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PERFORMANCE REVIEW

THE DEPARTMENT OF ENVIRONMENTAL PROTECTION THE REHABILITATION ENVIRONMENTAL ACTION PLAN

AUDIT OVERVIEW

Although REAP Has Produced Significant Output, It Has Not Been Effective in Pollution Prevention or Reducing Per Capita Municipal Solid Waste Disposed in Landfills.

Eliminating Illegal Dumps Has Become Costlier Under DEP Purchasing Procedures, the DEP Often Cleans Areas That Have Been Re-Trashed Multiple Times, and High Administrative Costs and Questionable Expenditures Are Diverting Funds From Intended Purposes.



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EXECUTIVE SUMMARY

The Legislative Auditor conducted an Agency Review of the West Virginia Department of Environmental Protection pursuant to West Virginia §4-10-8(b)(2). As a part of this review, a performance audit was conducted on the A. James Manchin Rehabilitation Environmental Action Plan (REAP). The objective of this audit was to determine if REAP is effective and efficient in encouraging proper disposal of commercial and residential solid waste, eliminating open dumps and tire piles, and promoting recycling through public awareness and recycling grants. The highlights of this audit are discussed below.

Frequently Used Acronyms in this Report

PERD: Performance Evaluation and Research Division, within the Office of the Legislative Auditor;

DEP: West Virginia Department of Environmental Protection;

REAP: A. James Manchin Rehabilitation Environmental Action Plan;

MSW: municipal solid waste;

CED: Covered Electronic Devices;

PPOD: Pollution Prevention and Open Dumps;

OASIS: Our Advanced Solution with Integrated Systems (the system used by state agencies to upload financial information, documentation, and to pay vendors);

SWMB: West Virginia Solid Waste Management Board;

SWA: Solid Waste Authority;

LCO: Litter Control Officer; and

HRDF: Human Resource Development Foundation, Inc.

Report Highlights

Issue 1: Although REAP Has Produced Significant Output, It Has Not Been Effective in Pollution Prevention or Reducing Per Capita Municipal Solid Waste Disposed in Landfills.

- The REAP program eliminates between 1,000 and 1,200 illegal dumps each year and facilitates the proper disposal hundreds of thousands of waste tires annually.
- The Legislature established a goal to reduce per capita municipal solid waste (MSW) going into landfills by 50 percent of the 1991 level. There is no evidence that the DEP attempted to achieve this goal, and per capita MSW has been steadily increasing from 2010 to 2018.
- The number of illegal dumps eliminated each year tends to be around 1,000 each year, which shows no signs of progress in pollution prevention.

- The Legislative Auditor concludes that the major causes of REAP's ineffectiveness are that limited resources at the local level hinder progress in pollution prevention, and the DEP has not established goals for the REAP program.

Issue 2: Eliminating Illegal Dumps Has Become Costlier Under DEP Purchasing Procedures, the DEP Often Cleans Areas That Have Been Re-Trashed Multiple Times, and High Administrative Costs and Questionable Expenditures Are Diverting Funds From Intended Purposes.

- Eliminating illegal dumps has become more expensive and the number of contractors who are eligible to bid on cleanup projects has been reduced from 15 to 5.
- PERD estimates that on average 20 percent of REAP cleanup projects over the 2013 to 2017 period were re-trashed areas, and for some counties the percentages range as high as 38 percent.
- There have been questionable expenditures from the PPOD fund, and a sizable amount of the Recycling Assistance Fund is being diverted from the intended use of awarding recycling grants.
- The Legislative Auditor determines that REAP's purposes should be restructured so that local solid waste authorities are provided more financial resources and have greater incentives in pollution prevention.

Recommendations

1. *The DEP should establish goals that are consistent with the Legislature's intent for the REAP program. These goals should include:*
 - a. *reducing the state's per capita MSW disposed in landfills; and*
 - b. *reducing the number of illegal dumps generated in the state each year.*
2. *The DEP should correct the inadequacies of its internal controls pertaining to PPOD data to reduce the risk of fraud and abuse, and to improve the quality of its management information.*
3. *The DEP should compile necessary outcome data and performance measures in the administration of the REAP program. Such data should include:*
 - a. *per capita MSW disposed in landfills, including MSW disposed out of state;*
 - b. *the total number of illegal dumps cleaned each year;*
 - c. *the total tonnage of illegal dumps cleaned each year; and*
 - d. *the number of counties with litter control officers distinguished between full-time and those who have multiple responsibilities.*
4. *The Legislature should consider reestablishing and updating the recycling goal specified in W. Va. Code §22-15A-16 to reduce the disposal of per capita MSW in landfills. An appropriate benchmark would be 2010, the percentage could be reduced to 25 percent, and the time for completion could be the year 2025.*

5. *The Legislature should consider reestablishing W. Va. Code §22C-4-10(c) to require a feasibility study of reducing solid waste collection fees to individuals who pay for such services, who receive public assistance and are limited in their ability to afford solid waste disposal.*
6. *The Legislature should consider requiring all recycling centers to report the tonnage of recyclable materials collected each year to the Solid Waste Management Board to estimate the state recycling rate.*
7. *The Legislature should consider ways to increase the distribution of solid waste assessment fees to local SWAs to improve recycling and pollution prevention.*
8. *It should be the State's goal to encourage appropriate counties to employ full-time litter control officers.*
9. *The Public Service Commission should amend its rule CSR §150-9-6.5 to require all common carriers of solid waste to annually report their customer counts to the Solid Waste Management Board and local solid waste authorities. However, upon request by any local solid waste authority, common carriers should provide the names and service addresses of customers or, in the alternative, a list of the names and addresses of non-subscribing waste generators in their service areas.*
10. *The Solid Waste Management Board should estimate for each county the annual percentage of households, as estimated by the U.S. Census Bureau, that subscribe for solid waste collection services using subscription counts provided by common carriers of solid waste.*
11. *The Legislative Auditor recommends that the SWMB conduct a study on ways to improve the availability and affordability of solid waste disposal for rural residents.*
12. *The Legislature should consider having the PSC and the SWMB collaborate on re-evaluating the standards and criteria as they relate to flow control, pursuant to West Virginia Code §24-2-1h, to determine if the process is effective and equitable.*
13. *It is recommended that the solid waste assessment fees currently allocated for eliminating illegal dumps under West Virginia Code §22-15A-7 be distributed to local SWAs proportionate to population. An alternative would be to allocate an equal share and then distribute the remaining amount based on population. This distribution can be a flow-through or a draw-down process. It is further recommended that the West Virginia Solid Waste Management Board be the flow-through agent of these funds.*
14. *It is recommended that the Recycling Assistance Grant and the CED Grant be administered by the West Virginia Solid Waste Management Board. It is also recommended that the Legislature consider statutorily limiting administrative expenses to 15 percent of total expenditures.*

15. *The Legislature should consider eliminating the Litter Control Fund established by West Virginia Code §22-15A-4(c) and amending Code §22-15A-4(c)(d) to allow all civil penalties go to the local SWA of the county that litter violations occurred.*
16. *If the Human Resource Development Foundation does not submit the required independent report by June 30, 2020, the DEP should bar the HRDF from subsequently receiving state grants until the grantee has filed the report, pursuant to W. Va. §12-4-14(c)(1). In addition, the DEP should report the HRDF to the Legislative Auditor for purposes of debarment from receiving state grants if it fails to file the required report by June 30, 2020 (W. Va. §12-4-14(c)(2)).*

PERD's Response to the Agency's Written Response

On June 5th, 2020, PERD received the DEP's written response, which is provided in Appendix C of this report. The DEP indicated that it is committed to correcting valid deficiencies identified by the recommendations of this report. The agency also acknowledged that while it has a substantial record, the REAP program "*could and will be better.*" However, the DEP strenuously opposes any partial breakup or defunding of its REAP programs in favor of diverting landfill tipping fees to local Solid Waste Authorities because it would ignore the DEP's successes, history "*and its ever-present need for additional legislative support, not less.*" The DEP responded to each recommendation of the report and agreed with several of them or did not respond to recommendations that were not directed to it. Below is PERD's response to some of DEP's responses to certain recommendations.

Agency Response to Recommendation 1: "*The DEP agrees that it should establish improved performance goals consistent with the Legislature's intent for REAP and in many ways has already done so. All of those are being reevaluated with an eye to making the tracking data more useable.*"

PERD Response: This audit identifies that the DEP stated it does not have goals or measures to determine the effectiveness of REAP, and at no time did the agency provide PERD with evidence it has already developed performance goals. Moreover, the agency, in its written response, indicates that a major performance goal of reducing per capita municipal solid waste established by the Legislature is "*unrealistic and unattainable from inception*" and "*simply naive.*" It is not clear how the DEP intends to establish performance goals "*consistent with the Legislature's intent for REAP,*" when it disagrees with an important goal statutorily established by the Legislature.

Agency Response to Recommendation 2: "*The DEP and REAP identified and addressed this issue in an internal audit performed by the agency in 2016-2017. As a direct result of that internal audit, REAP instituted several changes to the manner in which PPOD collects and analyzes data related to the program.*"

PERD Response: This audit acknowledges the agency's internal audit report and the changes implemented that rectified important issues related to compiling PPOD data. However, the internal audit does not address other internal controls issues such as the agency granting \$1 million to a non-profit organization for cleanup projects and there are no PPOD data compiled on how many projects were conducted, their locations, the tonnage disposed, the costs per project or the completion dates.

Agency Response to Recommendation 3: The DEP indicated that it will collect the outcome data as recommended. The agency indicates that it compiled data on litter control officers even though it is not required. Collecting the data was intended to encourage counties to support hiring local litter control officers. However, the DEP stated that the quality of the data is only as good as counties are willing to supply.

PERD Response: PERD made Recommendation 3 to encourage the DEP to measure REAP's effectiveness, which is a statutory mandate but has not been done adequately. Recommendation 3 is not an exhaustive list of outcome and output data, and the agency can improve the quality of data on litter control officers. Data on litter control officers are an indicator of the state's status and progress in pollution prevention.

Agency Response to Recommendation 4: The DEP considers the Legislature's goal of reducing per capita MSW by 50 percent of the 1991 level by the year 2010 as "*unrealistic and unattainable from the inception.*" The agency cited several factors that make the recycling goal unattainable, such as: MSW includes commercial waste, industrial sludge, and wastewater; attitudes toward disposing everything is prevalent; the goal has no provision for adjusting for population growth and the development of new industries; and West Virginia's per capita MSW is well below the national average as cited in this report.

PERD Response: The Legislative Auditor asserts that when an agency is statutorily mandated to achieve a goal, it should not ignore it because it contends that the goal is unattainable. Instead, the agency should express its opinion directly to the Legislature and possibly offer an alternative. Furthermore, the DEP is incorrect for a variety of reasons. First, by definition, MSW does not include industrial sludge or wastewater, and commercial operations are capable of recycling as do residents. The DEP also does not recognize that per capita measures adjust for population growth since population is the divisor of the measure. Finally, per capita MSW is a respected measure that the U.S. Environmental Protection Agency reports annually as an indicator of the country's progress in recycling, and the state of California, a leader in waste management, also uses per capita MSW as an effectiveness measure. It is also interesting that while the DEP does not accept per capita as a useful measure, it accepts the measure when West Virginia is shown to be below the national average.

Agency Response to Recommendation 7: The DEP stated that REAP was created to respond to problems resulting from relying solely on local solid waste authorities to manage solid waste. In the DEP's opinion, the Legislature wanted the work of REAP done at the State level because local solid waste authorities mismanaged the work.

PERD Response: It should be noted that while the Legislature's finding, as stated in W. Va. Code §22-15A-1, cites the improper management of solid waste as a factor in creating REAP, the force of the finding is the Legislature's concern over the unlawful disposal of solid waste and the inefficiencies of the work carried out by different state agencies. The State's interest was to establish a program with recycling goals, that promotes pollution prevention, and that eliminates illegal dumps effectively and efficiently. This audit report indicates that the DEP has not had goals for the REAP program, it has not been effective in pollution prevention, REAP cannot be effective in pollution prevention without greater resources for local SWAs, and the elimination of illegal dumps has not been efficient. Moreover, the DEP has made questionable expenditures in the use of solid waste assessment revenues.

Agency Response to Recommendation 13: The DEP opposes the concept of re-distributing solid waste assessment fees to local SWAs to eliminate illegal dumps for the reasons cited in its response to Recommendation 7. Also, the DEP is suggesting that the higher costs of remediating open dumps cannot be avoided at the state or local level and that the “additional cost is *mandated* by the Legislature.”

PERD Response: It must be understood, the Legislature did not mandate the additional costs of the remediating open dumps. The additional costs are the result of the DEP’s decision to include the PPOD program in the agency’s in-house purchasing procedures as construction remediation projects, as opposed to maintaining the previous purchasing process that would have individual projects be procured through the use of purchase orders if they were under \$2,500. In turn, local SWAs can also use the same acceptable purchasing procedures that were used by the DEP under the prior process. PERD also reiterates that pollution prevention has not been effective under the REAP program, and it will continue to be ineffective unless local SWAs receive additional resources.

Agency Response to Recommendation 14: The DEP does not agree with the recommendation to have the Recycling Assistance grant and the Covered Electronic Devices grant administered by the West Virginia Solid Waste Management Board (SWMB). The DEP defends its use of the Recycling Assistance Fund by stating that the Youth Environmental Program (YEP) meets the public education component of recycling assistance. The agency also argues that YEP has been very productive and it would be difficult for local SWAs to equal the production of YEP if the funds supporting YEP were to be diverted to local organizations.

PERD Response: The recommendation to have the SWMB administer the two grants is based on the inappropriate use of the Recycling Assistance Fund by the DEP, and because the SWMB is a better fit for this program. A significant amount of the Recycling Assistance Fund is being used for programs that are inconsistent with the intent of the fund, such as the Litter Control grant, Adopt a Highway, Operation Wildflowers, the Youth Environmental Program, the Make It Shine program, and grants for non-recycling purposes. Although YEP provides important services that are in line with recycling, YEP is a program, not a grant. As a grant program and by rule (CSR §33-10), recycling assistance grants cannot be awarded to agencies in consecutive years; the grant cannot be used for office equipment, computers or furniture; the grant is limited to no more than \$25,000 towards wages; and for a state agency, the recipient cannot be awarded a grant exceeding \$75,000. Hence, the Recycling Assistance grant was not intended to establish ongoing programs such as YEP, despite the value of its services.

OVERVIEW

Although the Rehabilitation Environmental Action Plan Has Produced Significant Output, the Program Is Inefficient and the Primary Desired Outcomes Are Not Being Achieved.

The Performance Evaluation and Research Division (PERD) conducted a performance audit of the Rehabilitation Environmental Action Plan (REAP), established by West Virginia Code §22-15A to administer coordinated statewide litter control and recycling programs. This audit examines REAP's effectiveness and efficiency.

The REAP program is an integral part of the State's overall solid waste management program. The Legislature purposed to address solid waste management by establishing programs and plans based on the following waste management hierarchy:

- (1) **Source reduction.** -- This involves minimizing waste production and generation through product design, reduction of toxic constituents of solid waste and similar activities.
- (2) **Recycling, reuse and materials recovery.** -- This involves separating and recovering valuable materials from the waste stream, composting food and yard waste and marketing of recyclables.
- (3) **Landfilling.** -- To the maximum extent possible, this option should be reserved for nonrecyclables and other materials that cannot practically be managed in any other way. This is the lowest priority in the hierarchy and involves the waste management option of last resort (W. Va. Code §22C-4-1).

PERD finds that the REAP program has mixed results. While there is evidence of positive accomplishments through REAP, they are overshadowed by evidence of ineffectiveness and inefficiencies. The list below describes some of the positive aspects of REAP.

- The proper disposal of tires is promoted through legal drop-off events conducted each year.
- Recycling and litter control are occurring, open dumps and tire piles are being eliminated.
- Many volunteers and civil organizations statewide assist in litter control and recycling.
- Between \$1.5 and \$2 million in recycling grants are issued each year.
- The Department of Environmental Protection and the State Department of Education provide educational programs promoting recycling and litter control.

PERD finds that the REAP program has mixed results. While there is evidence of positive accomplishments through REAP, they are overshadowed by evidence of ineffectiveness and inefficiencies.

However, the following list describes evidence of ineffectiveness and inefficiencies.

- West Virginia’s per capita municipal solid waste (MSW) disposed in landfills shows a steady upward trend over the 2010-2018 period.
- A lack of progress in pollution prevention is indicated in cleaning a similar number of open dumps and re-trashed sites each year. It is common for the DEP to clean areas that have been re-trashed multiple times, and in several counties 20 to 35 percent of cleanup projects are re-trashed areas.
- Expenditures for cleaning open dumps often exceed revenues which requires the DEP to transfer funds from another fund.
- The cost of eliminating illegal dumps is costlier due to changes in procurement procedures.
- The State does not know its recycling rate.

Overall, PERD finds that REAP has not met the statutory intent of being an effective and efficient system of solid waste management (W. Va. 22-15A-1(g)). The causes for this are listed below.

- Local solid waste authorities have insufficient resources and lack incentives to be more effective in recycling and pollution prevention.
- The DEP has no goals for the REAP program, despite the Legislature’s desire for such goals (W. Va. §22-15A-1(f)).
- The Legislature mandated a recycling goal (W. Va. §22-15A-16), but the DEP has no evidence it attempted to measure or achieve the goal.
- The DEP does not adequately measure or report the effectiveness of the REAP program.
- The State does not have reporting requirements for recyclable tonnage, and other important data are not compiled to assist in an effective solid waste management plan.
- Internal controls over REAP’s output data are inadequate, which increases the risk of fraud and abuse, and makes it difficult to properly manage the program or establish goals and benchmarks.
- Changes in the DEP’s purchasing procedures for open dump remediation have significantly reduced the number of qualified contractors and have significantly increased cleanup costs.
- There have been questionable REAP expenditures by the DEP.

Overall Conclusions

The above-listed causes of ineffectiveness and inefficiencies indicate a reactionary system with no emphasis on measuring effectiveness or addressing the root causes that impede progress. Consequently, PERD concludes that major structural changes should be considered for a more effective solid waste management system. Maintaining REAP as a state-operated program will require the DEP to make significant changes involving establishing goals, compiling reliable outcome and output measures, seeking statutory reporting requirements, and measuring progress. However, more attention is needed in the area of pollution prevention which includes addressing the root causes at the local level. Therefore, the Legislature should also consider having some of the purposes of REAP come under the state Solid Waste Management Board and local solid waste authorities. This restructuring would include redistributing more solid waste assessment revenues to local solid waste authorities and having pollution prevention, eliminating open dumps, and recycling be managed more at the local level. Moreover, eliminating the state-level layer of REAP would allow state overhead costs associated with REAP to be available to local solid waste authorities.

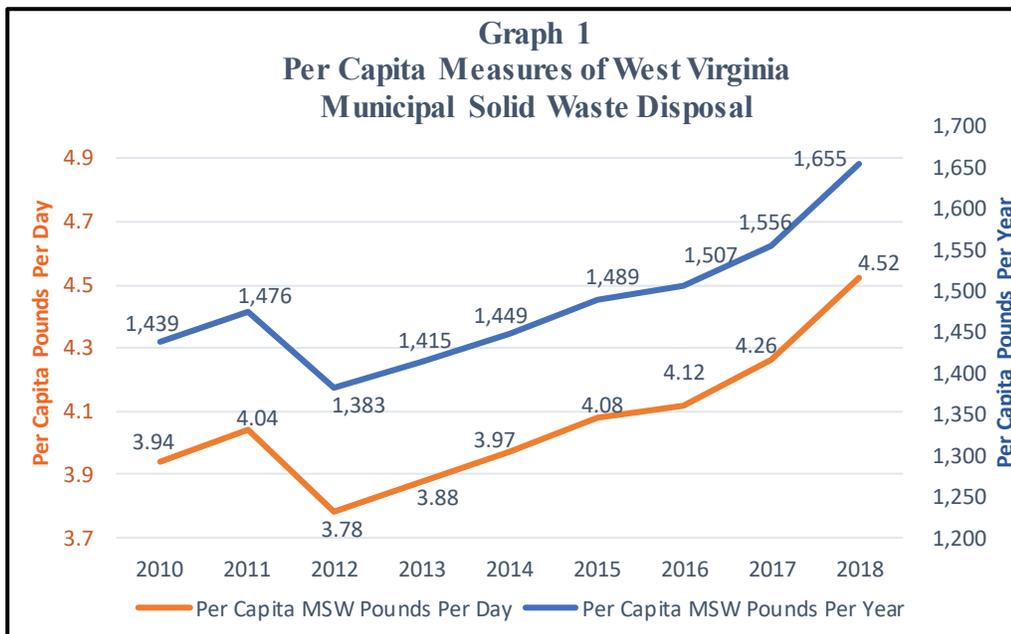
However, more attention is needed in the area of pollution prevention which includes addressing the root causes at the local level. Therefore, the Legislature should also consider having some of the purposes of REAP come under the state Solid Waste Management Board and local solid waste authorities.

ISSUE 1

Although REAP Has Produced Significant Output, It Has Not Been Effective in Pollution Prevention or Reducing Per Capita Municipal Solid Waste Disposed in Landfills.

The A. James Manchin Rehabilitation Environmental Action Plan (REAP), established within the Department of Environmental Protection (DEP) by West Virginia Code §22-15A, was created to administer coordinated statewide litter control and recycling programs. These programs are intended to encourage proper disposal of commercial and residential solid waste, eliminate open dumps and tire piles, and promote recycling through public awareness and recycling grants. Although the DEP effectively eliminates open dumps and tire piles, and provides recycling and litter control grants, outcome data in terms of municipal solid waste per capita disposed in landfills (in-state and surrounding state landfills) have been trending upward over the last nine years (see Graph 1 below).¹ Furthermore, the trend of illegal dumping has been flat over the past six fiscal years. Overall, REAP has been ineffective in reducing solid waste generation, which is the highest preference in the State’s waste management hierarchy. Primary causes for this ineffectiveness is that the DEP does not have performance goals or measures for the REAP program. In addition, structural changes are needed that include consideration for greater local-level responsibilities in pollution prevention and open dump

Overall, REAP has been ineffective in reducing solid waste generation, which is the highest preference in the State’s waste management hierarchy.



¹ Municipal solid waste consists of any household or commercial solid waste and any sludge from a waste treatment plant or water supply treatment plant (33 CSR 1, 2.79). The measure does not include out-of-state solid waste, industrial waste, construction/demolition waste, hazardous waste, waste tires, asbestos waste or Marcellus drilling mud.

cleanup, and redirecting solid waste assessment funds to the local level to employ more litter control officers and other pollution prevention initiatives.

The Audit Objectives

The objectives of this audit consist of determining the effectiveness and efficiency of the A. James Manchin Rehabilitation Environmental Action Plan (REAP) program. Issue 1 of this report discusses the effectiveness of REAP, while efficiency is discussed in Issue 2. The methodology to determine effectiveness involves examining outcome and output data. Outcomes are results or effects of a program that show the progress made in achieving the program's purpose or statutory mandate. Outputs represent the quantity of goods or services produced by a program. For the REAP program, an important outcome measure is West Virginia's per capita municipal solid waste (MSW) disposed in landfills. Reducing the state's per capita MSW is a measure the Legislature established statutorily for REAP. Output data, such as illegal dumps and tonnage eliminated, are also important not only as measures of REAP production and accomplishments, but in some cases they indirectly measure pollution prevention, which is also a statutory mandate for REAP.

The objectives of this audit consist of determining the effectiveness and efficiency of the A. James Manchin Rehabilitation Environmental Action Plan (REAP) program.

The Purpose of the Rehabilitation Environmental Action Plan

The REAP program was statutorily created during the 2005 legislative session (W. Va. Code §22-15A). The legislative intent was to consolidate litter control, open dump elimination and reclamation, waste tire cleanup and recycling programs under one program to be administered by the DEP. It was felt that having these programs under multiple state agencies was less efficient and effective than under one agency.

The REAP program was statutorily created during the 2005 legislative session (W. Va. Code §22-15A). The legislative intent was to consolidate litter control, open dump elimination and reclamation, waste tire cleanup and recycling programs under one program to be administered by the DEP.

The programs that were consolidated to form REAP are listed below. In 2005, the Litter Control and Recycling Programs were transferred to the DEP from the Division of Natural Resources, and the waste tire remediation program was transferred to the DEP from the Division of Highways.

❖ Litter Control and Recycling (§22-15A-3)

- Work with industry and local governments to accomplish litter control and recycling.
- Encourage and organize participation in voluntary litter control and recycling campaigns.
- Attract persons or industries that purchase, process or use recyclable materials.

- Increase public awareness of citizens' responsibilities toward the reduction of litter.
 - Cooperate with various agencies in enforcing pollution prevention in public and private areas of the state.
 - Award litter control grants to counties and municipalities to initiate and administer litter control programs.
 - The Department of Education in cooperation with the DEP shall distribute educational materials on proper solid waste disposal and incorporate such information into the curriculum of the public school system.
 - State agencies and local governments are authorized to establish recycling programs.
- ❖ **Pollution Prevention and Open Dumps (PPOD) (§22-15A-7)**
- Encourage proper disposal of commercial and residential solid waste, clean up illegal dumps and tire piles, and remediate affected area.
- ❖ **Waste Tire Remediation (§22-15A-10(a) and (g))**
- Remediate waste tire piles and properly dispose of waste tires removed from waste tire piles. Also receive passenger car and light truck waste tires at designated locations for proper disposal.
- ❖ **Covered Electronic Devices (CED) Takeback Program (22-15A-25)**
- Manufacturers of CEDs wishing to sell CEDs in the state must register with the DEP.
 - CED manufacturers are encouraged to establish CED takeback programs.
- ❖ **Grant Programs**
- Litter Control Matching Grants (§22-15A-3(f)).
 - Recycling Assistance Grants (§22-15A-19(h)(1)).
 - CED Recycling Grants (22-15A-25(d)).

Outcome Data Indicate West Virginia Per Capita Municipal Solid Waste Disposed in Landfills Has Been Increasing.

An important overarching outcome measure of REAP's effectiveness is West Virginia's per capita MSW being disposed in landfills. When REAP was created in 2005, the Legislature desired evidence of effectiveness in the program. It mandated that the DEP provide effectiveness reports to the President of the Senate and the Speaker of the House every five years. In addition, the Legislature mandated that by the

first day of January 2010, the goal of the State was to reduce the disposal of MSW by 50 percent of the amount of per capita solid waste disposed of in 1991 (W. Va. §22-15A-16). PERD asked the DEP if this goal was achieved. The agency could not verify the compliance or accomplishment of this statutory goal. Instead, the DEP gave the following response:

While the state's efforts to promote recycling and composting are paying off with a per capita reduction in those materials being landfilled, it is not clear that per capita solid waste figures have declined. The data necessary to determine the amount of solid waste generated by West Virginia residents and disposed of is not readily available as some quantity of solid waste is hauled out of state for disposal and there is not a reporting mechanism. Additionally, some solid waste generated outside of West Virginia is disposed of in state.

This response reveals an inadequate understanding of an important outcome measure. First, the DEP's Code of State Rules (CSR) §33-1-4.12.b requires monthly solid waste tonnage reports be submitted to the DEP by all solid waste landfills describing the type, amount and source of solid waste received, including each state. Solid waste generated from outside of West Virginia must be reported separately. Therefore, out-of-state solid waste disposed of in West Virginia does not complicate the ability to measure West Virginia's per capita MSW. Secondly, data on West Virginia's MSW exported to surrounding states can be obtained by request, and the Virginia Department of Environmental Quality provides annual reports on its website that lists the states of origin of MSW its landfills receive. Although West Virginia may export MSW and other waste beyond its border states, it is reasonable to assume that the large majority is transported to border state landfills. Therefore, acquiring data from surrounding states on MSW received from West Virginia is sufficient and appropriate for determining the state's per capita MSW.

Table 1 shows data on the number of tons of West Virginia MSW disposed in West Virginia landfills and in surrounding state landfills for calendar years (CY) 2010-2018. West Virginia's annual in-state MSW is compiled by the West Virginia Solid Waste Management Board (SWMB) from the monthly tonnage reports submitted by the state's landfills. The monthly tonnage reports require landfill operators to list separately various categories of waste. Drilling mud associated with Marcellus drilling activities is listed separately and is not included in MSW. There are two fee-exempt tonnage categories: one for "free day" tons and one for other fee-exempt tons. Free Day tonnage is the amount that landfill operators are statutorily required to accept from West Virginia residents on a monthly "free day" (W. Va. §22-15-7) and must report separately (CSR §33-1-14.12.b.3). PERD added Free Day tonnage in the MSW total since it consists of residential waste. Flood debris during a state

An important overarching outcome measure of REAP's effectiveness is West Virginia's per capita MSW being disposed in landfills.

While the state's efforts to promote recycling and composting are paying off with a per capita reduction in those materials being landfilled, it is not clear that per capita solid waste figures have declined.

of emergency are tax-exempt and should be included in the other fee-exempt category. PERD did not add tonnage from the other fee-exempt category in the MSW totals. Therefore, Marcellus mud waste and flood debris during a state of emergency are not included in the MSW tonnage totals.

PERD also obtained from surrounding states the amount of MSW they received from West Virginia. The data show that West-Virginia-generated MSW has ranged between 1.2 to 1.5 million tons over the 2010-2018 period. The largest amount of the state's exported MSW goes to Kentucky, followed by Pennsylvania and Ohio. Over the 2010 to 2018 period, West Virginia has exported between 17 to 23 percent of its total MSW to surrounding states.

Table 1
West Virginia MSW (in tons)
Disposed In-State and Exported to Surrounding States
CY 2010-2018

Calendar Year	WV In-State	KY	MD	OH	PA	VA	Total In-State and Exported MSW
2010	1,099,294	80,397	9,895	32,083	83,750	28,999	1,334,418
2011	1,118,224	82,897	10,201	38,358	87,244	32,730	1,369,654
2012	1,029,408	87,400	26,982	31,256	76,142	33,027	1,284,215
2013	1,067,810	99,757	28,904	49,965	50,958	14,005	1,311,399
2014	1,080,091	119,939	30,704	61,504	45,666	1,823	1,339,727
2015	1,111,193	126,840	32,206	46,201	46,670	8,365	1,371,475
2016	1,097,679	150,149	32,234	40,989	57,991	420	1,379,462
2017	1,106,484	124,879	33,830	75,095	73,177	116	1,413,581
2018	1,148,564	134,541	35,996	88,867	84,666	1,904	1,494,538

Sources: West Virginia Solid Waste Management Board, Annual West Virginia Landfill Tonnage Reports, 2010-2018; Kentucky Department of Environmental Protection, Division of Waste Management; Maryland Department of the Environment; Ohio Environmental Protection Agency, Division of Materials and Waste Management; Pennsylvania Department of Environmental Protection, Bureau of Waste Management; Virginia Department of Environmental Quality, calendar year reports for 2010 - 2018.

PERD obtained the state's population data from the U.S. Census Bureau in order to calculate West Virginia's per capita MSW. Graph 1 below shows that over the 2010-2018 period, West Virginia's per capita MSW disposed in landfills each year has increased steadily to 1,655 pounds in 2018. The daily average has increased correspondingly each year to a level of 4.52 pounds per day in 2018. The outcome data show an upward trend that has an average annual increase of 1.62 percent and

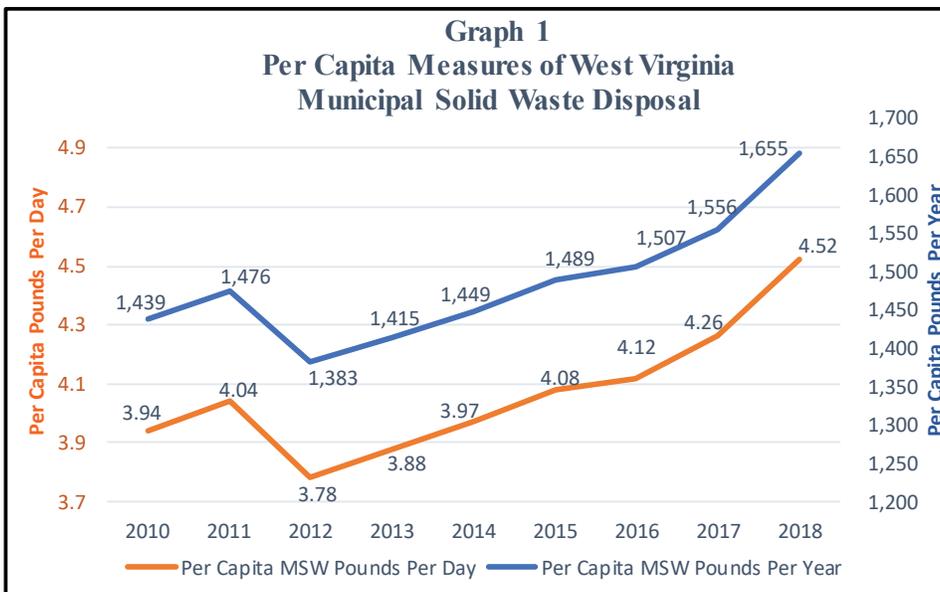
an overall increase of 13.7 percent for this period.

The upward trend is a measure of ineffectiveness in achieving the overall goals of source reductions of solid waste, increasing recycling, reuse and composting. Per capita MSW disposed in landfills is an important outcome measure that the DEP needs to compile and monitor. There is no evidence that the DEP complied with the statutory goal of reducing per capita disposal of MSW in landfills by 50 percent of 1991 levels.

Although the Legislative Auditor determines that per capita MSW is an important measure, an equally important measure for assessing the success of source reduction and recycling is determining the recycling rate. However, as will be discussed in another section of this report, there are no reporting requirements on recyclable tonnage to determine the recycling rate. The recycling rate and per capita MSW are complimentary measures. Improvements in the recycling rate will invariably be reflected to some extent by reductions in per capita MSW. Both are adequate performance measures, and both should be calculated and reported. The United States Environmental Protection Agency (EPA), California and Florida report both measures. Therefore, the Legislative Auditor concludes that **the Legislature should consider reestablishing the goal of reducing per capita disposal of MSW using 2010 as the benchmark. An appropriate time for completion could be the year 2025 and the percentage reduction could be modified to 25 percent instead of 50 percent, given the shorter timeframe.**

Graph 1 below shows that over the 2010-2018 period, West Virginia's per capita MSW disposed in landfills each year has increased steadily to 1,655 pounds in 2018.

Per capita MSW disposed in landfills is an important outcome measure that the DEP needs to compile and monitor.



West Virginia compares favorably with United States per capita measures for 2010 through 2017 as can be seen in Table 2.² West Virginia is below the national averages as reported by the EPA. However, the gap between the U.S. and West Virginia has narrowed in 2017.

Table 2
MSW Per Capita Measures
Pounds Per Day & Per Year
United States and West Virginia

	2010	2011	2012	2013	2014	2015	2016	2017
U.S.:								
MSW Pounds/Per Person/Per Day	4.45	4.40	4.38	4.40	4.44	4.48	4.53	4.51
MSW Pounds/Per Person/Per Year	1,624	1,606	1,603	1,606	1,621	1,635	1,658	1,646
West Virginia:								
MSW Pounds/Per Person/Per Day	3.94	4.04	3.78	3.88	3.97	4.08	4.12	4.26
MSW Pounds/Per Person/Per Year	1,439	1,476	1,383	1,415	1,449	1,489	1,507	1,556

Sources: U.S. data for MSW Pounds/Per Person/Per Day come from Advancing Sustainable Materials Management: 2017 Fact Sheet, United States Environmental Protection Agency. The same publication issued in previous years provided data for the years 2011 – 2014. Data for 2010 were referenced in the 2017 report.
U.S. MSW Pounds/Per Person/Per Year are calculated by PERD by multiplying EPA Per Day figures times the number of days in a year.
West Virginia MSW Pounds/Per Person/Per Year are calculated by PERD by dividing total West Virginia in-state and exported MSW to surrounding states by West Virginia total population as reported by the U.S. Census Bureau for 2010 through 2018 and multiplying the amount by a short ton (2,000 pounds).
West Virginia Pounds/Per Person/Per Day are calculated by PERD by dividing Pounds/Per Person/Per Year by the number of days in a year.

Most of the State’s Landfills Have High Life Expectancies.

Although West Virginia per capita MSW is increasing, most landfills in the state have relatively high estimated life expectancy. Table 3 shows that the state had 18 operational landfills in 2017. However, the Nicholas County landfill closed in June 2018 and was converted to a transfer station. In 2017, the 18 operational landfills accepted total tonnage amounting to 48 percent of their combined permitted capacity. The Charleston landfill in Kanawha County has the lowest life expectancy at 6 years, followed by the Pocahontas County landfill with 11 years life expectancy.

² The EPA has not issued 2018 per capita MSW data for the U.S. as of the writing of this audit report.

**Table 3
West Virginia Landfill Facilities
Status as of CY 2017**

Landfill Facility Name	County	Permitted Limit of Tons Per Month	Average Monthly Tonnage	Ratio of Average Monthly Tonnage to Permitted Monthly Tonnage	Estimated Life Expectancy
Charleston	Kanawha	24,157	17,010	70%	6 Years
Pocahontas County	Pocahontas	1,400	578	41%	11 Years
S & S	Harrison	9,999	4,662	47%	27 Years
Short Creek	Ohio	50,000	26,308	53%	36 Years
Brooke/Valero	Brooke	20,000	7,080	35%	42 Years
Wetzel	Wetzel	9,999	12,177	122%	42 Years
LCS	Berkeley	9,999	9,578	96%	46 Years
Northwestern	Wood	30,000	19,647	65%	50 Years
Tucker County	Tucker	9,999	6,093	61%	50 Years
Disposal Services	Putnam	20,000	6,920	35%	69 Years
Mercer County	Mercer	9,999	2,428	24%	100 Years
Nicholas County	Nicholas	9,999	2,543	25%	100 Yrs. (Closed)
Raleigh County	Raleigh	16,638	8,465	51%	100 Years
Meadowfill	Harrison	30,000	17,515	58%	114 Years
Greenbrier County	Greenbrier	5,500	3,424	62%	150 Years
Copper Ridge	McDowell	50,000	4,260	9%	479 Year
HAM	Monroe	9,999	8,618	86%	Not available
Sycamore	Putnam	20,000	5,697	28%	Not available

Sources: 2017 and 2019 West Virginia Solid Waste Management Plans, West Virginia Solid Waste Management Board.
 Yellow highlight – Privately owned landfill.
 Green highlight – Publicly owned landfill.

Output Data Show Significant Production but Illegal Dumping Is Not Declining, Suggesting More Effectiveness Is Needed in Pollution Prevention.

PERD finds that there are several positive accomplishments of REAP. Table 4 below shows a list of REAP output measures. Waste tires collected are the result of the Waste Tire Remediation program. This program has been successful in encouraging state residents to properly dispose of waste tires. Each year the DEP schedules at least one tire collection event within each county of the state. The program allows residents to properly dispose up to 10 passenger or light truck tires without

charge. Several counties have weekly or monthly collection days. This program has received hundreds of thousands of properly disposed waste tires. According to 2013-2017 DEP data provided for this audit, most waste tires collected (83.5 percent) came from legal drop-offs of tires at scheduled county locations. The remaining 16.5 percent came from illegal dumps or tire piles. Waste tires collected through legal drop-offs is an output measure that reflects effectiveness in pollution prevention which is an important component of REAP. Without these scheduled events, more tire piles would likely surface in the state for costly PPOD cleanups, potential health hazards and environmental damage.

Table 4 also shows that REAP, through its PPOD Program, has been effective in eradicating hundreds of open dumps, tire piles, cleaning streams and collecting thousands of tons of litter and waste each year. Eliminating open dumps are important because they are potential health and environmental hazards. Moreover, the West Virginia Make It Shine (MIS) Program encourages volunteers, businesses, local governments and community organizations to conduct cleanups throughout the state. According to DEP data, over the 2013-2017 period, 248 MIS projects have been conducted involving the cleanup of 344 illegal dumps, using over 5,700 volunteers. Volunteers also assist in other PPOD projects such as open dumps, stream cleanups and tire collections. The types of organizations that conduct cleanups are 4-H Clubs, Girl Scouts, Cub Scouts, fishing clubs, schools, community groups and organizations, and faith-based organizations. Table 4 also shows that the DEP has issued several million dollars in recycling and litter control grants.

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**Table 4
Annual REAP Output Measures
As Reported in the DEP 2016 Effectiveness Report
FY 2013-2017**

	2013	2014	2015	2016	2017
Dumps eradicated	1,443	1,158	1,457	1,273	1,419
Miles stream cleaned	182	180	180	200	435
Tons litter/waste collected	5,866	5,113	3,693	5,592	3,974
Tons scrap recycled	169	197	120	45	17
Appliances recycled	366	424	411	65	206
Waste tires collected	307,669	258,568	317,155	245,036	302,517
Tons office paper recycled	265	325	322	145	90
Recycling Grant Awards	\$1,425,000	\$1,952,239	\$1,722,573	\$2,200,000	\$1,856,210
CED Grants Awarded*	\$173,200	\$154,030	\$183,416	\$177,090	\$108,341
Litter Control Grants	\$60,530	\$63,195	\$54,518	\$71,696	\$65,662

Source: The Department of Environmental Protection. (The data for dumps eradicated, waste collected, and tire collected are unauditable.)

**CED stands for Covered Electronic Devices.*

In addition, the West Virginia Department of Education, in cooperation with the DEP, complies with statute by incorporating litter control and recycling goals in the curriculum of public schools. As required by W. Va. Code §22-15A-5(b), the Department of Education shares educational materials to schools that state the goals of litter control and proper disposal of solid waste, and how school students can contribute to achieving these goals. The Department of Education announces and encourages participation in events such as Earth Day, and programs sponsored by the West Virginia Recycling Coalition. The Department of Education also encourages students to nominate teachers for the DEP's Make It Shine Teacher of the Year Award. The DEP sponsors the West Virginia Youth Environmental Program and works with the Department of Education to encourage students to enroll in the program along with other youth groups to participate in environmental projects. The Department of Education also incorporates this information into the curriculum of the public school system as the law requires.

In addition, the West Virginia Department of Education, in cooperation with the DEP, complies with statute by incorporating litter control and recycling goals in the curriculum of public schools.

Output Data Indirectly Reveal Measures of Ineffectiveness in Pollution Prevention.

Although output data of above-mentioned Table 4 are important measures of work conducted, using output data to comply with the Legislature's requirement to report effectiveness is inadequate. In some cases, output data can indirectly measure effectiveness, while in other cases they do not. For example, while the amount of grants issued through the REAP program is significant, this does not indicate effectiveness in recycling or litter control. In order to determine the effectiveness in recycling, the State needs to know its recycling rate. However, there are no reporting mechanisms in place to estimate the State recycling rate. **According to the EPA, information about waste generation and disposal is an important foundation for solid waste management.**³

Therefore, if REAP is being effective in encouraging proper waste disposal, then a downward trend would be expected in the number of illegal dumps eradicated and the tons of illegally disposed waste collected.

Furthermore, although output data show the PPOD program has been productive in cleaning hundreds of open dumps, the program is also mandated to "encourage the proper disposal of commercial and residential solid waste" (W. Va. §22-15A-7(a)). Therefore, if REAP is being effective in encouraging proper waste disposal, then a downward trend would be expected in the number of illegal dumps eradicated and the tons of illegally disposed waste collected. The data for "dumps eradicated" in the 2016 Effectiveness Report consist of illegal dumps and legal tire drop-off events and other special events for legal disposal. Table 5 below isolates the data for illegal dumps and the amount of illegal tonnage as reported by DEP's PPOD database. There is a sharp downward trend in the tonnage collected from illegal dumps, with an average annual decrease of nearly 7.5 percent. A likely explanation is that illegal dumps do not contain as many waste tires due in large

³ *United States Environmental Protection Agency, Advancing Sustainable Materials Management: 2017 Fact Sheet, November 2019, 2.*

part to legal tire drop-off events. **Again, this reflects the effectiveness of pollution prevention efforts of the Waste Tire Remediation program.**

However, the number of illegal dumps cleaned each year, as shown in Table 5, is relatively flat and tends to be around 1,000 each year. It should be mentioned that PERD issued a report in 2005 on the PPOD program and found that the number of dumps cleaned in 2003 and 2004 was 1,164 and 1,022 respectively. Furthermore, PERD finds that the DEP has at any given time a backlog of dumps to be eliminated, counties also have lists or maps of dump sites that they have yet to clean, and in many cases illegal dump sites are soon re-trashed after a cleanup is completed. Re-trashed dump sites are discussed in more detail in Issue 2 of this report. **These factors lead to the conclusion that while the tire remediation program has been effective in pollution prevention of waste tires, REAP has been ineffective in encouraging proper disposal of other commercial and residential solid waste.**

**Table 5
PPOD Data on Illegal Dumps and Tonnage
FY 2013-2018**

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Total Number of Illegal Dumps Eradicated	1,221	983	1,391	1,031	1,016	958
Total Illegal Tonnage	1,905	1,936	1,848	1,763	1,201	1,390

Source: PERD analysis identifying illegal dumps and tonnage using the DEP's PPOD Database.

It should also be noted that according to DEP data, the number of cleanup volunteers has dropped substantially over the years for the MIS program as well as all PPOD cleanup projects. This is shown below in Table 6. Depending on the accuracy of the data, there may be a need to revitalize the MIS program.

**Table 6
Volunteers for MIS and All PPOD Cleanups
FY 2013-2017**

	2013	2014	2015	2016	2017
Number of MIS Volunteers	1,979	1,714	1,092	476	494
Total Volunteers for All PPOD Cleanups	3,792	2,560	1,900	1,251	1,071

Source: Environmental Resource Information System (ERIS), the West Virginia Department of Environmental Protection Agency.

Internal Controls Over the Agency's Output Data Are Inadequate.

At the start of the audit, DEP's internal auditors informed PERD that REAP output data in the Environmental Resource Information System (ERIS) were un-auditable. They concluded there was insufficient supporting documentation to verify the accuracy of the PPOD data. The causes for this deficiency were a lack of record retention and difficulties in matching project costs entered into the database with actual invoices. When a contractor finished a cleanup project, DEP regional managers received Stat Sheets with the relevant data for each project. The regional managers were discarding the Stat Sheets soon after the PPOD data were entered in ERIS. This was being done in violation of the State's Public Records Management and Preservation Act (W. Va. §5A-8). The DEP has since rectified this issue by establishing a record retention schedule. The difficulty in reconciling the cost of each project was due to costs coming from two or more sources, such as the contractor, the landfill facility or a waste tire monofill. Moreover, in many cases the contractor would combine the solid waste of multiple projects that were in close vicinity to each other and dispose of the waste in one load. Assigning the tonnage and disposal costs to each individual project was problematic and oftentimes required the PPOD regional managers to estimate the tonnage and costs per project. The internal auditors attempted to reconstruct a sample of PPOD projects to the exact amounts but could only do so in 22 of 60 projects. **Therefore, the internal auditors concluded that the PPOD data were un-auditable.**

REAP Output Data at Best Are Estimates of Production.

Although the PPOD database is un-auditable, this does not completely negate the actual work and solid waste collected. Although DEP's internal auditors were concerned with the financial integrity of the PPOD data, PERD was also concerned with the integrity of the data as performance measures. Consequently, PERD needed reasonable assurance in the accuracy of the number of PPOD dumps eliminated, the types of cleanups distinguished between legal and illegal disposals, the cleanup tonnage as well as the cost of the cleanups.

Therefore, PERD tested the output data by attempting to reconstruct a sample of 50 PPOD projects, 10 from each fiscal year of 2013-2017. PERD randomly selected expenditure data from the State's "Our Advanced Solution Integrated Systems" (OASIS) for Fund 3332, the Solid Waste Reclamation and Environmental Response Fund, established for PPOD projects. PERD attempted to match the OASIS purchase orders and invoices for Fund 3332 to associated PPOD projects listed in the ERIS database. The methodology and results are described in greater detail in Appendix D.

PERD found that on average, 84 percent of the projects in the OASIS sample matched projects listed in ERIS, and the project costs of the matches were 94.2 percent of the project costs listed in ERIS. Tonnage data were less reliable. Only 50 percent of the OASIS transactions had tonnage information listed on the invoices, but when tonnage data were listed, it matched 82.1 percent of the tonnage data in ERIS. PERD's sample also had 11 documents for legal tire drop-off events. All 11 documents in OASIS matched a tire collection event listed in ERIS. The costs for these tire collection events listed in OASIS were nearly 97 percent of the costs listed in ERIS. In some cases, invoices in OASIS listed either tire counts, tire tonnage or no tire data. In the cases where there were tire counts or tonnage, the data in OASIS matched over 70 percent of the tire counts or tonnage in ERIS.

PERD concludes that REAP output data are estimates with certain margins of error. Cleanup costs of individual projects are reasonably close to actual expenditures; nevertheless, the discrepancies represent inadequate internal controls and risk of fraud and abuse. **This is concerning and should be addressed by the agency.** Moreover, since the DEP has inadequate knowledge of how much is being spent from the PPOD Fund (Fund 3332), it is difficult to manage the financial resources of the program. Evidence shows that the DEP often runs into cash-flow problems as PPOD expenditures often exceed revenues. As a result, the agency periodically must transfer funds from another fund into the PPOD fund. This is discussed in greater detail in Issue 2 of this report.

Several Causes Are Identified in the Overall Ineffectiveness of REAP

Since the amount of per capita MSW going to landfills is increasing and illegal dumps are not declining, PERD finds that REAP has been ineffective in accomplishing major legislative objectives of the program. PERD evaluated various aspects of REAP to determine causes for its overall ineffectiveness. These causes are listed below.

Cause #1: No Goals Are Established for the REAP Program.

A contributing factor in the ineffectiveness of REAP is that the DEP does not have goals for the program. PERD asked the DEP if it has established measurable outcome goals consistent with either reducing the amount of solid waste disposal per capita, increasing the tonnage of materials recycled or any other outcome measure? The agency stated that it has not. The legislative findings and purposes in creating REAP are to “establish a program to promote pollution prevention and to eliminate and remediate open dumps.” Furthermore, the PPOD program within REAP is mandated to not only remediate open dumps but also

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A contributing factor in the ineffectiveness of REAP is that the DEP does not have goals for the program.

to “encourage the proper disposal of commercial and residential solid waste” (W. Va. §22-15A-7(a)). Therefore, output data on open dumps should show signs of reductions in the number of open dumps and illegal tonnage of solid waste if pollution prevention is occurring. Without outcome or output goals that are consistent with the statutory mandate of REAP, the program will not operate as intended and it will be unknown if the program is effective. **The DEP should measure the state’s per capita MSW and establish a goal for its reduction, and the agency should have a goal to reduce the number of illegal dumps occurring in the state.**

Therefore, output data on open dumps should show signs of reductions in the number of open dumps and illegal tonnage of solid waste if pollution prevention is occurring.

Cause #2: The DEP Does Not Compile Management Data to Measure Effectiveness or Progress of the REAP Program.

According to West Virginia Code 22-15A-5(e), the Secretary of the DEP is required to submit a report no later than March 1, 2006 and every five years thereafter to the Senate President and the House Speaker reporting the effectiveness of the REAP programs. Table 7 shows that the DEP did not submit an effectiveness report for March 1, 2006, and the last two required reports were submitted virtually two years past the due dates.

Dates Effectiveness Reports Were Due	Dates Effectiveness Reports Were Submitted
March 1, 2006	No Record of Submission
March 1, 2011	January 11, 2013
March 1, 2016	June 8, 2018
<i>Source: The Department of Environmental Protection, and W. Va. Code §22-15A-5(e) for due dates.</i>	

While it is important to report the accomplishments of a program, output data in many cases do not measure effectiveness.

The Effectiveness Reports that the DEP submits to the Legislature provide output data showing the production of REAP. While it is important to report the accomplishments of a program, output data in many cases do not measure effectiveness. **The DEP needs to compile outcome data to better measure the effectiveness of REAP.** Such data should include West Virginia per capita MSW disposed in landfills (in state and out of state), the recyclable tonnage and the state’s recycling rate, and the percentage of households for each county that subscribe to solid waste collection. This latter statistic would help identify counties that are more susceptible to illegal dumping and determine ways to

increase the percentages. By rule, common waste carriers are required to report their customer subscription list to the SWMB and local solid waste authorities. According to the Public Service Commission's legislative rule, Title 150, Series 9, section 6.5:

Every common carrier of solid waste shall, on an annual basis, provide a listing of its industrial, commercial and residential customers, including names and service addresses or, in the alternative, a listing of the names and addresses of non-subscribing waste generators in its service area, to each county or regional solid waste authority having jurisdiction in the carrier's operating territory and to the West Virginia Division of Environmental Protection Solid Waste Management Board. **The express purpose of this Rule is to assist such authorities in enforcing W. Va. Code 22C-4-10 and other applicable laws. [emphasis added]**⁴

The Public Service Commission (PSC) and the SWMB indicated that solid waste carriers are not in compliance with this reporting requirement, and no enforcement actions have been taken. The PSC acknowledged that motor carriers likely consider their customer lists proprietary and resist making customer information public. The SWMB informed PERD that maintaining customer lists could be difficult to keep updated because of frequent changes of residences. It should be noted that according to the SWMB's 2019 Solid Waste Management Plan, Lewis, Gilmer and Marshall Counties receive customer lists from its haulers to determine households that do not subscribe to collection services or are landfill customers. **Customer lists are an important enforcement tool and can assist in pollution prevention.**

It Is Important to Know the Percentage of Households With Waste Collection Services.

The PSC suggested that the rule could be amended to require motor carriers to provide only the annual customer count as a measure of county households with waste collection services. While obtaining customer lists from haulers may be difficult, some counties are receiving the information. The Legislative Auditor determines that customer counts would be useful to calculate county percentages of households with solid waste collection services; however, customer lists should be made available upon the request of local SWAs or the SWMB. **These reporting requirements for haulers should be strictly enforced by the PSC.**

⁴ West Virginia Code §22C-4-10 requires each person in the state occupying a residence or operating a business subscribe to and pay for solid waste collection services, or provide proper proof that a person disposes of solid waste in an approved solid waste facility at least once within every 30-day period.

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The Public Service Commission (PSC) and the SWMB indicated that solid waste carriers are not in compliance with this reporting requirement, and no enforcement actions have been taken.

The Legislative Auditor determines that customer counts would be useful to calculate county percentages of households with solid waste collection services; however, customer lists should be made available upon the request of local SWAs or the SWMB.

Cause #3: Limited Resources at the Local Level Hinder Progress in Pollution Prevention.

The Affordability of Solid Waste Collection Services Is Still an Issue.

As stated previously, the PPOD program has seen success in encouraging proper disposal of waste tires but has been less effective in promoting proper disposal of other solid waste. However, PERD finds that this lack of effectiveness can be attributed to insufficient attention given to pollution prevention in many places at the local level. The Legislature established county and regional solid waste authorities (local SWAs) to develop and implement litter and solid waste control plans and programs to reduce solid waste management problems. Illegal dumping is a local-level economic issue based on people's income, the cost of waste collection services and the level of enforcement at the local level. The Legislature recognized that the affordability of waste collection services would be an issue for many state residents. Therefore, to alleviate this problem, the Legislature mandated "Free Days" that landfill operators accept solid waste from West Virginia residents free of charge once a month (W. Va. §22-15-7). Also, the Legislature considered the feasibility of reducing solid waste collection fees to individuals who pay for such services, who receive public assistance and are limited in their ability to afford solid waste disposal (W. Va. Code §22C-4-10(c)). **No evidence is available that shows this study was conducted. The Legislature should consider re-commissioning a study that addresses the feasibility of reducing waste collection costs for low income residents.**

As stated previously, the PPOD program has seen success in encouraging proper disposal of waste tires but has been less effective in promoting proper disposal of other solid waste.

The issue of waste collection affordability has also been addressed at the local level. According to the PSC, Boone County formerly provided two transfer stations where county citizens could dispose their solid waste without charge.⁵ Citizens were required to transport their waste to the transfer stations because Boone County did not provide collection services to residents outside of the three municipalities that provided collections services. Boone County officials closed both transfer stations in June 2016 because it could no longer provide the free service due to a reduction in severance tax revenues and County Commission financial difficulties. **The Legislative Auditor recommends that the SWMB conduct a study on ways to improve the availability and affordability of solid waste disposal for rural residents.**

Pollution prevention can also be enhanced through the employment of full-time litter control officers (LCOs).

More Full-Time Litter Control Officers Are Needed.

Pollution prevention can also be enhanced through the employment of full-time litter control officers (LCOs). By law (W. Va. Code §7-1-3ff(c) (d)), county commissions may employ a LCO and they may use a law-enforcement officer to serve as its LCO. LCOs may be employed to prevent

⁵ A transfer station is a location or facility where solid waste is taken from collection vehicles and placed in other transportation units for transport to a landfill.

litter, cleanup open dumps and roadsides, and work with state, county and local law enforcement agencies to enforce litter laws and mandatory trash disposal regulations. LCOs may also coordinate cleanup efforts with state, local and community entities, and obtain inmate labor to assist in cleanups.

According to the DEP, only 13 counties in the state have LCOs (see Table 8 below). However, PERD finds that the DEP needs to revisit this information because it is incomplete and incorrect according to supporting information. PERD did not perform a complete search of all counties, but identified that the DEP lists several counties for which it does not have LCO information; yet, at least one of those counties (Mineral) has a LCO, and at least two counties (Berkeley and Nicholas) that have LCOs are listed by the DEP as not having one. **The DEP needs to compile accurate data on LCOs and it also needs to distinguish between full-time LCOs and those who have multiple duties. It should be a goal of the State to encourage the appropriate number of full-time LCOs be employed to facilitate pollution prevention.**

It should be a goal of the State to encourage the appropriate number of full-time LCOs be employed to facilitate pollution prevention.

**Table 8
County Litter Control Officers
as Listed by the DEP**

County	LCO Officer	County	LCO Officer
Barbour	No LCO	Mercer	1
Berkeley	No LCO	Mineral	
Boone	No LCO	Mingo	No LCO
Braxton	No LCO	Monongalia	2
Brooke	No LCO	Monroe	No LCO
Cabell	No LCO	Morgan	No LCO
Calhoun	No LCO	Nicholas	No LCO
Clay		Ohio	No LCO
Doddridge	No LCO	Pendleton	
Fayette	1	Pleasants	
Gilmer	No LCO	Pocahontas	
Grant	No LCO	Preston	1
Greenbrier	No LCO	Putnam	No LCO
Hampshire	No LCO	Raleigh	2
Hancock	No LCO	Randolph	
Hardy	No LCO	Ritchie	
Harrison		Roane	1
Jackson	No LCO	Summers	No LCO
Jefferson		Taylor	No LCO
Kanawha	1	Tyler	No LCO
Lewis	No LCO	Tucker	No LCO
Lincoln	No LCO	Upshur	No LCO
Logan*	1	Wayne	1
McDowell	1	Webster	No LCO
Marion	1	Wetzel	No LCO

Table 8 County Litter Control Officers as Listed by the DEP				
County	LCO Officer		County	LCO Officer
Marshall**	1		Wirt	No LCO
Mason	No LCO		Wood	
			Wyoming	1

*Source: West Virginia DEP.
*No LCO title but does issue citations.
**The LCO is a contact person but notifies sheriff to issue citations.*

Full-time LCOs can facilitate improved pollution prevention and in some cases conduct cleanups at a much lower cost than counties that do not have LCOs. Table 9 below shows the average cleanup costs per dump for select counties with full-time LCOs in comparison to regional and statewide averages. Raleigh and Wayne Counties are consistently below regional and state averages by significant amounts. Fayette and Wyoming Counties are at times well below regional and state averages as well. Raleigh and Wayne County have a relatively large number of dumps to clean. However, Raleigh County SWA (RCSWA) officials indicated that the high number of dumps and the low cleanup costs reflect its aggressive approach to litter control. The RCSWA’s LCOs make good use of work release and day report offenders which help keep cleanup costs low.

Full-time LCOs can facilitate improved pollution prevention and in some cases conduct cleanups at a much lower cost than counties that do not have LCOs.

Table 9 Average Cleanup Costs for Select Counties With Full-Time Litter Control Officers					
County	Average Cleanup Costs Per Dump				
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Fayette	\$600	\$152	\$634	\$365	\$571
Raleigh	\$96	\$188	\$299	\$285	\$223
Wayne	\$103	\$168	\$139	\$160	\$170
Wyoming	\$96	\$767	\$376	\$365	\$189
Region					
East Region	\$1,130	\$2,033	\$678	\$1,624	\$2,404
North Region	\$849	\$1,810	\$625	\$2,200	\$1,096
South Region	\$640	\$523	\$881	\$730	\$666
West Region	\$686	\$819	\$790	\$678	\$603
State Average	752	855	750	971	760

Source: PERD calculations based on West Virginia DEP data from ERIS.

Funds for Local SWAs Are Limited.

Some local SWAs that own operational solid waste facilities can assist in the employment of LCOs. For example, Raleigh County's SWA has an intergovernmental agreement with the Raleigh County Commission in which the county commission hires two full-time LCOs and the RCSWA reimburses the county commission for salaries and benefits. The RCSWA also pays for the officers' office space, uniforms, vehicles, and oversees their day-to-day activities. However, in the case of Fayette County SWA, which does not own an operational landfill, the County Commission provides financial assistance to the Fayette County SWA to employ its LCO. In the case of Mercer County SWA, the Mercer County Commission employs a full-time LCO. In other cases, LCOs are not full-time. They may have multiple responsibilities. For example, according to the SWMB's 2018 Performance Review of Region VIII SWA, Mineral County, which the DEP does not list as having a LCO, has two LCOs who also function as animal control officers. Kanawha County has a LCO who also is a Code Inspector. Other counties may have a law-enforcement officer serve as a LCO who may have other law-enforcement duties. Counties that do not have a LCO rely on either the Division of Natural Resources or the DEP to enforce litter complaints.

Employing LCOs is a challenge either for county commissions or local SWAs, and funding constraints are the main factors. A primary source of funds for local SWAs come from Solid Waste Assessment Fees imposed on each ton disposed in the state's landfills. The total amount of assessments fees imposed by the State equals \$8.25 per ton. In addition, local SWAs that have landfills in their county are statutorily authorized (W. Va. §7-5-22) to impose an additional solid waste assessment fee not to exceed \$0.50 per ton on the disposal of solid waste. The revenues from this additional fee may be used for administrative costs of the local SWA or for waste cleanups or litter control programs.

Figure 1 below shows that the distribution of the \$8.25 solid waste assessment fees goes to three state agencies: the DEP, the SWMB and the Division of Natural Resources (DNR). Most of the fees (\$6.75) goes to the DEP for various solid waste management programs. The DNR receives \$0.25 per ton for personal services and benefits for full-time conservation officers. The remaining \$1.25 per ton goes to the Solid Waste Planning Fund administered by the SWMB.

Local SWAs receive a portion of these solid waste assessments from the SWMB and from the DEP Recycling Assistance grants. By law (W. Va. §22C-4-30(h)), half (approximately \$0.63 per ton) of the Solid Waste Planning Fund is divided equally among each local SWA and distributed at least monthly. The annual total of monthly equal shares was \$24,346 for each SWA in fiscal year 2018. The remaining half of the Solid Waste Planning Fund (\$0.62 per ton) is expended by the SWMB

Other counties may have a law-enforcement officer serve as a LCO who may have other law-enforcement duties. Counties that do not have a LCO rely on either the Division of Natural Resources or the DEP to enforce litter complaints.

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for grants to local SWAs and the SWMB’s administrative expenses or other costs associated with implementing the purposes of solid waste management. The DEP is required to allocate proceeds from a \$1.00 per ton recycling assessment to local SWAs, counties, municipalities and other interested parties in the form of recycling assistance grants (W. Va. §22-15A-19(h)(1)).

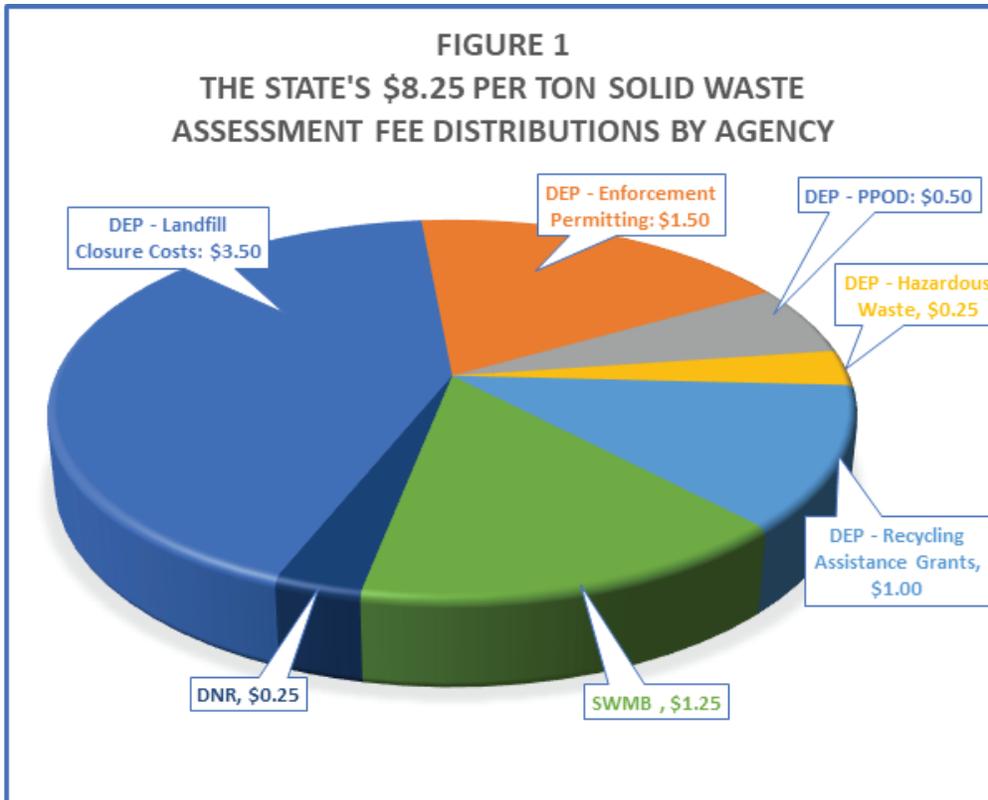


Chart 1 below shows the amounts local SWAs received in 2018 from the SWMB and the DEP Recycling Assistance grants. Chart 1 also shows that local SWAs may receive Covered Electronic Devices (CED) grants and Litter Control Matching grants from the DEP. Manufacturers of CEDs wishing to sell CEDs in the state must pay a registration fee to the DEP’s Covered Electronic Devices Takeback Fund. The DEP is required to use the registration fees to issues CED recycling grants to counties and municipalities (W. Va. §22-15A-25). Also, half of the proceeds from fines and civil penalties for litter violations goes to the local SWA in which violations occurred, and the other half goes to the Litter Control Fund administered by the DEP to issue matching grants to counties and municipalities for litter control programs (W. Va. §22-15A-3(f)).

As Chart 1 shows, the total amounts received by local SWAs from these sources vary significantly. Several local SWAs received only the equal share, and that may be the case for consecutive years. Other local SWAs may not receive much more than the equal portion. Other local SWAs received grants in each year, some of which were relatively large grants. It should be noted that local SWAs may receive other income from civil penalties, the sale of recyclables, and profits from the operations of a landfill. Nevertheless, the amounts received by many local SWAs cannot sustain viable recycling and litter control programs. Appendix G shows the same information for fiscal years 2016 and 2017.

Several local SWAs received only the equal share, and that may be the case for consecutive years. Other local SWAs may not receive much more than the equal portion.

Chart 1						
County	2018 Local SWA Equal Share	SWMB Grants	DEP Recycling Grants	DEP (CED) Recycling Grant	DEP Litter Control Matching Grants	2018 Totals Received
Barbour	\$ 24,346	\$ 5,500	\$ 23,500	\$ 9,500		\$ 62,846
Berkeley	\$ 24,346	\$ 8,200			\$ 3,000	\$ 35,546
Boone	\$ 24,346	\$ 7,250	\$ 67,038		\$ 1,500	\$ 100,134
Braxton	\$ 24,346	\$ 9,700	\$ 28,000			\$ 62,046
Brooke	\$ 24,346					\$ 24,346
Cabell	\$ 24,346	\$ 7,225				\$ 31,571
Calhoun	\$ 24,346	\$ 9,490	\$ 149,412			\$ 183,248
Clay	\$ 24,346	\$ 8,440				\$ 32,786
Doddridge	\$ 24,346	\$ 1,300				\$ 25,646
Fayette	\$ 24,346	\$ 7,500				\$ 31,846
Greenbrier	\$ 24,346	\$ 7,500				\$ 31,846
Hancock	\$ 24,346	\$ 10,000	\$ 51,224	\$ 5,850	\$ 1,600	\$ 93,020
Harrison	\$ 24,346					\$ 24,346
Jackson	\$ 24,346	\$ 6,000		\$ 10,000		\$ 40,346
Jefferson	\$ 24,346	\$ 6,400				\$ 30,746
Kanawha	\$ 24,346	\$ 9,000				\$ 33,346
Lincoln	\$ 24,346	\$ 10,000		\$ 7,863		\$ 42,209
Logan	\$ 24,346					\$ 24,346
McDowell	\$ 24,346	\$ 4,850				\$ 29,196
Marion	\$ 24,346	\$ 9,325	\$ 122,867		\$ 3,000	\$ 159,538
Marshall	\$ 24,346					\$ 24,346
Mason	\$ 24,346					\$ 24,346
Mercer	\$ 24,346	\$ 10,000				\$ 34,346
Mingo	\$ 24,346	\$ 17,000				\$ 41,346
Monongalia	\$ 24,346	\$ 5,450				\$ 29,796
Monroe	\$ 24,346	\$ 8,500				\$ 32,846
Morgan	\$ 24,346	\$ 9,385				\$ 33,731
Nicholas	\$ 24,346					\$ 24,346
Ohio	\$ 24,346	\$ 8,750		\$ 8,000		\$ 41,096
Pleasants	\$ 24,346	\$ 8,550	\$ 40,500	\$ 10,000		\$ 83,396
Pocahontas	\$ 24,346	\$ 8,000	\$ 49,650	\$ 8,500		\$ 90,496
Preston	\$ 24,346	\$ 16,560				\$ 40,906
Putnam	\$ 24,346	\$ 7,550				\$ 31,896
Raleigh	\$ 24,346	\$ 12,000			\$ 2,393	\$ 38,739
Randolph	\$ 24,346					\$ 24,346
Region VIII	\$ 121,730	\$ 10,000			\$ 2,525	\$ 134,255
Grant						\$ -
Hampshire						\$ -
Hardy						\$ -
Mineral						\$ -
Pendleton						\$ -
Regional SWA	\$ 48,692					\$ 48,692
Gilmer						\$ -
Lewis						\$ -
Ritchie	\$ 24,346			\$ 7,950		\$ 32,296
Roane	\$ 24,346					\$ 24,346
Summers	\$ 24,346	\$ 8,550				\$ 32,896
Taylor	\$ 24,346	\$ 4,650				\$ 28,996
Tyler	\$ 24,346					\$ 24,346
Tucker	\$ 24,346					\$ 24,346
Upshur	\$ 24,346	\$ 7,900	\$ 3,940			\$ 36,186
Wayne	\$ 24,346	\$ 8,500		\$ 5,320		\$ 38,166
Webster	\$ 24,346					\$ 24,346
Wetzel	\$ 24,346	\$ 7,400	\$ 37,880		\$ 3,000	\$ 72,626
Wirt	\$ 24,346	\$ 8,575				\$ 32,921
Wood	\$ 24,346					\$ 24,346
Wyoming	\$ 24,346	\$ 5,000			\$ 3,000	\$ 32,346
Total	\$1,339,047	\$300,000	\$574,011	\$ 72,983	\$ 20,018	\$2,306,059

Sources: Solid Waste Management Board, 2019 West Virginia Solid Waste Management Plan; West Virginia Department of Environmental Protection; PERD calculations of equal shares for local SWAs.

Nevertheless, the amounts received by many local SWAs cannot sustain viable recycling and litter control programs.

Redirecting Solid Waste Assessment Revenue to Local SWAs Should Be Considered.

During the 2020 legislative session, HB 4443 was introduced that would direct solid waste assessment fee revenues away from the Solid Waste Landfill Closure Assistance Program to local SWAs. Currently, a solid waste assessment fee is imposed in the amount of \$3.50 per ton of solid waste disposed in landfills and is deposited in the Landfill Closure Assistance Fund to assist in the proper closure of old landfills. The bill recognizes that most of the old landfills (28 of 35) have been properly remediated. The bill would reduce the \$3.50 assessment fee per ton to \$2.50 and a \$1.00 per ton assessment fee would be imposed and distributed to local SWAs on a per capita basis. The bill passed the House Committee on Government Organization but it did not come out of the House Finance Committee. **If the Legislature opposes redistributing Landfill Closure Assistance funds to local SWAs, it should consider alternative redistribution means to provide needed resources to improve recycling and pollution prevention.**

Compounding the difficulties of limited funds, some local SWAs with operational waste facilities are losing business to landfills in bordering states.

Some State Landfills Lose Business to Out-of-State Landfills.

Compounding the difficulties of limited funds, some local SWAs with operational waste facilities are losing business to landfills in bordering states. According to the SWMB, in 2017 West Virginia exported more solid waste than it imported which resulted in a positive net export balance of over 450,000 tons. This translates into a loss of over \$3.7 million in assessment fees to state landfills. The SWMB indicated that the city of Bluefield, West Virginia is currently transporting approximately 75 percent of its waste to Tazewell County, Virginia instead of the Mercer County SWA landfill. This is having a significant impact on Mercer County's landfill operations. The majority of solid waste collected in Cabell County is transported out of state. Each surrounding state receives solid waste from several West Virginia counties.

The majority of solid waste collected in Cabell County is transported out of state. Each surrounding state receives solid waste from several West Virginia counties.

This loss of revenue has raised concerns and interest has been expressed to implement "flow control," in which some local waste would be required to be disposed at local landfills. The PSC has statutory authority to impose flow control but must consider several factors in issuing a flow control order (W. Va. Code §24-2-1h(b)). Tucker County and Region VIII SWAs have petitioned the PSC for flow control to no avail. **The Legislature should consider having the PSC and the SWMB collaborate on re-evaluating the standards and criteria as they relate to flow control to determine if the process is effective and equitable.**

Cause #4: Local Solid Waste Authorities Have Difficulties Recycling Profitably.

With a relatively low volume of recyclable materials, combined with the rural nature of West Virginia and the volatility of the recyclable market prices, it is difficult to have many profitable recycling programs in the state. According to the SWMB, West Virginia's relatively low population density has a major impact on collection costs of recyclable materials. Successful recycling programs tend to have curbside pickup of recyclable materials; however, providing this service is cost prohibited in low population density areas. Moreover, the state has a low volume of recyclable materials and a lack of local markets for such materials. If small operations must ship recyclables to regional markets out of state, depending on prices and transportation costs, they may be giving the materials to transporters free of charge or possibly losing money because of high transport costs. Some operations can hold recyclable materials while they wait for market prices to rise, but some small operations cannot hold materials for long periods of time. Figure 2 below shows tons of mixed paper being held in inventory by the Raleigh County SWA until mixed paper prices increase, which at the time (2018) had no market value.

With a relatively low volume of recyclable materials, combined with the rural nature of West Virginia and the volatility of the recyclable market prices, it is difficult to have many profitable recycling programs in the state.

Figure 2
Raleigh County Solid Waste Authority
Mixed Paper in Inventory Until Prices Rise



Most Mandated Recycling Municipalities Earn No Income from Recycling.

The SWMB periodically conducts recycling surveys of local SWAs and the 14 municipalities that are statutorily mandated to provide curbside recycling. The fact that the SWMB must survey these entities to gather important recycling information and that some entities do not respond to the survey reflect the need for reporting requirements of this information. Table 10 shows the summary of survey responses from mandated municipalities. The survey indicates that most municipalities collected relatively small amounts of recyclables and earned little to no income from them. However, curbside recycling has significant costs for these municipalities. The city of Parkersburg collected the largest amount and earned the largest income. The city of Huntington is not in compliance with providing curbside recycling.

The fact that the SWMB must survey these entities to gather important recycling information and that some entities do not respond to the survey reflect the need for reporting requirements of this information.

In addition, the SWMB indicates that there are eight non-mandated municipalities that provide curbside recycling. These municipalities are Buckhannon, Kingwood, Philippi, Sutton, Marmet, Chesapeake, Belle and the Town of Wayne. No information on income earned from recycling was gathered for these municipalities.

Municipality	Tons	Income
Beckley	226	\$0.00
Bluefield	241	\$0.00
Charleston	838	\$11,028
Clarksburg*	---	---
Fairmont*	---	---
Huntington**	---	---
Martinsburg	59	\$0.00
Morgantown	776	\$0.00
Parkersburg	1,129	\$122,400
South Charleston	377	\$5,401
St. Albans	346	\$0.00
Vienna	342	\$0.00
Weirton	324	\$0.00
Wheeling	176	\$0.00
Totals	4,834	\$138,829
<i>Source: West Virginia Solid Waste Management Board, 2019 West Virginia Solid Waste Management Plan. *Did not respond to the survey. **Does not provide curbside recycling.</i>		

The survey indicates that most municipalities collected relatively small amounts of recyclables and earned little to no income from them.

West Virginia Relies Primarily on Drop-Offs for Recycling

The survey results for local SWAs are shown in Table 11. West Virginia’s recycling relies primarily on drop-offs, with 198 drop-off locations compared to 38 curbside programs. This is a 5:1 ratio. As stated previously, successful recycling programs tend to have curbside pickup of recyclable materials. Thirty-six (36) of the 50 SWAs have recycling programs, of which 26 earned recycling income and 10 did not. Nine (9) SWAs did not have recycling programs and five did not respond to the survey. Monongalia and Ohio SWAs discontinued their drop-off recycling programs. Tyler and Wetzel SWAs dropped their curbside recycling programs because of increasing costs. Wetzel SWA is transitioning to a drop-off program.

West Virginia’s recycling relies primarily on drop-offs, with 198 drop-off locations compared to 38 curbside programs.

**Table 11
2017 SWMB Recycling Survey Results
Local SWAs By Wasteshed**

Wasteshed	Drop-Offs	Curbside	Revenue
Wasteshed A: <i>Brooke, Hancock, Marshall, Ohio, Tyler, Wetzel</i>	12	2	\$14,460
Wasteshed B: <i>Barbour, Braxton, Clay, Doddridge, Gilmer, Harrison, Lewis, Marion, Monongalia, Preston, Randolph, Taylor, Tucker, Upshur</i>	27	11	\$137,144
Wasteshed C: <i>Jackson, Pleasants, Ritchie, Wirt, Wood</i>	8	7	\$221,757
Wasteshed E: <i>Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral Morgan, Pendleton</i>	17	4	\$163,584
Wasteshed F: <i>Greenbrier, Nicholas, Pocahontas, Webster</i>	7	2	\$379,608
Wasteshed G: <i>Fayette, McDowell, Mercer, Mingo, Monroe, Raleigh, Summers, Wyoming</i>	86	3	\$467,690
Wasteshed H: <i>Boone, Cabell, Calhoun, Kanawha, Lincoln, Logan, Mason, Putnam, Roane, Wayne</i>	41	9	\$101,375
Totals	198	38	\$1,485,620

Source: West Virginia Solid Waste Management Board, 2019 West Virginia Solid Waste Management Plan.

China’s Import Restrictions Made Recycling More Challenging.

Recycling became more challenging beginning in 2017 when China, a leading importer of recyclable materials, imposed import bans on post-consumer plastics and mixed paper. In addition, beginning in January 2018, other recyclable materials must meet stringent contamination levels before China will accepted them. Consequently, a

greater emphasis has been placed on the quality of recyclable materials in the United States. This focus on higher quality recyclables will require more public education to ensure consumers know the importance of quality. Moreover, since China banned mixed paper and other materials, U.S. municipalities must consider limiting the types of materials to collect.

Conclusions

When the Legislature enacted the REAP program in 2005, it desired REAP to be effective and efficient. One such measure it chose for effectiveness criteria was a reduction in the per capita MSW disposed in landfills (W. Va. §22-15A-16). There is no evidence that the DEP attempted to comply with this mandate and the data indicate that per capita MSW disposed in landfills has been increasing over the 2010-2018 period. Output data also suggest that the Waste Tire Remediation program has been successful in pollution prevention; however, more progress is needed in preventing pollution of other forms of solid waste.

The Legislative Auditor concludes that overall the REAP program has not been as effective as desired by the Legislature. Part of this ineffectiveness comes from the lack of establishing goals by the DEP. As a result, the REAP program has been primarily reactionary. Another cause for ineffectiveness is insufficient resources for local SWAs which impedes progress in recycling or pollution prevention. Municipalities that are mandated to provide curbside recycling do so at a loss. Until more resources can be made available to the local level, the REAP program will continue to operate in a reactionary capacity and the Legislature's effectiveness goals will not be accomplished.

Since part of the ineffectiveness of REAP stems from insufficient resources at the local level, the Legislative Auditor concludes that the Legislature should not only distribute a greater amount of solid waste assessment revenues to local SWAs, but also consider removing some REAP programs from the administration of the DEP. This would provide more direct local-level involvement, increase local-level incentives and allow the state overhead expenses to be distributed to the local level. The advantages of this restructuring are discussed in greater detail in Issue 2.

If the Legislature chooses to continue having REAP administered through the DEP, the Legislative Auditor makes the following recommendations. Some of these recommendations need to be implemented even if much of REAP is removed from DEP's oversight.

This focus on higher quality recyclables will require more public education to ensure consumers know the importance of quality.

Since part of the ineffectiveness of REAP stems from insufficient resources at the local level, the Legislative Auditor concludes that the Legislature should not only distribute a greater amount of solid waste assessment revenues to local SWAs, but also consider removing some REAP programs from the administration of the DEP.

Recommendations

1. *The DEP should establish goals that are consistent with the Legislature's intent for the REAP program. These goals should include:*
 - a. *reducing the state's per capita MSW disposed in landfills; and*
 - b. *reducing the number of illegal dumps generated in the state each year.*
2. *The DEP should correct the inadequacies of its internal controls pertaining to PPOD data to reduce the risk of fraud and abuse, and to improve the quality of its management information.*
3. *The DEP should compile necessary outcome data and performance measures in the administration of the REAP program. Such data should include:*
 - a. *per capita MSW disposed in landfills, including MSW disposed out of state;*
 - b. *the total number of illegal dumps cleaned each year;*
 - c. *the total tonnage of illegal dumps cleaned each year; and*
 - d. *the number of counties with litter control officers distinguished between full-time and those who have multiple responsibilities.*
4. *The Legislature should consider reestablishing and updating the recycling goal specified in W. Va. Code §22-15A-16 to reduce the disposal of per capita MSW in landfills. An appropriate benchmark would be 2010, the percentage could be reduced to 25 percent, and the time for completion could be the year 2025.*
5. *The Legislature should consider reestablishing W. Va. Code §22C-4-10(c) to require a feasibility study of reducing solid waste collection fees to individuals who pay for such services, who receive public assistance and are limited in their ability to afford solid waste disposal.*
6. *The Legislature should consider requiring all recycling centers to report the tonnage of recyclable materials collected each year to the Solid Waste Management Board to estimate the state recycling rate.*
7. *The Legislature should consider ways to increase the distribution of solid waste assessment fees to local SWAs to improve recycling and pollution prevention.*

8. *It should be the State's goal to encourage appropriate counties to employ full-time litter control officers.*
9. *The Public Service Commission should amend its rule CSR §150-9-6.5 to require all common carriers of solid waste to annually report their customer counts to the Solid Waste Management Board and local solid waste authorities. However, upon request by any local solid waste authority, common carriers should provide the names and service addresses of customers or, in the alternative, a list of the names and addresses of non-subscribing waste generators in their service areas.*
10. *The Solid Waste Management Board should estimate for each county the annual percentage of households, as estimated by the U.S. Census Bureau, that subscribe for solid waste collection services using subscription counts provided by common carriers of solid waste.*
11. *The Legislative Auditor recommends that the SWMB conduct a study on ways to improve the availability and affordability of solid waste disposal for rural residents.*
12. *The Legislature should consider having the PSC and the SWMB collaborate on re-evaluating the standards and criteria as they relate to flow control, pursuant to West Virginia Code §24-2-1h, to determine if the process is effective and equitable.*

ISSUE 2

Eliminating Illegal Dumps Has Become Costlier Under DEP Purchasing Procedures, the DEP Often Cleans Areas That Have Been Re-Trashed Multiple Times, and High Administrative Costs and Questionable Expenditures Are Diverting Funds From Intended Purposes.

Issue Summary

By law (W. Va. §5A-3-3(9)), construction and reclamation contracts entered into by the DEP are exempt from the State Purchasing Division's review, and therefore, such contracts go through the DEP's in-house purchasing procedures. Since September 2017, contracts for cleaning illegal dumps go through DEP purchasing because such work was determined to be construction/reclamation by the State Purchasing Division. As construction projects, contractors must meet additional standards to be eligible to bid on open dump contracts compared to purchasing procedures prior to September 2017. These new standards impose additional costs that small companies cannot afford. As a result, the number of PPOD contractors who are eligible to clean illegal dumps has gone from the pre-September 2017 number of 15, to the current number of 5. The lower number of PPOD contractors has resulted in higher costs to eliminate illegal dumps, due in large part to the longer distance contractors must travel to dump sites. Moreover, fewer dumps can be cleaned at any given time because of fewer contractors.

In addition, PERD finds that it is common for the DEP to clean illegal dumps in the same areas multiple times. This common occurrence represents inefficiencies and a lack of progress in pollution prevention. This also suggests systemic issues at the local level that have not been appropriately addressed by the REAP program.

Cleaning Illegal Dumps Has Become More Expensive With Fewer Qualified Contractors.

During the 2016 legislative session, the Legislature granted the DEP a partial exemption from the State Purchasing Division's examination of construction and reclamation contracts entered into by the DEP. Prior to the exemption, PPOD contracts were not processed as construction. However, the latest PPOD contract after the exemption was determined to qualify as construction by State Purchasing and the Division of Labor. This led to PPOD contracts coming under the exempt status and be processed through DEP's in-house purchasing procedures beginning in September 2017. However, cleanups of tire piles and tire collection events were not considered construction; therefore, those contracts are processed by the State Purchasing Division.

As a result, the number of PPOD contractors who are eligible to clean illegal dumps has gone from the pre-September 2017 number of 15, to the current number of 5.

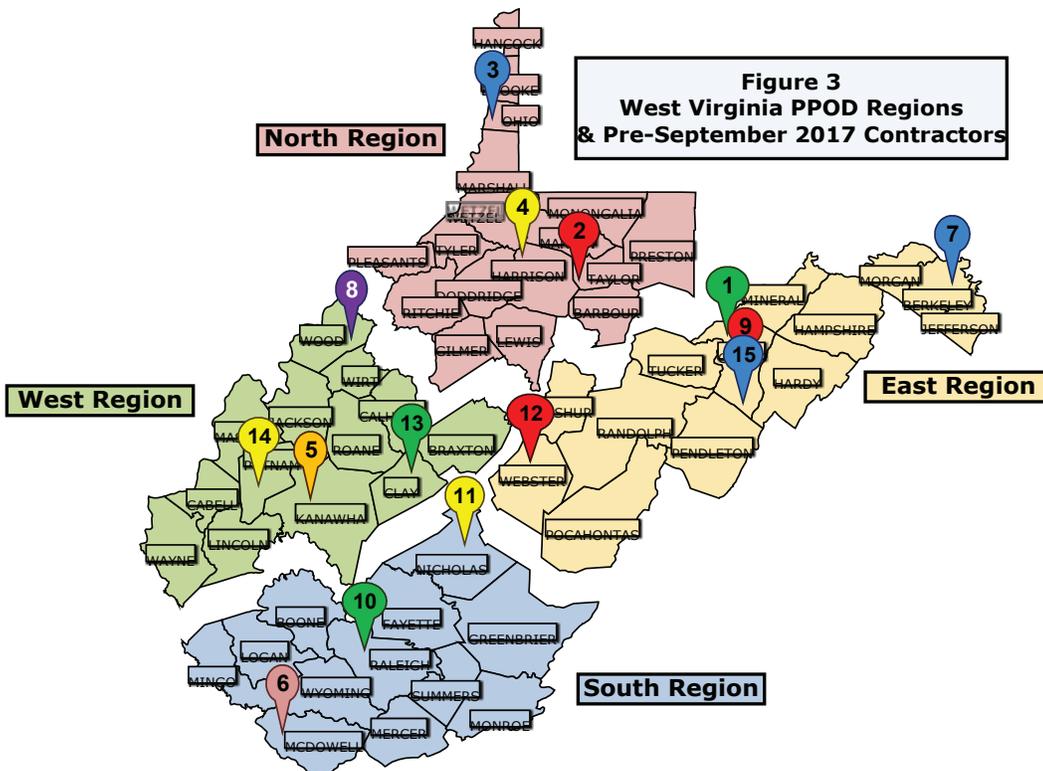
In addition, PERD finds that it is common for the DEP to clean illegal dumps in the same areas multiple times. This common occurrence represents inefficiencies and a lack of progress in pollution prevention.

One consequence of having PPOD contracts processed as construction is that additional requirements are imposed on PPOD contractors that were not imposed prior to September 2017. For example, government construction contracts by law (W. Va. Code §5-22-1(d)) require bid bonds by contractors. Bid (pre-bid) bonds are usually five percent of the bid amount which would be paid to the DEP if the vendor refused to do the work after he or she bid on a contract. In addition, contractors must now have a contractor license and a workers compensation certificate to be eligible to bid on PPOD contracts. These additional requirements to clean illegal dumps impose additional costs on contractors to qualify to bid on PPOD contracts, particularly acquiring pre-bid bonds. DEP officials also stated that they think requiring a contractor license may be disqualifying some vendors from bidding on PPOD contracts who previously did PPOD cleanups.

DEP officials also stated that they think requiring a contractor license may be disqualifying some vendors from bidding on PPOD contracts who previously did PPOD cleanups.

Figure 3 below shows the four PPOD regions established by the DEP. Figure 3 also shows the number of PPOD contractors who were used by the DEP to clean illegal dumps prior to September 2017. There were 15 contractors located in 13 counties dispersed throughout the state who formerly cleaned open dumps. Each region had at least three vendors to choose from, and the East Region had five vendors.

There were 15 contractors located in 13 counties dispersed throughout the state who formerly cleaned open dumps.

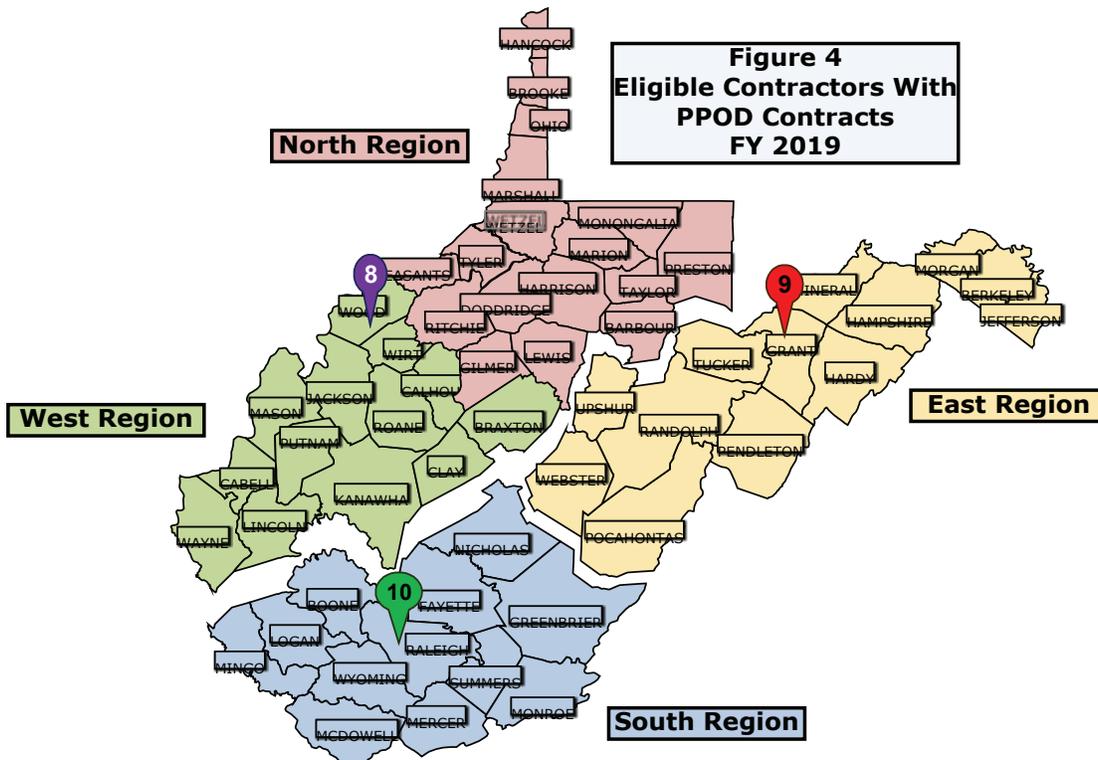


However, once PPOD contracts were treated as construction and the additional requirements were imposed starting in September 2017, the number of contractors eligible to bid on PPOD contracts decreased from 15 to 5, and of the 5 eligible contractors, only 3 were awarded contracts for FY 2019. This is shown in Figure 4. It should be noted that the contracts for each region had only one bidder, and a contractor located in Wood County was the only bidder for the West and the North Regions.

According to the DEP, under the post-September 2017 process, it takes longer to clean open dumps which can cause dumps to possibly become worse.

There are inefficiencies and ineffectiveness in having only one contractor for each region, and only one contractor serving the relatively large contiguous West and North Regions. First, the number of open dumps that can be cleaned in any period is limited by having only one contractor per region. **The DEP acknowledged that under the pre-September 2017 process, open dumps were cleaned faster because there were more vendors to employ.** According to the DEP, under the post-September 2017 process, it takes longer to clean open dumps which can cause dumps to possibly become worse. **The DEP also acknowledged that the cost of remediating open dumps is higher under the post-September 2017 process.** A primary reason for the higher cost is the longer travel distance to each dump site when a region is served by only one contractor. Under the current PPOD contracts, contractors may charge a rate per mile for transportation of equipment to the open dump and back to the vendor’s office. The per mile rate may be charged for each truck that is authorized for use in the contracted work directive.

The DEP acknowledged that under the pre-September 2017 process, open dumps were cleaned faster because there were more vendors to employ.



In order to estimate the cost differential between the pre and post September 2017 cleanup process, PERD compared contractor costs to clean open dumps between the two procurement procedures using FY 2018 and 2019 data from the State’s “Our Advanced Solution Integrated Systems” (OASIS) for the PPOD fund. The data used for pre-September 2017 come from cleanups that were completed towards the end of FY 2017 but were paid in FY 2018, and many cleanups were completed early in FY 2018 but prior to September 2017. All cleanups in FY 2019 were under the revised procurement procedures.

Table 12 shows the difference in cleanup costs between the two procurement processes. There is not much difference in cost for the West and North regions which are under one contractor. Despite the relatively long distances this vendor travels from his place of business in Parkersburg, West Virginia, the contractor has kept costs close to the cost of the previous system by cleaning multiple dumps per project. However, the East and South regions have significantly higher average cost per dump compared to the previous procurement process. The cost differential in the South region is nearly \$3,000 more per dump, and it is over \$11,000 more in the East region.

Although the cost differential in the East region is based on only two cleanup projects for the post-September 2017 period, it is still reflective of the higher cost of classifying open dump cleanups as construction and reclamation. When the first solicitation was released for North and East region PPOD cleanups as construction contracts, only two contractors bid on each contract. In each case, one of the contractors was disqualified and the same contractor was awarded both the East and North contracts. However, the awarded-contractor’s bid for the East region was more than double the disqualified contractor’s bid (\$810,000 to \$380,600), and the same awarded-contractor’s bid for the North region was more than four times the disqualified contractor’s bid (\$810,500 to \$199,920). The DEP decided to use the awarded-contractor for only two illegal cleanup projects in the East region and the awarded-contractor was not used in any cleanup projects in the North region according to OASIS data. The 12 cleanup projects in the North region during the post-September 2017 period were completed under a new contract that had a sole bidder with a bid of \$415,000, nearly 50 percent lower than the previous contractor.

Having illegal dump remediation classified as construction/reclamation has led to the State incurring higher cleanup costs due in large part to a limited number of qualified contractors and greater travel distances. This analysis shows that in order for PPOD projects to be conducted at the lower pre-September 2017 costs, contractors will have to clean several dumps per project as shown in Table 12. However, even with a larger number of dumps remediated per project, the costs can still be much higher than the previous procurement process, as can be seen in the South region. Moreover, with only one contractor per region, the

However, the East and South regions have significantly higher average cost per dump compared to the previous procurement process. The cost differential in the South region is nearly \$3,000 more per dump, and it is over \$11,000 more in the East region.

Having illegal dump remediation classified as construction/reclamation has led to the State incurring higher cleanup costs due in large part to a limited number of qualified contractors and greater travel distances.

timeliness of cleaning illegal dumps will invariably suffer. It is not clear if the DEP can return to the previous procurement process for PPOD cleanups. **However, the effects of the current procurement process warrant consideration of giving local SWAs the funds to remediate illegal dumps using the larger number of contractors who were used previously.**

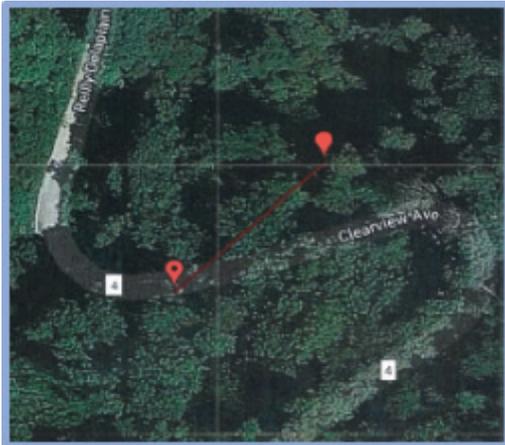
Table 12
Average Illegal Dump Cleanups Cost
Pre and Post-September 2017 Procurement Processes
FY 2018 and 2019 Data

	Total Cost	Number of Projects	Number of Dumps	Average Cost Per Dump	Avg. Cost Differential
West Region					
Pre-Sept 2017	\$78,454	62	76	\$1,032	
Post-Sept 2017	\$250,154	53	188	\$1,330	\$298
East Region					
Pre-Sept 2017	\$89,730	42	42	\$2,136	
Post-Sept 2017	\$39,622	2	3	\$13,207	\$11,071
North Region					
Pre-Sept 2017	\$30,566	16	20	\$1,528	
Post-Sept 2017	\$131,638	12	91	1,446	-\$82
South Region					
Pre-Sept 2017	\$87,948	47	49	\$1,794	
Post-Sept 2017	\$193,228	16	42	\$4,600	\$2,806

Source: PERD analysis of data from OASIS for the PPOD fund (3332).

Areas Are Often Cleaned Multiple Times Due to Re-Trashing.

The inefficiencies of REAP are also revealed in the frequency in which the DEP re-cleans the same areas multiple times. This finding was also cited in a 2005 PERD report. Below are satellite photos of areas in each region that were re-trashed multiple times after previous cleanups. The table beside each photo details the date of each cleanup, the associated cost and the distance between the current and previous cleanup spots. These are a few examples. Other examples are shown in Appendix E. In some cases, the DEP is cleaning a re-trashed area a month after a cleanup (see Ohio County in the North Region and Kanawha County in the West Region) or several months later, and an area may have been recleaned as many as five times over a one to two-year period, with costs ranging between \$2,000 to \$3,000 for each cleanup.



North Region – Ohio County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
2-10-2013	\$2,936	---
12-30-2013	\$2,445	182 Ft.
1-30-2014	\$3,034	109 Ft.
12-25-2014	\$2,122	171 Ft.
12-25-2015	\$2,172	139 Ft.



South Region – Boone County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
8-8-2015	\$2,509	---
12-16-2015	\$2,406	94 Ft.
1-25-2017	\$2,206	69 Ft.



East Region – Webster County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
11-7-2014	\$2,598	---
9-16-2015	\$2,565	19 Ft.
3-18-2017	\$2,000	6 Ft.



West Region – Kanawha County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
10-23-2012	\$2,400	---
11-21-2012	\$2,613	0 Ft.
11-12-2013	\$1,087	55 Ft.
9-18-2014	\$1,300	16 Ft.
4-21-2016	\$1,268	38 Ft.

Overall, PERD estimates that on average 20 percent of REAP cleanup projects completed from FY 2013 to FY 2017 were re-trashed areas within 300 feet of each other (see Table 13 below). PERD also calculated the proximity between current and previous dump sites up to 200 and 100 feet and found the percentages of re-trashed dump sites were 17.8 and 13.8 respectively. Three hundred feet is an appropriate distance to define a re-trashed dump site because an open dump can be large enough to overlap a previous site 300 or more feet away.

Overall, PERD estimates that on average 20 percent of REAP cleanup projects completed from FY 2013 to FY 2017 were re-trashed areas within 300 feet of each other (see Table 13 below).

However, several counties had re-trashed percentages between 20 and 38 percent. Some counties make use of the Make It Shine program by which local volunteers visit the same areas to cleanup. Other counties have litter control officers who see the need to revisit areas for cleanups. The cost to clean re-trashed areas may be relatively low, but in many cases the costs can be thousands of dollars. PERD compiled the total cost of cleaning re-trashed areas within 300 feet of each other and found it to be \$579,827 for the five-year period. This is an annual average of \$115,965, or 12.5 percent of the total annual cost to clean illegal disposal of solid waste.

While cleaning open dump sites multiple times is inefficient, it also represents ineffectiveness in pollution prevention. Satellite images show that re-trashed areas are often in wooded areas or near major roadways. This indicates that people are still challenged to legally dispose of solid waste.

While cleaning open dump sites multiple times is inefficient, it also represents ineffectiveness in pollution prevention. Satellite images show that re-trashed areas are often in wooded areas or near major roadways. This indicates that people are still challenged to legally dispose of solid waste. This further suggests that for many people the cost of legal disposal is perceived to be higher than the cost and risks of illegal disposal. There are systemic issues at the local level that are not being addressed and that are more prevalent in certain counties than in others. This is discussed in greater detail in Issue 1.

Table 13
Percentage of Dumps Re-Trashed Up to 300
Feet from the Previous Dump Site
FY 2013 - 2017*

	Total Number of Completed Projects	Up to 300 Feet from Previous Dump Site	Re-trashed Percentage
Barbour	26	0	0.0%
Berkeley	36	4	11.1%
Boone	116	31	26.7%
Braxton	37	2	5.4%
Brooke	9	0	0.0%
Cabell	103	24	23.3%
Calhoun	7	0	0.0%
Clay	35	2	5.7%
Doddridge	1	0	0.0%
Fayette	210	57	27.1%
Gilmer	22	0	0.0%
Grant	16	0	0.0%
Greenbrier	62	10	16.1%
Hampshire	27	2	7.4%
Hancock	12	2	16.7%
Hardy	12	0	0.0%
Harrison	39	0	0.0%
Jackson	25	2	8.0%
Jefferson	28	10	35.7%
Kanawha	256	52	20.3%
Lewis	14	2	14.3%
Lincoln	120	14	11.7%
Logan	49	11	22.4%
Marion	53	3	5.7%
Marshall	32	2	6.3%
Mason	14	0	0.0%
McDowell	74	15	20.3%
Mercer	82	7	8.5%
Mineral	20	0	0.0%
Mingo	37	0	0.0%
Monongalia	50	6	12.0%
Monroe	34	2	5.9%

Table 13 Percentage of Dumps Re-Trashed Up to 300 Feet from the Previous Dump Site FY 2013 - 2017*			
	Total Number of Completed Projects	Up to 300 Feet from Previous Dump Site	Re-trashed Percentage
Morgan	13	5	38.5%
Nicholas	250	35	14.0%
Ohio	24	7	29.2%
Pendleton	16	0	0.0%
Pleasants	9	0	0.0%
Pocahontas	19	0	0.0%
Preston	62	4	6.5%
Putnam	79	20	25.3%
Raleigh	707	214	30.3%
Randolph	54	0	0.0%
Ritchie	19	3	15.8%
Roane	23	0	0.0%
Summers	47	4	8.5%
Taylor	12	2	16.7%
Tucker	9	2	22.2%
Tyler	11	0	0.0%
Upshur	25	2	8.0%
Wayne	481	126	26.2%
Webster	83	12	14.5%
Wetzel	18	0	0.0%
Wirt	19	0	0.0%
Wood	79	4	5.1%
Wyoming	346	117	33.8%
Totals	4,063	817	20.1%
<i>Source: PERD analysis of the DEP's PPOD data. * The total number of completed cleanup projects for "Dumps" includes open dumps, tire piles, Make It Shine projects, and stream cleanups. Tire collection events for legal disposal are excluded.</i>			

High Cleanup Costs and Inadequate Internal Controls Lead to Expenditures Exceeding Revenues.

The cleanup costs for many projects can be costly, and since the DEP has inadequate internal controls over PPOD management information, as mentioned in Issue 1, it often has insufficient knowledge of how much is being spent from the PPOD Fund. As a result, the DEP frequently has cash-flow problems as expenditures routinely exceed revenues. Table 14 shows total revenues and expenditures for the PPOD Fund for 2013 through 2018. The PPOD fund receives revenue from waste assessment fees imposed at landfills, reimbursements for tire remediation from the Division of Highways, and fines and penalties. Expenditures exceeded revenues in three of the six years (fiscal years 2013, 2016 and 2017) and were close to revenue in the other years.

Table 14
Total PPOD Revenues and Expenditures
FY 2013 – FY 2018

Fiscal Year	Total PPOD Revenues	Total PPOD Expenditures	Operating Fund Transfers to PPOD Fund	Ending Cash Balance in PPOD Fund	Ending Cash Balance Without Operating Fund Transfers
2013	\$2,021,945	\$2,392,746	\$300,000	\$95,922	-204,077
2014	\$2,246,743	\$2,235,952	---	\$106,713	-193,286
2015	\$2,802,361	\$2,754,811	\$150,000	\$251,015	-145,736
2016	\$2,255,883	\$2,843,005	\$434,000	\$97,893	-732,858
2017	\$2,125,030	\$3,109,034	\$1,000,000	\$113,889	-1,716,862
2018	\$2,379,150	\$2,374,471	\$290,000	\$408,568	-1,712,183

Sources: OASIS reports (WV-FIN-BC-004; and WV-FIN-GL-064) for fiscal years 2015-2018; and Fund Balances, Revenue and Disbursements for Special Revenue, State Road Fund, Lottery Funds and Federal Funds, Fiscal Years 2012-2014, Legislative Auditor's Office, Budget Division.

Since end-of-cash balances for the PPOD fund have been relatively low, the fund has had to receive operating fund transfers from the Solid Waste Enforcement Fund. These operating fund transfers began in FY 2012. In a memo from then Cabinet Secretary Randy Huffman, the request was made to the DEP Budget Section that due to unexplained reasons, the PPOD fund has experienced low cash balances since FY 2011, and it was determined that:

...this fund will continue to have cash balance issues if a transfer is not made periodically from the Solid Waste Enforcement Fund (3333). Based on this analysis, we have calculated a transfer of \$75,000 should be made every

Since end-of-cash balances for the PPOD fund have been relatively low, the fund has had to receive operating fund transfers from the Solid Waste Enforcement Fund.

October and then another \$75,000 in April to properly maintain work associated with this fund.

Over the 2013-2018 period, the DEP has transferred over \$2.1 million to keep the PPOD Fund with a positive cash balance (see Table 14 above). Without these periodic transfers, the PPOD fund would have a deficit of over \$1.7 million.

Questionable Expenditures from the PPOD Fund Contribute to the Cash-Flow Problems.

Table 15 lists several questionable expenditures from the PPOD fund totaling over \$1.2 million. The expenditures to the Kanawha County and Calhoun County SWAs were issued as grants for recycling. The DEP provided PERD a copy of the required title for the equipment purchased by Kanawha County SWA. PERD did not audit the grants or their effectiveness. According to legislative rule 33 CSR 10, Section 7.1, an applicant for the Recycling Assistance Grant Program may receive one grant every other year and the maximum that may be received in a grant for a County SWA is \$150,000. Kanawha County SWA received two grants in FY 2016, and one was in excess of the \$150,000 grant limit. Given the cashflow problems the PPOD fund has, it is questionable to spend nearly \$235,000 from the PPOD fund instead of the Recycling Assistance Grant Program.

Over the 2013-2018 period, the DEP has transferred over \$2.1 million to keep the PPOD Fund with a positive cash balance (see Table 14 above).

The DEP Has Insufficient Documentation on How a \$1 Million Grant Was Spent by a Non-Profit Grantee.

The stipulations of the \$1 million dollar grant to the Human Resource Development Foundation, Inc. (HRDF), as shown in Table 15, are as follows:

- Total Grant Award - \$1,000,000 distributed as quarterly payments of \$250,000.
- Purpose: “To hire temporary workers for clean-up activities and contractor/contractors for debris removal in District 4 comprised of Mingo, Logan, and Boone Counties.”
- Performance Period: October 1, 2016 - September 30, 2017.
- First quarterly payment made after Notice of Award was signed. The second, third and fourth quarter payments would be contingent on submission of quarterly reports.
- Follow the rules of the Recycling Assistance Grant Program, CSR §33-10, sections 12.3 requires the grantee to submit an independent audit report to test whether the grant was spent as intended, and section 12.10 requires the title on any

Given the cashflow problems the PPOD fund has, it is questionable to spend nearly \$235,000 from the PPOD fund instead of the Recycling Assistance Grant Program.

equipment purchased with the grant be submitted to the DEP making it the first lienholder of the equipment.

**Table 15
Questionable Expenditures from the PPOD Fund**

Fiscal Year	Agency	Purpose	Grant Amount
2016	Kanawha County Solid Waste Authority	Purchase Recycling Roll-off Truck, 40 foot Storage Containers, Install electrical service at recycling facility	\$178,000
2016	Kanawha County Solid Waste Authority	Pay operating expenses at recycling facility.	\$25,000
2016	Calhoun County Solid Waste Authority	Assist in paying closing cost on recycling facility and purchase a baler.	\$31,550
2017	Human Resource Development Foundation, Inc.	Hire workers and contractors for clean-up in Mingo, Logan and Boone Counties.	\$1,000,000
Total			\$1,234,550

Source: DEP transactions as reported in OASIS.

When PERD requested the appropriate documentation for the HRDF grant, the DEP provided copies of the non-profit’s 2017 and 2018 consolidated financial statements. **The financial statements report the receipt of the grant and the total amount spent, but they do not attest that the money was spent as intended.** The HRDF also provided the DEP with a final report with a one-page narrative and numerous photographs of work conducted. Also, the HRDF submitted a final expenditures report listing various expenditures totaling nearly \$1 million. Finally, the DEP provided PERD with a fourth quarter report from the HRDF for work done in Boone, Logan and Mingo Counties. The second and third quarter reports that were required prior to each quarterly grant payment were not provided to PERD. It is also not known if the HRDF purchased equipment that would require it to submit the title pursuant to section 12.10 of legislative rule CSR §33-10.

When PERD requested the appropriate documentation for the HRDF grant, the DEP provided copies of the non-profit’s 2017 and 2018 consolidated financial statements. The financial statements report the receipt of the grant and the total amount spent, but they do not attest that the money was spent as intended.

Furthermore, PERD examined the PPOD database for cleanup projects conducted by the HRDF during the performance period of October 1, 2016 and September 30, 2017. PERD identified 77 dumps cleaned by the HRDF in the performance period in the amount of \$87,933 (see Table 16 below). However, most of these dumps were cleaned in counties not specified in the grant, and only nine open dumps were eliminated in the three counties referred in the grant (Boone, Logan

and Mingo). Moreover, the cost of these cleanups was paid for by the State with PPOD funds; however, the grant indicates that workers and contractors were to be hired and paid with grant funds. The evidence suggests that the cleanup projects in Table 16 were not part of the grant. **If this is the case, it raises the question why the DEP did not include the cleanup projects, dates, locations, and tonnage derived from the HRDF grant in its database like other cleanup projects?** Although the HRDF provided a narrative and photos indicating significant work conducted in the three counties, the DEP does not have an independent report stating that the \$1 million grant was spent as intended, second and third quarter reports were not provided and the DEP did not compile any data on HRDF cleanup projects resulting from the grant.

County	Number of Dumps Cleaned	Total Costs
Boone	1	\$110
Clay	10	\$11,413
Fayette	4	\$168
Greenbrier	7	\$10,804
Kanawha	28	\$25,036
Logan	6	\$2,004
Mingo	2	\$1,583
Nicholas	1	\$724
Roane	1	\$890
Summers	17	\$35,199
Totals	77	\$87,933

Source: PERD analysis of PPOD data provided by the DEP.

Although the HRDF provided a narrative and photos indicating significant work conducted in the three counties, the DEP does not have an independent report stating that the \$1 million grant was spent as intended, second and third quarter reports were not provided and the DEP did not compile any data on HRDF cleanup projects resulting from the grant.

Under the agreement of the grant, the HRDF received four quarterly payments, three were paid in FY 2017 and the fourth quarterly payment was made in August 2017, which is FY 2018. A review by the Legislative Auditor's Legislative Services Division indicates that since the last quarterly payment was made by the DEP in HRDF's 2018 fiscal year, that it has until June 30, 2020 to submit the required independent report to determine if the grant was spent as intended. PERD concludes that if the HRDF does not submit the required independent report by June 30, 2020, then the HRDF should be barred from subsequently receiving state grants until the grantee has filed the report, pursuant to W. Va. §12-4-14(c)(1). In addition, the DEP should report the HRDF to the Legislative Auditor for purposes of debarment from receiving state grants if it fails to file the required report by June 30, 2020 (W. Va. §12-4-14(c)(2)).

The Recycling Assistance Fund Is Used for Non-Recycling Programs.

West Virginia Code §22-15A-19(a) imposes a \$2 per ton recycling assessment fee on solid waste disposed at all solid waste disposal facilities. The proceeds of the fee are deposited in the Recycling Assistance Fund and administered by the DEP. Half of the total proceeds (\$1 per ton) are to be provided in grants to assist municipalities, counties and other interested parties in planning and implementing recycling programs. Due to administrative expenses, less than half of the proceeds goes to grants. The DEP stated that it does not have other sources of funding to cover administrative costs of the program, and it is unreasonable to assume that a grant program of any type could be administered without some form of administrative costs.

PERD’s review of the Recycling Assistance Fund found that the administrative expenses are for the recycling assistance program and other non-recycling programs. Table 17 shows that seven staff positions are authorized to be paid entirely from the Recycling Assistance Fund except the Public Information Specialist 3 position which is 50 percent funded. The funds for recycling grants are also being used to administer the Litter Control and CED grants. These two grants are relatively small and cannot cover a large amount of administrative expenses; therefore, the DEP is administering the three grants using recycling assistance funds. Although the CED grant is for recycling, the Litter Control grant is not. Recycling assistance funds are also used to pay for positions that conduct or supervise non-recycling programs such as Adopt a Highway, Operation Wildflowers, Youth Environmental Program and Make It Shine.

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Authorized Staff Positions	Programs
Environmental Resource Specialist - Supervisor	Recycling, Litter Control and CED Grants; Adopt A Highway/Operation Wildflower; and Make It Shine
Office Assistant 3	All Programs Under the Supervisor
Environmental Resource Specialist 2	Recycling, Litter Control and CED Grants
Public Information Specialist 3	Youth Environmental Program
Public Information Specialist 2	Youth Environmental Program
Public Information Specialist 2	Youth Environmental Program
Environmental Resource Specialist 2	Make It Shine
<i>Sources: West Virginia OASIS report WV-HRP-PC-011, West Virginia Department of Environmental Protection Employee Directory.</i>	

Table 18 shows a breakdown of the Recycling Assistance Fund’s administrative expenses for FY 2018. The fund received nearly \$2.5 million and had nearly \$2.2 million in total expenditures. Most of the expenses were for recycling assistance (69.7 percent). However, over \$100,000 were expended on non-recycling grants. One of these grants was to the Woodlands Development Group to provide \$40,000 in financial assistance to demolish a building located in Thomas, West Virginia. The Woodlands Group provided the DEP with a sworn statement of the expenditure as required by statute (W. Va. §12-4-14(b)(2)). The purpose of the demolition was to facilitate the redevelopment of the Thomas downtown street. Another non-recycling grant was in the amount of \$50,901 for asbestos abatement of a building in the town of Whitesville, West Virginia. The Make It Shine grants were awarded to several county governments in recognition of their cleanup and beautification efforts.

Administrative costs were nearly 26 percent of the Recycling Assistance Fund expenditures.

Administrative costs were nearly 26 percent of the Recycling Assistance Fund expenditures. The costs to manage the Make It Shine and Youth Environment Programs were half the administrative expenses. **A sizable amount of the Recycling Assistance Fund is being diverted from the intended use of awarding recycling grants.**

A sizable amount of the Recycling Assistance Fund is being diverted from the intended use of awarding recycling grants.

Table 18 Expenditure Breakdown of the Recycling Assistance Fund FY 2018		
Total Revenue	\$2,470,632	
Total Expenditures:	\$2,177,385	
Recycling Assistance Grants:	\$1,517,943	69.7%
Non-Recycling Grants:		
Grants for Asbestos Removal/Demolition of Building	90,901	4.2%
Make It Shine Awards	9,350	0.4%
Administrative Expenses:	\$559,190	25.7%
Grant Programs: Recycling Assistance, Litter Control & CED	\$196,819	9.0%
Make It Shine Program	\$110,650	5.1%
Youth Environment Program	\$172,965	7.9%
Allocated Cost for Business & Technology Units	\$78,754	3.6%
<i>Source: PERD analysis of West Virginia OASIS reports (WV-FIN-GL-065).</i>		

Consideration Should Be Given to Removing Parts of REAP from DEP Oversight.

The findings of this report indicate that aspects of REAP are ineffective and inefficient. The problems identified by PERD will be

difficult to resolve without major structural changes. For this reason, the Legislative Auditor lists the following factors that warrant consideration for removing REAP components from DEP control:

- REAP cannot be effective without greater local-level resources and incentives.
- REAP's inefficiencies will persist because of state-level overhead costs.
- Illegal dumps can be cleaned at a lower cost by local governments and SWAs compared to the DEP's cleanup process.

Tire Remediation Should Remain in the DEP, But the PPOD Program Should Function Locally.

PERD finds that the Tire Remediation Program has been effective in pollution prevention and should remain as a state program. This is discussed in Issue 1. However, due to significant increases in cleanup costs, high overhead costs of the DEP and questionable expenditures, the Legislative Auditor recommends that remediation of illegal dumps be administered by local SWAs. This can be accomplished by re-allocating the solid waste assessment fees of the Solid Waste Reclamation and Environmental Response Fund to local SWAs proportionate to population. It is further recommended that the West Virginia Solid Waste Management Board be the flow-through agent of these funds.

Many counties do not have significant problems with illegal dumping, while other counties, particularly those with LCOs, remediate illegal dumps with minimal assistance from the DEP and at relatively low costs. Other counties have greater reliance on the DEP for relatively large dumps. Appendix F provides a table showing the number of dumps remediated in each county for the FY 2013-2017 period and the average number. Table 19 below compiles the average number of dumps for each county for the 2013-2017 period. Nearly 40 percent of the counties averaged 5 or less dumps per year and 60 percent averaged 10 or less. There are 12 counties that average over 20 dumps per year. It should be noted that some counties such as Raleigh, Wayne and Wyoming that average over 40 dumps each year have LCOs who are aggressive and remediate dumps at lower costs than the statewide average. The median number of illegal dumps each year is between eight and nine.

PERD finds that the Tire Remediation Program has been effective in pollution prevention and should remain as a state program.

Due to significant increases in cleanup costs, high overhead costs of the DEP and questionable expenditures, the Legislative Auditor recommends that remediation of illegal dumps be administered by local SWAs.

Number of Counties	Range of the Average Number of Dumps Per Year
21	5 or less
12	6 - 10
4	11 - 15
6	16 - 20
2	21 - 25
1	26 - 30
1	31 - 40
8	More than 40
Median	
55	8.6

Source: PERD analysis of DEP data.

Distributing PPOD solid waste assessment fees to local SWAs would allow them to use contractors that have been ineligible to clean dumps under the DEP's current procurement procedures. This would lead to lower clean-up costs on average.

Distributing PPOD solid waste assessment fees to local SWAs would allow them to use contractors that have been ineligible to clean dumps under the DEP's current procurement procedures. This would lead to lower cleanup costs on average. Consideration should be given to allowing unused assessment fees each year be used for other pollution prevention or recycling efforts. This would create incentives to be economical and effective in cleaning and reducing illegal dumps.

Table 20 shows two distribution scenarios based on 2017 estimated county population and PPOD solid waste assessment fees for FY 2017. Assessment fees for FY 2017 totaled \$950,420, and over \$772,000 was used for cleanups. The table shows a distribution proportionate to population and an alternative distribution based on population and an equal amount of \$3,000 per county. For most counties under either scenario, the distribution would exceed what the DEP spent to clean open dumps in those counties in 2017. Under a distribution based on population, 36 counties would receive more than what was spent in their county, while 19 counties would have received less than what was spent in their county. However, this will vary each year because the number of illegal dumps remediated in each county will vary. A distribution that includes an equal share of \$3,000 would have 38 counties receiving more than what was spent in the county, while 17 would receive less than what was spent. The counties with the largest negative differences are Boone, Summers and Webster with relatively small populations that also had high cleanup costs in 2017. The State paid over \$57,000 to eliminate

A distribution that includes an equal share of \$3,000 would have 38 counties receiving more than what was spent in the county, while 17 would receive less than what was spent.

open dumps in Boone County in 2017, while Summers County had over \$37,000 and Webster had over \$26,000 in cleanup costs.

Some counties with relatively small populations that have problems with illegal dumping will be challenged in the proposed distribution if they do not aggressively address pollution prevention. The proposed distribution would provide needed funds and an incentive to counties to improve pollution prevention efforts. The Legislative Auditor does not anticipate a significant increase in administrative costs for SWA's to contract vendors to remediate illegal dumps when they identify or are notified of illegal dumps.



Table 20
FY 2017 Solid Waste Assessment Fees

County	2017 State	Population	Difference	Population &	Difference
	Pop. Est. 1,815,857	Pro Rated Distribution	Proposed vs. Actual Exp.	Flat \$3,000 Distribution	Proposed vs. Actual Exp.
Barbour	16,497	8,635	\$179	10,136	\$1,680
Berkeley	114,920	60,149	\$60,149	52,707	\$52,707
Boone	22,349	11,697	(\$45,350)	12,667	(\$44,381)
Braxton	14,237	7,452	(\$2,996)	9,158	(\$1,289)
Brooke	22,443	11,747	\$11,747	12,707	\$12,707
Cabell	94,958	49,701	\$25,801	44,073	\$20,172
Calhoun	7,307	3,824	\$3,824	6,161	\$6,161
Clay	8,764	4,587	(\$7,222)	6,791	(\$5,018)
Doddridge	8,560	4,480	\$2,324	6,702	\$4,546
Fayette	43,521	22,779	(\$18,399)	21,824	(\$19,353)
Gilmer	8,005	4,190	\$1,674	6,462	\$3,946
Grant	11,670	6,108	\$2,444	8,048	\$4,384
Greenbrier	35,287	18,469	(\$1,649)	18,263	(\$1,855)
Hampshire	23,471	12,285	\$12,285	13,152	\$13,152
Hancock	29,448	15,413	\$15,413	15,737	\$15,737
Hardy	13,717	7,179	\$7,179	8,933	\$8,933
Harrison	67,811	35,492	\$16,808	32,331	\$13,646
Jackson	28,976	15,166	\$10,025	15,533	\$10,393
Jefferson	56,338	29,487	\$27,669	27,368	\$25,550
Kanawha	183,293	95,936	\$25,584	82,280	\$11,929
Lewis	16,226	8,493	\$6,458	10,018	\$7,983
Lincoln	20,825	10,900	(\$2,548)	12,008	(\$1,440)
Logan	32,925	17,233	\$548	17,241	\$556
Marion	18,456	9,660	(\$14,561)	10,983	(\$13,238)
Marshall	56,337	29,487	\$11,360	27,368	\$9,240
Mason	31,190	16,325	\$13,921	16,491	\$14,087
McDowell	26,801	14,028	(\$8,722)	14,592	(\$8,158)
Mercer	59,753	31,275	\$10,443	28,845	\$8,014
Mineral	27,222	14,248	\$435	14,774	\$961
Mingo	24,127	12,628	(\$2,036)	13,436	(\$1,229)
Monongalia	105,030	54,973	\$40,876	48,429	\$34,332
Monroe	13,402	7,015	\$7,015	8,797	\$8,797
Morgan	17,686	9,257	\$8,182	10,650	\$9,575
Nicholas	25,043	13,108	(\$17,945)	13,832	(\$17,220)
Ohio	42,035	22,001	\$17,505	21,182	\$16,686
Pendleton	6,996	3,662	\$3,662	6,026	\$6,026
Pleasants	7,512	3,932	(\$1,072)	6,249	\$1,246
Pocahontas	8,456	4,426	\$4,426	6,658	\$6,658
Preston	33,679	17,628	(\$18,238)	17,567	(\$18,298)
Putnam	56,792	29,725	\$13,248	27,564	\$11,088
Raleigh	75,022	39,267	\$7,183	35,450	\$3,367
Randolph	28,785	15,066	\$10,293	15,450	\$10,677
Ritchie	9,774	5,116	\$4,756	7,228	\$6,868
Roane	14,043	7,350	\$95	9,074	\$1,819
Summers	12,993	6,801	(\$30,741)	8,620	(\$28,921)
Taylor	16,930	8,861	(\$12,647)	10,323	(\$11,185)
Tucker	6,915	3,619	\$3,619	5,991	\$5,991
Tyler	8,795	4,603	(\$4,215)	6,804	(\$2,014)
Upshur	24,465	12,805	(\$7,473)	13,582	(\$6,696)
Wayne	40,153	21,016	\$2,538	20,368	\$1,889
Webster	8,372	4,382	(\$22,344)	6,621	(\$20,104)
Wetzel	15,437	8,080	\$5,630	9,677	\$7,227
Wirt	5,794	3,033	(\$376)	5,506	\$2,098
Wood	85,104	44,543	\$8,139	39,810	\$3,406
Wyoming	21,210	11,101	(\$6,676)	12,174	(\$5,604)
Totals	1,815,857	\$950,420		\$950,420	

Sources: PERD analysis based on PPOD data and U.S. Census Bureau population estimates.

Some counties with relatively small populations that have problems with illegal dumping will be challenged in the proposed distribution if they do not aggressively address pollution prevention. The proposed distribution would provide needed funds and an incentive to counties to improve pollution prevention efforts.

Local SWAs Should Receive the Civil Penalties That Are Transferred to the Litter Control Fund.

Under the law (W. Va. §22-15A-4(c)(d)), half of the civil penalties paid by individuals who violated the State's litter prohibition go to the local SWA of the county in which the violation occurred, and the other half is deposited in the Litter Control Fund. This fund generally receives between \$45,000 and \$50,000 each year to provide litter control grants. This is a relatively small fund to be administered by the State, and it is a disincentive for local governments and SWAs who enforced the litter law. **The Legislature should consider eliminating the Litter Control Fund and amend statute to have all civil penalties go to local SWAs.** This would provide additional funds and incentives to enhance pollution prevention efforts.

The Legislature should consider eliminating the Litter Control Fund and amend statute to have all civil penalties go to local SWAs. This would provide additional funds and incentives to enhance pollution prevention efforts.

The Recycling Assistance and CED Grants Should Come Under the SWMB.

The Legislature should consider placing the Recycling Assistance and the CED grant programs under the West Virginia Solid Waste Management Board. The Legislature should also consider statutorily limiting administrative expenses to 15 percent of expenditures. Currently, the DEP is using a significant amount of recycling assistance funds for programs that are not for recycling. The SWMB is statutorily aligned with local SWAs. It provides technical assistance in SWAs' development of their solid waste management plans (§22C-4-8(c), provides for performance reviews of SWAs (§22C-4-9a), and it provides solid waste assessment proceeds and recycling grants to local SWAs under W. Va. Code §22C-4-30(h). **The Legislative Auditor determines that the SWMB is an appropriate agency to provide recycling assistance and CED grants and recommends that it administer these grant programs.**

Currently, the DEP is using a significant amount of recycling assistance funds for programs that are not for recycling.

Conclusions

The Legislative Auditor concludes that there are significant inefficiencies in the REAP program. The solid waste management programs of REAP are for the benefit of the local level but administering them through another layer of government has added administrative costs that detract from the programs' purposes. This is evident in the PPOD program and the Recycling Assistance Grant program. Furthermore, the Legislative Auditor determines that REAP's purpose cannot be effective unless local SWAs are provided more financial resources and have greater incentives in pollution prevention. The issue of re-trashed sites is a systemic local level issue that needs to be addressed at the local level. However, addressing pollution prevention at the local level cannot

Furthermore, the Legislative Auditor determines that REAP's purpose cannot be effective unless local SWAs are provided more financial resources and have greater incentives in pollution prevention.

occur if counties do not have the necessary funds. Since the PPOD program is limited in the number of contractors it can use under DEP's current procurement process, the cost of cleanups is higher. Local SWAs can provide cleanups at lower costs by using those contractors that the DEP formerly used but are now unable to qualify under the agency's present system. Therefore, the Legislative Auditor makes the following recommendations.

Recommendations

- 13. It is recommended that the solid waste assessment fees currently allocated for eliminating illegal dumps under West Virginia Code §22-15A-7 be distributed to local SWAs proportionate to population. An alternative would be to allocate an equal share and then distribute the remaining amount based on population. This distribution can be a flow-through or a draw-down process. It is further recommended that the West Virginia Solid Waste Management Board be the flow-through agent of these funds.*
- 14. It is recommended that the Recycling Assistance Grant and the CED Grant be administered by the West Virginia Solid Waste Management Board. It is also recommended that the Legislature consider statutorily limiting administrative expenses to 15 percent of total expenditures.*
- 15. The Legislature should consider eliminating the Litter Control Fund established by West Virginia Code §22-15A-4(c) and amending Code §22-15A-4(c)(d) to allow all civil penalties go to the local SWA of the county that litter violations occurred.*
- 16. If the Human Resource Development Foundation does not submit the required independent report by June 30, 2020, the DEP should bar the HRDF from subsequently receiving state grants until the grantee has filed the report, pursuant to W. Va. §12-4-14(c)(1). In addition, the DEP should report the HRDF to the Legislative Auditor for purposes of debarment from receiving state grants if it fails to file the required report by June 30, 2020 (W. Va. §12-4-14(c)(2)).*

Appendix A Transmittal Letter

WEST VIRGINIA LEGISLATURE *Performance Evaluation and Research Division*

Building 1, Room W-314
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Charleston, West Virginia 25305-0610
(304) 347-4890
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John Sylvia
Director

May 4, 2020

Samuel A. Caperton, Cabinet Secretary
West Virginia Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

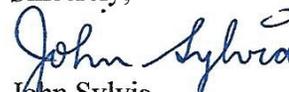
Dear Secretary Caperton:

This is to transmit a draft copy of the audit on the West Virginia Rehabilitation Environmental Action Plan, pursuant to West Virginia Code 4-10-8(b)(2). This report will be presented during a future interim meeting of the Joint Committee on Government Operations, and the Joint Committee on Government Organization. We will inform you of the exact time and location once the information becomes available. It is expected that a representative from your agency be present at the meeting to orally respond to the report and answer any questions committee members may have during or after the meeting.

I would like to schedule a virtual exit conference to discuss any concerns you may have with the report. Please notify us by May 15th when you would like to meet. In addition, we need your written response by noon on Friday, June 5th, 2020 in order for it to be included in the final report. If your agency intends to distribute additional material to committee members at the meeting, please contact the House Government Organization staff at 304-340-3192 by the Thursday prior to the meeting to make the arrangements.

We request that your personnel not disclose the audit to anyone unaffiliated with your agency. Thank you for your cooperation.

Sincerely,


John Sylvia

c: Edward F. Maguire, Environmental Advocate
Jane S. Caswell, Internal Auditor
Enclosure

————— *Joint Committee on Government and Finance* —————

Appendix B

Objectives, Scope and Methodology

The Performance Evaluation and Research Division (PERD) within the Office of the Legislative Auditor conducted this performance review of the A. James Manchin Rehabilitation Environmental Action Plan (REAP) as part of the Agency Review of the West Virginia Department of Environmental Protection as required and authorized by the West Virginia Performance Review Act, Chapter 4, Article 10, of the *West Virginia Code*, as amended. The purpose of REAP, as established in West Virginia Code §22-15A, is to encourage proper disposal of commercial and residential solid waste, eliminate open dumps and tire piles within the state, and promote recycling through public awareness and recycling grants.

Objectives

The objectives of this review are to determine if the Rehabilitation Environmental Action Plan (REAP) is effective in terms of measurable reductions of legal and illegal solid waste disposal, and is REAP efficient in terms of cost-effective management of solid waste disposal, rehabilitating open dumps and carrying out other statutory purposes of the REAP program.

Scope

The timeframe for this audit consisted of fiscal years 2013-2019. The scope consists of the various programs under REAP, including the Pollution Prevention and Open Dump (PPOD) program, the Waste Tire Remediation Program, the Recycling Assistance Grant program, the Litter Control Matching Grant program, and the Covered Electronic Devices Grant program. The funds associated with these programs were also analyzed, including the Solid Waste Reclamation and Environmental Response Fund, the Recycling Assistance Fund, the Litter Control Fund, and the Covered Electronic Devices Fund. Output data for the PPOD program stored in the Environmental Resource Information System (ERIS) were tested for use as performance measures, along with the internal controls over data compilation and the grant programs.

Methodology

PERD gathered and analyzed several sources of information and conducted audit procedures to assess the sufficiency and appropriateness of the information used as audit evidence. The information gathered and audit procedures are described below.

Testimonial evidence was gathered for this review through interviews with the DEP staff, the West Virginia Solid Waste Management Board (SWMB), the Public Service Commission and the Raleigh County Solid Waste Authority in order to gain a better understanding of solid waste management from agencies involved in the process. The testimonial evidence from agencies was confirmed by written statements and in some cases by corroborating evidence.

The output data contained in the ERIS database was considered un-auditable by the DEP's internal auditors. The DEP's internal auditors were concerned with the financial integrity of the PPOD data; however, PERD was also concerned with the integrity of the data as performance measures. Consequently, PERD needed reasonable assurance in the accuracy of the number of PPOD projects and dumps eliminated, the types of cleanups distinguished between legal and illegal disposals, the cleanup tonnage as well as the cost of the cleanups. Therefore, PERD tested the output data by attempting to reconstruct a sample of 50 PPOD projects,

10 from each fiscal year of 2013-2017.

PERD randomly selected expenditure data from the State's "Our Advanced Solution Integrated Systems" (OASIS) for the Solid Waste Reclamation and Environmental Response Fund (Fund 3332) which was established for PPOD projects and Waste Tire Remediation. PERD attempted to match output data represented by OASIS purchase orders and invoices for Fund 3332 to associated PPOD projects listed in the ERIS database to assess the integrity of output data. PERD's tests of the PPOD data for FY 2013-2107 led to the determination that PPOD output data were reasonably sufficient and appropriate to meet the objectives of this audit.

Output data for FY 2018 and 2019 could not be used for this audit because the data were stored using a PPOD app instead of ERIS and the DEP encountered programming issues with the new data system. Moreover, PERD discovered data irregularities for the West and North Regions in FY 2018 which were brought to the attention of the DEP. Although the DEP corrected some of these issues, the PPOD output data for FY 2018 and 2019 lacked continuity with the data of previous years and the data for the West and North Regions would have been seriously skewed.

Per capita municipal solid waste (MSW) was an important outcome measure that the Legislature mandated a goal to reduce it by 50 percent of 1991 levels. In order to determine the status of West Virginia's per capita MSW, PERD gathered MSW from the SWMB's annual reports. PERD had discussions with the SWMB on how it ensured the accuracy of West Virginia MSW. The SWMB indicated that solid waste assessment fees were dependent on landfill facilities giving complete reports on MSW to the State Tax Department. Therefore, the SWMB tracks the MSW reported to the Tax Department to ensure complete reporting. PERD also gathered MSW from West Virginia exported to the surrounding states. PERD evaluated out-of-state MSW and discussed the data with appropriate personnel to ensure that each state's MSW did not include waste that should not be included as MSW. PERD determined that in-state and out-of-state MSW were sufficient and appropriate evidence.

In order to determine the percentage of illegal dump sites that were re-trashed, PERD examined GPS coordinates associated with each illegal dump site as contained in ERIS. Each illegal cleanup project was arranged by county and in ascending order of the GPS coordinates. In order to calculate the distance in feet between GPS coordinates, PERD identified a calculator (<http://movable-type.co.uk/scripts/latlong.html>) that showed the distance between two sets of coordinates and satellite photographs of the location. PERD found other similar calculators and tested the results. PERD found that the results were the same. Therefore, PERD concluded that the calculations were appropriate for determining the distance between dump sites and the percentage of re-trashed illegal dump sites for each county.

PERD used data from OASIS to analyze REAP funds, staffing data and individual expenditures and contracts. OASIS is a major repository of data representing the operations of state agencies. As such, OASIS data are widely accepted by West Virginia state government and generally recognized as sufficient and appropriate for analyzing state agencies. Given the nature of OASIS information and, in some cases, it can be corroborated by other sources, PERD did not perform extensive procedures to verify the information. The staffing data from OASIS were confirmed by DEP's staff directory and program descriptions.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix C

Agency Response



west virginia department of environmental protection

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Austin Caperton, Cabinet Secretary
dep.wv.gov

June 5, 2020

Mr. John Sylvia
Director
West Virginia Legislative Auditor
Performance Evaluation & Research Division
Building 1, Room W-314
State Capitol Complex
Charleston, WV 25305

Subject: The West Virginia Department of Environmental Protection and Rehabilitation Environmental Action Plan's Response to West Virginia Legislative Auditor Performance Evaluation & Research Division Audit Report

Dear Director Sylvia:

Thank you for providing the May 4, 2020 draft of the Performance Evaluation & Research Division's recommendations on the West Virginia Department of Environmental Protection's Rehabilitation Environmental Action Plan (REAP). The REAP program has a legacy dating back to its original founder and visionary, A. James Manchin. It's overall goal has always been to shine the light on the need to rid West Virginia's otherwise beautiful natural landscape of litter, both large and small. That's a tremendous challenge anywhere in Appalachia where there is a generational history of disrespect for the property of others AND an absence of adequate trash collection programs to service citizens. But REAP has been a bulwark against that ethic and continues to make progress in keeping West Virginia Clean and Green.

It is imperative to the DEP that we operate REAP in the most efficient manner possible. As such, we commit to correcting valid deficiencies highlighted in PERD's recommendations. However, as discussed below, the DEP and REAP will strenuously oppose any defunding of some of REAP's program in favor of diverting landfill tipping fees to local Solid Waste Authorities. We take that stand not to merely defend the status quo, but because we know from years of experience that such a change will critically wound the entire notion of cleaning trash and litter throughout our beautiful state and will return West Virginia to the days when large hillside trash dumps, roadside litter, and degraded streams were the norm.

REAP was created by the West Virginia Legislature as a statewide, rather than local, program tasked with the mission of mitigating environmental abuse by coordinating cleanup efforts with centralized, accountable oversight while also creating and sustaining educational programs to teach West Virginians about the very real problems created by trash and other solid waste. REAP's record is substantial, yet it could and will be better. But to suggest any partial breakup of its collection of programs ignores its successes, its history, and its ever-present need for additional legislative support, not less.

In response to PERD's report, we offer the following.

Issue One: Although REAP has produced significant output, but it has not been effective in pollution prevention or reducing per capita municipal solid waste disposed in landfills.

Audit Recommendations

1. The DEP should establish goals that are consistent with the Legislature's intent for the REAP program. These goals should include:
 - a. reduce the state's per capita municipal solid waste disposed in landfills; and
 - b. reduced the number of illegal dumps generated in the state each year.

DEP Response: The DEP agrees that it should establish improved performance goals consistent with the Legislature's intent for REAP and in many ways has already done so. All of those are being reevaluated with an eye to making the tracking data more useable.

2. The DEP should correct the inadequacies of its internal controls pertaining to PPOD data to reduce the risk of fraud and abuse, and to improve the quality of its management information.

DEP Response: The DEP and REAP identified and addressed this issue in an internal audit performed by the agency in 2016-2017. As a direct result of that internal audit, REAP instituted several changes to the manner in which PPOD collects and analyzes data related to the program.

3. The DEP should compile necessary outcome data and performance measures in the administration of the REAP program. Such data should include:
 - a. per capita MSW disposed in landfills, including MSW disposed out of state;
 - b. the total number of illegal dumps cleaned each year; and
 - c. the total tonnage of illegal dumps cleaned each year; and
 - d. the number of counties with litter control officers distinguished between full-time and those who have multiple responsibilities.

DEP Response: With regard to each subpart:

- a. **The DEP will compile per capita municipal solid waste (MSW) disposed in landfills, including MSW disposed out of state;**
- b. **The DEP already collects data regarding the total number of illegal dumps cleaned each year;**

- c. **The DEP already collects data regarding the total tonnage of illegal dumps cleaned each year; and**
- d. **It should be noted that REAP has not been mandated historically to collect this data, but has done so as a means to motivate counties to support an increase in hiring local litter control officers. Ultimately, however, the DEP and REAP have no control over litter control officers and there is no mandate that requires this information to be supplied to the DEP. REAP attempts to maintain an accurate list of litter control officers, but the information is only as good as the counties are willing to supply.**

4. The Legislature should consider reestablishing and updating the recycling goal specified in W. Va. Code §22-15A-16 to reduce the disposal of per capita MSW in landfills by 50 percent of the per capita MSW disposed in 2010. An appropriate time for completion could be the year 2025.

DEP Response: This goal was unrealistic and unattainable from inception. It was conceived to track recycling performance but ignored the fact that MSW includes commercial waste, industrial sludge, and wastewater. The goal ignores the fact that society, including West Virginia, has sadly seen a transformational shift towards “disposable everything.” The goal had no provisions for adjustments to allow for population growth, the impact of new industries with no appreciable recycling component to their business model, etc. Using MSW as a measure for recycling performance in today’s world is simply naive. Additionally, the disposal of per capita MSW in landfills in West Virginia remains far below the national average based on the numbers supplied in your report.

5. The Legislature should consider reestablishing W. Va. Code §22C-4-10(c) to require a feasibility study of reducing solid waste collection fees to individuals who pay for such services, who receive public assistance and are limited in their ability to afford solid waste disposal.

DEP Response: The DEP agrees that the Legislature should amend West Virginia Code §22C-4-10(c) to require a feasibility study of reducing solid waste collection fees to individuals who pay for such services, who receive public assistance, and who are limited in their ability to afford solid waste disposal. Such a study should be conducted under the Public Service Commission.

6. The Legislature should consider requiring all recycling centers to report the tonnage of recyclable materials collected each year to the Solid Waste Management Board to estimate the state recycling rate.

DEP Response: The DEP agrees that the Legislature should consider requiring all recycling centers to report the tonnage of recyclable materials collected each year to the Solid Waste Management Board so as to estimate the state recycling rate.

7. The Legislature should consider redistributing solid waste assessment fees to local SWAs so as to improve recycling and pollution prevention.

DEP Response: REAP was created in response to the problems created by relying solely on local SWAs to manage solid waste. West Virginia Code §22-15A-1(b) explicitly states the Legislature’s findings at the time REAP was created:

The Legislature further finds that the improper management of commercial and residential solid waste and the unlawful disposal of such waste creates open dumps that adversely impacts the state's natural resources, public water supplies and the public health, safety and welfare of the citizens of the state. It is therefore necessary to establish a program to promote pollution prevention and to eliminate and remediate open dumps.

W. Va. Code §22-15A-1(b). REAP was designed from its inception as the Legislature's solution to the problem of solid waste mismanagement. Rather than allowing local SWAs to founder alone, REAP provides directed grants with oversight and accountability. The Legislature found that many local SWAs, when left to their own devices mismanaged this crucial work, a fact reflected in the dozens of landfills that were forced into state management to be remediated at state taxpayer expense.

8. It should be the State's goal to encourage appropriate counties to employ full-time litter control officers.

DEP Response: The DEP strongly agrees with this recommendation. In the meantime, REAP currently provides grants to counties to assist in the hiring of full-time litter control officers. REAP also initiated a Litter Control Officer training and networking program to further educate and encourage to the direct benefits that can be gleaned from Litter Control Officers.

9. The Public Service Commission should amend its rule CSR §150-9-6.5 to require all common carriers of solid waste to annually report their customer counts to the Solid Waste Management Board and local solid waste authorities. However, upon request by any local solid waste authority, common carriers should provide the names and service addresses of customers or, in the alternative, a list of the names and addresses of non-subscribing waste generators in their service areas.

DEP Response: This recommendation doesn't apply to DEP or REAP and the agency takes no position on this issue.

10. The Solid Waste Management Board should estimate for each county the annual percentage of households, as estimated by the U.S. Census Bureau, that subscribe for solid waste collection services using subscription counts provided by common carriers of solid waste.

DEP Response: This recommendation doesn't apply to DEP or REAP and the agency takes no position on this issue.

11. The Legislative Auditor recommends that the SWMB conduct a cost-benefit analysis of select counties providing rural residents with free disposal of solid waste similar to Boone County's former practice.

DEP Response: This recommendation doesn't apply to DEP or REAP and the agency takes no position on this issue.

12. The Legislature should consider having the PSC and the SWMB collaborate on re-evaluating the standards and criteria as they relate to flow control, pursuant to West Virginia Code §24-2-1h, to determine if the process is effective and equitable.

DEP Response: This recommendation doesn't apply to DEP or REAP and the agency takes no position on this issue.

Issue Two: Eliminating illegal dumps has become costlier under DEP purchasing procedures, the DEP often cleans areas that have been re-trashed multiple times, and high administrative costs and questionable expenditures are diverting funds from intended purposes.

PERD suggests that “the effects of the current procurement process warrant consideration of giving local SWAs the funds to remediate illegal dumps using the larger number of contractors that were used previously.” PERD Audit at 33. PERD’s entire analysis boils down to, “county SWAs don’t have to follow rigorous purchasing procedures (that are required by the West Virginia Legislature) that are specifically designed to prevent corruption and mismanagement. Certainly, contracts that must be reviewed and approved by the DEP and that include requirements for bidder qualifications are often costlier, but that additional cost is *mandated* by the Legislature.

Recommendations

13. It is recommended that the solid waste assessment fees currently allocated for eliminating illegal dumps under West Virginia Code §22-15A-7 to be distributed to local SWAs proportionate to population. An alternative would be to allocate an equal share and then distribute the remaining amount based on population. This distribution can be a flow-through or draw-down process. It is further recommended that the West Virginia Solid Waste Management Board be the flow-through agent of these funds.

DEP Response: As noted above, the DEP opposes this recommendation. As previously discussed, this will simply devolve West Virginia’s solid waste management efforts to pre-REAP mismanagement, corruption, and ubiquitous garbage.

14. It is recommended that the Recycling Assistance Grant and the CED Grant be administered by the West Virginia Solid Waste Management Board. It is also recommended that the Legislature consider statutorily limiting administrative expenses to 15 percent of total expenditures.

DEP Response: According to West Virginia Code §22-15A-19, 50 percent of the Recycling Fund proceeds shall be provided in grants to assist municipalities, counties and other interested parties in the planning and implementation of recycling programs, public education programs and recycling market procurement efforts. REAP addresses the public education component of that charge via DEP’s Youth Environmental Program which is funded in large part by the Recycling Fund. For the audit review period of 2013-2017, YEP coordinated more than 74,000 club members annually who provided nearly 100,000 volunteer hours picking up litter, cleaning streams, and other environmental projects. A volunteer hour was valued at \$22.14 to \$24.14 for a total of \$2.2 million dollars from 2013 to 2017. Clubs that YEP collaborated with include 4-H, schools, scouts, Lions, Rotary,

senior centers, and Solid Waste Authorities. It is hard to imagine that a direct diversion of any of the Recycling Fund dollars to individual SWAs would result in anything close to the efficiencies currently being provided by the combined REAP effort.

15. The Legislature should consider eliminating the Litter Control Fund established by §22-15A-4(c) and amending West Virginia Code §22-15A-4(c) to allow all civil penalties go to the local SWA of the county that litter violations occurred.

DEP Response: The DEP agrees that the Legislature should consider eliminating the Litter Control Fund established by §22-15A-4(c) and amending West Virginia Code §22-15A-4(c) to allow all civil penalties go to the local SWA of the county where a given violation occurred.

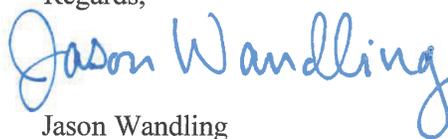
16. If the Human Resource Development Foundation does not submit the required independent report by June 30, 2020, the DEP should bar the HRDF from subsequently receiving state grants until the grantee has filed the report, pursuant to W. Va. Code §12-4-14(c)(1). In addition, the DEP should report the HRDF to the Legislative Auditor for purposes of debarment from receiving state grants if it fails to file the required report by June 30, 2020 (W. Va. Code §12-4-14(c)(2)).

DEP Response: The DEP agrees with this recommendation and will immediately have the grant reviewed by Fiscal Services.

In conclusion, I'd like to thank you again for your well-prepared and thoughtful words during our exit interview on June 2. Your report contained many helpful insights that the DEP and REAP will implement immediately. We disagree on a number of issues, particularly those made without any documented substantiation that local SWAs could more effectively manage certain program components, as that seems completely counter to the Legislature's original intent when it created the consolidated, centralized, statewide REAP program. But I nevertheless appreciate your kindness and your professionalism during this process.

We will appear at the hearing on your report and will be prepared to answer any question asked by the Joint Committee on Government Organization. In the meantime, as always, please don't hesitate to call, text, or email me.

Regards,



Jason Wandling
General Counsel

JW/

Appendix D

PERD Evaluation of REAP Output Data

Since PERD intended to evaluate REAP effectiveness and efficiency using output and outcome data, the data had to be tested to determine reasonable assurance of their sufficiency and adequacy. REAP output data required extensive testing because they were determined to be un-auditable by DEP internal auditors. PERD's audit objectives required reasonable assurance for the number of open dumps eliminated, the cost of the projects and the tonnage from each project. Other data such as the number of volunteers, the amount of steel and appliances removed, and the number of acres cleaned are important but such data could not be confirmed.

The methodology to test REAP output data involved reconstructing a sample of 50 Pollution Prevention and Open Dump (PPOD) projects, 10 from each fiscal year of 2013-2017. PERD randomly selected expenditure data from the Solid Waste Reclamation and Environmental Response Fund (Fund 3332), established for PPOD projects, as recorded in the State's Our Advanced Solution Integrated Systems (OASIS). PERD attempted to match the OASIS purchase orders and invoices from Fund 3332 to an associated PPOD project listed in the ERIS database.

Table 21 shows that PERD was able to match invoices or purchase orders in OASIS to a PPOD project in ERIS for 84 percent of the sample. In some cases, OASIS documents had the name of a PPOD project that did not match a project name listed in ERIS. For those cases in which a project identified in OASIS matched a project in ERIS, the ERIS costs were 94.2 percent of the costs recorded in OASIS on average. Only half of OASIS documents had tonnage data available. In the cases when tonnage data were available, ERIS tonnage was 82.1 percent of the tonnage recorded in OASIS.

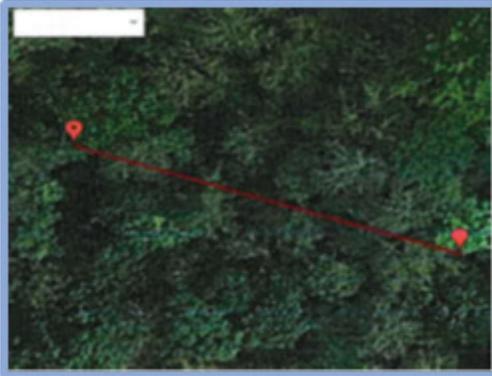
Fiscal Year	Percentage of PPOD Project Matches in OASIS and ERIS	Percentage of Cost Accuracy Between OASIS and ERIS	Percentage of OASIS Transactions with Tonnage Data	Percentage of Accuracy of Tonnage Amount When Tonnage Data Were Available
2013	90%	77.0%	40%	64.5%
2014	100%	97.7%	60%	93.5%
2015	90%	98.8%	40%	83.6%
2016	70%	101.6%	40%	68.8%
2017	70%	97.5%	70%	102.4%
Averages	84%	94.2%	50%	82.1%

Source: PERD reconstruction of PPOD cleanup projects as reported in ERIS and OASIS.

PERD's sample included tire collection projects in which tires were collected through legal drop-off events. Table 22 shows the accuracy between documents in OASIS and ERIS for tire collection projects.

Table 22 Reconstruction of Tire Collection Projects Within the 50 Randomly Selected PPOD Projects				
Fiscal Year	Number of Tire Collection Projects in the Sample	Percentage of Cost Accuracy Between OASIS and ERIS	Percentage of Tonnage Accuracy Between OASIS and ERIS	Accuracy of Tire Count
2013*	3	93.6%	22.5%	17.6%
2014**	3	108.1%	97.1%	n/a
2015	2	100.0%	100.0%	n/a
2016	2	91.2%	71.2%	100.0%
2017	1	100.0%	100.0%	100.0%
Averages		96.9%	78.1%	72.5%
<i>Source: PERD reconstruction of PPOD cleanup projects as reported in ERIS and State Auditor data through OASIS.</i>				
<i>*Two of three transactions had no tire count or tonnage in OASIS, while one transaction in OASIS matched ERIS 100 percent.</i>				
<i>**One of three transactions had no tire count or tonnage in OASIS.</i>				

Appendix E Re-trashed Areas by Region



North Region – Lewis County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
12-15-2012	\$3,079	---
7-30-2015	\$2,595	144 Ft.



North Region – Monongalia County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
12-30-2014	\$2,446	---
8-20-2015	\$2,388	43 Ft.



North Region – Preston County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
7-20-2012	\$2,511	---
10-28-2014	\$2,386	220 Ft.



East Region – Jefferson County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
7-2-2014	\$2,037	---
4-27-2015	\$2,612	200 Ft.



East Region – Tucker County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
4-14-2014	\$2,646	---
4-28-2015	\$2,625	242 Ft.



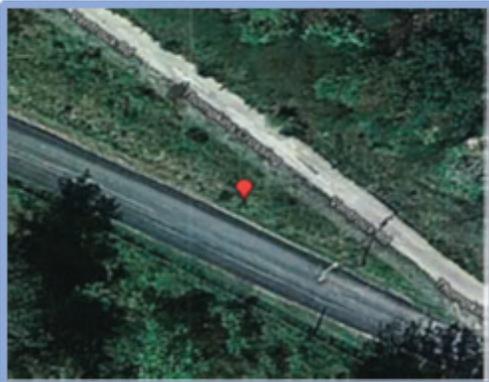
East Region – Upshur County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
11-30-2013	\$2,774	---
4-10-2014	\$2,545	81 Ft.



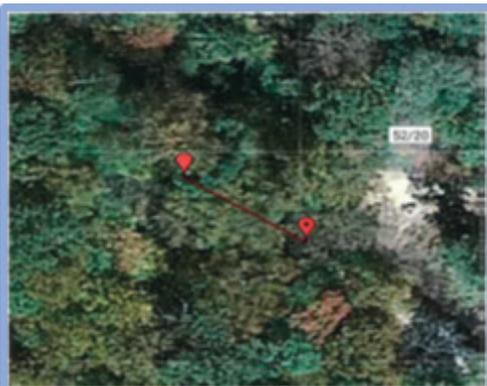
West Region – Cabell County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
3-25-2013	\$2,515	---
9-9-2015	\$2,454	21 Ft.



West Region – Putnam County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
8-26-2014	\$2,717	---
1-5-2015	\$2,670	0 Ft.



West Region – Wayne County

Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
11-6-2014	\$221	---
1-24-2017	\$296	57 Ft.

South Region – Fayette County



Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
4-6-2013	\$2,520	---
1-18-2017	\$1,929	50 Ft.

South Region – Greenbrier County



Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
12-6-2015	\$2,514	---
5-15-2017	\$2,539	61 Ft.

South Region – Logan County



Cleanup Completion Dates	Cleanup Costs	Distance from Previous Spot
12-18-2015	\$2,480	---
12-29-2016	\$2,502	44 Ft.

Appendix F

Number of Illegal Dumps by County FY 2013-2017

Table 23						
Number of Illegal Dumps by County						
FY 2013 – 2017						
County	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Avg. Number
Barbour	1	1	1	18	5	5.2
Berkeley	11	23	10	3		9.4
Boone	12	23	18	28	43	24.8
Braxton	9	8	12	3	7	7.8
Brooke	6	2	1	2		2.2
Cabell	33	25	18	42	27	29.0
Calhoun	1	4	3			1.6
Clay	3	12	12	8	7	8.4
Doddridge					1	0.2
Fayette	31	44	40	46	72	46.6
Gilmer	2	8	10	1	2	4.6
Grant	1	6	5	4	2	3.6
Greenbrier	11	9	16	15	11	12.4
Hampshire	48	13	181	33		55.0
Hancock	2	9		2		2.6
Hardy	4	4	2	5		3.0
Harrison	5	1	3	15	38	12.4
Jackson	4	4	7	11	18	8.8
Jefferson	5	9	11	4	1	6.0
Kanawha	54	58	72	86	79	69.8
Lewis	10		1	5	1	3.4
Lincoln	13	13	11	45	41	24.6
Logan	19	5	13	27	19	16.6
Marion	4	9	36	9	28	17.2
Marshall	6	1	20	9	18	10.8
Mason	7	9	1		2	3.8
McDowell	20	20	19	17	16	18.4
Mercer	80	63	9	14	14	36.0
Mineral	2	6	4	10	5	5.4
Mingo	2	19	9	9	8	9.4
Monongalia	25	10	7	20	6	13.6
Monroe	12	10	9	3		6.8
Morgan	5	4	3		1	2.6

Table 23
Number of Illegal Dumps by County
FY 2013 – 2017

County	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Avg. Number
Nicholas	54	75	78	68	27	60.4
Ohio	9	4	5	2	2	4.4
Pendleton	7	4	1	3		3.0
Pleasants	7	1			5	2.6
Pocahontas	9	3	3	8		4.6
Preston	41	2	301	23	14	76.2
Putnam	20	16	26	17	20	19.8
Raleigh	165	162	130	159	144	152.0
Randolph	30	7	12	11	3	12.6
Ritchie	28	4	4	3	4	8.6
Roane	6	4	4	4	10	5.6
Summers	12	5	6	6	20	9.8
Taylor	4	1			16	4.2
Tucker	3	3	4			2.0
Tyler	1		6	4	13	4.8
Upshur	16	2	3	3	9	6.6
Wayne	211	143	141	72	109	135.2
Webster	35	15	17	11	9	17.4
Wetzel	2	11	2	9	1	5.0
Wirt	19	8	2	12	2	8.6
Wood	18	14	14	12	42	20.0
Wyoming	76	67	68	110	94	83.0

Source: PERD analysis of PPOD data in the DEP Environmental Resource Information System.

Appendix G

Charts 2 and 3-FY 2016 and 2017 Funds Received by Local SWAs

Chart 2						
County	2017 Local SWA Equal Share	SWMB Grants	DEP Recycling Grants	DEP (CED) Recycling Grant	DEP Litter Control Matching Grants	2017 Totals Received
Barbour	\$ 21,361					\$ 21,361
Berkeley	\$ 21,361		\$ 89,350	\$ 9,652	\$ 3,000	\$ 123,363
Boone	\$ 21,361	\$ 11,500			\$ 3,000	\$ 35,861
Braxton	\$ 21,361	\$ 10,635		\$ 8,000		\$ 39,996
Brooke	\$ 21,361	\$ 9,500		\$ 10,000		\$ 40,861
Cabell	\$ 21,361		\$ 147,652	\$ 3,678		\$ 172,691
Calhoun	\$ 21,361	\$ 12,765				\$ 34,126
Clay	\$ 21,361	\$ 7,810				\$ 29,171
Doddridge	\$ 21,361					\$ 21,361
Fayette	\$ 21,361				\$ 1,500	\$ 22,861
Greenbrier	\$ 21,361	\$ 6,290				\$ 27,651
Hancock	\$ 21,361	\$ 8,996				\$ 30,357
Harrison	\$ 21,361	\$ 7,000				\$ 28,361
Jackson	\$ 21,361	\$ 10,000	\$ 97,483	\$ 20,000	\$ 3,000	\$ 151,844
Jefferson	\$ 21,361		\$ 74,194		\$ 1,165	\$ 96,720
Kanawha	\$ 21,361	\$ 7,500				\$ 28,861
Lincoln	\$ 21,361	\$ 13,615	\$ 23,100			\$ 58,076
Logan	\$ 21,361	\$ 6,000				\$ 27,361
McDowell	\$ 21,361	\$ 11,300				\$ 32,661
Marion	\$ 21,361	\$ 15,000				\$ 36,361
Marshall	\$ 21,361					\$ 21,361
Mason	\$ 21,361					\$ 21,361
Mercer	\$ 21,361	\$ 9,500	\$ 124,640			\$ 155,501
Mingo	\$ 21,361					\$ 21,361
Monongalia	\$ 21,361	\$ 5,950				\$ 27,311
Monroe	\$ 21,361	\$ 8,000				\$ 29,361
Morgan	\$ 21,361	\$ 11,070	\$ 17,580			\$ 50,011
Nicholas	\$ 21,361	\$ 6,000	\$ 60,160			\$ 87,521
Ohio	\$ 21,361	\$ 10,000				\$ 31,361
Pleasants	\$ 21,361	\$ 11,052		\$ 7,000		\$ 39,413
Pocahontas	\$ 21,361	\$ 12,000		\$ 4,300		\$ 37,661
Preston	\$ 21,361					\$ 21,361
Putnam	\$ 21,361	\$ 8,150		\$ 8,000	\$ 3,000	\$ 40,511
Raleigh	\$ 21,361		\$ 150,000			\$ 171,361
Randolph	\$ 21,361					\$ 21,361
Region VIII	\$ 106,805	\$ 8,600			\$ 2,727	\$ 118,132
Grant						\$ -
Hampshire						\$ -
Hardy						\$ -
Mineral						\$ -
Pendleton						\$ -
Regional SWA	\$ 42,722					\$ 42,722
Gilmer						\$ -
Lewis						\$ -
Ritchie	\$ 21,361		\$ 20,105	\$ 7,000		\$ 48,466
Roane	\$ 21,361	\$ 14,500	\$ 126,200			\$ 162,061
Summers	\$ 21,361			\$ 2,210		\$ 23,571
Taylor	\$ 21,361	\$ 3,042				\$ 24,403
Tyler	\$ 21,361					\$ 21,361
Tucker	\$ 21,361	\$ 9,150				\$ 30,511
Upshur	\$ 21,361	\$ 8,450				\$ 29,811
Wayne	\$ 21,361	\$ 12,228	\$ 19,474	\$ 2,500		\$ 55,563
Webster	\$ 21,361					\$ 21,361
Wetzel	\$ 21,361	\$ 8,440				\$ 29,801
Wirt	\$ 21,361					\$ 21,361
Wood	\$ 21,361	\$ 7,000			\$ 1,212	\$ 29,573
Wyoming	\$ 21,361	\$ 8,957			\$ 3,000	\$ 33,318
Total	\$ 1,174,854	\$ 300,000	\$ 949,938	\$ 82,340	\$ 21,604	\$ 2,528,736

Sources: Solid Waste Management Board, 2019 West Virginia Solid Waste Management Plan; West Virginia Department of Environmental Protection; PERD calculations of equal shares for local SWAs.

Chart 3						
County	2016 Local SWA Equal Share	SWMB Grants	DEP Recycling Grants	DEP (CED) Recycling Grant	DEP Litter Control Matching Grants	2016 Totals Received
Barbour	\$ 24,192	\$ 11,900				\$ 36,092
Berkeley	\$ 24,192	\$ 2,820		\$ 10,000	\$ 2,927	\$ 39,939
Boone	\$ 24,192	\$ 16,536	\$ 18,200			\$ 58,928
Braxton	\$ 24,192	\$ 12,150	\$ 25,800	\$ 6,000	\$ 2,200	\$ 70,342
Brooke	\$ 24,192	\$ 14,000	\$ 50,600	\$ 10,000		\$ 98,792
Cabell	\$ 24,192	\$ 12,250		\$ 8,000		\$ 44,442
Calhoun	\$ 24,192	\$ 15,405	\$ 98,631			\$ 138,228
Clay	\$ 24,192			\$ 5,550	***	\$ 29,742
Doddridge	\$ 24,192					\$ 24,192
Fayette	\$ 24,192					\$ 24,192
Greenbrier	\$ 24,192	\$ 7,070	***	\$ 10,000		\$ 41,262
Hancock	\$ 24,192	\$ 13,600	\$ 50,200	\$ 7,000	\$ 1,487	\$ 96,479
Harrison	\$ 24,192	\$ 10,000				\$ 34,192
Jackson	\$ 24,192	\$ 5,500				\$ 29,692
Jefferson	\$ 24,192	\$ 5,750				\$ 29,942
Kanawha	\$ 24,192	\$ 10,500				\$ 34,692
Lincoln	\$ 24,192	\$ 18,900		\$ 7,000		\$ 50,092
Logan	\$ 24,192					\$ 24,192
McDowell	\$ 24,192	\$ 15,000		\$ 6,600		\$ 45,792
Marion	\$ 24,192	\$ 12,885	\$ 149,657		\$ 3,000	\$ 189,734
Marshall	\$ 24,192					\$ 24,192
Mason	\$ 24,192					\$ 24,192
Mercer	\$ 24,192	\$ 15,684			\$ 3,000	\$ 42,876
Mingo	\$ 24,192					\$ 24,192
Monongalia	\$ 24,192	\$ 7,050				\$ 31,242
Monroe	\$ 24,192	\$ 3,700	\$ 134,897	\$ 5,530	***	\$ 168,319
Morgan	\$ 24,192	\$ 12,000				\$ 36,192
Nicholas	\$ 24,192	\$ 10,000				\$ 34,192
Ohio	\$ 24,192	\$ 10,000				\$ 34,192
Pleasants	\$ 24,192	\$ 9,100	\$ 85,800	\$ 8,000		\$ 127,092
Pocahontas	\$ 24,192	\$ 14,351	\$ 150,000	\$ 10,000		\$ 198,543
Preston	\$ 24,192					\$ 24,192
Putnam	\$ 24,192	\$ 9,000	\$ 145,900	\$ 8,600	\$ 3,000	\$ 190,692
Raliegh	\$ 24,192	\$ 10,000		\$ 10,000		\$ 44,192
Randolph	\$ 24,192					\$ 24,192
Region VIII	\$ 120,960	\$ 13,980	\$ 141,100	\$ 10,000		\$ 286,040
Grant						\$ -
Hampshire						\$ -
Hardy						\$ -
Mineral						\$ -
Pendleton						\$ -
Regional SWA	\$ 48,384					\$ 48,384
Gilmer						\$ -
Lewis						\$ -
Ritchie	\$ 24,192	\$ 3,300				\$ 27,492
Roane	\$ 24,192	\$ 11,500				\$ 35,692
Summers	\$ 24,192	\$ 9,275		\$ 1,565		\$ 35,032
Taylor	\$ 24,192					\$ 24,192
Tyler	\$ 24,192					\$ 24,192
Tucker	\$ 24,192					\$ 24,192
Upshur	\$ 24,192	\$ 6,900	\$ 9,025			\$ 40,117
Wayne	\$ 24,192	\$ 7,044		\$ 3,000		\$ 34,236
Webster	\$ 24,192					\$ 24,192
Wetzel	\$ 24,192	\$ 7,125	\$ 36,400			\$ 67,717
Wirt	\$ 24,192					\$ 24,192
Wood	\$ 24,192	\$ 5,725	\$ 19,925	\$ 6,245	\$ 1,073	\$ 57,160
Wyoming	\$ 24,192	\$ 10,000			\$ 3,000	\$ 37,192
Total	\$1,330,560	\$360,000	\$1,116,135	\$133,090	\$ 19,687	\$2,959,472

Sources: Solid Waste Management Board, 2019 West Virginia Solid Waste Management Plan; West Virginia Department of Environmental Protection; PERD calculations of equal shares for local SWAs.



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