2010 State Solid Waste Management Plan

Kansas Department of Health and Environment
Bureau of Waste Management

Acknowledgments and Adoption

State law (K.S.A. 65-3406) directs the secretary of the Department of Health and Environment to develop a statewide solid waste management plan. The first state plan was prepared and adopted in 1996. In accordance with the provisions of the first plan, the plan was updated in 2000 and every five years thereafter.

To facilitate the 2010 update, KDHE implemented a general public and solid waste stakeholder survey in the fall of 2009. Additional feedback was solicited at the 2010 WORKS! Conference held in Junction City in March 2010. Excellent feedback regarding important solid waste management issues was received through these mechanisms. A total of 147 people completed the survey (see Appendices A and B for details) and about 150 stakeholders participated in the follow-up sessions at the WORKS! Conference. KDHE appreciates the efforts of everyone who participated in both of these events.

This plan attempts to balance the opinions of the general public, local government officials who have the responsibility to ensure that adequate solid waste management services exist in their cities and counties, and state legislators who provide KDHE with statutory direction regarding the implementation of the state solid waste program.

On behalf of the Kansas Department of Health and Environment, I want to thank everyone who helped prepare this updated plan. In addition, I want to recognize the efforts of the hundreds, perhaps thousands, of people who are directly involved in providing solid waste management services to our households, businesses, and institutions. In combination, those efforts reduce potential nuisances and environmental impacts.

This state plan will help Kansas continue to make improvements in waste management. The plan acknowledges that the state role is important, but that statewide improvements in solid waste management practices require the cooperative efforts of many public and private parties.

This plan is hereby adopted as a guide for state activity related to solid waste management from 2010 to 2015.

Roderick L. Bremby
Secretary
Kansas Department of Health and Environment

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Introduction to 2010 to 2015 State Solid Waste Management Plan

STATE AUTHORITY AND RESPONSIBILITY

The secretary of the Kansas Department of Health and Environment (KDHE) is directed by state law to prepare and adopt a state solid waste management plan (K.S.A. 65-3406 (a)(5)). The first state plan was adopted in 1996 and two subsequent revisions were adopted in 2000 and 2005. No specific statutory guidance is provided regarding the plan content; however, KDHE has consistently considered the complete body of current state solid waste laws when drafting each version of the state plan. Additional input has been solicited from key stakeholders to help prepare each plan. The overall statutory intent regarding solid waste management in Kansas and the state's role is summarized by the following:

- The protection of the health and welfare of the citizens of Kansas requires the safe and sanitary disposal of solid waste.
- The state should work cooperatively with local governments to facilitate the development of environmentally sound and cost effective methods for managing and reducing solid waste.
- KDHE should maintain adequate resources and proper approvals from the U.S. Environmental Protection Agency (EPA) to fully administer all solid waste regulatory programs in lieu of federal regulatory oversight.
- All solid waste processing and disposal facilities should be subject to state permitting and operational regulations so that environmental impacts and nuisances will be minimized.
- Major solid waste management decisions should be made at the local level as part of the comprehensive local planning process carried out in concert with land-use determinations.
- KDHE should administer programs to provide technical training, public education, illegal dump clean-up, and grants to improve solid waste management and waste reduction practices.

PURPOSE OF STATE SOLID WASTE MANAGEMENT PLAN

The purpose of the state solid waste management plan is to: (1) guide KDHE in administering all aspects of the solid waste program and (2) provide the citizens of Kansas with information that equips them to make good solid waste management decisions and prepares them to respond to state directives. KDHE staff utilize the plan to prioritize staff efforts and the use of monetary resources. Even though the state plan does not direct local governments or private companies to carry out certain duties, the work of KDHE may indirectly result in the need for action by others or it may impact their operational activities or decisions (e.g., the development of new regulations, new grant opportunities, etc.).

NEED TO UPDATE STATE SOLID WASTE PLAN

KDHE determined in the late 1990s that the state plan should be updated every five years. This is the same timeframe established in state law for counties to update their local plans. Many factors and conditions are constantly changing justifying a thorough re-evaluation process and plan update at this five-year frequency. As improvements in waste management continue to be made throughout the state and as local programs and the statewide system mature, fewer changes should be necessary in state plan updates. However, routine reviews and updates will always be necessary for the following reasons:

- Improved waste management practices does not mean ideal conditions have been reached. There may be more opportunities for improvements.
- Technology changes or knowledge may warrant modifications in local waste management systems.
- Population changes may require modifications to facilities or services.
- New waste streams may require management as technology evolves or new businesses develop.
- Available resources to carry out waste management activities may increase or decrease.
- Public education and technical training needs to change as new information is obtained, when changes to facilities or services are made, and as various unforeseen challenges arise.

This 2010 version of the state solid waste management plan covers the period 2010 to 2015; however, some projections related to waste quantities are made through 2019. The next plan review will begin in late 2014 and the updated plan will be finalized and adopted in 2015.

PROCEDURE TO PREPARE THE 2010 UPDATE

Several steps were followed by KDHE to prepare this 2010 update to the state plan. The process began with an online survey for stakeholders and other interested citizens. A total of 147 persons responded to the survey including 79 people whose job responsibilities included some aspect of solid waste management. The results of the survey are presented in Appendix B.

Additional stakeholder input was solicited at the KDHE "WORKS! Conference" in March 2010. Over 200 people with various solid waste management responsibilities participated in a follow-up survey and discussion period providing more valuable information and opinions to KDHE.

Following these two steps, KDHE developed a draft plan which was made available for review on the KDHE website for 45 days. Various outreach methods were used to notify Kansans that the state plan could be reviewed and commented upon during that period including a Kansas register notice and a statewide press release. Following that public comment period, KDHE finalized the plan and it was adopted by the secretary of KDHE.

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Chapter 2
Waste Management in Kansas

The current system of solid waste management in Kansas is described in this chapter. This system serves as the basis for assessing the adequacy of present practices and services and for determining if changes are needed to bring the system into conformance with the "vision" of the preferred management system described in Chapter 4. The current system is defined with respect to: (1) the amounts of waste routinely managed for disposal and recovered for recycling and composting; (2) the number and types of facilities which handle wastes and recyclables; and (3) the capacities of facilities managing waste and recyclables. The evaluation of waste quantities includes a review of waste imports and exports and future projections. This chapter also addresses the state's capabilities to manage waste generated through natural disasters such as tornados, floods, hail, fires, etc. or animal carcasses resulting from an outbreak of a foreign animal disease. Finally, a brief review of the status of county and regional solid waste planning is included in this chapter.

AMOUNTS OF SOLID WASTE MANAGED IN KANSAS

All permitted solid waste facilities in Kansas are required to submit annual reports to KDHE which quantify the amounts of waste landfilled, transferred out of state, composted, and processed for recovery or disposal. However, there is no requirement to report the amounts of waste recycled. Voluntary reporting on recycling has been requested by the department for several years, but less than complete participation has been common. For this reason, it is difficult to accurately estimate the amount of waste diverted from landfills for recycling or reuse.

The amount of solid waste disposed at permitted Kansas landfills and transferred to out-of-state landfills is provided for 2009 in Table 2-1 according to five major categories of waste. Municipal solid waste (MSW) comprised 54 percent of the 5.58 million tons which were handled by landfill and transfer station operators. A total of 761,500 tons were imported (mostly from Missouri) and only 82,800 tons were

exported through transfer stations. Industrial waste and construction & demolition (C&D) waste comprised 20.1 and 16.1 percent of the waste total, respectively. Smaller amounts of special waste (498,000 tons / 8.9 percent) and waste tires (50,000 tons / 0.9 percent) were landfilled. Special waste consists of a variety of waste types including medical waste, contaminated soil, and miscellaneous industrial process wastes.

Over 3 million tons of municipal solid waste was landfilled in Kansas in 2009, about one ton per person.

The total volume of waste handled in Kansas facilities has trended downward for several years due to various waste reduction efforts; however, another major factor came into play in 2008 - - the nationwide economic slowdown. There has been a major reduction in waste generation and disposal from 2008 to 2010. Over the past 24 months, MSW disposal has dropped by about 10 percent and C&D disposal has dropped by about 20 percent. Disposal of industrial wastes which occurs mostly in on-site landfills is also down by over 10 percent, but many individual industrial landfills have seen reductions of 40 to 60 percent due to manufacturing slowdowns. This trend which is occurring across the country demonstrates clearly that waste generation is directly linked to economic prosperity.

The economic slowdown that began in 2008 has resulted in nearly one million fewer tons of generated waste.

Table 2-1 **Solid Waste Landfilled in Kansas or Sent to Out-of-State Landfills in 2009**

Waste Type	Total Tons	%	Imported Tons	Exported Tons
Municipal solid waste	3,014,000	54.0	587,000	82,000
Construction & demolition waste	898,000	16.1	49,000	< 100
Industrial waste	1,120,000	20.1	500	0
Special waste	498,000	8.9	102,000	800
Waste tires	50,000	0.9	23,000	0
Total	5,580,000	100	761,500	82,800

Measuring Waste Reduction Efforts

Many states and the U.S. Environmental Protection Agency have set MSW recycling rate goals. The federal goal is 35 percent and some states have set much more aggressive goals. Despite setting quantitative goals, most states and the EPA face the same difficulties in accurately estimating the amounts of recycled materials as explained above so they often use hypothetical calculations to estimate their rates.

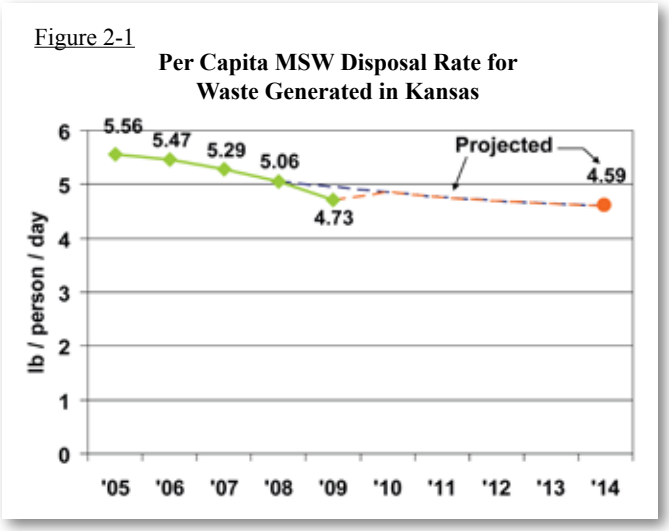
Neither the Kansas Legislature nor KDHE have set a numeric recycling goal for the state as a whole; however, KDHE has encouraged county and regional solid waste planners to set recycling goals. Goals may be numeric recycling rates or more oriented toward the implementation of various new waste reduction programs. An example of a locally adopted non-quantitative goal could be curbside recyclables pick-up for all households within cities of a certain size. Recycling rates may be more precisely calculated at the local level because fewer parties are involved in recycling than statewide.

The Kansas MSW recycling rate was estimated to be at least 26 percent in 2009.

Despite data limitations, KDHE has utilized voluntarily reported information for 2009 to estimate the Kansas MSW recycling rate at 25.7 percent. This slight increase from 2008 is based upon actual recycled tonnage of nearly 836,500 tons. Because some waste recovery is almost certainly not reported, the actual recycling rate was probably a couple percentage points higher; perhaps in the 26 to 28 percent range. For a state without recycling mandates, this estimated recycling rate is fairly high. The same methodology was used to calculate the Kansas recycling rate over the past decade indicating an average growth in the statewide recycling rate of about one percent per year.

The per capita MSW disposal rate in Kansas has decreased by about ¾ of a pound per person since 2005.

Figure 2-1



Another way to track overall waste reduction in Kansas is to calculate MSW disposal per person. Solid waste disposal data must be reported by permitted facilities to KDHE. Therefore, a statewide per capita MSW disposal rate can be more precisely estimated than a recycling rate. Figure 2-1 shows the MSW per capita disposal trend from 2005 to 2009 for Kansas generated waste. A projection estimate is also included and discussed later in this chapter. There has been a clear decreasing trend each year with the greatest reduction occurring in 2008 and 2009 due to the economic slowdown. The overall decrease in the MSW disposal rate over this

period was 15 percent, or an average of nearly 4 percent per year. It is noteworthy that the per capita reduction over the three-year period from 2005 to 2008 was about 9 percent, or about 3 percent per year. The drop from 2008 to 2009 was 6.7 percent.

The observed downward trend in per capita disposal accounts for more factors than waste recovery and the economy. It combines the effects of the primary diversion practices such as recycling and composting with source reduction and economic conditions. Source reduction can be significant with respect to certain components of the waste stream such as yard waste (resulting from backyard composting or mulching).

Waste Imports and Exports

As shown in Table 2-1, Kansas is a large importer and a minor exporter of solid waste. Waste flow across state lines is protected by the Commerce Clause of the U.S. Constitution and most decisions regarding importation or exportation of waste are driven by the availability and cost of competing disposal options. Other market factors are also important such as local government franchising practices for collection services. Since the City of Kansas City, Missouri does select a single contractor for residential MSW collection, this contract is quite important with respect to waste flow to Kansas. For the first time in many years, the City of Kansas City, Missouri selected a new collection contractor and beginning in May 2010, a significant amount of waste that had previously been disposal of in the Johnson County, Inc. landfill was shifted to a Missouri landfill. This fact was considered when making waste quantities projections in the following section of this chapter.

Even with the loss of some residential waste from Kansas City, Missouri, most solid waste imports will come to Kansas from the metropolitan Kansas City area. Significant waste quantities have traditionally entered Kansas from St. Joseph, Missouri, southwest Missouri, and the Oklahoma panhandle. Total imports in 2009 were about 761,000 tons (77 percent was MSW). Special waste which primarily consists of contaminated soil and other industrial wastes comprised 13 percent of imports.

Solid waste exports are relatively minor (nearly 83,000 tons in 2009) and nearly all occurs in southeast Kansas. This amount may also increase due to the recent closure of an MSW landfill in Cherokee County.

Projected Solid Waste Amounts

The amounts and types of solid waste that will require disposal and/or processing need to be estimated into the future to determine the adequacy of the existing network of waste management facilities and the need for future facilities. Therefore, the amounts of waste should be projected using the best available information. The methodology used to project waste quantities in 2014 and 2019 is explained below:

- **MSW** - The per capita disposal rate and import/export information is used to project MSW that will require management in Kansas facilities. To project the per capita disposal rate for Kansas-generated waste (see Figure 2-1), it is necessary to consider the effects of the poor economy on the high drop in disposal rates in 2008 (4.3 percent) and 2009 (6.7 percent) with respect to previous years. It is uncertain whether the disposal rate will increase to the levels that would have been expected without the economy impacts; however, for purposes of making projections, the 2009 rate was adjusted upward to a 3 percent per year decrease for 2008 and 2009. Further reductions of 2 percent per year were assumed from 2009 to 2012, 1.0 percent per year from 2012 to 2015, and then just 0.5 percent per year from 2015 to 2019. Based upon these assumptions, the per capita generation rates for 2014 and 2019 are calculated and applied to projected population estimates to calculate total Kansas MSW that would be generated for disposal. This information is presented in Table 2-2 along with estimates of imported tonnage. Exported tonnage is already included in the per capita disposal rate.

MSW generation will remain fairly flat through 2019.

Table 2-2

Projected Estimates of MSW Managed in Kansas

	2009	2014	2019
Per Capita Disposal Rate (lb/person/day)	4.98 *	4.59	4.46
Percent Decrease from 2009	NA	7.8%	10.5%
Population	2,802,134	2,867,958	2,925,784
Total Kansas MSW for disposal (tons)	2,427,000	2,402,000	2,381,000
MSW Imports (tons)	587,000	450,000	400,000
Total MSW Managed in Kansas (tons)	3,014,000	2,852,000	2,781,000
Estimated Precision	NA	± 10%	± 10%

* Adjusted for depressed economy; actual 2009 rate was 4.75

Imports are projected to decrease due to known and anticipated losses of imported tonnage as well as increased waste reduction. Overall, the total amount of MSW to be managed is projected to decrease over the initial five years due to improved recycling and a loss of some imported waste. From 2014 to 2019, the amount of MSW requiring management in Kansas is projected to remain fairly flat with some minor reductions in per capita disposal being cancelled out by increased population. Since so many factors can influence these projections, the totals should be considered accurate within 10 percent of what will actually be experienced.

- **Construction & Demolition (C&D)Waste** – The routine generation and disposal of construction and demolition waste appears more related to the state of the economy than MSW waste. The amount of C&D waste is also related to natural disasters and even the prevalence of hail storms (addressed below). C&D waste generation in Kansas was generally above one million tons per year for many years before the decrease in 2008 and 2009. It is believed that C&D generation and disposal will return to near the historical generation rate in the future. It is also noteworthy that Kansas is an importer of C&D waste especially from the Kansas City area because disposal is much more expensive in the State of Missouri due to more stringent landfill standards for this type of waste. This difference in applicable rules is not expected to change throughout the projection period. C&D waste disposal is likely to range from 800,000 to 1,200,000 tons per year through 2019. However, C&D waste recycling may increase substantially during this period.

- **Industrial Waste** - Most industrial waste is generated by coal-fired electric power generation facilities (fly ash, bottom ash, and other air pollution control residues). This type of waste may increase as additional air pollution controls are required and implemented. However, the pressures to move away from coal may result in some decreased generation. Other major industrial waste generators include foundries, cement plants, and other metal casting facilities. These wastes are nearly all disposed of in on-site landfills. Industrial waste volumes are similar to C&D waste quantities, perhaps somewhat less. It is estimated that non-power plant waste will decrease somewhat over the projection period and coal combustion related wastes will remain fairly stable. Overall,

industrial waste generation will range from 800,000 to 1,100,000 tons per year.

- **Special Waste** – Some special waste is routinely generated (medical waste, wastewater treatment sludges, asbestos, etc.) but most is related to environmental clean-up projects, including spill response activities (primarily contaminated soil). The amount of special waste varies greatly ranging from 200,000 to 500,000 tons per year. A considerable amount of special waste is imported to Kansas MSW landfills from Missouri.

- **Waste Tires** – Processed waste tires may be disposed of in Kansas MSW landfills; however, most that are landfilled go to waste tire monofills which take nothing except waste tires. Waste tires managed for disposal should gradually decrease as tire recycling increases. Kansas is unique in its number of monofills which offer relatively low cost disposal so imports are common comprising nearly half of the typically landfilled amount. It is estimated that waste tire disposal in Kansas will range from 30,000 to 60,000 tons per year during the projection period.

Projected waste quantities are provided for all waste categories in Table 2-3. High, low, and best estimates are given for each projection year. Statewide, the amount of solid waste requiring management in Kansas is likely to remain steady over this ten year period due to a variety of factors (widespread waste reduction and recovery by individuals, businesses, local governments, and institutions combined with increased population and industrial activity). Waste quantities may increase in some locations that are experiencing higher than average growth rates or above average business development.

Table 2-3

Solid Waste Requiring Management by Permitted Facilities

	2009	2014			2019		
		Low	High	Best	Low	High	Best
MSW	3,014,000	2,567,000	3,137,000	2,852,000	2,593,000	3,169,000	2,881,000
C&D	898,000	800,000	1,200,000	1,000,000	800,000	1,200,000	1,000,000
Industrial	1,120,000	900,000	1,300,000	1,200,000	900,000	1,400,000	1,250,000
Special Waste	498,000	250,000	500,000	350,000	250,000	500,000	350,000
Waste Tires	50,000	30,000	60,000	40,000	30,000	60,000	40,000
Total	5,580,000	4,547,000	6,197,000	5,442,000	4,573,000	6,329,000	5,521,000

Amounts of Waste Recycled and Composted

The reported amount of municipal solid waste recycled and composted in 2009 is presented in Table 2-4. The projected reduction in the MSW disposal rate (see Figure 2-1) is due partially to increased recycling so the amount of recyclable materials handled should increase accordingly. Some of that reduction in disposal is related to source reduction. Based upon the projected decrease in per capita disposal, it is reasonable to assume that diversion of MSW waste into recycling streams should increase by at least 100,000 tons by 2014 and by an additional 50,000 tons by 2019 yielding the following amounts handled by all recovery operations combined:

Table 2-4

Kansas MSW Recycling and Composting in 2009

	Total Tons	% Change from 2008
Paper	342,416	-18.9
Non-Ferrous Metal	43,610	-20.9
Ferrous Metal (White Goods)	250,338	+16.5
Lead Acid Batteries	2,366	-22.2
Plastic	10,630	+13.8
Glass	17,093	+88.7
E-Waste	4,242	+29.4
Other (mostly yard waste)	165,813	+11.3
Total	836,508	-0.03

Recycling Rate . . . 25.7%

MSW Recyclables Handled	
2009	836,500 tons
2014	936,000 tons (estimated)
2019	986,000 tons (estimated)

Little information is available on the amounts of non-MSW recycled; however, it is clear that more and more C&D, industrial, and waste tires will be recycled each year. Most C&D recycling relates to clean rubble (concrete, asphalt, masonry, etc.) that can be processed at non-permitted facilities. Only limited amounts of wood or other C&D wastes are recycled at the present time.

Household hazardous waste (HHW) is part of the MSW stream. The amount of HHW diverted from the MSW stream has consistently grown from the inception of the HHW programs in the mid-1990s. It is probable that HHW collection will continue some growth throughout this period. The total amount of HHW collected in

2009 was 4.6 million pounds (2,300 tons). If collection increases by one percent per year over the projection period the following quantities will be diverted from landfills in the projection years:

	HHW Collected
2008	2,300 tons
2014	2,420 tons
2019	2,543 tons

Disaster Related Solid Waste

The waste projections made in Table 2-3 do not include any disaster related debris. Disasters are unpredictable and debris amounts can range from small to astronomical. Every year, some disaster related debris is generated from tornados, floods, hail storms, wind events, and ice storms. A large tornado can result in the generation of hundreds of thousands of tons of mixed debris. Nearly a half million tons of debris were generated by the 2007 EF-5 tornado that hit Greensburg.

Most tornado debris can be managed as C&D waste. Smaller amounts of MSW and recyclables are also generated by tornados and floods. Waste segregation is always appropriate when a disaster strikes a community. Items such as household hazardous wastes, appliances, scrap metal, electronic waste, trees and brush, automobiles, and even bricks and concrete should be separated to maximize recycling and environmentally sound disposal. Many other industrial and commercial wastes may also require segregation including things such as electrical transformers, tanks, 55 gallon drums, propane cylinders, waste tires, and other items.

Another type of disaster could be the death of a large number of animals including cattle, pigs, or birds (chickens or turkeys). The reasons for such deaths could be weather (heat, cold, blizzards, or ice) or a foreign animal disease. The magnitude of animal death can range from a small number of animals to hundreds of thousands. Kansas has millions of animals on farms and ranches and a widespread event could result in major processing or disposal needs. This is addressed in more detail later in this chapter on available disposal and processing facilities.

In general, it is necessary to evaluate every disaster to estimate the amount of waste generated in order to quickly assess the capabilities of existing nearby facilities to manage the waste. KDHE should work with local government officials, the Kansas Department

of Emergency Management, and private companies, as appropriate, to perform these assessments.

KANSAS SOLID WASTE MANAGEMENT FACILITIES

Nearly all solid waste is managed at facilities that have been issued permits by KDHE. There are presently over 573 active permits for 16 different types of solid waste facilities. The total number of each type of facility in 2010 is provided in Table 2-5 along with ownership information. In some cases, more than one permit type has been issued to the same entity at the same location; therefore, there are actually less than 364 different locations for these facilities.

Table 2-5

Permitted Solid Waste Facilities

Facility Type	Total	Ownership			
		City	County	Private	State/ Federal
Composting	147	70	36	35	6
Construction & Demolition LF	98	9	58	28	3
Household Hazardous Waste	61	4	54	0	3
Incinerator	1	0	0	1	0
Industrial LF	41	7	4	28	2
Landfarm	3	0	0	2	1
Medical Waste Processor	1	0	0	1	0
Mobile Tire Processor	8	0	0	8	0
Municipal Solid Waste LF					
Subtitle D	18	2	8	8	0
Small Arid	33	2	31	0	0
Solid Waste Processor	20	1	0	17	2
Transfer Station	65	4	48	13	0
Waste Tire Collection Center	1	0	0	1	0
Waste Tire Monofill	23	3	10	10	0
Waste Tire Processor	17	0	0	17	0
Waste Tire Transporter	36	0	0	36	0
Total	573	102	249	205	17

Inert "clean rubble," is a type of C&D waste which may be managed at non-permitted facilities. Clean rubble consists of materials such as concrete, bricks, asphaltic pavement, and dirt and can include steel rebar in demolished roads, bridges, and other structures.

Materials such as various paper types, metal cans, plastic and glass bottles, and miscellaneous other materials are exempt from the definition of solid waste if they are managed as "recyclables." That means the materials are segregated by generators and separately collected, stored, and processed outside of a mixed MSW stream. Recyclables may be managed at non-permitted facilities; however, their management is addressed in county and regional solid waste management plans. The best source of information regarding the availability of non-permitted recycling facilities can be found at www.kansasrecycles.org.

MSW Landfills and Transfer Stations

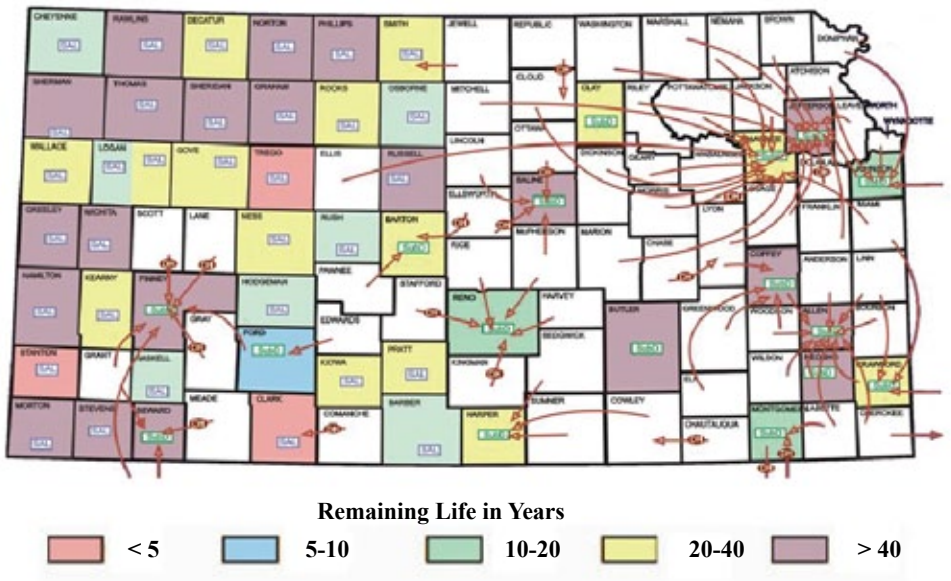
Kansas has an excellent network of MSW landfills that should meet the state's disposal needs well beyond the 2019 projection period. One of the 18 permitted Subtitle D MSW landfills is in the process of closing in southeast Kansas; however, there is good overall capacity in the region, including southwest Missouri. The remaining Subtitle D and small arid landfills serving western Kansas have many years of permitted capacity based upon current disposal rates. Many of these landfills also have the capability to expand their permitted capacity within their permitted boundaries while others have adjacent property which could be used for expansion. Figure 2-2 shows the remaining permitted capacity of each MSW landfill in years based upon the volume of waste currently being landfilled. It also shows which counties use each MSW landfill by means of flow lines from the counties sending the waste to the landfills. If the designation "DH" is used on the flow lines, that means the waste is directly transported in collection vehicles rather than through a transfer station. Table 2-5 shows there are 65 transfer stations compared to 59

Kansas has adequate MSW landfill capacity to last through the 10 year projection period.

59 Kansas counties transfer their MSW to a landfill in another county.

Figure 2-2

MSW Landfills and Waste Transfers



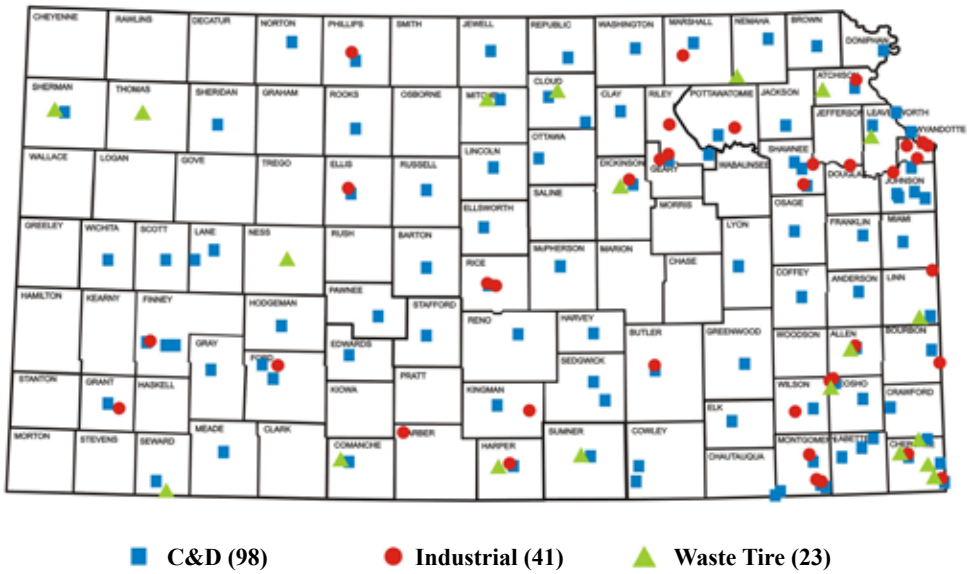
counties that directly haul all of their waste to an adjacent county. A small number of counties may directly haul a small percentage of their waste out of the county and manage the majority through a transfer station or in a county landfill.

More than half of Kansas counties (59) transfer their MSW to landfills in other counties or out-of-state. Overall, waste transfers have remained steady since the early to mid-1990s when Subtitle D regulations went into effect.

The decision to transfer waste in Kansas is made by local planners, public works officials, and elected county commissioners. The ownership and operation of transfer facilities and waste hauling companies varies from county to county. In some cases, operations are totally owned and operated by local government. In other cases, private companies or a mix of public and private entities own and operate transfer stations. The longest transfer distance in Kansas continues to be from Ellis County (Hays) to a large private landfill north of Topeka in Shawnee County (about 220 miles). Many transfers are less than 50 miles to neighboring counties.

Figure 2-3

Non-MSW Landfills in Kansas



Other Landfill Types

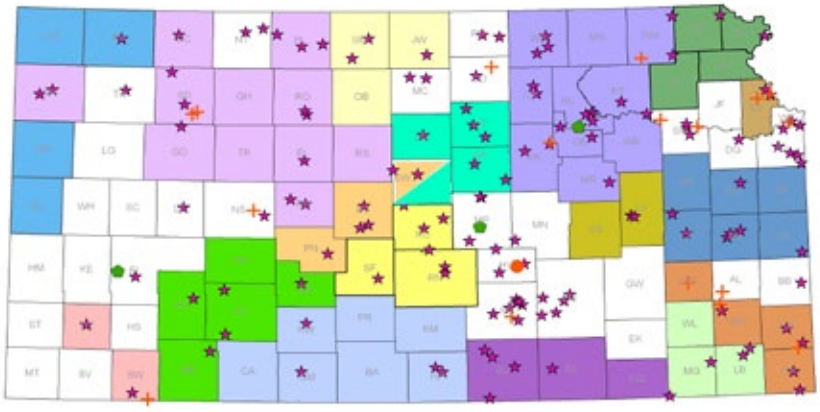
Figure 2-3 shows the other types of permitted landfills that make up the waste disposal system in Kansas including landfills for C&D waste, industrial waste, and waste tire monofills. Nearly every county has at least one C&D landfill and a few counties have several landfills such as Johnson County which also serves as a disposal location for some Missouri waste. Most industrial landfills are located "on-site" at manufacturing facilities (mostly foundries) or at coal-fired power plants. The U.S. EPA has proposed more stringent regulations for coal combustion residue landfills which could impact the future of such facilities. Kansas has a few large waste tire monofills that receive tires from other states as well as Kansas and about 20 more small monofills that are primarily used for waste tires that are brought to small landfills by the public.

Permitted Waste Processing Facilities

Figure 2-4 shows the distribution of composting facilities, household hazardous waste facilities including their satellite collection points for regional programs, waste tire processors, landfarms for contaminated soils, and medical waste processors. Composting and HHW facilities are widely distributed to conveniently meet the needs of the general public. Waste tire processors, landfarms, and medical waste processors are widespread, specialized facilities that receive waste through commercial collection services.

Figure 2-4

SW Processing Facilities in Kansas



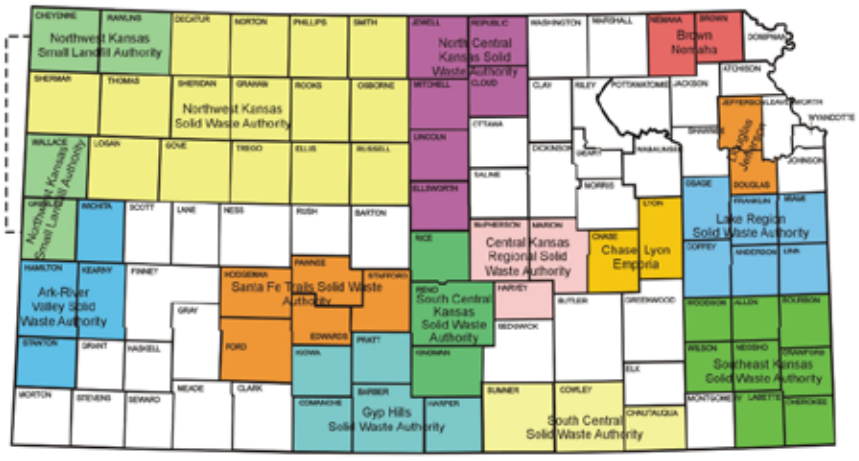
COUNTY AND REGIONAL SOLID WASTE MANAGEMENT PLANNING

All Kansas counties are required to prepare and maintain up-to-date solid waste management plans. Counties may plan individually or as regions. Each county or region must perform annual plan reviews and prepare five-year plan updates and submit documentation to KDHE that such actions have taken place. The purpose of these local plans is to ensure that solid waste services are adequate to meet the needs of waste generators and to give the public an opportunity to provide input into how wastes are managed within their county or region. Some counties have taken the planning process very seriously while most other counties minimize planning efforts simply to comply with state law.

Figure 2-5 shows the planning regions in Kansas and those counties which plan individually. Regional planning was initially chosen by most counties in the mid-1990s because they received higher state financial support than if they planned individually. However, since that time counties have realized that regional planning is significantly more complicated with respect to coordinating required annual reviews and five-year updates than individual county planning. In addition, few counties are coordinating the disposal of

Figure 2-5

County and Regional Solid Waste Planning in Kansas



solid waste in their regions. Some counties do coordinate HHW collection and recycling activities with neighboring counties, but those arrangements do not always match up with the planning regions. Consequently, some regions have dissolved and others are considering converting to individual planning. This change will require each county to develop its own plan.

Counties and regions have struggled to complete annual plan reviews and five-year updates on time. At any point in time, several counties and regions are usually out of compliance with required reviews and updates. KDHE consistently works with counties to offer advice and assistance in completing the tasks that are required by law.

Chapter 3
Resources to Administer the State Solid Waste Management Program

Available resources to administer the state solid waste management program fall into three primary categories: (1) people, (2) knowledge or information, and (3) money. These resources are used to carry out the duties and functions assigned to the Department of Health and Environment in K.S.A. 65-3406. The duties are further explained with respect to areas where KDHE is authorized to expend fees deposited into the state solid waste management fund (listed in K.S.A. 65-3415a(c)).

Over many years the Kansas Legislature has gradually added to the state solid waste program, but no additional resources have been added since 1992 when the solid waste landfill tonnage fee was set at $1.50 per ton and the maximum number of state employees working in the program was established at 44 full-time equivalent positions. While the number of positions has held constant since that time, the tonnage fee was decreased to $1.00 per ton in 1996. Consequently, the Department has had to gradually shrink spending in several statutorily authorized solid waste programs due to inflation and a reduction in solid waste disposal brought about by significantly increased recycling and composting. Areas where spending has decreased most significantly over the past decade include grants for waste reduction projects, solid waste public education primarily related to waste reduction, city dump repair, common waste collection events (agricultural pesticides, mercury, etc.), and illegal dump clean-up.

The state solid waste program is administered by 44 full-time staff.

KDHE PERSONNEL RESOURCES

Even though KDHE is limited to 44 full-time equivalent positions to administer all aspects of the solid waste program, there are actually about 70 different people who work in the program. The higher number represents people who work in multiple environmental programs including things such as hazardous waste management, spill response, environmental

remediation, and broad-based managerial responsibilities in various parts of the department. Some positions are totally dedicated to solid waste duties, but most are a mix of two or more environmental programs.

The types of positions that make up the solid waste program consist of (approximate numbers are provided):

- Environmental Scientists (23 positions)
- Professional Environmental Engineers (5 positions)
- Engineering Associates (4 positions)
- Geologists (6 positions)
- Administrative Staff (6 positions)

KDHE believes that this number and breakdown of staff is adequate to administer the state solid waste program including the initiatives that will be carried out to implement this plan. As any positions become vacant, an evaluation will be performed to determine whether a shift in duties is appropriate based upon the greatest needs, both from a short and long-term perspective. For example, it may be appropriate to re-classify a position from a scientist to an engineer or vice versa depending upon current and anticipated work load. As this plan is being developed, the current mix of positions is considered appropriate to address workload.

Staff qualifications and competency to address increasingly complex solid waste management could become a growing challenge due to the loss of experienced staff. At this time, the staff retains adequate experience and qualifications to administer the program, but that could change if just a few key staff members were lost. The regulated community and Kansas citizens expect KDHE to retain qualified staff to: (1) ensure that human health and safety are adequately protected and (2) submitted documents and plans are promptly and correctly evaluated.

It is important to maintain an adequate number of well qualified scientists, engineers, and geologists to effectively administer the state solid waste program.

Knowledge and Information

An important state resource is the knowledge of staff as mentioned in the personnel section above and the information (or data) that KDHE maintains in files and numerous databases. "Institutional knowledge"

cannot be quantified, but it is recognized as highly important to maintaining efficient and effective services. In 2010, the Bureau of Waste Management has several senior managers and engineers with 10 to 25 years of experience in their current positions. Some of these staff members may reach retirement age during the next 5 to 10 years which will result in program impacts.

KDHE also maintains extensive databases that are useful in performing various department duties and in providing assistance to local governments and private businesses. Such data facilitates the performance of both routine activities and responses to emergencies such as natural disasters. These databases contain permitted facility information, compliance and enforcement history for all facilities, groundwater monitoring data at landfills, statewide hydrogeological data, approved animal burial sites at confined feeding operations, recycling facility locations and services, and waste quantity data. Much of this information is available in GIS location format to allow mapping and correlation with other available GIS data related to sensitive areas such as rivers, drinking water wells, preserves, and even schools.

SOLID WASTE PROGRAM FUNDS

All state solid waste program expenses are funded by the statutorily established Solid Waste Management Fund that receives revenue from the $1.00 per ton landfill tonnage fee, solid waste permit fees, and interest on the fund balance. About 95 percent of revenue comes from tonnage fees paid by about 200 landfills and a few exporting transfer stations.

Nearly all solid waste program funding comes from the $1.00 per ton landfill tonnage fee.

Deposits to the Solid Waste Management Fund in fiscal years (FY) 2005 to 2010 are shown in Table 3-1. Figure 3-1 shows fund revenue from its inception in 1993 until the present along with projections through FY 2014. Revenue dropped dramatically in FY 2008 and 2009 due to the economic recession and some minor increases in recycling. FY 2010 revenue remained similar to 2009 revenue which is down over $800,000 from the pre-recession

Table 3-1

Solid Waste Management Fund Revenue

Fiscal Year	Tipping Fees	Permit Fees	Other Collections*	Earned Interest	Total
2005	5,680,616	65,409	70,718	84,414	5,901,157
2006	4,816,023	107,304	17,584	182,224	5,123,135
2007	5,347,242	113,225	22,129	259,041	5,741,637
2008	5,118,158	118,800	9	243,542	5,480,509
2009	4,479,182	115,325	1,920	139,934	4,736,361
2010	4,425,922	121,400	5,290	50,719	4,603,331

*Other Collections includes refunded grants, donations for public education projects, and funds recovered through enforcement actions

level. The projections estimate some modest recovery of tonnage fees through 2014 but pre-recession disposal rates are not expected. This information is discussed in much more detail in Chapter 2 which addresses the historical and projected amounts of waste disposed and recycled.

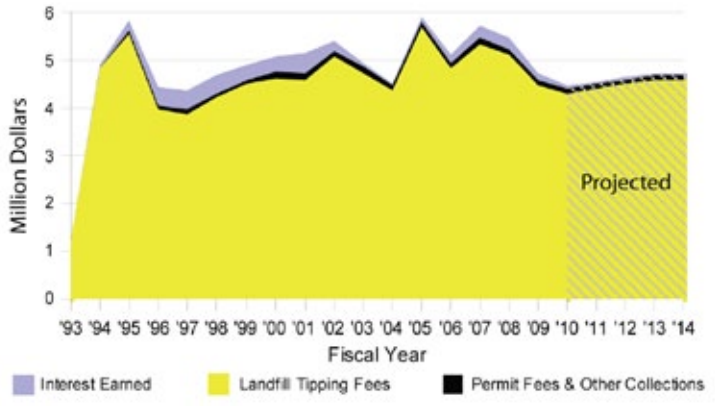
The economic recession resulted in a 15 percent reduction in tonnage fee revenue.

Overall, it is estimated that the entire state waste program will have between $4.5 to $5.0 million per year to administer all program activities, unless a new revenue source is added. During the 5 year period that this updated plan is in effect, it is probable that a legislative proposal will be introduced to raise the tonnage fee which has been set at $1.00 per ton since 1996. Without such an increase, major reductions in state program activities will be required most notably the elimination of grants and major reductions in state assistance to clean-up illegal dumps, repair old city dumps, and carry out public education and outreach activities.

Tonnage fee revenue in 2010 is inadequate to maintain all statutorily directed or authorized programs.

Figure 3-1

Historical and Projected
Solid Waste Management Fund Revenue



Chapter 4
Vision of the Best Solid Waste Management System for Kansas

The primary purpose of the Kansas Solid Waste Management Plan is to establish state-level policies and goals that move the state closer the best solid waste management system for the greatest number of Kansans. Determining what is best requires consideration of technical, economic, and political factors and consideration of both short and long-term perspectives.

There is good consensus among solid waste stakeholders and the general public that the best system of waste management in Kansas must adequately protect human health, the environment, and personal property. However, there is much less agreement as to what constitutes the best overall system of waste management. Differences of opinion are most notable as related to the government's role to mandate waste reduction efforts rather than leave such behaviors as voluntary. So, while people can agree that any waste management system must ensure that people, the environment, and personal property must be protected under a set of enforced laws and regulations, they sharply disagree regarding the appropriateness of regulating practices such as recycling, composting, and household hazardous waste collection.

Stakeholders have differing opinions on what constitutes the best solid waste management system for Kansas

Most people recognize that the "best" solid waste management system for Kansas must be sustainable, meaning the system must provide Kansas with practical and protective waste management services from a long-term perspective. However, people disagree as to what constitutes a "sustainable" system. A small number of stakeholders believe the only sustainable system is one where waste volumes are greatly reduced, with some people even embracing "zero waste" goals. These individuals advocate new laws and regulations that require enhanced efforts to reduce, reuse, and recycle. The majority of stakeholders and the general public recommend a more moderate approach which they believe can still yield a sustainable

waste management system in Kansas. They recommend improvements in waste reduction brought about by education, incentives, and local choices rather than state mandates in this area.

When establishing a "vision" for the best solid waste management system for Kansas, KDHE balanced the diverse stakeholder opinions and considered political, economic, and technical realities. It was decided that the Kansas "vision" should challenge local governments, businesses and individuals to make realistic improvements, but not set the bar so high that there would be little or no chance of successful implementation. The vision can be characterized as follows:

The Kansas "vision" challenges local governments, businesses, and individuals to make realistic improvements in waste management practices.

- It is sustainable, both technically and economically.
- It promotes the conservation of energy, material resources, and landfill space.
- It is adequately protective of human health and the environment.
- It requires improvements in the current system of waste management.
- It combines regulations, education, and other incentives to achieve change.
- It is a vision for "Kansas" not for other states that have different conditions and challenges.
- It is a vision that can be feasibly achieved in 5 to 10 years and maintained for 25 or more years.

The "vision" presented in this chapter of the Kansas Solid Waste Plan maintains the long-standing KDHE and legislative philosophy that local governments working through the county and regional planning process will continue to decide their own waste management method(s) based upon local needs, resources, and preferences. For example, elected officials working with their appointed planning committees and with advice from public works experts, private businesses, and the general public will select their preferred long-term waste management methods (i.e., landfill, waste transfer, and all of energy and/or material recovery options) considering all relevant factors including sustainability. Despite this deferral by the "state" to local decision-making, the statewide *"vision"*

does recognize that certain waste management practices are generally preferable as related to the concept of sustainability. Therefore, this update to the state plan provides the following list of solid waste management methods in priority order:

Priority 1 -	Reduce waste generation
Priority 2 -	Recycle or compost generated waste rather than dispose
Priority 3 -	Convert organic waste to gas for direct use or power generation
Priority 4 -	Landfill waste with methane gas recovery and utilization
Priority 5 -	Incinerate waste with energy recovery
Priority 6 -	Landfill waste without methane gas recovery or without energy utilization
Priority 7 -	Incinerate waste without energy recovery

It is recognized that some combination of waste management methods is likely to be most practical in all counties and regions and acceptable within the established "vision." A continued trend toward the higher priority management methods is expected over the next decade.

OVERVIEW OF VISION FOR A SUSTAINABLE SOLID WASTE MANAGEMENT SYSTEM

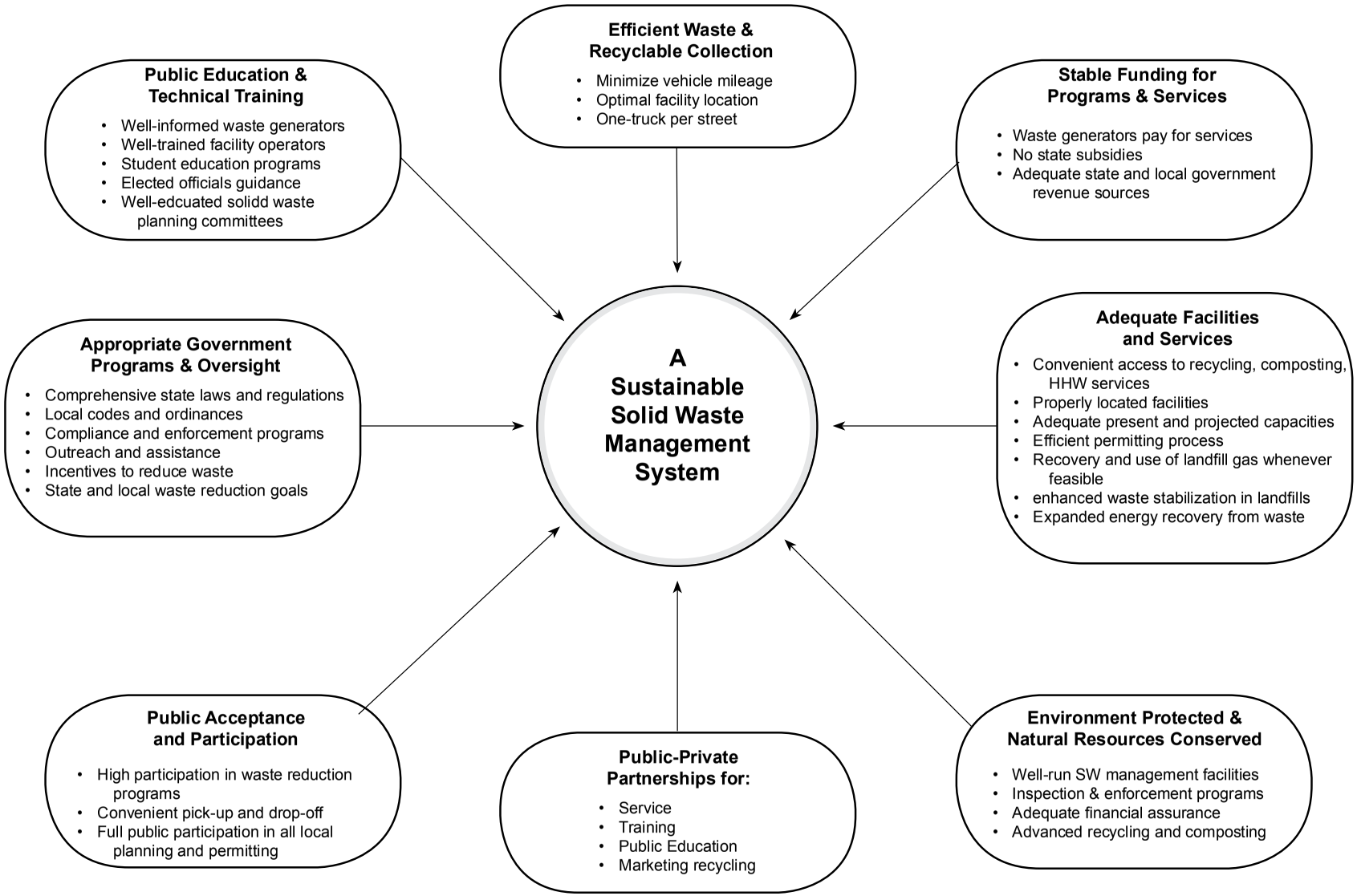
Figure 4-1 summarizes the vision for a sustainable solid waste management system in Kansas. The system is comprised of several major components, or goals, that together provide cost-effective and convenient disposal and waste recovery services, thorough protection of the environment, and conservation of natural resources. Many of the characteristics of this system are already in place; however, improvements are needed in most areas. Identified areas of improvement are presented in Chapter 5 for each goal along with straightforward strategies to achieve desired changes. The following eight broad goals must be satisfied to yield the desired solid waste management system:

- Adequate public education and technical training
- Appropriate government programs and oversight
- Public acceptance and participation
- Efficient waste and recyclables collection
- Public-private partnerships
- Stable funding for programs and services
- Adequate facilities and services
- Environment protected and natural resources conserved

Figure 4-1

A Vision for the Best Solid Waste Management System for Kansas

A Safe, Efficient, Environmentally Protective, and Sustainable Waste Management System



Some of these components/goals of the "vision" have overlapping details. For example, a thorough state inspection and enforcement program is part of "appropriate government programs and oversight" and "protecting the environment and conserving natural resources." Therefore, similar goals may be listed under more than one component.

A brief explanation of the importance of each goal is given below:

Goal #1 - Adequate Public Education and Technical Training

Every generator and handler of solid waste needs information to make good management decisions. This information ranges from very basic information that people need for household recycling to complex technical training for operators of permitted waste management facilities. The best waste management system for Kansas can only be achieved if appropriate information is disseminated to the citizens of the state. Public education and technical training should be accomplished through the combined efforts of many parties including state and local government, schools, private businesses, trade associations, and others.

Goal #2 - Appropriate Government Programs and Oversight

Even though government units may provide waste management services, that responsibility is addressed under the "Services" component of the solid waste system. This component consists primarily of government administered regulatory programs that ensure wastes are properly managed. Government must develop and implement laws, regulations, and local codes that establish minimum requirements. Government can also educate and establish incentives that encourage waste generators and handlers to voluntarily choose non-mandated waste management practices or behaviors including tax incentives. Government can also provide financial assistance to waste management projects in the form of grants. The educational role of government authorities is very important. They can share information directly with the public and teach by their example of following good waste management practices. Therefore, the best solid waste management system for Kansas would include widespread good practices within all levels of government.

Goal #3 - Public Acceptance and Participation

This component of the waste management system relates directly to how well the public has been educated and trained, and whether the public

trusts the information they have been provided. It also relates to the convenience and cost of participating in preferred waste management programs, such as recycling or composting. The goal is to provide the public with reasonable and practical information which influences their personal decisions because they better understand personal responsibility and the benefits associated with best management practices. Ideally, the public will believe that good management practices should be followed because of associated benefits to themselves, their communities, and their state as a whole. Regardless of whether the public believes that certain voluntary practices yield benefits and should therefore be followed, many who "believe" will not do so if those practices are inconvenient or expensive. Overcoming these two barriers is an ongoing challenge for voluntary systems.

Good public choices require good information and public trust

Two major barriers to public participation in voluntary prorgrams is cost and inconveience

Goal #4 - Efficient Waste and Recyclables Collection

Every residence or place of human activity generates solid waste and/or recyclable materials. While some waste material, such as yard waste, may be managed on-site, nearly all wastes and recyclables must be consolidated for processing or disposal. The best waste management system will make the collection and consolidation of wastes and recyclables efficient which means minimizing the need for individual transportation of material and the total number of vehicle miles traveled. It also means facilities to collect, process, and dispose of waste will be optimally located with respect to points of generation. Multiple factors enter into decisions to make waste collection and transportation most efficient; however, it is clear that the most sustainable system would minimize transportation impacts.

The best waste management systems minimize vehicle miles to transport waste and recyclables

Goal #5 - Public-Private Partnerships

Private parties often work with state and local governments to carry out tasks related to solid waste management. Ideally, public and private efforts will complement one another and not be duplicative or competitive. Complementary activities can include collection or processing services, training, and public education. The best possible system is where public and private parties plan and implement together

to maximize the benefit derived from available resources.

Goal #6 - Stable Funding for Programs and Services

All solid waste management programs and services require funding. The majority of expenses are borne by generators of waste and users of collection, disposal, and recycling services either through direct payments or assessed taxes or fees. Technical training of facility operators is also largely paid for directly by the individuals who are trained through registration fees. The compliance and enforcement activities performed by state and local regulatory agencies as well as the public assistance programs which such agencies administer, such as grants and dump clean-up work, is generally funded by taxes and fees. Appropriately determined fees and direct payments that fully cover the costs for actual services received constitute a sustainable system. For example, generators of waste pay a certain monthly fee for trash or recyclable collection, processing, and disposal. Such fees are paid to either a local government or a private company.

Waste fees can also support general government programs; however, such fees usually are used for multiple areas of expenditure rather than for specific services received. History has demonstrated that state subsidies can be useful to jump-start desired waste management practices which transition into a sustainable system based upon ongoing local support or market factors. Ongoing government subsidies do not promote long-term sustainability for when the subsidies are discontinued the programs are often terminated. Because government solid waste programs constitute an important part of the desired solid waste management system for Kansas, it is important to establish secure funding provisions that maintain revenue at an adequate level to support critical program functions.

Goal #7 - Adequate Facilities and Services

A complex mix of facility types and sizes is required to meet the needs of the best solid waste management system for Kansas. These strategically located facilities include landfills, transfer stations, compost facilities, household hazardous waste facilities, and a wide range of recycling and possibly energy recovery operations. Facilities should be located such that waste transportation distances and impacts to neighbors are minimized. The state and local permitting process should provide the proper balance of protecting public interests while

not creating and overly burdensome processes that adversely impact the development of new or modified facilities.

The universe of facilities that comprise the Kansas solid waste management system should include state-of-the-art technologies that maximize protection of the environment, stabilization of landfilled waste at the earliest time possible, the recovery and reuse of valuable components that are in the solid waste stream, and the recovery of energy from wastes, with a special focus on enhanced generation and recovery of methane produced when organic waste anaerobically biodegrades.

Hundreds of diverse facilities serve the waste management needs of Kansas.

Goal #8 - Environment Protected and Natural Resources Conserved

The discussion above on "adequate facilities" addressed the idea of environmental protection and resource conservation. The facility universe must be designed and operated to satisfy this important component of the state solid waste management system. Two major aspects of this component are: (1) the technical qualifications of the personnel responsible for the operation of waste management systems, and (2) a thorough government inspection and enforcement program (comprised of state and local government officials). Other relevant factors include the need for facility owners to maintain adequate financial assurance to close and clean up their facility if they unexpectedly went out of business and a well-informed public to properly manage their waste materials.

Successful conservation is the result of millions of individual personal decisions made on an almost daily basis necessitating ongoing public education and outreach efforts. Things that a sustainable system will conserve include energy, material resources, and landfill space. The diversion of wastes from landfill for recycling, composting, or energy recovery will achieve such conservation outcomes. Rather than establish statewide quantitative goals related to these conservation activities (such as a statewide MSW recycling rate), this vision looks more generally to the widespread implementation of practices to divert usable material from landfills including:

- Recycling programs in every community for all materials which can be processed, marketed, and

beneficially reused or recycled
- Organic waste processing facilities (either composting or energy recovery)
- Household hazardous waste collection and reuse facilities with treatment or disposal utilized only as necessary

Every community should have these services available to their residents, businesses, and institutions. Some communities may choose to promote participation in waste reduction programs through educational methods while others will require participation. Mandatory participation in waste reduction practices will not be pursued statewide.

Every community should have convenient, cost-effective ways for citizens to recycle, compost organic waste, and drop-off household hazardous waste.

In addition to waste diversion practices, landfill space can be conserved by operational practices that enhance the biodegradation of waste in the landfill disposal areas. Such practices, which typically involve the addition of liquids also increase landfill gas generation and the feasibility of landfill gas recovery projects.

VISION MUST BE COMPARED TO CURRENT SYSTEM OF WASTE MANAGEMENT

The vision described above is general in nature rather than specific with respect to the details of each goal. For example, the vision for technical training explains the need for a well-trained work force but it does not define the needed training nor explain how it will be accomplished. By comparing the current solid waste management system described in Chapter 2 with this vision it is possible to determine where deficiencies or inadequacies exist. Those challenges can then be used to establish strategies for achieving desired changes or improvements in the comprehensive solid waste management system. This comparison is presented in Chapter 5.

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Chapter 5
Goals and Strategies to Achieve a Sustainable Solid Waste Management System in Kansas

The existing solid waste management system in Kansas has improved in many ways since the early 1990s, but some improvements are necessary before it can be characterized as "sustainable" for the long-term. Chapter 4 presents the criteria which have been selected to define a sustainable system in Kansas based upon a proper balance of technical, economic, and political factors. This balanced system is characterized as a sustainable "vision" for the unique circumstances of Kansas. The current system of solid waste management characterized in Chapter 2, along with the summary of available resources in Chapter 3, is evaluated in this chapter with respect to those criteria (or goals) to determine where change is needed to bring the system more in line with the "vision." This chapter separately examines each sustainable system goal that makes up the vision (see Figure 4-1) with respect to current deficiencies or needs and lists strategies for achieving desired improvements. At the end of the chapter, a schedule is provided for implementing the plan strategies over the next five years.

ASSESSMENT OF THE CURRENT SOLID WASTE MANAGEMENT SYSTEM WITH RESPECT TO VISION

This section of the state plan evaluates the current waste management system with respect to each of the criteria, or goals, that comprise the "vision" of the best solid waste management system for Kansas. As explained in Chapter 4, several vision goals overlap and; therefore, some strategies to accomplish goals are similar or the same for different goals.

This chapter identifies 31 strategies to help achieve a sustainable solid waste management system in Kansas

In accordance with feedback received from stakeholders, strategies are expressed using very specific language when possible and they are limited in number. Listed

strategies under each goal are for state efforts only. They include the continuation of existing practices, the enhancement of existing practices (identified as "ENHANCE"), and new areas of effort (identified as "NEW").

Goal #1 – Adequate Public Education and Technical Training

Public education differs from technical training but they were combined in the vision discussion because they both relate to the dissemination and understanding of information. In this section, they will be separately evaluated.

Goal #1a – Adequate Public Education - Nearly every Kansan has some understanding of proper waste management practices. Public surveys have been completed by KDHE that demonstrate fairly good public knowledge and widespread understanding of the importance of minimizing waste, recycling, and maintaining well-run waste management facilities. Information reaches the public through a variety of ways including schools, mass media, and government outreach efforts. Many businesses have determined that it is in their best interest to reach out to the public with messages that teach and explain their own efforts to manage their wastes in environmentally sound ways and the services that their companies offer. The quality of information which reaches the public ranges from poor and misleading to excellent.

The state's contribution to solid waste public education has been significant for over 10 years and it takes many forms. Most noteworthy methods of outreach include student education through schools, the Kansas Don't Spoil It Calendar Contest, web-based information sources, news releases and op-ed articles, posters, and miscellaneous other awareness-building initiatives.

Because financial resources are limited and many other public and private parties are contributing to public education, the current level of state efforts is considered adequate; however, it is necessary to routinely assess educational needs to ensure proper focus. A sustainable solid waste system requires ongoing public education; therefore, the State of Kansas should continue to be part of outreach efforts. State efforts will continue to complement public education activities carried out by other parties which this plan assumes will continue.

The current level of state public education is considered adequate because it complements outreach efforts by other public and private parties.

Public Education Strategies

a. ***Maintain student educational efforts in schools through newsletters, school assemblies, and grants.***
b. ***Online educational opportunities (ENHANCE).***
c. ***Provide educational materials to elected officials (ENHANCE).***
d. ***Provide educational materials to solid waste planning committees (NEW)***

Goal #1b – Provide Technical Training - Every type of solid waste facility operator needs ongoing technical training to perform his or her job efficiently, effectively, and safely. Technical training is received from co-workers and supervisors, by written and online materials, and through conferences and training courses provided by government and private organizations. KDHE has provided effective operator training for over 15 years, sometimes independently, but most often in cooperation with other organizations such as SWANA, the Kansas Organization of Recyclers (KOR), and the Kansas Landfill Association (KLA). This training is voluntary; there is no mandated training or operator certification except for training required by workers at household hazardous waste facilities.

Current technical training opportunities for facility operators are adequate.

The existing system of technical training for operators is considered adequate. State efforts related to technical operator training require cooperation and partnerships by other solid waste organizations and a willingness of facility owners, managers, and elected government officials to approve of employee participation in training sessions.

Technical Training Strategies

a. ***Maintain practice to provide annual solid waste facility operator training events in cooperation with SWANA, KOR, and KLA.***
b. ***Develop online operator training courses (NEW).***
c. ***Develop and distribute technical newsletters and reports (ENHANCE).***

Goal #2 - Appropriate Government Programs and Oversight

State program activities are established by state laws and regulations. KDHE has some discretion such as in the education and training area as explained above, but resources should only be used in areas where clear authority has been granted by applicable sections of law. KDHE believes that adequate authority has been granted to administer the programs necessary to achieve the vision set forth in Chapter 4; however, resources may be inadequate to fully implement all activities. Those resource challenges are addressed under Goal #6 which follows. This goal also overlaps with Goal #8 which addresses the need for solid waste management programs which are protective of human health and the environment and which conserve natural resources.

Overall, it is believed that existing state programs simply need to be maintained, perhaps with some improvements in performance or completion of ongoing projects or tasks. Additional statutory authority is not needed to achieve the goals associated with a sustainable system. A limited number of stakeholders disagree with this conclusion and seek to establish more mandatory programs such as required recycling or landfill bans for certain waste types. KDHE agrees that such new laws would increase recycling rates to some degree but not significantly affect "sustainability" of the overall system.

State Government Program Strategies

a. ***Maintain existing solid waste regulatory program including permitting, inspections, and enforcement of all applicable laws and regulations.***
b. ***Improve balance of traditional enforcement with technical assistance to achieve a high level of compliance with solid waste laws and regulations.***
c. ***Continue to respond to all public questions and complaints related to the management of solid waste.***
d. ***Coordinate state agency green team efforts to improve waste management practices that can serve as a model for other government units, institutions, or businesses (ENHANCE).***
e. ***Adopt new or revised solid waste regulations as necessary to protect human health and the environment and encourage recycling and other waste reduction practices (NEW).***
f. ***Maintain state-assisted solid waste clean-up and remediation programs including the illegal dump and closed city programs.***

Goal #3 - Public Acceptance and Participation

The statewide solid waste management system includes a combination of required and voluntary practices carried out by individuals and organizations. Compliance with requirements and participation in voluntary programs depend on the state compliance and enforcement program (see Goal #2 strategies 2a and 2b) and whether people believe that they or society in general derive benefits from the subject practices. The best results will only occur if people believe that their efforts will truly make a difference, either for them personally or from a broader community or global perspective. For example, people are more willing to experience some additional waste management costs or to expend additional personal effort to recycle if they believe recycling yields benefits locally, such as by saving local landfill space, and globally by reducing consumption of finite resources.

Public education (discussed above) is a way to raise public awareness and improve acceptance and participation; however, the recipient must trust the educator. This is becoming a greater challenge as environmental issues have become very politicized in recent years. Only a few years ago a straightforward environmental message might be well-received by nearly everyone, but in 2010, a major segment of the population doubts that government-sponsored environmental education is being objectively presented. This situation presents new challenges that could impact the ability to maintain or expand widespread acceptance and participation in good waste management practices.

To help focus public education efforts and improve public acceptance of good waste management practices, the following strategies will be employed:

Public Acceptance and Participation Strategies

a. ***Survey the public to determine the degree of understanding of waste management issues, and acceptance and participation in preferred waste management practices (NEW).***
b. ***Develop and implement a public outreach plan in response to public perceptions and practices in light of available resources (NEW).***
c. ***Develop guidance for local officials to facilitate public participation in solid waste planning (NEW).***
d. ***Maximize public participation in solid waste permitting.***

Goal #4 - Efficient Waste and Recyclables Collection

Efficient collection, as compared to inefficient collection, will result in fewer vehicle miles driven by individuals to drop off waste and recyclables and by collection services (both public and private). Efficiency in this area is important because it affects the cost of services, environment and natural resource impacts associated with collection, wear and tear on roads and highways, and neighborhood safety.

Efficient waste and recyclables collection systems result in fewer vehicle miles driven which saves money and lessens environmental impacts.

In Kansas, the free market system has resulted in local collection scenarios where multiple public and private entities may be providing collection service in the same cities or even in the same neighborhoods. As of the 2010 legislative session, the Kansas Legislature has decided that the state should not adopt a state law that would intercede in locally arranged collection systems. The Legislature heard arguments related to franchising of waste or recyclables collection, but decided not to take action. At the present time, the Legislature has chosen to leave this responsibility with local governments.

Solid waste stakeholders agree that the state should not regulate "efficiency" even if there are environmental and cost benefits to Kansas citizens. However, stakeholders do believe that KDHE should perform certain limited evaluations and provide information and recommendations to local governments regarding perceived inefficiencies in collection services. This input in combination with Legislative direction limits state involvement in this area to the following one strategy:

Efficient Waste and Recyclables Collection Strategies

a. Evaluate existing statewide collection systems to determine areas of inefficiency and make recommendations to local solid waste planners and service providers (NEW).

Goal #5 - Public-Private Partnerships

Partnerships have the potential to improve the efficiency (see above discussion) and feasibility of solid waste management practices and projects. Past successes have demonstrated that partnerships are valuable and instrumental in achieving the statewide vision of the best overall management system for Kansas. However, the state's

role in helping establish partnerships is limited since they are usually voluntary in nature. While it is possible for partnerships to facilitate compliance with regulations, most relate to business relationships that benefit participating parties.

As with collection efficiency, KDHE will limit its role in this area. The following two strategies listed below will be implemented to facilitate the development of appropriate partnerships related to waste management practices and projects:

Public-Private Partnership Strategies

a. ***Correspond and meet regularly with partnering organizations to coordinate efforts related to public education and technical training (ENHANCE).***
b. ***Identify model partnering arrangements related to various waste management practices and services and prepare summaries to use for educational purposes with local planners, elected officials, public works officials, businesses, etc. (NEW).***

Goal #6 - Stable Funding for Programs and Services

Chapter 3 of this plan examines state resources including both personnel and funding. This goal focuses on funding which indirectly relates to the number and qualifications of staff. Adequate stable funding is needed to maintain a staff of qualified scientists, engineers, and geologists to administer all aspects of the state solid waste program.

Total available funding for the state solid waste program is likely to range from $4.5 to $5.0 million per year (95 percent of revenue comes from the $1.00 per ton landfill tonnage fee). These funds must cover the costs of about 43 to 44 full-time equivalent staff positions which the Legislature authorized to administer the program and all other statutorily directed sub-programs including waste reduction grants, illegal dump clean-up, old city dump repairs, waste sweeps to collect and properly dispose of commonly occurring hazardous chemicals (e.g., mercury, pesticides, school lab chemicals, etc.), public education, and technical training.

Revenue to the Solid Waste Management Fund has dropped significantly since 2007. The economic recession resulted in a decrease in waste disposal and tonnage fee revenue by approximately 15 percent in both 2009 and 2010 as compared to pre-recession revenue.

It is projected that revenue will increase somewhat as the economy recovers; however, modest increases in recycling are expected to continue cancelling out some increases in waste disposal.

The state tonnage fee has been set at $1.00 per ton since 1996 and KDHE has gradually reduced expenditures over the past decade due to inflationary impacts and increases in recycling. Some "discretionary" programs have seen major spending reductions over the past several years, especially grants, public education, and certain clean-up and remediation work. It is anticipated that these programs will need to be eliminated within a couple years and others reduced even further unless some increase in revenue occurs (as compared to the 2010 level).

KDHE will need to work with stakeholders over the next two years to evaluate the most recent revenue data and revenue enhancement options. Any revenue enhancement would require legislative action since the tonnage fee is set in law, not regulations. The following strategies will be followed to address this goal to maintain a stable and adequate funding:

Stable Funding for Programs and Services Strategies

a. ***Continue to develop annual state solid waste program revenue and expenditures summary to determine adequacy of revenue to meet program responsibilities. Develop spending priority list and state solid waste budget in accordance with available funding.***
b. ***If necessary, develop recommended revenue enhancements to allow the department to accomplish statutorily established duties or revise statutes to eliminate responsibilities that cannot be accomplished with resources (NEW).***
c. ***Provide information and encouragement to local governments to help them evaluate solid waste program funding and ways to increase sustainability (NEW).***

Goal #7 - Adequate Facilities and Services

Statutorily required county or regional solid waste planning includes an evaluation of the facilities and services that are available to meet the needs of waste generators in the area covered by the plan. "Adequacy" is to some degree an arbitrary concept because what is adequate to one person may not be adequate to another. For example, a person with high expectations may believe that a county needs a comprehensive

mix of facilities to "adequately" meet needs including an MSW landfill, a C&D landfill, a household hazardous waste facility, a compost facility, and a recycling facility all of which are conveniently located to minimize driving distance and with large buffer zones to minimize nuisance. The same person may believe that curbside recycling should be available to everyone in the covered area. Another person may have lower expectations believing one mixed waste MSW landfill is adequate to go with some drop-off recycling containers located at a few places in the county.

The adequacy of facilities and services in a given area should be routinely evaluated as part of the local solid waste planning process.

Based upon stakeholder input, the determination of adequacy should remain with local planners who are accountable to the local population. However, stakeholders also believe that it is appropriate for KDHE to carry out selective evaluations of existing local solid waste management systems and make recommendations to local planners and/or county commissioners regarding potential improvements. KDHE will independently make decisions to carry out local system evaluations and will do so upon request to assist local planners. KDHE assessments will not include detailed feasibility studies and only a limited number of evaluations can be performed in any given year in accordance with available staff resources.

This goal overlaps significantly with Goal #4 (Efficient Waste and Recyclables Collection), Goal #5 (Public-Private Partnerships), and Goal #8 (Environment Protected and Natural Resources Conserved).

Adequate Facilities and Services Strategies

a. ***Evaluate existing waste management facility network to determine need for improvements related to capacity, location, nuisance, and new technologies, particularly waste-to-energy technologies (NEW).***
b. ***Make recommendations to local government officials or private businesses regarding observed deficiencies, opportunities for improvement or alternative methods of waste management, need for expanded capacity, or other concerns (NEW).***

Goal #8 - Environment Protected and Natural Resources Conserved

Goal #8 relates to the primary duties and responsibilities assigned to KDHE in state law. Foremost is KDHE's responsibility to ensure that wastes are managed in a manner that is protective of human health and the environment. The state solid waste regulatory program which

addresses permitting, complaint investigations, illegal dumping, and various waste handling activities is also addressed as a Goal #2 strategy (appropriate government programs and oversight). Natural resource conservation relates mostly to recycling and other waste reduction efforts which directly conserve raw materials and indirectly conserve energy since less energy is required to make products from recycled materials than from virgin raw materials.

The most important responsibility of the state is to ensure that solid wastes are managed in ways that are protective of human health and the environment.

A continuation of existing efforts should substantially satisfy the goal of environmental protection and natural resource conservation. However, some improvements or enhancements are possible, especially as related to existing waste reduction programs (overlaps with a Goal #7 strategy which more broadly evaluates the adequacy of all facilities and services). Improvements in facility operations are also always possible. Any KDHE findings regarding opportunities to improve waste reduction practices or to enhance waste processing to maximize the recovery of valuable materials or energy will be incorporated into recommendation reports submitted to local governments. Improvements in operations and compliance with applicable regulations will be passed on to facility owners through recommendation reports and through standard compliance and enforcement documents, including orders.

One way to enhance waste reduction efforts is through grants. Based upon stakeholder feedback, the grant program will be modified to ensure that all future grants are for projects that demonstrate long-term sustainability characteristics. In the past, sustainability was considered as one factor in determining whether an award should be given. In the future, sustainability will be a requirement. Grants that are for projects related to solid waste education are assumed to satisfy the sustainability criteria because the individuals receiving the education will hopefully manage wastes in environmentally preferred ways long after the educational efforts are over. This is particularly applicable to grants to schools to teach their students about good waste management practices.

Another consideration related to protecting the environment relates to natural disaster response including a broad range of possible events (tornados, floods, ice storms, fires, and even a widespread outbreak of foreign animal disease). Nearly every natural disaster results in the generation of a large amount of solid waste for disposal. The State of Kansas has experienced numerous natural disasters since

the Greenburg tornado of 2007 and learned much from those experiences. However, additional work is needed to formalize a state "debris management plan" which involves numerous state agencies. Without a comprehensive debris management plan, there is a tendency to make hasty decisions regarding how to manage debris at the times of the disaster, sometimes resulting in greater environmental impacts. Two of the strategies listed below are specifically to improve disaster response efforts.

The following strategies will be followed to achieve the environmental protection and natural resource conservation goal:

Environmental Protection and Natural Resource Conservation Strategies

a. ***Continue to administer a thorough solid waste facility compliance and enforcement program to ensure that waste management practices do not adversely impact human health or the environment.***
b. ***Evaluate statewide existing waste reduction practices and services to determine opportunities for improvement especially as related to organic waste and C&D management (NEW).***
c. ***Make recommendations to local government officials to enhance waste reduction efforts as appropriate based upon the statewide evaluation (NEW).***
d. ***Encourage enhanced waste biodegradation in landfills in association with landfill gas recovery and use projects to maximize the production of renewable energy sources, to conserve landfill space, and to stabilize landfills (ENHANCE).***
e. ***Administer a grant program to facilitate the start-up or enhancement of waste reduction projects that have demonstrated a basis for technical and financial sustainability (ENHANCE).***
f. ***Identify and implement regulatory and non-regulatory incentive programs to encourage waste reduction activities (NEW).***
g. ***Work with other state agencies (primarily the Division of Emergency Management and the Kansas Department of Transportation) to finalize the Kansas Debris Management Plan and provide technical guidance to all parties when disasters occur. (NEW with respect to the plan).***
h. ***Maintain an up-to-date data base of animal burial sites to be used in cases of foreign animal disease.***

SCHEDULE FOR IMPLEMENTING STATE STRATEGIES

A total of 31 strategies for implementation have been identified for implementation through 2014 to achieve the eight (8) goals set forth in this chapter. Table 5-1 lists all of the strategies for each goal and gives a general timeframe for the implementation of each strategy. Many of the strategies are to continue ongoing practices with efforts to improve performance as necessary. Some strategies are listed under more than one goal. In such cases, strategies will accomplish multiple purposes. For example, the evaluation of the network of local facilities and services will help determine if public needs are being met and the environment is being properly protected.

Some strategies are new, but they will become ongoing activities for KDHE staff rather than one time projects. This includes KDHE's evaluation of solid waste facilities and services and efforts to develop and share partnering models.

KDHE Bureau of Waste Management staff members have been assigned duties to implement the 31 state plan strategies. All strategies will be implemented on or before the end of 2012 but not necessary completed. Except for just a few strategies that involve the completion of discrete projects or tasks, most will continue indefinitely through this five-year planning period and beyond.

All of the strategies listed in this plan can be implemented during this planning period with existing staff and monetary resources except for two which require revenue enhancements - - 2f (maintenance of the illegal dump clean-up and city dump repair programs) and 8e (the waste reduction grant program). Without greater program revenue than received in fiscal years 2009 and 2010, these programs will gradually be eliminated.

UNFORESEEN DEVELOPMENTS

Various events can take place which will cause KDHE to deviate from the direction established in this plan. Examples include:

- Major loss of program funding
- Major natural disasters that divert staff effort
- Legislative action to modify KDHE duties and authorities
- New federal laws or regulations that require state actions

Table 5-1

Implementation of State Solid Waste Plan Strategies

Goal/Strategies	Schedule
1a - Adequate Public Education	
a. Maintain student outreach	Ongoing
b. Develop online educational opportunities	First products by end of 2010, then ongoing
c. Provide educational materials to elected officials	January 2011 when take office
d. Provide educational materials to solid waste planning committees	Late 2011, ongoing as needed
1b - Provide Technical Training	
a, Maintain annual operator training with SWANA, KOR, KLA	Ongoing
b. Develop online operator training courses	HHW 2010, next operator course by June 2011
c. Distribute technical newsletters and reports	2 newsletter per year, other as needed
2 - Appropriate Government Programs and Oversight	
a. Maintain existing state regulatory program	Ongoing
b. Balance traditional enforcement with technical assistance	Began in 2010 with "compliance assistance visits"
c. Respond to public questions and complaints	Ongoing
d. Coordinate state agency "Green Team" efforts	Ongoing, agency assessments begin in 2011
e. Adopt new or revised regulations as needed	Ongoing
f. Maintain illegal dump and city dump programs	Ongoing
3 - Public Acceptance and Participation	
a. Survey public on solid waste issues and understanding	Spring 2011
b. Develop public outreach plan	Summer 2011
c. Develop guidance on public particpation in local planning	Late 2011
d. Maximize public participation in solid waste permitting	Ongoing
4 - Efficient Waste and Recyclables Collection	
a. Evaluate existing systems and prepare recommendations	Begin in fall 2010, ongoing
5 -Public Private Partnerships	
a. Coordinate public education and technical training with partners	Ongoing
b. Develop model partnering arrangements	Ongoing, first models available by end of 2011
6 - Stable Funding for Programs and Services	
a. Prepare annual revenue and expenditures reports	Ongoing, by end of each calendar year
b. Develop revenue enhancement initiative	Meet with stakeholders: summer 2011
c. Develop funding guidance for local governments	2012
7 -Adequate Facilities and Services	
a. Evaluate statewide facility and service network	Begin in 2011
b. Evaluate county or regional facility and service system	Begin in 2011
c.Make recommendations to local governments	Following completion of evaluations
8 - Environment Protected And Natural Resources Conserved	
a. Maintain existing regulatory program (see Goal 2a)	Ongoing
b. Evaluate statewide waste reduction practices (see Goal 7a, 7b)	Begin in 2011
c. Make waste reduction recommendations (see Goal 7c)	Begin in 2011
d. Facilitate energy recovery from landfills and waste	Ongoing
e. Administer waste reduction grant programs	Ongoing, modify sustainability criteria fall 2010
f. Develop incentives to encourage waste reduction	Solicit ideas winter 2011
g.Complete KS Debris Mgt Plan for natural disasters	2010 to 2011
h. Maintain animal disposal data base for foreign animal disease	Ongoing

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Appendix A

State Solid Waste Management Plan Survey

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2010 State Solid Waste Management Plan Survey

Stakeholder and Public Survey to Update the
State of Kansas
Solid Waste Management Plan

Every five years, the Kansas Department of Health and Environment updates the Kansas Solid Waste Management Plan. The current 2005 plan is due to be updated by early 2010. The update process begins with this survey of stakeholders and the general public. Feedback is being solicited to help KDHE develop a revised plan which is responsive to the perceived needs of the citizens of Kansas and to the statutory requirements related to waste management.

Purpose of the State Solid Waste Plan
To establish specific and measurable goals, objectives, and strategies for state efforts related to the maintenance of solid waste management practices that are protective of human health and the environment and the improvement of practices to yield greater benefits to the citizens of Kansas.

Anticipated Plan Update Steps and Schedule
-- Stakeholder and general public complete survey by November 20, 2009
-- KDHE drafts preliminary plan by end of January 2010
-- KDHE meets with stakeholder and public to review draft plan in February 2010
-- KDHE revises and adopts 2010 Kansas Solid Waste Plan in spring 2010

Personal Information

The following information is optional:

First Name
Last Name
Title
Organization
Address
City State Zip Code
Phone
E-mail

The following are required unless noted otherwise:

1. I work for:

- ○ City government
- ○ County government
- ○ Private company
- ○ Non-profit organization
- ○ Other (describe)

2. My current employment duties involve some aspect of solid waste management

- ○ Yes [Goto question 2a]
- ○ No [Goto question 3]

2a. You said your current duties involve some aspect of solid waste management. Select **all** of the following that apply:

- ☐ Landfill
- ☐ Transfer station
- ☐ Recycling facility
- ☐ Household hazardous waste facility
- ☐ Waste tire management
- ☐ Composting facility
- ☐ Processing facility

- [ ] E-waste collection or processing
- [ ] Consulting
- [ ] Elected official
- [ ] Planner
- [ ] Other (describe)

3. I have worked in the environmental field for

- ○ 0 years
- ○ 1-5 years
- ○ 6-10 years
- ○ 11-20 years
- ○ Greater than 20 years

4. Should the state Plan describe a "vision" for a preferred solid waste management system:

- ○ Yes [Goto question 4a]
- ○ No [Goto question 5]

4a. List some of the things you believe should make up Kansas' preferred solid waste management system, including available services and facilities, waste generation and recovery practices, and laws and regulations.

5. Should the state plan include a background section that describes the current solid waste management system in Kansas?

(Click here to choose)

6. A list of many KDHE solid waste program functions follows. On a scale of one to ten, rate the importance of each function by clicking on a number with "1" being of lowest importance and "10" being of greatest importance.

	Importance									
	1	2	3	4	5	6	7	8	9	10
Administer permitting program for disposal and processing facilities	○	○	○	○	○	○	○	○	○	○
Provide technical assistance and training to facility owners and operators	○	○	○	○	○	○	○	○	○	○
Oversee local solid waste planning process	○	○	○	○	○	○	○	○	○	○
Provide local planners with tools to assist in the planning process	○	○	○	○	○	○	○	○	○	○
Inspect permitted facilities to assess compliance	○	○	○	○	○	○	○	○	○	○
Perform annual recycling survey	○	○	○	○	○	○	○	○	○	○
Provide annual recycling, composting, and HHW training	○	○	○	○	○	○	○	○	○	○
Provide special health and safety training to HHW operators	○	○	○	○	○	○	○	○	○	○
Oversee a post-closure care program for landfills	○	○	○	○	○	○	○	○	○	○
Coordinate efforts with professional state solid waste organizations (KOR, SWANA, etc.)	○	○	○	○	○	○	○	○	○	○
Administer grant programs to improve statewide solid waste reduction practices (solid waste, HHW, waste tires)	○	○	○	○	○	○	○	○	○	○
Prepare and distribute written technical guidance documents and manuals for facility owners and operators	○	○	○	○	○	○	○	○	○	○
Develop appropriate regulations to maintain and improve waste management practices	○	○	○	○	○	○	○	○	○	○

Adminster a waste management education program for Kansas students	○	○	○	○	○	○	○	○	○	○
Administer a waste management education program for all Kansans	○	○	○	○	○	○	○	○	○	○
Invest staff time and money to be involved in national waste management organizations to help set national policy	○	○	○	○	○	○	○	○	○	○
Oversee planning process for disposal of farm animals caused by disasters and foreign animal disease	○	○	○	○	○	○	○	○	○	○
Provide technical assistance on debris management to local governments in cases of natural disasters	○	○	○	○	○	○	○	○	○	○
Administer the landfill tonnage fee payment program including the performance of audits to ensure proper fee payments	○	○	○	○	○	○	○	○	○	○
Administer the illegal dump clean-up program	○	○	○	○	○	○	○	○	○	○
Administer the waste tire permitting and clean-up program	○	○	○	○	○	○	○	○	○	○
Oversee the state agency Green Teams program	○	○	○	○	○	○	○	○	○	○
Administer the city dump repair program	○	○	○	○	○	○	○	○	○	○
Investigate solid waste complaints and take appropriate actions to require corrective measures if necessary	○	○	○	○	○	○	○	○	○	○

State Solid Waste Program Resources

7. KDHE is authorized and directed by law to conduct various activities related to solid waste management. Revenue to support KDHE's solid waste program is generated primarily through the $1 per ton landfill fee. This fee no longer supports all the activities that make up the solid waste program at historical levels. Because it is probable that some programs will need to be significantly reduced or eliminated during the five-year period covered by the revised plan, this survey seeks input to help KDHE prioritize funding priorities.

Do you agree that the state plan should include a major section on resource availability, prioritization of work, and options for resolving projected budget shortfalls?

- ○ Yes
- ○ No

Financial Resource Facts

-- Landfill tonnage fee revenue - down nearly $1 million from 2007; total tonnage fee revenue equaled about $4.5 million in 2009
-- Other revenue - Permit fees and interest - about $300,000 per year (decreasing annually)
-- Expenditures - stable since 2006, about $5.4 million in 2009 (includes $900,000 transferred for overhead)
-- Fund balance - about $2.5 million in late 2009
-- Tonnage fee has been set by law at $1 per ton since 1996
-- Options - (1) Major cuts in expenditures to balance revenue and expenditures (2) Increase revenue through tonnage fee increase [fee has been $1 per ton since 1996]; requires legislative action

8. The decrease in solid waste tonnage revenue and a shrinking fund balance has required KDHE to already reduce expenditures in several solid waste program areas. Long term reductions in programs will be incorporated into the state solid waste plan. Stakeholder input will be used to establish long-term program priorities and to allocate and prioritize the use of available funds. The following table lists several areas of contractual and grant spending which are authorized by statute but considered “discretionary." Please rank these programs in order of importance by selecting a 1 (most important) to 11 (least important) in the rank column.

	Rank Most Important to Least Important
Illegal dump clean-up projects (75% of clean-up cost paid by KDHE; 25% by local government, up to $10,000 per site)	(Click here to choose)
City dump repair program (100% of repair cost covered by KDHE at highest priority dump sites)	(Click here to choose)
Household hazardous waste collection center grants to establish new programs or enhance existing programs	(Click here to choose)
Recycling and composing grants to public or private entities	(Click here to choose)
Green Schools grants to improve waste reduction efforts in public and private schools	(Click here to choose)
Public education initiative regarding proper solid waste management practices	(Click here to choose)
Student and teacher education regarding proper solid waste management practices	(Click here to choose)

Waste collection events for special dangerous wastes such as mercury, pesticides, etc.	(Click here to choose)
Emergency clean-up efforts when solid waste disposal presents high risks to human health and the environment	(Click here to choose)
Support for KSU small business assistance program	(Click here to choose)
Memberships in state and national waste organizations	(Click here to choose)

9. If available funding becomes so limited that certain program functions needed to be reduced or eliminated, what should those programs be? Enter your opinion of the lowest priority duties in the following text box.

10. Should KDHE pursue a revenue enhancement initiative in order to maintain the authorized solid waste programs listed in question number 8 and to maintain staffing at the current level?

- ○ No
- ○ Yes, increase the solid waste tonnage fee per ton from $1.00 to $
- ○ Yes, establish new fees. Explain
- ○ Other (explain)

Perceptions and Goals

11. Using the scale below, answer whether you agree or disagree with the following statements. Please check No Opinion if the issue is not applicable or you have no knowledge in this area.

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
The state solid waste plan should be concise with a limited number of goals and objectives to increase the feasibility of implementing those goals.	○	○	○	○	○
Recycling makes money by selling materials so I should not have to pay extra for curbside collection	○	○	○	○	○
If cap and trade federal legislation passes and carbon emissions are restricted and traded, it will adversely impact waste management practices due to probable higher fuels costs.	○	○	○	○	○
New landfills are no better than old dumps because all landfills smell, make dust and litter, and leak.	○	○	○	○	○
We can recycle just about everything so zero waste is a realistic goal.	○	○	○	○	○
KDHE should not subsidize recycling programs because when the subsidies are gone the programs cannot sustain themselves.	○	○	○	○	○
E-waste is no more dangerous than other solid wastes so it is acceptable to landfill this waste in any MSW landfill.	○	○	○	○	○
KDHE needs to inspect solid waste facilities more often than one time per year.	○	○	○	○	○
Recycling is very important and KDHE should do more to encourage or require recycling through new regulations.	○	○	○	○	○
KDHE should be more proactive regarding the promotion of waste to energy projects.	○	○	○	○	○
KDHE should set statewide numeric recycling goals.	○	○	○	○	○
KDHE should maintain an up-to-date database on permitted facility capacities and their projected lifespans.	○	○	○	○	○
Coal combustion wastes such as fly ash and bottom ash are adequately regulated by current industrial landfill and wastewater permits.	○	○	○	○	○
Construction and demolition landfills are adequately regulated.	○	○	○	○	○
Industrial landfills are adequately regulated	○	○	○	○	○
New C&D regulations are needed to control landfill gas					

generation.	○	○	○	○	○
A new class of C&D landfills that requires compacted clay liners and groundwater monitoring should be established at which screening requirements could be lessened and empty chemical containers could be disposed.	○	○	○	○	○
My community has adequate waste management services including recycling, composting, wood waste processing, and HHW collection.	○	○	○	○	○
KDHE provides adequate technical assistance to local government on debris management when natural disasters occur.	○	○	○	○	○
KDHE should perform research and publish reports on waste composition.	○	○	○	○	○
Recyclers should be required to report recycling quantity information to KDHE as part of the KDHE recycling survey.	○	○	○	○	○
New regulations are needed to address long-term post-closure care at landfills including the establishment of criteria for reduced monitoring and financial assurance.	○	○	○	○	○
Landfill owners should be required to update their permits annually in the post-closure period including the payment of applicable fees to cover KDHE's cost of regulatory oversight.	○	○	○	○	○
New landfill fees should be collected and serve as a reserve fund to address long-term needs at landfills where responsible parties have disappeared or have no resources.	○	○	○	○	○
Landfill regulations and permit conditions should facilitate the biodegradation of waste by keeping the waste moist rather than create "dry tombs" where waste degradation is inhibited.	○	○	○	○	○
KDHE technical training has helped me perform my job better resulting in a better compliance record and money savings.	○	○	○	○	○
My community has developed a sustainable waste management system meaning adequate resources are available for the foreseeable future.	○	○	○	○	○
I am familiar with one or more of the following KDHE public education initiatives: Kansas Don't Spoil It, Get Caught Recycling, E-Waste It Still has Value, Kansas Green Schools.	○	○	○	○	○
KDHE should develop online technical training to take the place of training at conferences or other training workshops due to travel expenses and time spent away from the job.	○	○	○	○	○
The WORKS conference has been of value to me and it should continue as an annual event.	○	○	○	○	○
Kansas needs to maintain a state recycling organization.	○	○	○	○	○

12. KDHE routinely develops new and updated regulations to comply with statutory directives and to address changing conditions. The following table lists some areas where new regulations are being considered. Using the scale below, answer whether you agree or disagree that new or updated regulations are needed in the listed areas. Please check No Opinion if the issue is not applicable or you have no knowledge in this area.

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
C&D landfill gas control	○	○	○	○	○
Construction quality assurance for landfills	○	○	○	○	○
Landfill post-closure financial assurance enhancements	○	○	○	○	○
Landfill post-closure care operational criteria	○	○	○	○	○
Inward gradient landfill standards of design and operation	○	○	○	○	○
Enhanced landfill siting restrictions	○	○	○	○	○
Update to medical service waste standards	○	○	○	○	○
Solid waste processing facilities standards	○	○	○	○	○
Beneficial use requirements	○	○	○	○	○

Industrial landfill design and operational standards	○	○	○	○	○

13. Should county and regional solid waste planning laws and regulations be revised?
(Click here to choose)

13a. Check the changes you would like to be made

- ☐ Changes to the membership requirements for planning committees (describe)
- ☐ Changes to the plan review and update process (describe)
- ☐ Changes to regional planning requirements (describe)
- Other (describe)

14. List any waste management services you believe should be made available or improved in your community or county.

15. List the three greatest solid waste management challenges currently facing Kansas.

16. List three things that KDHE could do better to help improve solid waste management in Kansas.

17. List three things that KDHE has done well in the last five years.

Thank you for completing this survey.

Submit Survey Reset

Appendix B

Solid Waste Stakeholder and Public Survey Results and Other Feedback

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This appendix summarizes the results of the comprehensive solid waste management survey carried out in October and November 2009 (see Appendix A) as well as other stakeholder feedback received at the 2010 WORKS Conference held in Junction City from March 23 to 25, 2010. A comprehensive presentation and review of all survey responses is not provided in this appendix; however, the detailed results can be found online at www.kdheks.gov/waste/index.html.

STAKEHOLDER AND PUBLIC SURVEY PARTICIPATION

KDHE carried out a thorough review of the statistical results for each survey question and studied all individual responses to questions. The survey results clearly demonstrate that interested stakeholders with responsibility for waste management as well as the general public have widely different opinions regarding the best approaches to solid waste management. However, despite several widely differing opinions, especially related to whether the state should mandate waste reduction efforts, some shared goals and priorities did emerge.

The total number of respondents to the survey was 147. There was a good mix of respondents to the survey which took place over the period October and November 2009 with respect to places of employment as shown below:

City, county or state government	32%
Private business	35%
Non-profit organization	11%
Other or not employed	22%
	100%

More than half (54%) of respondents indicated that their job responsibilities involved some aspect of solid waste management.

Implications of Voluntary Surveys

The October/November online survey was voluntary. The general public was provided notice that they could participate and a list of several hundred solid waste stakeholders were provided other notices that a survey was available to help KDHE update the state solid waste management plan.

If a survey is voluntary, there is likely to be some built-in bias because persons who participate generally have a strong interest in the subject matter. People who chose to participate in this survey appear to have strong feelings about environmental issues and recycling in particular. This showed up strongly in the completed surveys received from members of the general public. A large majority of respondents who do not have work responsibilities related to waste management encouraged the state to implement mandates related to recycling and implement other more stringent laws and regulations to reduce waste. Opinions were much more balanced among solid waste stakeholders which consisted of both government officials and representatives of private companies.

Respondents Vision of a Preferred Solid Waste Management System in Kansas

Respondents had varying opinions of what would constitute the best solid waste management practices and system for Kansas. A list of key respondent preferences follows:

- Mandatory recycling programs with many specifically mentioning curbside recycling rather than drop-off
- Free curbside recycling programs (no new fees or taxes)
- More convenient recycling services for everyone
- Pay-as-you-throw disposal system which the cost of service on the amount of waste disposed (some believe this program should be mandatory)
- No mandates related to the implementation of recycling programs (keep as voluntary)
- More waste-to-energy facilities to take the place of landfills
- More methane gas recovery and beneficial use systems at landfills
- Franchise solid waste collection to avoid multiple trucks on same streets
- Incentives or rewards are needed to encourage individuals and businesses to choose recycling instead of disposal
- More recycling and reuse of industrial waste streams instead of treatment and disposal, including controlled land application of wastes
- Promote special household hazardous waste collection days in spring and fall, even where ongoing collection is available
- Improved e-waste management including convenient and cost effective recycling opportunities for everyone; some believe a landfill ban on e-waste is needed
- Higher stable funding needed to maintain state programs
- More stable funding needed to maintain local solid waste disposal and recycling programs
- A well-trained solid waste workforce and educated public
- Establish a Kansas waste exchange to facilitate the beneficial use of wastes
- A yard waste landfill disposal ban with enhanced composting (some include food waste composting along with yard waste)
- Strict enforcement of waste management laws and regulations by KDHE and local law enforcement officials including penalties
- Strict regulatory oversight of industrial waste landfills especially those receiving coal combustion waste
- Prohibit new landfills in sensitive environmental areas
- Enhance the biodegradation of waste in landfills to facilitate methane gas recovery and to stabilize the landfills earlier
- KDHE partners with SWANA and the Kansas Organization of Recyclers (KOR) for all technical training

State Solid Waste Program Revenue

The survey posed the following question: Should KDHE pursue a revenue enhancement initiative in order to maintain the authorized solid waste programs?

Yes	66%
No	21%
No opinion	13%
	100%

Most respondents who answered yes believe the solid waste landfill tonnage fee of $1 per ton should be increased to $1.25 to $3.00 per ton. Some respondents believe the tonnage fee should be automatically adjusted for inflation every 3 to 5 years. Some other ideas for increasing revenue include:

- The elimination of exemptions in state law
- Higher fees for larger landfills because more work for KDHE staff
- Excise taxes on things such as plastic bags, pesticides, electronics, etc.
- A small solid waste sales tax

If spending needs to be cut in the future due to revenue shortfalls, the following areas were recommended in the order of preferred cuts:

First Tier Cuts
- Memberships in national, regional, and state organizations
- Funding for Kansas State Small Business Assistance Program
- Green Schools Initiative/education in schools

Second Tier Cuts
- Public education in good solid waste management practices
- Grants to private companies
- City dump corrective measures program

Third Tier Cuts
- Grants for all solid waste programs
- Illegal dump clean-up program
- Special waste collection programs such as mercury, pesticide, and school lab chemicals

Respondent Opinions on Key Solid Waste Issues

Respondents were asked many questions about their belief on many important waste issues. A list of some key findings is given below:

1. One-third believe recycling should be free because the sale of recyclables makes money for the service provider
2. 86 percent believe that new landfills are designed and operated in a safer manner than old dumps
3. One-third believe that “zero waste is an attainable goal
4. 82 percent believe e-waste is more dangerous than other mixed municipal solid waste
5. 77 percent believe KDHE should do more to encourage or require recycling
6. 80 percent believe KDHE should encourage waste-to-energy facilities

7. 75 percent believe Kansas should set waste recycling quantitative goals
8. 70 percent believe KDHE should develop online training for facility operators
9. 84 percent believe Kansas needs a state recycling organization
10. 88 percent believe the state plan should be concise with a limited number of goals

Biggest Challenges for Waste Management in Kansas

Dozens of challenges were identified by respondents, some which were similar in nature, but called by different names. The top ten challenges are listed below in order of importance:

1. Improvements in and maintenance of recycling programs
2. Siting and permitting of landfills
3. Education of the public and local elected government officials
4. Environmental impacts (ground and surface water primarily) of landfills
5. E-waste disposal and recycling
6. Yard waste management (improved composting)
7. Landfill (and other facility) compliance with environmental laws and regulations
8. Problems at construction & demolition landfills
9. Willingness of government to more strongly regulate waste management
10. Household hazardous waste collection and disposal

Areas Where KDHE Can Improve Performance

Respondents identified many areas of potential improvement. It is noteworthy that fewer respondents answered this question than other survey questions. Those areas most commonly mentioned are listed below in order of importance:

1. More actively require or promote recycling
2. Provide more public education
3. More strictly enforce requirements at permitted waste management facilities, especially landfills
4. Set state recycling goals
5. Provide newsletters to elected government officials for their education and for them to use to educate their constituents
6. Provide more grants to help establish and enhance waste reduction programs
7. Provide ongoing technical training to facility operators

Areas Where KDHE has Performed Well in Solid Waste Management

Several areas of good performance were identified; however, fewer people provided feedback to this question than others. A list of areas is listed below in order of importance:

1. Assistance to local governments during times of natural disasters
2. Technical training of facility operators
3. Grants to facilitate the start-up and enhancement of recycling and composting facilities

4. The WORKS Conference to address and encourage recycling, composting, and HHW collection
5. Assistance and technical training for HHW facility operations
6. Outreach programs in schools
7. Partnering with groups such as SWANA and KOR to achieve technical training goals
8. Waste tire clean-up and management of statewide program

STAKEHOLDER FEEDBACK RECEIVED AT WORKS! 2010 CONFERENCE

As a follow-up to the online survey discussed above, additional feedback was sought from solid waste stakeholders at the 2010 WORKS! Conference held in Junction City from March 23 to 25. Approximately 200 people participated in a general session during which additional questions were asked to build upon the survey results. A follow-up open discussion period occurred with about 150 people. The feedback received confirms much of what was learned through the online survey. Some of the major points of emphasis received from stakeholders at WORKS! 2010 are listed below:

- Online education and training is something the state should pursue; however, online education for the public will have minimal value while online technical training for facility operators should be pursued in a more major way.
- KDHE funding for the illegal dump clean-up program should be equal to the funding allocated for the city dump repair program rather than allocate more money for the city dump repair program as has been done in the past.
- The general public should be routinely surveyed to ascertain their overall level of knowledge and opinions regarding solid waste management practices and preferences.
- Factors that influence the public's participation in recycling in priority order are convenience, cost, and availability of service.
- The state should work with local programs to provide area-specific public education.
- KDHE should evaluate local solid waste management systems and make recommendations to local officials or key private parties related to efficiency, adequacy of facilities, and potential partnerships to accomplish projects.
- Future grants or other subsidies should include demonstrations of sustainability as a prerequisite to obtain state funds.
- The state should provide local planners with guidance to re-evaluate their existing primary waste management method.
- Landfills should be inspected twice per year and other facilities only one time per year.
- The state should identify ways to expand energy recovery from organic waste streams and provide encouragement and technical information to local decision-makers on opportunities.

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Appendix C

Solid Waste Program Budget Information

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Table C-1
Solid Waste Management Fund Revenue

Fiscal Year	Tipping Fees	Permit Fees	Other* Collections	Earned Interest	Total
1993	$ 1,218,425	$ 0	$ 0	$ 3,307	$ 1,221,732
1994	4,824,382	500	0	83,047	4,907,929
1995	5,556,757	56,250	0	236,434	5,849,441
1996	3,956,182	86,875	0	403,180	4,446,237
1997	3,862,432	100,500	0	411,319	4,374,251
1998	4,233,178	71,375	7,573	389,642	4,701,768
1999	4,503,998	68,750	12,173	315,628	4,900,549
2000	4,614,518	85,000	49,874	345,201	5,094,593
2001	4,592,347	91,425	35,430	430,579	5,149,781
2002	5,079,279	91,710	8,998	216,691	5,396,678
2003	4,714,091	130,818	17,394	98,007	4,960,310
2004	4,348,305	108,680	3,908	53,093	4,513,986
2005	5,680,616	65,409	70,718	84,414	5,901,157
2006	4,816,023	107,304	17,584	182,224	5,123,135
2007	5,347,242	113,225	22,129	259,041	5,741,637
2008	5,118,158	118,800	9	243,542	5,480,509
2009	4,479,182	115,325	1,920	139,934	4,736,361
Total	$76,945,115	$1,411,946	$247,710	$3,895,283	$82,500,054

Projections	Tipping Fees	Permit Fees Other Collections		Interest	Total
2010	4,300,000	100,000	**	80,000	4,480,000
2011	4,400,000	100,000	**	60,000	4,560,000
2012	4,500,000	100,000	**	50,000	4,650,000
2013	4,600,000	100,000	**	40,000	4,740,000
2014	4,600,000	100,000	**	40,000	4,740,000

*Other Collections includes refunded grants, donations for public education projects, and funds recovered through enforcement actions

**Projections for permit fees and other collections combined in “Permit Fees” column.

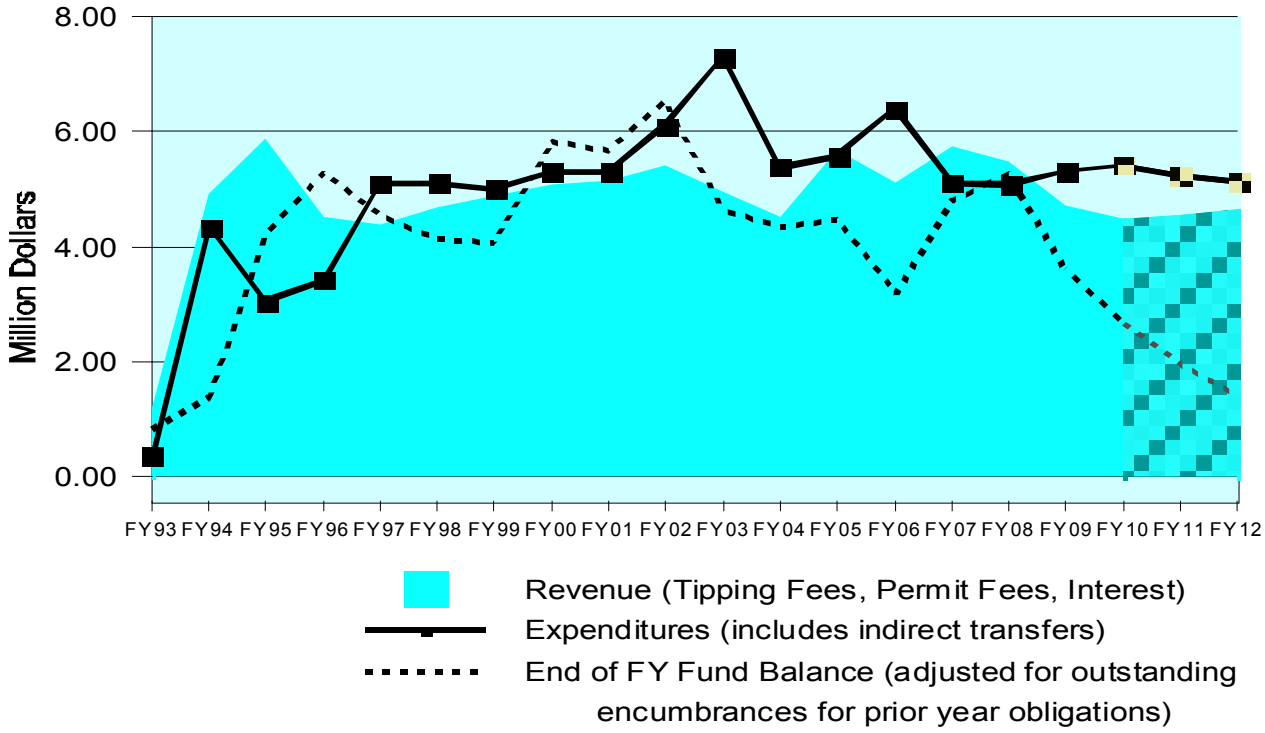
Table C-2
Historical Summary of Solid Waste Program Expenditures

	Fiscal Year		
Area of Expenditure	**FY 2007**	**FY 2008**	**FY 2009**
Staff Salaries	**2,231,767**	**2,453,383**	**2,494,053**
Operational Costs	**366,434**	**432,164**	**383,131**
Grants			
-HHW	60,220	250,547	15,553
-Recycle/Compost	826,472	1,379,946	697,990
Total Grants	**886,692**	**1,630,493**	**713,543**
Contracts			
-Public Education & Training	227,173	219,696	347,837
-Financial Assurance	0	0	0
-Pesticides/Waste Sweeps	27,927	5,480	12,037
-SW Studies*	0	0	0
-Abandoned Waste Disp.	0	0	0
-Other**	61,917	79,821	88,176
Total Contracts	**317,017**	**304,997**	**448,050**
Illegal Dumps	301,633	92,545	108,500
City Dumps	185,212	294,607	225,317
TOTAL EXPENSES	**4,288,755**	**5,208,189**	**4,372,594**
Indirects Transferred	**631,488**	**631,488**	**937,763**
TOTAL USE OF FUND	**4,920,243**	**5,839,677**	**5,310,357**

* SW Management Planning/Engineering Solutions & Design, Inc. and KLA contract

** Key Staffing, St. Francis Health Center labs, misc

Figure C-1
Solid Waste Management Fund
Revenue - Expenditures - Balances



Kansas Department of Health and Environment
Bureau of Waste Management