Morgan County
Solid Waste
Needs Assessment
2008

### Item # 1 Demographic Information

The following table and charts illustrate the population trends of the county as whole, respective municipalities, total municipal residents and county only residents. The 2010 and 2015 projects 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 county saw a 4.2% increase between 1990 and 2000. The State during the same time saw a 6% growth rate. Morgan County is a very rural county with very little opportunity that some of the neighboring counties have to offer to attract new residents. It is expected that Morgan County will see a 2% increase in population between 2006 and 2010. The development of the new prison will bring in some new residents into the area. However, most of the existing employees at the prison will remain at the new prison. The State is still deciding what to do with the old prison and there has been talk about a woman's prison. If this takes place Morgan County should see additional residents of 1% over the 2% increase. The City of Oakdale will not see any increase of significant amount due to the size of the City. The City of Sunbright will also see very little increase that will effect the residential population of the Region. The City of Wartburg will probably see the largest increase of about 10%. This will partly be due to the potential of increasing the growth area of the City.

Jurisdiction	1990	2000/% change	2006 / %	2010 / %	2015 / %
Morgan	17,300	20,086/14%	20,488 / 2%	21,308 / 2%	22,160 / 2%
County					
Oakdale	268	244/negative%	249 / 2%	254 / 2%	259 / 2%
Sunbright	0	340/N/A	347 / 2%	354 / 2%	361 / 2%
Wartburg	932	890/N/A	949 / 2%	968 / 2%	987 / 2%

It should be noted that due to the overall population of the region being so small that any new industry or housing development can greatly effect the percentage growth. However, from 2005 to 2015 the region will see about a 2,000 resident growth. That growth will provide a minimal effect to the waste stream.

#### **Item 2 Region Economies**

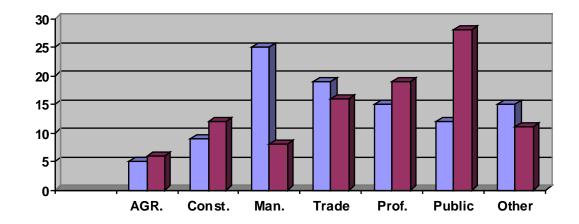
The following table and chart show the per capita incomes for the county and each municipality in 1989 and 1999 and estimates for 2007, 2010 and 2015. The existing trends are expected to continue for each municipality and the county, though increases will likely be smaller in the future for most municipalities.

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 could present problem waste. Based on the % increase from 1989 to 1999 of 60%. In talking to the Chamber of Commerce, it was the suggested that the County cannot use the 60% increase in population that was shown between 1990-2000 as a barometer for the future. The County was simply catching up with the rest of the region with new industries coming into the area and the reliance on Coal and trucking etc. had diminished. The manufacture jobs attracted new residents into the area. That being the case a 10% increase can be realized over the next few years. The fact that the City of Wartburg is where the courthouse is located has been were most of your higher paying jobs have been housed. Attorneys, government jobs, etc. have been realized in Wartburg. The City of Wartburg has surpassed the PCI of the County in 2007 and will continue to be higher then the County. Sunbright could pass the PCI of the County in the future, if more of the County schoolteachers move into the city limits. Oakdale will also remain slightly above the County and this is partly due to the location of the County that is near the City of Harriman, which provides a chance for higher wage jobs.

Jurisdiction	1989	1999	2007	2010	2015
Morgan	\$7,722	\$15,457	\$19,414	\$21,595	\$23,755
County					
Oakdale	\$8,687	\$16,799	\$20,788	\$22,539	\$25,765
Sunbright	\$8,959	\$13,906	\$18,500	\$19,931	\$21,831
Wartburg	\$7,303	\$12,252	\$21,595	\$23,755	\$26,131

The following table takes a look at the types of business in Morgan 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 1998 and 2005. As the table shows the type of business has changed very little that should keep any spikes in waste from happening in the future. Increase in waste should come from the fact that more people live in the region, rather then from the change in industrial growth.

Industry	2000	2005
Agriculture, Forestry,	5%	6%
Fisheries, Mining		
Construction	9%	12%
Manufacturing	25%	8%
Trade and Finance	19%	16%
Professional Services	15%	19%
Public Administration	12%	28%
Other (consumer industry)	15%	11%



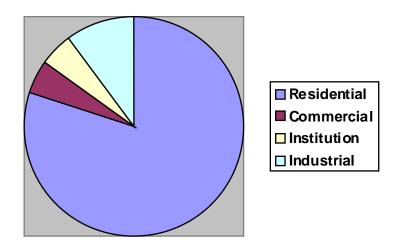


The influx of retirees has impacted the region in the following way. Many of the jobs created by this type of development may be seasonal and low pricing. Retirees generate more comparatively low-skilled, low wage, service employment in a county. This can offset the creation of jobs by not providing good money paying jobs that cause people to spend helping the tax base. However, that being said the influx of retirees does usually bring higher homes values that help in property tax. Tax revenues may also be shifted in the future from more schools to more environmental programs as the residential base becomes older. This change can be shown in the table that shows manufacture jobs dropping 17% between 2000 and 2005. It is estimated that the County could see an increase of 20% retiree community in the future.

# **Item # 3 Region Waste Stream**

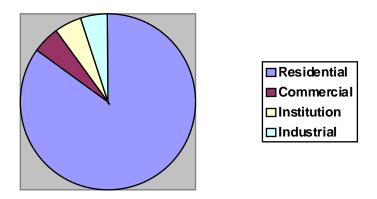
Morgan County solid waste stream is shown below.

Residential 80% Commercial 10% Institution 5% Industrial 5%

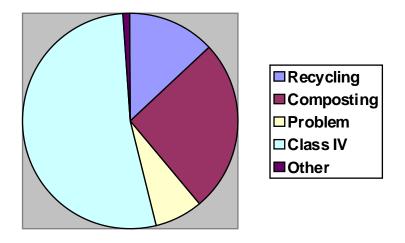


The waste stream during the last needs assessment looked like the following.

Residential 85% Commercial 5% Institution 5% Industrial 5%



This can be further broken down into the following: Recycling -322-13%Composting -658-26%Problem Waste -184-7%Class IV Waste -1,321-53%Other -25-10%Total Waste Diversion -2,485



Morgan County's waste stream has two major products that help their waste diversion. The first is the diversion from the Class IV landfill. The Class IV diversion should continue to be the largest diversion efforts in the future. The County has a unique way to help residents collect Class IV waste with a 4 cu.yd container on wheels that can be rented out and taken to the resident's home for disposal. When full the containers are brought back to the Class IV landfill for disposal. This design has kept a lot of waste from being illegally dumped. The other waste is the compost that is generated from the prisons. The new prison should help the composting efforts to increase in the future.

Problem waste is handled in the following manner. Waste tires our taken to the Class IV landfill for disposal into trailers that when full are hauled away by way of a contract to an end user. Morgan County does not charge any tipping fee for the tires. The county may look at charging a tipping fee in the future. The county has operated the waste tire program on a very tight budget and cannot handle any changes in State funding in the future. The County recently stopped taking tires at the convenience centers. It will be interesting to see how this will affect the tires collected in 2008. It is quite possible that in the more remote areas that the tires could be illegally dumped.

Another problem waste is the used oil program. The used oil program will continue to grow over the next few years with the recent awarding of a grant to the County. The grant will allow the county to purchase used oil tanks that will be placed in all of the

convenience centers. Also, the State just recently awarded a grant for a used oil heater and tank at the Morgan County School Bus garage. The used oil that is collected is being used to heat the school bus garage and the recycling center. Private industries have been collecting used oil for years and the County has not received any totals to report in their annual report. This is something that the County may look at doing to get a more accurate report of used oil collected in the region. The County will continue to collect and process the oil for heating purposes at the Morgan County Recycling Center and the Morgan County School Maintenance Building. The City of Sunbright also collects used oil and uses it to heat their public works building. The City of Wartburg and the City of Oakdale does not collect used oil at the present time. The City of Wartburg residents have the opportunity to take their used oil to the recycling center located within the city limits. The aforementioned activities should not change in the next five years. However, the numbers should increase with used oil tanks in all of the convenience centers.

The County is also handling white goods by allowing people to drop off their waste at the Morgan County Recycling Center and at the Class IV landfill. The cities don't provide any kind of pickup of white goods. Due to the solid waste budgets of the cities, one should not expect the cities to provide any kind of pickup in the future.

Brush collection is not being done in the region. Private citizens burn most brush. The region could look at setting up a composting site at the Class IV landfill site in the future. This will probably happen as a way to meet the 25% waste diversion in the future. The composting efforts will still be handled on the private industrial side with the prisons providing composting through food waste. The County will need to look at collecting the sewer sludge in the future and use it to compost brush. The County would need to get with State Regulatory agents to see if this is possible. The County would need to purchase a brush chipper to process the brush. A tub grinder would work the best, but funding would be an issue for such a large capital investment.

The recycling program has been adequate in the past and the County has continued to expand on the recycling program. The County provides a recycling drop off site at all of the convenience centers. A trailer that is hauled by a ton truck picks up the centers and the items are taken back to the recycling center in Wartburg. The material is processed using a baler. The County has a vertical baler that will need to be replaced in the near future due to its age. The County provides some institutional pickup of mixed paper in the government offices. The County will need to look at picking up paper at the schools in the future. A lot of the other regions have been able to do this with a private contract. Due to the remoteness of Morgan County, this is probably not going to happen and the County will have to provide that collection using their own workforce.

The material that is collected at the convenience centers is separated before it is delivered to the processing center. None of the cities provide a house-to-house collection of recyclables. There is no incentive to recycle unless the sell of the materials can make the program break-even and the Region can meet the 25% waste reduction efforts.

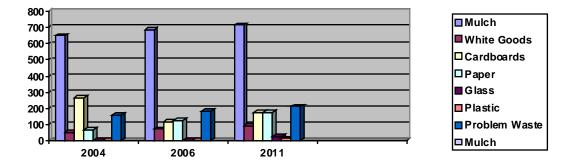
Areas that the County needs to look at for future collection are the following items. E-Waste is one waste that the County has not been active in. E-Waste collection will be provided as part of the waste stream during the next five years. Due to the availability of a market, glass will not be a major item for collection in the future. The collection of plastic will probably be increased in the future. This could be done using the existing convenience centers and the existing baler to bale the items.

Another area that the county needs to look at providing is paint collection. Currently, some small collection of paint is realized at the Mcott County Recycling Center, but this is basically not publicized for fear that the County may get more then they can handle. The County will need to look at investing in a paint storage building. The County would then be able to store the paint in a climate control area and be able to save the good paint for reuse and dump the old paint. The County would look at providing the same kind of set-up as Anderson County, whereby the County would utilize a 4 cu.yd container to mix the paint with saw dust for a drying agent and disposal into the landfill. There is no push from the recycling leaders to collect paint and paint collection will not happen in the next couple of years.

The region with convenience centers is handling class I waste. The waste is collected by the County and taken to the transfer station located in Wartburg at the recycling center. The waste is then hauled by way of a contract to the regional landfill in Scott County. The collection of Class I waste should not change in the next five years. The handling of Commercial and Industrial Waste is being taken care of by private haulers.

Material	Material – 2003	Material –2006	Material –2011
Sanitation	9,320	9,164	9,804
White Goods	53	71	89
Cardboard	264	119	175
Paper	69	122	176
Glass	0	0	25
Plastic	0	1	12
Problem Waste	160	184	212
Mulch	650	685	715

The 2011 figure is based on  $.32 \times 2000 \text{ residents} = 640 \text{ tons}.$ 



It is estimated that the recycling totals should increase by at least 16 % over the next five years. All of the increases can be explained due to the increase in the amount of population that is projected to increase in the future. One should keep in mind that the percentage numbers don't reflect a large increase in numbers due to the small amount of recyclables collected. The biggest change that is not shown on the recycling numbers is the fact that Champion International uses their wood waste as a by-product. This waste is just now being counted and will increase in the future. Champion reuses a total of 30,000 tons of year.

The County has the potential to increase the collection of recyclables with the drop off sites in place at the convenience centers. As is the case for most small counties, the region must be assured that the cost to increase recycling efforts is offset by the sell of materials. The County could expand into the schools with the purchase of containers. The County could also expand the collection of plastic with the purchase of Gaylord boxes. The collection of glass could be expanded with the placement of containers in all of the convenience centers. The County must expand the collection of recyclables by expanding one convenience center at the time. This will allow the County to grow their recycling collection without any new personnel and will allow the county to set up a market for the materials.

Class I waste is going to Scott County Regional Landfill that is collected by the public entities. All commercial/industrial waste is taking to the landfill in Scott County or Anderson County depending upon the contracted source.

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

Morgan County has nine convenience centers that collect the solid waste for the region. The Morgan County Recycling Center located in Wartburg provides the collection of Class I Waste with a transfer station. The transfer station is collected with a contract by a private hauler that takes the Class I waste to the regional landfill in Scott County. None of the municipalities in the region collect Class I waste door-to-door. Their residents utilize the convenience centers for the disposal of Class I waste and the collection of recyclables.

The only composting that is being done by the region is at the prisons. The prison takes their food waste and turns it into a composting agent that is used on the prison yard for landscaping.

Tires are collected at the Morgan County Class IV landfill site and placed into a trailer by prisoners and hauled to an end user by a contracted company. Morgan County just recently stopped the collection of tires at the convenience centers. The Cities in the region don't provide any pickup of tires.

Recycling items are collected at the convenience centers in the region. The convenience centers allow for the collection of mixed paper and cardboard. The materials are taken back to the Morgan County Recycling Center and placed directly into the baler by the State and Federal prisoners. The baled items are taken outside until a sufficient amount is collected for the selling to the market place. The cities don't provide any programs for the collection of recyclable items. The County has begun collecting paper at the governmental institutes in Wartburg, which includes the courthouse offices. The paper is picked up using a trailer and taken back to the recycling center for processing. Metals are placed outside the processing building and collected by a private individual.

Used oil is collected at the recycling center and some of the convenience centers and used for the heating of the recycling center. In 2008 all of the convenience centers will be able to collect used oil. Used oil is also collected at the Morgan County School Maintenance building and used to heat the building.

**Section 5 – Scott County Reduction Rate** 

Current	Current	Base	Current	%	MSW %	MSW %	Real Time
Year	Year	Year	Year	Reduction	Reduction	Reduction	Comparison
Generation	Disposal	Disposal	Population	compared	Population	using	
				to Base	Ration	Population	
				Year		Econ	
						Ration	
21,946	9,164	11,234	20,086	19 %			58%

The County has a 19% base year reduction. The real time comparison reduction is 58%. Without the numbers from Champion International the County would have had 22% real time comparison. The county realizes that in order to continue meeting this goal that the municipalities in the area must provide some kind of recycling effort. The county is also looking at expanding their recycling efforts into the school system that will help recycling numbers in the future. The county also has the ability to increase recyclables collected at their convenience centers with plastic, metal and glass collection. The county may also be able to work out a contract for the collection of recyclables in the future with the changing of their containers to roll-offs. This would allow the current contract with Scott Solid Waste to expand to the collection of recycling with their roll-off truck. The County does not have the convenience to rely on industrial companies in their region due to the lack of industries in the region. The County leaders are always very cognizant of the bottom line, in terms of financing. This makes it hard for the County to expand programs that could be costly for the County to operate.

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

Site Name	Annual	SNL Permit	Current	Maximum	Projected
	Tons	#	Landfill	capacity	Life of
	Disposed by		Capacity		Facility
	Scott		(daily		
	County		throughput)		
Volunteer	9,164	SNL-76-	1,000 tons per	Depends on	25 years
Landfill		0271	day	compaction	remaining
Located in				rate and	
Scott				Landfill	
County				Design and	
				Operations	
				Plan	

Morgan County takes all of their waste to the Scott County Regional Landfill. The residents in the region must use the convenience centers in the region for Class I disposal or they can dump directly at the transfer station. The Cities in the region don't provide any door to door collection and their residents must use the convenience centers.

Public and Private Collection Service in the Campbell County Region

Service	Service Area	Frequency of	Estimated	Type of Service
Provider		Service	average annual	
			tons collected	
Morgan County	County Wide	As Needed	9,164	Convenience
				Centers

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

**Item #7: Solid Waste Management Infrastructure** 

### Scott

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Description	Present Need	Unmet Needs	Total Needs
	\$/year	\$/year	(Present + Unmet) \$/year
Salary and Benefits	\$0	\$0	\$0 \$0
Transportation/hauling	\$0	\$0	\$0
Collection and Disposal Systems	ΨΟ	ΨΟ	ΨΟ
Equipment	\$0	\$0	\$0
Sites	\$0	\$0	\$0
Convenience Center	\$209,337	\$8,600	'
			\$217,937
Transfer Station	\$459,856	\$0	\$459,856
Recycling Center	\$90,796	\$18,500	\$109,296
MRF	\$0	\$0	\$0
Landfills	\$0	\$0	\$0
Site	\$0	\$0	\$0
Operation	\$88,684	\$4,000	\$92,684
Closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$
Administration (supplies, communication cost, etc.)	\$0	\$0	\$0
Education	\$28,129	\$0	\$28,129
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$0
Rev	enue		
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$682,632	\$0	\$682,632
Sales tax	\$0	\$0	\$0
Surcharges	\$0	\$0	\$0
Disposal fees	\$203,439	\$0	\$203,439
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.)	\$60,941	\$0	\$60,941
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Salary: Morgan 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: Morgan County needs to purchase some more of the 4 cu.yd containers for the Class IV facility. Open top containers will need to be purchased for the convenience centers in order to expand the collection of recyclables. Also, a new trailer will be needed at the recycling center for the collection of mixed paper. A new vertical baler will be needed at the recycling center to replace the worn-out baler.

Facilities: The County is in need of re-surfacing all of the convenience centers. We are showing in the budget one per year. Also, we made need to provide a storage building at the convenience centers for collection such as e-waste and paint in the future.

None of the municipalities have sanitation budgets. Any general pickups during clean up days are handling by the street department.

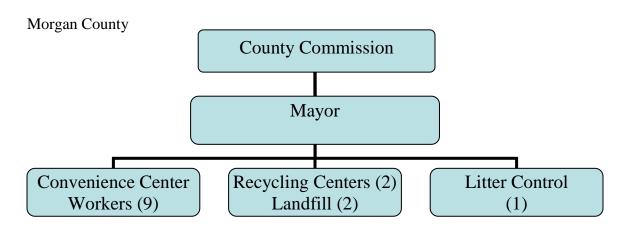
It should be noted that in talking with all of the Cities no large capital investments would be needed for the next five years.

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

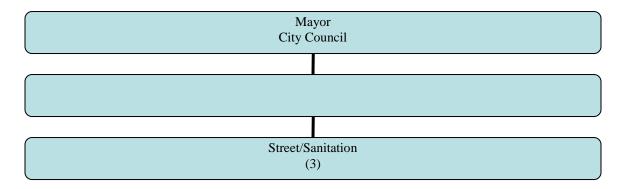
### Morgan County

Staffing for Morgan County includes two full time staff at the Morgan County Recycling Center. The County has 1 litter control officer. The County also has nine convenience center workers and two Class IV landfill workers. The County also utilizes prison labor for most of their labor-intensive jobs. All of these County employees report to the County Mayor. The County Mayor reports to the County Commission.

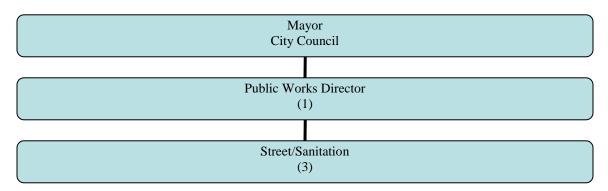
Any shortcomings by the County in terms of solid waste collection are not an issue at the present time.



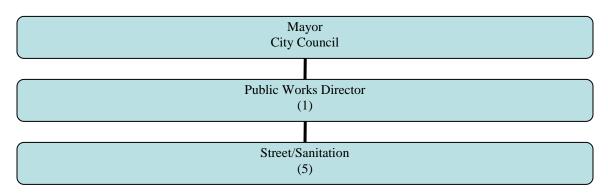
#### Oakdale



# Sunbright



# Wartburg



# **Item #9: Future Waste Management Needs**

# **Morgan County**

### Collection

Conection			
Equipment	Operational Use	Estimated Cost	Potential Revenue
			Source
Open top containers		\$1,200	Property Tax / Grant
Storage Building		\$1,200	Property Tax / Grant
Re-surface CC		\$5,000	Property Tax / Grant
Disposal			
Equipment	Operational Use	Estimated Cost	Potential Revenue
			Source
4 cu. yd containers		\$800	Tipping Fee Charges
Material Recovery			
Recycling Trailer		\$2,500	Property Tax / Grant
Vertical Baler		\$16,000	Property Tax / Grant

# Sunbright

## Collection

Equipment	Operational Use	Estimated Cost	Potential Revenue Source
Brush Chipper		\$15,800	Grant
Disposal	•		

#### Disposal

Equipment	Operational Use	Estimated Cost	Potential Revenue
			Source
None			

# Material Recovery

None		

## Oakdale

## Collection

Equipment	Operational Use	Estimated Cost	Potential Revenue
			Source
Brush Chipper		\$15,800	Grant
Disposal			
Equipment	Operational Use	Estimated Cost	Potential Revenue
			Source
None			
Material Recovery			
None			

# Wartburg

### Collection

Operational Use	Estimated Cost	Potential Revenue
		Source
	\$14,800	Grant
	Operational Use	

Disposal

Equipment	Operational Use	Estimated Cost	Potential Revenue
			Source
None			

Material Recovery

None		

#### **Item # 10: Residents Attitude and Participation**

No surveys have been done to measure the public's attitude of Morgan County residents concerning support for environmental programs. The residents that are recycling are pleased with the drop off sites provided in the region. However, rural areas have a hard time properly disposing of their Class I Waste and will not recycle, if it means any extra effort. Unless a convenience center is within a couple of miles, residents have no incentive besides being good environmental stewards to recycle. It should be noted that the litter control team has not seen a drop in litter over the last few years, which suggest that although the recycling numbers have picked up, there are still residents that need to be reached. Morgan County has had a very active education program in the past that targets the youth. The children are reminded of recycling almost daily with different programs. However, the schools don't have the opportunity to practice what they have learned. The county needs to look at providing the schools an opportunity to recycle in the future. The collection of paper will help the students have hands on experience.

Morgan County continues to educate the children on the need and benefit of recycling. 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 Morgan County will have to expand the items that are collected at the convenience centers in the future in order to keep up with the demands of the residents.

Morgan County is attracting retirees into the area that are use to recycling and as these retiree numbers continue to grow more public pressure will be put on the Cities to provide more recycling opportunities. The long time residents of the County were not raised with recycling efforts and do not see the need to recycle any items that can be simply put into the garbage can. The only way the County will change these people's minds is either through their kids or set a pay as you go charge. The County leaders will not even discuss this option at the present time, unless monies become an issue in the County budget.

The County would be better served working with the commercial and industrial leaders that see a direct correlation to savings by recycling. These efforts could show companies how they can save money on disposal fees and even bring money into their revenue stream. It is through these companies that their workers will begin to recycle and maybe if it becomes a way of life will start recycling at home.

#### Item # 11: Regional Solid Waste Plan

The County's plan for the next five years is to expand services within the recycling and waste diversion divisions. The County will examine going to a roll-off system in the future that could allow the collection of more recyclables at the convenience centers. By changing to a roll-off system the county would have the opportunity to contract out the collection of recyclables? The county might be able to increase the collection of plastic, glass and mixed metals at the convenience centers.

The County will continue to provide the collection of C&D waste as a waste diversion for the region. The County has been able to come up with a unique way to divert some C&D waste. The County has placed wheels on 4 cu.yd containers that can be rented out by residents of Morgan County. This allows residents who might be renovating a house or cleaning up property to directly dump the C&D waste into a container that can hold more waste then the back of a truck. The resident then transport the C&D waste back to the Class IV landfill for proper disposal. It is my belief that this process has kept a lot of waste from being illegally dumped due to the distance to the landfill for some of the residents. These residents will take one trip to the landfill, but probably not multiple trips to the landfill.

The County will examine the collection of paint at their convenience centers. This will entail the County to purchase a paint storage building that will give the County a place to store the paint. This will allow the County to go through the paint and save the good paint for reuse and dispose of the other paint. The County will need to get with TDEC to determine how they can collect paint at the convenience centers. This will help residents to become better environmental stewards. Currently, if you have paint and need to get rid of the paint, you place the paint in a garbage bag and take it to the dump. The paint and the cans are then taken to the Class I landfill. The County use to have HHW events, but have not been promoting these as often largely due to turnouts.

Morgan County has the ability to expand their recycling of materials with the convenience centers as the recycling drop off points. Due to budget constraints within the region, any increase in recycling opportunities will have to be done in steps to avoid new expenses that require new revenue sources. Morgan County continues to rely upon the commercial and industrial sectors to provide enough reduction in order to meet the 25% reduction. This will not create a problem because a new prison has just been built that should be in the area for the next 25 years. Champion International has also been in operation for the past five years and should be around for a long time. The County needs to continue to find methods to increase recycling opportunities without new revenue sources. That is the only way that the governmental leaders will allow such programs to exist. One avenue for the County is to have each Town to reduce their waste by 25% through recycling.

### Sources:

Morgan County Solid Waste Morgan County Chamber of Commerce U.S. Census Bureau City of Oakdale City of Sunbright City of Wartburgh

