



Year End Report

Fiscal Year 2019



Ada County Solid Waste Management

2019 Year End Report

200 West Front Street

Boise Idaho 83702

208-577-4725

Adacountylandfill.com

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Solid Waste Management

Kurt Hunt, Director of Ada County Solid Waste Management

Theresa Rademacher, Deputy Director of Solid Waste Management

Justin McConnell, Landfill Operations Supervisor

Chad Schwend, Environmental Compliance Coordinator

Micah Munion, Landfill Technician III

David Dyer, Landfill Technician II

Cody Mendenhall, Landfill Technician II

Kenneth "Kenny" Butt, Landfill Technician I

Charles "Chuck" Silvers, Landfill Technician I

Richard Puzio, Landfill Technician I

Barbara "Barbie" Cogen, Office Supervisor

Mary Pera, Account Clerk II

Misty Toulouse, Account Clerk II

Barbara Burkhardt, Scalehouse Operator

Jay Camp, Scalehouse Operator

Cearah Munion, Scalehouse Operator

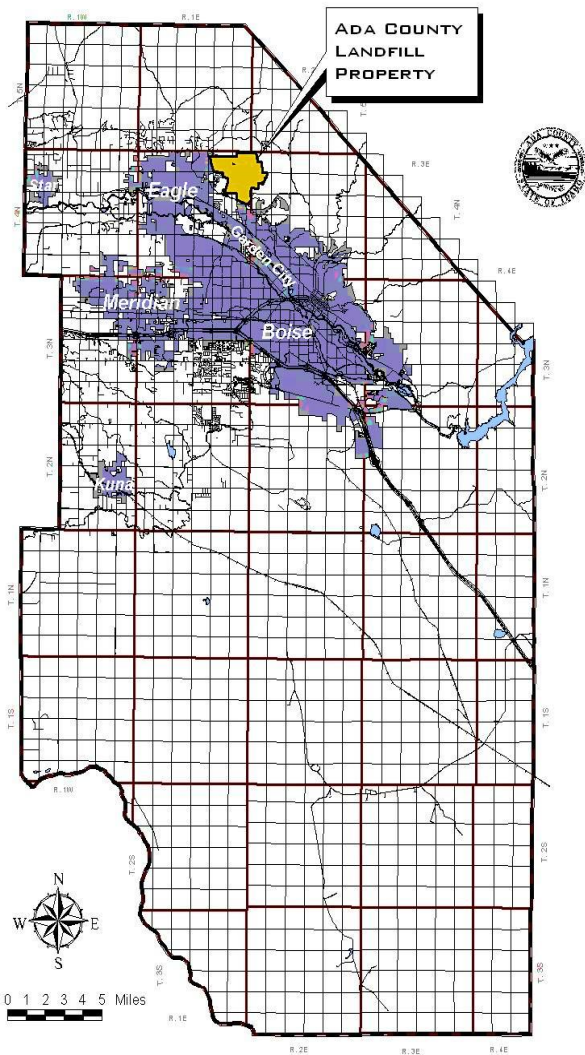
Marna Poulson, Scalehouse Operator

Donna Kinkead, Scalehouse Operator

John Hebel, Scalehouse Operator

Jessie McMillian, Automotive Service Technician





Solid Waste Management seeks to pro-actively manage County waste disposal facilities, enforce applicable codes, and provide reasonably priced and environmentally acceptable methods for solid and hazardous wastes reduction and disposal for County residents and businesses. Services provided by the Division include:

Division Mission

- *Maintenance of a sanitary landfill for acceptance of wastes generated by County residents,*
- *Operation of a permanent year-round facility for disposal of household and small business hazardous wastes,*
- *Contractual oversight of the franchised trash collection in unincorporated Ada County ensuring compliance with trash pick-up, recycling and rates,*
- *On-site recycling programs for wood, tires, automotive batteries, refrigerators and air conditioners,*
- *Educational resource for local schools and service groups.*

Executive Summary

Landfill Economics

Ada County is required, under State of Idaho laws and regulations, to maintain a municipal solid waste disposal system. To meet these obligations, Ada County established the Solid Waste Enterprise Fund for development and operation of the disposal system. Charged with the responsibilities of complying with federal, state and local laws, rules and regulations, the County's Solid Waste Division oversees operation and management of the County's:

- Landfill Cells – Hidden Hollow and North Ravine;
- Household Hazardous Waste collection and disposal;
- Electronic, Wood, and organics recycling; and
- 2,700-acre multi-use Ada County Landfill Complex.

Since the Department is funded solely through an enterprise fund, Solid Waste does not receive any support from tax-dollars for the activities of the Department. Responsibilities are met through collection of user fees assessed at the landfill gate. Those fees support all daily operations, payroll expense, long-term obligations, for example, landfill closure and post-closure care, capital improvements, special waste collections, and diversion and recycling programs, for example, household hazardous waste management, electronic recycling, and organics recycling.

Across the board, waste disposal volumes were fairly consistent over the last three years. Division revenues are generated mostly through waste volumes and expenditures have been adjusted to compensate for the steady, volumes.

Some of the expenditures that the Landfill has incurred during Fiscal Year 2019 are:

- Expanded the gas field to allow for more gas from The North Ravine Cell to be extracted
- Vertical Well Drilling into Hidden Hollow Cell
- Cost of Service Study
- Landfill Gas Feasibility Study
- Purchased new equipment to ensure safe and effective operations

What We Do

The Department

All daily operational decisions are under the discretion of the Director. Long-term plans for the landfill are discussed with and approved by the Board of Ada County Commissioners.

To accomplish its responsibilities, goals and mission, the Department consists of three functioning divisions within the department, identified by their primary objectives. The three divisions are Operations, Hazardous Waste, and Environmental. Although the functions define the division of labor, the three functions are closely allied and coordinated to achieve the common objectives of environmentally and fiscally sound management of Ada County's municipal solid waste management system.

Although the Division has the large responsibility of ensuring proper disposal of Ada County's municipal solid waste, it does so with a staff of 20 – six of whom are part-time workers.

Operations

The oversight of the daily operations and landfill activities fall under the *Operations* portion of the Department. This function works directly with the onsite contractors in the daily receipt, placement and cover of the waste into the landfill or through the wood-waste recycling area.

Environmental

The *Environmental* division oversees operation and maintenance of the landfill-gas extraction system, leachate collection and control systems, groundwater protection, and other environmental facilities located at the Hidden Hollow Sanitary Landfill. This function is also responsible for creating reports regarding systems function and operation.

Hazardous Waste

The *Hazardous Waste* division oversees operation and maintenance of the County's hazardous materials collection program. This function works with the municipalities in the County to provide a seamless program for proper disposal of household hazardous wastes.

The Staff

These functions within the department would fall apart were it not for the dedicated staff of the landfill. The landfill functions with twenty employees, six of whom work part time.

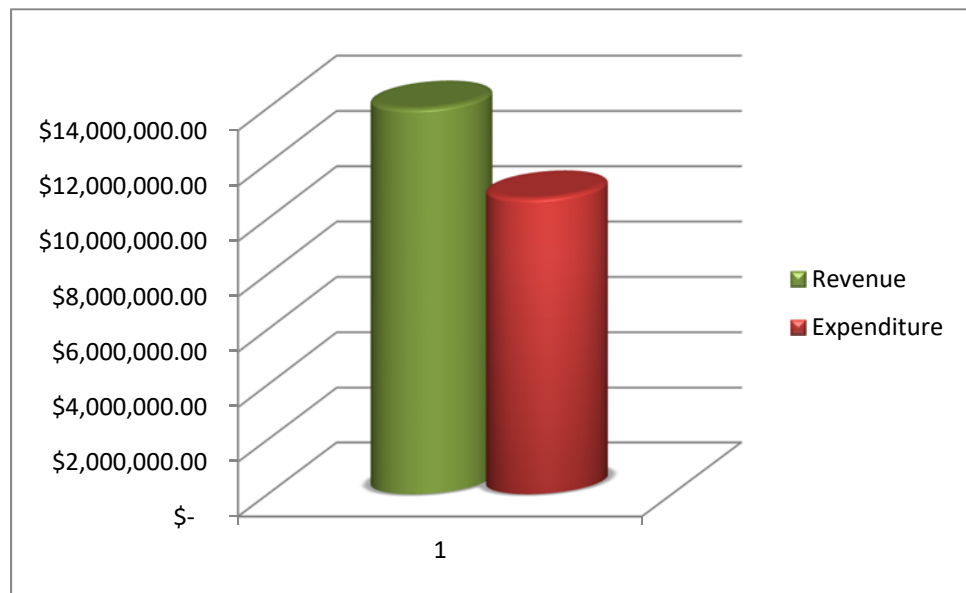
- The Director is responsible for overseeing all activities of the landfill. Additionally the Director is responsible for keeping the Board of County Commissioners apprised of all pertinent developments for the landfill.
- The Deputy Director provides short, and long range analysis of wastes, revenue and expenses. The Deputy Director investigates developments for various solid and hazardous waste functions and activities, conducts analysis of annual waste streams, recommends the development of new programs that result in diversion and/or reduction of the waste stream, and conducts studies of special areas of emphasis. The Deputy Director is responsible for all personnel issues, financial compliance and tours of the landfill. The Deputy Director writes, reviews and updates policies and procedures. The updated procedures are often at the suggestion of staff for functionality.
- The Environmental Compliance Coordinator oversees operation and maintenance of the landfill-gas extraction system, leachate collection and control systems, groundwater treatment, irrigation system, and other facilities located at the Landfill. This position is also responsible for creating reports regarding systems function and operation. Additionally this position is the main point of contact for the contractors for the Household Hazardous Waste Facility and the onsite Generators. The Environmental Compliance Coordinator is focused on the permits that allow the Landfill to operate; including air, operating, and groundwater. The Environmental Compliance Coordinator is the primary safety coordinator for the Landfill, ensuring that staff, customers and contractors stay safe.
- The Landfill Operations Supervisor oversees the daily operation and landfill activities. This position works directly with the onsite contractors in the daily receipt, placement and cover of the waste into the landfill or through the wood-waste recycling area. The Operations Supervisor oversees and conducts landfill technicians and identifies facility maintenance projects as needed.
- The Landfill Technicians work across the division by performing hazardous waste screening, assisting with environmental monitoring, participation in the recycling activities and in miscellaneous landfill maintenance and operational activities.
- The Landfill Office Supervisor oversees all financial aspects of the business. This position oversees the Scalehouse Operators, Account Clerks, and any Administrative issues. The Office Supervisor functions as a support to the Scalehouse Operators with customer interaction, the Account Clerks and any customer support. The Office Supervisor fills in for any staff members who are unable work.
- An Account Clerk performs the full range of record-keeping work in the detailed maintenance of the financial status of Solid Waste Management Division, maintains accurate details of daily receipts and transactions, and monitors charge account activities of approved customers, and accomplishes secretarial duties for the Division. The Department, in order to create a separation of duties, employs two Account Clerks, one for Accounts Receivable, and one for Accounts Payable.

Supplementing the County's staff are temporary employees from a contracted employment services company. These supplemental employees help with supervising SLD participants in grounds maintenance, litter control and onsite routine grounds maintenance.

- Scalehouse Operators greet customers, assess and collect fees from landfill customers, maintain custody and account for money received. The landfill employs six cashiers, each cashier works part time.
- The Automotive Service Technician is responsible for the maintenance and repair of the Departments various and numerous pieces of machinery and vehicles.

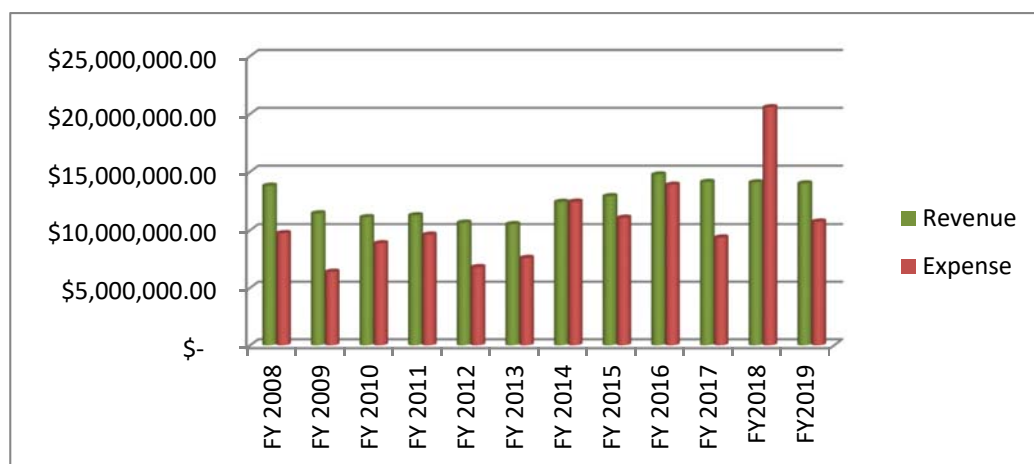
Financial Health

The Financial Health examines expenditures and revenues, the impact of revenues on long-term planning, and scrutinizes the effects on landfill programs subsidized by landfill user fees. Because Solid Waste Management functions directly on the fees collected at the gate, the financial health of the division, current operations, and future development of projects and plans, are dependent upon the volume of waste that is dropped at the landfill. The expenses to operate the division totaled \$10,736,934.14. The revenue reported for Fiscal Year 2019 was \$13,982,293.99. This difference reflects spending at \$3,245,359.85 less than revenue.



In addition to the expenditures for the operations of the landfill there was also \$4,989,801.31 spent from the North Ravine Cell Expansion fund 117 to close out the expansion of the North Ravine Cell, Phase 3.

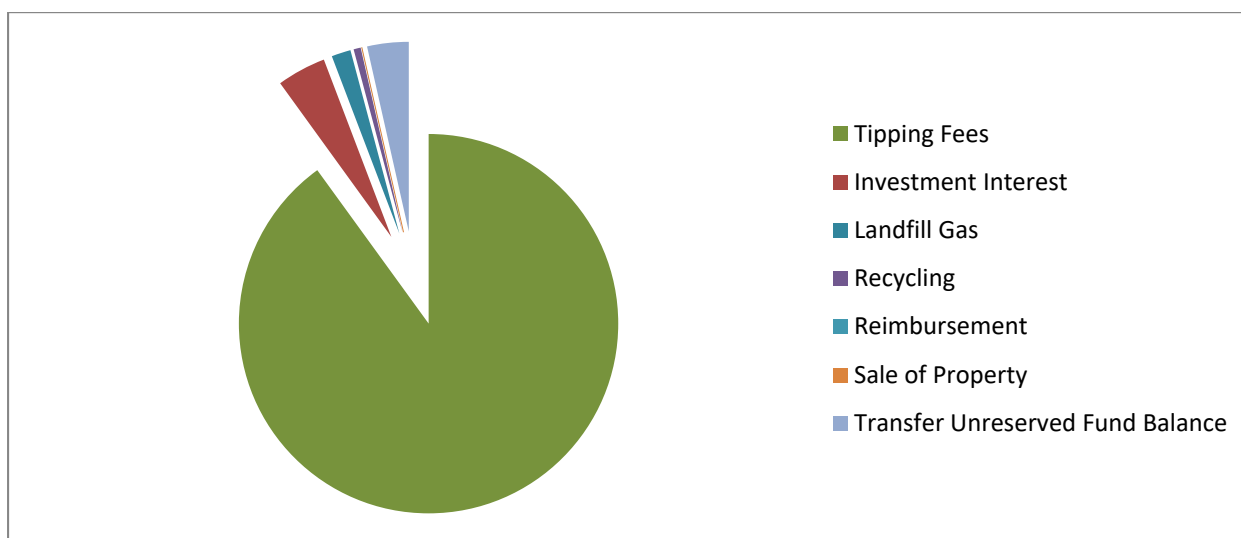
The following chart provides a ten year historical perspective of the revenue versus expense that the department has seen. As shown most of the past ten fiscal years the department has exhibited reasonable spending to facilitate future needs.



Revenue

Revenue, for the most part, is generated by the fees that are collected at the gate. Gate fees typically reflect the majority of the income for the landfill. Fiscal year 2019 is no exception; gate fees were responsible for 90% of the total revenue for the landfill. These monies are accrued by the collection of municipal solid waste in the Cities of Boise, Meridian, Star, Garden City, Eagle, Kuna, and unincorporated Ada County. This total amount also reflects cash customers at the landfill gates and customers who have in-house charge accounts. The total amount of revenue from gate fees totaled \$12,586,978.85 for fiscal year 2019.

In addition to the fees collected at the gate, the remaining 10% of the revenue that is generated for the landfill include investment interests, 4.2%, for \$85,149.17, the sale of landfill gas, 1.6%, \$228,643.55 for the production of electricity, from the sale of recyclable materials, .6%, \$84,769.26, general reimbursement, 0%, \$2,342.99, and for this year the sale of property, 0%, \$675.51; and finally the Transfer of Unreserved Fund Balance was left from fund 117 back into the operation account as the North Ravine Cell was completed, 3.5%, \$493,734.66. These revenue sources brought a total of \$1,395,315.14.



Expenditures by Category

Solid Waste Management oversees a variety of projects to increase efficiency, and to promote environmentally friendly methods for disposing of municipal solid waste from Ada County. However, the majority of the expenditures that Solid Waste Management incurs are centered on daily landfill operations. There are six major categories of expenses for the landfill: Personnel Costs, Administrative Costs, Capital Costs, Hazardous Waste Costs, Environmental Control Costs and Capital Improvements. Over all, the landfill spent \$10,736,934.14 for all of the expenses for operating and maintaining the landfill. The chart provides a glimpse of how the categories reflected in the spending at the landfill in fiscal year.

Operational Costs are the highest portion of spending at the landfill. Administrative costs include operational contracts for landfill operations, Hidden Hollow Closure, various operational insurances, grounds maintenance, tire recycling, wood waste recycling and the daily operational costs associated with maintaining an office environment. In Fiscal Year 2019, the landfill spent \$7,846,118.27 in operational costs.

Hazardous waste disposal; Stericycle is the County's hazardous waste contractor. As part of their contract they staff the Hazardous Waste Facility and the Mobile collection trucks, process all the waste received and monitor the free recycling program for county residents. This contract represents 90% of the total amount spent for Hazardous Waste disposal. The Landfill paid Stericycle \$601,685.09 for the management and disposal of hazardous materials from Ada County citizens. The remainder of the money spent was to maintain the department with office supplies and trainings. The Hazardous Waste division spent a total of \$664,008.59 in Fiscal Year 2019.

Environmental Controls is traditionally third for the largest portion of landfill spending; Environmental Controls focus on landfill gas extraction systems and the environmental impact of the landfill. The two major portions of this budget are engineering services, provided by CH2MHill and gas collection. Part of the contractual obligations for Jacobs Engineering is to report to the landfill regarding environmental issues and landfill capacity. Gas collection is provided by a system of pipes and wells that have been installed to extract landfill gas. The gas is, in turn, sold to a third party that uses the gas to generate electricity. Whatever gas is not sold is sent to the onsite flare system, where it is destroyed, with minimal emissions. The Landfill spent \$653,906.31 for Environmental Controls in fiscal year 2019.

Personnel costs are crucial to the functionality of the Landfill. The landfill operates with twenty staff members, six of those are part time employees. Part of the personnel costs includes County provided benefits for employees. The landfill operates with the assistance of temporary employees contracted through a temporary employment agency, the cost of which is included in the Administrative Costs budget. For Landfill personnel, the division spent \$1,104,542.79.

Capital Costs are physical, high cost, items purchased for the department, including vehicles, office furniture, computers and major equipment. In Fiscal Year 2019 there were several vehicle purchases including a 2019 Ford F150, a Bobcat E 85 T-R with accessories, a towable boom lift, a 5 ton dump truck from Federal Surplus, a John Deere Loader and Backhoe, a small Ford EcoSport for Administrative use, and movable vehicle lifts that are capable of lifting any piece of equipment the department owns. For Fiscal Year 2019 the Solid Waste management Department spent \$468,358.18 for all Capital Expenses.

Vehicles

In Fiscal Year 2019 the department purchased several vehicles for departmental use.

BobCat E 85 T4 R- Series for \$83,675 and \$1,066 for accessories.

2019 Ford Eco Sport for use at the administrative trailer and for bank runs. This little four wheel drive replaced a Ford F-150 that went back into the field. It was determined that the large truck would be better used in the field instead of sitting in a parking lot. The Ford Eco Sport was purchased for \$23,284

A Towable Boom Lift was purchased too work on several projects around the landfill. The first project was the retrofitting of the lights in the hangar. The old outdated lights were replaced with upgraded LED lights. The second project was for the installation of cameras throughout the property. This lift is used by other county employees who come to perform work at the landfill. Additionally this unit can be used to perform maintenance on the flare and other projects that require safe lifting of personnel. This lift was purchased for \$36,480.



Towable lift

A used 5 ton dump truck was purchased from Federal Surplus to add to the fleet of similar dump trucks the landfill already has. This dump truck was purchased for \$5,000, and brings the number of like vehicles to five for the landfill.

A new 2019 Ford F-150 was purchased to add to the fleet of pickup trucks there are in the department. This new truck is for the Operations Supervisor to use. This truck was purchased for \$19,195, after trading in an older F-150.

The department purchased two John Deere units. A 2019 John Deere 644K Loader for \$180,995.

Capital Improvements

During the Fiscal Year the department purchased land across Seamans Gulch Road. This land was part of an abandoned dump site from decades ago and was on private land. By purchasing the land the department, with qualified staff, became responsible for the seepage that was seen via satellite imagery. This small piece of land was purchased for \$42,941.68.

The Department purchased a set of six mobile equipment and vehicles lifts. These lifts are capable of lifting 18,500 pounds each and when working collaboratively can lift 111,000 pounds safely. In addition to the lifts the department also purchased the crossbeam so that machines can be lifted by their frames and the forklift adapter. Additionally these lifts can be taken out into the field and used on any piece of equipment where it is. These lifts were put into Capital Improvements as they were a long term improvement in safety for the onsite Mechanic and cost \$75,721.50.

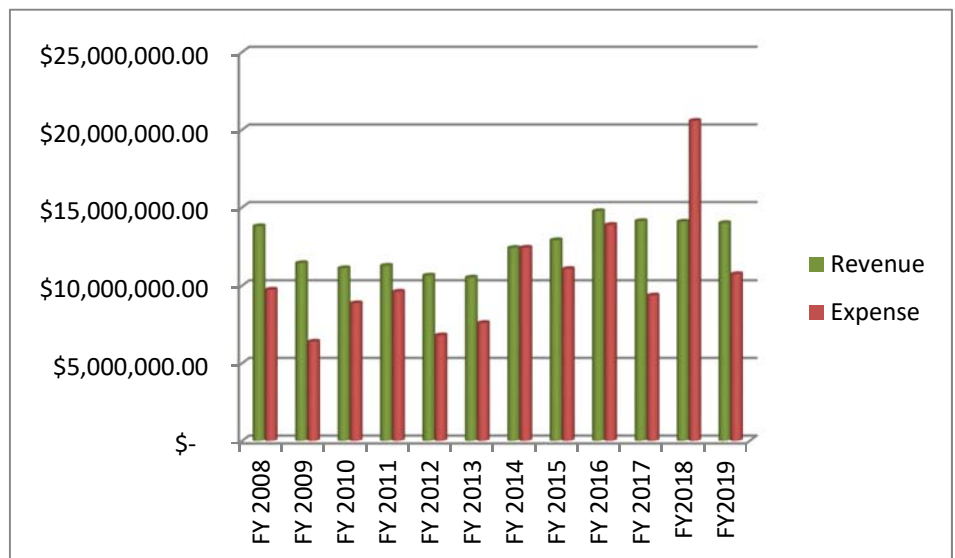


New lifts lifting the new F-150 the Department purchased in FY2019

Enterprise fund

Historically the Department has been, through fiscally conservative spending, able to save monies for use later than the fiscal year they are acquired. From Fiscal year 2009 through Fiscal Year 2019 the department was able to preserve an average of \$1,671,359 per year, including two years where expenses were higher than revenue. That preservation allows for projects, like the expansion of the North Ravine Cell, to be funded without the assistance of the County general fund, or

by borrowing the money from outside sources. These practices allow the Department to fully fund projects from the Enterprise Fund which sustains operations. The Department, for Fiscal Year 2019 spent \$3,245,359 less than revenue collected. The graph shown gives a visual for the conservative spending practices of the Department over the past ten fiscal cycles.



Major Projects

Horizontal Pipes

During Fiscal Year 2019 the staff at the landfill installed horizontal gas collection pipes into the North Ravine Cell Landfill. This is an ongoing project and as the cell is filled up, there will always be more pipes to be installed. In Fiscal Year 2019, in addition to the normal gas field expansion there was additional pipe purchased to hook up the 72 new vertical wells that were installed in the Hidden Hollow Cell, and spent approximately \$402,130.

Billing System

During Fiscal Year 2018 it was determined that the old Accounts Receivable software, Sage, was not working well and needed to be replaced. Because the landfill operated the Scalehouse through proprietary software the same company developed an accounts receivable software that integrates with the operating software, Total Scale. This project was developed and installed before there was a renewal for Sage in December 2018. The new software was implemented for the December 1, 2018 billing cycle for charges in November 2018. The new software works more efficiently and saves the AR Account Clerk a significant amount of time each month during billing. This new software was written for the landfill for \$20,515.

Well Drilling

Part of the closure plan for the Hidden Hollow Cell, officially closed in Fiscal Year 2018, was to install vertical wells into the trash all the way to the native soil, the deepest well was just over 300 feet. With these new wells installed the department is better able to capture transient landfill gas from going into the atmosphere. The 72 new wells cost \$535,777 and completed the Hidden Hollow Closure. The only remaining work that will need to be done on Hidden Hollow will be maintenance and monitoring of the gas field, repair any erosion spots on the landfill, and monitoring groundwater and gas.

Sign off of NRC3

Construction of the North Ravine Cell Phase 3 was completed in January 2019. The Idaho Department of Environmental Quality signed off on occupancy on March 29, 2019. This approval allowed the first load to be deposited into the new phase on April 15, 2019. The new cell was used only for commercial loads while the fluff layer and pad were developed. Through the months of May and June both NRC2 and NRC3 were used. On July 1, 2019 all waste was directed to NRC3 and NRC2 was closed off with the exception of asbestos containing loads. This recent expansion should last the department approximately five years and the engineering and design of phase 4 will need to start in four years.

Cost of Service Study

As part of the investigation into tipping fees at the landfill the Department entered into an agreement with Great West Engineering to conduct a Cost of Service Study. This inclusive report looked at the daily operations of the landfill, the future capital expenses by utilizing the Strategic Management Plan published by the Department in January 2019, and the closure/post-closure regulatory obligations that the Department has. The main purpose of this report was to determine the cost per ton for the landfill to conduct the business needed. That rate was determined to be \$29 per ton to operate, plan for the future, and maintain the closed landfill in the future.

In addition to the cost of doing business the COSS provided an Excel based model to assist the department in determining weight based tipping fees. In Fiscal Year 2020 the Department will be working through the model to implement a new rate structure in Fiscal Year 2021.

This study, with the rate model cost the department \$51,295

Landfill Gas Feasibility Study

Part of the commitment to environmental cleanliness and compliance with the air quality permit the department had a feasibility study conducted with Paragon Consulting to determine options for the landfill gas since the two one-site generators were at capacity and the increase of quantity of gas was anticipated with NRC starting to produce more gas. This report looked at different options for engine generator expansion on site. This report cost the department \$25,625.

Leachate Pond Test

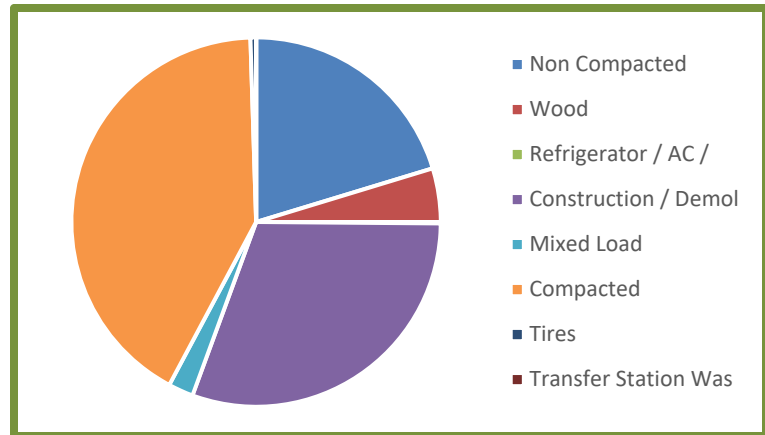
The landfill has two 5 million gallon leachate ponds on site. These ponds collect leachate from the North Ravine Cell and allows the moisture to evaporate. These ponds are constructed similarly to the North Ravine Cell. They have liners and are made of hard concrete, therefore creating an impermeable hole for the leachate to sit and evaporate naturally. The regulations for these ponds suggest leak tests on the ponds every ten years. Since the ponds were installed ten years ago it was time for them to be tested. Materials Testing and Inspection performed the seepage test and charged the department \$5,624.64.

Both ponds passed their tests and will be good to go for the next ten years.

Leachate Recirculation

When the North Ravine Cell was designed it was designed with the intention of recirculating leachate into the lined cell. In August 2019 Department Staff, Engineering Staff from Jacobs Engineering and Staff from the Department of Environmental Quality met to discuss implementing the reinjection of leachate into the lined cell. On August 14, 2019 the Department received notice to proceed with a three year pilot program to inject leachate into the lined cell, allowing for data collection and to determine the efficacy of the program. Part of the conditions of the pilot study was to conduct an open house for members of the public to comment and ask questions. We held the open house on September 17, 2019 and only had one person come to ask questions. The department started the reinjection process on October 2, 2019 and will have more to report as the pilot program progresses.

Disposed Materials by Category and Typical Fees



Starting off fiscal year 2015 was a new rate structure for the residential customers of the landfill. While commercial customers are still charged by the cubic yard, residential customers are now charged by the weight. The standard charge for residential customers is \$33 per ton for general waste, construction and demolition debris and for wood waste the charge is \$22 per ton. There is an \$11 minimum for all loads that minimum will cover up to 680 and 1,000 pounds respectively.

As previously discussed, the fees collected at the gate account for 90% of the income for the landfill for Fiscal Year 2019. These fees are collected from every load that is brought to the landfill which generates a fee. The only loads that would not generate a fee through the gate are loads of E-Waste. These can consist of up to 10 units or one single television. Additionally leaves and Christmas trees are taken, for limited periods, free of charge. The fee collected at the Scalehouse generated \$12,598,932.34 in revenue for fiscal year 2019.

The Solid Waste Management tracks several types of waste. Since this is how customers are charged these are the most common forms of waste accepted at the Ada County Landfill:

- **Compacted** waste is brought mostly by commercial carriers. This waste has been compacted in a vehicle and takes up less space when it initially arrives at the landfill. During fiscal year 2019 the landfill accepted 99,744.95 tons of compacted material, a reduction from Fiscal Year 2018, just over 60,000 tons. Compacted waste is billed at \$11 per yard. For Fiscal Year 2019 compacted material resulted in \$3,227,548.40 of revenue for the landfill.
- **Transfer Station Waste** is waste generated from one of the two area transfer stations owned and operated by a private waste hauler, Republic Services, one in South Boise and one in Western Meridian. This waste is collected at transfer stations and then consolidated into a transfer trailer and hauled to the landfill, these loads are currently billed at \$22 per ton for the waste. These trailers brought 228,841.67 tons of waste to the landfill, an increase of nearly 83,000 tons, and resulted in \$5,034,439.63 in revenue for Fiscal Year 2019.
- **Construction and Demolition** waste is the refuse that comes from constructing or demolishing a building or yard. This waste is delivered frequently by private builders and contractors. This waste also includes asbestos disposal which also includes certification of disposal and certification of burial. Construction and demolition debris are billed at \$11 per yard for commercial customers, however for residential customers the material is billed at \$33 per ton. For fiscal year 2019 the landfill accepted 83,199.03 tons of construction and demolition debris; an increase of 13,837 tons from Fiscal Year 2018. The revenue accumulated by Construction and demolition debris increased as a reflection of the increased volume and resulted in \$2,478,390.50

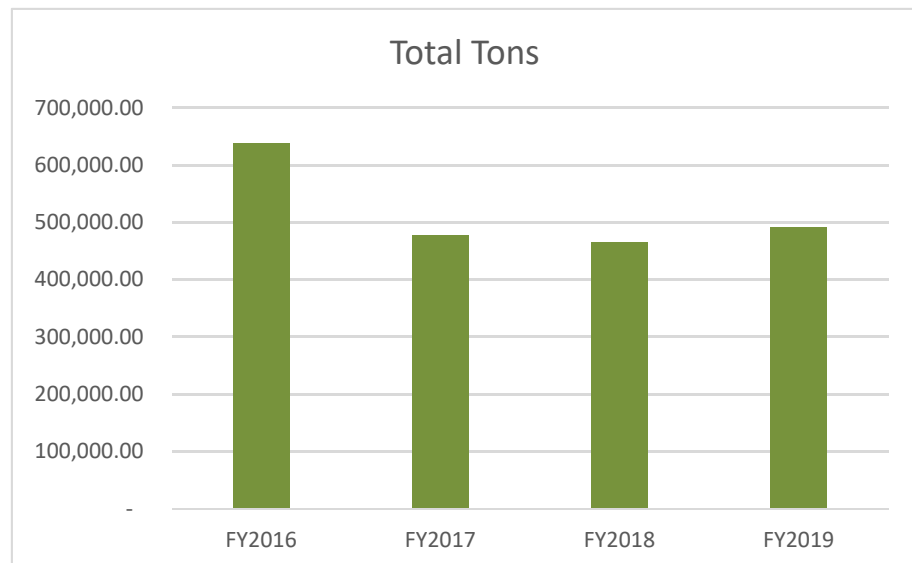
- **Non-Compacted** Waste is brought by average citizens of Ada County. These can be property owners, renters or anyone who has anything that needs to be disposed of. Non-Compacted waste includes several different categories of waste; in fiscal year 2019 the landfill accepted 36,430.45 tons and \$1,466,899.63. Non-Compacted waste is billed at \$5.50 per cubic yard for commercial customers and residential customers can expect to pay \$33 per ton for the material.
- **Wood recycling** is a popular program at the landfill. This includes all branches from trees, clean lumber, and Christmas trees, which are accepted for free for a limited time after the holidays. This program also includes leaves that are accepted, free of charge during the fall. For Fiscal Year 2019 the landfill accepted 11,760 pounds of Christmas Trees and 8,584,920 pounds of leaves. For compensable material, the landfill accepted 17,688.01 tons of wood for recycling. Residential customers pay \$22 per ton for wood, while commercial customers will pay \$2.75 per cubic yard, with a four yard minimum; resulting in an income of \$378,829.18 for Fiscal Year 2019.
- **Household Hazardous Waste** is classified as anything with the potential to be hazardous to human health or environment. In this category are televisions sets with Cathode Ray Tubes otherwise known as CRT, cleaners, oils, pesticides and herbicides. For the residents of Ada County disposing of all of these products free of charge. Conditionally Exempt small quantity generators may use this service as well, for a nominal fee. Typically these materials are taken to the Household Hazardous Waste Facility, however, at times when residents have only a small amount they are allowed to leave it at the recycling area for future processing. In fiscal year 2019 the Scalehouse accepted 353.38 tons of hazardous waste.
- **Tire Recycling** is a program that the landfill employs to keep tires out of the landfill. Ada County has contracted with a local company to take the tires away and to apply them for different purposes. In fiscal year 2019 the landfill accepted approximately 15.02 tons of tires, or approximately 710 tires, showing a revenue of \$2,485.
- **Refrigeration Units**, including refrigerators, freezers and air conditioners are charged at \$22 per item; the landfill only accepts 2 items per household per year for this category. For Fiscal Year 2019, the landfill accepted 1,506 refrigerators for an income of \$33,132.

In addition to these waste types, the landfill also charges for:

- Certificates of Disposal
- Asbestos Disposal

How much waste do we take?

In fiscal year 2019, the Ada County Landfill accepted 492,217 tons of waste, including wood waste. This reflects a 5% increase from Fiscal Year 2018.



Discounts, Waivers and Donations

As Solid Waste Management operates as an Enterprise Fund, the operations and finances are covered from the fees that are collected at the gate. The fees that are charged are determined by the Board of Ada County Commissioners and are applied to all customers equally; there are a few exceptions that are approved by the Board of Ada County Commissioners. Those exemptions for fees fall under categories.

Charitable Organizations

Many charitable organizations become inundated with items impossible for them to sell or to use, leaving the organization crippled with garbage. Because of the services they provide to the community, the Board of Ada County Commissioners has authorized a discounted rate for the waste they bring to the landfill. Without this discount, many of the organizations would be unable to continue to offer the community many of their important services.

Community Service Groups

Often, Community service Groups undertake projects to assist elderly or less fortunate individuals in maintenance of their homes and property. Typically a one-time project, there is often a considerable amount of trash collected by the groups. An organization may request from the Board a one-time fee waiver. An example of this fee waiver is the Paint the Town annual program.

Clean Up Projects

Different Community groups benefit the community by gathering litter and illegally discarded items in public areas. Oftentimes, the waste hauling companies in the communities donate their services to haul the collected trash. When these projects are undertaken, the County typically donates the disposal fees as authorized by the Board of County Commissioners.

Standard Discounts

The one fee that is discounted for any customer, who utilizes the landfill services, is the rate for disposal of recyclable wood. Customers who separate their scrap wood and tree limbs from the rest of their load receive a considerable per yard discount on their disposal fees.

For specified periods each year, the landfill accepts, at no charge, leaves and Christmas trees. When the Landfill has the need, these items are processed into compost at the landfill for re-vegetation projects and erosion-control projects. In fiscal year 2019, the landfill accepted 8,584,920 pounds of leaves and 11,760 pounds of Christmas Trees.

As a standard practice, the landfill accepts electronic waste, commonly referred to as E-Waste free of charge.



Hazardous Waste

Hazardous Materials Management

Since 1988, Ada County has proactively worked to keep household hazardous waste from entering the landfill. The initiative started with a one-day annual collection event. However, after some time the need for a facility to collect hazardous material throughout the year became a necessity. In 1998, the County opened its Household Hazardous Waste Collection Facility. The facility is operated by an outside contractor experienced in hazardous waste management. Ada County currently contracts with Stericycle for hazardous material management and disposal. Stericycle operates the facility according to an operations plan and contract documents. For fiscal year 2019, the County paid Stericycle \$601,685.09 for this service. Over the course of the year the Household Hazardous Waste Facility serviced 8,875 households at the facility.

Built in 1998, Ada County's Household Hazardous Waste Facility currently accepts hazardous waste on Friday and Saturday, every week from both residents and very small quantity business.

Collection of Hazardous Materials

Ada County Household Hazardous Waste Facility

The Household Hazardous Waste Facility, located at the Ada County Landfill, accepts hazardous waste from only county residents. Stericycle is contracted to accept the materials from residents free of charge. Materials that are accepted include but are not limited to: paints, pesticides, fertilizers, cleansers, solvents, and automotive products. Residents are welcome to bring their hazardous waste to the facility on Fridays and Saturdays. Additionally, very small quantity generators, also known as VSQG, and formally called conditionally exempt small quantity generators, may use the facility for a nominal fee. These business generators must produce less than 220 pounds of hazardous waste or 2.2 pounds of acutely hazardous waste per month. These very small generators are served at the Household Hazardous Waste Facility each Friday. During fiscal year 2019, the facility collected 965,297 pounds of hazardous waste; of that 230 VSQG contributed 71,176 pounds of hazardous waste.

City Mobile Collections

The partners involved in the hazardous materials program strive hard to make the program seamless throughout Ada County; using the same educational materials and vehicles. Stericycle has agreements with the cities of Ada County to offer mobile collections throughout each month. As an active partner in the proper disposal of



hazardous material, Ada County Solid Waste Management incurs the cost of properly disposing of the hazardous materials collected through these events and the Facility; while the Cities incurs the expense of operating the mobile collection program. The City of Boise leases trucks to the other Cities specifically dedicated to the household hazardous waste program at a very nominal rate.

The City of Boise has ten sites for mobile collection; each site is open one day per month for seven hours. There are 2-3 collection sites open each week in the City of Boise. The City of Meridian collections occur each Monday of the month, with the exception of holidays. This results in 3 to 5 collections each month. The sites are open for seven hours each Monday. The City of Eagle and the City of Kuna contract with Stericycle for quarterly collection on specific Wednesdays of the month. This results in 4 collection events per City per year. Each event is open for seven hours. All these collection locations are open to Ada County residence. Residences are able to utilize whichever location is most convenient to them.

The mobile collection program served 19,951 Ada County households, resulting in 597,698 pounds of household hazardous material diverted from landfill disposal. Below is a summary of the Cities' collection events.

City	Customers	Materials per Pound
Boise	11,421	330,027
Meridian	7,398	227,245
Eagle	611	14,630
Kuna	521	25,796
Total	19,951	597,698

The success of the hazardous waste collection program is directly attributable to the partners who have committed to the health and safety of our environment through meticulous planning and execution of the program. Ada County sincerely wishes to thank the public and private agencies for their efforts and resources that have helped Ada County reduce the environmental threat to our community, namely:

- City of Boise
- Republic Waste Services of Idaho, in collaboration with the City of Meridian
- City of Eagle
- J&M Sanitation, in collaboration with the City of Kuna
- Ada County Highway District
- Idaho Department of Environmental Quality
- Central District Health Department

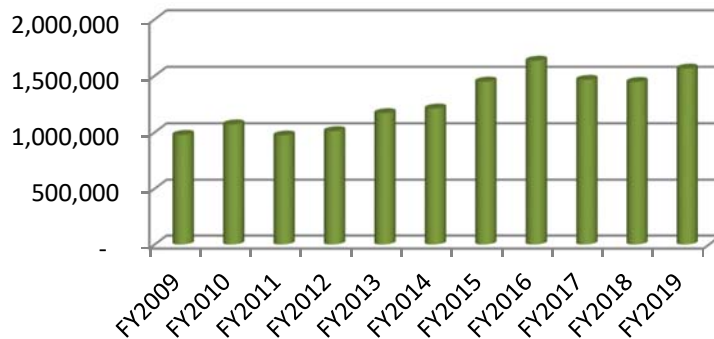
All hazardous waste, both residential and commercial, that is generated through the hazardous waste program is processed through the Ada County Household Hazardous Waste Facility at the Ada County Landfill. In total the Facility processed 1.5 million pounds of hazardous waste in fiscal year 2019; servicing 31,826 households.

Processing of Collected Materials

Hazardous waste collected in the countywide program are taken to the County's Household Hazardous Waste Facility for processing and shipment to disposal facilities. Ada County's hazardous material contractor, Stericycle; categorized and processed 1,563,049 pounds of material; of that 1,496,155 pounds were recycled or beneficially reused by entities throughout the County. Some of that material was used for power generation, but specifically 623,979

pounds of latex paint was re-formulated into a recycled latex product and sold in specific markets. The remaining hazardous materials, 66,894 pounds, were processed through treatment or other disposal means.

Hazardous Waste by Weight



Stericycle segregates hazardous and non-hazardous materials into some of the following categories:

- Reusable products
- Automotive batteries
- Oil-based paint
- Flammable liquids
- Latex paint
- Motor oil
- Antifreeze
- Pesticides
- Oxidizers
- Corrosives

Reuse Materials

The Ada County Hazardous Waste Program operates a successful reuse program. As part of the processing of materials that are brought into the program; if it is found that a product meets certain criteria for reusability. It is cleaned and placed into the reuse area. In fiscal year 2019, the Facility processed 46,752 pounds of products that were eligible for reuse. Reusable products once placed in the reuse area are free for customers of the Ada County Facility to take home and use. This is not open for business use. The types of products that residences can take home include; latex paints, oil-based paints, automotive products, herbicides, pesticides, and fertilizers. This part of the hazardous materials program is very popular. Products are quickly depleted each week. In fiscal year 2019, the reuse area was revamped to make it more user friendly.



Historical Program Use

The number of Ada County Residents that have utilized the Household Hazardous Waste Facility and mobile collection sites has steadily increased over the last decade. In fiscal year 2019, 31,826 households utilized the hazardous materials program. The following chart presents the trend in the number of households that have taken advantage of the Household Hazardous Waste program.



Televisions and Electronic Waste

At the beginning of fiscal year 2014, the Landfill adopted the responsibility for recycling of electronic waste. The recycling of such units was, historically, the responsibility of the hazardous waste contractor. After a proposal and an approval by the Board of Ada County Commissioners, the Landfill moved the E-waste program in-house.

During the 2017 fiscal year, the E-waste program experienced big changes. This was the result of notification of a contractor ending their role with the program and another contractor being awarded the E-waste program. Onsite Electronics Recycling was awarded the contract for the remaining months of fiscal year 2017. The

structure of the new E-waste proposal caused the program expenses to experience a large jump due to E-waste shipped offsite was now an expense per pound. At the end of the 2017 fiscal year it was expected that the expenses seen in fiscal year 2017 would substantially increase in fiscal year 2018.

For fiscal year 2019, Ada County Landfill paid Onsite Electronics Recycling \$341,812.46 for recycling of CRT televisions, and CPUs. There were a total of 52 shipments of electronic waste to Onsite from the Ada County Landfill.

The Ada County Landfill does not charge customer for televisions that are brought to the landfill either over the scales or through the household hazardous waste program. This means that all televisions in Ada County will, at the end of their life, come to the landfill for recycling at a cost to the Ada County Landfill.

Environmental Compliance

The specialized systems at the landfill necessary to reduce the landfill's impact on the environmental are monitored daily. This includes systems to manage; landfill gas destruction, Hydrogen sulfide reduction, groundwater remediation, leachate management, and stormwater runoff/run-on. Each of these systems uses an array of specialized calibration and monitoring units. One full-time employee is responsible for these various systems to ensure compliance with regulations and operating requirements. He is supported by the Operations Supervisor's Landfill Technicians.

Landfill Gas Management

Landfill gas is the natural by-product when decomposition of organic materials occurs in landfills. Decomposition occurs in two different environments: aerobic, with Oxygen, or anaerobic without Oxygen. Depending on the environment, the decomposition takes place differing landfill gases and quantities can be found.



In municipal landfills, anaerobic decomposition is preferred, because it results in less odors and the formation of primarily Methane: CH_4 , also known as natural gas. Other gases are also formed through the process. These include Carbon dioxide or CO_2 , Hydrogen sulfide, known as H_2S , Nitrogen, N_2 , and other de minimis gases. The Landfill is primarily concerned with the Methane, Hydrogen sulfide, and Oxygen. Each of these gases has properties, such as: colorless, odorless, flammable, or corrosive, requiring the gases to be handled appropriately and not simply vented to the atmosphere.

Methane is heavier than air and flammable and is a greenhouse gas. The Landfill operates with a Clean Air Permit through the Idaho Department of Environmental Quality, and that permit requires that the Landfill appropriately destroys Methane and not let it escape to the atmosphere. Hydrogen sulfide is what gives the Landfill that distinctive landfill odor -- rotten egg smell. This gas must also be managed appropriately so the

Landfill is not a nuisance to its neighbors. Hydrogen sulfide is also corrosive to engine parts during power generation. Oxygen is managed so that the landfill functions in an anaerobic environment and also to mitigate any subsurface combustion events.

In 2001, Ada County began the capture of Methane and the other gases, flaring the gases through two John Zink flares for destruction. In 2005, Ada County furthered best management of the gases with a contractor, LFG Development, to use the gas supply to fuel two engines, generating electricity that is sold to Idaho Power. In 2014, the landfill refined the landfill gas to remove high quantities H₂S so that the corrosivity of the gas would be less harsh on the power generation engines.

The Ada County Landfill continues to monitor the landfill gas to remain in compliance with the air permit, while providing gas to the contractor for power generation is enough to provide 3.2 mega-watts of power to Idaho Power. This power is enough for approximately 2,400 homes. In fiscal year 2019, LFG Development paid Ada County approximately \$228,643.55 as part of the power generation contract.

Groundwater Management

The Ada County Landfill is made up of two Cells, Hidden Hollow Cell, commonly referred to as HHC, and North Ravine Cell, commonly known as the NRC. The Landfill must monitor the groundwater under each of these Cells to ensure that contamination does not occur or if contamination occurs it is remediated.

The Hidden Hollow Cell began its operation in 1972. It wasn't until 1976 with the passage of the Resource Conservation and Recovery Act, commonly known as RCRA, that environmental rules were put in place for the siting and operation of solid waste landfills. RCRA was established to deal with the large amounts of contamination that was occurring because best management practices for landfills were not established. The Ada County Landfill's Hidden Hollow Cell has suffered some groundwater contamination due to unfavorable disposal practices in the early years of its operations. The Ada County Landfill takes its roll of remediation of the groundwater under the HHC very seriously. The Landfill monitors the groundwater continually and has established a successful remediation program to remove pollutants before returning the water to the aquifer.



The North Ravine Cell is a state-of-the-art facility. The cell has established groundwater monitoring wells that are monitored twice per year, as required by Idaho Department of Environmental Quality. The cell is constructed with a bottom liner made up of a geosynthetic clay liner, known as GCL, which is a bentonite clay layer sandwiched between two layers of high-density polyethylene, or HDPE, resulting in a very low permeability. On this bottom sheet is a layer constructed for the removal of leachate from the landfill cell. The leachate is removed thorough pumping to evaporation ponds. There has never been an instance of groundwater contamination underneath the NRC.

Leachate Management

Beginning with the building of the new North Ravine Cell in 2006, infrastructure was put in place for better management of leachate through recirculation into the landfill cell. With the completion of Phase 3 of the North Ravine Cell in 2019, the final implements were installed to facilitate leachate recirculation. Ada County Solid Waste sought the approval of Id DEQ and CDHD for a 3 year pilot study to determine the operation strategies of leachate recirculation. Leachate recirculation is a seasonal operation; ACSW began recirculation in October 2019 and ended the season just before Thanksgiving. During that time 1.6 Million gallons of leachate was returned to the NRC. The purpose of the operation is best management practices of our leachate onsite so that costly offsite trucking will not have to occur. Other side benefits of the process include increase degradation of the organic matter, increased methane production; which could be used for power production, and recovery of valuable airspace. ACSW will begin the recirculation process in the spring of 2020.

Working Together

Public-Private Partnership

From the landfill's opening in the spring of 1972, Ada County has evaluated which services it could most economically perform in-house and which services it would be most cost effective to contract with privately-owned companies. This evaluation is reviewed regularly to ensure that revenues are being spent in the most cost-effective manner.

When it is determined to contract for services with privately-owned companies, Ada County is able to ensure the most cost-effective service delivery for the County through competitive bids. Before issuing any contract for services, the County issues a Request for Qualifications or a Request for Proposal. The request specifies the criteria for qualifications and the specifics of the work to be performed under the terms of the contract.

Through carefully written contracts, Ada County provides an effective, low-cost solid waste disposal system to the residents, businesses and institutions in the county.

The Contracts

Landfill Operations

Typically, Solid Waste Management's largest contract is for daily operations. This includes waste compaction, daily waste cover, intermediate cover, road construction and maintenance, as well as other incidental work keeping the landfill open and operating.

Republic Services, Inc. operates under this contract, and as required by the contract between Ada County and Republic Services, Inc., this contractor supplies all the equipment and personnel necessary to complete the work specified in the contract. This includes the acceptance, compaction and covering of daily wastes; daily cover excavation and road maintenance during winter and dust abatement during dry conditions.

For the services provided to Ada County through their contracts, for the maintenance of the landfill tipping area, Republic Services, Inc. was paid \$3,334,071.12.

Engineering

CH2M HILL, Inc. is the Division's engineering consultant. They provide a full-range of engineering services that includes annual operations, surveying, rate-of-fill calculations, landfill gas system design, and support services. CH2M Hill operates under two different contracts, one for the operations of the landfill and another for the environmental impact of the landfill. The operations contracts resulted in \$500,421.70 to CH2M Hill, Inc. For their services regarding the environmental contract CH2M Hill, Inc. received \$294,372.14. These Engineering services included the proposal for the reinjection of the leachate into the lined cell of the landfill. In fiscal year 2019, the County paid CH2M HILL an accumulative \$789,694.43 for their services for both the operations, and the environmental division.

Organics Recycling

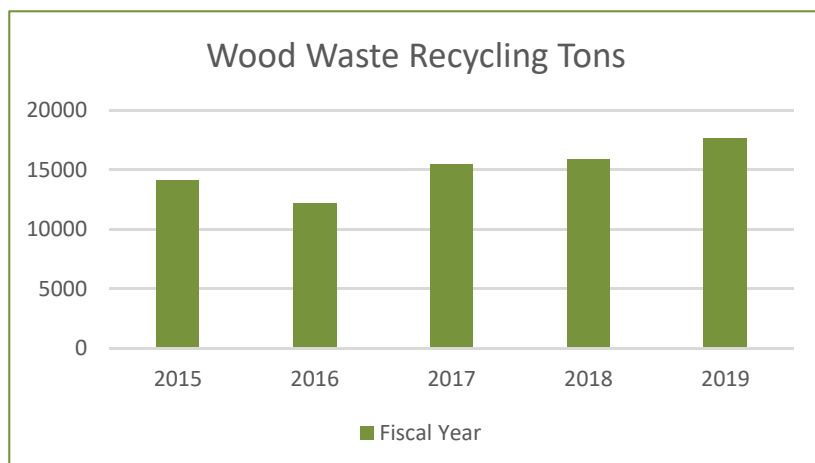
Wood-waste recycling is a very popular and highly successful program at the landfill. Since 1994, landfill customers have been encouraged to separate their wood waste from their other waste for recycling. From its modest beginnings with 10,000 cubic yards of wood recycled the first year, the program has grown. 17,679 tons of wood were recycled in fiscal year 2019; additionally, the seasonal free Christmas tree disposal exceeded 11,700 pounds. The total weight for wood recycling and Christmas Trees exceeded 12,850 tons. **M.M. Demolition** is the contractor for wood and organics recycling. The County pays this firm for material that is chipped and hauled away from the landfill; M.M Demolition is paid \$34 per ton to remove wood chips and leaves. In Fiscal year 2019 M. M. Demolition was paid \$666,439.96.



Along with wood recycling, Ada County provides programs to encourage leaf and Christmas tree recycling. In the fall, residents can bring their leaves to the landfill at no charge during a six-week period. In Fiscal year 2019 the landfill accepted 4,292.5 tons of leaves. In addition, following Christmas, residents may bring their Christmas trees, free of charge, to the landfill for recycling. Even though the contractor charges the department to dispose of both of these items the landfill absorbs the cost to dispose of them as part of a community service for Ada County residents.

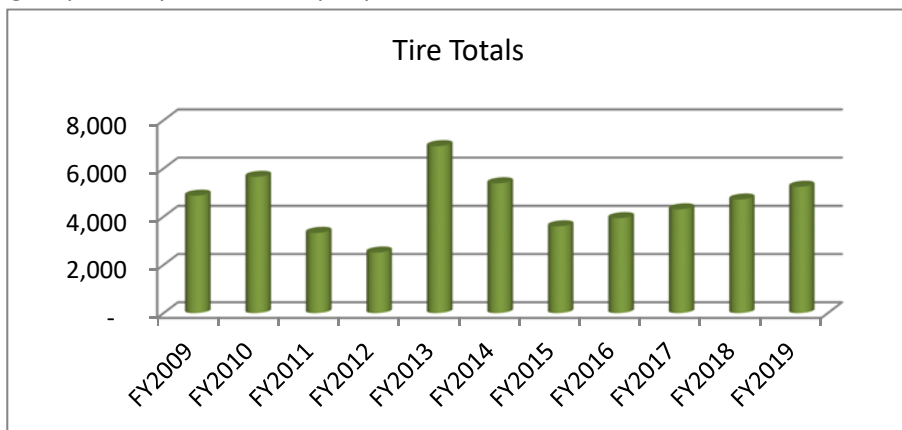
Wood Waste Recycling

For fiscal year 2019, the wood recycling program saw an increase in tons. With additional building in the area there was an increase of 1782 tons from the previous year, this was also seen in the significant increase in construction and demolition waste brought to the landfill.



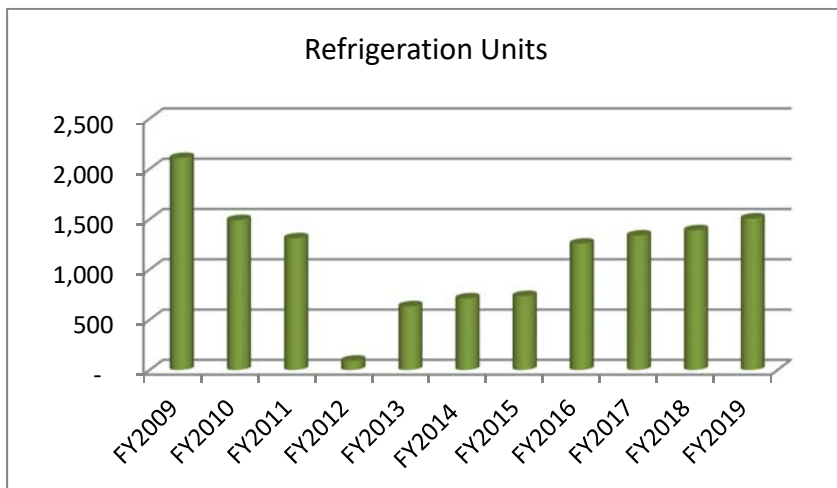
Tire Recycling

Tires delivered to the landfill are recycled through a privately owned company. The tires are used for various projects, such as athletic tracks, road base, and fuel in the process of making cement. Tire Recycling at the landfill has been increasing over the past few years, and in Fiscal Year 2019 the landfill took 5,239 tires from the public.



Refrigeration Unit Recycling

Appliances that use Freon are collected separately at the landfill because Freon is a greenhouse gas. Qualified technicians employed by Stericycle, the Hazardous Waste Contractor, at the landfill remove the Freon for recycling. In Fiscal Year 2019 the landfill accepted 1,506 refrigeration units, including refrigerators, freezers and air conditioners. The metal cases from the appliances are then shipped to a local metals recycler.



What to Expect in 2020

FY 2019-2020 will be a very exciting year for the Solid Waste Management Division. Some changes to watch for in the coming fiscal year include:

- Meet Trashy- the landfill has had a mascot adapted and he will be showing up in marketing and advertisements starting in FY2020



- The addition of more horizontal gas collection lines
- A new administrative office building
- An education center proposal
- The publication of an Air Space Preservation Plan which staff has given the acronym ASPP
 - This will include the reuse and recycling expansion plan
- Waste Stream Analysis 2020
- Daily operations contract will go for RFP
- Leachate recirculation data collection
- 72 vertical gas wells in the Hidden Hollow Cell will go online and start taking landfill gas to the landfill gas to energy plant and flares

Synopsis

The operation of the Ada County Landfill by Solid Waste Management continues to concentrate on meeting daily obligations while looking to the demands of the future. Since the Hidden Hollow Cell has been completely closed, all incoming waste is being directed to the North Ravine Cell and, again, the funds to continue expansion of this cell must be accrued prior to any construction.

Through careful planning, innovative cost-saving procedures and continual vigilance on the evolving regulatory requirements the division will ensure the Ada County Solid Waste Management continues its excellent record of operating the landfills in the most efficient and compliant manner while meeting the needs of the community, now and in the future.

We are consistently looking for ways to reduce the amount of waste being deposited into the landfill. With the expansion of recycling programs we are ensuring that the North Ravine Cell will accommodate the needs of Ada County Citizens and businesses for another century or better.

Solid Waste Management thanks you for your interest in the progress of the department.