Kentucky Division of Waste Management

Annual Report

Fiscal Year 2007




Commonwealth of Kentucky
Environmental and Public Protection Cabinet
Department for Environmental Protection
Division of Waste Management

www.waste.ky.gov
www.recycle.ky.gov

FROM THE DIRECTOR

I am pleased to present the Kentucky Division of Waste Management's *Annual Report* for Fiscal Year 2007. This report presents clear, factual information about progress made and the challenges that remain to minimize our waste generation, to increase our recycling and beneficial reuse, to properly dispose of our waste and to remediate lands degraded by illegal dumping and other releases to the environment.

In 2004, the Environmental and Public Protection Cabinet formulated a strategic plan to guide this agency's operations. This report serves to update the public and our own agency on the progress we've made toward achieving the goals and objectives stated in our strategic plan.

In preparing our first annual report for Fiscal Year 2006, we envisioned a document that will continue to be updated through the years; one that will provide an easy-to-use tool to measure our progress and to identify our deficiencies. To that end, this Fiscal Year 2007 report builds upon that initial report.

As I did last year, I encourage all Kentuckians to **get involved** in improving our environment:

- **educate** yourselves on solid waste issues affecting your town;
- **meet** your county's solid waste coordinator;
- **contribute** your time to help your community profit from recycling;
- **organize** local groups to participate in Commonwealth Cleanup Week;
- **think** before you use or dump chemicals and other pollutants into the environment;
- **take action** to reduce your waste and expect others to do the same.

Together we can make Kentucky a better place in which to live and work for future generations.

Sincerely,

R. Bruce Scott, P.E., Director
KY Division of Waste Management

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(31) "Waste" means:

(a) "Solid waste" means any garbage, refuse, sludge, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining (excluding coal mining wastes, coal mining by-products, refuse, and overburden), agricultural operations, and from community activities, but does not include those materials including, but not limited to, sand, soil, rock, gravel, or bridge debris extracted as part of a public road construction project funded wholly or in part with state funds, recovered material, tire-derived fuel, special wastes as designated by KRS 224.50-760, solid or dissolved material in domestic sewage, manure, crops, crop residue, or a combination thereof which are placed on the soil for return to the soil as fertilizers or soil conditioners, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923):

1. "Household solid waste" means solid waste, including garbage and trash generated by single and multiple family residences, hotels, motels, bunkhouses, ranger stations, crew quarters, and recreational areas such as picnic areas, parks, and campgrounds, but it does not include tire-derived fuel;

2. "Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other service and non-manufacturing activities, excluding tire-derived fuel and household and industrial solid waste;

3. "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste or a special waste as designated by KRS 224.50-760, including, but not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer or agricultural chemicals; food and related products or by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products, except tire-derived fuel; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment; and

4. "Municipal solid waste" means household solid waste and commercial solid waste; and

(b) "Hazardous waste" means any discarded material or material intended to be discarded or substance or combination of such substances intended to be discarded, in any form which because of its quantity, concentration or physical, chemical or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed;

[Kentucky Revised Statutes, Chapter 224, Subchapter 1, Section 010]

EXECUTIVE SUMMARY

The largest division of the Department for Environmental Protection with 280 staff positions, the Division of Waste Management (DWM) oversees a wide array of programs dealing with solid waste management, recycling, hazardous waste, underground storage tanks (USTs) and site remediation at contaminated properties such as "brownfields." As a regulatory agency DWM requires permits from certain facilities to ensure that wastes are managed properly. These include solid waste disposal facilities (landfills) and entities that transport, store and dispose of hazardous waste (TSDs).

Selected achievements and challenges for Fiscal Year 2007:

- The Kentucky hazardous waste regulations had not been updated since 1997. The update of these 148 regulations was effective on June 13, 2007.

- The division is in the process of performing a comprehensive review of its regulations in two major program areas: solid waste and underground storage tanks. In 2008 the division plans to propose new regulatory amendments to update these two programs. Solid waste regulations are planned to be amended to introduce information that has been changed since the last promulgation effort. The UST program plans to incorporate changes in response to the Federal Energy Policy Act of 2005.

- The number of pending solid waste permits (the backlog) has dropped dramatically from more than 250 in the summer of 2004 to 0 in February 2007. This zero permit backlog has been maintained throughout Fiscal Year 2007.

- Prices for certain recyclable materials are increasing (PET, steel, aluminum). Recycling commodities prices are holding at solid sustainable levels with some commodities, such as aluminum beverage cans, scrap copper, scrap steel and plastic containers (PET and HDPE) at historic highs. The long-term outlook (over the next five to seven years) is for continued favorable pricing levels to recyclers.

- Recycling in Kentucky has improved to 27 percent, a 5 percent increase from 2005. This is ahead of the Southeast Regional average of 22 percent but still behind the national average of 28.5 percent.

- Nearly 88 percent of Kentucky households receive door-to-door garbage collection service.

- There are approximately 2,380 known underground storage tank cleanup projects to be completed in Kentucky.

- In Fiscal Year 2007, DWM reimbursed counties more than $2.9 million for the cleanup of 627 illegal open dumps.

- During calendar year 2006, counties reported collecting 646,033 bags of litter at a cost of $8.4 million.

- In FY 2007, DWM conducted 6,155 inspections (513 per month on average) and issued 1,304 notices of violation.

- A total of 61 major state Superfund sites have been remediated since 1993. Since 1993, 450 removals/responses for smaller sites (abandoned or leaking drums, mercury assessments and removals, soil cleanups, etc.) have been conducted.

- The number of incidents per day to be addressed by the cabinet's Environmental Response Team has more than doubled from 8.6 in 2003 to 22.6 in 2006.

- Since October 2005 the Division of Waste Management, in partnership with the Cabinet for Health and Family Services, has held eight mercury collection events for the public around the state, with 1,920 pounds of mercury collected.

- Scott County-Briar Hill Landfill cleanup and capping project is complete. The total expenditure on this completed historic landfill project is $1.2 million.

- The federal government, in 1988, slated the Lexington Bluegrass Army Depot for closure under the Base Realignment and Closure Program. The Army recently completed remediation at this 750-acre site. DWM reviewed and approved final remedies for this site on June 15, 2007.

- Nine historic landfill projects are currently under construction for closure/remediation and all nine are scheduled to be completed by the end of calendar year 2007. Total costs for all nine projects including site characterization, design, and construction is more than $32 million.

- The Division of Waste Management awarded 26 recycling grants, totaling $2,297,541 from the Kentucky Pride Fund.

- The crumb rubber grant program has awarded $4,666,795 in grant funding to 162 counties since 2004. Forty-five of those totaling $1,473,459 were in calendar year 2006.

- The Waste Tire Trust Fund was reauthorized in the 2006 General Assembly and will remain in effect until July 31, 2010. More than 3.1 million tires were recycled from 2004-2006. Another 2 million tires were sent out-of-state for use as tire-derived fuel.

- The Government Recycling Section recycled 10,555,043 pounds of office paper from governmental offices, generating $618,021 in revenue from 2004-2006. In 2007, the cabinet initiated a pilot project to increase paper recycling within state government. The goal is for Kentucky to be No. 1 nationally in paper recycling.

The division will be seeking legislation to address the following areas:

- The hazardous waste assessment fee is used by DWM and the DEP Environmental Response Team to fund cleanups and emergency responses. The fee is due to be reauthorized in June 2008. The division will request an extension of this expiration date in the 2008 legislative session.

Division of Waste Management Scorecard

The following is a scorecard on how the division performed for FY 2007 in the subject areas of the annual report. We have given ourselves a "thumbs-up" or a "thumbs-down" depending on how we performed in the given area and provided a brief description of why we believe we achieved the given rating.

Waste Generation 

According to available data Kentuckians, on average, generate 6 lbs./day/person of waste compared to the national average of 4.6 lbs./day/person. This high per capita generation data is an issue the division is looking into to verify the accuracy of the data and if correct to identify causes and recommend methods to reduce this rate.

Recycling 

The recycling rate in Kentucky has been steadily increasing since 2003. The current rate of 27 percent is a significant improvement from previous years. The state government recycling program has been a huge success serving 115 buildings in Frankfort. The program recycled 4,095,332 lbs. of waste paper in FY 2007 alone. The waste tire program continues to promote recycling of waste tires into crumb rubber and other products. Twenty six counties were awarded Kentucky's first recycling grants totaling $2.3 million.

Collection and Disposal 

In Kentucky the door-to-door collection rate has increased 31 percent since 1993 to 88 percent today, which may be due in part to the low cost for collection in comparison with surrounding states. The division, in cooperation with other state agencies, continues to offer mercury collection events throughout the state.

Site Remediation 

The brownfields program continues to grow with the addition of a couple of pieces of legislation to encourage brownfield redevelopment. The historic landfill program has been successful in closing the Scott County-Briar Hill landfill. The program currently has nine projects under construction with others lined up to follow. Fewer bags of litter and a decrease in the number of illegal open dumps demonstrated substantial improvements in these program areas.

Administration 

The division received a thumbs-up in this category for several reasons. The division's permitting processes were streamlined resulting in the achievement of a 0 percent backlog in solid waste as well as a substantial reduction in the number of pending hazardous waste permit applications. The conversion to a new accounting system (eMars), imaging of paper files to reduce storage space, the cleanup of the Rockwell Facility in Russellville, and the revision to the TEMPO permitting system, were all significant achievements in FY 2007.

Policy Developments 

The hazardous waste regulations, totaling 148 regulations, became effective June 2007. This set of regulations had not been updated since 1997 and incorporated changes in the Code of Federal Regulations through 2005. There were several pieces of legislation that, while not promoted by the division, were welcomed as positives for Kentucky's health and environment.

INTRODUCTION

The Division of Waste Management (DWM) is one of six divisions of the Department for Environmental Protection in the Environmental and Public Protection Cabinet (EPPC). The cabinet strategic plan, developed in September 2005, describes the mission of the agency:

> *"to improve the quality of life for all Kentuckians and to enhance Kentucky's economy while protecting Kentucky's environment, workers and the general public."*

To accomplish this mission, the cabinet has developed a set of objectives to be implemented by each department from 2006-2009. The objectives and tactics germane to DWM are:

Cabinet Goal #1: Improve regulatory procedures and implementation. Make Kentucky's regulatory program rational, reasonable and user-friendly.

Cabinet Goal #4: Improve the quality of the Kentucky environment and minimize the health impacts to the citizens from environmental risks in the Commonwealth.

Tactic 4.2.3: Restore or manage contamination at sites with known or suspected releases to soil or groundwater.

Tactic 4.2.4: Encourage reduced waste generation and disposal by promoting beneficial reuse, recycling, waste minimization and pollution prevention.

Tactic 4.2.5: Assure proper management and disposal of waste.

This means the division's approach is to first minimize waste generation. When waste is generated, we work to reclaim that which has value as a resource (recycling) and then assure that the remaining waste is disposed of properly.

Next we work to restore lands that are contaminated when wastes are *not* managed properly. In the sections that follow, we report on our activities in these main areas: waste generation, recycling, collection/disposal and site remediation.

To track our progress, DWM has developed a set of environmental indicators that are tracked in this *Annual Report*, and will continue to be in the future.

Measures for **Permit Backlogs:**

- Total number of permits pending [see pp. 35-39].
- Total number of permits pending that exceed regulatory time frames [see p. 35-39].
- Percentage of permit reviews completed within regulatory time frames [see p. 35-39].
- Percentage of permit reviews that exceed regulatory time frame [see p. 35-39].

Measures for **Recycling**:

- The tons of solid waste and special waste recycled or reused, by type [see p. 7-14].
- The tons of material recycled through the state government recycling program [see p. 8-9].
- The number of tires reused through tire-derived fuel projects and crumb rubber grants [see pp. 12-14].

Measures for **Collection and Disposal**:

- The compliance rates for authorized solid waste management facilities [see p. 41].
- The amount, by weight, of litter collected by counties through the Kentucky Pride program [see p. 30].
- The compliance rates for authorized hazardous waste facilities [see p. 41].
- The compliance rates for registered underground storage tanks [see p. 41].

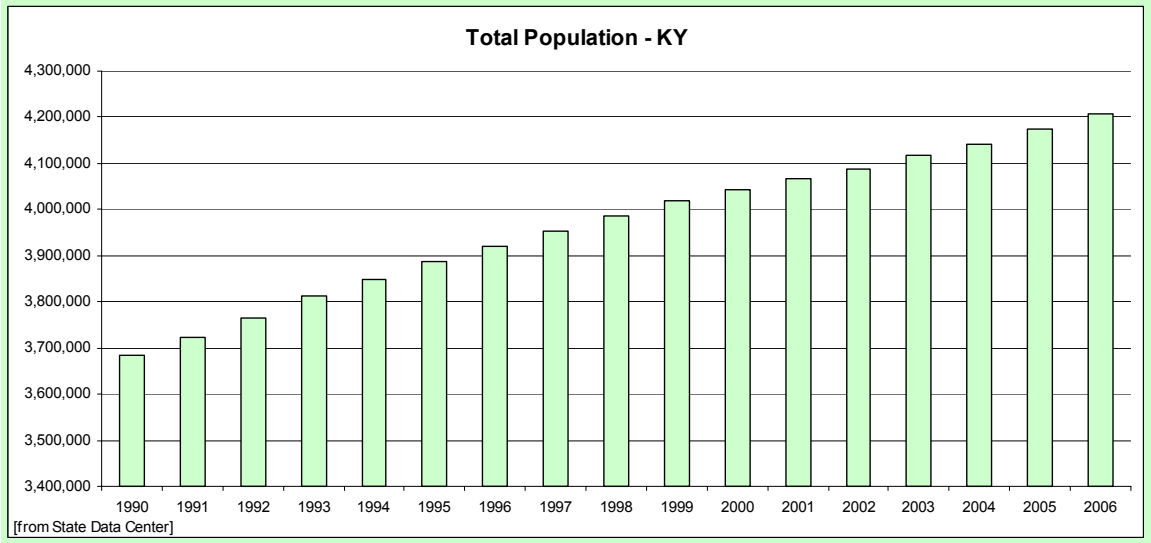
Measures for **Site Remediation** are as follows: The number of sites with known or suspected releases where no further action is required or human exposures are otherwise controlled as a result of implementing a management-in-place technique.

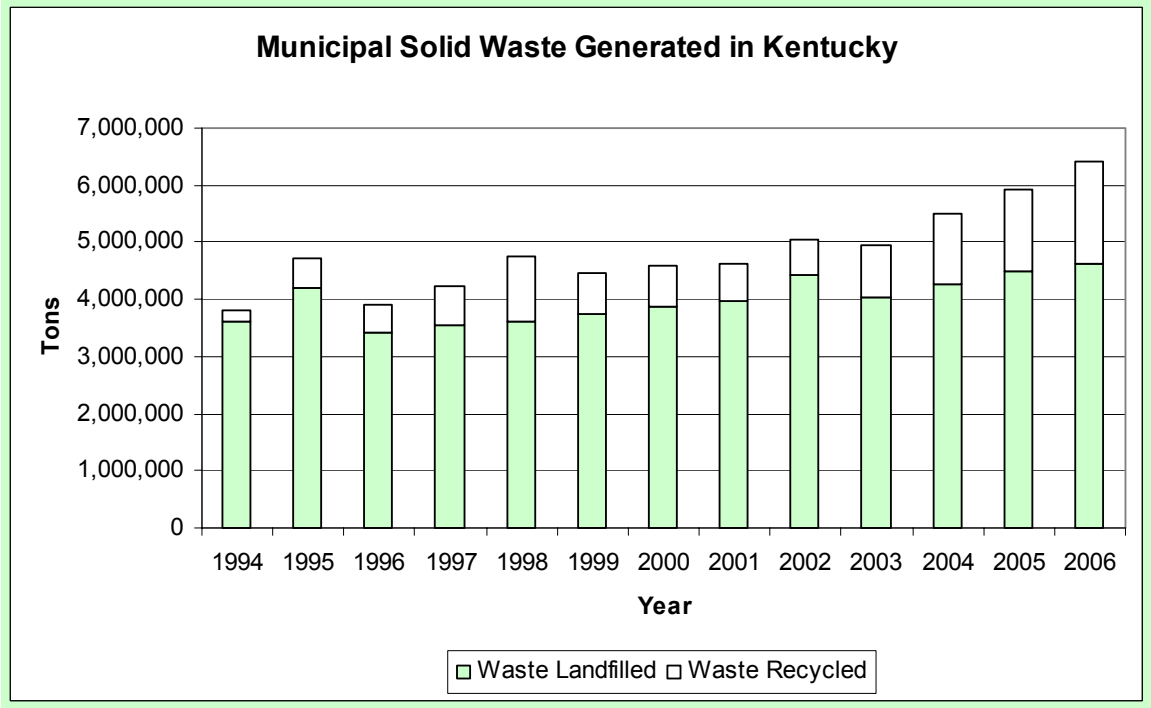
This item can be further distinguished along programmatic lines:

- Number of underground storage tank cleanups conducted, remaining [see pp. 19-20].
- Number of hazardous waste program corrective actions completed, remaining [see pp.20-21 and 37].
- Number of historic landfills characterized, number remediated, remaining [see pp. 27-28].
- Number of illegal dumps remediated under the Kentucky Pride program, remaining [see p. 29-30].
- Number of State Superfund sites characterized, number remediated [see pp. 21-24].
- Number of emergency or incident responses made and number of cases closed [see p. 32-33].
- Number of cleanups conducted under state oversight via the Voluntary Environmental Remediation Program [see brownfields p. 24-25].

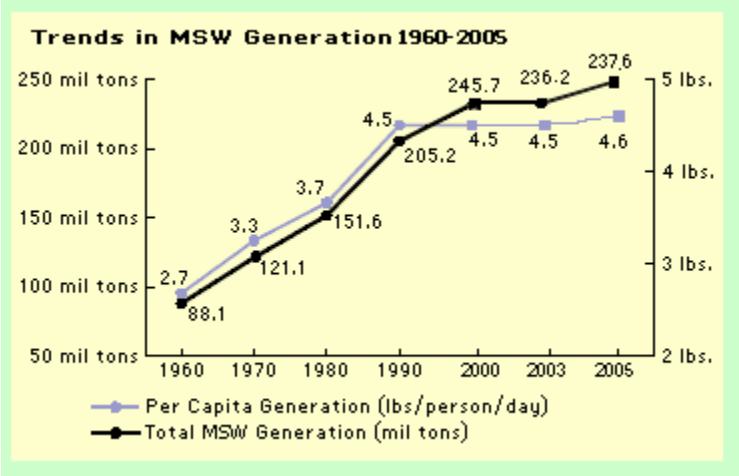
WASTE GENERATION

All counties in Kentucky offer a system of universal waste collection. Universal waste collection means that collection service is made available to households, either through curbside collection or through drop-off centers/collection centers/transfer stations for use by households. The total population in Kentucky is increasing, which will be related to the amount of waste generated in the state increasing as well. The charts below show these trends of increasing population as well as increasing amounts of waste being generated. One encouraging trend is the amount of wastes being recycled is increasing as well.

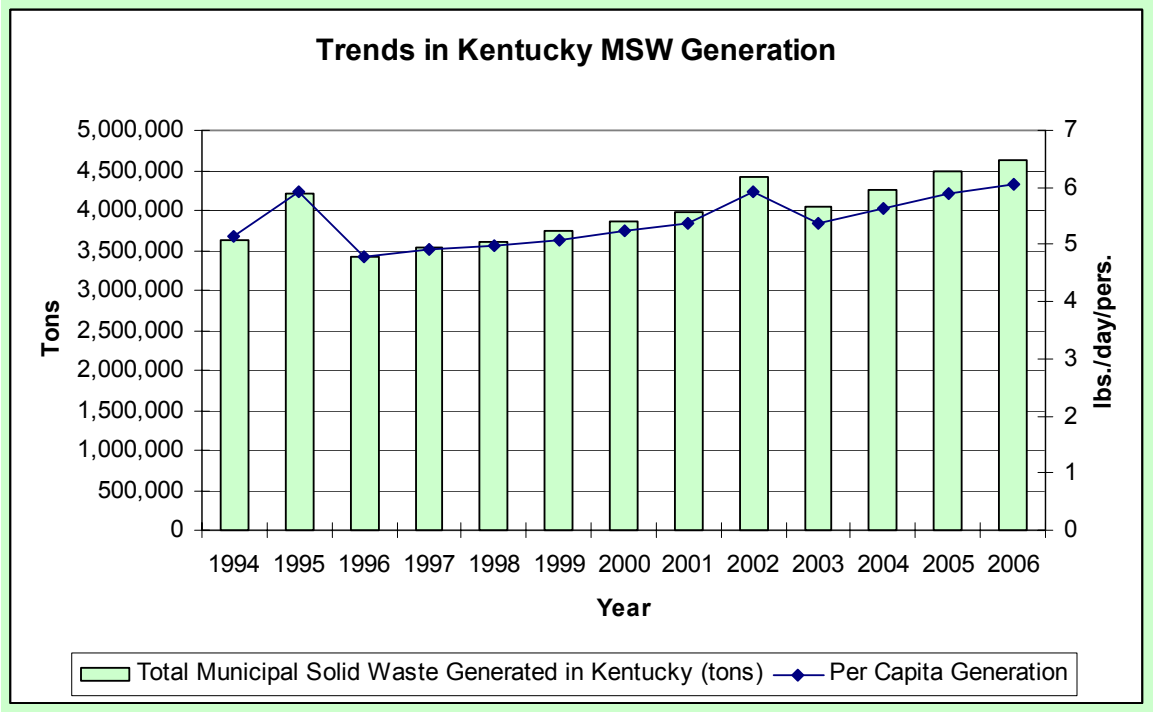




National Municipal Solid Waste (MSW) Trends:



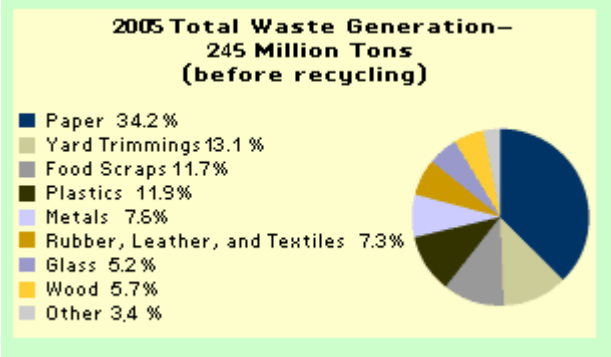
(From www.epa.gov)



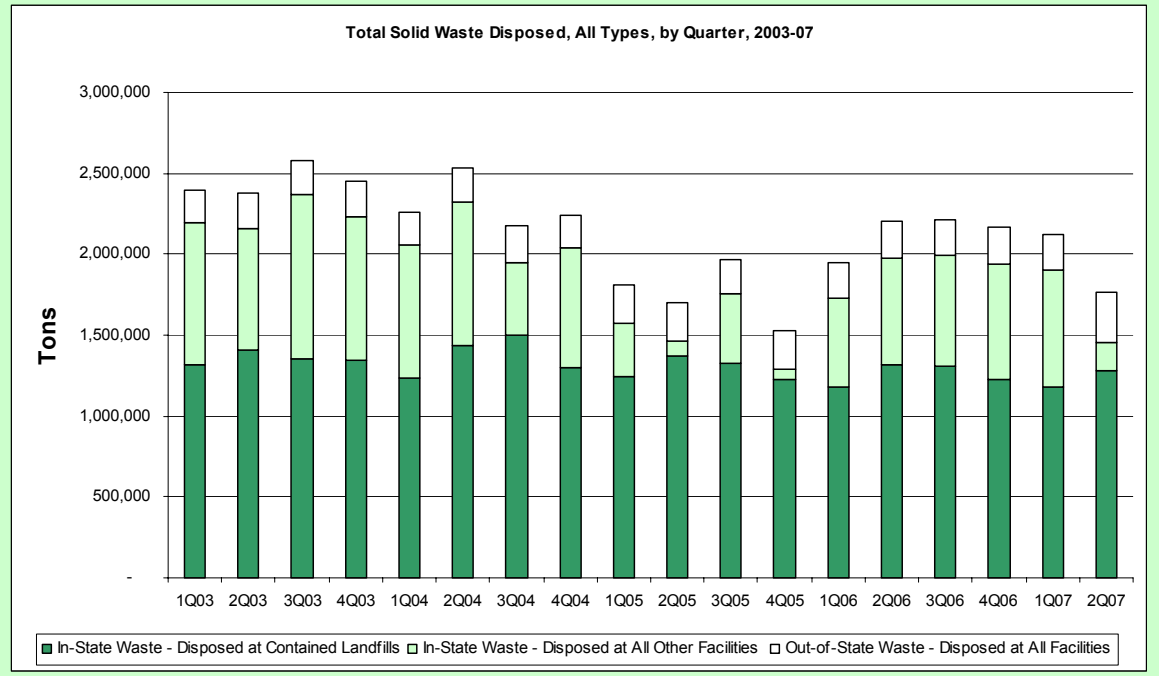
According to U.S. Environmental Protection Agency (EPA), the national per capita generation of municipal solid waste is 4.6 lbs./person/day and has flattened out at this rate for the past 15 plus years. In Kentucky the per capita generation of municipal solid waste is slightly higher than 6 lbs./day/person and has increased gradually over the past 15 years. This equates to 1.4 lbs./day/person higher in Kentucky, or 30 percent higher. While Kentucky's population has increased gradually over the past 15 years, the annual amount of waste generated has outpaced population growth.

If this data is correct this raises the question of why generation of municipal solid waste in Kentucky is so much higher than the national average. Any number of theories may be offered for this trend, some of which may be symptomatic of larger issues of concern

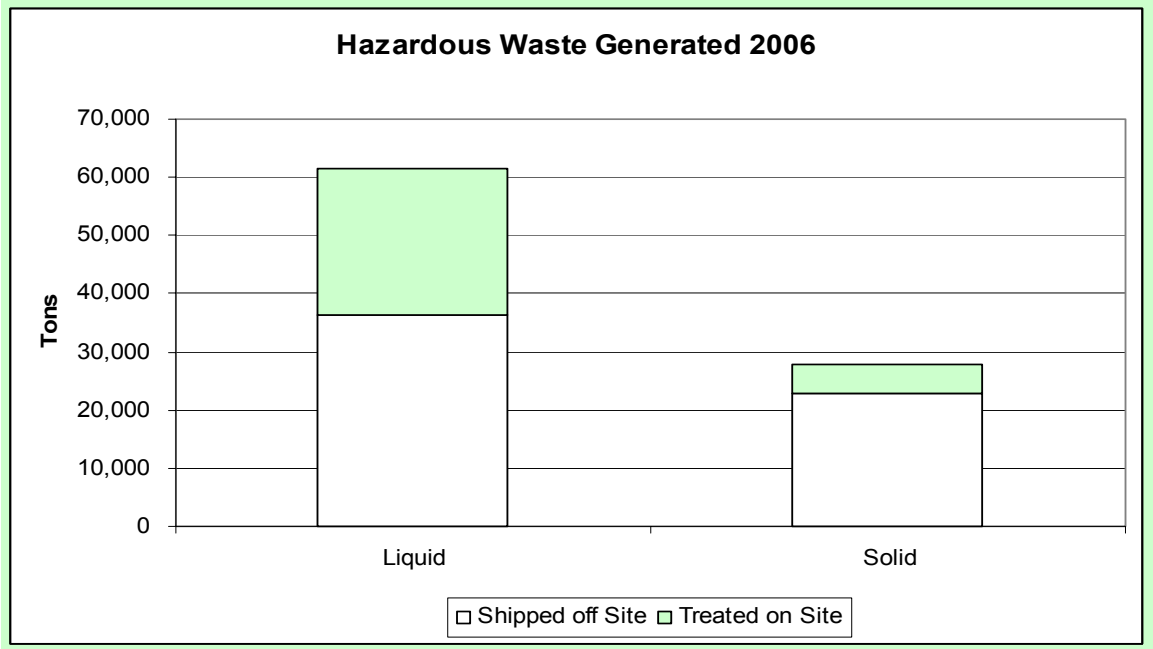
within the commonwealth. To evaluate the issue further, the division will be investigating the matter to verify the accuracy of the data and if correct to identify causes and recommend methods to reduce this rate of generation.



As reported on Quarterly Solid Waste Quantity Reports submitted by facility operators:



The graph above shows the total amount of solid waste disposed in Kentucky landfills. This includes waste that is shipped into the state from out-of-state sources. As evident in the graph, waste generated in state and disposed of at a contained landfill has remained steady over the past four fiscal years. Out-of-state waste disposed of at Kentucky facilities is also relatively flat. However, the in-state waste disposed of at facilities other than a contained landfill is decreasing. These are facilities such as greater than one acre construction/demolition debris (CDD) landfills, less than one acre CDD landfills, and industrial landfills. This graph does not reflect wastes that are shipped to transfer stations.

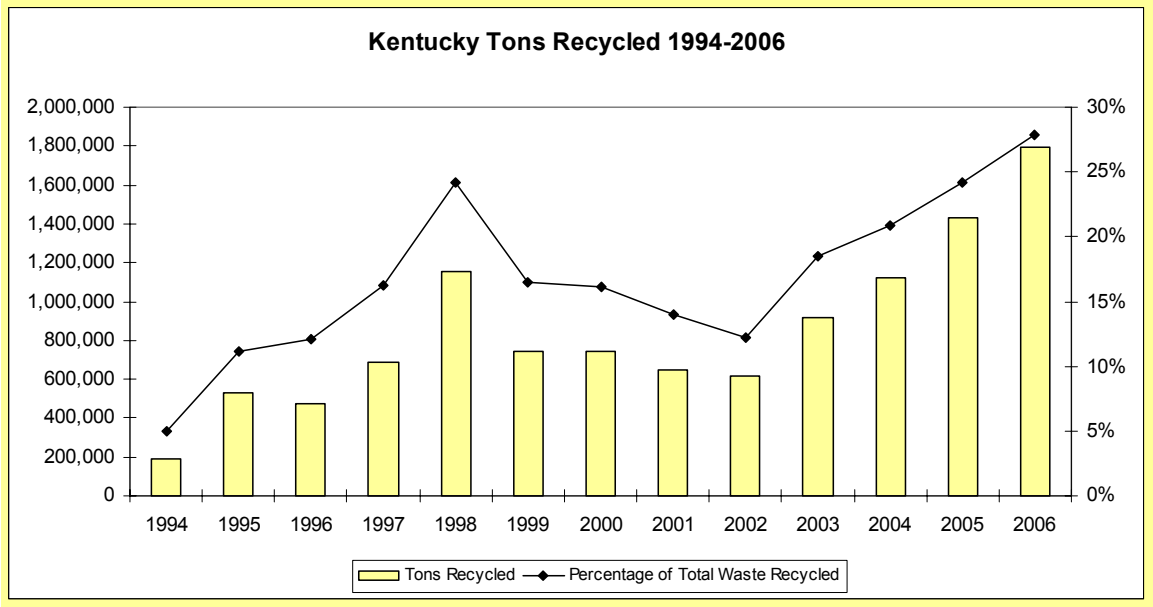


Note: The chart above does not include 12,172,563 tons of hazardous waste that is exempt from assessment, such as process wastewaters regulated under the Clean Water Act. This also excludes "limited quantity generators" who are exempt from filing generator reports or annual tax assessments.

The chart above shows the amount of waste generated as reported in the 2006 Hazardous Waste Assessments. Waste shipped off site is waste that is generated and shipped off site to be treated, recycled, or disposed. On-site waste is treated, recycled or disposed of on the facility site.

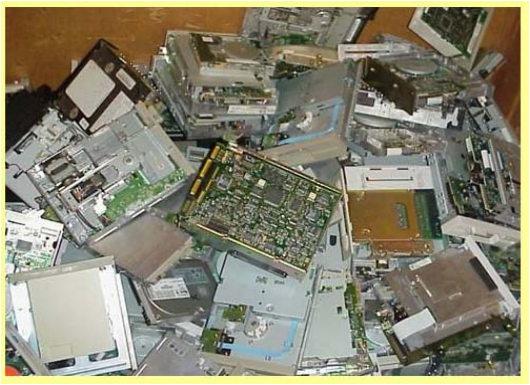
RECYCLING

Kentucky's recycling rate on common household items (aluminum, cardboard, steel, plastic, newspaper, glass and paper) increased steadily from 18 percent in 2003 to 27 percent in 2006. However, Kentucky's recycling rate still trails behind the national average of 28.5 percent, but is ahead of the Southeast Region states whose average is 22 percent.



Prices for certain recyclable materials are increasing (PET, steel and aluminum). Recycling commodities prices are holding at solid sustainable levels with some commodities, such as aluminum beverage cans, scrap copper, scrap steel and plastic containers (PET and HDPE) at historic highs. The long-term outlook (over the next five to seven years) is for continued favorable pricing levels to recyclers.

Recycled commodity pricing has been driven by export demand and the outlook for this to continue is good as long as there are no disruptions in the consumer sector growth in China and India, in particular.



Steady growth in the U.S. economy will add to demand for resources recovered from the waste stream, as petroleum-based materials become unaffordable. "Waste" is rapidly becoming the new resource of the 21st century.

Senate Bill 50 [2006] established a fund for the building of recycling infrastructure and the collection of household hazardous waste. This program has the potential for significantly increasing the volume being recycled in the state.

Twenty six counties were awarded Kentucky's first recycling grants totaling $2.3 million. The grants will be utilized to expand existing recycling programs and develop new recycling programs in areas where recycling has been limited.

Electronic waste (e-scrap) is a rapidly increasing sector of recycling. The Recycling and Local Assistance Branch obtained a grant from the EPA to conduct a series of workshops on e-scrap recycling at which various aspects and considerations for instituting an e-scrap program were presented. Two demonstration drop-off programs were conducted in Boyle and Calloway counties at which nearly eight tons of old computers and other electronics were collected and delivered for recycling. As a result of the success of those two demonstrations, a permanent drop-off program for e-scrap was established in Boyle County, as well as Franklin County. The city of Lexington is in the process developing an e-scrap program.

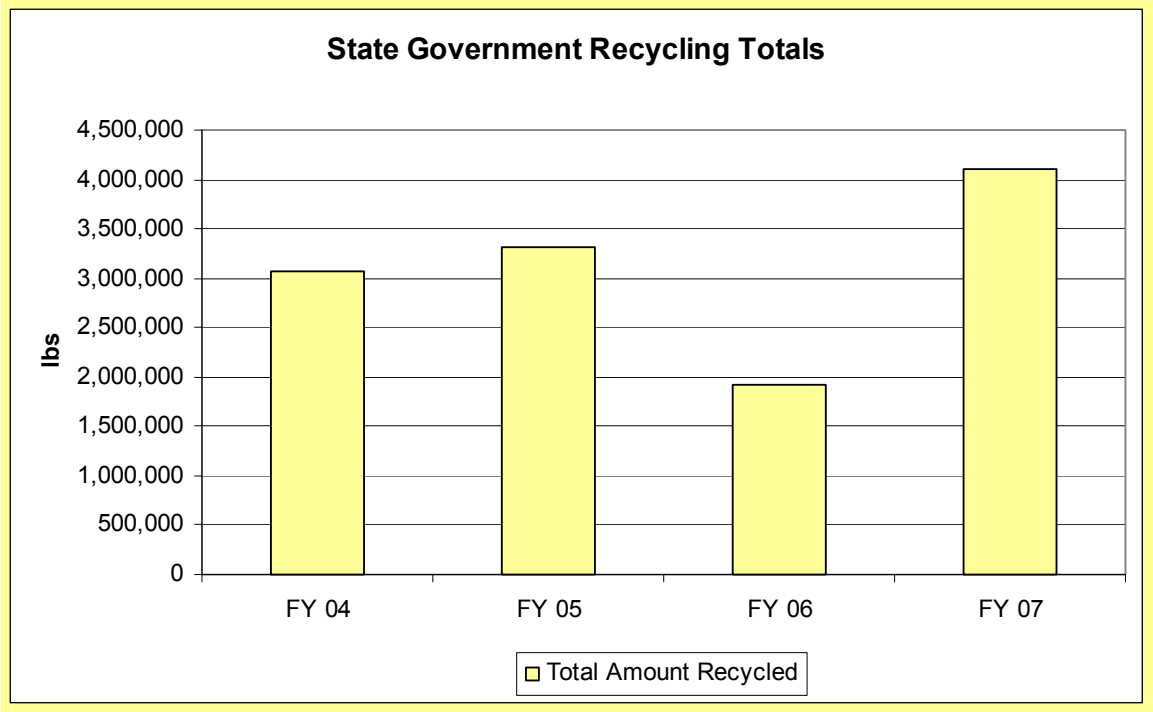
The State Government Recycling Program:

KRS 224.10-650 establishes a program, administered by DWM, for collection and source separation of waste materials generated as a result of state agency operations, including, at a minimum, aluminum, high-grade office paper and corrugated paper.

Currently, DWM serves more than 115 building locations in Frankfort collecting white and colored ledger paper, mixed paper, computer paper, newsprint and corrugated paper. The paper recycling program offers free weekly pickup of office paper and free document destruction for all state offices. The program is self-supporting, utilizing no General Fund dollars.

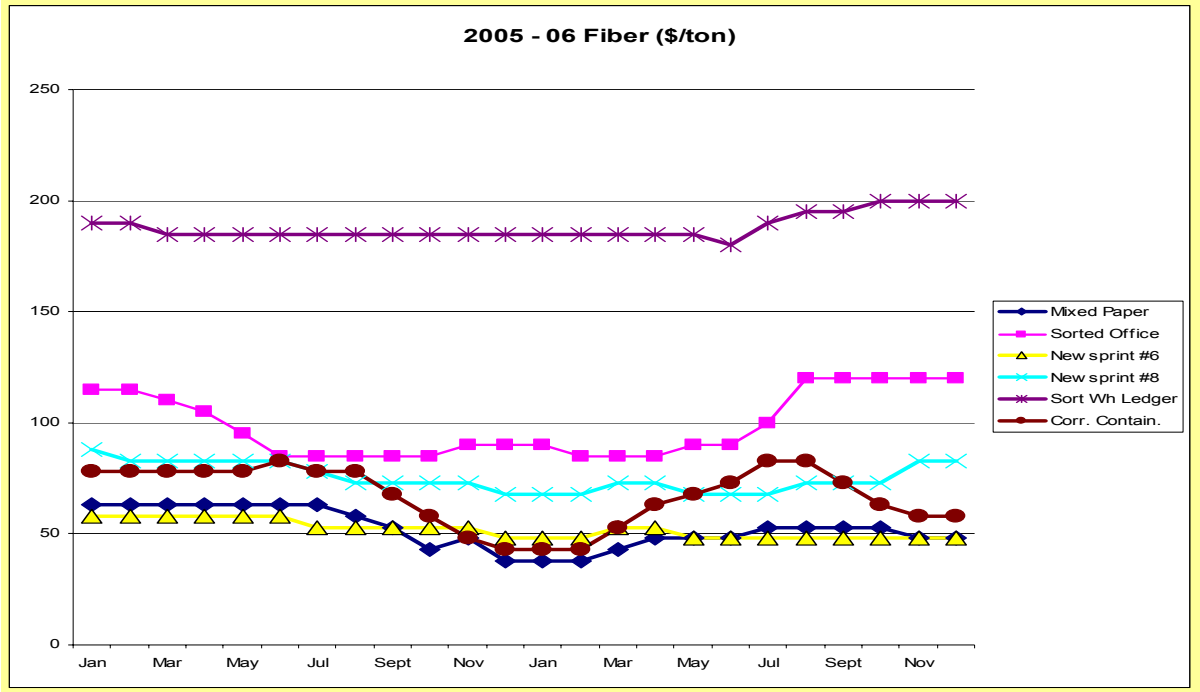
The cabinet has initiated a pilot project to increase paper recycling within state government. The Government Recycling Section has made presentations to various state agencies and has provided training to each new cabinet employee on the importance of recycling waste paper. Following these presentations, many state offices have cancelled document destruction contracts with outside entities, thereby saving state government several hundred thousand dollars.

During FY 2007, the Government Recycling Section collected and recycled 4,095,332 pounds of waste paper. This amount of waste would cost the state $86,002 for disposal in a contained landfill. Instead it provided an income of $295,056, which is used to fund the program employing seven employees. In March 2004 the cabinet purchased three box trucks with funds from the waste paper program.



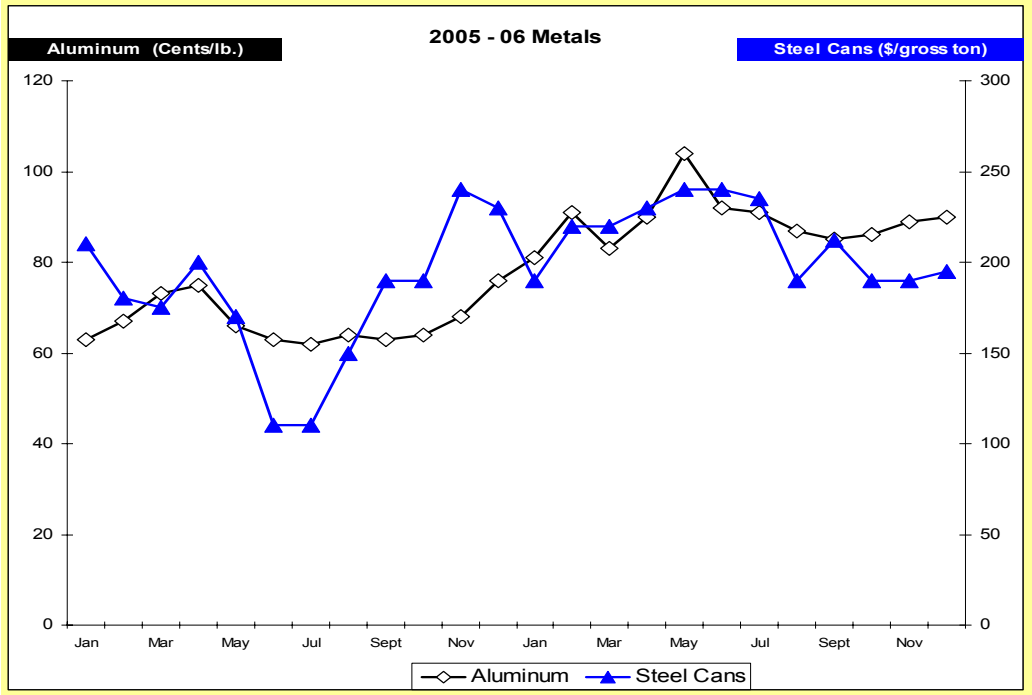
The decrease in recycling totals in the graph above is due to a shutdown of recycling operations while the State Government Recycling Program was moved to a new location.

Through publication of its *Marketplace* newsletter, DWM reports on the prevailing prices paid for aggregate recyclable materials. The following charts show the trends for various commodities.

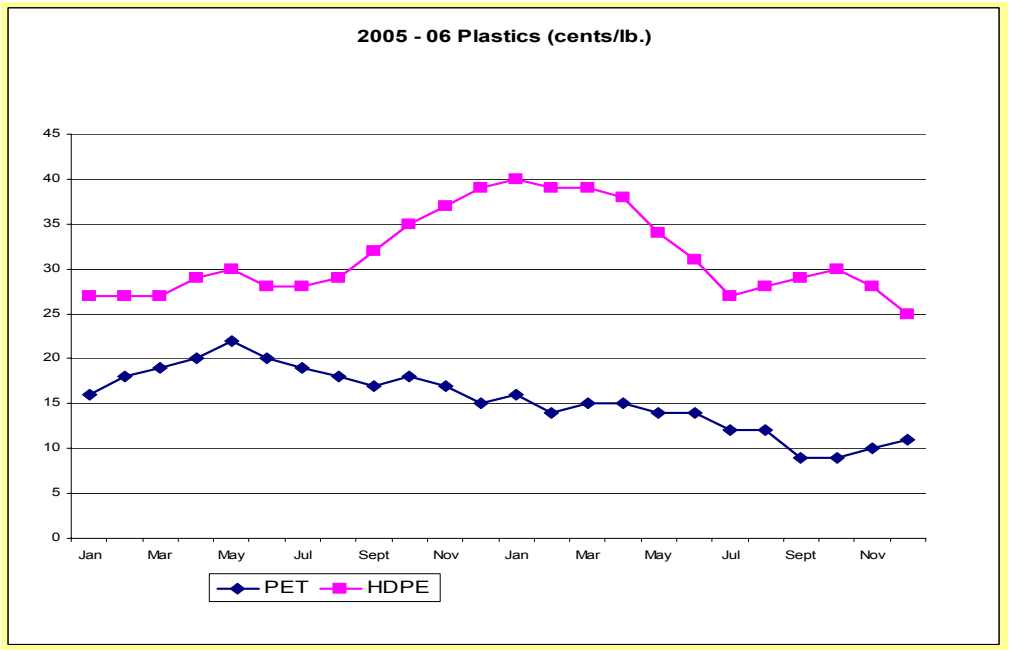


Note:
"Newsprint #8" means baled sorted newspaper, with no sun exposure, with less slick advertising inserts.
"Newsprint #6" means baled newspaper that typically has advertising slicks in it.
"Sorted office" means mostly white and colored, groundwood-free copier and printer paper.
"Mixed paper" means a lesser-grade of material that can include slick advertising inserts, envelopes and other things with gummy surfaces.
"Sorted white ledger" means higher class white paper such as stationery (free of groundwood fiber)
"Corrugated containers" means, typically, cardboard boxes.

The American Forest & Paper Association (AF&PA) recently announced that 53.4 percent of the paper used in the United States was recovered for recycling in 2006. According to the figures, that is almost 360 pounds per person each year – an 83.7 percent increase since 1990. The industry goal is to recover 55 percent by 2012. An estimated 14 million tons of paper used in the United States each year cannot be recycled because it is contaminated by food or is in the form of tissue. Thirty million tons, worth roughly $2.5 billion, that could be recycled ends up in a landfill each year. Recycling not only saves landfill space; it costs less to produce new paper products and reduces carbon emissions by three tons for every ton of paper recycled.

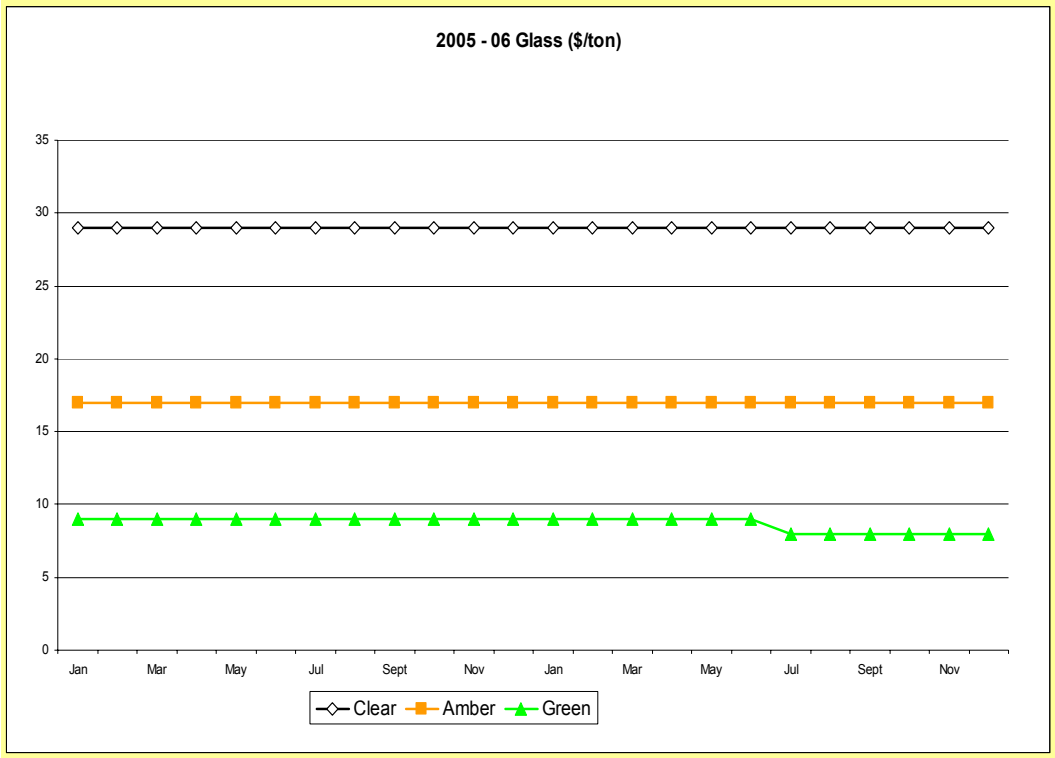


Recycling prices for steel cans and aluminum cans during 2005-2006 sustained normal yearly fluctuations, but aluminum ended higher at the end of 2006 while steel cans fell slightly. Aluminum hit an all-time high of $1.04 cents per pound in May 2006.



Note: "PET" means: Polyethylene Terephthalate, typically in the form of soft drink bottles.
"HDPE" means: High Density Polyethylene, typically in the form of milk jugs.

Number one and two plastics (PET and HDPE) also had fluctuations, with both ending 2006 a bit lower than the beginning of 2005. However, these prices aren't dramatically different from 2003 prices (27cents/lb. for HDPE which indicates a fairly static upward trend.



Glass prices, which are historically static, held steady with the exception of green glass, which dropped slightly by $1 per ton.

Recycling prices historically fluctuate during a given year. The current pricing trends on all the recycling commodities should encourage recyclers to keep collecting as much volume as possible. More volume commands higher prices from the buyers and buyers typically give preference to recyclers who maintain a steady stream of materials.

Waste Tire Program:

The Waste Tire Program mandated by KRS 224.50-850 was established in 1998 and directs the cabinet to "…manage waste tires in a way that protects human health, safety and the environment, and which encourages the development of markets for waste tires."

Funding for the program is established in KRS 224.50-868, which imposes a $1 fee on every new tire sold in the state. The fund for the "new tire fee" has experienced a slight decrease from approximately $2.8 million each year to $2.7 million for program implementation.

The waste tire program is focused on four primary activities to achieve its statutory mandate. These include:

Waste Tire Amnesty Program – A state and local government coordinated initiative with additional support from the state Department of Highways that enables residents to dispose of privately accumulated waste tires free of charge and without fear of legal prosecution. Under a state-administered contract, recovered tires are required to be recycled. Additionally, the program is able to promote and educate the public first-hand on responsible waste tire management practices. The first statewide amnesty program, which took place from 1998 though 2001, recovered 6,979,806 Passenger Tire Equivalents (PTEs), which is the weight of tire material it takes to equal one passenger tire, approximately 20 pounds. The 2002 General Assembly reauthorized funding for the program through June 2006 and a second round of amnesty programs was conducted in 2003 through 2005. In 2006, the General Assembly again reauthorized funding through July 31, 2010, and a third round was initiated in the fall in the five counties of the Gateway Area Development District. There were 185,930 PTEs collected and recycled into products including tire-derived fuel (TDF) and crumb rubber used on athletic fields, playgrounds, and landscaping mulch.

Tire Dump Remediation Projects – A coordinated effort between state and local solid waste management officials to identify and remediate abandoned tire dumps. Through 2003, the program had removed 45 tire dumps, recovering approximately 3,650,000 PTEs. Since 2003, only one dump containing more than 25,000 PTEs has been discovered and clean up on that dump is under way. This ongoing effort to rid Kentucky of illegal tire dumps is necessary to protect public health and maintain a high standard for environmental quality.

Reimbursement for Tires Collected During Litter and Illegal Dump Cleanups – An incentive program that reimburses counties through their area development districts for tire disposal costs incident to Commonwealth Cleanup Week and PRIDE cleanup events.

Market Development Projects –A sustained and long-term initiative that proactively seeks and develops beneficial end use markets for waste tires. The program funds the purchase of equipment or materials that are shown to be both technically and economically viable, and demonstrate a clean market development benefit. Establishing self-sustaining waste tire markets is the most critical component to developing a permanent solution to Kentucky's waste tire problem. Without developed markets, all other attempts to solve the waste tire problem are unsustainable solutions. One of the new programs in this area is the land application of "crumb rubber" [finely shredded tires that are free of metal wire and other tire parts] at athletic fields and park lands. Other innovative uses have been discovered for waste tires including sidewalk pavers, curb stops and signpost bases.

Waste tires can be beneficially reused as fuel because of their high heating value. Waste tires when shredded and used for energy recovery are considered TDF. Some advantages to TDF are: tires produce the same amount of energy as oil and 25 percent more energy than coal, and the ash residues from TDF may contain lower heavy metals content than some coals, and result in lower NOx emissions when compared to many U.S. coals, particularly the high-sulfur coals.

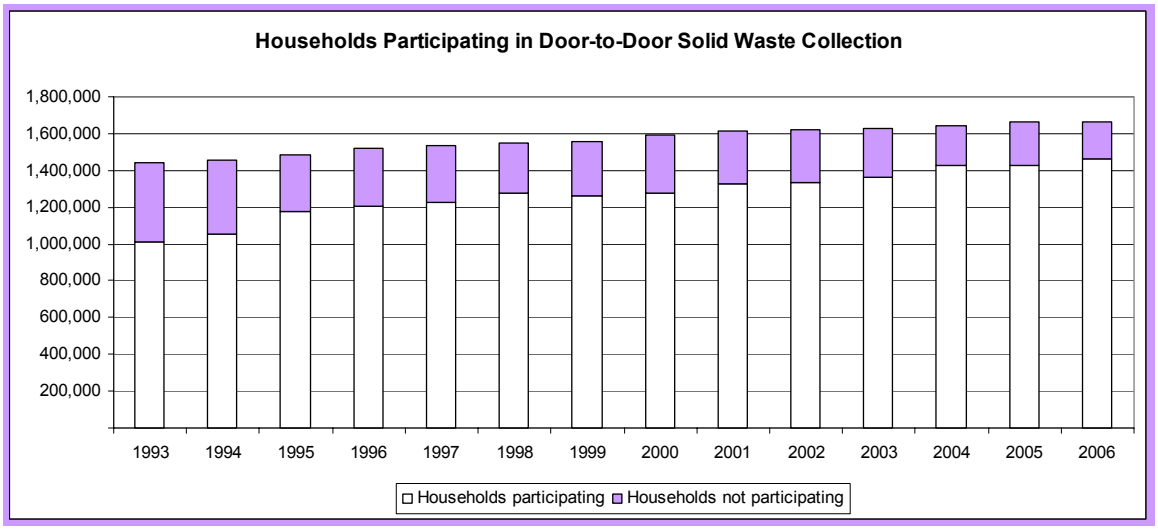
In 2006, a grant totaling $750,000 was awarded to NewPage paper in Wickliffe, Ky., to use tire-derived fuel in its boiler system at the mill. During the final quarter, approximately 1,000 tons of TDF was used. It is anticipated that in calendar year 2007, the facility will be able to use 1,000 tons (100,000 PTE) per month.

COLLECTION AND DISPOSAL

KRS 224.01-010(45) defines "universal collection" as:

…a municipal solid waste collection system which is established by ordinance and approved by the cabinet and requires access for each household or solid waste generator in a county. A commercial or industrial entity which transports or contracts for the transport of the municipal solid waste it generates or which operates a solid waste management facility for its exclusive use may be excluded from participation.

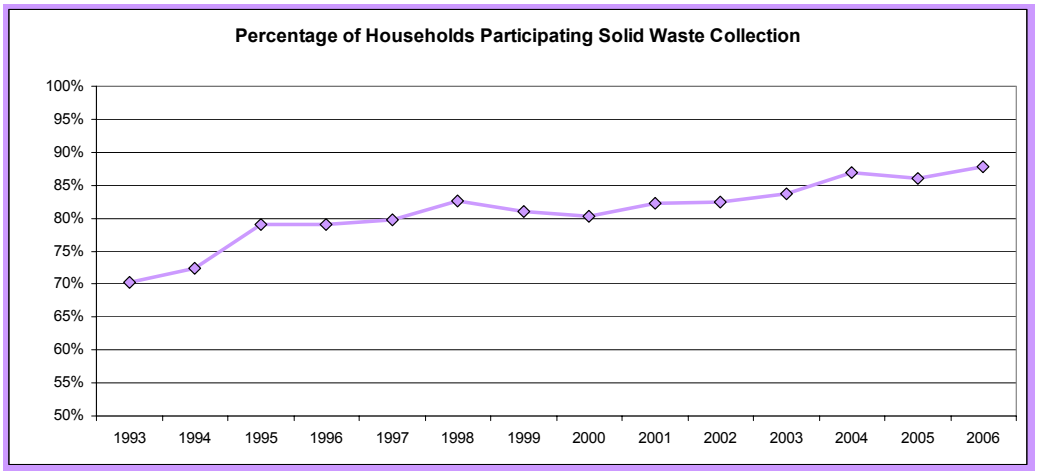
Each Kentucky county met the Oct. 1, 2003, statutory (KRS 224.43-315(1)) deadline for establishing a universal waste collection program. Universal waste collection is available to households through the form of curbside collection (door-to-door) or self-haul to a convenience center, transfer station, or contained landfill.



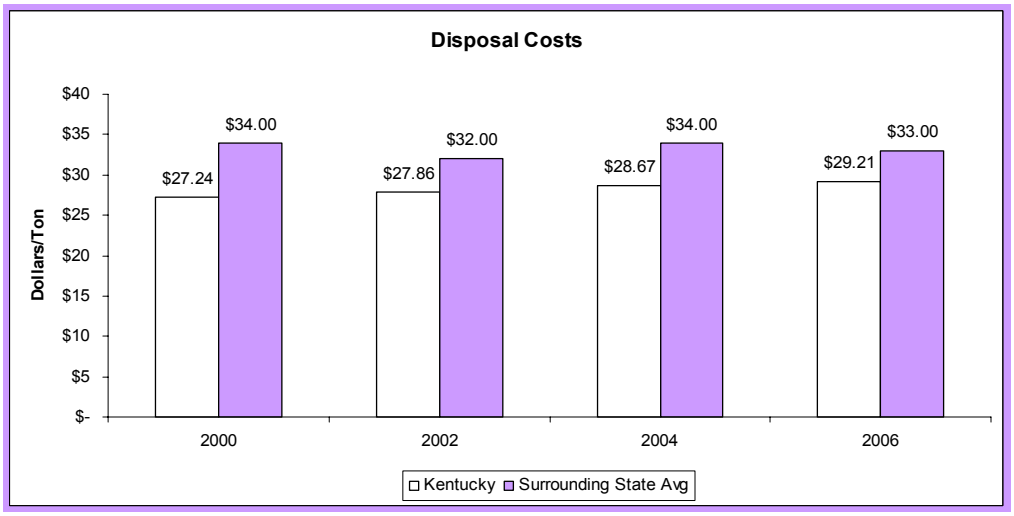
The number of households participating in door-to-door collection has increased 31 percent since 1993. The increase is due in part to enforcement and education efforts established by the cabinet in 1997 to eliminate illegal open dumping in the

commonwealth. The increase in door-to-door collection is also due to better reporting from waste haulers. House Bill 174 established in 2002 requires waste haulers and recyclers to register and report to the county for which they provide service.

The 2006 collection participation rate was 88 percent, which means an estimated 203,012 households (12 percent) are either disposing of their garbage illegally or are not accounted for by current tracking methods. While self-haul to a convenience center, transfer station or landfill is a legal method of disposal, it is difficult to track the number of households utilizing this method of disposal, which may account for a portion of the 12 percent that are currently unaccounted for.



Waste disposal is cheaper in Kentucky than the average of surrounding states. While cheaper disposal prices may help encourage proper disposal, they can potentially adversely affect the ability to build recycling infrastructure as an alternative to high waste disposal costs. Kentucky's 2006 disposal cost per ton was $29.21 compared to Ohio at $32, West Virginia at $34, and Missouri ranging from $30-35.

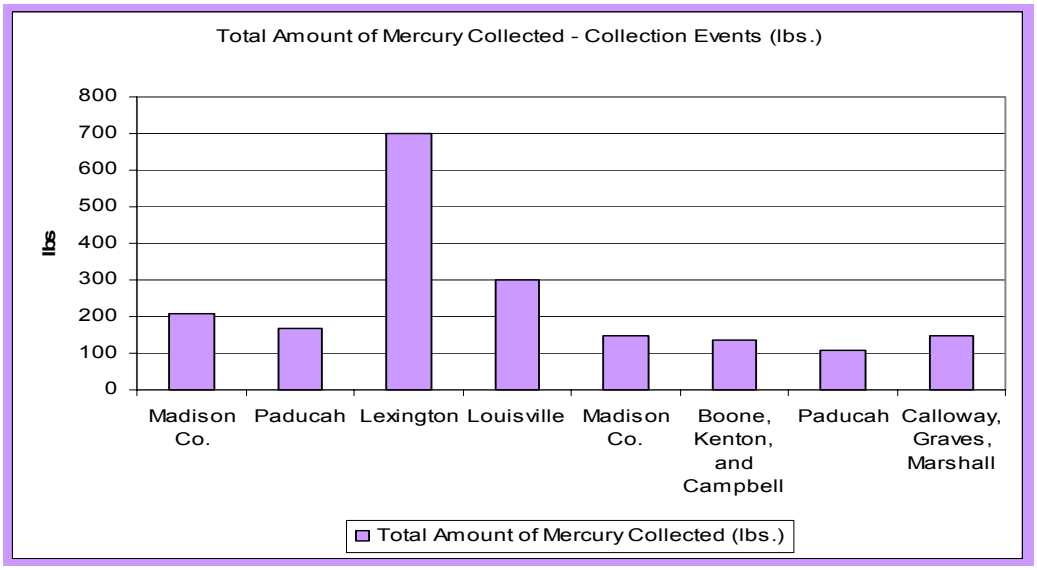


Household Hazardous Waste Collection:

DWM coordinated local events to collect mercury and mercury-containing items. This is a new effort by the agency to address household hazardous waste, an under-acknowledged waste stream.

Liquid mercury or "quicksilver" (also known as elemental or metallic mercury) is found in a variety of household items including silver-bulb thermometers, fluorescent lights, old chemistry sets, thermostats and switches including "silent" light switches made pre-1991. According to the EPA, almost 79 percent of all fish consumption advisories issued in the United States are partly due to mercury contamination in fish and shellfish. (*Mercury Update: Impact on Fish Advisories*, EPA-823-F-01-011, June 2001).

From 2000 to June 2007, Kentucky has experienced 128 mercury incidents that required state or federal emergency response, 43 of which involved schools. Since October 2005 DWM, in partnership with the Cabinet for Health and Family Services (CHFS), has collected 1,920 lbs. of mercury in eight collection events. In addition, the Superfund Branch, as first responders to spills, also collected 1,100 lbs. of mercury since 2004.



Note: The chart above includes collections of both "elemental" mercury and mercury-containing items.

	Madison Co.	Paducah	Lexington	Louisville	Madison Co.	Boone, Kenton, Campbell	Paducah	Calloway, Graves, Marshall
Total Amount of Mercury Collected (lbs)	207	169	700	300	150	135	109	150
Cost to Dispose of Mercury	$2,285	$1,875	$3,600	$2,105	$2,655	$5,015	$1,600	$2,000
Date of Event	10/14/2005	04/01/2006	04/22/2006	05/20/2006	10/21/2006	11/18/2006	04/14/2007	05/19/2007

There were 26 mercury spills in Fiscal Year 2007. Most of the spills were cleaned up by contractors qualified to perform mercury cleanups. The average cost for cleaning up a minor mercury spill is $4,000 to $20,000 depending on how well the spill was initially contained. The most expensive spill cleanup in FY 07 was within a Kentucky school system where the cleanup cost reached $117,454.

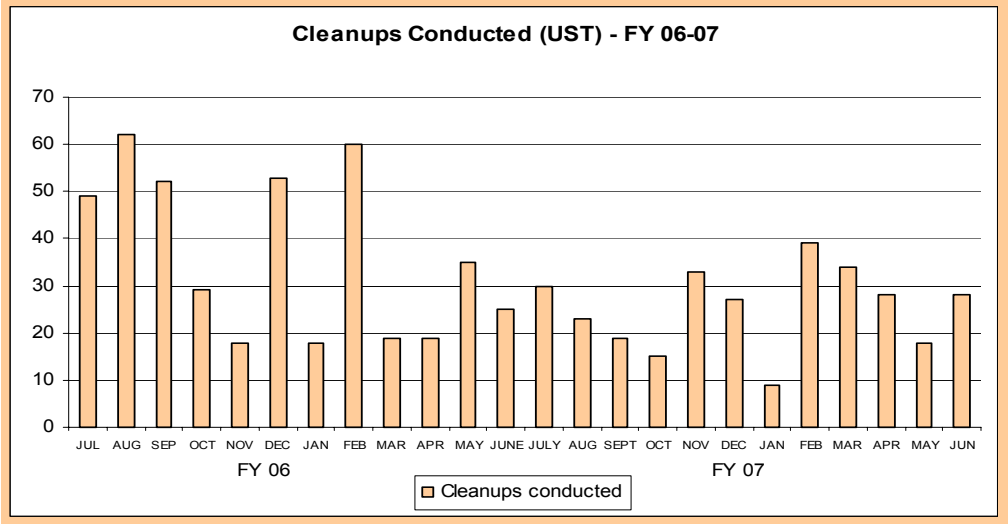
The average cost/pound for disposal of mercury from a collection event is $15. Compare this figure with the numbers from the previous paragraph and it is easy to see that collection and proper disposal of mercury is cheaper than cleaning up a spill and is better for the environment.

The End of Life Vehicle Solutions (ELVS) program began in April of calendar year 2007. The program was created as part of the National Mercury Switch Recovery Program. The ELVS program is aimed at safe removal and processing of mercury auto switches from automobiles that are being prepared for recycling. A $4 million fund was created to reward dismantlers and recyclers for their efforts by paying $1 per mercury switch.

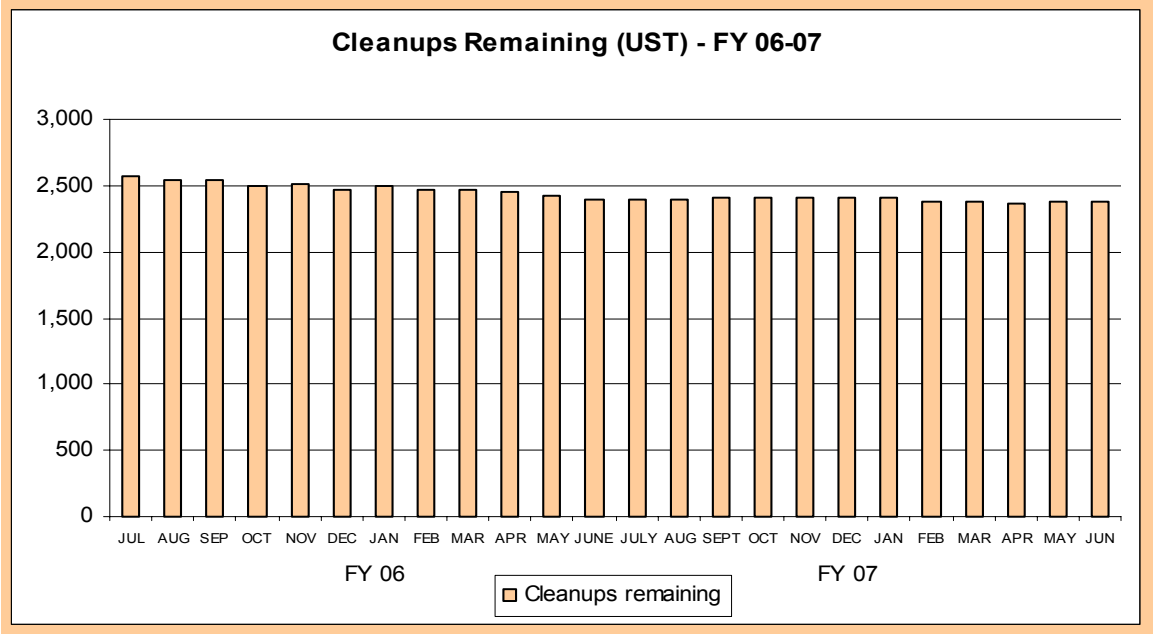
SITE REMEDIATION

When wastes are dumped, released or otherwise improperly disposed of, DWM intervenes. Four major programs address these problems: underground storage tanks (USTs), hazardous waste corrective action, state Superfund and the Kentucky Pride program which addresses illegal dumps and improperly-closed historic landfills.

Underground Storage Tanks:



The above chart includes sites that have received a No Further Action letter from the Underground Storage Tank Branch. The graph above has an overall downward trend that is the result of a required transfer of funds from the Petroleum Storage Tank Environmental Assurance Fund near the end of FY 2003, which resulted in limited carry-forward of funds into FY 2004. The chart indicates that UST cleanups from March 2006 through June 2007 vary significantly on a monthly basis and are somewhat less than the number of UST cleanups conducted in the latter half of FY 2006. This relative decrease in the number of UST cleanups is attributed to the dual efforts required of UST staff related to the formulation of the UST regulation update. Currently, the UST program has funding and is issuing a significant number of directive letters requiring cleanup.



Note: "Cleanups remaining" for the UST program continues to hover around 2,500 due to new releases occurring faster than the agency can declare old sites "clean." Also, some sites have been around a long time due to the presence of groundwater contamination, which requires long-term remedial action.

As stated in the note above, the number of cleanups remaining for the UST program remains nearly constant. Each month a number of tanks are cleaned up. But in the same time period, a nearly equal number of previously unidentified USTs are found and leaks are detected in newer tanks.

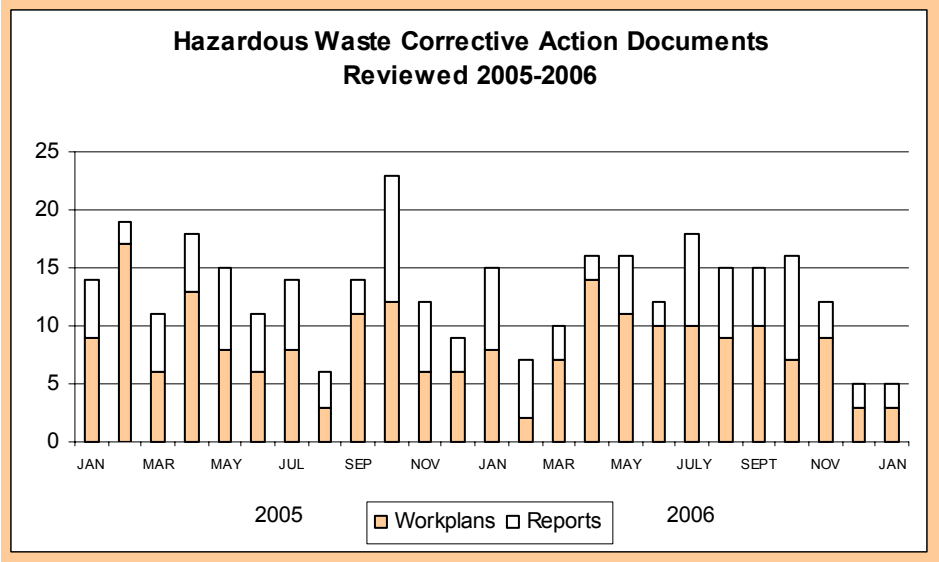
Hazardous Waste Corrective Action:

Kentucky has 41 facilities in the Hazardous Waste Corrective Action Program and is responsible for overseeing the EPA Environmental Indicator Program. In 2006, Kentucky met and surpassed its interim goals regarding this program. The four indicators in the hazardous waste corrective action (cleanup) program are: (1) current human exposures controlled, for which Kentucky exceeded the 2006 goal of 82 percent and achieved 83 percent; (2) groundwater releases controlled (Kentucky met the 2006 goal of 68 percent); (3) site-wide remedies selected (Kentucky exceeded the 2006 goal of 15 percent and achieved 24 percent); and (4) site-wide remedy construction complete (Kentucky exceeded the 2006 goal of 5 percent and achieved 20 percent). Kentucky is on track to meet the 2007 goals as well, for which the deadline is the end of the federal fiscal year (the end of September 2007).

The next round of EPA environmental indicators is the national 2020 initiative. The 2020 baseline is an expanded list of 61 facilities in Kentucky, for which the goal will be completion of all cleanup remedies by the year 2020. Kentucky notified each facility in April 2007 of its inclusion in the new 2020 baseline.

Hazardous Waste Permitting:

Kentucky made major strides during 2006 in reducing the permitting backlog in the Hazardous Waste program. (see page 37) As a result of the backlog effort, Kentucky anticipates issuing a record number of application approvals, public notices, and final permits during the last half of 2006 through the first half of 2007.



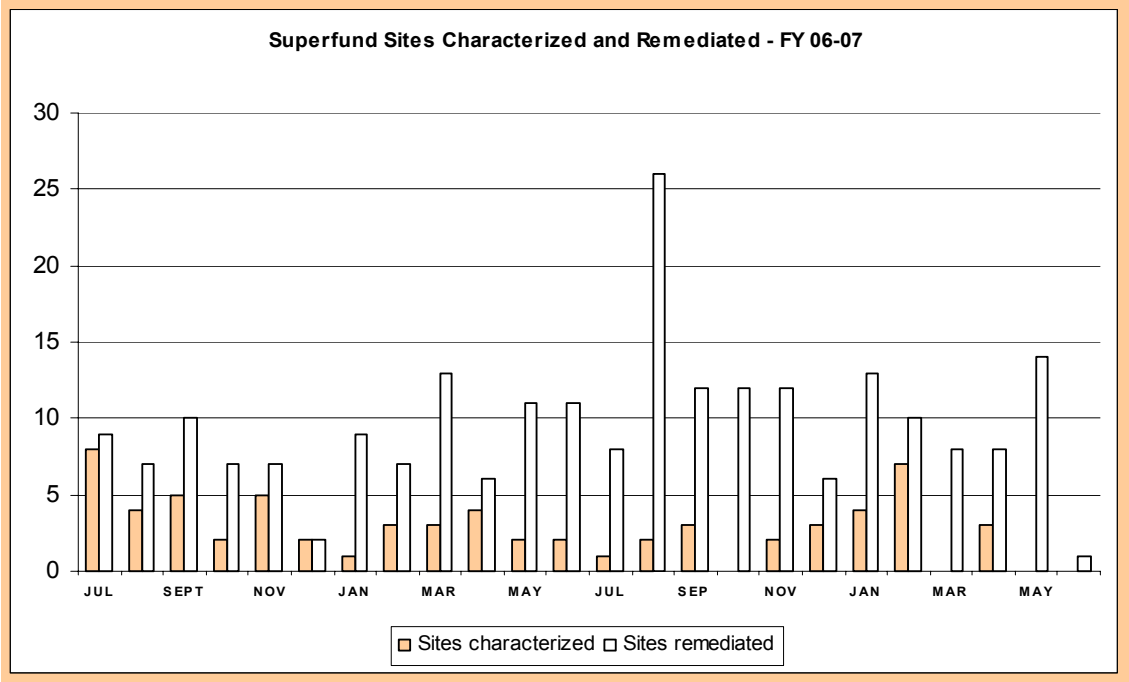
The chart above indicates the overall number of reviews has remained constant or slightly declined over time. Also, the chart in general tends to confirm an overall positive trend toward the completion of long-term cleanups, such as the final cleanup of complex military base closure sites. Along with the completion of historic cleanups, there are fewer and fewer major new cleanups needed, due to better waste handling procedures and improved awareness of environmental stewardship.

Superfund:

In 1980, following discovery of several toxic waste dumps in the country, including Valley of the Drums in Kentucky, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the federal Superfund law. Under this law, the federal EPA investigates sites contaminated with hazardous materials, located across the country.

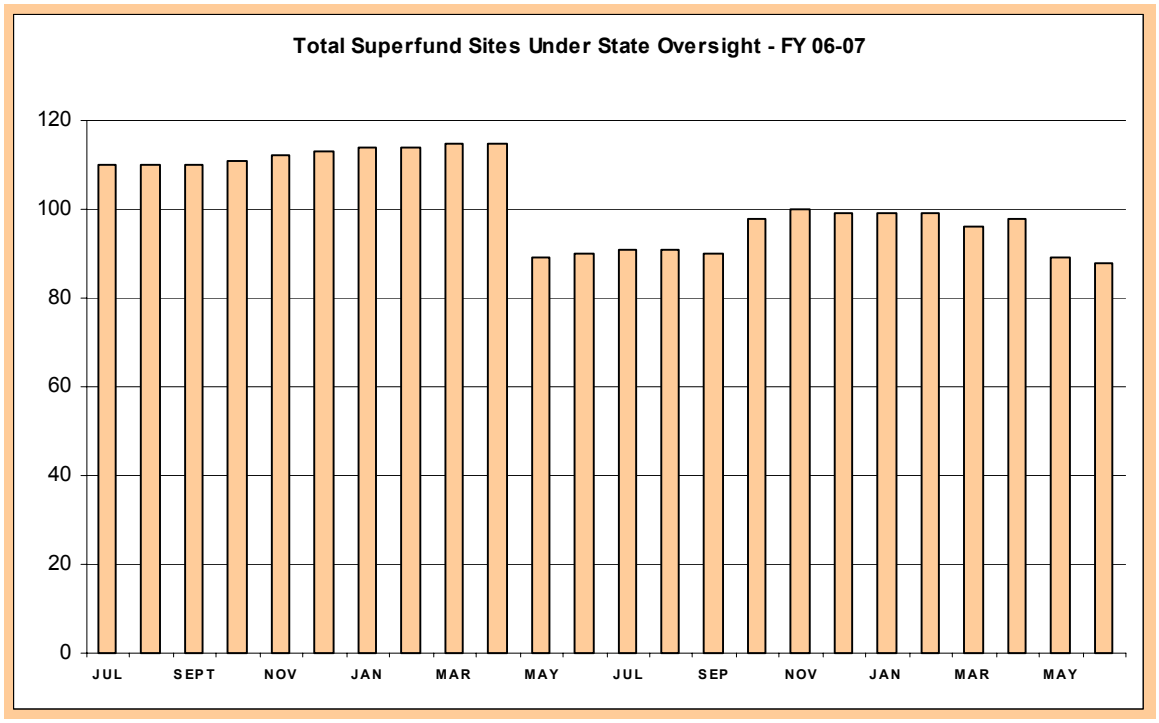
The worst sites are placed on the National Priorities List (NPL) for federal cleanup funding. Kentucky has a state Superfund program which handles oversight of cleanup of hazardous substance releases and non-UST petroleum releases across the commonwealth. The chart shows the number of sites that the state Superfund program has characterized or sampled, and remediated.

For those releases of hazardous substances where there are no viable responsible parties to perform the cleanup, or if the release creates an environmental emergency, the state Superfund program utilizes money from the Hazardous Waste Management Fund to remediate the release. Sixty-one **major** state-lead sites have been remediated since 1993 (see chart). Since 1993, 450 removals/responses for smaller sites (abandoned or leaking drums, mercury assessments and removals, soil cleanups, etc.) have been conducted.



The chart above shows the number of sites characterized and remediated through June 2007. The chart roughly shows a seasonal trend of remediation and characterization higher in the spring through fall months because this time coincides with times when construction is the highest. The number of sites remediated in the chart above spiked in August of 2006 as a result of closing a large number of the National Further Remedial Action Planned sites.

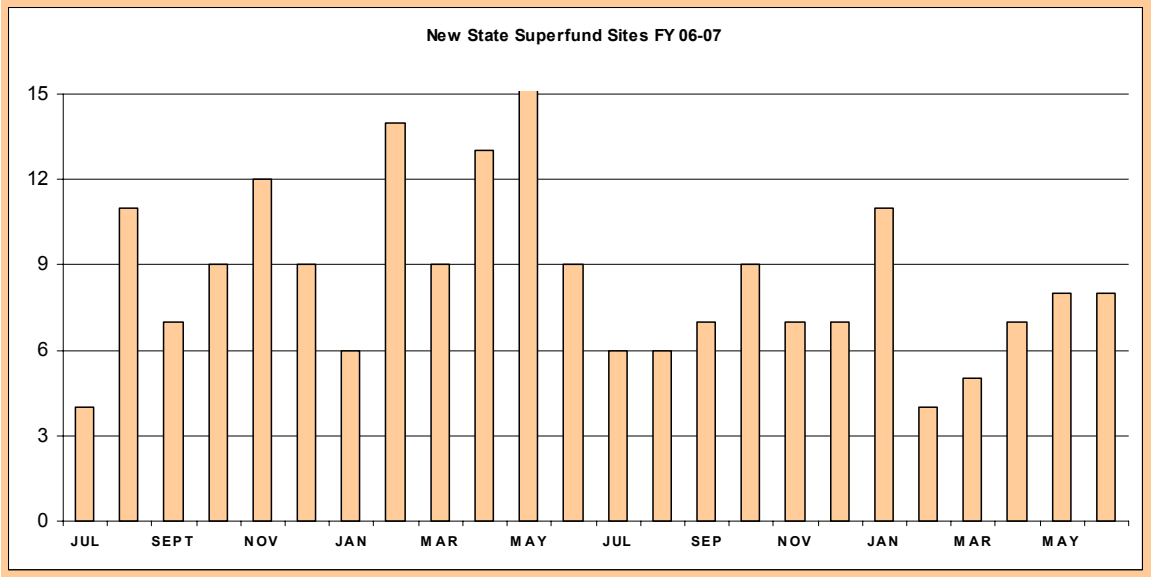
1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
3	2	4	9	6	8	8	5	0	3	4	7	2	0



Note: Reduction in the total number of Managed Sites in May 2006 is due to new information or change in closure option.

The total number of sites under state oversight by the Superfund Branch is listed in the chart above. For sites that are being managed, the obligations to continue to manage the releases are indefinite. Therefore, the numbers of total managed sites in Superfund will be constant or continue to increase as new sites are approved for closure under this option. As noted above, the only way a site can be removed from the managed site list is if additional cleanup is performed to restore the environment.

The chart above shows sites that were capped or had releases to soil or groundwater that were otherwise "managed in place." The totals would drop if a complete "restoration" to background levels was conducted. See KRS 224.01-400 (18) for the legal basis for these terms.



Superfund sites that are not available for the Federal Superfund Program are addressed by the State Superfund Program. The number of new sites that are addressed by the State Superfund Section are shown above. The spike noted in May 2006 is from an influx of a group of sites from the same responsible party.

Brownfields:

In 2005 DWM began to solidify its plans on how it could best serve the commonwealth through the utilization of the brownfields grant monies it had received in 2004. The purpose of the brownfields program is to assist municipal and county governments as well as non-profit organizations in assessing properties that have real or perceived environmental contamination.

In 2005 DWM completed three Phase II assessments for the city of Ludlow and began work on a seven-property site for a Habitat for Humanity project in Louisville. In addition to that work the branch started Phase I for the Lincoln Scrap Yard in Crab Orchard. In performing these actions, the branch enabled the property owners to move forward with redevelopment of these properties that would otherwise be idle for years to come.

The 2007 legislative session introduced two pieces of legislation, HB 549 and SB 82, that will promote brownfield redevelopment in the commonwealth. Previously, Kentucky has offered tax incentives to qualified entities that undertook property cleanups under the Voluntary Environmental Remediation Program (VERP). Qualified entities could receive up to $150,000 in income tax credits. In addition, the local property tax waived for three years and the state property tax reduced by 95 percent for the same period. Thus far no one had taken advantage of these incentives that were meant to encourage brownfield redevelopment. Senate Bill 82 opened up the incentives to other Environmental and Public Protection Cabinet-approved cleanups and expanded the properties that could qualify.

HB 549 expanded and restructured tax increment financing (TIF) tools for use by local governments to provide incentives for public and private investment in community development and redevelopment projects. A bond is issued to assist in funding a project in a designated area. While the local government continues to receive the current

amount of tax revenue from the area, any increase in revenue is funneled back to pay off the bond. This method of self-financing projects has been a very useful tool for brownfield redevelopment in many other states.

Brownfield redevelopment in the department is a joint effort between the Division of Waste Management and the Division of Compliance Assistance (DCA). For more information on DCA, see the agency's Web site at http://www.dca.ky.gov/brownfields/ or call 800-926-8111.

Note: "Brownfields" are properties that are abandoned or underutilized due to real or perceived contamination. These properties include abandoned factories, former dry cleaning establishments, vacant gas stations, illegal drug labs, old dumps and mine-scarred lands.

Non-UST Petroleum:

The Petroleum Section of the Superfund Branch provides regulatory oversight to all other petroleum releases outside of the Underground Storage Tank (UST) program. These include tanker truck spills, oil refineries, oil fields, train derailments and spills, exempt UST releases and removals, above ground storage tanks (AST), oil/water separators, tornado spawned releases, oil bulk plants and terminals, oil pipelines and other petroleum release scenarios. The section oversees projects that can be either limited in scope or have had numerous releases over time. The Petroleum Section closed 31 of these sites from January 2006 through March 2007.

Federal Superfund Case - Maxey Flats:

The Maxey Flats Project (MFP) is a former commercial facility utilized for the disposal of low-level radioactive waste. It was operational from 1963 through 1977. During that time approximately 4.7 million cubic feet of radioactive waste containing more than 2.4 million curies of by-product material, 431 kilograms of special nuclear material, and 533 thousand pounds of source material were disposed of in numerous trenches within the 45-acre radiological restricted area. To assure proper closure, the commonwealth of Kentucky purchased the facility upon termination of commercial operation and accepted responsibility for monitoring and maintenance of the facility.

Under the guidance of EPA Region 4, a remedial investigation and feasibility study was conducted from March 1987 through September 1991. The initial remedial phase began shortly thereafter and upon completion of the initial remedial activities the phase was declared completed in October 2003 by EPA. This initiated the current Interim Maintenance Period (IMP).

The remedial actions for Maxey Flats included extracting, solidifying, and disposing onsite approximately 3 million gallons of trench leachate; demolishing and disposing of structures onsite; and excavating additional disposal trenches for disposal of site debris and solidified leachate.

During the IMP the commonwealth of Kentucky is obligated to comply with radiological license, control access, conduct environmental monitoring, conduct radiological monitoring and provide facility maintenance and monitoring. This is accomplished by a series of EPA-approved work plans.

Presently the MFP consists of the original 280 acres and approximately 550 acres of buffer zone area. The restricted area has increased to approximately 60 acres, of which more

than 55 are covered with a geomembrane cap. A security fence surrounds the restricted area and the office complex that includes two radiochemistry laboratories, a maintenance garage, heavy equipment storage and a contaminated leachate storage structure.

2006 aerial photo taken form the northeast

During 2007 MFP contractors and personnel completed installation of a Homeland Security Funded surveillance/security system and installation of three monitor wells into the Crab Orchard bedrock formation.

The monitoring wells were installed to address the question of whether contamination from MFP is, or has the potential for migrating into the deeper stratigraphic units occurring below the valley floor (i.e. Crab Orchard Formation). The Division believed these stratigraphic units had not been extensively evaluated to determine if they have been impacted by contaminates related to MFP. Prior to drilling, a lineaments study and resistivity study were completed to pinpoint fractures with the highest likelihood to contain groundwater. This proved highly effective in that all three wells are producing significant water in a formation that does not transmit water effectively. Two sampling intervals have been completed with analysis indicating no link to MFP.

Future actions for Maxey Flats include: maintaining and periodically replacing the geomembrane cap, re-contouring the capped disposal area as needed to enhance the management of surface water, determining the need for a groundwater flow barrier, evaluating the burial trench's natural subsidence, and based on these findings, determining when a final cap design can be initiated, and installing a final engineered multi-layer cap.

Kentucky Pride Program:

KRS 224.43-500 establishes the Kentucky Pride Fund to address three facets of solid waste management. First, $5 million per year is paid to local governments, by formula, to abate the effects of roadside litter. Next, $2.5 million per year, plus the proceeds from a one-time bond issue of $25 million, is devoted to cleanups at landfills (historic landfills) that

ceased accepting waste prior to 1992. The balance of the fund each year, roughly $5 million, is set aside to clean up illegal open dumps. In 2006, Senate Bill 50 expanded the use of this funding stream to include recycling and household hazardous waste collection. The fund is financed through the "environmental remediation fee" of $1.75 per ton of waste disposed in Kentucky landfills, plus the aforementioned bond proceeds.

Historic Landfills:

Before waste management was regulated in Kentucky, most towns had a common location where garbage, and a vast array of other materials, was disposed. These "old town dumps" were the de facto landfill for the area, and hardly any were managed to today's standards. Nor were they properly capped to prevent migration of contaminated leachate and other pollutants. Hundreds of these sites are scattered across the state (approximately 620 documented by DWM).

The Historic Landfill program has been underway since 2003 to address proper closure and remediation of these "old town dumps." Closure/remediation work is presently on-going at several sites across the state. Funding for the program is through a one-time bond issuance of $25 million, plus an annual amount of $2.5 million collected from the Environmental Remediation Fee receipts (KRS 224.43-505).

In 2006 one landfill project was closed using Pride funding. The Scott County-Briar Hill Landfill cleanup and capping project was completed in 2006. Total expenditures on this completed project were $1.2 million.

Nine landfill projects are currently under construction for closure/remediation and all nine are scheduled to be completed by the end of CY07. Total costs for all nine projects including site characterization, design, and construction is over $32 million. These sites are:

Floyd County Landfill
Harlan County Fiscal Court Landfill
Campbellsville Landfill (Taylor Co.)
Leitchfield-Millwood Landfill (Grayson Co.)
Sims Road Landfill (Scott County)
Manchester Landfill (Clay County)
Perry County Landfill
Old City of Leitchfield Landfill (Grayson Co.)
Cynthiana Landfill (Harrison Co.)

The following three landfill projects have completed final designs and all are waiting on funding for construction bid solicitation advertisement. Total construction cost estimate, including engineering oversight, for all three projects is more than $4.25 million.

WMU/OCC Landfill (Clark Co.)
FIVCO Landfill (Carter Co.)
Richmond Landfill (Madison Co.)

Six landfill projects are in or near the final design stage and all are expected to have final designs completed by the end of CY07. Preliminary cost estimates for these six projects including site characterization, design and closure/remediation is more than $7 million. These six are:

Billy Glover Landfill (Jessamine Co.)
Marion County Landfill
Bowling Green Inert Landfill (Warren Co.)
Bullitt County Landfill
Mercer County Fiscal Court Landfill
Johnson County Landfill

The following nine landfill projects are under contract with architectural/engineering (A/E) firms to perform full site characterizations. Work has been performed on all nine projects. However, all nine projects are currently on hold or will soon be put on hold for further work until additional funding is available. At an assumed average cost of $1 million per site for site characterization, design and closure/remediation, an estimated total cost for these nine projects is $9 million.

Barbourville Landfill (Knox Co.)
Fulton Landfill (Fulton Co.)
Franklin Landfill (Simpson Co.)
Trigg County Fiscal Court Landfill
Owensboro Landfill (Daviess Co.)
Letcher County Landfill
Marshall County Landfill
Raven Run Landfill (Fayette Co.)
City of Bardwell Landfill (Carlisle Co.)

Five contracts with five individual A/E firms, each performing preliminary site characterizations and rankings on the remaining 144 sites in progress, are on-going. This work is being performed to evaluate which sites pose the most environmental risk in order to determine which sites need closure/remediation work performed sooner rather than later. Counties included in this work are listed below alphabetically:

Ballard	Graves	Menifee
Bath	Grayson	Mercer
Bell	Greenup	Montgomery
Bourbon	Green	Morgan
Boyle	Hardin	Muhlenberg
Breckinridge	Hart	Owen
Bullitt	Henderson	Pulaski
Caldwell	Hickman	Robertson
Calloway	Hopkins	Rockcastle
Carlisle	Johnson	Russell
Christian	Knox	Scott
Crittenden	Livingston	Simpson
Daviess	Logan	Trigg
Edmonson	Lyon	Union
Franklin	Magoffin	Warren
Fulton	Marion	Webster
Gallatin	Marshall	Whitley
Garrard	McCracken	Woodford
Grant	Meade	

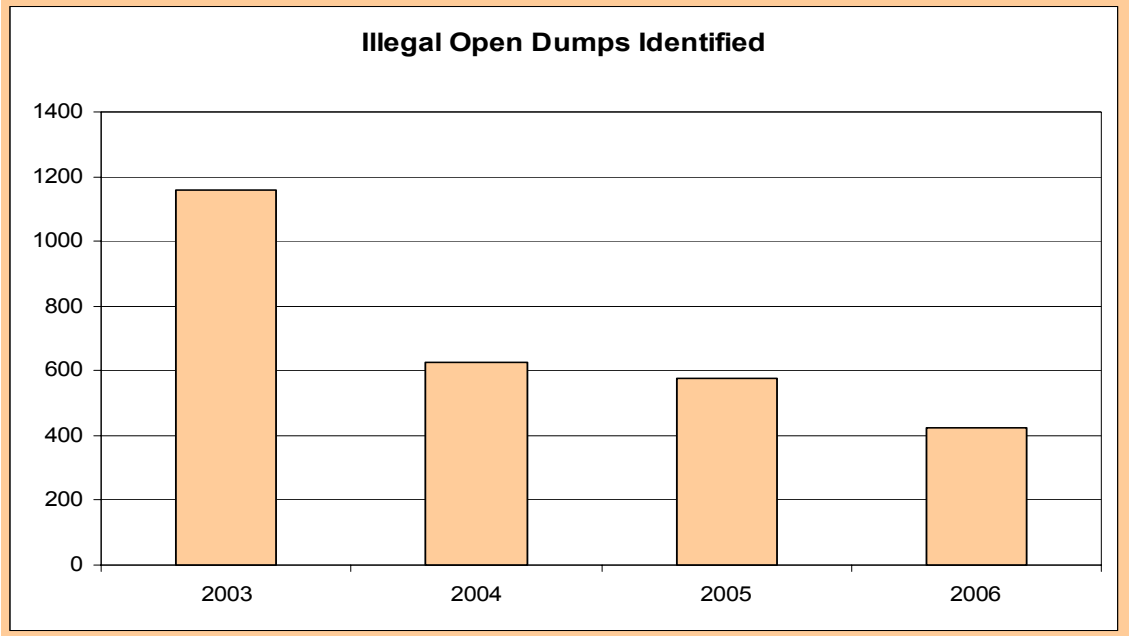
At an assumed average cost of approximately $600,000 per site for characterization, design and closure/remediation, an estimated total cost for these 144 sites is more than $86 million and would require over 34 years to complete at the current annual funding level of $2.5 million.

By projecting the total cost for the remaining 448 sites currently not in progress, it would take over $268 million and 107 years to complete closure/remediation activities for these 448 sites at the current annual funding level of $2.5 million.

Above: A gabion structure stabilizes the banks of the Elkhorn Creek at the Briar Hill landfill, Scott County.

Illegal Open Dumps:

A portion of Kentucky Pride funding is available to reimburse counties for 75 percent of the cost of remediating illegal open dumps. In 2006-07, the DWM reimbursed counties over $2.9 million for the cleanup of 627 illegal open dumps.

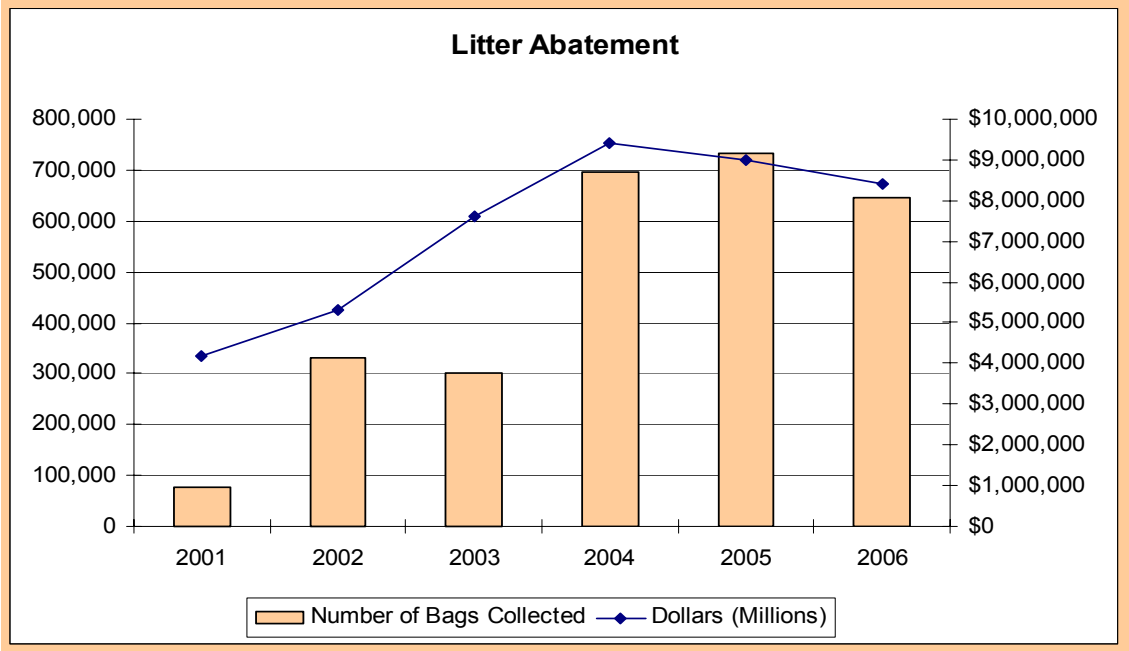


The number of illegal open dumps identified has declined from 1,159 in 2003 to 425 in 2006. This is in part due to a definitional change in the detailing what is considered an illegal open dump in 401 KAR 49:080. An illegal open dump is the disposal of waste at an unpermitted facility and is equal to or greater than two consolidated cubic yards of solid waste. Contributing to the decline in identified illegal open dumps has been an emphasis on public awareness, education, and enforcement instituted by the cabinet in the mid-'90s to not only clean dumps, but to stop illegal open dumping through enforcement and prosecution.

The environmental and economic value of remediating illegal open dumps and the availability of grant funding through House Bill 174 have encouraged counties to actively pursue illegal open dump violators. Currently, there are 771 known illegal open dumps in Kentucky, compared to more than 1,400 in 2003. The average cost to clean an illegal open dump has decreased from $4,776.72 in 2003 to $4,214.73 in 2006.

Litter Abatement:

During 2004, the counties reported collecting 697,047 bags of litter at a cost of $9.4 million. Five million of that 9.4 million was allotted from the Pride Fund. In 2006 $8.4 million was used to collect 646,033 bags of litter along Kentucky roadways. An encouraging trend has been the slight decrease in the amount spent on litter abatement from 2004. This is a direct result of increased volunteer participation in litter collection throughout the commonwealth and improved education about littering.



The success of litter abatement campaigns across the commonwealth is evident in the amount of litter collected along public roads. In 2006, 24,000 more roadways were cleaned collecting nearly 86,000 fewer bags of litter than in 2005, indicating a 12 percent decline in litter along public roads.

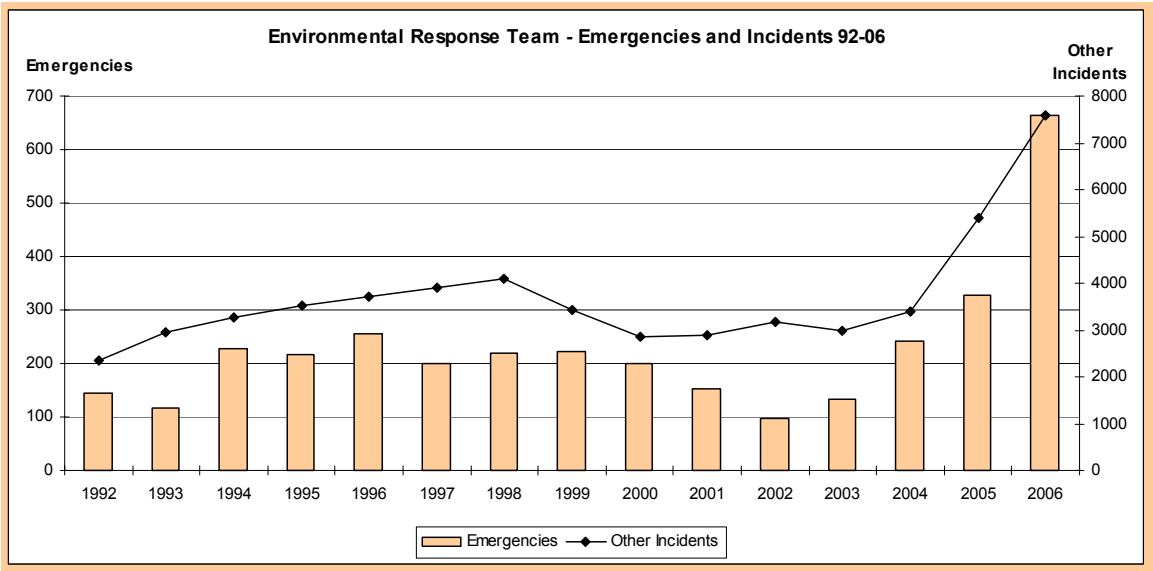
While litter abatement campaigns are increasingly successful and less litter is being thrown on our roadways, the cost of litter abatement is high in comparison to actual disposal of that waste. The average cost for litter abatement is 65 cents per pound or $1,300 per ton compared to the average cost of disposal of waste that is $29.21 per ton. This is the reason continued education and enforcement of criminal littering is so vital to the commonwealth.

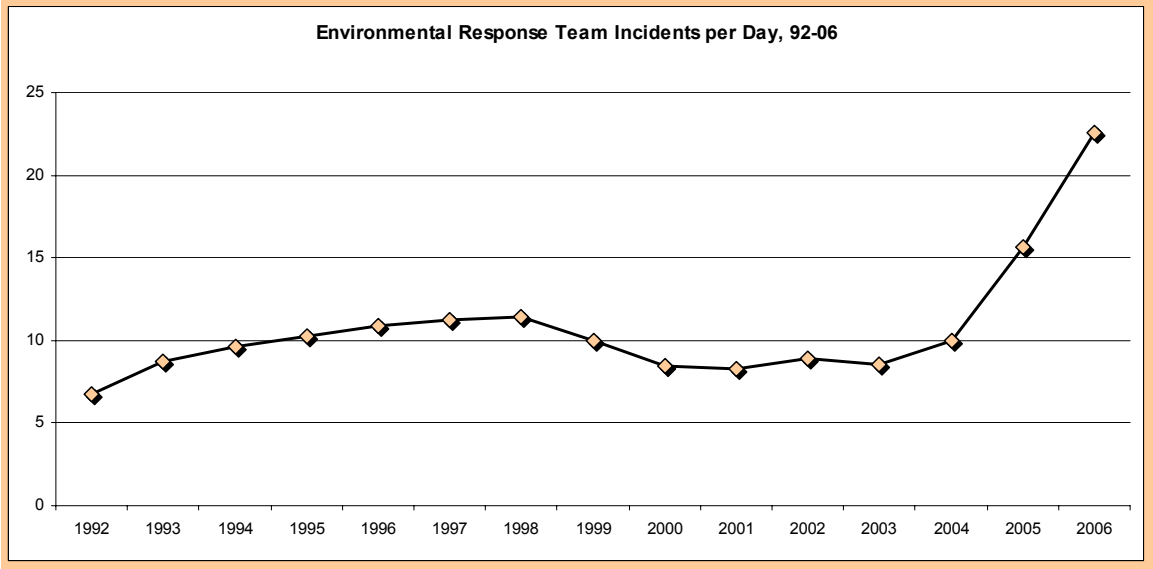
Above: Department for Environmental Protection Commissioner Cheryl Taylor picks up litter during Commonwealth Cleanup Week.

Above Left: Environmental and Public Protection Cabinet Secretary Teresa Hill and Garnett Thurman, executive director of Legislative Affairs, participate in Commonwealth Cleanup Week by picking up litter along Harvierland Road, Franklin county.

Emergency Response:

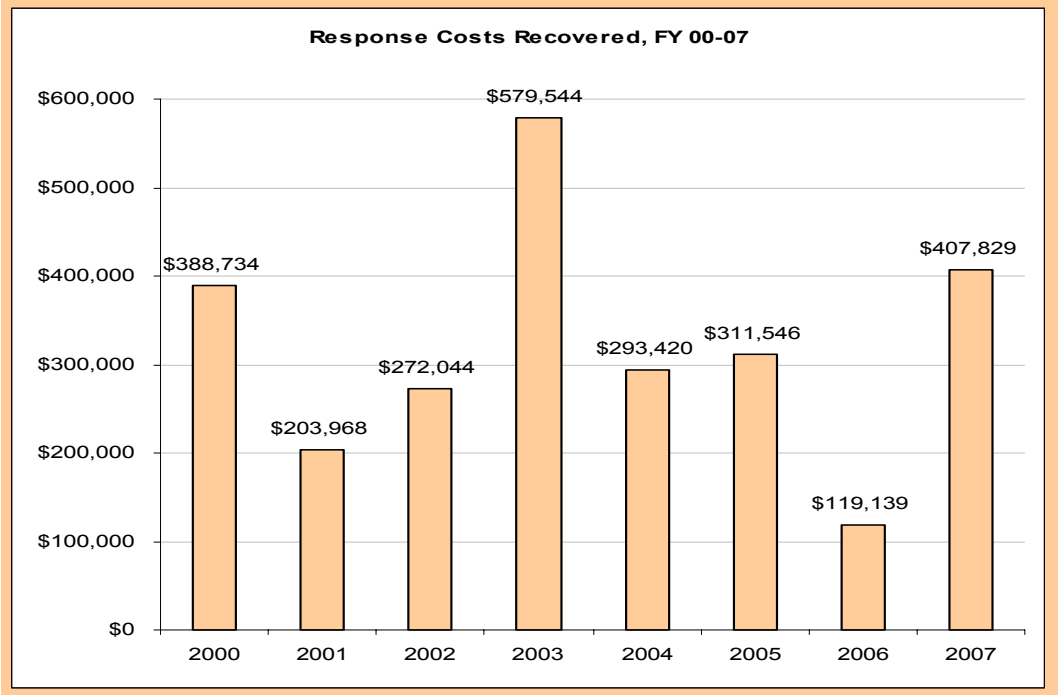
KRS 224.01-400 establishes the cabinet as the lead agency for hazardous substance, pollutant or contaminant emergency spill response. The Department for Environmental Protection maintains a roster of field staff who serve on the Environmental Response Team; they are the first to respond to environmental emergencies. The charts below indicate a sharp increase in incident response during the past two years.





The number of ERT incidents has dramatically increased since 2004. This may be linked to better training of emergency responders on reporting requirements, an increased volume of emergency related calls, and a better reporting initiative instituted by the department.

Per KRS 224.01-400 the cabinet has the authority and duty to recover response costs expended in remediating releases to the environment. The chart below shows the progress made by the agency in cost recovery; all collections are deposited into the Hazardous Waste Management Fund.



ADMINISTRATION

The largest division of the department with over 280 staff positions, DWM oversees a vast array of programs dealing with solid waste management, recycling, hazardous waste, underground storage tanks (USTs) and site remediation at contaminated properties such as "brownfields." DWM is a regulatory agency. Permits from DWM are required for certain facilities to assure that wastes are managed properly. These include solid waste disposal facilities (landfills) and entities that transport, store and dispose of hazardous waste (TSDs).

One of the primary goals of the EPPC Strategic Plan is to "*reduce permit backlogs. Improve regulatory procedures and implementation. Make Kentucky's regulatory program rational, reasonable and user-friendly*."

Regulation Development

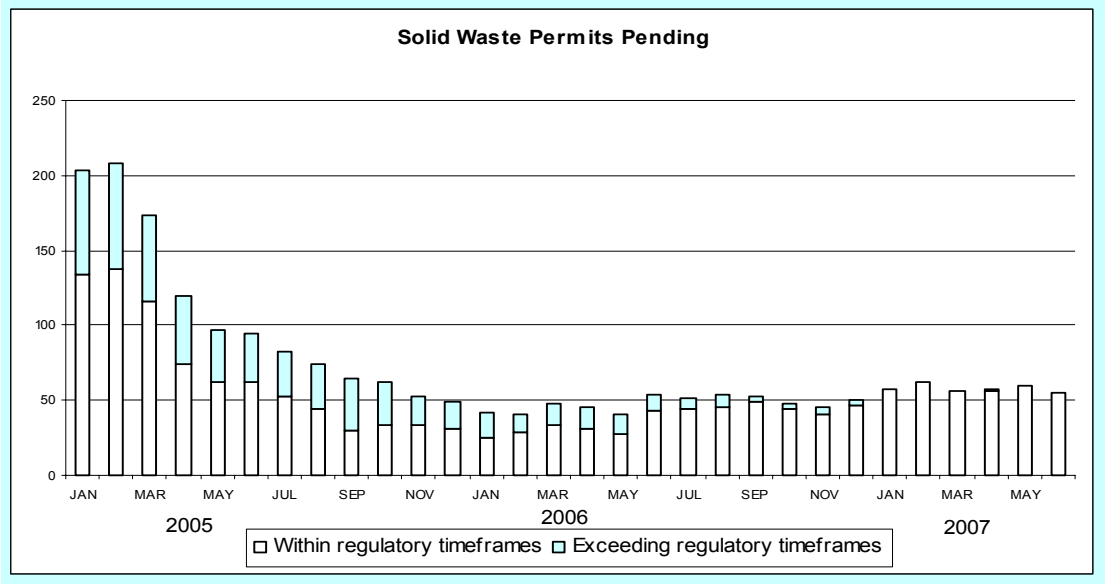
The division is pleased to report great progress in this effort. The division has completed a comprehensive update of its hazardous waste regulations. The hazardous waste regulations have been updated, effective June 13, 2007, to match federal standards adopted through 2005, with a few Kentucky-specific alterations. The UST regulation revisions, effective Sept. 13, 2006, have changed the way cleanups are financed through the Petroleum Storage Tanks Environmental Assurance Fund. Tank cleanups will be done faster, more efficiently, and at lower cost under the revised program.

Currently, the division is in the process of performing a comprehensive review of its regulations in the areas of solid waste and underground storage tanks. In 2008 the division plans to propose new regulatory amendments to update these two programs. The solid waste regulations are planned to be amended to introduce information that has been changed since the last promulgation effort. The UST program plans to incorporate changes in response to the Federal Energy Policy Act of 2005.

The division is also working on an update to a Recycling and Local Assistance regulation that will incorporate changes introduced in Senate Bill 50 from the 2006 legislative session.

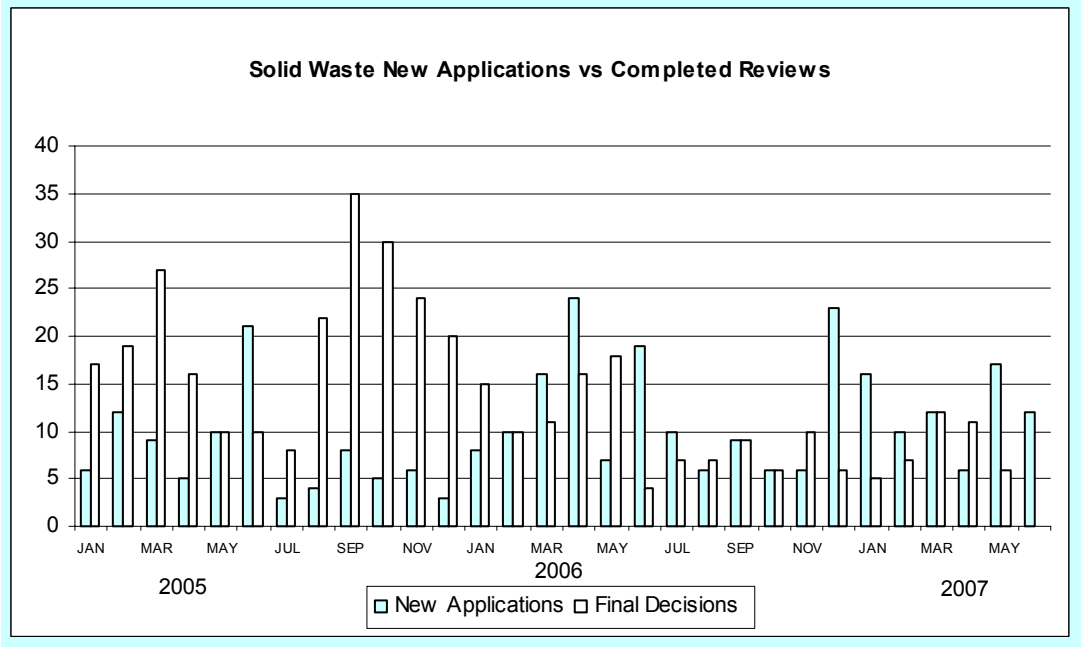
Solid Waste Permitting:

In regard to permit backlogs, the division is proud to report as of February 2007, there were zero solid waste permits pending beyond the statutory or regulatory time frames for permit review.

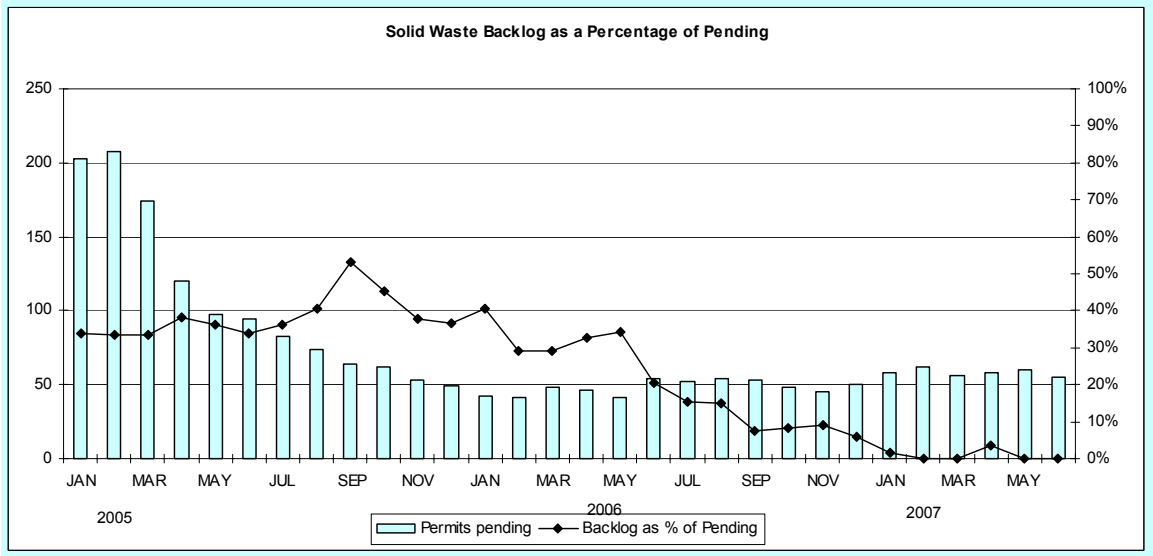


This chart shows a decreasing trend in both the number of pending permit applications, and the number of permits being issued beyond regulatory timeframes. The more rapid reduction in backlogged items in the early part of the backlog elimination effort was due to the branch addressing easier applications first, coupled with the elimination of applications backlogged for administrative reasons. Only those applications involving complex, time-consuming solutions were left to the latter part of the reduction effort. Once the backlog was eliminated, all effort could be focused on maintaining the zero permit backlog.

Above: Ron Gruzesky, Solid Waste Branch manager, left, and R. Bruce Scott, division director, exchange a handshake celebrating the achievement of the solid waste zero permit backlog.

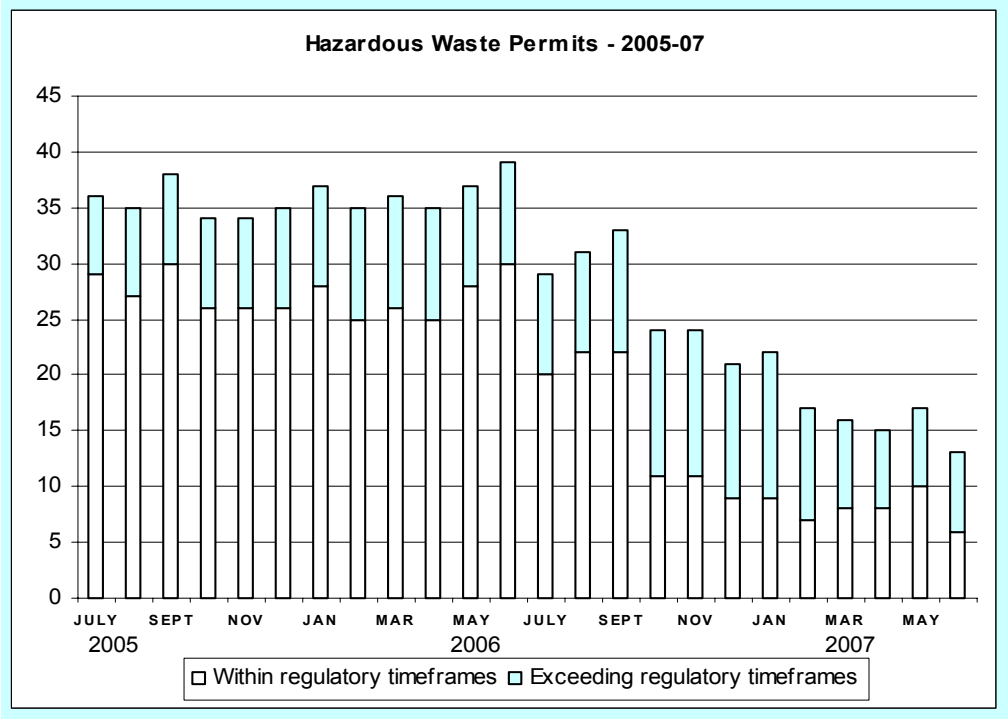


The chart above shows, predictably, that more applications were approved than received during the timeframes when the largest amount of backlog reduction occurred. Since achieving zero backlog, the number of applications approved is more closely in line with the number of permits approved. It should be noted that while DWM can have a great influence over the number of permits approved, there is no way to influence the number of applications received.



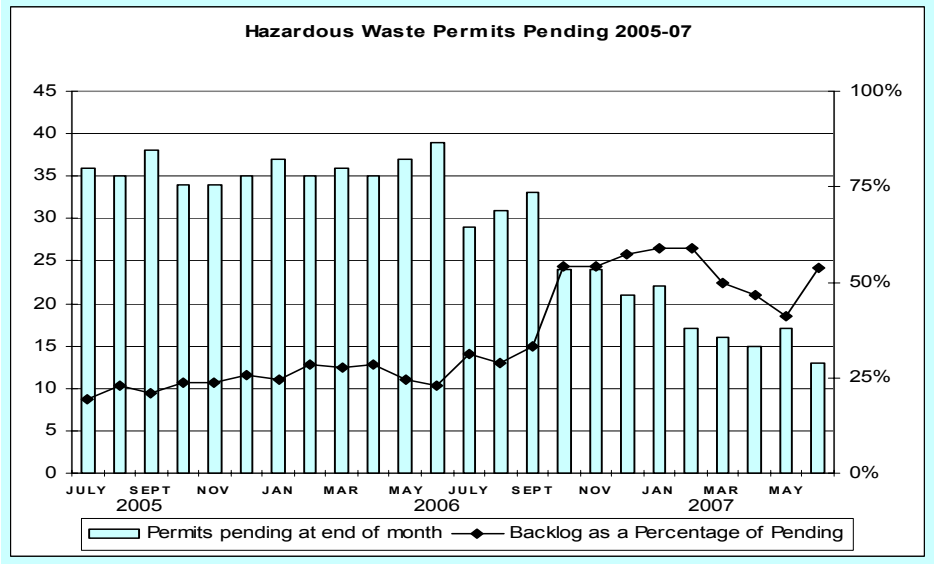
The above chart shows the percentage of backlogged permits decreasing until the time it reaches zero. After this is achieved it has been maintained outside of a minor blip in April 2007. The permits pending after zero permit backlog is achieved are within the regulatory timeframe and therefore do not contribute to the backlog percentage.

Hazardous Waste Permitting:



Note: Data prior to October 2006 include some submittals and approvals not subject to regulatory timeframes.

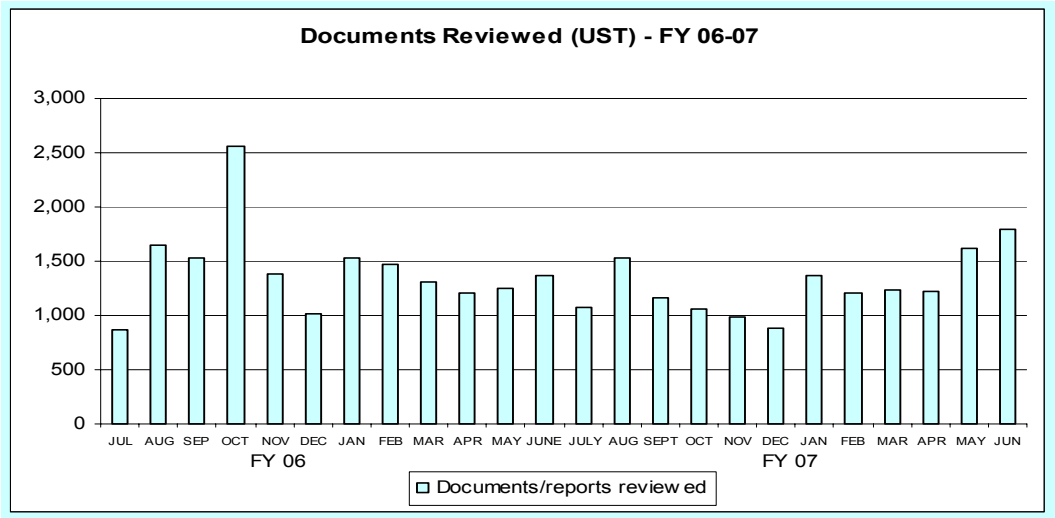
The above chart shows the total number of pending permit applications declining as well as the number of permits both within the regulatory timeframe and beyond the regulatory timeframe. Improved tracking from June to September 2006 resulted in a more accurate representation of pending hazardous waste applications. As a result of a concerted effort to decrease permit backlog and to process new applications promptly, there was a considerable reduction in pending permit applications from September 2006 through July 2007.



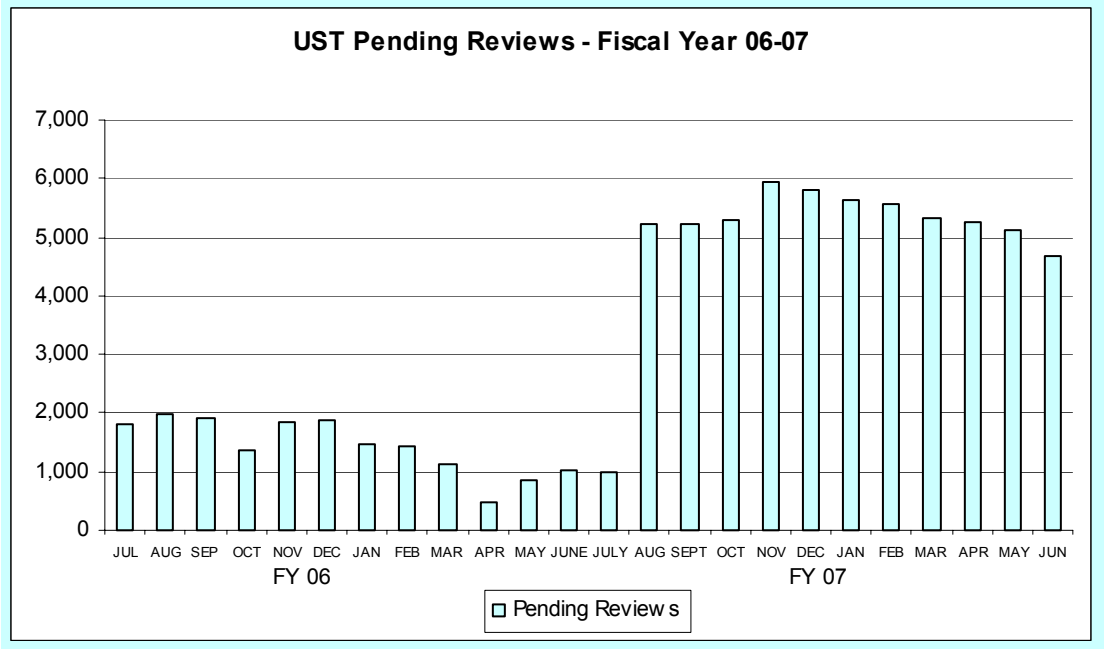
Note: Data prior to October 2006 include some submittals and approvals not subject to regulatory timeframes.

As evident in the chart on the bottom of page 37, in September 2006 the number of permits pending at the end of each month dropped considerably. This occurred as procedures were changed for processing the permit applications. The number of pending permits at the end of each month declined steadily as the backlog declined. This resulted from the DWM initiative to reduce or eliminate the number of permits exceeding the regulatory timeframe.

UST Approval / Reviews:



The Underground Storage Tank Branch (USTB) reviews numerous documents in any given month. These documents include registration forms, closure reports, site investigation reports, corrective action reports, compliance monitoring reports, reimbursement claims/request, and fire marshal reports. The overall trend shows an increase in the documents reviewed. There is a notable spike in the upward trend in October 2005. This spike is the result of the Administrative Section performing a follow-up on more than 1,000 tank owners who had outstanding tank fees from previous years. Once the review was complete, letters were sent to the owners with outstanding tank fees and fees that had been due for years were collected.

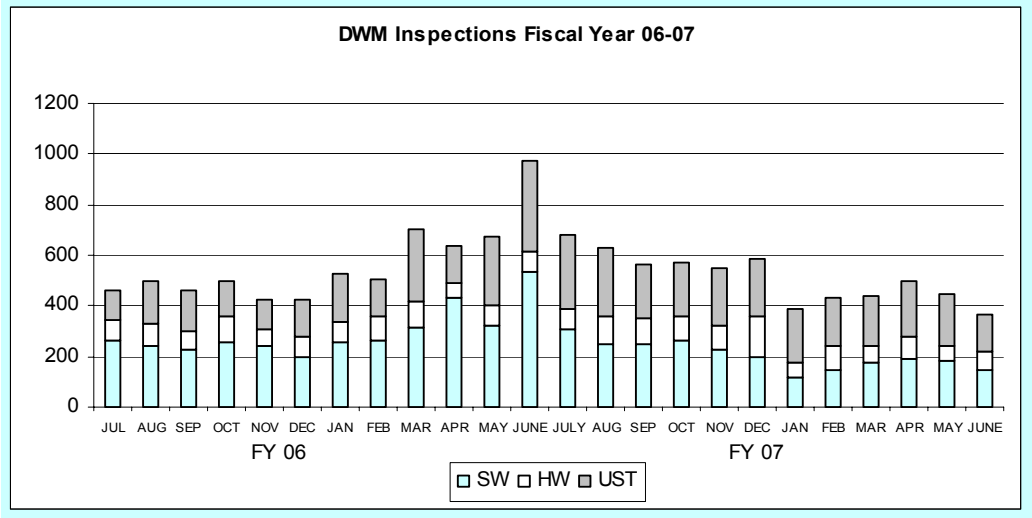


From July of 2005 until August 2006, the UST Branch had a suspension of new directive letters for contaminated sites. This was because of over obligation of available funds in previous fiscal years and as a result of required budget transfers from the Petroleum Storage Tanks Environmental Assurance Fund to the General Fund. From August 2006 until Sept. 13, 2006, the UST Branch requested several sites to over excavate soil contamination. This was the goal of eliminating the need for numerous soil-only facilities to have a Rank 6 designation under the new regulations. In addition, a significant portion of the spike in reviews is tied to the Compliance Section initiating the review of installation permits from the State Fire Marshal's Office.

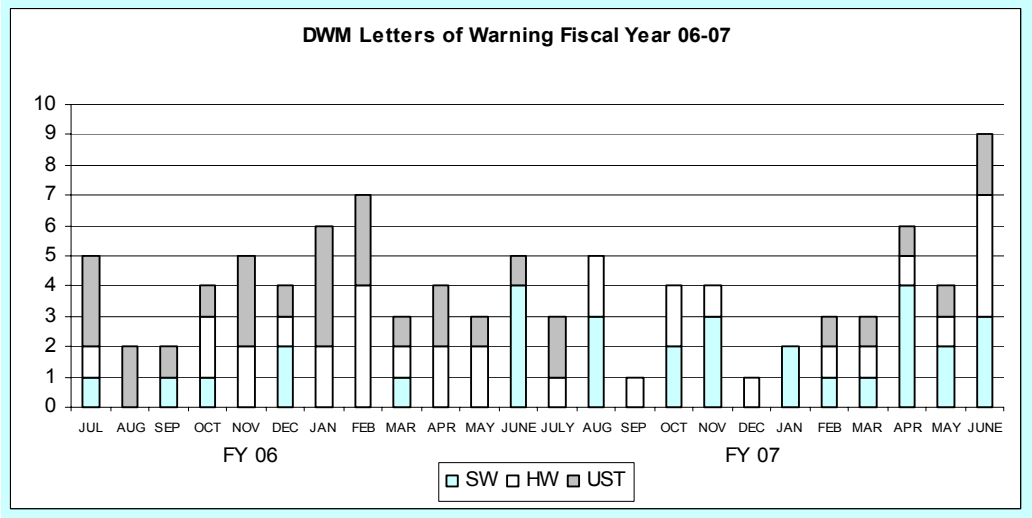
Compliance and Enforcement:

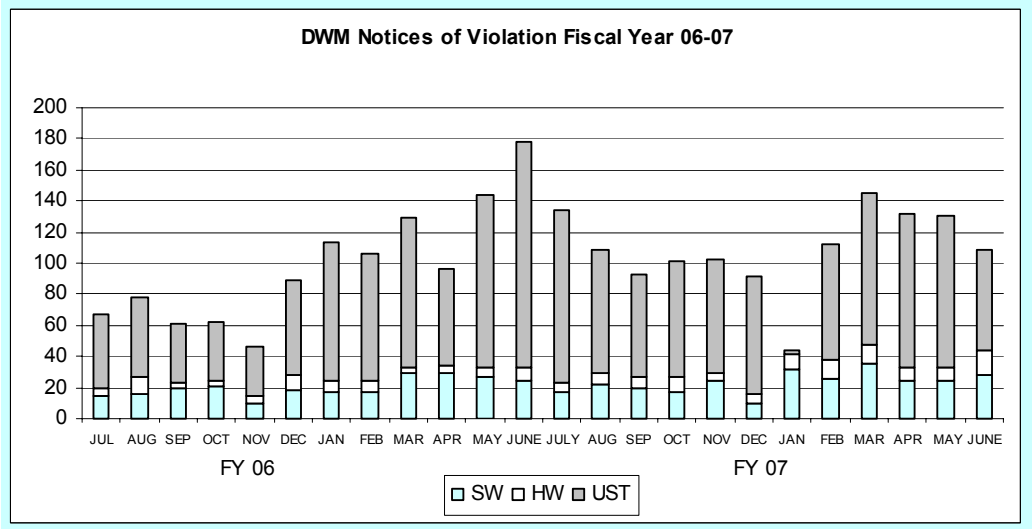
Senate Bill 50 modified the illegal dump program to allow upfront allocation of funding prior to actual dump clean up as opposed to the previous reimbursement approach. In anticipation of this change the division's Field Operations Branch (FOB) worked closely with numerous counties to identify and inspect open solid waste dumps. This is evident in June 2006 in the graph below, which shows a significant increase in solid waste inspections. The cabinet has seen a 64 percent decline in illegal dumping since 2003.

The 2005 Energy Bill, among other things, requires that all UST facilities be inspected on a three-year rotation. In anticipation of the energy bill, the DWM FOB initiated a process to inspect all UST facilities that had not been inspected since 1998. The DWM has already met this requirement for the initial three-year rotation subsequent to the passage of the energy bill. The new energy bill will also require all UST facilities to be inspected on a three-year rotation.

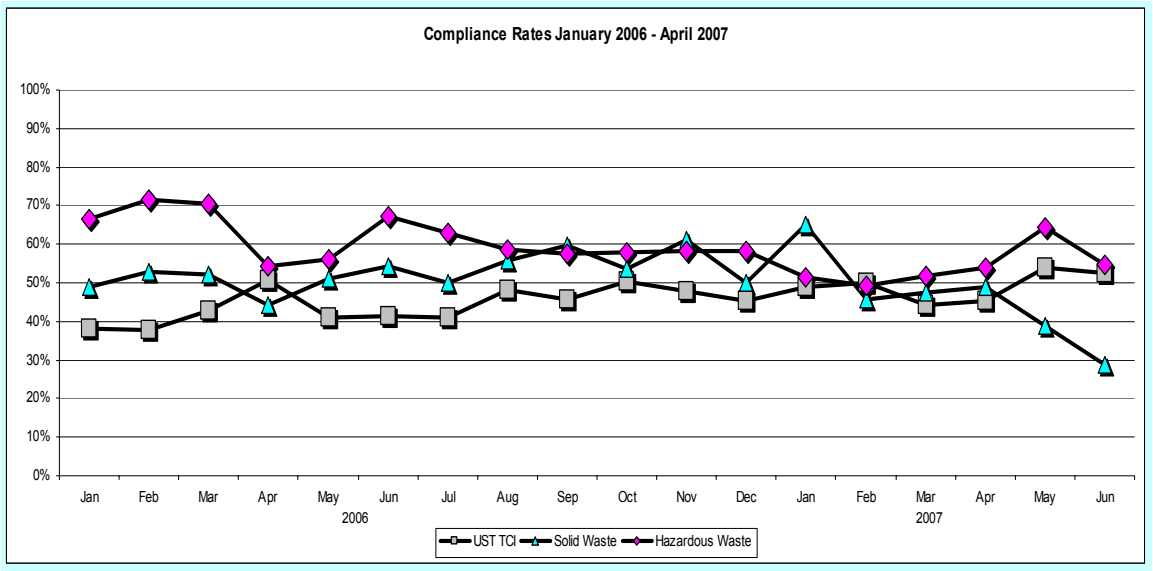


Note: SW=Solid Waste, HW=Hazardous Waste, UST=Underground Storage Tanks
Note: Inspection totals include "complaint investigations" in addition to typical inspections of regulated entities





In June 2006, the DWM process of conducting technical compliance inspections (TCI) changed. The new inspection process, mandated by EPA, requires the UST owner/operators to submit more detailed records of their UST systems. There has also been an increase in the number of Notices of Violation issued over the past year because DWM has substantially increased the number of UST inspections performed in response to the 2005 Energy Bill, which requires all UST facilities that have not had inspections since Dec. 22, 1998, be inspected and for each UST to be inspected once every three years.

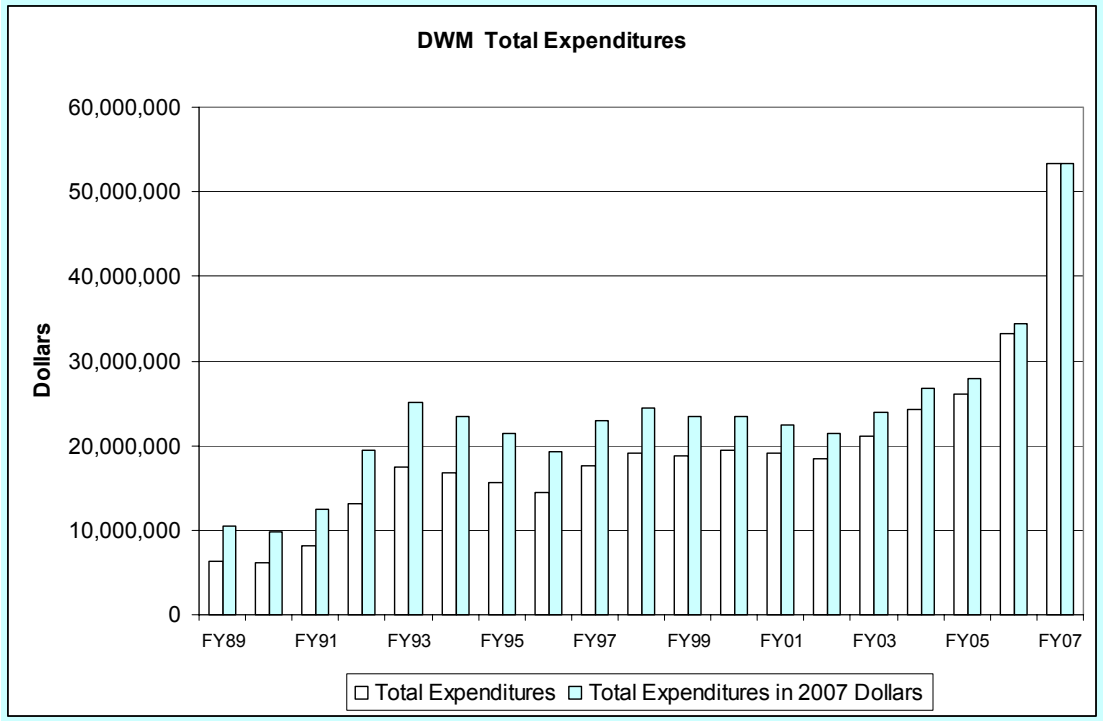


Note: "Compliance rate" means the percent of total inspections where an inspector noted that no violation had occurred; does not include investigations triggered by citizen complaints.

Note: "UST TCI" means a technical compliance inspection for a facility's underground storage tanks.

Kentucky's 52 percent compliance rate for underground storage tanks, while having remained relatively constant over the past two years, is below the 74 percent average compliance rate for other Region 4 states. The division met with EPA officials from the Region 4 Office and has established a process in which division representatives will visit other Region 4 states to observe inspection procedures and determine any differences which can be implemented to raise Kentucky's UST compliance rate. There has also been an effort to work with UST owners during inspections. This involves scheduling inspections at times the owner can be present. The underground storage tank staff is also working on a mechanism for complying with the 2005 Energy Bill.

Budget and Personnel:



Note: These expenditures include the Petroleum Storage Tanks Environmental Assurance Fund, which became part of DWM during a reorganization of the agency which was ratified by the legislature in the 2005 session of the General Assembly [Senate Bill 41, 2005 Regular Session].

The division's expenditures consist of general funds, federal grants, and fees collected, as authorized by various statutes and regulations. The number of accounts DWM is responsible for grew from seven accounts in FY 89 to 12 in FY 07. The first notable upswing in the amount of expenditures noted in the above graph occurs in FY 91 with the creation of the UST and the Waste Tire accounts. The Maxey Flats account was established in FY 93, which is used to support the 280-acre radioactive waste disposal site in Fleming County. Waste expenditures remained fairly steady until FY 03 when the Kentucky Pride Fund was established. The Kentucky Pride Fund is used for litter abatement, illegal open dumps cleanup, and addressing historic landfills. The most recent addition to DWM expenditures occurred with the reorganization of the agency in 2005. The Petroleum Storage Tank Environmental Assurance Fund program (PSTEAF) became part of the Underground Storage Tank Branch with this reorganization bringing with it the PSTEAF. The large increase in expenditures in FY 07 was mainly due to large bond expenditures that occurred in the Kentucky Pride Program as a result of historic landfill projects.

Management Initiatives:

enhanced Management Administrative Reporting System (eMars):
On July 1, 2006, Kentucky state government switched from the Mars accounting system to the new eMars accounting system. The two systems, unfortunately, were not completely compatible. Therefore, DWM was faced with relying on two accounting systems; one for financial information prior to 7/1/06 and one for what occurred after 7/1/06. Program Planning and Administration staff took numerous training classes in order to learn the new accounting system. The transition from Mars to eMars was efficiently handled by staff in all areas of DWM and is currently being used effectively.

Above: Amy Metzger, Donna Conway, and Nini Hughes are congratulated by Director R. Bruce Scott for their efforts in the transition from Mars to eMars.

File Room Imaging:
The division receives numerous documents each day that need to be maintained in the division's central file room. Throughout the years the division's central file room has accumulated enough files to take up 4,000 linear feet. In 2006 the use of scanned images as official files was approved by the Kentucky Department for Libraries and Archives (KDLA). The division is in the process of scanning all of its files into an electronic format and recycling the paper copies that were stored for many years. This change in procedure will save money and file storage space in the future.

Above: Rob Thorne, supervisor of the Program Planning and Administration, Information Management Section, and Tina Fisher, document processing specialist, recycle "hard copies" of the first documents that have been scanned into InfoImage under the KDLA procedures.

UST Branch New Regulation Seminar:

On Sept. 13, 2006, the UST Branch implemented new regulations for all regulated underground storage tank (UST) systems. The regulations focus on new procedures for all aspects of UST systems including registration, compliance monitoring, release investigation, cleanup and reimbursement for cleanup. In October 2006, the UST Branch held training sessions for internal staff and field inspectors that outlined all changes to the regulations. The UST Branch also held two informational seminars for the regulated community including certified contactors. About 160 people attended the external training session.

Above: Jean Tanksley, seated left, and Kim Kinney staff the sign in station during training on the new UST regulations held for the regulated community while Stephen Kent looks on.

Rockwell Facility:

The former Rockwell Facility located in Russellville, Ky., is one of the most significant cleanup sites in the commonwealth. Historical releases of polychlorinated biphenyls have resulted in deleterious effects on soil, sediment, surface water and groundwater in areas of the city of Russellville, as well as Town Branch and Mud River. Rockwell has conducted significant cleanup activities under the oversight of the Kentucky Division of Water.

In December 2006, the Division of Waste Management was tasked with reviewing the project to determine what additional actions may be needed to complete site characterization and select and implement final and long-term remedies in accordance with the State Superfund Program under KRS 224.01-400. This process is currently ongoing and is being conducted in accordance with an agreement between the Environmental and Public Protection Cabinet and Rockwell that was finalized on Aug. 3, 2007. The agreement included a $10 million settlement that will be dispersed: as civil penalties, as correction to natural resource damages, to support local water and sewer projects, and to support environmental compliance across Kentucky. Rockwell submitted a draft Site Characterization Report on July 25, 2007, and intends to submit a Corrective Action Plan later this calendar year.

TEMPO Permit Revision:

In an effort to issue more customer-friendly permits, the Solid Waste Branch (SWB) has revised its permitting process.

Following the implementation of the TEMPO environmental permitting software, the SWB permits were lengthy, hard to navigate, and difficult to comprehend. Most landfill permits issued by the SWB exceeded 100 pages. Monitoring and limitation requirements were written in narrative format, making it difficult for the reader to quickly determine the requirements that applied to specific environmental media and monitoring points. Moreover, because of the large number of standard conditions in each permit, site-specific conditions were often difficult to locate and understand.

Therefore, SWB staff reprogrammed the TEMPO database to produce permits that were both more concise and more easily understood. The revised permits provide the following: 1) more pertinent information about the regulated facility and its permitted waste activities; 2) easy-to-find site specific special conditions for each permitted waste activity; 3) historical information about the facility; 4) more financial assurance information; 5) current approved cost estimates; and 6) monitoring and limitation tables for all environmental media monitored.

POLICY DEVELOPMENTS

Regulation Development

The division is pleased to report great progress in this effort. The division has completed a comprehensive update of its hazardous waste regulations. The hazardous waste regulations have been updated to match federal standards adopted through 2005, with a few Kentucky-specific alterations. On Nov. 13, 2006, EPPC Secretary Teresa J. Hill signed, and approved for filing, 148 regulatory amendments to the state hazardous waste program. These regulations, under development for many years, update Kentucky's program to include changes that have occurred at the federal level through 2005.

Due to the tremendous volume associated with this regulatory package (more than 3,000 pages total), the agency submitted the amendments to the Legislative Research Commission in three separate filings in November and December 2006 and January 2007.

The UST program has changed the way cleanups are financed through the Petroleum Storage Tanks Environmental Assurance Fund. Tank cleanups will be done faster, more efficiently, and at lower cost under the revised program.

The division is currently working on updates to its regulations in three program areas: solid waste, recycling and local assistance, and underground storage tanks. In 2008 the division plans to propose new regulatory amendments to completely overhaul these three programs. Solid waste regulations are planned to be amended to introduce information that has been updated since the last promulgation effort. The UST program plans to incorporate changes in response to the Federal Energy Policy Act of 2005. The Recycling and Local Assistance Branch will incorporate changes into their regulation introduced in Senate Bill 50 from the 2006 legislative session.

2007 Legislative Session

There were several pieces of legislation from the 2007 legislative session that had an impact on DWM. The following are brief summaries of legislation that passed and signed by the governor during the 2007 Legislative Session.

- **HB 94** This bill enables the EPPC to implement a certification program for contractors to decontaminate clandestine methamphetamine labs within the commonwealth. The cabinet must coordinate with other governmental entities including the Justice Cabinet, the Kentucky Housing Corporation and local health departments. Contractors are required to obtain public liability insurance and demonstrate financial assurance in the amount of $500,000. The Division of Waste Management's Superfund Branch has developed and is administering a cleanup certification program for contractors that qualify to perform this service.

- **SB 82** Senate Bill 82 defined several new terms and amended others which opened up incentives to other Environmental and Public Protection Cabinet-approved cleanups and expanded the properties that could qualify.

- **HB 137** Extends the deadline for registering and filing applications relating to underground storage tanks from July 15, 2006, to July 15, 2008.

- **SB 125** Senate Bill 125 excludes the term "tire-derived fuel" from the definitions for solid waste, household waste, commercial wastes, and industrial wastes and created a new definition for "tire-derived fuel." Also the term was added to the definition of "recovered materials." It also allows those entities that utilize "tire-derived fuel" for energy needs to be exempt from the local determination required under KRS 224-40-315(1).

- **SB 196** This bill relates to the permitting process for "industrial energy facilities" by adding a definition for this term as well as, making these facilities eligible for one-stop shopping for environmental permits.

The passage of these pieces of legislation will help the commonwealth remain protective of human health and the environment as well as providing a positive environment for economic development.

2008 Legislative Session:

The division will be seeking legislation in the following area:

The hazardous waste assessment fee expires in June 2008. The division intends to request the extension of this date in the 2008 legislative session. The funding received is used to address critical environmental issues for which DWM is responsible. A portion is used to fund the Kentucky Pollution Prevention Center which assists hazardous waste generators in identifying ways of minimizing waste. Another segment is used to fund the Department for Environmental Protection's Environmental Response Team who addresses dangerous environmental situations. Lastly the fund is used to cleanup numerous state lead Superfund sites in the commonwealth that would not be addressed otherwise.

These state-lead sites are those that do not qualify for federal funding and where there is not a viable responsible party. These cleanups not only address sites that would pose a threat to human health and the environment but also make available beneficial redevelopment of properties for economic development and jobs.

ACKNOWLEDGMENTS

Governor Ernie Fletcher

Secretary Teresa J. Hill
Deputy Secretary Lloyd R. Cress

This *Annual Report* is intended to provide a concise set of facts and measurements to support environmental decision-making. We welcome your questions and comments to the contacts below:

Kentucky Division of Waste Management

14 Reilly Road
Frankfort, KY 40601
Phone: 502-564-6716
Fax: 502-564-3492

www.waste.ky.gov
www.recycle.ky.gov

Director: R. Bruce Scott, P.E.
Assistant Director: Anthony R. Hatton, P.G.

Kentucky Department for Environmental Protection

Commissioner: Cheryl A. Taylor
Deputy Commissioner: Valerie Hudson

www.dep.ky.gov

We acknowledge the contributions of the staff and management of the Division of Waste Management.

Recycling and Local Assistance:	Leslie King
Solid Waste:	Ronald D. Gruzesky, P.E.
Field Operations:	Jon Maybriar
Hazardous Waste:	April J. Webb, P.E.
Superfund:	Fazllolah Sherkat, P.E.
Program Planning and Administration:	Allan Bryant
Underground Storage Tanks:	Robert H. Daniell

Compiled by: Michael Mullins

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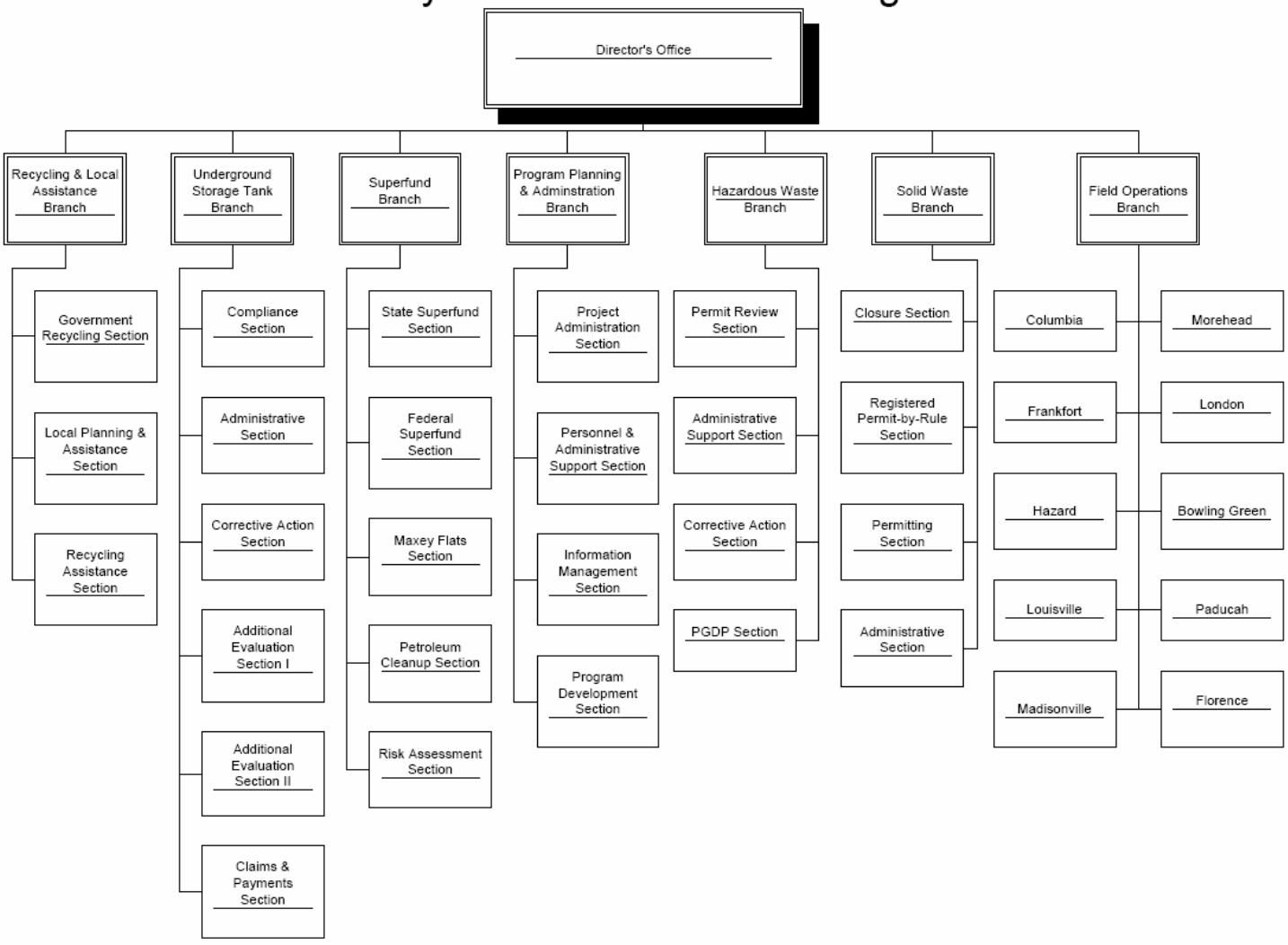
Kentucky Division of Waste Management



Division of Waste Management
14 Reilly Road
Frankfort, KY 40601

Report an Environmental Emergency, 24-hour: 502-564-2380 or 800-928-2380