CY 2014 WASTE TIRE PROGRAM

ANNUAL REPORT TO THE GENERAL ASSEMBLY

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection
Division of Waste Management
(502) 564-6716
waste.ky.gov

TABLE OF CONTENTS

FIGURES and TABLES

EEC Mandate

This report has been prepared as required by KRS 224.50-872. The purpose of the report is to provide information related to the commonwealth's waste tire program. Specifically, the report includes information related to the expenditures and revenues, the effectiveness in developing markets, the effectiveness of the fee in funding the cabinet's implementation of the waste tire program, and recommendations for improvement.

• • •

KRS 224.50-872 "The cabinet shall report to the General Assembly no later than January 15 each year on the effectiveness of the waste tire program in developing markets for waste tires, the amount of revenue generated and the effectiveness of the fee established in KRS 224.50-868 in funding the cabinet's implementation of the waste tire program, to include any waste tire amnesty program established by the cabinet as provided for in KRS 224.50-880(1)(b), whether the fee should be extended, comparative data on the number of waste tires generated each year, the number disposed of, the number of orphan tire piles, and the cost of tire disposal by counties in the Commonwealth.

• • •

HISTORY AND PURPOSE OF THE FUND

In 1990, the General Assembly passed House Bill 32 creating the waste tire control program and establishing the Waste Tire Trust Fund (WTTF) to eliminate existing and prevent future waste tire piles. The original program imposed a $1.00 fee on retailers of new motor vehicle tires sold in Kentucky, created requirements for tire accumulation and storage, and resulted in the removal of many tires from the environment. However, hundreds of thousands of tires continued to be stockpiled in anticipation that waste tire markets would develop in the future. In 1994, the General Assembly extended the program an additional four years and added a prohibition on open burning of waste tires.

In 1998, the General Assembly repealed the existing waste tire control program and created a new program with a new approach. The revised statute retained the $1.00 fee collected on new motor vehicle tires, the Waste Tire Trust Fund, and registration requirements for accumulators of waste tires. New additions to the waste tire management program included financial assurance requirements for accumulators, processors, and transporters of waste tires, grants for projects that manage waste tires, and reporting requirements for the Energy and Environment Cabinet regarding the effectiveness of the program. The fee is collected from consumers by retailers and paid monthly to the Department of Revenue (DOR). The cabinet uses the fee to implement the waste tire program, including the waste tire amnesties, remediation, and to fund grants that manage and develop markets for waste tires. The program has been successively extended by the General Assembly in 2002, 2006, 2010, 2012, 2014, and is set to expire on June 30, 2016.

During the 2011, the legislature passed House Bill 433 establishing the Waste Tire Working Group (WTWG). The purpose of the WTWG is to review numerous aspects of the Kentucky waste tire program and to advise the cabinet on changes that could improve the program. Currently the WTWG consists of the following positions:

(1) Mr. Tim Hubbard, P.G., Assistant Director for the Division of Waste Management;
(2) Mr. Gary Logsdon, Manager, Recycling and Local Assistance Branch;
(3) Mr. Harland Hatter, Deputy Director, Department of Agriculture;
(4) Ms. Kelly Chapman, Boone County Solid Waste Coordinator;
(5) Mr. Scott Tussey, Madison County Solid Waste Coordinator;
(6) The Honorable James R. Townsend, Webster County Judge-Executive;
(7) The Honorable Martin L. Voiers, Mayor of Flemingsburg; and
(8) Mr. Joe T. Durkin, Assistant Manager of a Lexington tire retailer.

The cabinet held two business meetings this year for the WTWG, familiarizing the new members with each other and ongoing waste tire issues. The meetings were held on June 25th and September 17, 2014. Presentations were made on waste tire amnesties and market trends, the waste tire manifest system, and thoughts for improving the waste tire program. A committee was formed to research the regulation of used tires, the waste tire manifest system, and auto salvage yards.

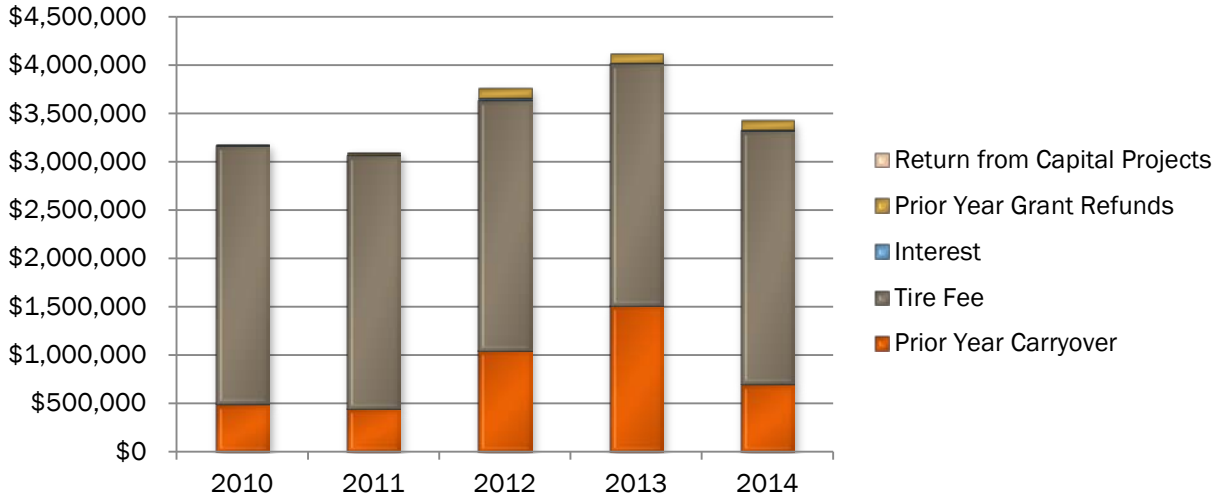
REVENUES

Kentuckians buy approximately 3,700,000 new replacement tires each year. Subtracting about 5% for internet sales, the commonwealth could be collecting about $3.5M per year.[1] Kentucky is receiving an average of $2.6 million per year, or approximately 74% of the money that could be collected of the new motor vehicle tire fee. Figure 1 below depicts tire fee receipts, as well as the other revenue in the waste tire trust fund for the last five years.

A number of possible explanations exist to explain why all of the fees are not being collected, including:

- Not all retailers are collecting and remitting the proper amount of tire fees;
- No fee is being paid by trucking companies when purchasing large numbers of tires through fleet sales from wholesalers; and
- Revenue is paid a flat fee of $50,000 per year instead of a percentage of what they collect, as in some other states, providing inadequate resources and no incentive to pursue non-payers.

Figure 1: Waste Tire Trust Fund Revenues

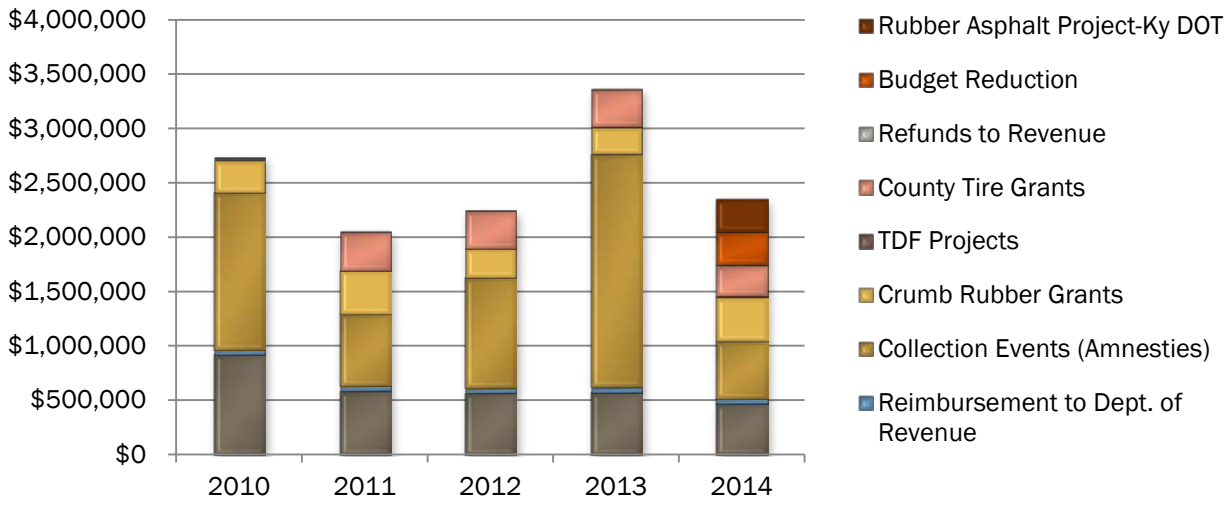


A second issue involving the Department of Revenue (DOR) includes the handling of the fee paid to revenue for their collection services as an "administrative cost" under the statute. The law requires the WTTF to reimburse DOR for its costs incurred in assessing and collecting fees, not to exceed $50,000 per year. Currently the payment to DOR is considered to be an administrative cost to the cabinet, and thus a portion of the cabinet's 25% allotted for administration of the program. The statute could specifically exclude DOR's reimbursement from being a portion of the cabinet's administrative costs since this funding is not made available to the cabinet.

EXPENDITURES

During 2014 the cabinet expended waste tire funds to conduct waste tire collection events, provide funding directly to counties for the removal of waste tires, and to remediate tire piles. Collection events held by the cabinet recycled 820,472 passenger tire equivalents (PTEs) and cost $931,645. Grants awarded by the cabinet to Kentucky counties primarily funded $307,204 for disposal and recycling of 202,181 PTEs. In addition, the cabinet spent $40,541 to clean up 35,703 PTEs collected from orphan tire piles. Overall, state and county government efforts represented the cleanup of 1,058,326 PTEs during 2014. Kentuckians generated 5.1 M PTEs as waste tires in calendar year 2014, thus the state and county handled 20% of the PTEs sent to market. The private sector handled the remaining 80% of waste tires. Figure 2 below depicts expenditures from the Waste Tire Trust Fund for the last five years.

Figure 2: Waste Tire Trust Fund Expenditures



One of the biggest potential costs the cabinet faces is the cleanup of facilities after tire fires at sites where the responsible party is unable to remediate the sites themselves. The burning of tires results in a release of hazardous substances into the environment and cleaning a post-fire site is much more costly than removing the same volume of tires at a typical dump site. A large tire fire in FY 2013 cost the Waste Tire Trust Fund $649,050. These are not predictable, planned expenses, and in some cases can cut into the funding earmarked for grants, market development, or cleanup of additional sites.

COUNTY GRANTS

Reduced Waste Tire Collection Event (amnesties) costs have allowed the cabinet to award grant funds directly to counties to assist them in addressing waste tires. Since FY 2011, the cabinet has made $3,000 per year available to counties to transport and dispose or recycle waste tires. During fiscal year 2015, the cabinet was able to increase the grant amount to $4,000. The cabinet expended $285,000 to 95 counties. Of the money the cabinet awarded, the counties spent $216,308 to dispose or recycle 202,181 PTEs. In addition, counties spent $90,896 of their own money toward waste tire remediation. Counties returned $68,692 of unspent state grant funds. This counts for a grand total of $307,204 of both state and county funding for an average cost of $1.52 per PTE to the taxpayer. Notice that the cost is slightly higher than the state amnesty contract price of $1.14 since counties must often remove these tires from roadsides and dumps. The typical charge from waste tire processors is $1.00 for cutting and landfilling, up to $1.50 for recycling.

In addition to the waste tire grants to counties, the cabinet uses PRIDE fund monies to provide grants to counties for crumb rubber. See Appendix B for a list of the Kentucky counties that received a crumb rubber grant during FY2014.

Lastly, the cabinet awarded 19 grants to counties for illegal open dumps that contained waste tires during the last grant cycle. These grants allowed counties to clean up a total of 21,851 waste tires from illegal open dumps.

WASTE TIRE MANAGEMENT PROGRAM

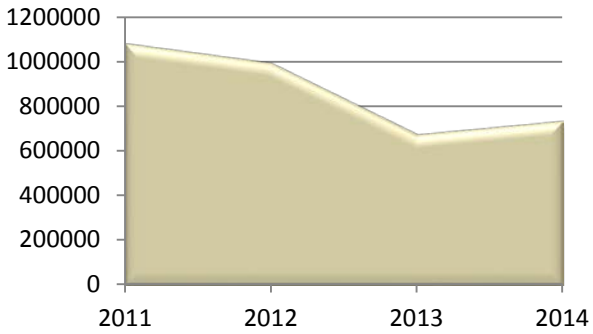
Since 1998, the waste tire program has funded the removal and disposal of nearly 23 million Passenger Tire Equivalents (PTEs) at a cumulative cost of $22.7 million. The tires were collected from 120 counties as part of the management program and the remediation of numerous tire piles.

During the Spring of 2014, the cabinet conducted collection events in the Big Sandy, Gateway, KY River, and Northern KY Area Development Districts (ADD). These events garnered 404,372 PTEs at a cost of $459,164 or $1.14 per PTE. During the Fall months, the cabinet conducted events in the Cumberland Valley, KIPDA, and Purchase ADDs netting 416,100 PTEs at a cost of $472,482. The 2014 Waste Tire Collection Events netted a total of 820,472 PTEs for a cost of $931,645.

Waste Tire Collection Events have been effective in reducing the amount of waste tires in the environment as evidenced by a declining trend in the number of tires collected at each event. Figure 3 summarizes the amount of PTEs collected per year for the last 4 years.

Waste Tire Collection Events are conducted in each county every three years, on a repeating schedule. Therefore, to compare total tires collected over time, it is appropriate to look at three-year cycles. Thus, although there was an increase in total tires collected in 2014 compared to 2013, it is more meaningful to compare 2014 to 2011 as it compares the last year in which the counties were serviced. Although there is considerable variability, the general trend shows a clear decrease in total tires collected for each three year period.

Figure 3: Waste Tires Collected (PTEs)



Waste Tire Collection Events scheduled for 2015 include Pennyrile, Green River, Barren River, and Bluegrass ADDs.

GENERATION AND DISPOSAL

Kentuckians generated 5.1 Million PTEs in 2014. There is no known statistical database for waste tires generated in individual states, therefore this was an estimate drawn from national data prorated based on the commonwealth's population, gasoline consumption and number of motor vehicle registrations.

A waste tire is generated for each replacement tire sold. A waste tire is most commonly measured in 20-pound units or Passenger Tire Equivalents (PTEs), which is the approximate average weight of a passenger automotive tire. A light truck tire is 30 pounds or 1.5 PTEs, while a medium truck tire, such as a tractor-trailer tire at 110 pounds, is 5.5 times heavier than an automotive tire, or 5.5 PTEs. Conversion of tire units into a uniform weight basis (100 PTE = 1 ton) allows comparison of waste tire generation to markets that are tracked in tons.

Waste tires are also generated from vehicle salvage operations. Junked vehicles generally have tires, some of which are recovered and resold as used tires while others are eventually disposed of as waste. For this report, waste tires from vehicle salvage operations are considered to represent 5% of replacement tire sales.

The following is a list of challenges within the current waste tire program:

- It is highly likely that some percentage of retailers were collecting disposal fees and then stockpiling waste tires until a waste tire collection event was conducted in their areas.

- Some retailers were suspected of transferring tires to an unpermitted hauler who then illegally dumps them on a roadside or elsewhere. Discovery of such a pile required a response from county or state government to recover the tires at taxpayers' expense.

- If there is a significant decrease in the amount of waste tires managed by the commercial processors, the Waste Tire Trust Fund would be insufficient to manage the increase in the number of waste tires that would result.

- Individuals have chosen to retain their waste tires to avoid additional fees charged by tire retailers for waste tire disposal, taking these tires out of the recycling stream. Also, these tires, or a portion thereof, may have been later mismanaged and dumped into the environment which burdened counties with continued waste tire management issues. It was reported that some tire retailers charged a higher fee of $3-3.50 to discourage individuals from leaving waste tires with the retailer, instead of the average $1.50-2.00 tire disposal/recycling fee. As an alternative, this situation could be improved by requiring the disposal price to be included in the sale price or list the actual state wide average disposal rate on a notice and let the free market handle the situation.

- KRS 224.50-868(3) gives the Department of Revenue (DOR) the authority to collect the waste tire fee. The statute requires up to $50,000 per year be transferred to DOR for collection of the fee. This neither provides enough money ($65,000-70,000 is needed to employ one person per year) or incentive for DOR to enforce the collection. States that have specified a percentage to be awarded to the collection agency have a higher collection rate.

- Many tires collected by registered waste tire transporters are still being legally disposed of in landfills rather than being recycled. It is less capital intensive to cut or shred and landfill a tire than to install equipment required to produce a recyclable product. Some states have fixed this problem by banning all tire material, including cut or shredded tires, from landfills, except for pre-approved constructive civil engineering applications within landfills.

MARKET DEVELOPMENT

The Waste Tire Trust Fund helps support the continued removal of waste tires from the environment to prevent fires and reduce breeding grounds for mosquitoes. The cabinet has removed waste tires from the environment, funded crumb rubber grant projects, and assisted in developing markets for waste tires.

The statewide recycling rate for tires was 80.1% for 2014 compared to 86% for 2013. This figure is comparable to the 81.6% in the U.S. for 2011, the latest available national data.[2] The 2014 recycling rate was negatively impacted by disposal of large quantities of shreds by Liberty as a result of its fire in late 2014. If this material had been processed for markets, the recycling rate would have been about 88%, representing continuing progress. The commonwealth has increased its recycling rate in the short-term by working to increase the in-state Tire Derived Fuel (TDF) market and could increase the reuse percentage in the future through the diversification of markets. Although TDF is expected to remain the largest end use of waste tires for the foreseeable future, ground tire rubber is considered a higher-end market than TDF, as the properties of the original tire are carried forward to the new product rather than using the one-time energy value of the waste tire as TDF.

TDF applications includes use in boilers at paper mills, cement kilns, and utilities that use whole or processed tires as a supplemental energy resource, displacing a small percentage of fossil fuel usage. These facilities operate in full compliance with all applicable federal, state and local environmental regulations. The largest ground rubber applications include playground safety cushioning, colored landscape mulch, and athletic fields.

The cabinet conducted several steps to gather information about the commonwealth's waste tire recycling markets. Since the processors and landfill owners have no knowledge of open tire dumps, the cabinet did not include the number of waste tires at open dumps in the recycling report. However, the cabinet estimated about 2.1% of waste tires were illegally disposed based on the national average of unreported markets for waste tires.[3] Since the cabinet gives $4,000 grants to counties to assist in remediating tire piles, and the counties expend some additional funds cleaning up tire dumps, the percentage for tires remaining in dumps in Kentucky may be lower. The steps the cabinet took to obtain information for this report include the following:

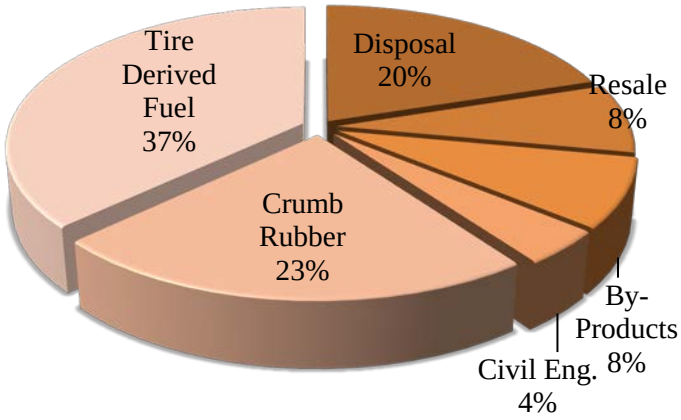
- Obtaining recycling market information from each major in-state processor;
- Compiling total tonnage of disposal of waste tires and processing wastes from each landfill;
- Differentiating tires collected in Kentucky from those collected out-of-state based on the processors' records and knowledge;
- Identifying and contacting out-of-state processors believed to collect tires from Kentucky; and

- Contacting users of the tire products to verify the receipt of processed tires and the landfill owners to verify disposal amounts.

When comparing Kentucky to other national markets, comparisons show the following:

- TDF is the largest Kentucky market at 37%, but this is below the national average;
- About the same reliance on playground mulch and ground rubber;
- Less use in civil engineering applications;
- Slightly less reselling of used tires;
- Almost no exporting to other countries; and
- Slightly more landfill disposal.

Figure 4: 2014 Kentucky Waste Tire Markets



Kentucky has gone from no in-state markets in 2000 to a point where potentially all TDF produced in Kentucky could be consumed in constructive applications. The cabinet has been involved in several initiatives to encourage growth in the TDF market, providing both grant funding and technical assistance. There have been several success stories in this field:

- In 2001, Kentucky spent $454,276 on capital equipment to assist Owensboro Municipal Utility (OMU) in using TDF. Although the contract expired in 2004, OMU still used 127,500 PTEs in 2014, and expects its 2015 use to increase. In 2006 NewPage, located in Ballard County, was granted $750,000 to make improvements to its process infrastructure in order to use 3,750,000 PTEs by 2012. To date, NewPage has used over 2,000,000 PTEs and requested an extension to the initial deadline to meet the goal. Since that time, NewPage has undergone bankruptcy and technically discharged its obligation to use tires. However, the company does continue to use TDF. Rubber fuel use in the commonwealth has increased from approximately 1.1 million PTEs per year in 2001 to approximately 3.7 million in 2014. In 2001, all Kentucky-generated waste tires went to out-of-state TDF markets. Currently, virtually all of Kentucky's annually-generated PTEs that are destined for TDF are used in-state.

- Kosmos Cement, a partnership between CEMEX and Lone Star Cement, used 83,100 PTEs in 2010 and has increased each successive year. Kosmos used 1,434,000 PTEs in 2014. The company uses a unique tire machine, similar to a baseball or softball pitching machine, to toss whole tires into the center of the kiln for a more efficient burning. The reinforcing wire in the tire is incorporated into the clinker. Compliance air emission

testing revealed no significant change in emissions from using waste tires and coal as opposed to only coal. In fact, Nitrogen Oxide emissions, a major greenhouse gas, were reduced 37% when using TDF with coal.[4] Kosmos is expected to begin using chips in addition to whole tires to increase its capacity for recovering the energy from tires.

- Another progressive company using TDF is East Kentucky Power Cooperative (EKPC). The cabinet submitted a letter in support of EKPC's petition to the Public Service Commission (PSC) during 2012 to use the Fuel Adjustment Clause for TDF which was subsequently granted during 2013. Use of the provision allows for quicker recovery of TDF cost from the electrical customer and makes the use of alternative fuels more economical. EKPC used 1,880,000 PTEs in 2014. EKPC could use up to 4 million PTEs per year to provide 2-4% of its energy requirements.

The use of TDF helps further the use of coal as it makes the fossil fuel more environmentally friendly. According to the U.S. EPA, greenhouse gas (GHG) emissions have been reduced as a co-benefit of the use of secondary materials—the GHG rate associated with the combustion of scrap tires is approximately 0.09 million metric tons of carbon dioxide equivalent ($MtCO_2e$) per million BTU of scrap tires combusted, while the GHG emissions rate for coal is approximately 0.094 $MtCO_2e$ per million BTU. Combined with the avoided extraction and processing emissions 0.006 $MtCO_2e$/million BTU for coal, the total avoided greenhouse gas is 0.010 $MtCO_2e$ per million BTU. Also, substituting TDF for coal would avoid an estimated 0.246 lbs/million BTU of particulate matter associated with the extraction and processing of the coal.[5] Multiplying the annual use of 28,656 tons TDF with coal in Kentucky by these factors shows a savings of almost 9,700 tons carbon dioxide (CO_2) and 109 tons particulate matter not emitted each year.

The ground rubber market has remained steady over time. Since 2004, the commonwealth has awarded 390 grants totaling over $7.0 million, primarily to schools and municipalities, for crumb rubber uses. The uses were crumb rubber spread on athletic fields to increase turf life and playgrounds to reduce injuries. A listing of crumb rubber grantees for FY 2014 is included as Appendix B.

In October 2014, NBC News ran a story about possible health threats associated with the use of crumb rubber on athletic fields, and later ran a similar story on concerns with the use of crumb rubber mulch on playgrounds. A premise of these studies is that exposure to crumb rubber and playground mulch may result in exposure to constituents in crumb rubber that could result in adverse health affects. At this time there is no documented and peer reviewed evidence that substantiates these concerns. Existing studies conducted by industry and third parties have indicated that exposure to recycled waste tires under these scenarios does not result in harmful affects. At this time, there appears to be a growing divide between these two interests. In light of these issues, the cabinet is considering whether or not providing crumb rubber grants for playgrounds and athletic fields will be part of its grant portfolio in 2015. A final decision has not been made as of this time.

Manufacturing of ground rubber and mulch from Kentucky tires increased from near zero in 1998 to 1,101,500 PTEs per year in 2014. Liberty Tire (formerly Martin Tire) in Union County manufacturers a large quantity of colored mulch for outlets such as Lowes, Home Depot and

Wal-Mart. Dalton Tire Recycling in Boyd County produces ground rubber for playgrounds and horse arenas. Porter Tire in Carter County started producing crumb rubber in 2013.

Another market for ground rubber, and one that has grown in significance in other states in recent years, is rubberized asphalt. The cabinet is looking for ways to help this market grow in Kentucky and in 2013 partnered with the Kentucky Transportation Cabinet on a rubberized asphalt pilot project. The cabinet covered the $70,000 additional cost of using crumb rubber from waste tires for a portion of the asphalt mix, as well as $15,000 for some additional testing. The project appears to have been a success but final data assessing the asphalt performance is pending. The cabinet is also considering a new grant program to encourage counties to use rubberized asphalt in their chip seal paving projects.

Kentucky has developed diverse product markets, producing more TDF and ground rubber than the national average. However, it produced less ground rubber for synthetic turf, molded rubber products, and rubber modified asphalt. When considering possible new areas for growth in waste tire markets, it should be noted that in 2010, Kentucky ranked third in the U.S. for auto industry employment.[6] The commonwealth could consider assisting the three major automotive manufacturers in Kentucky in using waste tire ground rubber in molded automotive parts to broaden this important potential application.

MARKET DYNAMICS

Due to the volatile nature of the scrap tire market, it is not uncommon for tire processors to quickly accumulate more tires than they can reasonably manage during busy times, processing equipment outages or changes in product markets. When shredded tires are improperly stored, specifically in piles that are too large, there is the possibility of auto-ignition. When a large pile of whole or shredded tire material catches fire it is extremely hard to extinguish. Permitted tire processors are required to have a bond equal to $1.00 per on-site PTE, with a minimum of $10,000. One common problem with this system is that facilities often bond for the minimum amount, then accumulate well over 10,000 tires, and put themselves in a situation where the bond is not nearly adequate in the event a cleanup is required. In addition to stronger enforcement of the bonding requirement, some solutions to be considered in funding remediation of tire fires include a statutory increase in the amount of the bond required. The bond amount in KRS 224.50-862 could be increased from $1.00 per tire to $1.50 to cover all cleanup costs. Or, as done in several other states, the legislature could consider requiring a cost estimate for closure to determine the amount of financial assurance requirement.

Kentucky did experience one large tire fire in CY 2014. Liberty Tire Recycling in Louisville caught fire on November 3rd, creating a plume of smoke visible more than 10 miles away, and resulting in a temporary shelter-in-place order for local residents. Liberty was in violation at the time for improper storage of tire shreds. The cause of the fire has not yet been determined. Liberty is a large tire processing company and has the resources to remediate the site and return it to operation. Liberty is subject to an agreed order that obligates them to manage waste tires at the site and to conduct characterization and remediation as a result of the tire fire. At the time of this report, Liberty has completed the requirements of the Agreed Order, whereby they can commence receiving waste tires.

The cabinet knows of three additional sites that pose a fire or safety threat. There are well over one million PTEs stored at these sites with a potential cleanup cost, in the case of a fire, of roughly $2 million. The current bonds total $30,000, so the Waste Tire Trust Fund would have to pay most of the costs. The new tire fee collections average $2.6 M per year, therefore a fire at any of these sites would significantly impact the WTTF. Such a remedial action could end waste tire collection events, grants and market development for one year or severely restrict funding availability over several years.

One potential problem for tire processors is the reduction in national TDF markets in 2010, reflecting a general downturn in the U.S. economy and manufacturing. However, unlike many states Kentucky's TDF market is fairly healthy and has potential for continuing growth, which may help alleviate some of the problems noted above. Major TDF markets in Kentucky include:

- East Kentucky Power Cooperative (EKPC), Maysville:
    - Cabinet submitted a letter to PSC in support of East Kentucky Power Cooperative (EKPC) use of a fuel adjustment clause for possible TDF use;
    - EKPC could use over 4 M PTEs per year based on projections; and

  - EKPC utilized almost 1.9 M PTEs in 2014, its first full year of usage. Ways to increase supply to EKPC from local processors will be explored.

- Kosmos Cement (CEMEX-Lone Star Cement partnership) Louisville:
  - CEMEX handled 1.4 M whole-tire PTEs in 2014 and is currently adding a shredded tire supply line that could significantly increase this number.

The in-state TDF market could potentially handle all scrap tires generated in Kentucky.

FUTURE OF THE FUND

The waste tire program exemplifies the cabinet's mission of protecting human health and the environment by encouraging waste reduction, reuse, and recycling. The Waste Tire Trust Fund supports statewide waste tire collection events on a three year rotation, remediates large tire piles, provides direct grants to counties, and develops markets for TDF and ground rubber. If the waste tire fee is not extended, program funds will not be available to conduct collection events, provide grants to counties or remove illegally dumped tires, and Kentucky businesses involved in tire processing and remediation would be negatively impacted.

Waste tire funds discontinued in other states resulted in illegal waste tire dumps reappearing. These states were faced again with a recurrence of the original emergency situation which necessitated the fee, including remediation of large tire piles and fires. Legislatures and governors were asked to remedy a problem that was previously solved.

A total of 36 states have a mandated tire fee[7]. The median fee is $1.00 per new tire sold. The highest fee is $2.50 in Alaska, Illinois and New York State while the lowest fee is $0.25 in Indiana. Some examples of problems encountered by states that discontinued their waste tire fee includes:[8]:

- Minnesota: An increase in waste tire tipping fees and an increase in monofilling (landfilling of tires in a disposal cell and a loss to the recycling market);
- Wisconsin: Product markets crashed without the state subsidy;

- Texas: $9.5 million in general funds to clean up two waste tire piles and buy TDF metering (feed) systems for industry. Saw an increase in land reclamation using waste tires in conjunction with soil to fill excavated sites, and still have major legacy stockpiles;
- Missouri: No fee for two years during which the state saw an increase in fires. The legislature reinstated the fee for five years in 2009; and
- Recycling rates dropped an average of 25% in seven states after discontinuance of the fee.

In addition to the repercussions discussed above, the following impacts could happen in Kentucky as a result of the fee expiring:

- Counties would not receive the $4,000 annual grant to cleanup abandoned waste tires;
- Rural areas would be impacted by abandoned waste tires on farms and roadsides;
- Counties may not be able to rely on the commonwealth for tire pile remediation; and
- Rubberized asphalt and extruded molding (auto parts) market development would stop.

The Waste Tire Program faces many challenges:

- HB 433 in the 2011 session attempted to "close the loop" regarding accountability for waste tires placed into the disposal or recycling system. Before 2011, each transporter who picked up tires from a retailer merely left a copy of the waste tire receipt with the tire retailer. Then, the processor left a copy of the receipt with the transporter. There was no requirement that the processor return a receipt to the tire retailer showing that the waste load had reached its destination and that the retailer was receiving the service that it expected. The return of a final receipt or copy of a manifest from the processor is mandated by most states. The language in KRS 224.50-874(2) reads as follows:

  > "A retailer, an automotive recycling dealer, and a person required to register as an accumulator, transporter, or processor who transfers waste tires to another person shall obtain a receipt for the waste tires. The final processor or a transporter who arranges for disposal or recycling ***out-of-state*** shall return a copy of the receipt for disposal or recycling to the retailer within thirty (30) days of receiving the waste tires. If the retailer does not receive the receipt from the final processor or transporter showing proof of who took final custody of the waste tires and disposed of the tires in accordance with KRS 224.50-856(1) and (2), the retailer shall notify the Division of Waste Management."

  The language could be interpreted to only close the loop for retailers sending their tires out of state for disposal. In order to clarify that the language "closes the loop" regarding accountability for waste tires, in-state processors could also be required to return a copy of the receipt to the original generator, the language could read (with inserted commas underlined):

> "The final processor, or a transporter who arranges for disposal or recycling out-of-state, shall return a copy of the receipt for disposal or recycling to the retailer within thirty (30) days of receiving the waste tires."

- The free market handled approximately 80% of the PTEs in Kentucky, with state-funded programs paying for 20%. Coverage of all areas by processors is necessary for the free market to work. Transportation distance translates into higher costs for certain areas if a good tire processor is not reasonably near. Appendix C contains a map showing the locations of waste tire processors in the commonwealth.

- The reporting requirement in KRS 224.50-872 could be more efficient if the requirement was for a report every two fiscal years. This would allow for changes to the program to be realized before a report was due. It would also place reports in conjunction with the state budget cycle.

- The Waste Tire Working Group could be expanded in order to examine more thoroughly how the program might be improved. The workgroup currently consists of the members required by statute: Two cabinet members, two SWaCK members, a representative of the Kentucky Department of Agriculture, one county Judge-Executive, one Mayor and one member of the tire retail establishment. Additional representatives might come from the Department of Revenue, tire wholesalers, scrap tire experts, Rubber Manufacturers Association, tire processors, tire accumulators, tire transporters, TDF users, Kentucky Trucking Association, County Clerks, salvage yards, school districts, and others as necessary. The trucking association is important because trucks use about half of all rubber, by weight, in the tire market. TDF users consume most of the waste tire rubber in the commonwealth. School districts use crumb rubber on playgrounds and athletic fields.

- A change to how the Department of Revenue is reimbursed could help close the gap between the possible $3.6 million that could be collected and the $2.6 million actually received.

- Kentuckians buy approximately 530,000 used tires each year based on the national average, 13.2% of all waste tires.[9] A recent tire industry survey showed that 88% of all tire repairs are performed incorrectly.[\10] One example of an incorrect repair is the failure to apply a patch from the inside of the tire when plugging a puncture. KRS 224.50-868(2)(c) encourages reuse of waste tires "…for its original intended purpose…". With such a high defective repair rate, this is a safety issue.

In conclusion, the cabinet strongly recommends that the General Assembly extend the waste tire fee and continue the Waste Tire Program.

FOOTNOTES

[1] U.S. Census Bureau News, November 22, 2013, http://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf

[2] Miles Moore, "Softening scrap tire market prodding industry to adapt", *TireBusiness.com*, May 30, 2013, http://www.tirebusiness.com/

[3] Rubber Manufacturers Association, U.S. Scrap Tire Management Summary 2005 -2009, October 2011, p.2

[4] Cement Kiln Burns Scrap Tires, *The Courier-Journal*, November 26, 2012.

[5] 76FR15494, 40 CFR Part 241, EPA, Identification of Non-Hazardous Secondary Materials That Are Solid Waste, Final Rule, March 21, 2011 *Federal Register.*

[6] 2012 Kentucky Automotive Industry, Kentucky Cabinet for Economic Development, Office of Research and Public Affairs; http://thinkkentucky.com/kyedc/pdfs/KY_Auto_Industry.pdf

[7] Rubber Manufacturers Association, 2011

[8] *Waste Tire Management Program Closure-Precedents/Experience in Other States*, Terry Gray, TAG Resource Recovery, Inc., Houston, TX 2011

[9] U.S. Department of Transportation, Federal highway Administration, Office of Policy Information, Highway Statistics Series, Highway Statistics 2012, FUNCTIONAL SYSTEM TRAVEL – 2012 (1), ANNUAL VEHICLE – MILES, http://www.fhwa.dot.gov/policyinformation/statistics/2012/vm2.cfm

[10] United States Census State & County QuickFacts, http://quickfacts.census.gov/qfd/states/21000.html

CREDITS AND ACKNOWLEDGEMENTS

Commonwealth of Kentucky
Governor Steve Beshear

Energy and Environment Cabinet
Secretary Leonard K. Peters

Kentucky Department for Environmental Protection
Commissioner R. Bruce Scott, P.E.
Deputy Commissioner Aaron Keatley

This annual report was produced by:

Kentucky Division of Waste Management
200 Fair Oaks Lane
Frankfort, KY 40601
Phone: 502.564.6716
Fax: 502.564.3492
waste.ky.gov

Director Anthony R. Hatton, P.G.
Assistant Director Timothy Hubbard, P.G.

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

Gary Logsdon
Donna Conway
John Maddy
Michelle Mitchell
Frederick “JR” Holt
Terry Gray
Kristina Davis

Editor : Louanna C. Aldridge

The mission of the Kentucky Division of Waste Management is to protect human health and the environment by minimizing adverse impacts on all citizens of the Commonwealth through the development and implementation of fair, equitable and effective waste management programs.

January 2015

Appendix A: FY 2014 Waste Tire Grant Awards

COUNTY	AWARD	FUNDS USED	PTEs	FUNDS RETURNED
Adair Co.	$3,000.00	$ 2,596.65	728	$403.35
Allen Co.	$3,000.00	$ 1,747.70	983	$1,252.30
Anderson Co.	$3,000.00	$ 2,983.65	1,712	$16.35
Ballard Co.	$3,000.00	$ 3,437.65	1,188	$0.00
Bath Co.	$3,000.00	$ 3,111.00	3,111	$0.00
Bell Co.	$3,000.00	$ 2,071.00	1,140	$929.00
Boone Co.	$3,000.00	$ 6,580.00	5,000	$0.00
Boyd Co.	$3,000.00	$ 3,032.50	1,327	$0.00
Boyle Co.	$3,000.00	$ 6,545.23	3,505	$0.00
Bracken Co.	$3,000.00	$ 1,084.13	310	$1,915.87
Breckinridge Co.	$3,000.00	$ 4,399.00	1,787	$0.00
Bullitt Co.	$3,000.00	$ 500.00	400	$2,500.00
Butler Co.	$3,000.00	$ 3,000.00	1,800	$0.00
Caldwell Co.	$3,000.00	$ 3,000.00	2,400	$0.00
Calloway Co.	$3,000.00	$ 485.60	173	$2,514.40
Campbell Co.	$3,000.00	$ 4,618.14	4,025	$0.00
Carlisle Co.	$3,000.00	$ 3,000.00	720	$0.00
Carroll Co.	$3,000.00	$ 7,907.20	4,416	$0.00
Casey Co.	$3,000.00	$ 3,089.90	779	$0.00
Christian Co.	$3,000.00	$ 3,000.00	3,750	$0.00
Clark Co.	$3,000.00	$ 4,116.00	3,000	$0.00
Clay Co.	$3,000.00	$ -	0	$3,000.00
Crittenden Co.	$3,000.00	$ 3,000.00	4,500	$0.00
Cumberland Co.	$3,000.00	$ 2,477.20	1,469	$522.80
Daviess Co.	$3,000.00	$ 3,202.75	2,784	$0.00
Edmonson Co.	$3,000.00	$ 8,298.50	3,928	$0.00
Elliott Co.	$3,000.00	$ 2,233.00	1,653	$767.00
Estill Co.	$3,000.00	$ 1,388.30	546	$1,611.70
Franklin Co.	$3,000.00	$ -	0	$3,000.00
Gallatin Co.	$3,000.00	$ 2,220.13	758	$779.87
Garrard Co.	$3,000.00	$ 669.68	381	$2,330.33
Grant Co.	$3,000.00	$ -	0	$3,000.00
Graves Co.	$3,000.00	$ 3,343.20	1,194	$0.00
Grayson Co.	$3,000.00	$ -	0	$3,000.00
Green Co.	$3,000.00	$ 1,119.80	659	$1,880.20
Hancock Co.	$3,000.00	$ 2,638.55	1,517	$361.45
Hardin Co.	$3,000.00	$ -	0	$3,000.00
Harlan Co.	$3,000.00	$ 5,280.00	4,000	$0.00
Harrison Co.	$3,000.00	$ 3,055.85	1,781	$0.00
Hart Co.	$3,000.00	$ 2,894.00	1,460	$106.00
Henderson Co.	$3,000.00	$ 3,448.30	2,093	$0.00

Henry Co.	$3,000.00	$ -	0	$3,000.00
Hickman Co.	$3,000.00	$ -	0	$3,000.00
Hopkins Co.	$3,000.00	$ 3,232.80	4,041	$0.00
Jackson Co.	$3,000.00	$ 3,812.75	2,178	$0.00
Jessamine Co.	$3,000.00	$ 7,422.50	2,140	$0.00
Johnson Co.	$3,000.00	$ 3,207.50	1,283	$0.00
Knott Co.	$3,000.00	$ 2,901.16	1,357	$0.00
Knox Co.	$3,000.00	$ 3,208.00	1,332	$0.00
LaRue Co.	$3,000.00	$ 3,600.00	2,400	$0.00
Laurel Co.	$3,000.00	$ 3,203.00	1,237	$0.00
Lawrence Co.	$3,000.00	$ 3,206.50	1,785	$0.00
Lee Co.	$3,000.00	$ 1,892.70	1,097	$1,107.30
Leslie Co.	$3,000.00	$ 3,000.00	1,242	$0.00
Letcher Co.	$3,000.00	$ -	0	$3,000.00
Lincoln Co.	$3,000.00	$ 669.68	381	$2,330.33
Livingston Co.	$3,000.00	$ 3,396.80	814	$0.00
Logan Co.	$3,000.00	$ 2,331.05	294	$668.95
Lyon Co.	$3,000.00	$ 3,000.20	1,066	$0.00
Madison Co.	$3,000.00	$ 3,034.70	1,694	$0.00
Magoffin Co.	$3,000.00	$ 3,000.00	3,000	$0.00
Marion Co.	$3,000.00	$ 1,554.50	446	$1,445.50
Mason Co.	$3,000.00	$ 7,479.01	9,713	$0.00
McCracken Co.	$3,000.00	$ 12,000.00	7,200	$0.00
McCreary Co.	$3,000.00	$ 1,922.75	1,441	$1,077.25
McLean Co.	$3,000.00	$ 3,453.06	3,041	$0.00
Meade Co.	$3,000.00	$ 4,718.00	2,093	$0.00
Menifee Co.	$3,000.00	$ 2,963.00	2,683	$37.00
Mercer Co.	$3,000.00	$ 1,887.65	904	$1,112.35
Metcalfe Co.	$3,000.00	$ 3,066.00	891	$0.00
Monroe Co.	$3,000.00	$ 3,408.25	1,710	$0.00
Montgomery Co.	$3,000.00	$ 1,530.00	765	$1,470.00
Muhlenberg Co.	$3,000.00	$ 4,314.85	3,416	$0.00
Nicholas Co.	$3,000.00	$ -	0	$3,000.00
Oldham Co.	$3,000.00	$ 3,453.50	2,162	$0.00
Owen Co.	$3,000.00	$ 5,429.99	1,464	$0.00
Owsley Co.	$3,000.00	$ 2,288.70	1,327	$711.30
Pendleton Co.	$3,000.00	$ 1,249.00	399	$1,751.00
Perry Co.	$3,000.00	$ -	0	$3,000.00
Pike Co.	$3,000.00	$ 22,000.00	22,000	$0.00
Pulaski Co.	$3,000.00	$ 3,720.35	2,173	$0.00
Rockcastle Co.	$3,000.00	$ 3,007.70	1,293	$0.00
Rowan Co.	$3,000.00	$ 220.00	102	$2,780.00
Scott Co.	$3,000.00	$ 3,050.38	1,090	$0.00

Shelby Co.	$3,000.00	$	4,125.00	4,000	$0.00
Simpson Co.	$3,000.00	$	1,042.00	353	$1,957.27
Spencer Co.	$3,000.00	$	8,258.40	10,432	$0.00
Taylor Co.	$3,000.00	$	2,222.00	998	$778.00
Trimble Co.	$3,000.00	$	1,905.00	381	$1,095.00
Union Co.	$3,000.00	$	10,000.00	10,000	$0.00
Washington Co.	$3,000.00	$	3,806.95	1,676	$0.00
Wayne Co.	$3,000.00	$	618.45	303	$2,381.55
Webster Co.	$3,000.00	$	3,112.12	3,700	$0.00
Wolfe Co.	$3,000.00	$	5,576.35	3,280	$0.00
Woodford Co.	$3,000.00	$	4,125.90	2,427	$0.00
GRAND TOTALS	**$285,000.00**	**$**	**307,202.81**	**202,181**	**$70,255.52**

Appendix B: FY 2014 Crumb Rubber Grant Awards

COUNTY	APPLICANT	LOCATION	PROJECT	AWARD
Barren	City of Cave City	Learning Tree Day Care	Playground	$2,562.00
Boone	Hebron Baptist Church - CrossRoads Preschool	CrossRoads Preschool	Playground	$19,730.00
Carroll	City of Carrollton	Point Park	Playground	$5,350.00
Clay	Clay County Board of Education	Paces Creek Elementary	Preschool Playground	$4,265.00
Garrard/Lincoln	Garrard/Lincoln Solid Waste Management Area	Veterans Memorial Park (Lincoln County)	Playgrounds (6)	$16,962.00
Grant	Grant County Board of Education	Mason Corinth Elementary School	Playground	$28,913.00
Grayson	City of Leitchfield	B. G. Dewitt Park (Priority #1)	Playground	$13,833.00
Hart	Hart County Board of Education	Memorial Elementary School	Playground	$4,145.00
Henderson	Henderson County Fiscal Court	Baskett Community Park	Playground	$14,950.00
Jefferson	City Jeffersontown	Skyview Park	Playground	$9,425.00
Johnson	Tender Heart Child Care, LLC	Tender Heart Child Care, LLC	Playground	$4,254.00
Kenton	Northern Kentucky Community Action Commission	Head Start Early Childhood Education Center	Playground/Landscaping	$5,130.00
Knox	Knox County Schools	Dewitt Elementary Schools	Playground	$19,832.00
Leslie	Leslie County Schools	Mountain View Elementary & Stinnett Elementary	Playgrounds (2)	$23,300.00
Letcher	Letcher County Fiscal Court	County Playgrounds	Playgrounds (10)	$28,500.00
Livingston	Livingston County Board of Education	North Livingston Elementary School & South Livingston Elementary School	Playgrounds (2)	$66,540.00
Logan	City of Russellville	Russellville/Logan County Memorial Park	Playgrounds (2)	$15,306.00
Marshall	Marshall County Fiscal Court	Mike Miller County Park	Playgrounds (5)	$43,250.00
Metcalfe	Metcalfe County Fiscal Court	Sulphur Well Community Center	Playground	$4,703.00
Nelson	City of Bardstown (Bardstown/Nelson County Parks & Recreation Department)	Jones Avenue Park and West Broadway Park	Playgrounds (2)	$24,131.00
Oldham	River Valley Christian Church	River Valley Christian Church	Playground	$5,789.00
Pike	City of Pikeville/City of Pikeville Parks and Recreation	Pikeville Pond	Playground	$1,944.00
Todd	Kirkmansville United Methodist Church	Kirkmansville United Methodist Church	Playground	$5,750.00
Washington	Washington County Fiscal Court	Fredericktown Community Park	Playground	$5,515.00
Webster	Webster County Fiscal Court	Dixon Elementary School	Playgrounds	$30,520.00
			GRAND TOTAL	**$404,599.00**

Appendix C: Large Waste Tire Processor Locations