COMMONWEALTH OF KENTUCKY
ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
WASTE.KY.GOV

WASTE TIRE PROGRAM

Annual Report to the General Assembly

CY 2016

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FIGURES & APPENDICES

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 states, "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 & 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.

Off-site tire cleanup in Whitley County, KY. Photo by Chris Craig

In 1998, the General Assembly repealed the then-existing waste tire control program and created a brand new program with a new approach.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 2016. It is set to expire on June 30, 2018.

Off-site cleanup in Estill County, KY. Photo by Chris Craig

During 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. Gary Logsdon, Manager, Recycling and Local Assistance Branch;
(2) Mr. Harland Hatter, Deputy Director, Office of Consumer & Environmental Protection in the Department of Agriculture;
(3) Ms. Kelly Chapman, Boone County Solid Waste Coordinator;
(4) Mr. Scott Tussey, Madison County Solid Waste Coordinator;
(5) The Honorable Martin L. Voiers, Mayor of Flemingsburg; and
(6) Mr. Joe T. Durkin, Assistant Manager of a Lexington tire retailer.

The WTWG lost two members to resignation in 2017 and anticipates the appointment of a new member to fill the vacant County Judge Executive position, and an additional position from the Division of Waste Management to bring the group back to full membership.

Waste Tire Collection Event in Grayson County, KY Photo by Chris Craig

The cabinet held one business meeting this year for the WTWG. Topics included two presentations on new tire processing technologies, discussion of tire regulation enforcement issues and rubber modified asphalt, and continued work on updating and improving required recordkeeping systems for waste tire generators. The next meeting of the WTWG is anticipated for January 2017.

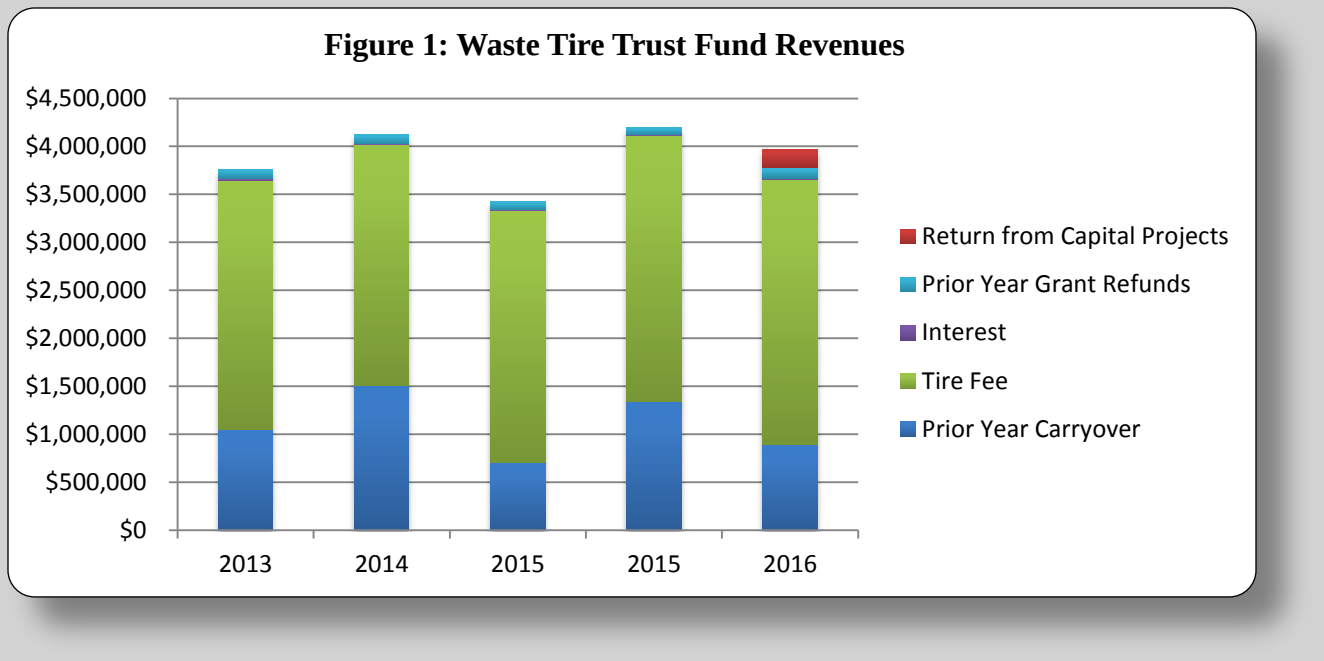
REVENUE

Waste Tire Collection Event in Boyd County, KY. Photo by Chris Craig

Kentuckians buy approximately 3,700,000 new replacement tires each year. Subtracting about 6.8% for internet sales, the commonwealth could be collecting about $3.4 M per year.[1] Kentucky is receiving an average of $2.65 million per year, or approximately 75% of the money that could be collected from the new motor vehicle tire fee. Figure 1 depicts tire fee receipts, as well as the other revenue in the WTTF 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*
- *Department of Revenue (DOR) 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.*



A second issue involving the 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.

Off-site tire cleanup in Estill County, KY. Photo by Chris Craig

EXPENDITURES

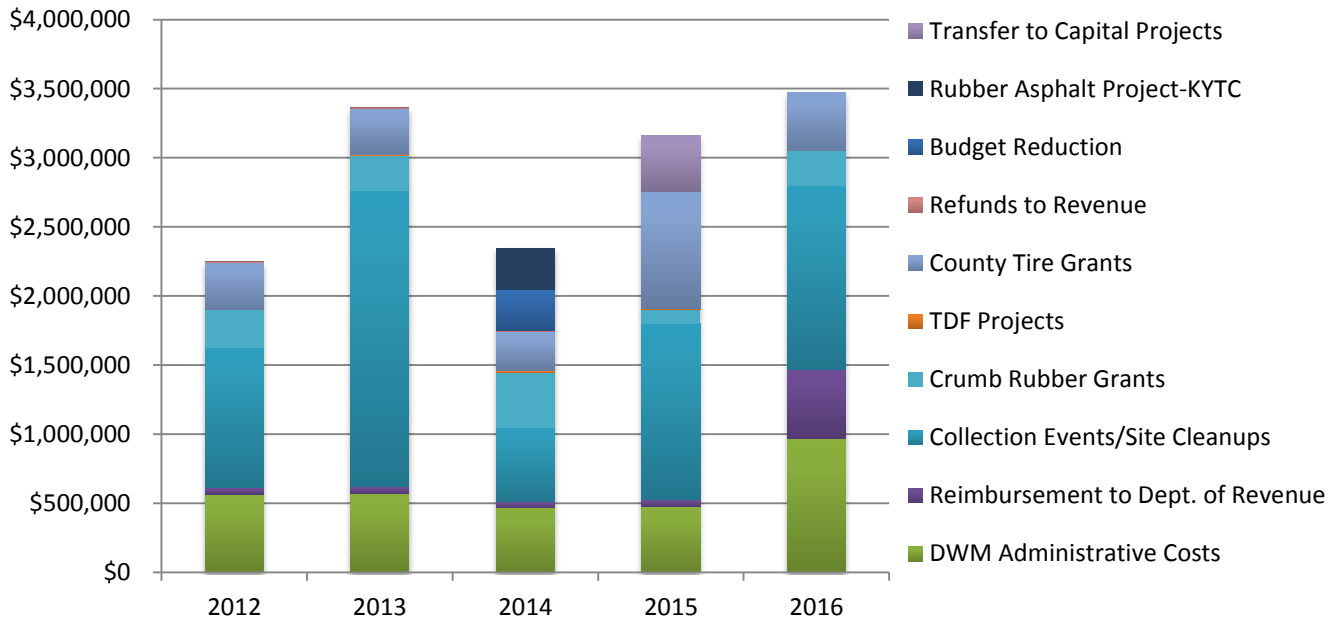
Off-site tire cleanup in Whitley County, KY. Photo by Chris Craig

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.

During 2016, the cabinet expended waste tire funds to conduct waste tire collection events, provided funding directly to counties for the removal of waste tires, and to remediate "off-site" tire piles. Collection events held by the cabinet recycled 528,283 PTEs and cost $834,687. Grants awarded by the cabinet to Kentucky counties primarily funded $421,829 for disposal and recycling of 267,864 PTEs. In addition, the cabinet spent $108,260 to clean up 51,956 PTEs collected from orphan tire piles. Overall, state and county government efforts represented the cleanup of 848,103 PTEs during 2016. Kentuckians generated 5.1 million PTEs as waste tires in calendar year 2016, thus the state and county handled 16.6% of the PTEs sent to market. The private sector handled the remaining 83.4% of waste tires.

Figure 2 below depicts expenditures from the WTTF 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 parties are 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. Regular compliance inspections of permitted waste tire accumulators minimize the risk of such fires. However, these are not predictable planned events and in some cases can cut into the funding earmarked for grants, market development, and cleanup of additional sites.

COUNTY GRANTS

Reduced Waste Tire Collection Event (amnesty) costs have allowed the cabinet to award grant funds directly to counties to assist them in addressing waste tires. During fiscal year 2014, the cabinet was able to increase the grant amount per county from $3,000 to $4,000 per year to transport and dispose or recycle waste tires. The cabinet awarded $440,000 to 110 counties in 2016. Of the money the cabinet awarded, the counties spent $421,829 to dispose or recycle 267,864 PTEs. In addition, counties spent $85,222 of their own money toward waste tire remediation. Counties returned $95,281 of unspent state grant funds. This counts for a grand total of $507,052 of both state and county funding for an average cost of $1.89 per PTE to the taxpayer. Counties must often remove these tires from roadsides and dumps, thus increasing total disposal cost. The typical charge from waste tire processors is $1.00 for cutting and land-filling, up to $1.50 for recycling. In addition to the waste tire grants to counties, the cabinet uses monies from the WTTF 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 FY2016.

Waste Tire Collection Event in Greenup County, KY. Photo by Chris Craig

Lastly, the cabinet awarded 20 grants to counties for illegal open dumps that contained waste tires during the previous grant cycle. These grants allowed counties to clean up a total of 534 waste tires from illegal open dumps.

WASTE TIRE MANAGEMENT PROGRAM

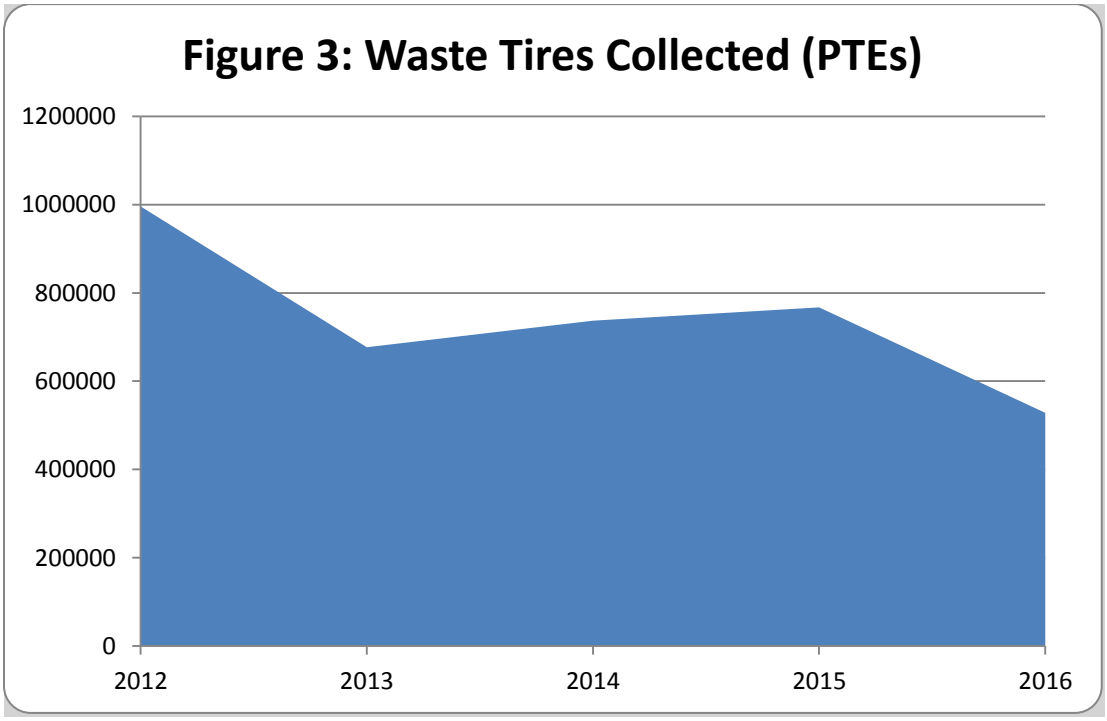
Since 1998, the waste tire program has funded the removal and disposal of approximately 25.1 million PTEs at a cumulative cost of $25.9 million. These tires were collected from 120 counties as part of the management program and the remediation of numerous tire piles.

During the spring of 2016, the cabinet conducted collection events in the Lincoln Trail and Lake Cumberland Area Development Districts (ADD). These events garnered 397,894 PTEs at a cost of $628,672 or $1.58 per PTE. During the fall months, the cabinet conducted events in the Buffalo Trace and FIVCO ADDs netting 130,389 PTEs at a cost of $206,014; $1.58 per PTE. The 2016 Waste Tire Collection Events netted a total of 528,283 PTEs for a cost of $834,686. There was a considerable decrease in the volume of waste tires collected due to 2016 being a year in which the least amount of counties are serviced throughout the three year cycle.

Rubber-modified asphalt chip seal application, Fleming, KY. Photo Christopher "Kitt" Tuttle

Waste Tire Collection Events have been effective in reducing the amount of waste tires in the environment as evidenced by an initial decline followed by a stabilization of the trend in the number of tires collected at each event. Figure 3 summarizes the amount of PTEs collected per year for the last four 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. There was a noticeable decrease in PTEs collected in 2016 as it compares to the last year in which the counties were serviced in 2013. Although there is considerable variability, the general trend shows a clear decrease in total tires collected for each three-year period.



Waste Tire Collection Events scheduled for 2017 include Northern KY, Gateway, Big Sandy, Kentucky River, Cumberland Valley, KIPDA, and Purchase ADDs.

MARKET DEVELOPMENT

The WTTF 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 89.2% for 2016 compared to 86.8% for 2015. This figure is comparable to the 87.9% in the U.S. for 2015[2], the latest available national data. 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.

Rubber-modified asphalt chip seal application, Fleming County, KY. Photo by Christopher "Kitt" Tuttle

TDF applications include 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 coal 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. 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.

Steps the cabinet performed to obtain information for this report included:

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

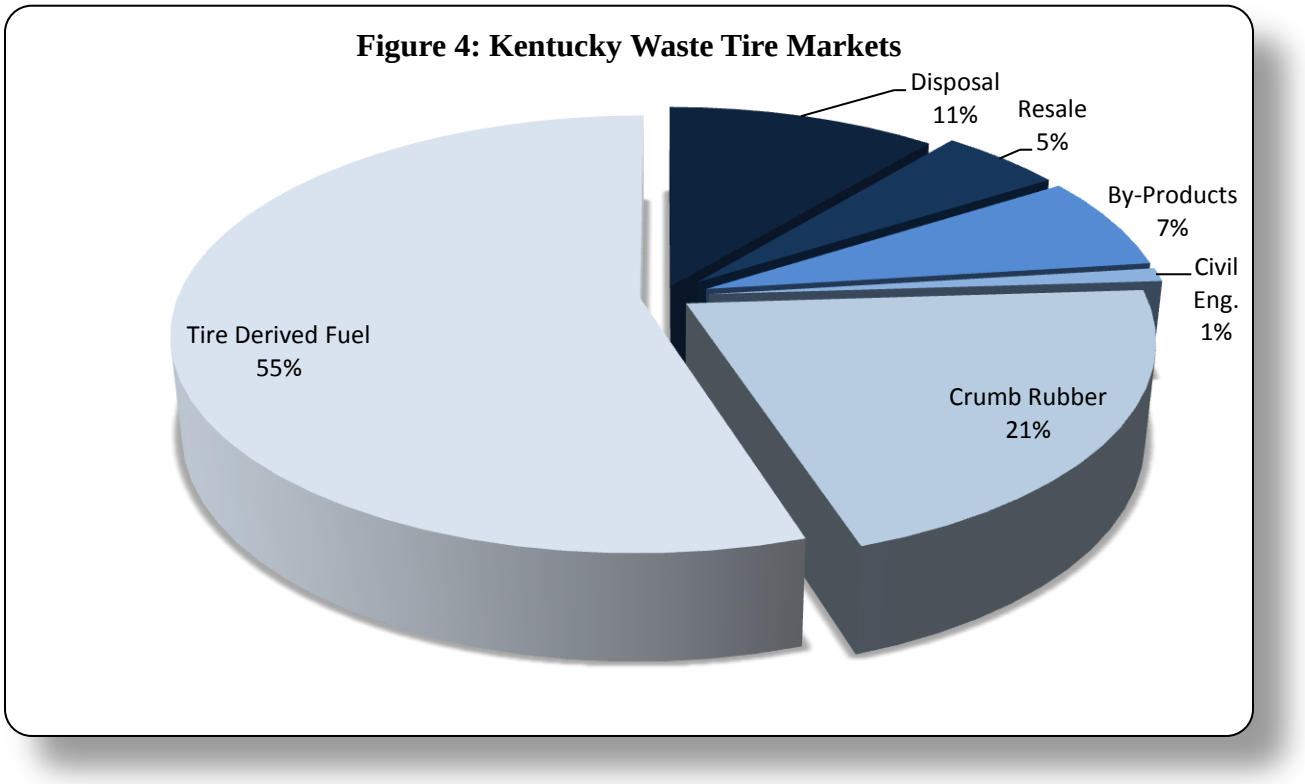
Waste Tire Collection Event, Bourbon County, KY. Photo by Chris Craig

Comparing Kentucky to other national markets shows:

- ***TDF is the largest Kentucky market at 55%, slightly above the national average of 48.6%[3];***
- ***About 4% less (20.8% in Kentucky versus 25.8% nationally) for ground rubber applications including colored landscape mulch, playground cushioning, synthetic turf infill, and ground rubber;***

- ***Less use in civil engineering applications;***
- ***Less reselling of used tires;***
- ***Limited exporting to other countries; and***
- ***Slightly less landfill disposal of tires generated in Kentucky.***

Figure 4: 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 uses TDF. Its consumption in 2016 was limited by power generation equipment outages and competitive power generation from natural gas, but is expected to rebound in 2017. In 2001, TDF production in Kentucky was about 1.1 million tires, all shipped out of state because there were no in-state users. In 2016, TDF users in Kentucky consumed 3.83 million PTEs, almost 3 million of which were***

produced by in-state and out-of-state producers from tires generated in Kentucky. Some TDF still crosses into and out of Kentucky based on regional markets and transportation logistics.

- ***Kosmos Cement, a partnership between CEMEX and Lone Star Cement, began using whole tires as TDF in 2010 and has added use of TDF (tire chip form) as well to become one of the two largest in-state users. 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 increasing use of tire chips in addition to whole tires may further increase its capacity for recovering the energy from tires, so additional growth is possible.***

- ***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 has become one of the largest TDF users and could potentially 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 United States Environmental Protection Agency (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 (MtCO2e) per million BTU of scrap tires combusted, while the GHG emissions rate for coal is approximately 0.094 MtCO2e per million BTU. Combined with the avoided extraction and processing emissions 1.6 MtCO2e/million BTU for coal, the total avoided greenhouse gas is 0.010 MtCO2e 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 2016 use of 38340 tons TDF with coal in Kentucky by these factors shows a savings of almost 13,000 tons carbon dioxide (CO_2) and 147 tons of particulate matter not emitted each year. The use of TDF to reduce certain pollutants makes the long-term use of coal more viable.

Waste Tire Collection Event, Bourbon County, KY. Photo by Chris Craig

The ground rubber market has remained steady over time. Since 2004, the commonwealth has awarded 409 grants totaling over $7.7 million, primarily to schools and municipalities, for crumb rubber uses. The most common uses were crumb rubber spread on athletic fields to increase turf life and on playgrounds to reduce injuries. In October 2014, NBC News presented a story about possible health threats associated with the use of crumb rubber on athletic fields, and later presented 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 effects. 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 effects. At this time, there appears to be a growing divide between these two interests. In light of these issues and out of an abundance of caution, the cabinet did not provide crumb rubber grants for playgrounds and athletic fields as part of its grant portfolio in 2015 and 2016. Crumb rubber grants were still made available to counties for landscaping applications. As noted by Figure 4, the suspension of crumb rubber grants for playgrounds and athletic fields has not significantly affected crumb rubber production in the state.

Manufacturing of ground rubber and mulch from Kentucky tires increased from near zero in 1998 to 914,500 PTEs in 2016. 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. While the project exhibited suspected cold-weather cracking in the control and rubber-modified lanes, it appears to have been a success. Final data assessing the asphalt performance is pending.

In May of 2016, the Division of Waste Management implemented its first ever Rubber-Modified Asphalt Grant program. The cabinet used Waste Tire Trust Fund monies to provide grants to counties for applying chip seal to county roads utilizing asphalt that has been amended with recycled tire rubber. The grant funded the application of approximately two lane miles of rubber-modified chip seal, with the grantees required to fund an identical amount of standard chip seal. The projects will be monitored for five years to assess the performance of rubber-modified versus standard chip seal. Five counties received a total of approximately $350,000 in grant funds in 2016. The grant is expected to continue in 2017 and possibly expand to include additional pavement processes, contingent on sufficient funding.

County	**Location**
Fleming	Markwell Road, Town of Hillsboro
Hart	Mt. Vernon Road, Rocky Hill Road,
Metcalfe	Town of Bonnieville
Trigg	Jack Spark Road and County Road 1020,
Whitley	Town of Edmonton

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 2015, Kentucky ranked third in the U.S. for car

and truck production.[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 diversity is a critical component of successful waste tire management programs. Developing additional civil engineering markets for shredded tires would enhance the diversity of Kentucky's markets and provide constructive applications for shredded tires that are currently landfilled.

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 large, deep compacted piles, 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, and then accumulate well over 10,000 tires, putting 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.

Rubber-modified asphalt chip seal application, Fleming County, KY. Photo by Christopher "Kitt" Tuttle

One potential problem for tire processors is the maturation of national TDF markets, reflecting a general downturn in the U.S. manufacturing and reduction in coal usage. However, unlike many states Kentucky's TDF market remains fairly healthy and has potential for continuing to be a major use of waste tires in Kentucky, but use of all solid fuels, including coal and TDF is expected to decline in the foreseeable future, so continuing efforts to further diversify markets are critical for maintain high of constructive utilization of waste tire resources.

Major TDF markets in Kentucky include:

- **East Kentucky Power Cooperative (EKPC), Maysville:**
  - Cabinet submitted a letter to PSC in support of EKPC use of a fuel adjustment clause for possible TDF use;
  - EKPC could use over 4 M PTEs per year based on projections; and
  - Ways to increase supply to EKPC from local processors will be explored.
- **Kosmos Cement (CEMEX-Lone Star Cement partnership) Louisville:**
  - CEMEX utilizes whole-tire PTEs and has added a shredded tire supply line that has significantly increased this number.
- **Owensboro Municipal Utility**
  - Due to restrictions in the equipment on-site, OMU cannot use more TDF than the current level of 2% TDF replacement.

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 WTTF 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 to 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. Legislators and governors were asked to remedy a problem that was previously solved.

Off-site tire cleanup in Estill County, KY. Photo by Chris Craig

A total of 35 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, New York, and Oklahoma while the lowest fee is $0.25 in Indiana and Kansas.

Some examples of problems encountered by states that discontinued their waste tire fee include[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. They 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 over 25% in seven states after discontinuance of the fee, and as much as 80% in some states.

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 clean up 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 cease.

The waste tire program faces many challenges, most of which are common to programs across the country:

- It is likely that some retailers collect disposal fees and then stockpile waste tires until a waste tire collection event was conducted in their area, or otherwise mismanage their waste tires.
- 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. Some of these tires may later be mismanaged, burdening counties with continued waste tire management issues. It has been reported that some tire retailers charge a higher fee of $3.00-3.50 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.
- 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.
- Kentuckians buy approximately 530,000 used tires each year based on the national average, 10% of all waste tires.[9] A recent tire industry survey showed that 88% of all tire repairs are performed incorrectly.[10] In light of this, consideration could be given to whether re-use of tires should be promoted or discouraged.
- Coverage of all areas of the state by tire processing facilities 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.
- 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.

- KRS 224.50-868(3) gives the 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 (approximately $75,000 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.

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] 2015 US Scrap Tire Management Summary, Rubber Manufacturers Association, August 2016

[3] Rubber Manufacturers Association, 2013

[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] *Auto Jobs & Economics*, Auto Alliance, http://www.autoalliance.org/auto-jobs-and-economics/state-facts

[7] *State Scrap Tire Legislation Summary*, Rubber Manufacturers Association, 2015, http://www.rma.org/download/scrap-tires/state_&_federal_reports/legislation_chart_2015.pdf

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

[9] *Used Tires Businesses Balloon*, Feb. 2011, Mike Breslin, http://www.americanrecycler.com/0211/814used.shtml

[10] *RMA: 88% of Tire Repairs Done Incorrectly*, 2008 http://www.tirebusiness.com/article/20080228/NEWS/302289997?template=printart

CREDITS & ACKNOWLEDGEMENTS

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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:

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January 2017

APPENDICES

Appendix A: FY 2015 Waste Tire Grant Awards

COUNTY	AWARD	FUNDS USED	PTEs	FUNDS RETURNED
Adair	$ 4,000.00	$ 1,047.00	31	$ 2,953.00
Allen	$ 4,000.00	$ 3,453.50	2,275	$ 546.50
Anderson	$ 4,000.00	$ 4,191.50	2,274	$ -
Ballard	$ 4,000.00	$ 4,015.91	1,716	$ -
Bath	$ 4,000.00	$ 5,717.25	4,483	$ -
Bell	$ 4,000.00	$ 1,683.00	623	$ 2,317.00
Boone	$ 4,000.00	$ 9,380.00	7,052	$ -
Bourbon	$ 4,000.00	$ -	-	$ 4,000.00
Boyd	$ 4,000.00	$ 4,478.38	2,053	$ -
Boyle	$ 4,000.00	$ 2,717.00	1,356	$ 1,283.00
Bracken	$ 4,000.00	$ 3,974.26	1,135	$ 25.74
Breathitt	$ 4,000.00	$ 3,601.00	900	$ 399.00
Breckinridge	$ 4,000.00	$ 3,887.00	1,707	$ 113.00
Bullitt	$ 4,000.00	$ 2,262.50	1,213	$ 1,737.50
Caldwell	$ 4,000.00	$ 4,000.00	2,400	$ -
Calloway	$ 4,000.00	$ 1,540.00	300	$ 2,460.00
Campbell	$ 4,000.00	$ 11,908.60	11,736	$ -
Carlisle	$ 4,000.00	$ 4,000.00	4,000	$ -
Carroll	$ 4,000.00	$ 4,260.80	2,140	$ -
Casey	$ 4,000.00	$ 4,011.50	1,081	$ -
Christian	$ 4,000.00	$ 7,450.00	5,325	$ -
Clark	$ 4,000.00	$ 4,104.00	3,144	$ -
Clay	$ 4,000.00	$ 4,000.10	2,353	$ -
Clinton	$ 4,000.00	$ 2,414.00	1,420	$ 1,586.00
Crittenden	$ 4,000.00	$ 4,000.00	4,800	$ -
Cumberland	$ 4,000.00	$ 4,600.00	4,500	$ -
Daviess	$ 4,000.00	$ 4,349.00	4,349	$ -
Elliott	$ 4,000.00	$ 3,912.25	2,459	$ 87.75
Estill	$ 4,000.00	$ 4,000.00	1,500	$ -
Fayette	$ 4,000.00	$ 4,000.00	2,286	$ -
Fleming	$ 4,000.00	$ 970.39	277	$ 3,029.61
Floyd	$ 4,000.00	$ 4,075.08	1,698	$ -
Franklin	$ 4,000.00	$ 2,050.00	1,250	$ 1,950.00
Fulton	$ 4,000.00	$ 1,600.00	1,500	$ 2,400.00

Appendix A: FY 2015 Waste Tire Grant Awards continued…

Gallatin	$ 4,000.00	$ 2,180.99	895	$ 1,819.01
Garrard-Lincoln	$ 8,000.00	$ 2,851.05	1,331	$ 5,148.95
Grant	$ 4,000.00	$ 4,534.56	9,003	$ -
Graves	$ 4,000.00	$ -	-	$ 4,000.00
Grayson	$ 4,000.00	$ 5,475.00	4,500	$ -
Green	$ 4,000.00	$ 836.70	153	$ 3,163.30
Greenup	$ 4,000.00	$ 5,697.50	5,656	$ -
Hancock	$ 4,000.00	$ 4,058.55	1,928	$ -
Hardin	$ 4,000.00	$ -	-	$ 4,000.00
Harlan	$ 4,000.00	$ 12,460.00	8,500	$ -
Harrison	$ 4,000.00	$ 4,065.75	2,235	$ -
Hart	$ 4,000.00	$ 4,216.75	1,275	$ -
Henderson	$ 4,000.00	$ 4,800.00	6,000	$ -
Hickman	$ 4,000.00	$ -	-	$ 4,000.00
Hopkins	$ 4,000.00	$ 4,424.40	5,531	$ -
Jackson	$ 4,000.00	$ 4,213.50	1,535	$ -
Jessamine	$ 4,000.00	$ 6,994.50	2,989	$ -
Johnson	$ 4,000.00	$ 4,042.50	1,617	$ -
Kenton	$ 4,000.00	$ 6,500.00	5,000	$ -
Knott	$ 4,000.00	$ 6,239.72	3,067	$ -
Knox	$ 4,000.00	$ 4,144.00	1,953	$ -
LaRue	$ 4,000.00	$ -	-	$ 4,000.00
Laurel	$ 4,000.00	$ 4,721.50	1,645	$ -
Lawrence	$ 4,000.00	$ 4,840.00	2,314	$ -
Lee	$ 4,000.00	$ 1,868.30	1,099	$ 2,131.70
Leslie	$ 4,000.00	$ 4,000.00	552	$ -
Letcher	$ 4,000.00	$ 1,834.30	1,221	$ 2,165.70
Lewis	$ 4,000.00	$ 1,815.80	1,213	$ 2,184.20
Livingston	$ 4,000.00	$ 3,125.00	1,825	$ 875.00
Logan	$ 4,000.00	$ 1,734.50	474	$ 2,265.50
Lyon	$ 4,000.00	$ 2,681.70	1,174	$ 1,318.30
Madison	$ 4,000.00	$ 4,355.05	1,864	$ -
Magoffin	$ 4,000.00	$ 4,000.00	4,400	$ -
Marion	$ 4,000.00	$ 2,848.25	859	$ 1,151.75
Marshall	$ 4,000.00	$ 4,000.00	3,217	$ -

Appendix A: FY 2015 Waste Tire Grant Awards continued…

Martin	$ 4,000.00	$ -	-	$ 4,000.00
Mason	$ 4,000.00	$ 12,961.04	14,113	$ -
McCracken	$ 4,000.00	$ 11,000.00	6,675	$ -
McCreary	$ 4,000.00	$ 1,272.25	853	$ 2,727.75
McLean	$ 4,000.00	$ 8,000.00	6,000	$ -
Meade	$ 4,000.00	$ 6,724.00	2,843	$ -
Menifee	$ 4,000.00	$ 4,186.00	2,434	$ -
Mercer	$ 4,000.00	$ 1,046.25	523	$ 2,953.75
Metcalfe	$ 4,000.00	$ 2,276.25	558	$ 1,723.75
Monroe	$ 4,000.00	$ 4,774.75	2,197	$ -
Montgomery	$ 4,000.00	$ 3,976.00	994	$ 24.00
Nelson	$ 4,000.00	$ 3,700.00	3,928	$ 300.00
Ohio	$ 4,000.00	$ 4,178.95	2,865	$ -
Oldham	$ 4,000.00	$ 3,178.75	1,150	$ 821.25
Owen	$ 4,000.00	$ 4,457.98	1,434	$ -
Owsley	$ 4,000.00	$ 3,946.25	1,609	$ 53.75
Pendleton	$ 4,000.00	$ 1,727.25	1,277	$ 2,272.75
Perry	$ 4,000.00	$ 6,300.00	-	$ -
Pike	$ 4,000.00	$ 7,000.00	-	$ -
Powell	$ 4,000.00	$ 4,007.25	1,782	$ -
Pulaski	$ 4,000.00	$ 4,443.80	2,614	$ -
Robertson	$ 4,000.00	$ 1,250.76	868	$ 2,749.24
Rockcastle	$ 4,000.00	$ 4,009.75	2,155	$ -
Rowan	$ 4,000.00	$ 561.00	285	$ 3,439.00
Russell	$ 4,000.00	$ 2,354.50	1,385	$ 1,645.50
Scott	$ 4,000.00	$ 4,110.00	1,105	$ -
Shelby	$ 4,000.00	$ 3,551.00	3,300	$ 449.00
Simpson	$ 4,000.00	$ 671.50	170	$ 3,328.50
Spencer	$ 4,000.00	$ 9,903.89	6,601	$ -
Taylor	$ 4,000.00	$ 3,884.50	2,285	$ 115.50
Trigg	$ 4,000.00	$ 6,350.00	8,636	$ -
Trimble	$ 4,000.00	$ 590.00	118	$ 3,410.00
Union	$ 4,000.00	$ 6,000.00	4,800	$ -
Warren	$ 4,000.00	$ 2,028.75	868	$ 1,971.25
Washington	$ 4,000.00	$ 4,073.25	1,359	$ -

Appendix A: FY 2015 Waste Tire Grant Awards continued…

Wayne	$ 4,000.00	$ -	-	$ 4,000.00
Webster	$ 4,000.00	$ 4,416.38	5,208	$ -
Whitley	$ 4,000.00	$ 990.00	602	$ 3,010.00
Wolfe	$ 4,000.00	$ 3,852.20	2,226	$ 147.80
Woodford	$ 4,000.00	$ 2,861.10	1,683	$ 1,138.90
GRAND TOTALS	**$440,000.00**	**$ 421,829.24**	**267,864**	**$ 103,393.20**

Appendix B: FY 2015 Crumb Rubber Grant Awards

COUNTY	APPLICANT	LOCATION	PROJECT	AWARD
Breathitt, Lee, Wolfe	Middle KY Community Action Partnership, Inc.	Middle Kentucky Head Start Centers	Landscaping	$19,000
Campbell	Newport Independent Schools	Newport High, Middle & Primary Schools; Board of Education; Transportation-Maintenance Facility	Landscaping	$35,430
Fleming	City of Flemingsburg	Quality Appliance, City Park Lot, Walking Trail Garden, Walking Trail Parking Lot	Landscaping	$3,367
Grayson	City of Caneyville	Purple Flash Community Center & Pavilion	Landscaping	$3,630
Green	City of Greensburg	Pocket Parks, Paddle Trail Cabins (5), Paddle Trail Pavilion	Landscaping	$15,400
Greenup	City of Flatwoods	Community . Park, Senior & City Buildings	Landscaping	$5,044
Harlan	Harlan County Fiscal Court	Harlan County Parks	Landscaping	$4,800
Henderson	Henderson County Fiscal Court	Sandy Lee Watkins Park – Radio Controlled Flyer Landing Strip, Archery Facility & Additional Landscaping at the Park	Landscaping	$8,301
Hopkins	City of Nortonville	City Hall & Veteran′s War Memorial	Landscaping	$2,220
Lewis	City of Vanceburg	The George Morgan House (local museum), The Depot (old railroad depot museum) & the Veterans Park	Landscaping	$3,600
Logan	City of Russellville	Hampton Park of Russellville	Landscaping	$16,475
Mason	City of Maysville	City Hall, Police Department & Traffic	Landscaping	$4,125
Montgomery	City/Co. Parks & Rec.	Easy Walker Park	Landscaping	$14,895
Muhlenberg	City of Central City	City Building & Convention Center	Landscaping	$6,650
Perry	Perry Co Fiscal Court	Courthouse & Judicial Center, Senior Citizens Building, Eagles Landing Campground, Battle of Leatherwood Park	Landscaping	$5,438
Pike	Pike Co Fiscal Court	73 County Buildings and Sites	Landscaping	$45,992
Pulaski	Pulaski Co Fiscal Court	Courthouse & Judicial Center, County Park, Senior Center/Alzheimer′s Center	Landscaping	$16,444
Trigg	Trigg Co Fiscal Court	Trigg County Courthouse	Landscaping	$5,865
Webster	Webster County Fiscal Court	Courthouse, Road Department, County Compaction Centers (3), Dog Pound, City of Dixon & Parks, City of Providence & Golf Course, All County Schools & County Board of Education Central Office	Landscaping	$32,850
			GRAND TOTAL	**$249,526**

Kentucky Division of Waste Management
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

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