

**Union County
Solid Waste
Needs Assessment
2009**

Item # 1 Demographic Information

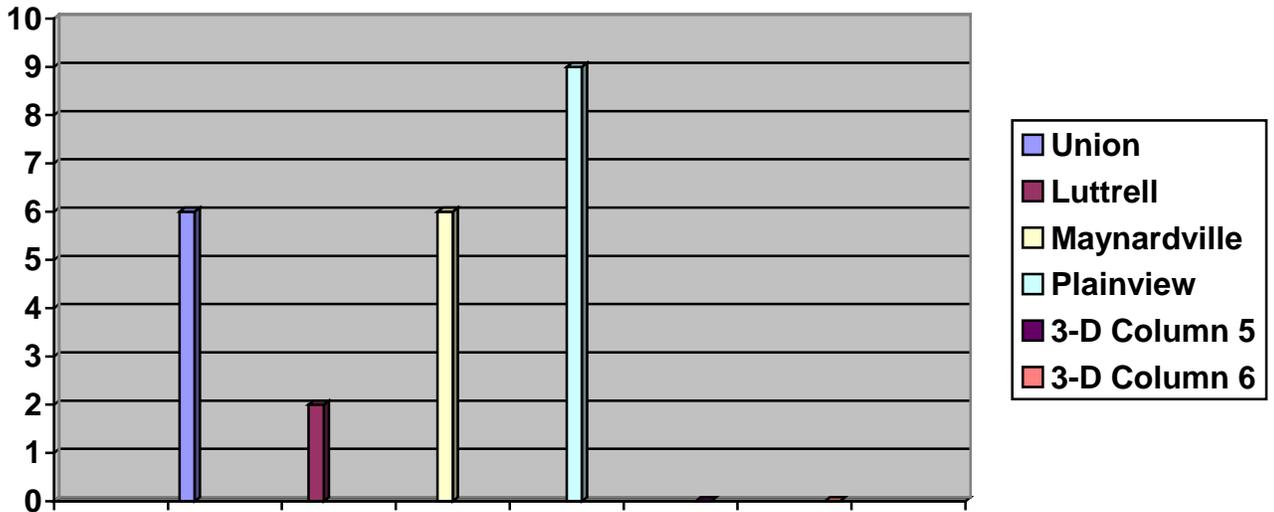
The following table and charts illustrate the population trends of the region, which includes respective municipalities, total municipal residents and county only residents. The 2004 and 2014 projects are based on existing trends for each jurisdiction as well as knowledge of the area.

The county as a whole is expected to continue to increase in population between 2000 and 2014. Union County had historically seen a larger increase in population than the State of Tennessee. However, within the last census date in 2000, the County's population resembles the States increase of about 6% growth rate. All reports suggest that the population growth rate should stay close to the same 6% rate over the next 10-14 years. The County will continue to grow in the future as more people look towards moving into the County for land. The City of Maynardville will continue to expand their growth boundaries and will bring more people into their city limits. The City of Luttrell should continue to see a small growth due to the terrain that is not conducive to large influx of residential growth. The City of Plainview should continue to see the largest growth partly due to their proximity to Knox County and the overflow of residential development in the area. The region of Union County is not going to see large increases in population in the future unless economic amenities are apparent, such as a new industrial plant that will affect population spurts. The rate of growth will vary depending on a host of local, regional, and national trends, as well as the employment of management tools that can affect this rate. These trends will impact countywide land use, housing, transportation and solid waste decisions.

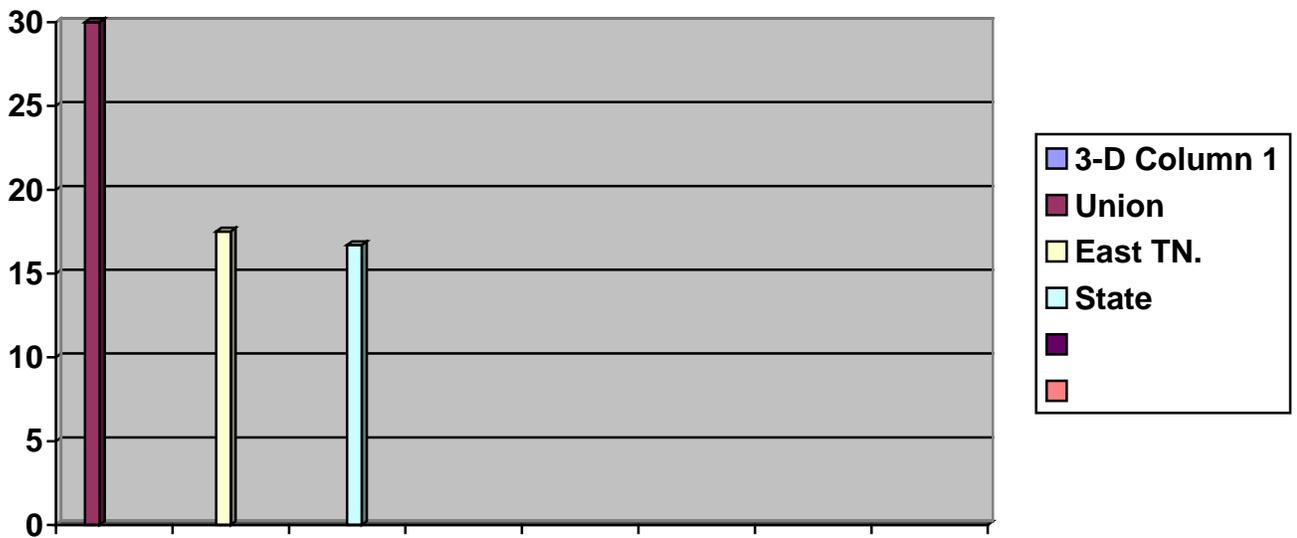
Jurisdiction	1990	2000/% change	2008 / %	2014 / %
Union County	13,694	17,808/30%	19,008 / 6%	20,148
Luttrell	812	915/12%	930 / 2%	949
Maynardville	1,298	1,782/37%	1,886 / 6%	1,999
Plainview	N/A	1,866	2,046 / 9%	2,230

Union County Communities

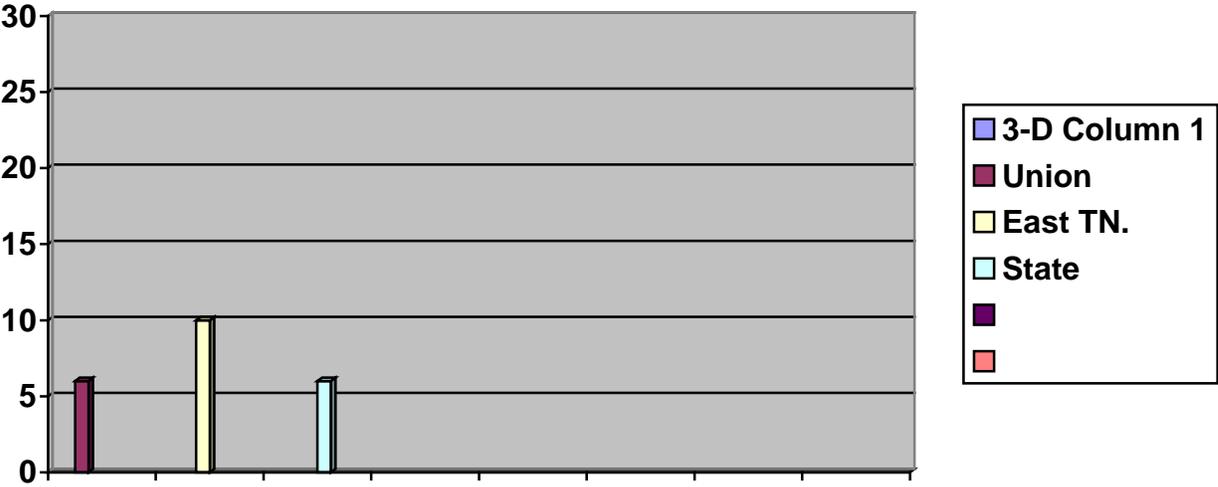
Population Change Percentage: 2000 - 2008



Population Growth: 1990-2000



Population Growth: 2000 - 2010



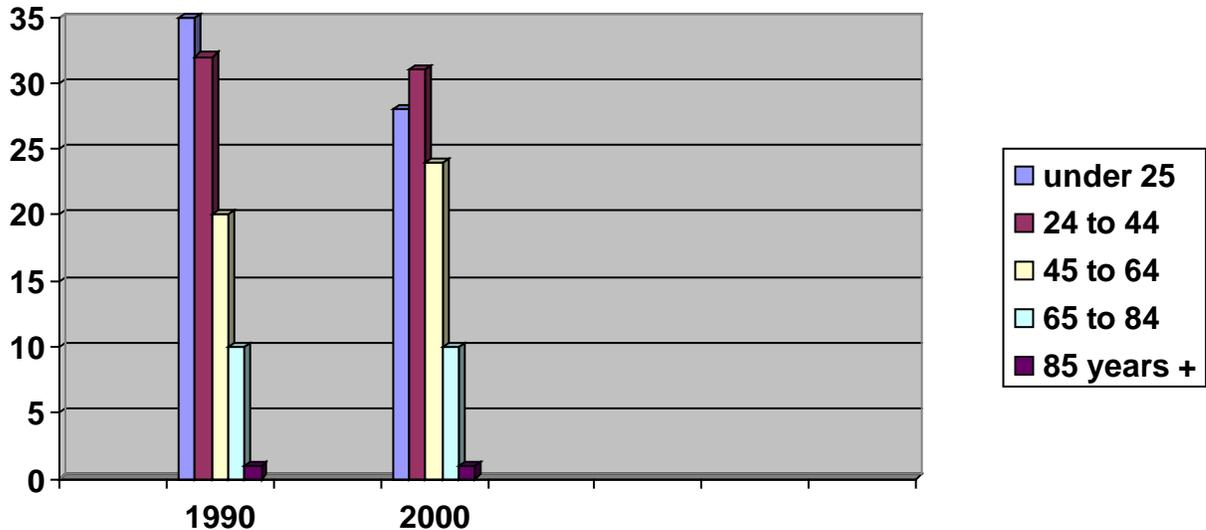
Item 2 Region Economies

The following table and chart show the per capita incomes for the county and each municipality in 1989 and 1999 and estimates for 2007, 2010 and 2015. The existing trends are expected to continue for each municipality and the county, though increases will likely be smaller in the future for most municipalities.

In looking at per capita incomes one must realize that this purchasing power is largely affected by the in-migration of working-age people, 25 to 64 years of age. Conversely, the higher proportions of young and old people are often associated with lower rates of per capita income growth. The median age in 1990 was 32.5 as compared to 2000 was 35.8.

Ages	1990 Number of People	Percent	2000 Number of People	Percent
Under 25	5,111	37.00	6,159	28.00
24 to 44	4,338	32.00	5,524	31.00
45 to 64	2,734	20.00	4,197	24.00
65 to 84	1,369	10.00	1,743	10.00
85 years and older	142	1.00	185	1.00

Age Distribution

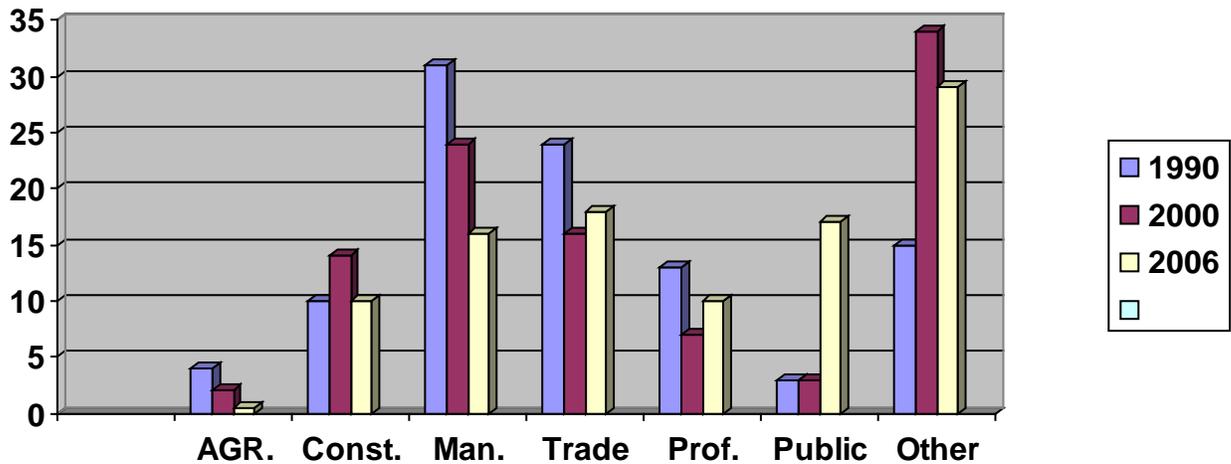


The estimates for the current per capita incomes show that most all entities have experience an increase in the purchasing power of their residents. Most residents are likely to use this increased purchasing power to spend more monies in the future. This is likely to mean an overall increase in solid waste generated by economic growth. However, this increase in solid waste will be from the consumer industries and not large industries that have the potential to create problem waste. Per capita increase of 38% between 1989 to 1999 and 37% between 1999 to 2006 would suggest that a 38% increase in per capita income should be realized from 2006 to 2015. However, a lot of the increase was the result of the labor force changing from farming to manufacturing that provided for the large increase in per capita income. The job market for the labor force is staying constant with consumer base jobs leading the way. This would suggest a lower rate of increase in per capita in the future due to lower paying jobs. Based on data in East Tennessee area one should realize about a 14 % increase between 2006 to 2015. The City of Plainview should continue to see a higher per capita then the other cities in the region largely due to the influx of younger, more educated residents that are located closer to jobs sources in Knox County.

Jurisdiction	1989	1999	2006	2010	2015
Union County	\$8,351	\$13,375	\$21,092	\$22,568	\$24,148
Luttrell	\$7,045	\$10,203	\$12,729	\$13,089	\$14,006
Maynardville	\$7,522	\$12,168	\$14,162	\$15,121	\$16,179
Plainview	N/A	\$13,383	\$16,697	\$17,829	\$19,077

The following table takes a look at the types of business in Union County that can have an effect in the amount of solid waste being generated. The table looks at the percentage of each classified work from 1990, 2000 & 2007. As the table shows the type of business has changed from manufacture to service industry. This basically results in less garbage that is produced in terms of large volume. The consumer industry will produce a lot of cardboard and paper that can be recycled. Also, the service industry usually results in less paying jobs.

Industry	1990	2000	2006
Agriculture, Forestry, Fisheries, Mining	4%	2%	<1%
Construction	10%	14%	10%
Manufacturing	31%	24%	16%
Trade and Finance	24%	16%	18%
Professional Services	13%	7%	10%
Public Administration	3%	3%	17%
Other (consumer industry)	15%	34%	29%



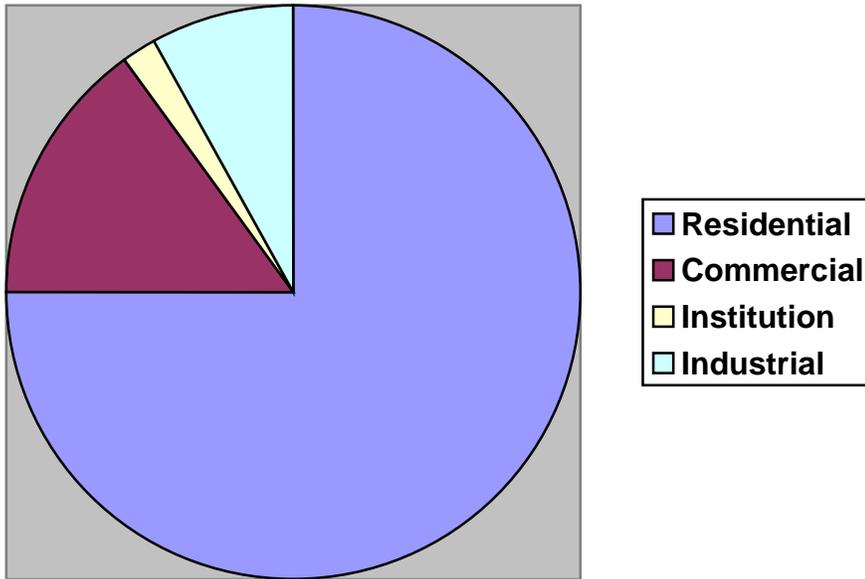
Service jobs tend to be the norm in the East Tennessee area. There has been a lot of concentration on creating more of a technology corridor in the area. However, service related jobs will still be the norm for the consumer-based society. The Region of Union County does not see a large increase in retirees that could affect the shift from taxes being spent more on environmental programs away from the schools in the future.

Another factor that will affect the solid waste stream is the private employment job growth that has not been adversely effected in Knox County due to the economic downturn. Union County has always been greatly affected by the jobs market in Knox County with over 65 % of the workers in Union County commuting and 84% of those commuting to jobs in Knox County. As jobs grow the housing market will grow that will create more residents in the area that will effect the solid waste stream.

Item # 3 Region Waste Stream

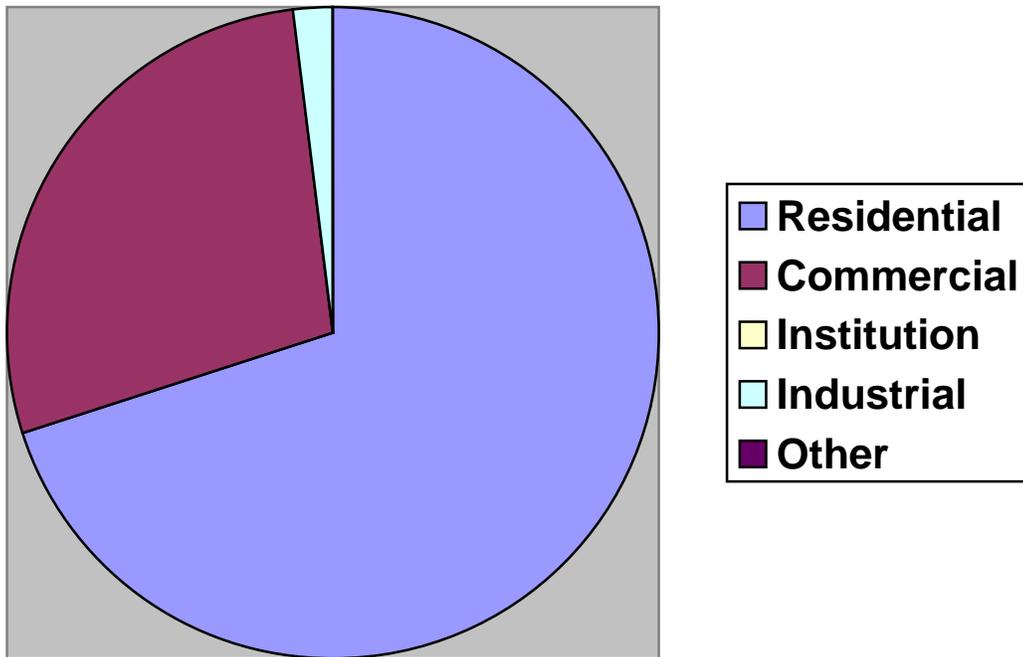
Union County solid waste stream is shown below.

Residential 75%
Commercial 15%
Institution 2%
Industrial 8%



The waste stream during the last needs assessment looked like the following.

Residential 70%
Commercial 28%
Institution 0%
Industrial 2%



This can be further broken down into the following:

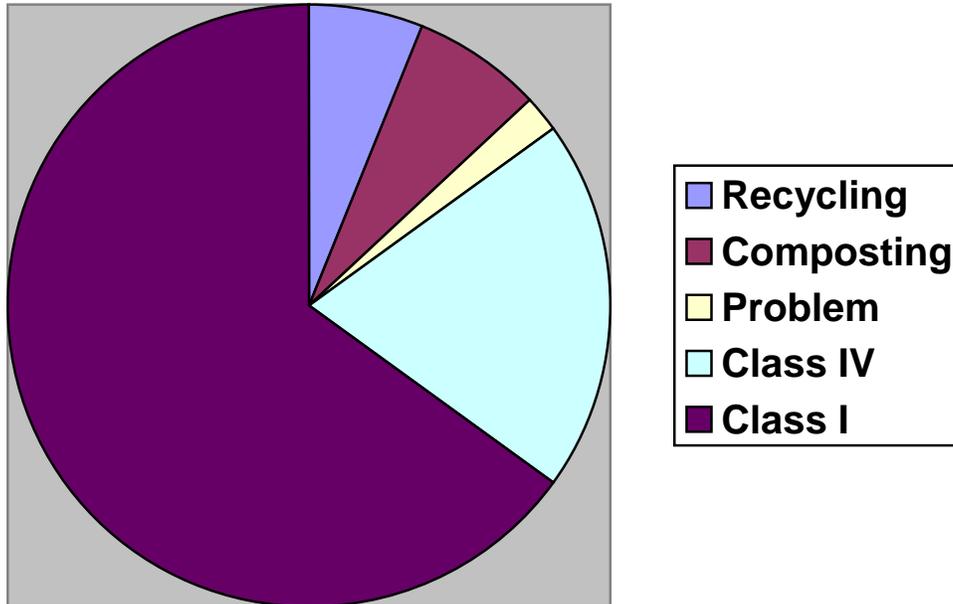
Recycling – 745 – 6%

Composting – 925 – 7%

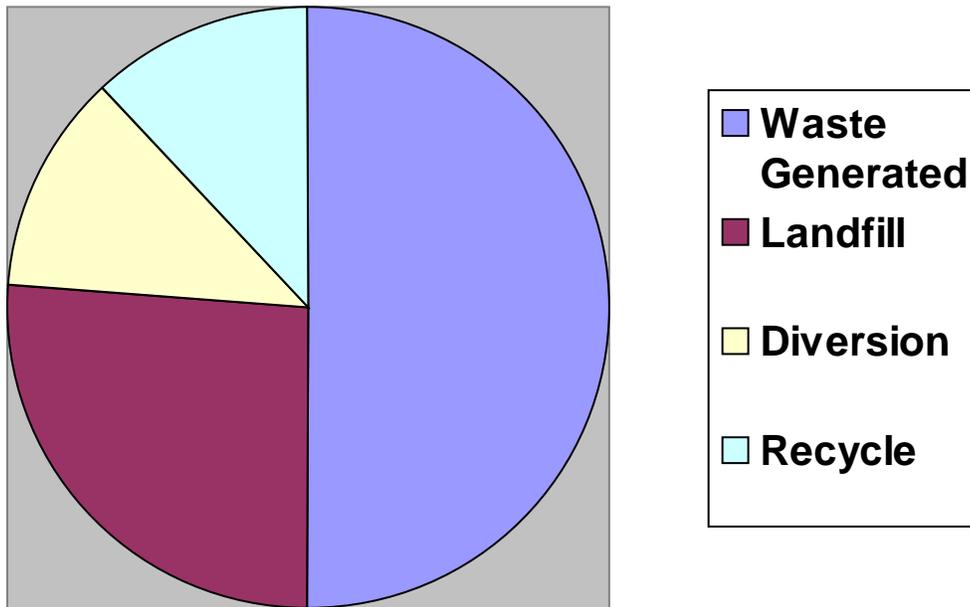
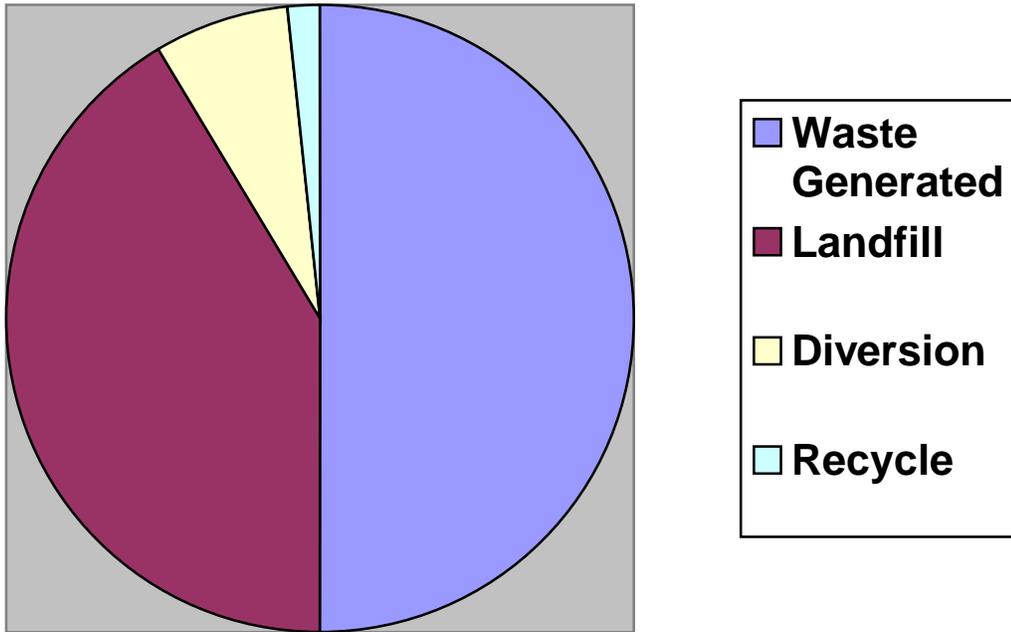
Problem Waste – 317 – 2%

Class IV Waste – 2,600 -20%

Class I Waste – 8,704 -65%



Waste Stream 1998 Totals



Waste Stream 2008 Totals

The pie charts show the percentage of waste that has changed from the 1998 needs assessment to the current needs assessment. Landfill waste was shown as 83% in 1998 and is now 52% of the waste. Diversion methods shown as 14% in 1998 are now shown as 24 %, Recycling efforts shown as 3% in 1998 are now shown as 24%. The chart shows that the generated waste has increased from 1998 to 2008 and that the tons per person has increased from .71 tons per to .88 tons per. This coincides with the increase in income earnings in the region. It should be noted that although the region is creating more waste per person, it is reducing the waste that is being land filled.

Union County does not have any waste that is entering the region and generated 19,008 tons of waste inside the region. All of Union County waste is leaving the region to privately owned regional landfills.

The components of solid waste are being handled the following way by the entities in the Union County Region.

Class I waste is being handled using (6) six convenience centers that are scattered throughout the county. All of the convenience centers have a trash compactor with a roll off container that is located in the center of the convenience center for use on both sides of the container. The containers are the property of Waste Management. Wolfe Creek Road Convenience Center has two compactors, due to its usage. The City of Plainview and the City of Luttrell residents use the Wolfe Creek Road Convenience Center. The City of Maynardville residents utilize Wolfe Creek, Hubbs Gove and Hickory Valley Convenience Centers. There are some very small mom and pop collection services that residents can utilize for the collection of their class I waste. That waste is taken to the convenience centers. The waste at the convenient centers is collected by Waste Management and transported to Chestnut Ridge or Volunteer Region Landfill. The waste is collected by A&A services by way of a contract with Waste Management. A&A services all six convenience centers with a roll-off truck. None of the cities in the region provide house to house collection of Class I waste. A total of 8,704 tons of waste was collected and transported to a Class I landfill for disposal.

C&D waste or Class IV waste is also handled by A&A services through a contract with Waste Management. A 40 cu. yard container that is owned by Waste Management is placed at the Wolfe Creek Road Convenience Center for residents to utilize. The waste is transported to Knoxville and placed in a Class IV landfill. No Class IV waste is handled at any of the other convenience centers and none of the cities provide services for the collection of Class IV waste. A total of 2,600 tons of waste was collected and diverted from a Class I landfill.

Waste Tires are collected at the Wolfe Creek Road Convenience Center. None of the other centers collect tires and none of the Cities in the region provide services for tires to be collected. The tires are placed onto an over the road trailer by the people that bring the tires to the center. A waste management employee will help the elderly or handicap to place the tires on the trailer, if needed. The employee will call when the trailer is full and Mac Tires will collect the trailer and take the tires to an end user. A total of 284 tons of tires were collected and diverted from a Class I landfill.

Used Oil is collected at all six of the convenience centers. The oil is then transported to the Wolfe Creek Convenience Center and placed in their used oil tank and used as heat for their paint processing building. During the summer, if the tanks are full at the paint processing facility, Safety Clean a private hauler collects the used oil. The Union County Highway Maintenance building also collects used oil and utilizes the used oil for the heating of their maintenance building. There are no other public used oil collection sites in the region. A total of 20 tons of used oil was collected in 2008.

E-Waste is collected at all six of the convenience centers by providing a site on the concrete for the material to be stored. About every two weeks Scott Recycling will go around the convenience centers and pick up the e-waste. The region use to place the waste in Gaylord boxes, but without proper covering weather damaged the Gaylord boxes. None of the cities in the region provide collection of e-waste for their residents. An estimated total of 18 tons of electronic waste was collected in 2008.

White Goods / metals are collected at the Wolfe Road Convenience Center in a 40 cu.yard open top. Residents are allowed to dump out their materials onto the concrete surface and the attendant places the material into the open top utilizing a tractor with a bucket. The container when full is taken to Phillips Metals in Knoxville by A&A. The open top is owned by the County. The cities do not provide any collection sites within the city limits. However, in cases of the elderly, the city will collect and transport the material out to the Wolfe Road Convenience Center. A total of 932 tons was collected at the Wolfe Road Convenience Center.

Brush / Compost materials are not collected at any of the convenience center sites. There is room at the Wolfe Road Convenience Center to accept brush in case of a natural disaster. The City of Plainview does own a chipper and provides that service to its residents. The brush is chipped on site and they don't have a place for collection. The other municipalities provide no brush service for its residents. A total of 2 tons was reported by the City of Plainview in 2008.

Sewer Sludge is not being collected at any of the convenience center sites. The City of Luttrell does land apply their sludge for farms in the area. The City of Maynardville also land applies their sludge. They however pay to have their sludge taken to Knoxville for the land application. A total of 909 tons was collected and diverted from a Class I landfill in 2008.

Paint is taken at the Wolfe Road Convenience Center. The paint cans are placed by the residents at the utility shed and then transported to the paint processing building by the attendant. The paint processing building is heated during the winter by used oil collected at the convenience centers. The paint collected is about 60% white based and is mixed together and utilized by the County maintenance department for a variety of activities, such as painting equipment at the play grounds and other projects. Union County Solid Waste has also used the paint on some of the recycling boxes at the Goodwill Recycling Drop-off site. No paint is collected at any of the Cities in the region. No tonnage was given in 2008 of paint collected.

Paper and cardboard is collected at each convenience center in 4 cu yard containers. Residents place their mixed paper into the containers that are provided by SP Recycling in Knoxville. SP Recycling also transports the waste out of the region by way of a front end loader truck. The County receives no money for these recyclables. The City of Luttrell also collects paper with a pull behind trailer that is permanently placed at city hall. Residents can come by and dispose of their mixed paper and cardboard. The City then transports the trailer to Hilltop Recycling in Union County and collects a small fee. The City of Plainview also has a pull behind trailer that sets at their fire hall. Residents can come by to dispose of their mixed paper and cardboard. The City also provides door to door collection of mixed paper and cardboard twice a month for its residents. The residents are expected to separate their materials and place them in bags. All of the material collected is then taken to the Wolfe Road Convenience Center. However, with the opening of the recycling drop off site in Maynardville by Goodwill Industries, the City may try to get a little revenue from the paper in the future. The City of Maynardville does not have any services for the collection of paper or cardboard for its residents. However, Goodwill industries has just open up a recycling drop off site in the City limits of Maynardville that will accept cardboard, mixed paper and plastic. The containers when full are picked up and taken to their Morristown facility for processing or directly to a processing facility in Knoxville. This has just opened up within the last two months. The region of Union County has placed paper shredders in all of the schools, county offices and health departments. The paper is then shredded and placed in small containers and picked up by County employees and transported back to Wolfe Road Convenience Center. 50% of the shredded paper is taken by SP Recycling and 50% of the shredded paper is used at the humane society for bedding. A total of 126 tons of paper products were collected by the region in 2008.

Plastic is currently not being accepted at any of the convenience centers. The City of Plainview does collect plastic and is currently taking it to Wolfe Road Convenience Center for disposal. The City of Luttrell collects plastic at their drop off site and takes it to Hilltop Recycling. The City of Maynardville does not collect plastic. The new Goodwill recycling drop off site in Maynardville will accept plastic and the City of Plainview will probably start taking their plastic to this site. Goodwill Industries is also working with the school system to collect their plastic milk jugs. The school system has switched from milk cartons to the plastic containers. No tonnage was report in 2008.

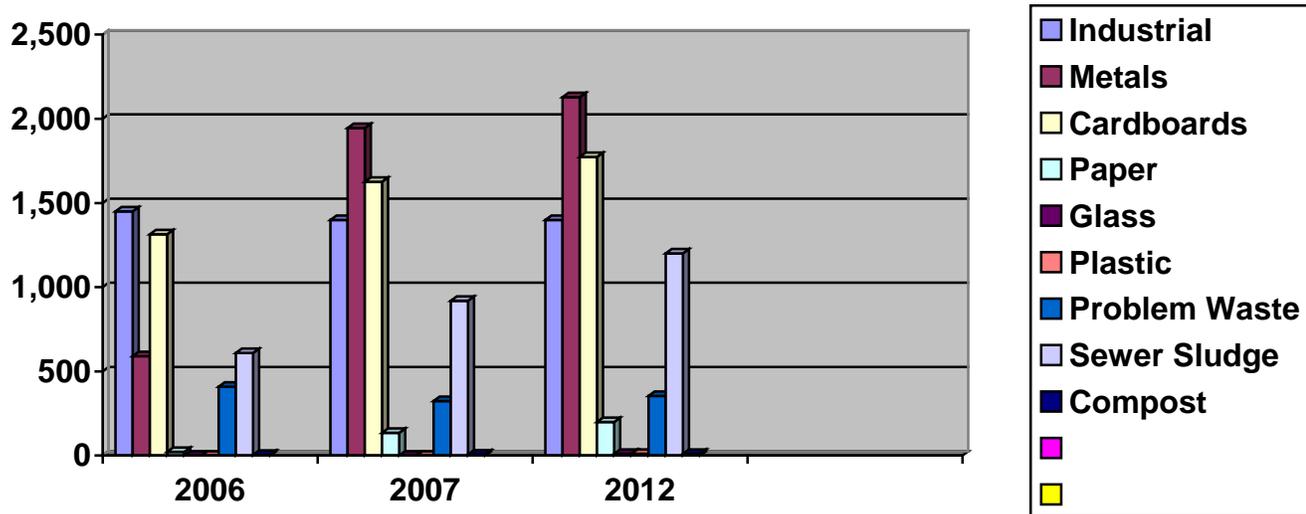
Glass is currently not being collected at any of the convenience centers in the region. None of the Cities are collecting glass in the region. No tonnage was reported in 2008.

Aluminum Cans are collected at all of the convenience centers and transported by A&A services by way of contract with the County and sells the material to Phillips Metals. The City of Luttrell collects their cans at their recycling drop off site and takes it to Hilltop Recycling and sells the materials. The City of Plainview collects aluminum cans house to house and at the recycling drop off site at the fire hall and takes it to Wolfe Road Convenience Center. Each school collects aluminum cans and sells the cans to provide funding for pet projects. The tonnage was reported in with the mixed metals in 2008.

Sanitation should increase in the future based on the .88 ton per person at 20,148 populations.

Material	Material - 2004	Material –2008	Material –2012
Sanitation - Land filled	10,932	8,704	7,808
Metals / White Goods	590	1,946	2,128
Cardboard	1,314	1,626	1,773
Paper	21	136	200
Glass	0	0	10
Plastic	0	0	10
Problem Waste – tires, batteries, automotive fluid, e-waste, paint.	410	325	355
Sewer Sludge	610	919	1200
Compost	4	7	10
Industrial by-product	1450	1400	1400
Class III/IV	3,500	2,600	2,836
Total Generated	18,831	16,744	17,730

The 2012 numbers were estimated based on the percentage of each line item to the tons generated for 2008. The numbers for plastic and glass are conservative assuming the market picks up to make it worth while to pick those items up. Based on the above predictions, you can see that the sanitation land filled will continue to go down by percentage of 58% in 2004, 52% in 2008 and 44% in 2012. Below is the numbers for materials that are not being land filled in either Class I or Class IV?



Item # 4: Waste Collection System and Life Cycle

The Region of Union County utilizes (6) six convenience centers to collect Class I waste for Union County and the municipalities of Luttrell, Maynardville and Plainview. Class I waste is then transported by Waste Management through a contract with A&A to Chestnut Ridge or Volunteer Regional Landfill. Class IV waste is collected at the Wolfe Road Convenience Center for the region of Union. The Class IV waste is then transported to Knoxville by Waste Management through a hauling contract with A&A for disposal. The Region of Union County has a contract with Waste Management until 2015 for the collection of their Class I and Class IV waste. Waste Management also provides assistance in the collection of recyclables by providing containers. The region of Union County is currently not being charged for the disposal of their waste and is being paid \$5,000 per month by Waste Management in accordance to the contract.

The citizens of Union County currently don't have any designated locations to drop off brush. In case of a natural disaster, the region does have room to accept brush at the Wolfe Road Convenience Center. The City of Plainview does have a brush chipper and will chip on site for their residents. The Cities of Luttrell and Maynardville don't have brush collection services for their residents. The rural nature of the region and the farms in the region has not placed a burden on the region to create a permanent site for brush disposal. Most residents take care of their brush on their own property.

Tires are collected at the Wolfe Road Convenience Center. The tires are placed into a trailer and hauled to an end user by the contracted company. None of the other convenience centers collect tires and none of the cities provide tire collection for their residents.

White Goods are to be taken at the Wolfe Road Convenience Center and are placed into a 40 yard open top by the attendant. When full the trailer is transported by A&A to Phillips in Knoxville. None of the cities provide collection of white goods for their residents.

Recyclable items are collected at all of the convenience centers in the area. The items are transported by different suppliers to the market place. The Cities of Luttrell and Plainview also provide a recycling drop off site for their residents. The City of Plainview also provides a house to house collection of recyclables twice a month. The City of Maynardville does not participate in any recycling efforts as a government entity. However, a private company has set up a recycling drop off site in the city limits that will take up the slack for the residents of Maynardville.

Used oil is collected at all of the convenience centers and transported to the Wolfe Road Convenience Center for use at the paint processing building for heating of the building. The County Highway department also has a used oil collection site and uses that collection for the heating of their maintenance garage. None of the cities provide drop off sites for used oil collection.

E-waste is collected at all of the convenience centers and collected by a private hauler for processing at their facility.

Section 5 – Blount County Reduction Rate

Current Year Generation	Current Year Disposal	Base Year Disposal	Current Year Population	% Reduction compared to Base Year	Real Time Comparison
16,744	8,704	8,065	19,008	<7%	48%

The Region has met their waste reduction goals in 2008. The region does not expect any problems in meeting these goals in the future. The programs in place should allow the region to continue to improve on waste reduction in the future.

Item # 6: 10-Year Regional Disposal Assurance in Union County Region.

Site Name	Annual Tons Disposed by Union County	SNL Permit #	Current Landfill Capacity (daily throughput)	Maximum capacity	Projected Life of Facility
Volunteer Landfill	3,000	SNL-76-0271	1,000 per day	Depends on compaction rate and Landfill Design and Operations Plan	24 years left
Chestnut Ridge Landfill	5,704	SNL-01-0160	1,500 per day	Depends on compaction rate and Landfill Design and Operations Plan	24 years left
Union County Landfill	0	SNL-87-0088	0	N/A	Not in Operation

The Union County Landfill is for the region of Union only. The landfill is remained permitted in case the contract with Waste Management is not renewed or it is to the benefit of the citizens of Union County. The other landfills mentioned above are operated as regional landfills.

Site Name	Annual Tons Disposed by Union County	SNL Permit #	Current Landfill Capacity (daily throughput)	Maximum capacity	Projected Life of Facility
Popular View Class III Landfill	2,600	DML-47-0057	73 tons per day	2,555 per day	15 years remaining

Public and Private Collection Service in the Union County Region

Service Provider	Service Area	Frequency of Service	Estimated average annual tons collected	Type of Service
Union County	County Wide	Four Days a Week	12,450	Convenience Centers
Luttrell	City Limits	Four Days a Week	818	Convenience Centers
Maynardville	City Limits	Four Days a Week	1,659	Convenience Centers
Plainview	City Limits	Four Days a Week	1,800	Convenience Centers

** Estimated tonnage is based on .88 tons per person time's population of entity.

Union County has six registered convenience center that are scattered throughout the region. All of the Convenience Centers operate as recycling drop off site. The sites handle white good/metals, small amounts of paint, e-waste, used oil, cardboard, newspaper, glass, plastic, batteries and tires. The operating hours are 9:00 – 5:00; M, W & F; 9:00 – 12:00 SA.

All commercial and industrial establishments contract out the collection of their waste with private haulers.

Item # 7: Solid Waste Management Infrastructure

Union County Solid Waste Authority

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$40,328	\$0	\$40,328.00
Transportation/hauling	\$0	\$0	\$0
Collection and Disposal Systems			
Equipment	\$0	\$41,000	\$41,000
Sites	\$0	\$0	\$0
Convenience Center	\$43,451	\$0	\$43,451.00
Transfer Station	\$0	\$0	\$0
Recycling Center	\$0	\$0	\$0
MRF	\$0	\$0	\$0
Landfills	\$0	\$0	\$0
Site	\$0	\$0	\$0
Operation	\$0	\$0	\$0
Closure – See total under post closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$0
Administration (supplies, communication cost, etc.)	\$14,725	\$0	\$14,725.00
Education	\$0	\$0	\$0
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$0
Total	\$98,504.00	\$0	\$139,504.00
Revenue			
Host agreement fee	\$60,000	\$0	\$60,000.00
Tipping fees	\$	\$0	\$0
Property taxes	\$108,412	\$0	\$108,412.00
Sales tax	\$0	\$0	\$0
Surcharges	\$0	\$0	\$0
Disposal fees	\$0	\$0	\$)
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$0	\$0	\$0
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0	\$0	\$0
Sale of Recyclables	\$11,138	\$0	\$11,138.00
Other sources: (Grants, bonds, interest, sales, etc.)	\$39,284	\$0	\$39,284.00
Total	\$218,834.00		\$218,834.00

Salary: Union County does not need any additional employees to run their current program. Any new increases in collection will be done with equipment that will offset the time spent by an employee.

Equipment: Open top containers are always needed to replace the recycling containers that are worn out. It would be nice to replace at least two per year at a cost of about \$1,000 for the small 4 cu.yd containers. The Region also needs to purchase another tractor to help in the operations of service. The cost of the tractor will be about \$35,000. The Region would also like to purchase a pressure washer that will help to keep the equipment they have clean and free of debris. The cost should be about \$5,000.

Site:

All other needs are being met at the present time and in the future.

City of Luttrell

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$8,000	\$0	\$8,000
Transportation/hauling	\$0	\$0	\$0
Collection and Disposal Systems			
Equipment	\$0	\$25,000	\$25,000
Sites	\$0	\$0	\$0
Convenience Center	\$0	\$0	\$0
Transfer Station	\$0	\$0	\$0
Recycling Drop Off Center	\$200	\$0	\$200
MRF	\$0	\$0	\$0
Landfills	\$0	\$0	\$0
Site	\$0	\$0	\$0
Operation	\$0	\$0	\$0
Closure – See total under post closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$0
Administration (supplies, communication cost, etc.)	\$0	\$0	\$0
Education	\$0	\$0	\$0
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$0
Total	\$8,200	\$25,000	\$33,200
Revenue			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$0	\$0	\$0
Sales tax	\$40,000	\$0	\$40,000
Surcharges	\$0	\$0	\$0
Disposal fees	\$0	\$0	\$0
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$0	\$0	\$0
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0	\$0	\$0
Sale of Methane Gas	\$0	\$0	\$0
Other sources: (Grants, bonds, interest, sales, etc.)	\$0	\$0	\$0
Total	\$40,000	\$0	\$40,000

The City of Luttrell would be interested in a brush chipper to provide that service for its residents. All other services are being met at the present time.

City of Maynardville

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$3,300	\$0	\$3,300
Transportation/hauling	\$0	\$0	\$0
Collection and Disposal Systems			
Equipment	\$0	\$0	\$0
Sites	\$0	\$0	\$0
Convenience Center	\$0	\$0	\$0
Transfer Station	\$0	\$0	\$0
Recycling Center	\$0	\$0	\$0
MRF	\$0	\$0	\$0
Landfills	\$0	\$0	\$0
Site	\$0	\$0	\$0
Operation	\$0	\$0	\$0
Closure – See total under post closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$0
Administration (supplies, communication cost, etc.)	\$0	\$0	\$0
Education	\$0	\$0	\$0
Public			
Continuing Education			
Capital Projects	\$3,300	\$0	\$3,300
Revenue			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$0	\$0	\$0
Sales tax	\$395,000	\$0	\$395,000
Surcharges	\$0	\$0	\$0
Disposal fees	\$0	\$0	\$0
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$0	\$0	\$0
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0	\$0	\$0
Sale of Methane Gas	\$0	\$0	\$0
Other sources: (Grants, bonds, interest, sales, etc.)	\$0	\$0	\$0
Total	\$395,000	\$0	\$395,000

All needs are being met in the present and future.

City of Plainview

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$1,500	\$0	\$1,500
Transportation/hauling	\$0	\$0	\$0
Collection and Disposal Systems			
Equipment	\$0	\$0	\$0
Sites	\$0	\$0	\$0
Convenience Center	\$0	\$0	\$0
Transfer Station	\$0	\$0	\$0
Recycling Center	\$0	\$0	\$0
MRF	\$0	\$0	\$0
Landfills	\$0	\$0	\$0
Site	\$0	\$0	\$0
Operation	\$0	\$0	\$0
Closure – See total under post closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$0
Administration (supplies, communication cost, etc.)	\$0	\$0	\$0
Education	\$0	\$0	\$0
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$0
Total	\$1,500	\$0	\$1,500
Revenue			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$0	\$0	\$0
Sales tax	\$40,000	\$0	\$40,000
Surcharges	\$0	\$0	\$0
Disposal fees	\$0	\$0	\$)
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$0	\$0	\$0
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0	\$0	\$0
Sale of Methane Gas	\$0	\$0	\$0
Other sources: (Grants, bonds, interest, sales, etc.)	\$0	\$0	\$0
Total	\$40,000	\$0	\$40,000

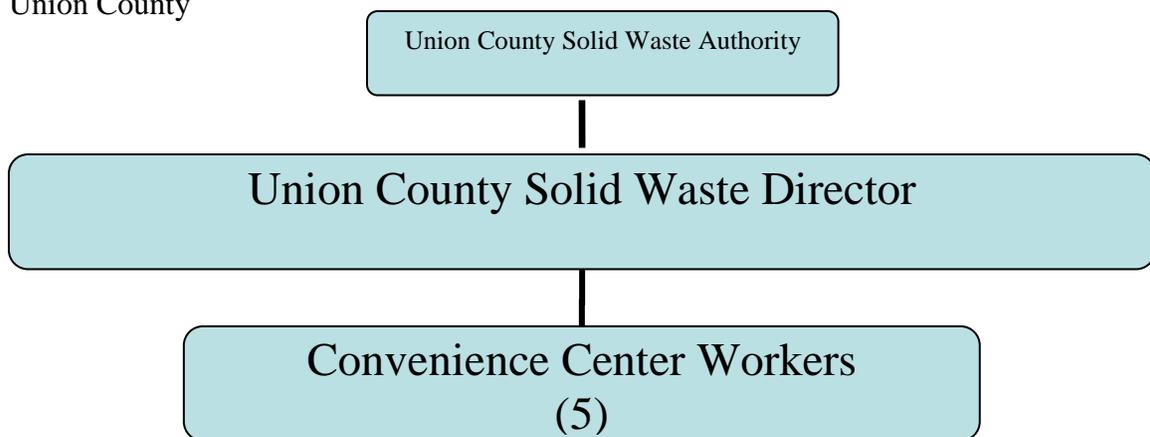
All needs are being met in the present and future.

Item # 8: Solid Waste Department Organization and Location

Union County

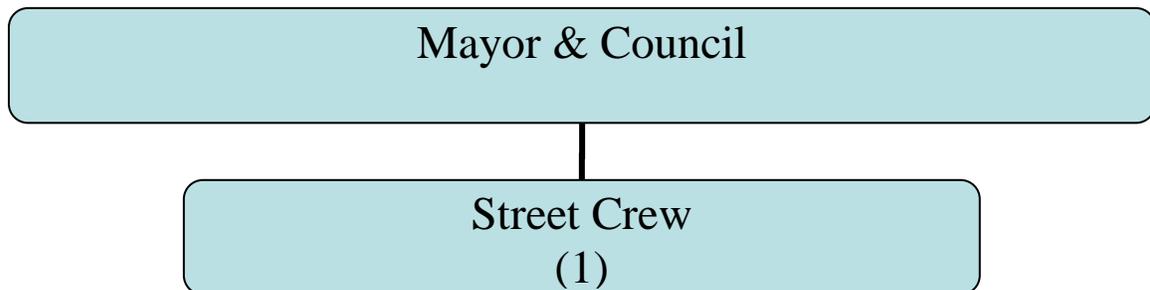
Staffing for Union County Solid Waste is 10 workers. The six convenience centers have one attendant with the attendant at the Wolfe Creek Convenience Center also is the Manager of the Union County Solid Waste.

Union County

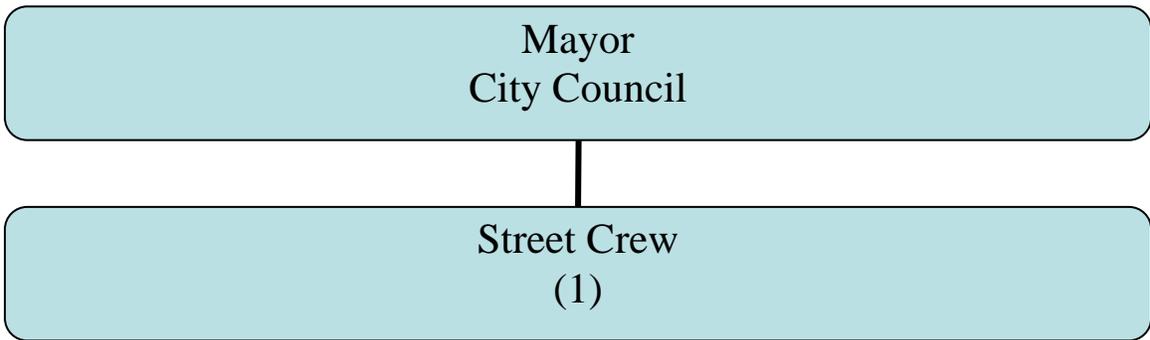


Luttrell

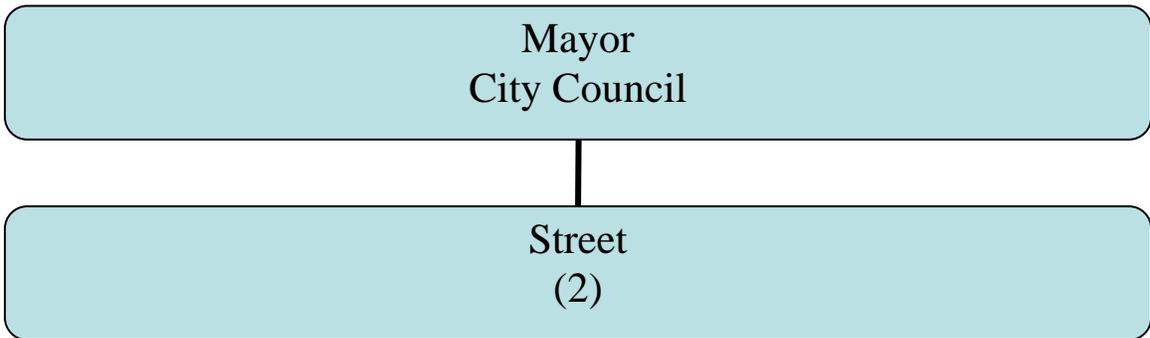
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Plainview



Maynardville



Item # 9: Future Waste Management Needs

Union County Region

Collection

Equipment	Operational Use	Estimated Cost	Potential Revenue Source
Containers	Recycling	\$1,000	Grant
Tractor	Wolfe Road CC	\$25,000	Grant
Pressure Washer	Wolfe Road CC	\$5,000	Contract Revenues
Brush Chipper	City of Luttrell	\$25,000	Grant

Disposal

Site	Operational Use	Estimated Cost	Potential Revenue Source
None			

The Region of Union has most of its waste management needs met by way of a contract with Waste Management. The Contract provides the Region of Union \$5,000 per month and Waste Management is responsible for the employee at the Wolfe Road Convenience Center. Waste management is also responsible for the collection and transportation of Class I and Class IV waste. The contract with the region is good until the summer of 2015. Union County region has a landfill that can be opened if needed in the future and that is why they have a deal with Waste Management. As shown in the text of this report, all of their solid waste needs are being met at the present time. The only area that the region is lacking is that of collection of glass and plastic recyclables. When the market improves for these recyclables, the region will start to collect these items. The region is pretty much locked in to working out a new contract with a private entity. The upstart cost to begin their own operations at the closed landfill and provide transportation is too much for the region.

The City of Luttrell would like to be able to provide some kind of chipping service to its residents. It would pattern their program to that of Plainview by chipping on site. The City of Luttrell will need to purchase a brush chipper in the future to start that program.

The City of Plainview will continue to operate their program, but will look at different avenues of funding for their recyclables collected. They are looking at Goodwill Industries to help in this endeavor. No new equipment of services is needed or planned for the future.

The City of Maynardville needs to start some kind of recycling program. However, funding is very limited that will delay such action in the future. Also, the emergence of Goodwill Industries developing a recycling drop off site within the city limits may take care of that need in the future.

Item # 10: Residents Attitude and Participation

No surveys have been done to measure the public's attitude of Union County residents concerning support for environmental programs. The residents that are recycling are impressed with the program and the ease that the County and the Cities have made if for them to recycle. The ease of the program should make everyone willing to recycle, but the mindset is still not there in the older population. Recycling rates have increased in the region and the percentage of waste being disposed of in a Class I landfill has decreased. The region has just recently begun providing some recycling programs in the school system within the last five years that will help to provide more participation in the future. The region has always told the kids that they need to divert waste from the landfill, but until recently had not given them any programs to show them how. This has proved successful in that most teens when you talk to them think that littering is very un-cool and are concerned with the future of the environment. As these students continue to get older and have families of their own, recycling participation will continue to grow. In looking at the recycling program, it is my belief that the Region of Union County will be able to handle this growth and has a good base from which to expand in the future.

Item # 11: Regional Solid Waste Plan / Executive Summary

The Union County Region's plan for the next five years is to continue to find ways to expand services within their recycling program. As part of the needs assessment, I will take a look at every area of the solid waste stream to give my thoughts on the needs in those areas.

Class I waste is currently being handled in the region by a network of convenience centers that also operate as recycling drop off sites. The Region pays for five attendants and Waste Management through a contract pays for the attendant at Wolfe Road. As shown on the attach map the convenience centers have been strategically placed throughout the region. A five mile radius shows that every section of the county can be reached by a convenience center. The region has been very proactive in building convenience centers around growth areas with the construction of three convenience centers within the last three years. The lack of any major dumps in the area illustrates that these convenience centers are taking care of the need for Class I disposal. Budget constraints will probably keep the cities from looking at house to house collection of class I waste within the next five years and right now I don't see a big issue on them not being able to do this. The disposal of Class I waste through a contract with Waste Management has saved the County a lot of money in the past and will continue to do so in the future. The County does not have to maintain a fleet of vehicles or provide the containers needed to transport the waste out of the region. The county does not have to pay a tipping fee and is actually receiving \$60,000 a year paid by Waste Management. The contract will expire in 2015 that will take us through another needs assessment. Regional competition for waste suggests that Union County should not have a problem in renewing a contract for the collection and hauling of their waste. The Union County Region still has a landfill that is permitted, but I just don't see how the region could afford to open up and maintain the landfill on their own. Maybe in the future they could contract out that landfill to operate as a regional landfill, but until the existing contract is up that is not something the County needs to worry about.

Class IV waste is being collected at Wolfe Road Convenience Center and is being taken care of through the contract with Waste Management. The Region does not have to pay to collect or haul the waste out of the region for disposal and this provides a good diversion of waste from a Class I landfill. There is no need to change anything that is going on in the collection of this waste. We might need to try a pilot program at one of the other convenience centers to see if there would be a large need for expanding the Class IV collection to other centers. This could be done by placing a 40 cu.yd container at the center. The only center that this might be feasible at is the Sharps Chapel Convenience Center due to the extra room at the center. The other centers would require extra land purchased around the centers.

Waste Tires are being collected at the Wolfe Road Convenience Center by way of a contract with Mac Tires. This program is working fine and waste management provides the salary position to man the operation. The State probably needs to provide more funding for this program, but other then that there is no reason to change what is being done for the collection of waste tires.

Used oil collection is being done at all of the convenience centers and at the County Highway maintenance building. The region is adequately covered with used oil collection centers. The used oil is being used to heat the paint processing building and the highway maintenance garage. Any excess used oil during the summer months is being picked up by a private hauler at no cost to the County. The Region may need to look at grant funding for another heater that could be used at another county building such as the school maintenance garage. This would make use of the excess used oil and save the county money in the winter for heat bills. Other than that the program seems to be working fine and no changes are needed.

E waste is something that the region has added in the past year and seems to be working well. Initial use of Gaylord boxes was eliminated because the centers did not have a cover to put over the boxes to protect against rain. The boxes were becoming destroyed causing an eye sore and a manpower problem for the region. The e-waste is placed on a concrete location at each convenience center and picked up twice a month by Scott Recycling.

White Goods and metals are being collected at Wolfe Road Convenience Center. A 40 cu yd container collects the material and then it is hauled away by a private hauler to Knoxville. Sharps Chapel Convenience Center might be the only other convenience center to provide for collection of this material due to space constraints. Would there be enough waste generated at the site, one would have to set up a container to find out. The program is being operated very efficient and I'm probably knit picking to even suggest setting up another site.

Brush/Compost is one area that the region is lacking. The region does not have any area from which to dispose of your brush. The City of Plainview does offer a brush chipping program for its residents. This program is something that the other two cities need to make available to their residents. The City of Luttrell would not be as crucial due to their availability of farm lands that can handle the brush. The City of Maynardville is more densely populated and burning the brush can create problems for those that have health problems. The region has enough land to handle the collection of brush at the Wolfe Road Convenience Center site, but how much would they generate without some kind of law prohibiting burning in the region. This may be an aware that the State mandates in the future and the region is capable of handling this if need be. Until such mandates the rural nature of the region allows for the burning of brush or filling of caveats on ones own land without having to haul the brush to a centrally located area.

The use of sewer sludge should continue to be a viable option for the wastewater plants in the region for the next five years. However, it is more stringent to get the permits for farm application. It might be useful for the City of Maynardville to try and get a permit for such applications in the region, rather than having to pay someone to take the sludge. Either way none of the waste is going to a Class I landfill and that is very beneficial for the region in terms of meeting the 25% waste diversion goal set by the State.

The collection of paint is something that the region has started in the last three years. Are we generating enough paint to suggest that we are properly having all the paint diverted from the landfill? I think not, but unless we can start collecting paint at the convenience centers then this will not ever be corrected. The region does have a location to handle

paint that is in the dry and is climate controlled. The region has not had any problems in getting rid of excess paint by having the county use the paint for projects in the area. The region has the entire infrastructure in place to expand the program in the future. This can only take place by being allowed to take paint at the convenience centers.

Paper and cardboard have always been collected at the convenience centers in the region. The only thing that I see that might need to be changed is for the Region to start receiving funds for their recyclables. Currently, SP Recycling collects the paper and cardboard at no cost to the County, but does keep any revenues from the recyclables. However, the emergence of Goodwill Recycling into the City of Maynardville may allow the County to share in some revenue from these recyclables. This is something that the region will need to look at within the next year. The City of Plainview and the City of Luttrell both provide recycling drop off sites for their residents and the City of Plainview also provides house to house collection twice a month. These programs should continue in the future and the City of Maynardville needs to look at providing some kind of collection for their residents. The City of Maynardville will need grant funding to help in the purchase of a trailer and the City should be able to provide the manpower needed to provide house to house collection at least once a month in some of the larger subdivisions. The Region has done a great job in providing recycling to the schools and other governmental offices by placing paper shredders in these public facilities. This has been great to promote recycling for the youth that will pay dividends in the future.

The Region is going to expand their recycling program at the schools within the upcoming school year. The schools have gone from cardboard milk containers to plastic containers. The plastic containers will be recycled by Goodwill Industries. If room is available a 4 cu. yd container will be placed at the school for disposal. Otherwise, we will have to look at some smaller containers that will have to be picked up by the County and transported to Goodwill Recycling drop off center or to the Wolfe Road Convenience Center. The region is capable of taking plastic at the convenience centers, but without any viable market it makes no sense at the present time.

If the market for glass becomes viable, the collection of glass could be done at the convenience centers and then transported to the Wolfe Road Convenience Center for storage until a trailer load could be generated. Again the region has the capability, but until the market improves there is no incentive to recycle glass.

The region of Union County has everything in place to grow their recycling program. The region should be commended for the recyclable items that they currently collect. The contract that the region has for the collection of waste has no incentives to even have a recycling program. Could the region spend more time on collecting Class IV waste and white goods and not even bother with the rest of the materials and still meet their 25% reduction. The answer would be yes, but the leaders in the region know the meaning of being good environmental stewards. They know the beauty of the mountains and streams in their area and the need to properly take care of waste. That is the real incentive for the region of Union County to have one of the most comprehensive recycling programs in the East Tennessee Region.

Sources:

Union County Solid Waste Department

Union County Solid Waste Authority

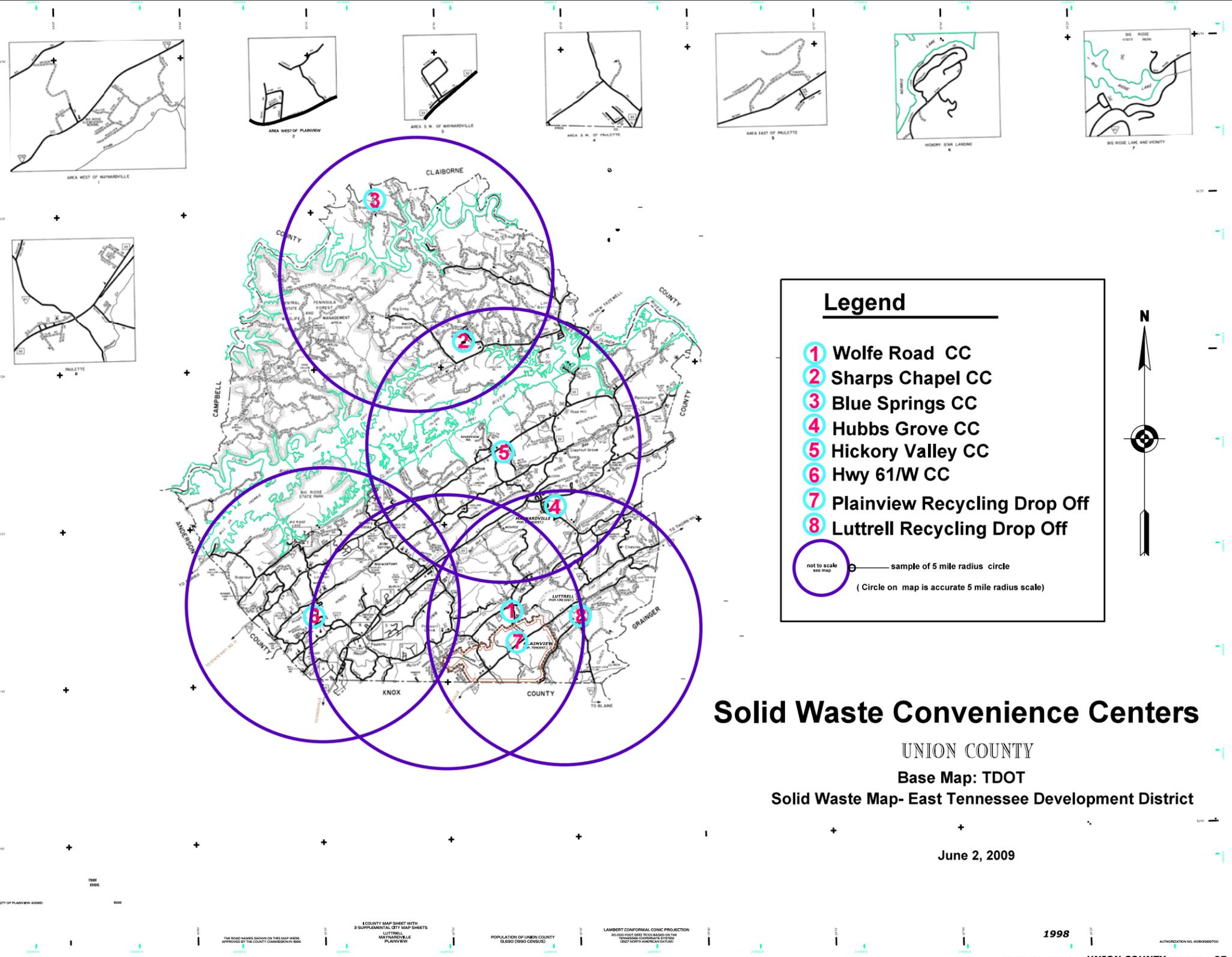
U.S. Census Bureau

City of Luttrell

City of Maynardville

City of Plainview

Tennessee Division of Solid Waste Management



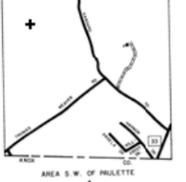
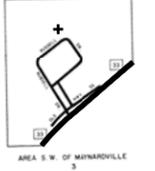
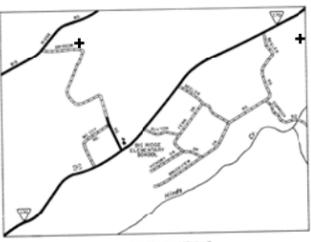
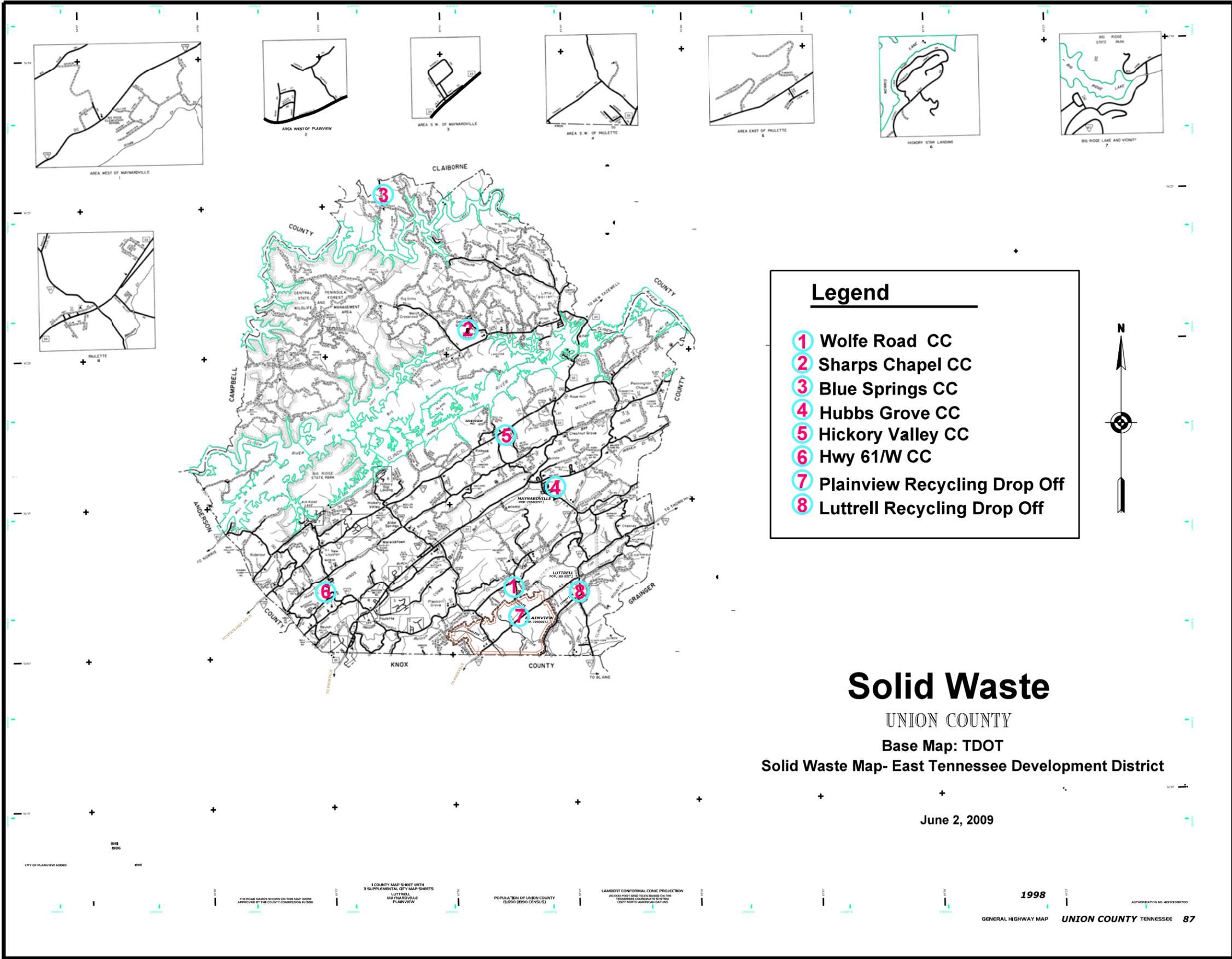
Legend

- 1 Wolfe Road CC
- 2 Sharps Chapel CC
- 3 Blue Springs CC
- 4 Hubbs Grove CC
- 5 Hickory Valley CC
- 6 Hwy 61/W CC
- 7 Plainview Recycling Drop Off
- 8 Luttrell Recycling Drop Off

 sample of 5 mile radius circle
 (Circle on map is accurate 5 mile radius scale)

Solid Waste Convenience Centers
 UNION COUNTY
 Base Map: TDOT
 Solid Waste Map- East Tennessee Development District

June 2, 2009



- Legend**
- ① Wolfe Road CC
 - ② Sharps Chapel CC
 - ③ Blue Springs CC
 - ④ Hubbs Grove CC
 - ⑤ Hickory Valley CC
 - ⑥ Hwy 61/W CC
 - ⑦ Plainview Recycling Drop Off
 - ⑧ Luttrell Recycling Drop Off



Solid Waste

UNION COUNTY

Base Map: TDOT

Solid Waste Map- East Tennessee Development District

June 2, 2009

1918
1936
CITY OF PLAINVIEW ADDED

THE ROAD NAMES SHOWN ON THIS MAP WERE APPROVED BY THE COUNTY COMMISSION IN 1986

1 COUNTY MAP SHEET WITH 3 SUPPLEMENTAL CITY MAP SHEETS LUTTRELL MAYNARDVILLE PLAINVIEW

POPULATION OF UNION COUNTY (1990 CENSUS)

LAMBERT CONFORMAL CONIC PROJECTION 20,000 FOOT GRID (BASED ON THE TENNESSEE COORDINATE SYSTEM (2007 NORTH AMERICAN DATUM))

1998

GENERAL HIGHWAY MAP

UNION COUNTY TENNESSEE 87