

2015 *Solid Waste Division Annual Report*



King County

Department of
Natural Resources and Parks
Solid Waste Division

*Mount Rainier looming in the distance of the Cedar Hills Regional
Landfill is a constant reminder of our environmental mission.*

Message from the Director

The King County Solid Waste Division is constantly working to understand how we can do things better, and in 2015 we strove for excellence in waste prevention, resource recovery, and waste disposal. Achieving this means our customers will save money, we will reduce our carbon emissions, and we will extend the life of the Cedar Hills Regional Landfill.

In order to be responsible and effective solid waste managers, we must first consider how we can prevent waste from even entering our system.

A large and immensely important component of waste prevention is education. Information is power, and even more important than telling customers and stakeholders which materials go where is explaining why it needs to be that way.

In 2015, our waste prevention experts reached out. Our *Food: Too Good to Waste* program attended farmers markets to encourage people to store and dispose of their food and food waste properly, and we partnered with private retailers to offer discounts on compostable containers and bags to make food scrap recycling that much easier.

Recicla más. ¡Es facilísimo!, our Spanish-language curbside recycling education campaign, continued to connect our Spanish-speaking residents to their waste. Our popular *EcoConsumer* program provided tips and resources on making the best waste prevention buying choices, and more schools and school districts joined our *Green Schools* program to increase recycling education and levels at the county's schools.

After waste prevention comes resource recovery. This may just sound like a fancy word for

recycling, but truly efficient resource recovery goes much deeper by making sure the economy and the consumer benefit as much as the environment does.

In addition to the division's resource recovery efforts at the Shoreline Recycling and Transfer Station in 2015, two new resource recovery programs began. The first, *LightRecycle WA*, is a statewide recycling program for mercury-containing bulbs and tubes. The program was developed by replicating recycling and collection models established by our division and at the end of the year our facilities successfully collected a total of 15,780 pounds of spent mercury-containing lighting. Our second new program, *Threadcycle*, displayed the power of partnership as the division collaborated with Seattle Public Utilities and nine area organizations to reduce the estimated 400,000 tons of clothes, shoes, and linens area residents send to landfills each year.

Everything comes to an end, and waste disposal still remains at the core of our business. Compared to 2014, total tonnage grew by 2.8 percent, about 24,500 tons, to 881,525 total tons of garbage and yard waste disposed at our transfer stations and the Cedar Hills Regional Landfill in 2015.

Tonnage and tip fees fund our organization and every year we continue to excel at providing the most sustainable, cost-effective, and environmentally sound waste disposal methods. This includes working to update our transfer system by siting newer, more modern transfer and recycling stations; using the best technology to aid in compaction so we save and use existing room wisely; and responsibly collecting landfill gas and turning it into usable energy.

Our 2015 work makes us proud, and it could not have been possible without the support of our valued employees, customers, partnering cities, two advisory committees, the King County Executive, the King County Council, and the many businesses and organizations we work with on a daily basis.

Together we will continue to lead by example, focus on the right things, and get the right results.



Waste Prevention

New Policies Reduce C&D in the Waste Stream

Construction and demolition debris (C&D) consists of materials generated during the construction and demolition of buildings, roads, and other structures. C&D includes asphalt, brick, concrete, clean wood, and gypsum drywall, among other materials. Historically, up to one-third of the waste stream has been C&D, which contains a high percentage of recyclable materials such as wood, metal, cardboard and concrete.

To prevent landfilling of C&D, the Solid Waste Division worked in consultation with private-sector companies to ban C&D materials from disposal at their facilities and instead send them to C&D recycling and disposal facilities specifically designed to handle these materials. These policies, which are the first county-wide C&D disposal bans in the nation, have also helped drive the creation of new C&D facilities, creating new jobs and supporting local businesses.

Partnering cities have also adopted similar legislation to ban C&D materials. The resulting policies went into effect on January 1, 2016.

Working to Enhance the Multi-Family Recycling Rate

Another important area of focus for preventing waste in 2015 was working on finding effective ways to increase the multi-family recycling rate. In general, multi-family housing faces challenges in implementing effective recycling and composting education for tenants. Some of the causes of this include high tenant turn-over, limited tenant English skills, and door-to-door outreach, the most effective education, is expensive. Multi-family complexes also face infrastructure challenges like inadequate capacity for garbage and recycling containers

The Solid Waste Division worked in partnership with Waste Management to conduct a multi-family pilot study to determine the Best Practice Basics (BPPBs) to address these unique challenges. The pilot study was published in early 2015, and the division worked throughout the year to understand how commercial haulers can apply these practices to increase recycling rates and decrease contamination. In 2016, Waste Management and Republic Services plan to implement the BPPBs in all the unincorporated King County multi-family complexes.

Waste Prevention by the numbers

2015 Schools enrolled in the Green Schools Program: **227**

2015 Earth Heroes at Schools: **18**

Social Media Accounts: **6**
(*Facebook, Twitter, Instagram*)

Total number of followers on Twitter and Instagram: **7,593**

Total number of likes on Facebook: **5,408**



C&D contains a high percentage of recyclable materials such as wood, metal, and concrete.

Waste Prevention Continued



After working with Zero Waste Vashon, the division brought yard and food waste disposal services to the Vashon Recycling and Transfer Station

Partnering with Vashon Island Residents

When Zero Waste Vashon, a nonprofit organization, approached the division about bringing yard and food waste disposal options to the Vashon Recycling and Transfer Station the division supported it. Beginning in October 2015, the division initiated a year-long pilot program to determine the feasibility of providing future processing for these materials. In the first three

months of the program, 426 customers brought 106.29 tons of yard and food waste to the station. These materials were then diverted from the Cedar Hills Regional Landfill and instead sent to Cedar Grove, a private-sector composting company. Throughout the duration of the pilot the division will track quantities and characterize types of waste collected to provide the best service.

Resource Recovery

Record Recycling Levels and Enhanced Services

With a significant increase in the amount of materials being recycled at division transfer stations, 2015 was a banner year for recycling. In total, 18,174 tons of recyclable materials were diverted from the Cedar Hills Regional Landfill. This represents a 33 percent increase from 2014. Overall, yard waste accounted for the largest category of materials recycled at 48 percent, followed by scrap metal, clean wood, and cardboard.

The Bow Lake and Shoreline recycling and transfer stations accounted for 75 percent of all recyclable materials recovered (Bow Lake alone collected 1,160 tons of cardboard, clean wood, and scrap metal).

The addition of new cardboard and commingled recycling compactors at the Shoreline, Enumclaw, and Vashon stations in June helped the division save \$128,427 in transportation costs and lowered greenhouse gas emissions by 23.99 Million Metric tons of Carbon dioxide equivalent (MtCo2e) for the period of June-December.

Looking Toward a Greener Built Environment

The division's *GreenTools* program supports internal county agencies, cities, the building community, and the public in designing buildings and infrastructure that have fewer impacts on the environment, are energy efficient, and that use recyclable materials.

Resource Recovery by the numbers

Recycling tons collected: **18,174**

Scrap metal tons collected: **2,391**

Yard waste tons collected: **11,723**

Mercury-containing bulbs and tubes pounds collected: **15,780**

Transportation cost savings due to use of compactors: **\$128,427**



Transfer Station Operators at the Shoreline Recycling and Transfer Station use heavy equipment to recover resources like cardboard.



Landfill gas is transported via pipeline from the disposal areas of the Cedar Hills Regional Landfill to the onsite BioEnergy Washington plant. Once there, the gas is converted into renewable natural gas.

The program brought a multi-jurisdictional group of planners and code officials together to develop and update green codes.

GreenTools was an integral part of the county's Strategic Climate Action Plan (SCAP). Included in the SCAP is the goal to register 10 "Living Building Challenge" projects by 2030.

At the end of 2015, *GreenTools* received a grant from the Bullitt Foundation to support the *Sustainable Cities Roundtable* program. The roundtables are a series of training sessions, discussions, and workshops dedicated to green building and climate change policy. The grant will fund bringing Island Press authors, who are national leaders in subjects of the built environment, climate change, and planning issues, to participate in the roundtables.

Life After Disposal

The landfill is designed to capture landfill gas, which is then sent by pipe to BioEnergy Washington's (BEW) facility. BEW is a private company that contracts with the division to process landfill gas into pipeline-quality Renewable Natural Gas (RNG) for sale to Puget Sound Energy. In 2015, the division provided saleable RNG worth approximately \$1.3 million to BEW. The gas is being sold as RNG for transportation uses in the California market. In 2015, the RNG produced at the BEW facility displaced the equivalent of 11,459,783 gallons of diesel fuel.

Waste Disposal

Planning for Future Capacity at the Cedar Hills Regional Landfill

In anticipation of Area 7 of the landfill reaching capacity in 2020, the division began preparing for a new Area 8 in 2015. Work on this project began in May with the excavation of the South Solid Waste Area (SSWA) to make room for the new area. Nearly 700,000 cubic yards of waste and soil buried in the SSWA was unearthed and moved to Area 7. Once that was completed, the division began the process of relocating stormwater ponds to the SSWA.

This project is expected to be completed at the end of 2019. At that time, the division will transfer waste disposal from Area 7 to Area 8.

Updating the Transfer System

In 2015, work to update our transfer system with more modern and adequate facilities continued. Most notably, substantial construction work was completed for the new Factoria Recycling and Transfer Station. This project, begun in 2014 and expected to be fully completed in 2017, will completely replace the current station and include facility enhancements, such as space for collecting recyclable materials, added roof clearance for modern, larger collection vehicles, and the ability to compact materials.

The station is being built to Leadership in Energy and Environmental Design (LEED) standards. These energy conservation efforts will result in 35 percent energy savings, and will include using natural daylight as the primary light source through translucent wall panels and overhead skylights, passive ventilation, and LED lighting. The project is forecasting 469 MMBTUs/year in energy savings, 1.3 million gallons/year in water savings, and 2,836 MTCO_{2e} in greenhouse gas savings. The old station remains open until the entire facility is rebuilt, allowing for minimal impact to customers.

At the end of 2015, work to site a South County Recycling and Transfer Station also progressed with the preparation of a Draft Environmental Impact Statement.



Scheduled for full completion in 2017, the new Factoria Recycling and Transfer Station will allow the division to add enhanced services like recycling.

Waste Disposal by the numbers

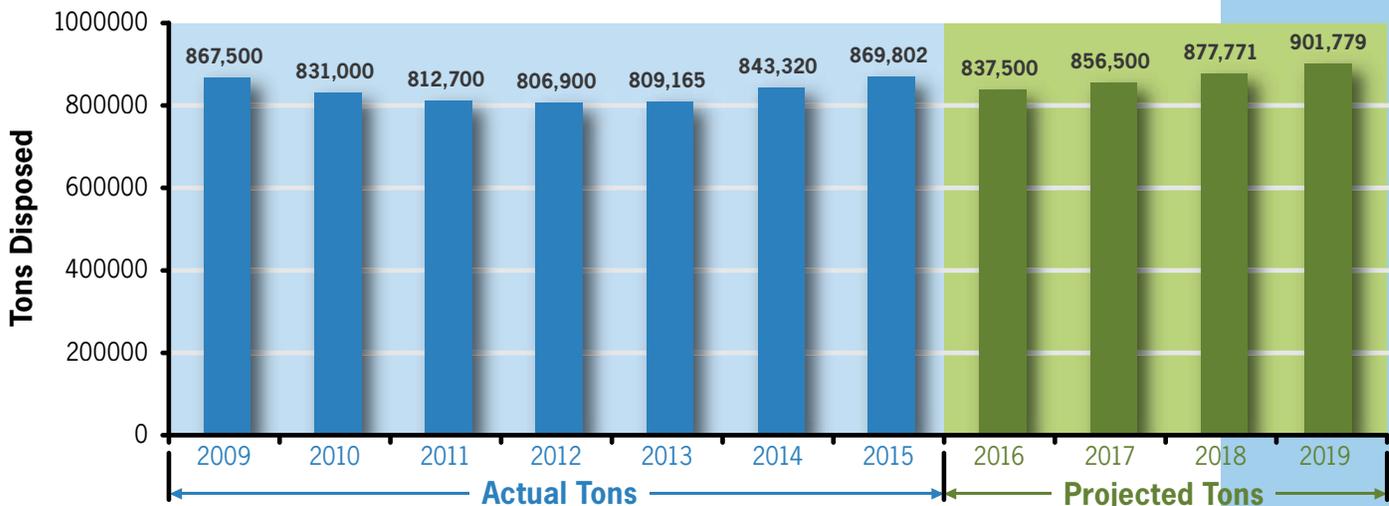
Total tons disposed at Cedar Hills: **869,802**

Estimated tonnage for 2016: **837,500**

Illegally dumped garbage tons collected: **114.73**

Illegally dumped recycling tons collected: **10.56**

Household Hazardous Waste tons collected: **1,645**



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