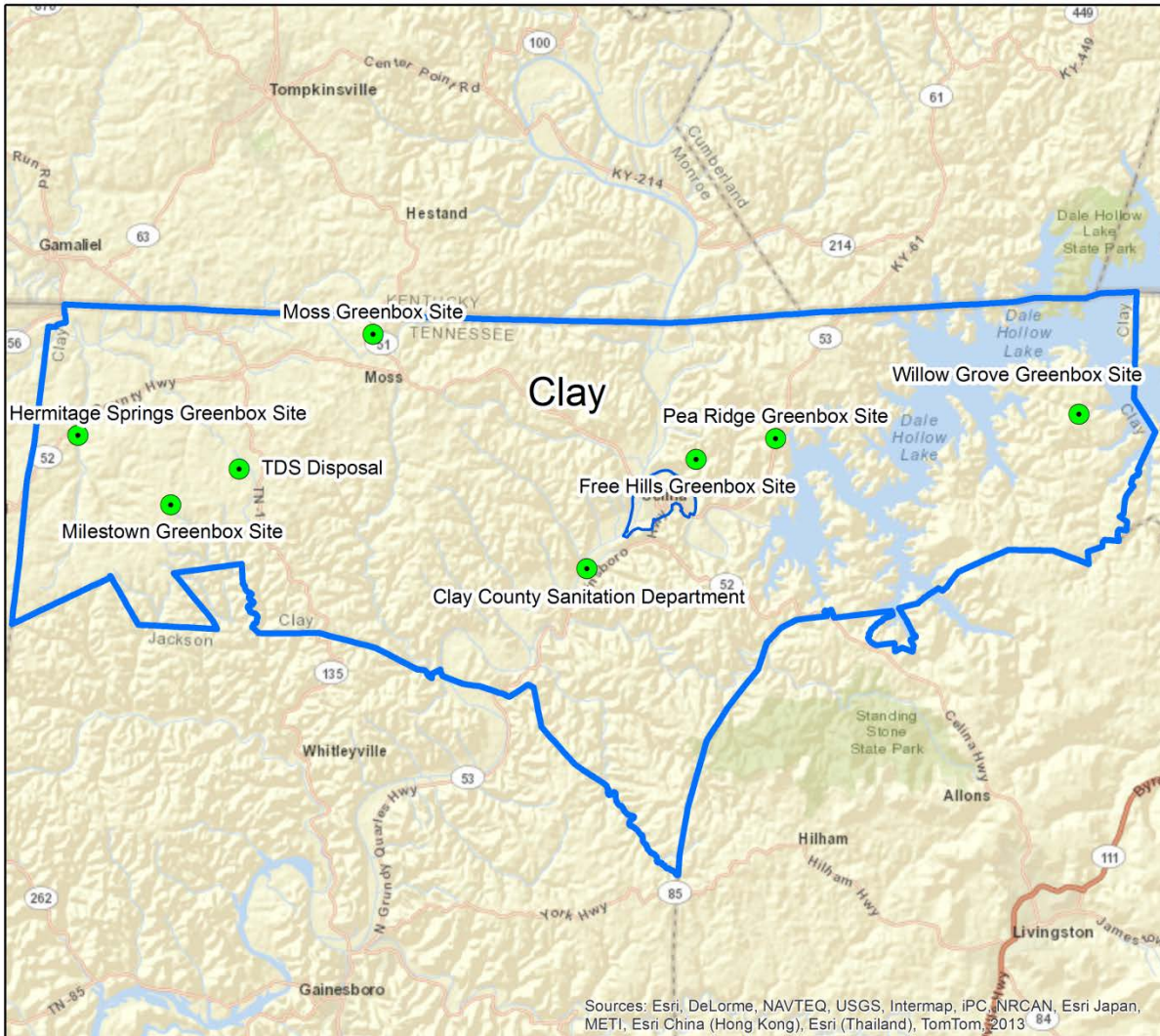


Sanitation Manager



Collectors

Clay County Solid Waste Facilities



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, INRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

OBJECTID*	SHAPE*	Name	Address	Facility_Type	County
5	Point	Milestown Greenbox Site	1900 Bakerton Road	Greenbox	Clay
6	Point	TDS Disposal	776 Terry Odel Road	Landfill	Clay
10	Point	Pea Ridge Greenbox Site	HWY 53 North	Greenbox	Clay
14	Point	Free Hills Greenbox Site	Community Center Lane	Greenbox	Clay
15	Point	Moss Greenbox Site	Tompkinsville HWY	Greenbox	Clay
16	Point	Hermitage Springs Greenbox Site	Rosedale Road	Greenbox	Clay
17	Point	Willow Grove Greenbox Site	Willow Grove Road	Greenbox	Clay
7	Point	Clay County Sanitation Department	169 Industrial Park Lane	Sanitation Department	Clay

- Solid Waste Facilities
- Administrative Boundaries



ITEM 6

Describe current attitudes of the region and its citizens towards recycling, waste diversion and waste disposal in general. Where recycling is provided, discuss participation within the region. Indicate current and ongoing education measures to curb apathy or negative attitude towards waste reduction. Are additional measures needed to change citizen's behaviors? If so, what specific behaviors need to be targeted and by what means?

There are a number of Clay County citizens who recycle at an advanced level; however, they are still the minority. The presence of the attendants at the collection sites encourages many citizens to recycle who otherwise probably would not. Watching the attendants separate the material prompts the citizens to do the same. Regarding waste disposal generally, attitudes vary at each of the sites. The Convenience Center has enjoyed much positive feedback from citizens who appreciate the quick and friendly service from the staff, who help them unload and separate their trash. CCSD also cleaned up the Convenience Center, which helps it operate more efficiently.

Apathy about solid waste management is still a problem with many citizens. Ongoing education measures include *Be Cool Recycle for Your School*, designed to get all area school systems to recycle. The main focus group is Celina K-8 which continues to show positive results. The Junk Art Contest encourages K-8 schools to participate in projects in which the students make art from recyclable materials. All entries are judged by grade level divisions and the winners in each division receive \$50.00 cash awards. They have their pictures taken and the pictures are placed in the local newspaper. The Christmas Ornament Contest is done in conjunction with TDOT's Litter program and is targeted to all Clay County K-8 schools. The students are encouraged to make Christmas ornaments using recycled materials. Ornaments are then brought to the Clay County Executive's Office to be judged. The winners receive \$50.00 cash prizes and have their pictures taken and placed in the local newspaper.

In addition to these ongoing programs, the CCSD proposes to conduct a demonstration in the fall of 2013 for all the K-8 Schools. The demonstration will offer comprehensive instruction about recycling, separating waste, breaking down cardboard boxes, etc.

ITEM 7

The Solid Waste Management Act of 1991 requires all regions to 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 the reduction rate by each of these goal calculation methodologies. Discuss how the region made the goal by each methodology, or why it 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.

County	Waste Reduction Goal Calculation Method	
	Compared to Base Year	Qualitative - Real Time
Clay County	9 %	32%
25% Waste Reduction Goal Achieved	No	Yes

ITEM 8

(a) Using the example shown below, provide a chart indicating current collection and disposal capacity by facility site and the maximum capacity the current infrastructure can handle at maximum throughput. Provide this for both Class I and Class III/IV disposal and recycled materials. Identify and discuss any potential shortfalls in materials management capacity, whether these are at the collection or processor level.

Site Name (s)	Current Capacity	Maximum Capacity	Projected Life of Facility
Upper Cumberland Landfill (TDS)	50 Tons Per Day	Dependent on expansion plans and customer levels	6 years

Trace Disposal Service is currently constructing a new large cell at its landfill, in anticipation of its six-year projected capacity life.

(b) Provide a chart or other graphical representation showing service area coverage by public and private waste collectors within the county and municipalities. Include provider's name, area of service, population served by provider, frequency of collection, yearly tons collected and the type of service provided.

Provider of Service	Service Area	Population Total Under This Service	Frequency of Service (Weekly, Bi-weekly, on call, etc.)	Annual Tonnage Capacity	Type Service (Curbside, Convenience Center, Green Box)
Clay County	County-wide	7,753	Anytime during the hours of operation	N/A	Convenience Center / Green Boxes
Celina	City-wide	1,531	Weekly	N/A	Curb-side
Private Haulers	County-wide	7,753	Weekly	N/A	Curb-side

ITEM 9

Complete the following chart and discuss unmet financial needs to maintain current level of service. Provide a cost summary for current year expenditures and projected increased costs for unmet needs.

EXPENDITURES			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$158,104	\$8,060	\$166,164
Transportation/hauling			
Collection and Disposal Systems		\$18,673	\$18,673
Equipment	\$5,000		\$5,000
Sites			
Convenience Center			
Transfer Station			
Recycling Center			
MRF			
Landfills	\$200,000		\$200,000
Site			
Operation			
Closure			
Post Closure Care			
Administration (supplies, communication costs, etc.)	\$2,000		\$2,000
Education			
Public			
Continuing Ed.			
Capital Projects			
REVENUE			
Host agreement fee			
Tipping fees	\$68,428		\$68,428
Property taxes	\$363,604		\$363,604
Sales tax			
Surcharges			
Disposal Fees			
Collection charges	\$41,810		\$41,810
Industrial or Commercial charges			
Residential charges			
Convenience Centers charges			
Transfer Station charges			
Sale of Methane Gas			
Other sources: (Grants, bonds, interest, sales, etc.)	\$28,478		\$28,478

ITEM 10

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 this need will be met in the future. Use Chart 9 as an example to present data.

Community	Current Revenue Source
Clay County	General Fund & Tire Fees
Celina	General Fund

Recycling is market-driven. The more cardboard CCSD can store during the “cheap price” periods the better off it is financially. Without more storage space, the county has to sell cardboard as it gets it. The only shortfall was recently, when the county saw an \$8,000 revenue drop. Mixed loads of recyclables sell cheaper than selling individual grades of plastic. Clay County recognizes a need for a “hub” facility in the region. The county has a serious need for space to keep multi-loads of recycling. Such a hub facility could be a regional drop-off for recyclables, with prices for the material set according to the market. Currently the CCSD is forced to sell partial recycling loads due to space constraints.

ITEM 11

Discuss this region’s plan for managing its solid waste system during the next five (5) years. Identify any deficiencies and suggest recommendations to eliminate deficiencies and provide sustainability of the system for the next five (5) years. Show how the region’s plan supports the Statewide Solid Waste Management Plan.

Clay County plans to reduce the amount of waste entering the Upper Cumberland Landfill by using the covered four-yard compactor and receiver boxes, which keep the waste dry and reduces the tonnage entering the landfill. Clay County also sees as a priority the monitoring of waste coming in from outside sources, brought by contractors from out of county and out of state. The county intends to continue to improve its recycling efforts. CCSD has improved by 19-20 % each year since 2010 and plans to build on the success it has achieved in recycling, with additional grant funding from the state and as the county's budget allows. The solid waste department plans to increase its recycling efforts by diverting wood products from the landfill and using the wood chips and sawdust for landscaping, heating sources and gardening. The department will continually look at new marketable materials, in addition to its current recycling strategy. There is a tire fee in Clay County, but there continues to be a limited market for tire diversion. Clay County eventually hopes to change all its Green Box sites to a 4-yard compactor and receiver box system, for greater efficiency under the Statewide Solid Waste Management Plan.

SOURCES

U.S. Census Bureau

University of Tennessee CBER

Tennessee Department of Labor and Workforce Development

U.S. Bureau of Economic Analysis

Tennessee Department of Revenue

Federal Deposit Insurance Corporation

Clay County Operating Budget FY 2012-2013

2012 Clay County Solid Waste Annual Progress Report

Upper Cumberland Development District GIS Department

Interviews with Clay County Solid Waste Director