

# **Hardeman County Solid Waste Needs Assessment**

**November 2007**

Southwest Tennessee Development District

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Solid Waste Planner

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## Item 1 - Region Population

The following table and charts illustrate the population trends of the county as a whole, respective municipalities, total municipal residents, and county only (non-municipality) residents. The 2010 and 2015 projections are based on existing trends for each jurisdiction as well as knowledge of the area.

The county as a whole is expected to see a slight increase in population between 2006 and 2010 and beyond. The 20.2% increase between 1990 and 2000 is not anticipated to occur again, though the county is likely to see a rate of growth greater than the 0.3% seen in the six-year period between 2000 and 2006. Bolivar's decline is projected to continue to the end of the decade but then turn around moving to 2015. Whiteville's population explosion is likely to continue to cool, though remain relatively strong compared to the rest of the county. Little change is expected in the other municipalities' population. The number of county only residents is likely to decline slightly in the future, as most new residents move to one of the county's municipalities; still, the decline is expected to be small.

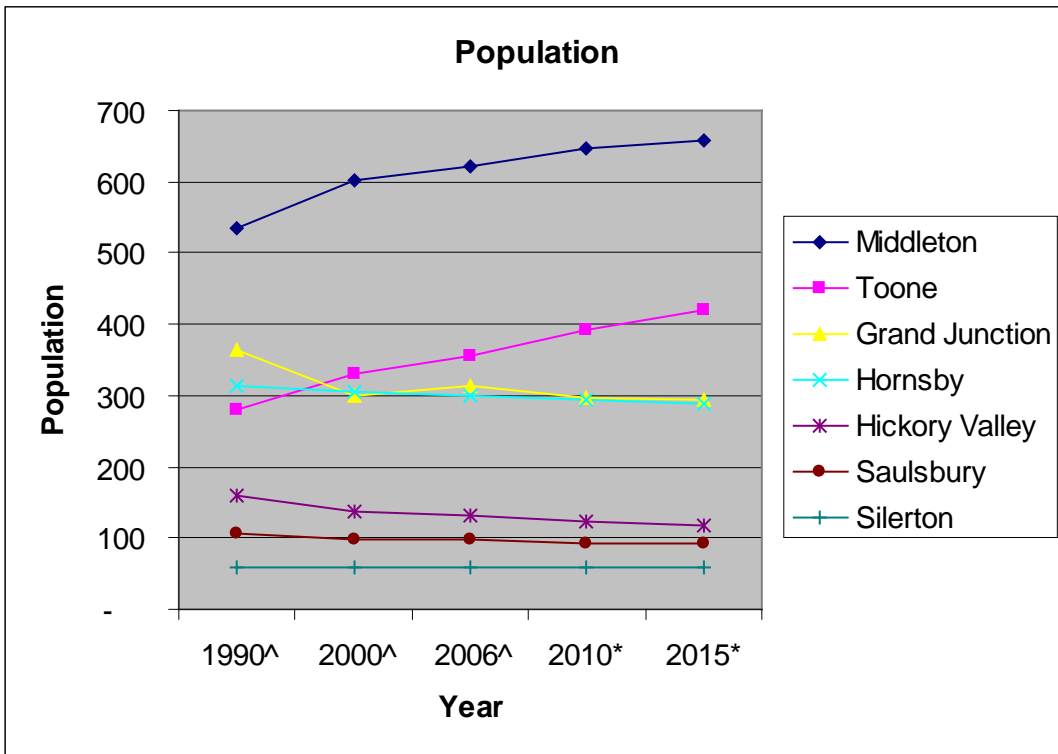
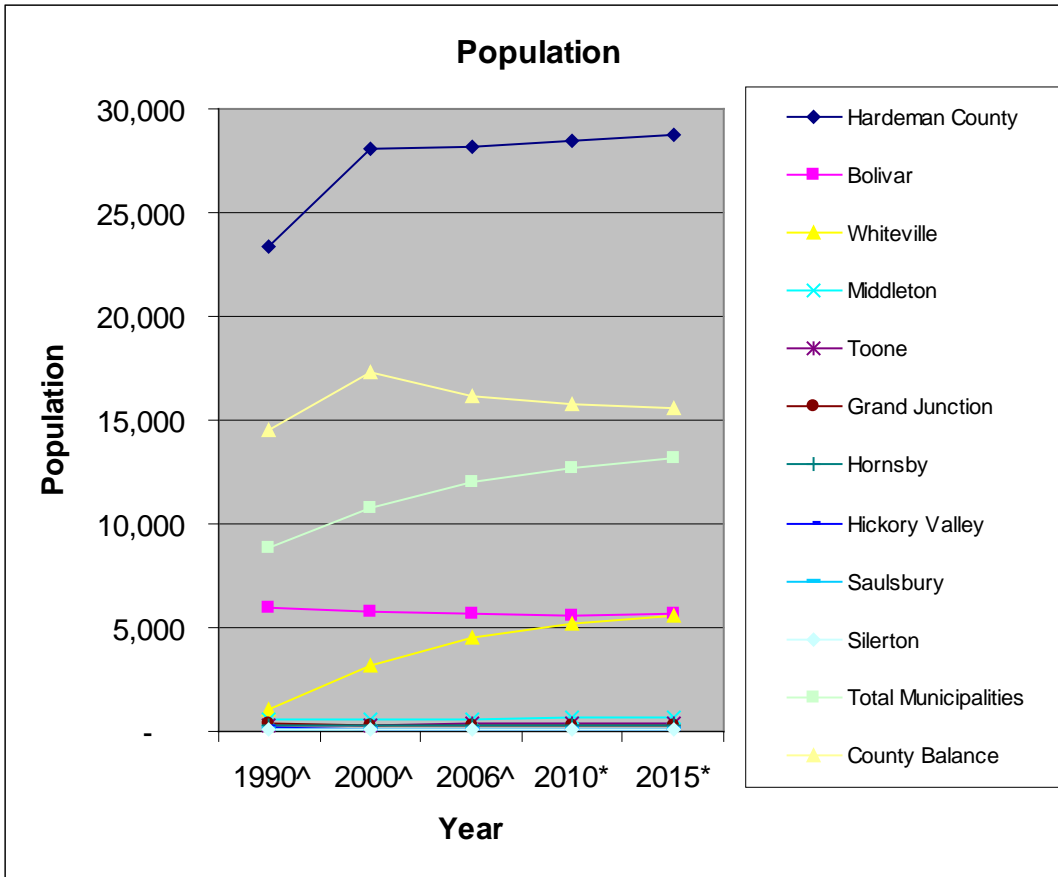
Population								
Jurisdiction	1990 <sup>^</sup>	2000 <sup>^</sup>	2006 <sup>^</sup>	2010 <sup>*</sup>	2015 <sup>*</sup>	% Change 90-00	% Change 00-06	% Change 90-06
<b>Hardeman County</b>	<b>23,377</b>	<b>28,105</b>	<b>28,176</b>	<b>28,458</b>	<b>28,742</b>	<b>20.2%</b>	<b>0.3%</b>	<b>20.5%</b>
Bolivar	5,969	5,802	5,639	5,583	5,638	-2.8%	-2.8%	-5.5%
Whiteville	1,050	3,148	4,487	5,160	5,573	199.8%	42.5%	327.3%
Middleton	536	602	621	646	659	12.3%	3.2%	15.9%
Toone	279	330	357	393	420	18.3%	8.2%	28.0%
Grand Junction	365	301	313	297	294	-17.5%	4.0%	-14.2%
Hornsby	313	306	299	293	287	-2.2%	-2.3%	-4.5%
Hickory Valley	159	136	131	124	118	-14.5%	-3.7%	-17.6%
Saulsbury	106	99	97	93	91	-6.6%	-2.0%	-8.5%
Silerton	59	60	59	60	60	1.7%	-1.7%	0.0%
<b>Total Municipalities</b>	<b>8,836</b>	<b>10,784</b>	<b>12,003</b>	<b>12,649</b>	<b>13,141</b>	<b>22.0%</b>	<b>11.3%</b>	<b>35.8%</b>
<b>County Balance</b>	<b>14,541</b>	<b>17,321</b>	<b>16,173</b>	<b>15,809</b>	<b>15,601</b>	<b>19.1%</b>	<b>-6.6%</b>	<b>11.2%</b>

<sup>^</sup>Data from the US Census Bureau

<sup>\*</sup>Data projected from trends derived from data from the US Census Bureau

With the anticipated growth in the county's population is expected to be seen in the municipalities much of the increased demand for waste disposal services will fall mainly on the municipalities within the county rather than on the county itself. In fact, the projected decline in county only residents indicates that the county's solid waste

infrastructure will experience a decline in use. The only municipality expected to see a substantial growth in population is Whiteville, projected to see almost a 1,100 person increase. The next largest projection is for Toone, with a growth of not quite 60 residents. As such, population is expected to have little to no negative effect on any of the jurisdictions' solid waste infrastructure, with most actually seeing less use of their systems. Whiteville, however, will need to plan for increased use of the provided door-to-door pick-up by ensuring that CNP has adequate capacity and that the city has adequate funding in place.



## **Item 2 - Region Economy**

### **Per Capita Income**

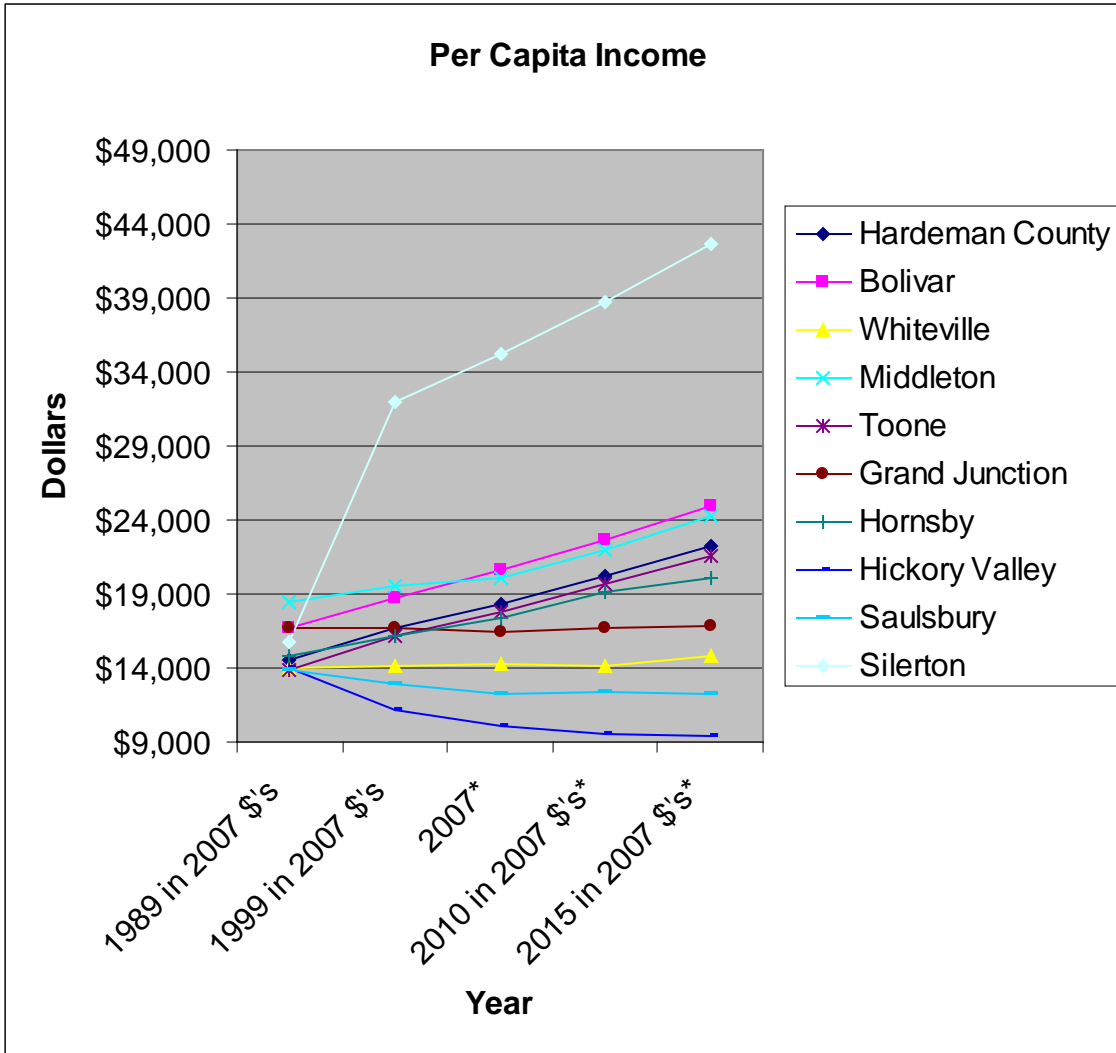
The following table and chart show the per capita incomes for the county and each municipality in 1989 and 1999 and estimates for 2007, 2010 and 2015. The existing trends are expected to continue for each municipality and the county, though increases will likely be smaller in the future for most municipalities.

The estimates for the current per capita incomes show that most all entities have experienced an increase in the purchasing power of their residents. Most residents are likely to use this increased purchasing power to do just as the name implies – purchase more. This is likely to mean an overall increase in solid waste generated by economic growth, though most likely only a slight increase as the county's growth in general is expected to stall for the next few years.

Per Capita Income								
Jursidiction	1989 <sup>^</sup>	1989 in 2007 \$'s	1999 <sup>^</sup>	1999 in 2007 \$'s	2007*	% Change 89-99 in 2007 \$'s	2010 in 2007 \$'s*	2015 in 2007 \$'s*
Hardeman County	\$8,650	\$14,544	\$13,349	\$16,705	\$18,376	14.9%	\$20,213	\$22,234
Bolivar	\$9,927	\$16,691	\$14,973	\$18,738	\$20,612	12.3%	\$22,673	\$24,940
Whiteville	\$8,317	\$13,984	\$11,310	\$14,154	\$14,296	1.2%	\$14,153	\$14,860
Middleton	\$10,994	\$18,485	\$15,616	\$19,543	\$20,032	5.7%	\$22,035	\$24,238
Toone	\$8,240	\$13,855	\$12,956	\$16,214	\$17,835	17.0%	\$19,619	\$21,581
Grand Junction	\$9,942	\$16,715	\$13,304	\$16,649	\$16,482	-0.4%	\$16,647	\$16,813
Hornsby	\$8,801	\$14,797	\$12,915	\$16,162	\$17,374	9.2%	\$19,111	\$20,067
Hickory Valley	\$8,325	\$13,997	\$8,935	\$11,181	\$10,063	-20.1%	\$9,560	\$9,369
Saulsbury	\$8,258	\$13,884	\$10,335	\$12,933	\$12,287	-6.8%	\$12,409	\$12,285
Silerton	\$9,355	\$15,729	\$25,571	\$32,000	\$35,200	103.4%	\$38,719	\$42,591

<sup>^</sup>Data from the US Census Bureau

\*Data projected from trends derived from data from the US Census Bureau



### Employment and Wages

The following table takes a business oriented look at the county's economy as opposed to the resident oriented view like above. The following data is from the Census Bureau's County Business Patterns. The table shows that, between the years 1998 and 2005 the county's business climate was a relatively poor one, with an overall decline in both employment and annual payroll. This indicates that more residents of the county and the surrounding area are finding work in other counties rather than in Hardeman County. The decline in payroll is likely almost entirely attributable to the loss in employment given the per capita income data above. The loss of employment does, however, clearly indicate a loss of business for the area. While per capita income does continue to grow the employment decline and slow population growth suggests that there should be no expectation of an economic boom for the county over the next few years.

The given economic data above and below leads one to a similar conclusion as with the slow population growth: that economic forces likely will cause only a small increase in the county's waste generation over the next five to ten years.



Businesses by NAICS: Hardeman County												
NAICS Code Industry		1998				2005				% Change 1998-2005		
		Employees	Annual Payroll in 1,000's (in 98 \$'s)	Annual Payroll in 1,000's (in 07 \$'s)	Total Est.	Employees	Annual Payroll in 1,000's (in 05 \$'s)	Annual Payroll in 1,000's (in 07 \$'s)	Total Est.	Emp	Annual Payroll (in 07 \$'s)	Total Est.
Total		5,748	\$141,300	\$180,864	432	5,630	\$153,971	\$164,749	373	-2.1%	-8.9%	-13.7%
11	Forestry, fishing, hunting, & ag support	20-99	N/A		6	0-19	N/A		5			-16.7%
23	Construction	208	\$6,054	\$7,749	41	114	\$2,366	\$2,532	30	-45.2%	-67.3%	-26.8%
31	Manufacturing	1,922	\$60,436	\$77,358	36	1,535	\$59,761	\$63,944	30	-20.1%	-17.3%	-16.7%
42	Wholesale	224	\$4,604	\$5,893	25	121	\$2,600	\$2,782	17	-46.0%	-52.8%	-32.0%
44	Retail	777	\$11,679	\$14,949	96	734	\$12,306	\$13,167	82	-5.5%	-11.9%	-14.6%
48	Transportation & warehousing	162	\$4,533	\$5,802	27	97	\$4,704	\$5,033	13	-40.1%	-13.3%	-51.9%
51	Information	58	\$1,310	\$1,677	11	20-99	N/A		7		-100.0%	-36.4%
52	Finance & insurance	212	\$4,374	\$5,599	20	153	\$4,235	\$4,531	26	-27.8%	-19.1%	30.0%
53	Real estate, rental, & leasing	26	\$267	\$342	8	37	\$498	\$533	8	42.3%	55.9%	0.0%
54	Professional, scientific, & technical services	53	\$800	\$1,024	16	54	\$842	\$901	12	1.9%	-12.0%	-25.0%

55	Management of companies and enterprises	0-19	N/A		1							
56	Admin, support, waste mgt, remediation services	250-499	N/A		7	500-999	N/A		10			42.9%
61	Educational Services					0-19	N/A		1			
62	Health care & social assistance	1,165	\$27,427	\$35,107	43	1,388	\$37,995	\$40,655	36	19.1%	15.8%	-16.3%
71	Arts, entertainment, & recreation	0-19	N/A		4	20-99	N/A		6			50.0%
72	Accommodation & food services	250-499	N/A		34	287	\$3,568	\$3,818	32			-5.9%
81	Other services (except public admin)	190	\$1,986	\$2,542	55	208	\$2,608	\$2,791	57	9.5%	9.8%	3.6%
99	Unclassified	0-19	N/A		2	0-19	N/A		1			-50.0%

Data from US Census Bureau or calculations based directly on said data.

### Item 3 - Region Waste Stream

The table below shows the landfill destination for the county's waste in 2006. The vast majority of the county's waste is taken directly to the Hardeman County Landfill, with only small amounts (less than 0.5% total) taken to nearby landfills outside the county. As long as it remains operational it is likely that the vast majority of the county's waste will continue to be disposed of in the Hardeman County Landfill.

Landfill Destination	2006 Q1	2006 Q2	2006 Q3	2006 Q4	2006 Total
Hardeman Co	4,039	4,419	4,677	4,892	18,027
Jackson/Madison Co	0	0	0	67	67
South Shelby	0	11	0	2	13
<b>Total</b>	<b>4,039</b>	<b>4,430</b>	<b>4,677</b>	<b>4,961</b>	<b>18,107</b>

The county's waste stream over the next five years will likely be quite comparable to today's waste stream given the moderate to minimal changes anticipated in the county's population and economic statistics. The amount of packaging materials (cardboard, plastic, Styrofoam) is likely to increase somewhat as residents' per capita income continues to rise; and the amount of e-waste will increase as well as residents continue to replace old, obsolete, or failing electronics with newer, more modern versions more frequently.

The county's waste stream will likely be handled five years from now in much the same manner as it is today. The county is looking at beginning glass and possibly plastic recycling programs in the future which will reduce the amount of both commodities in the waste stream. The county is also looking for ways to pull recyclables from the municipalities' waste streams as none of them currently offer recycling programs with their door-to-door pick-up programs. Given the county's current infrastructure the best bet for such a program would be to promote the county's convenience centers as locations for residents of municipalities to drop off their recyclables.

One interesting change possible, though likely more than five years out, is the possible splitting of the destination of waste within the county rather than sending it all to the county owned Class I landfill. Since the county's landfill is located in the northern half of the county the solid waste department is planning on investigating whether any cost savings can be had by diverting waste collected in the southern half of the county to an outside landfill. While only in the very early research phases there is a possibility that the county might begin diverting half of its solid waste to another landfill.

Waste tires will likely remain a problem for the county over the next five years. The county currently runs short on grant money provided by the state for waste tire disposal. The county could consider charging a fee for deposited tires, though such a course of action runs the risk of driving people to illegally dump their tires, which would cost the county money as well. As such, tires tend to be a tricky waste for the county to handle, wanting to keep the tires out of local ditches but preferring not to go into the red in the process. A possible remedy is for the county to implement a small charge for depositing tires, getting residents used to the idea, and then slowly raising the charge over time to attempt to cover charges. Of course, county commissioners are leery of imposing new fees and especially averse to raising fees they just recently created for fear of a public backlash.

Though e-waste is likely to increase over the years, the county has begun collecting such waste and will be working with RMCT to select the most advantageous buyer. This will likely not be a problem as demand for e-waste will likely increase in the years to come.

The county has also begun collecting used paint and will begin recycling the paint soon for use by other county departments and residents. Used paint collection is likely to increase as the county begins to publicize more heavily the paint-recycling program. Used oil is also collected at all county convenience centers and then collected by a certified transporter. The county recently applied for a used-oil burning heater that would allow the county to directly recycle collected used oil.

Industrial and commercial wastes are handled either in-house by the company or are picked up by a contractor or city. The county does collect select recyclables such as cardboard from some businesses such as grocery stores and restaurants and the city of Bolivar provides dumpsters to all businesses in the city limits. Much of the waste collected by the independent haulers contracting with the businesses and industries is transported to the Hardeman County Landfill, while the rest is taken to landfills in the surrounding area depending on the hauler.

#### **Item 4 - Waste Collection System and Life Cycle**

Hardeman County's waste collection system consists of ten (10) full service convenience centers, one (1) limited service (MSW only) center, the county owned Class I/III/IV landfill, and the recycling center located at the landfill. All household waste collected at the convenience centers is hauled directly to the county landfill by CNP Waste. All recyclables are transported to the county recycling center for processing except for tires which are collected at the recycling center only and used oil which is collected by the buyer at the convenience centers.

The municipalities of Bolivar, Hornsby, and Grand Junction have public sanitation departments and transport their waste to the Hardeman County Landfill. Hickory Valley has a public contract for waste collection with Annite Lax that covers 100% of residents, while Whiteville and Middleton have contracts with CNP Waste that covers 100% of their residents. None of the above municipalities offer recycling services to residents. The remaining towns of Toone, Saulsbury, and Silerton provide no higher-level of service for waste disposal.

Household waste in the region is collected by the county with its convenience centers or by the above municipalities with their curbside programs. The waste collected by the county is held at the convenience center for transport by CNP Waste to the county owned landfill where it becomes landfill material. Waste collected by the municipalities offering curbside service is collected at the residences and then, depending on the municipality and their contractor, taken to a transfer station and then transported to a landfill or is taken directly to a landfill, where it becomes landfill material.

Recyclables are collected by the county at ten (10) of the eleven (11) convenience centers and then transported to the recycling center for processing. After processing the recyclables are sold through RMCT to the most advantageous buyer or sold directly to Bolivar Recycling, a local recycling company. Waste tires and oil are handled differently, with both commodities being picked-up directly at the convenience centers by the buyers who then process the materials into useful products.

#### **Item 5 - Hardeman County Reduction Rate**

The table below shows the most recent available data for Hardeman County's reduction rate. The table shows that the county is meeting the diversion goals of all methods available. The county is meeting the real time comparison by 29% through increased participation in recycling over the years by both residents and businesses. Interestingly, the county is making the more stringent per capita method by an even larger number than the less stringent real time data. The reason for this appears to be erroneous disposal numbers for the base year, which are considered by many to be sketchy at best.

According to the table the current tons of waste generated by the county (disposal and diversion) is essentially equal to just the disposal figure for the base year, suggesting that although population has increased by 4,000 people since the base year, waste generation has actually gone down. This is counter-intuitive and almost assuredly incorrect. Even if one assumes that in the base year zero recycling was occurring, and therefore

disposal equaled generation, it is highly unlikely that the increased number of citizens are generating even an equal amount of waste. It would be easy to imagine that tons *disposed* would have gone down as diversion per capita went up, but to have tons *generated* stay the same or go down in spite of population growth is doubtful; especially considering that our society continues to become an ever increasing “disposable” society. Even a static population could be expected to see some amount of generation growth, let alone a growing population.

In light of the above discussion the county is almost certainly not making the per capita goal by 39%, though it is difficult to say exactly what percent per capita reduction they have. It is certainly possible that the county is still meeting the 25% reduction goal, but with unreliable base year numbers it is difficult to make any estimation.

Hardeman County 2006 Reduction Rate								
Current Year Generation	Current Year Disposal	Base Year Disposal	Current Year Population	Base Year Population	% Reduction Compared to Base Year	MSW % Reduction Pop Ratio	MSW % Reduction Using Pop Econ Ratio	Real Time Comparison
25,883	18,471	25,892	28,176	24,184	39%	39%	35%	29%

Source: TDEC SWM

### Item 6 – Facilities and Collection

The Hardeman County Class I and Class III/IV landfills have more than adequate capacity for the next 15 years and likely beyond as the county continues to encourage and provide capacity for local residents and businesses to increase recycling.

Site	Current Capacity	Maximum Capacity (Tons)	Projected Life of Facility
Hardeman County Class I Landfill	50	270,000	15 Years
Hardeman County Class III/IV Landfill	15	12,000	15 Years

The chart below shows all collections services in the area by provider, area, population served, frequency, current capacity, tons collected last year, and type.

Provider of Service	Service Area	Population Served	Frequency of Service	Current Yearly Tonnage Capacity	Tonnage Last Year	Type of Service
Hardeman County	Grand Valley	16,686	Daily	644	279.12	Convenience Center
Hardeman County	Middleton	16,686	Daily	3861	846.36	Convenience Center
Hardeman County	Pinetop	16,686	Daily	556	82.8	Convenience Center
Hardeman County	Piney Grove	16,686	Daily	556	74.88	Convenience Center
Hardeman County	Pocahontas	16,686	Daily	556	173.52	Convenience Center
Hardeman County	Powell Chapel	16,686	Daily	556	77.4	Convenience Center
Hardeman County	Saulsbury	16,686	Daily	644	293.28	Convenience Center
Hardeman County	Toone	16,686	Daily	1287	561.48	Convenience Center
Hardeman County	Van Buren	16,686	Daily	468	277.32	Convenience Center
Hardeman County	Whiteville	16,686	Daily	644	295.44	Convenience Center
Sub Total		16,686		9,772	2,962	
						<u>Approx</u>
Bolivar	Bolivar City Limits	5,639	Weekly	1204	1003	Curbside
Hornsby	Hornsby City Limits	299	Weekly	64	53	Curbside
Grand Junction	Grand Junction City Limits	313	Weekly	67	56	Curbside
CNP	Whiteville City Limits	4,487	Weekly	1000	798	Curbside
CNP	Middleton City Limits	621	Weekly	150	111	Curbside
Annite Lax	Hickory Valley City Limits	131	Weekly	27	23	Curbside
Sub Total		11,490		2,512	2,044	
<b>Total</b>		<b>28,176</b>		<b>12,284</b>	<b>5,006</b>	

Note: Current Yearly Tonnage Capacity is based on existing infrastructure and equipment. Expansions to one or both would result in increased capacity.

## Item 7 – Hardeman County Solid Waste Budget

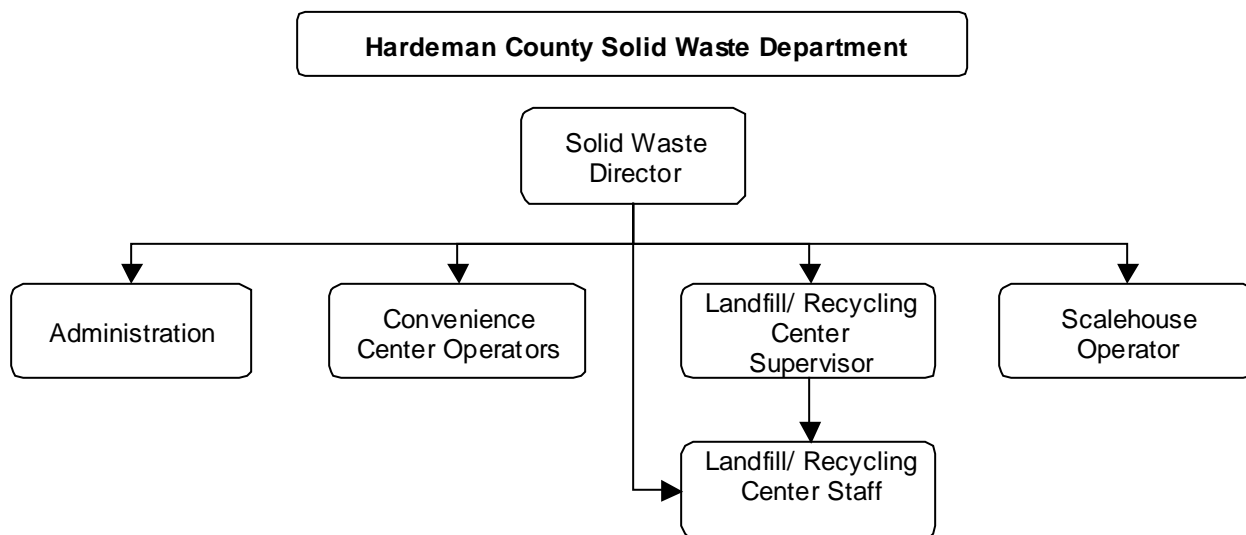
<b>Hardeman County Solid Waste Budget</b>			
<b>EXPENDITURES</b>			
<b>Account</b>	<b>2006-2007</b>	<b>2007-2008 Proposed Budget</b>	
101	Administrative Officer	\$21,484.64	\$29,355.00
149	Laborers	\$139,716.96	\$143,908.47
162	Clerical Personnel	\$32,767.59	\$37,080.00
169	Part-time Personnel	\$9,566.60	\$5,000.00
201	Social Security	\$12,515.56	\$13,000.00
204	State Retirement	\$24,340.60	\$27,663.04
205	Employee Insurance	\$40,149.45	\$42,000.00
209	Workman's Comp	\$25,625.00	\$32,000.00
210	Unemployment Comp	\$1,057.24	\$1,500.00
212	Employer Medicare Liability	\$2,927.00	\$3,000.00
305	Audit Service	\$0.00	\$1,000.00
307	Communication	\$6,800.93	\$6,500.00
308	Consultants	\$25,029.91	\$16,000.00
312	Contracts w/ Private Agencies	\$143,566.63	\$182,136.00
332	Legal Notice: Recording & Court Cost	\$104.00	\$200.00
335	Maintenance & Repair Services: Building	\$5,799.93	\$7,700.00
336	Maintenance & Repair Services: Equipment	\$90,445.72	\$65,000.00
338	Maintenance & Repair Services: Vehicles	\$5,273.72	\$10,000.00
348	Postage	\$3,328.47	\$5,000.00
355	Travel	\$2,068.86	\$1,000.00
359	Disposal Fee	\$13,969.93	\$12,500.00
410	Custodial Supplies	\$841.36	\$1,500.00
411	Data Processing	\$3,768.59	\$4,000.00
422	Food Supplies	\$5,714.68	\$6,000.00
425	Gasoline	\$29,590.60	\$30,000.00
433	Lubricants	\$1,997.40	\$3,500.00
435	Office Supplies	\$4,174.64	\$4,000.00
451	Uniforms	\$2,961.10	\$4,000.00
452	Utilities	\$47,048.37	\$55,000.00
456	Gravel & Chert	\$5,138.26	\$6,000.00
499	Other Supplies & Materials	\$25,570.09	\$31,000.00
506	Liability Insurance	\$41,197.00	\$41,197.00
511	Vehicle & Equipment Insurance	\$0.00	\$2,500.00
517	Surcharge	\$28,706.54	\$30,000.00
523	Landfill Closure/Post-closure Care Costs	\$512,747.31	\$0.00
599	Other Charges	\$3,680.04	\$5,000.00
602	Prinicpal on Notes	\$234,000.00	\$306,541.22
604	Interest on Notes	\$35,548.40	\$39,081.66
733	Solid Waste Equipment	\$283,350.00	\$28,000.00
<b>55754</b>	<b>Total Landfill Operation &amp; Maintenance</b>	<b>\$1,872,573.12</b>	<b>\$1,238,862.39</b>
<b>REVENUE</b>			
<b>Account</b>	<b>2006-2007</b>	<b>2007-2008 Proposed Budget</b>	
43114	Solid Waste Disposal Fees	\$1,200,500.00	\$1,369,670.00
46170	Solid Waste Tire Grant	\$18,500.00	\$9,500.00
<b>43114</b>	<b>Total Revenue</b>	<b>\$1,219,000.00</b>	<b>\$1,379,170.00</b>
<b>FUND BALANCE</b>		<b>\$653,573.12</b>	<b>\$140,307.61</b>

In the 2006-2007 fiscal year the Hardeman County Solid Waste Department operated at a budget deficiency of just over \$650,000. Obviously, local government cannot function for long at such a rate. To address this budgetary issue the county increased the landfill fee assessed monthly to all households to \$9.00. This accounts for much of the nearly \$170,000 increase in revenue over last year. In conjunction with expected decreases in the costs of equipment purchases (the large cost for 06-07 was the purchase of a new bulldozer for the landfill) and landfill closure costs the department is projecting a budget surplus of slightly more than \$140,000 dollars for the fiscal year 2007-2008.

The county will likely need to increase monthly charges to residents and businesses again in the future to cover the growing costs of waste disposal and processing. The question will be whether or not the county commission will be willing to implement such an increase when it becomes necessary. However, this increase will likely not be needed for three to four years. In the mean time the department will likely have to find areas to cut spending. The department has proposed the construction of a new, modestly sized building at the county landfill that would be the new office for the solid waste department, moving it from it's current location in downtown Bolivar. This move would allow for more direct supervision of the landfill and its staff, cut down on transit costs for employees and would also reduce utility costs for the county as the solid waste's current building is highly inefficient. The department has projected the first year savings to be, at a minimum, equal to the small cost of constructing the new building, with savings from there on out effectively being "income" when compared to current costs. The department, however, is having trouble getting traction for the idea with the county commissioners.

### Item 8 - Solid Waste Department Organization and Location

The chart below shows the organizational structure of the Hardeman County Solid Waste Department. No organizational deficiencies are prevalent and the structure is close to that of many of the other counties in the area.



Bolivar, Hornsby, and Grand Junction have their own sanitation departments with the Public Works Directors in charge of the departments. Hickory Valley has a public contract for waste collection and disposal with Annite Lax, who transports waste to the Hardeman County Landfill. Whiteville and Middleton also have public contracts with CNP Waste who also disposes of collected waste at the county landfill. For all three towns the mayor is the point of contact between the city and the service provider. Toone, Saulsbury, and Silerton do not provide any higher level of service; their residents use the county's convenience centers.



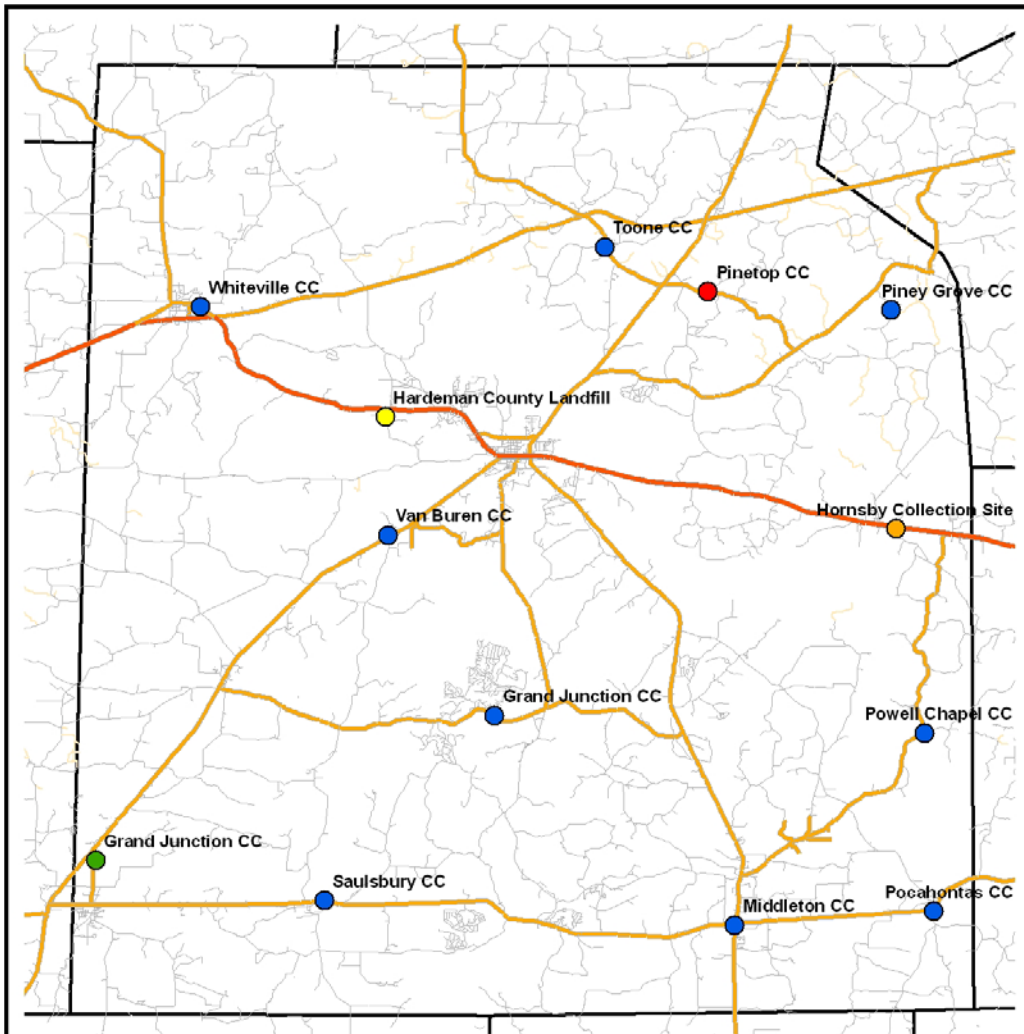
The map below shows the location of all county services offered. Tires, scrap metal, and electronics are collected at the recycling center at the landfill only; used oil, paint, and all other recyclables are collected at all of the convenience centers shown (blue and red circles) and the landfill (yellow circle), but not at the unmanned or pending facilities (orange and green respectively).

The pending facility, Grand Junction Convenience Center, will be open in the next few months as the replacement for Pinetop Convenience Center, which has not had enough usage since opening when the county first switched to CC's to sustain the location. The Grand Junction location, however, has a large need for a facility in the area. While other solid waste directors in the SWTDD region have commented on the need to move convenience centers due to inefficiency none have been able to muster the political capital necessary to effect such a change. The problem lies with the county commissioners being unwilling to expend the funds (however small) to open a new facility as well as loose a CC in or near their area for fear of public dissent. That the Hardeman County solid waste director (Gene Mills), mayor (Willie Spencer), and county commission have been able to come to an agreement on this issues is no small feat in Southwest Tennessee. All parties involved should be commended for taking realistic stock of their collection system and for having the willingness to correct deficiencies.

A quick glance at the map shows that this "move" of the Pinetop CC to the Grand Junction area is the most logical of any moves the county could have made considering the abundant coverage in the Northeast corner of the county and almost complete lack of coverage in the Southwest. The county solid waste director would like to move some of the other inefficient convenience centers as well, specifically Piney Grove, which is the only center not on a major highway.

The county initially chose (for the most part) and continues to choose to place convenience centers in or very near municipalities. While some might argue that the municipalities are the completely wrong location for CC's due to their existing higher levels of service, the municipalities are the destinations for practically all county residents, making them excellent and convenient (as the name implies) locations for residents to deposit their waste. Considering that the county can only afford to operate a limited number of collection sites, convenience centers must be placed in locations that attract the highest number of people; municipalities fit the description ideally. While this approach is by no means the only viable solution, it does serve as a very functional answer to the question of where to place convenience centers.

While the West-central area of the county appears to be the least served region of the county, it is almost assured that the residents of this area are traveling frequently to Whiteville, Bolivar, or Grand Junction for gas and groceries, again highlighting the effectiveness of placing CCs near municipalities.



**Legend**

**Solid Waste System**

Type, Status, Next\_Year

- CC, Active, Active
- CC, Active, Closed
- CC, Pending, Active
- I/III/IV, Active, Active
- Unmaned, Active, Active



## Item 9 – Revenue for Waste Management

Revenue for Waste Management		
Account	2006-2007	2007-2008 Proposed Budget
43114 Solid Waste Disposal Fees	\$1,200,500.00	\$1,369,670.00
46170 Solid Waste Tire Grant	\$18,500.00	\$9,500.00
<b>43114 Total Revenue</b>	<b>\$1,219,000.00</b>	<b>\$1,379,170.00</b>

Revenue as made available by the county is broken down into two categories: Solid Waste Disposal Fees and Solid Waste Tire Grant. The Solid Waste Disposal Fees are made up of tipping fees charged to industrial businesses for waste disposal in the county landfill, as well as the landfill service fees charged to residents, businesses, and industry in the county. This revenue is used to fund the entire solid waste department from salaries, to equipment purchase and maintenance, to waste management. Of this revenue stream the county has projected that just over \$215,000 will be needed for salaries, \$82,700 for maintenance of buildings, equipment, vehicles, and \$28,000 equipment purchases. These expenses equal \$325,700, about one quarter of the expected revenue for the department.

All three of these categories' costs are expected to increase over the years, requiring the county to either increase revenue or decrease other expenses. At an increase of five percent per year in ten years the cost of these categories will be approximately \$530,530, an increase of \$204,830. If the county's number of households remains relatively static as expected at approximately 11,000 households then in ten years the county will need to increase monthly charges to residents by \$1.55 per month. Of course, this increase takes into account an increase in only these three categories as well as only the residential revenue stream. If one assumes that over the next ten years the county will need to increase revenue by five percent per year then the department will need a revenue increase in ten years of over \$867,000 dollars to a total revenue of \$2.25 million. At an inflationary rate of 3 percent per year for ten years the county would need to increase solid waste revenue by \$474,300 to \$1.85 million dollars.

## Item 10 - Residents' Attitude and Participation

The attitudes of the region's citizens toward recycling and diversion are fairly similar to those of residents of the other regions in West Tennessee: varied. Some residents are strongly in favor of recycling and are willing to pay for such services; others see little to no need for recycling and are not pleased that they help fund recycling programs, and of course there are many in-between the two extremes. With that said, the county has been making a concerted effort to increase public participation and improve public perception of recycling. The county has also been active in a more generalized public relations campaign for the solid waste department in general.

The county's solid waste director has held multiple town hall style meetings with concerned citizens about funding of convenience centers, the landfill, recycling and other services, as well as about participating in the county's recycling services. Most citizens across the state have a very poor understanding of the functions, responsibilities, and needs of their local solid waste department. This is understandable; people typically don't care about the details of what happens to their waste so long as it's removed from their home. This lack of education does pose a difficulty for many solid waste departments, however. Most all solid waste directors have had occasions where citizens express anger over the amount of money they have to pay in one form or another to handle their waste and then turn around and complain about a lack of services. The county's solid waste director

has taken these occasions as an opportunity to explain to people how their money is spent and to explain that the county can provide all the services to them that they want, so long as they are willing to pay for it. The director has also taken these occasions to inform residents about ways that they can help the county reduce costs for waste disposal, namely recycling. For those citizens that do not view recycling as a necessary environmental action the economic perspective can provide a stimulus for participation.

Participation in the county's recycling program is increasing according to tons of commodities collected. This is due to two phenomenon, new participants in the services and existing participants being more diligent in their separation of recyclables, though more so the former than the latter.

The county's solid waste director's "back to basics" approach in dealing with the public is an approach sometimes overlooked by other solid waste directors who have perhaps become somewhat jaded with the public, especially if they have been in the business for a number of years. Certainly there are citizens who will never be happy, even if they know all the details of how a solid waste department works, but the education of residents on the basics gives the county a foundation to build on when trying to increase participation in recycling or to increase funding for the department.

### **Item 11 – Regional Solid Waste Plan**

The county's plan for the next five years for managing solid waste is quite diverse, with actions being taken on both the waste collection and recycling fronts. The county also recently addressed funding issues by increasing the monthly solid waste fee for residents, commercial, and industrial businesses by \$3.00 per month.

The county's greatest strength currently and for the future is the existing recycling program and the county's desire to continue to expand recycling services offered. The county's large recycling building provides room for growth in tons processed in the next five years for both existing and new commodities. The county plans to expand into paint, glass, and plastic recycling in the coming years, which would have the county recycling virtually all commonly recycled commodities. The county is also working to expand it's existing recycling services, especially for cardboard, to local businesses through the purchase of trailers to be placed at businesses generating large amounts of cardboard.

The county owns a large capacity baler, which it could market to surrounding counties, especially McNairy County, that are looking for a way to process recyclables. While McNairy County does not currently offer recycling of any kind, Hardeman County's ability to process collected recyclables could help encourage them to implement a recycling program sooner. Such a partnership would be beneficial for both counties, as McNairy would not have to initially invest in equipment to process materials while Hardeman could get a percent of the income from the materials sold or the value added by the materials having been processed.

The county is currently in the process of "moving" one existing convenience center and is planning to move at least one (if not more) in the next five years to increase efficiency for the department and convenience for county residents. These moves will take some of the pressure off of the current collection infrastructure that is stressed in locations such as the Middleton Convenience Center. The county is also investigating the benefits (if any) in diverting waste collected in the southern half of the county to another landfill outside of the region. The county is interested to see if such a move could reduce costs in transporting the waste as well as reduce costs at the landfill by reducing the amount of waste that must be processed and the amount of labor, equipment, and maintenance that accompanies such processing.

County-wide door-to-door collection would be the next step up in level-of-service provided to county residents, though such a move is likely to be more than five years away and is not currently being seriously considered. Given the difficulties that McNairy County, Hardeman County's eastern neighbor, has had with their door-to-door collection system and the costs associated with paying for such service it will likely be years before the county looks at such service. However, if Haywood County, Hardeman's northern neighbor, is able to efficiently and cost

effectively switch from green boxes to door-to-door it could help encourage Hardeman County's elected officials to take a serious look at providing a higher LOS to the residents.

The county is showing the early signs of interest in getting out of the class I landfill business (looking to divert waste collected in the southern half of the county from the county landfill) and should perform cost-benefit analysis to determine if the costs associated with maintaining the landfill still outweigh the costs of tipping fees and surcharges paid to a private landfill owner. The county is encourage to speak with officials in Madison County as they have recently sold their landfill when they feel it is an appropriate time to begin such investigations. While the county may find that the cost:benefit ratio does not support selling the landfill it is worth investigating.

The increasing costs associated with the solid waste (or any other) business means that the county should begin looking at funding avenues for the future now. While owning and operating the landfill may currently be profitable or sustainable for the county the economic dynamics at play may shift in the years to come. The county should take a serious look at the cost of such operations not just for next year, but for five and ten years in the future to help identify any potential pitfalls that might lay ahead. The county should also look at general operations costs for the next five and ten years, regardless of the landfill options, to ensure that a budget crisis does not develop suddenly. With the county having just increased landfill maintenance fees for the county it is likely that the solid waste department will have to move to cost cutting for the next few years if additional funds are needed, as the county commission is unlikely to turn around and raise the fees again soon. That is not to say that the increase was not necessary, only that costs will continue to increase, but revenue is likely to hold relatively steady for the next few years, leaving only cost cutting as an option to balance the departmental budget.

The county's current five-year plan is focused strongly on increasing both tons recycled and diverted and the efficiency of the collection system. The region's plan calls for the county to move into plastic, glass, and paint recycling while also expanding existing programs, especially for cardboard. The county is currently implementing the move of one convenience center and is investigating the move of at least one and possibly two more convenience centers within five years. The county is also focused on meeting as much of the mandatory reduction rate as possible through their own system while relying on private industry as little as possible. This plan for increased sustainability, recycling, diversion, efficiency, and convenience ensures that the county's plan supports the Statewide Solid Waste Management Plan.