

Kootenai County Solid Waste Department 2021 Waste Analysis Report



Kootenai County Solid Waste Department
3650 N Ramsey Road
Coeur d'Alene, ID 83815
(208) 446-1430



2021 Waste Stream Analysis for Kootenai County Solid Waste

Introduction

The annual report is an important historical record and planning tool. Utilizing historical data, the Solid Waste Department can address current obligations while looking to the demands of the future.

You may view detailed reports and information at either the Idaho Department of Environmental Quality (DEQ) office in Coeur d'Alene, Idaho or in the administration office of the Kootenai County Solid Waste Department.

In 2021, the year began with a windstorm in January that brought a response from FEMA and the Department saw a 55% increase of wood recycling between January and March as compared to those months in 2020. The Worley, Sun-up and Mica rural sites had some lighting improvements and our Chilco rural site was reconfigured with a new entrance. The landfill added a scale and unattended kiosk that went into use on June 22, 2021. The new scale is used to weigh the waste hauled from the transfer stations, southern rural sites, as well as some residential and commercial waste brought by local hauling companies. We also accept large, publicly hauled loads directly at the landfill on a case-by-case basis. Manager approval is required for public use at the landfill.

The Department managed 252,470 tons and served 808,744 customer site visits – a decrease of 1.4% or 11,084 customer visits in one year. In 2021, the landfill managed 211,433 tons of material - an increase of 5.7% or 11,312 tons as compared to 2020.

The Solid Waste Department offers a variety of services and strives to implement best management practices in compliance with ever-changing regulatory requirements. We are committed to provide citizens with affordable and efficient waste disposal.

Summary

This section contains an overview of the solid waste system and some planning tools used to help meet the needs of Kootenai County residents relative to waste disposal.

The Department is an affordable asset to Kootenai County providing financial stability to the County's financial future. This enterprise-funded program is currently debt-free, managing assets appropriately, and maintaining fiscal responsibility for operations, development, equipment, expansion and future landfill closure and post-closure costs.

Kootenai County Solid Waste department consists of the following:

- Fighting Creek Farm Landfill – the active landfill open 6 days per week;
- Prairie Transfer Station – a full-service transfer station open 7 days per week;
- Ramsey Transfer Station – a full-service transfer station open 7 days per week;
- 12 Rural Residential Collection sites located throughout the County; and
- Granite & Ramsey Landfills both closed for waste disposal.

Flexibility is the key to success in managing solid waste and it takes many talents and skills to keep the department running smoothly. The department has 64 full-time employees, with additional seasonal staff for the summer months.

The Department is always researching alternative methods to maximize disposal space, alternative waste management methods, and disposal and management of leachate. In addition, material reuse or recycling is encouraged to reduce the amount of waste sent to the landfill.

Budget

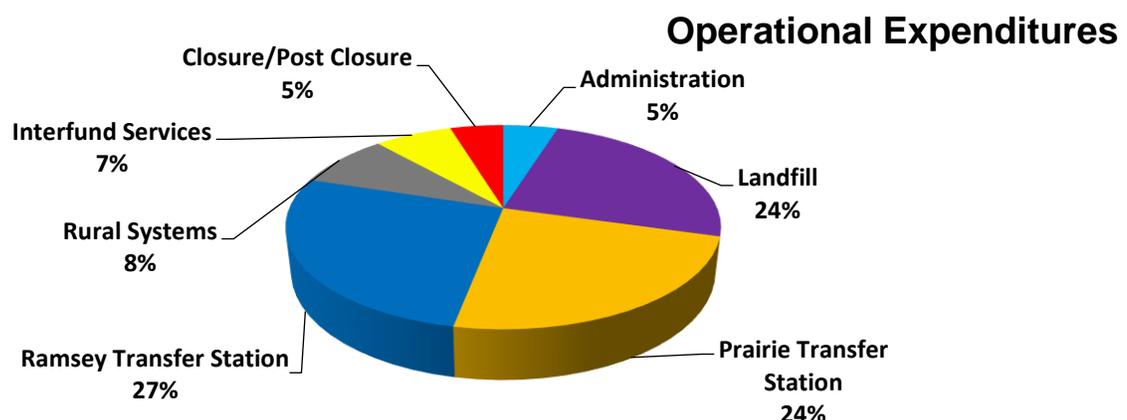
The Solid Waste Department carefully plans activities to provide for the maximum benefit of available funding. As an enterprise fund, the solid waste program operates more like a business than the typical tax-based government entity and does not receive any support from tax dollars. Solid waste dollars are managed in the solid waste fund, which is restricted for solid waste operations, activities, capital improvements, and construction.

Idaho Code §39-7417 requires that financial assurance mechanisms are in place for landfill closure and post-closure expenditures. Kootenai County's policy is to set aside the calculated cost of the depletion of landfill airspace annually. The practice sets aside funds each year for future closure post-closure costs to close and maintain the closed landfill. This fairly allocates future costs to the current year's disposers and reduces the future need to come up with substantial funds for these required actions.

These funds are restricted and used for closure and post-closure expenses only. Each year the County Finance Director provides a letter to Idaho DEQ meeting this financial assurance requirement. As of September 30, 2021, a total of \$10,158,000 has been set aside for closure/post-closure expenditures. See Appendix A-4 for additional information.

For detailed information about the financial records, view the Comprehensive Annual Report prepared by Kootenai County Auditor's office on the County's website at: <https://www.kcgov.us/211/Financial-Reports>

The Department maintains strategic, long-term financial plans and works to finance the required operation and expansion of services within the solid waste system. Expenditures are broken down into the following categories: Administration, Closure/Post Closure funding, Interfund Services (payment to the general fund for services provided by other departments), Landfill, Prairie Transfer Station, Ramsey Transfer Station, and Rural Systems. In 2021, the Department expenditures were \$11,583,604. All salaries necessary to support these activities are contained within the budget categories.



Fighting Creek Farm Landfill

Kootenai County owns and operates a fully permitted municipal solid waste landfill located approximately 16 miles south of Coeur d'Alene, Idaho. The Fighting Creek Farm Landfill includes over 500 acres of land, with approximately 115 acres permitted for active landfill. Recent estimations are that the currently constructed cells reach interim elevation by 2026. The additional cell developments and construction (E3/E4) will extend the landfill life to 2038, depending on waste growth.

The landfill was designed under 40 CFR 258, Federal Subtitle "D" regulations and complies with the Idaho Solid Waste Facilities Act, Idaho Code §39-7400. To meet these requirements, the landfill has been, and will continue to be, constructed with a fully developed liner, leachate collection system, and gas extraction system.



On October 25, 2016, the Department obtained a Tier 1, Title V Air Quality Permit and has continuously maintained compliance with this permit. Copies of the semi-annual and annual reports to the EPA are included with the electronic version of this report. (See Appendix A-2)

The landfill is the cornerstone of the solid waste system in Kootenai County. The facility is open 307 days per year providing service 6-days per week (Monday through Saturday). The facility is not open to the public as processing of most waste is completed through the two transfer stations. The removal of recyclable and reusable materials from the waste stream at the transfer stations prior to landfilling is imperative to save landfill space.

The landfill received 211,433 tons of material in 2021 - an increase of 11,312 tons over the previous year. The waste going to the landfill has steadily increased each year since 2011. A life cycle analysis is a planning tool to help understand how well operators are doing in managing and disposing of waste within the landfill. Based on historical data, the overall long-term growth rate of waste to the landfill is 4%. The current life cycle analysis report uses a planning growth factor of 5% based on prior five-year's growth. This results in a planning strategy of design and build of the next landfill expansion in 2023/2024.

Daily operations include placement/compaction of refuse and covering of these materials. Native clay soil is used for intermediate (or longer term) cover, as well as the application of Posi-Shell™ material as an approved ADC (alternative daily cover). ADCs conserve landfill space and generally allow for better landfill gas migration controls and gas recovery within the waste mass.

The original landfill footprint started fill placement in 1993 and reached interim closure elevation in August 2013 with approximately 2,350,597 tons of material in place. Placement of waste in Phase 1 of the East Cell began on August 5, 2013 and then shifted over to Phase 2 on June 14,

2016. Since the opening of the east cell footprint, a total of 1,410,358 tons of waste has been placed.

In 2019 the area between the original landfill footprint and the east cell development was developed into landfill space. This area, referred to as the “corridor” began waste placement on May 27, 2020. With the increased waste growth, the plans are still in place for design/construction of cell E3 in 2023/2024.

Gas System

The landfill has a gas extraction system, which currently includes 156 active landfill gas wells. This extensive gas well and trenching system collects landfill gas and conveys it to a collection point that feeds two operational enclosed flares and a landfill gas to energy facility. This system is regularly monitored and adjusted to ensure compliance. Required reporting for this system is included with the Tier 1, Title V semi-annual and annual reports (See Appendix A-2)

In 1994, installation of the first blower/flare took place and the gas system activated in 1995. Installation of a second enclosed flare took place in 2000. Kootenai County continues to implement landfill-gas control devices well ahead of state and federal requirements.

In March 2012, a landfill gas to energy project with Kootenai Electric Cooperative for the utilization of landfill gas to generate electricity became operational. Since then this facility has generated approximately 125 million kilowatt hours of electricity.



Leachate

Leachate is a liquid by-product that results from the compaction of saturated refuse and/or the migration of natural precipitation through garbage. Under current rules, all landfill leachate must be treated and disposed. Leachate is not characterized as hazardous material, but does contain soluble suspended material that comes from the waste.

Not allowing storm water to contact garbage is the best way to minimize leachate production. In 2018, the department completed construction that consisted of covering approximately 16 acres of landfill with a liner material to minimize leachate production as much as possible. It is anticipated that approximately 6 of these acres of liner are temporary in nature. The remaining 10 acres of liner material may qualify as final cover for the landfill. The installation of this material has the potential of preventing millions of gallons of clean storm water from becoming leachate, thus reducing the quantity of leachate to manage on-site.

The landfill manages leachate in a variety of methods, with ultimate disposal handled one of three ways: recirculation, evaporation, or off-site delivery to a wastewater treatment facility. The department processed over 6 million gallons of leachate in 2021. A total of 5.4 million gallons was handled through the on-site evaporation process and 722,700 gallons was hauled off site. (See Appendix A-7)

The following represents the leachate processed and disposed utilizing the misting system over the last 5 seasons:

- April-October 2017 – 5.5 million gallons
- April-October 2018 – 6.6 million gallons
- April-November 2019 – 6.1 million gallons
- April-November 2020 – 5.1 million gallons
- April-November 2021 – 5.4 million gallons

Groundwater

The landfill operations permit requires a groundwater monitoring system. Nine (9) groundwater monitoring wells are sampled biannually on the property. The location of these monitoring wells are up gradient and down gradient from landfill operations. The positioning of these sampling points allows for comparative analysis to background conditions of natural groundwater. Results enable engineers to discern if any ground water degradation has occurred due to landfill operations.

As part of a community outreach program, sampling of two domestic wells is completed at the same time as the semi-annual sampling events. To date, no landfill related degradation of ground water, at the landfill or the two domestic well sites, have been found. (See Appendix A-6)

Surface Water Monitoring - MSGP

The EPA and Idaho DEQ have established rules for surface water monitoring at the Fighting Creek landfill. Over time, the Department has established an extensive surface water infrastructure to assure any surface water leaving the site is clean.

A series of sedimentation ponds situated throughout the property accept run-off from all the local drainage areas. These ponds function mainly to aid in removing suspended solids. The design of each pond is for a specific retainage period to adequately control sedimentation. Cleaning of these ponds is done as necessary during the summer months, if silt has significantly reduced the holding capacity of water in the pond.

These ponds typically drain through large pre-designed vegetated drainages. This allows for natural filtration and aids in further cleaning the water. Within the drainage areas there also exists a series of rock “finishing dams” designed to slow down the run-off allowing more time for sediment to drop or filter out.



Enhanced wetland structures also help to remove solids and provide a robust microenvironment. These areas positively affect local wildlife. An abundance of ducks and geese migrate to these wetlands each year to nest.

The impact from efforts to maintain such clean water is also evident through sampling results. Typical data shows the surface water leaving this site to consistently be of higher quality than the surrounding receiving drainages. (See Appendix A-8)

Landfill Future Development

The Solid Waste Department regularly reviews/updates its development strategy. Planning for future work, including site development for future material sources for landfill cover, phases 3 and 4 landfill development, and south cell permitting/engineering is necessary and maintains our fiscal accountability.

The landfill property includes an area to the south and west of the original landfill footprint estimated to provide solid waste disposal needs for Kootenai County through 2070.

Closed Landfills

In addition to the landfill at Fighting Creek, the Department is responsible for two closed landfills.

The closed Ramsey landfill is located adjacent to the Ramsey transfer station in Coeur d'Alene, Idaho. The landfill portion of this complex stopped taking waste in 1993 upon the opening of the landfill at Fighting Creek. The Ramsey landfill utilizes an active gas extraction system combined within an impermeable cover. Landfill gas from this landfill is flared onsite. The older portion of this landfill (located on the west side of Ramsey Road) no longer produces measurable quantities of gas. See Appendix A-5 for additional Ramsey Gas System Reporting data.

The closed Granite landfill is located on the northern border of Kootenai County. This facility (shared between Kootenai and Bonner County) stopped accepting waste in the early 1990's. For many years, this location was far from dwellings. The sale of adjacent property and the establishment of rural residential development prompted the fencing of this property. A passive gas probe system was installed in 2008 to verify the absence of meaningful methane production at this location.

Complete landfill gas reports are available for review at the Idaho DEQ office in Coeur d'Alene or the administration office of the Solid Waste Department.

Customer Statistics – Transfer Stations

The Department is an affordable asset with a positive customer service reputation. The solid waste system in Kootenai County is owned by the citizens and exists solely for their use. A great deal of effort and funds are expended to provide safe and efficient service to citizens while working to deny access when out of county customers attempt to use the facilities.

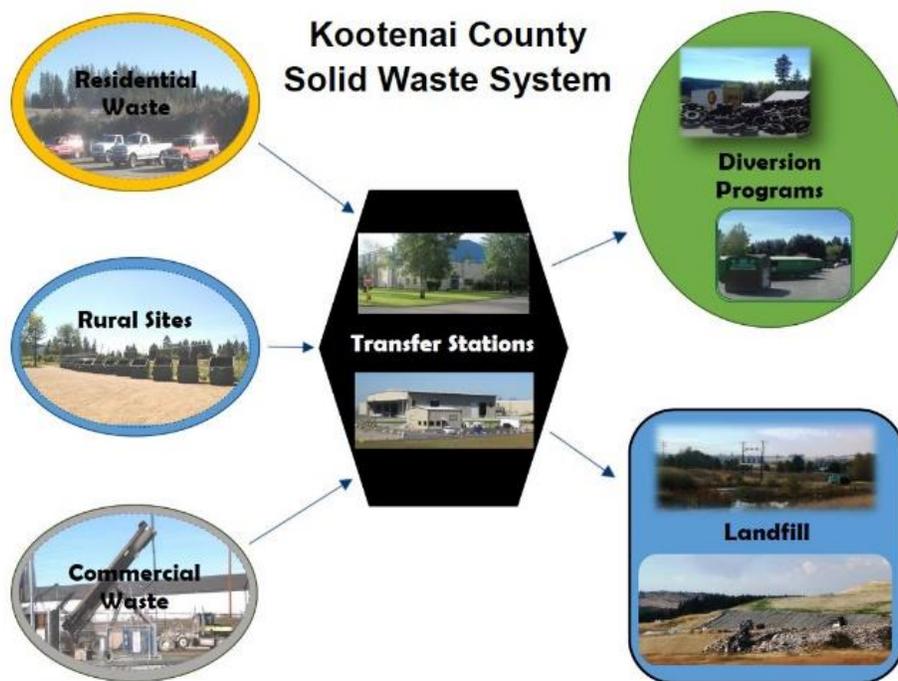
In 2021, a total of 808,744 customer site visits (customers) occurred, a decrease of 1.4% or 11,084 from 2020 (which had an increase of 12.6% or 92,014 from 2019). This number does not take into account the ten unattended rural sites in the County.

Prairie customer site visits totaled 217,916 in 2021. These figures break down as follows:

- Decrease of 2,530 or 1.2% compared to 2020.
- Average of 607 per day.
- Saturday was the busiest averaging 766 per day.
- Thursday was the least busy averaging 518 per day.
- Low of 201 customers on February 25, 2021.
- High of 1,105 customers on April 18, 2021.
- Trivia note: From 2009 through 2021, there have been 1,976,450 customer site visits to the Prairie site.

Ramsey customer site visits totaled 385,302 in 2021. These figures break down as follows:

- Increase of 6,308 or 1.66% compared to 2020.
- Average of 1,073 per day.
- Saturday was the busiest averaging 1,244 per day.
- Thursday was the least busy averaging 976 per day.
- Low of 338 customers on December 24, 2021.
- High of 1,889 on June 1, 2021.



- Trivia note: Since opening in 1993, there have been 7,698,405 customer site visits to the Ramsey site.

The staffed rural sites at Athol and Chilco saw 205,526 customer site visits in 2021, a decrease of 14,862 or 7% compared to 2020.

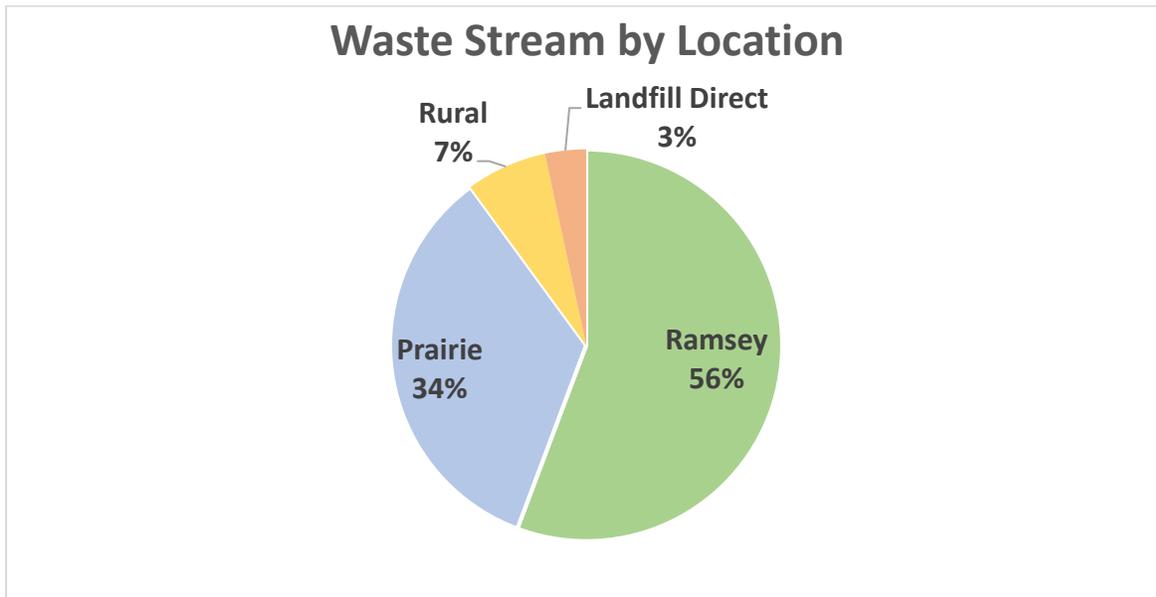
See Appendix B for additional charts relating to customer statistics.

Waste Statistics

In 2021, the Department processed 252,470 tons. This represents an increase of 10.1% or 23,106 tons from 2020* for waste coming into the facilities.

Waste shipped to the landfill was 211,433 tons, which is up 5.7% or 11,312 tons from 2020. The landfill received 11,306 loaded trailers from the two transfer stations, which is an increase from the 10,772 loaded trailers in 2020. Kootenai County has seen a lot of growth in the construction of housing and people moving to the area. There are many things that contribute to the rise of solid waste, but the growth in our area is a factor to consider.

* See page 9 for 2020 note.



Prairie Transfer Station

The Prairie site received 92,596 tons of material in 2021. This represents 34% of the waste processed in Kootenai County and an increase of 3,698 tons or 4.16% from last year*. The measurement of the waste stream from Prairie is the weight of all materials weighed into the facility during the calendar year.

- Average daily tons received was 258 (which is up from 233 last year*).
- Heaviest tonnage day was June 1, 2021 with 473 tons.
- Lowest tonnage day was April 4, 2021 with 55 tons.
- Friday is the highest tonnage day of the week with an average of 329.
- Sunday is the lowest tonnage day with an average of 132.



After processing the waste for recyclables and removal of other materials, the Prairie site shipped 79,610 tons or 4,134 trailer loads of waste to the landfill. From 2009 through 2021, the Prairie site has processed 833,327 tons of material.

Ramsey Transfer Station

The Ramsey site received 150,718 tons of material in 2021. This represents 56% of the waste processed in Kootenai County. It is an increase of 10,252 tons or 7.3% from last year*. The measurement of the waste stream from Ramsey is the weight of all materials entering into the facility during the calendar year.

- Average daily tons received was 420 (up from 368 last year*).
- Heaviest tonnage day was June 1, 2021 with 830 tons.
- Lowest tonnage day was February 21, 2021 with 77 tons.
- Thursday is the highest tonnage day of the week with an average of 512.
- Sunday remains the lowest tonnage day with an average of 192.



After processing the waste for recyclables and removal of other materials, the Ramsey site shipped 122,699 tons or 7,172 trailer loads of waste to the landfill. From January 1992 through 2021, the Ramsey site has processed 3,881,426 tons of waste.

* Note about 2020 waste statistics: From April 1, 2020 through May 31, 2020, due to COVID guidelines the transfer stations did not capture weights of all materials as they came in. Using all of the data that we have, it is estimated that as much as 12,000 tons of material came into the solid waste disposal system during this time. Because we are comparing weight statistics of 2021 to 2020, it is important to note that there was some estimation used to in the 2020 totals.

Direct Landfill Discharge

In 2021, over 9,000 tons (3% of the waste stream) of material were directly taken to the landfill in an effort to divert waste from the transfer stations from large construction/demolition projects. The contractors utilized the new scales at the landfill for measurement and delivered the material to the working face of the landfill. This operational change reduces the number of large loads into the transfer station and provides a rate decrease to the contractor for direct haul to the landfill. These projects are by authorization of the Department only.



See Appendix C for additional charts regarding waste statistics.

Recycling

Kootenai County encourages waste diversion, reduction, reuse and recycling before material becomes part of the solid waste system, but does not mandate or control what is collected outside County operated sites.

A wide variety of reuse, reduction, and recycling programs are in place throughout the area operated by businesses or other entities independent of County programs. Material collected by the County and recycled include, single-stream material (cardboard, newspaper, plastics, and other segregated recyclables), textiles, automotive batteries, scrap metal, used oil, wood waste and other materials.

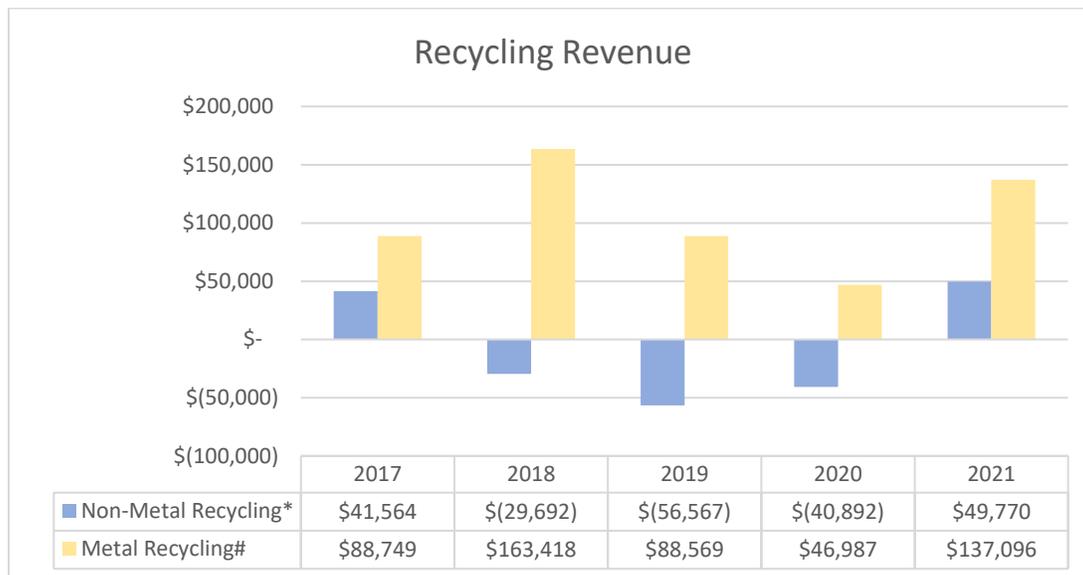


The Department offers recycling drop off stations at both transfer stations and some of the rural residential collection sites. These materials are modified dependent on current markets, challenges with marketing material, and problems with contamination of the recyclables.

There are significant issues facing recycling markets in the United States. The Department remains focused on providing as many opportunities to recycle as fiscally reasonable. Until there are significant changes made, recycling processing costs will continue. Working together with our recycling contractor, the Department has limited these costs, but the recycling markets are extremely volatile and unsteady, and will remain that way for several years.

Recycling can provide an effective means of reducing landfill space; however, it is not a free service. It takes funds to collect, sort, store, transport and manage these materials. If there is no end market for a particular material (i.e. plastics or glass) then these items may be removed from the offered recycling programs.

To help consumers understand the tough decisions made regarding recycling, we are providing revenue information regarding the two main components of the Department's recycling programs: metal and non-metal recycling. The non-metal recycling figure includes revenue for the product less the processing costs charged by the broker. Non-metal materials consist of corrugated cardboard, mixed paper, mixed plastics, aluminum and tin cans.



In 2021, we made a few small changes that helped with the cost of non-metal recycling and the price of metals increased substantially.

The recycling programs managed by the Department diverted a total of 24,109 tons of material from the landfill in 2021. This includes all materials removed from the waste stream at transfer stations and rural sites. This represents an increase of 5% or 1,154 tons over last year. This increase is seen in the wood recycling. See Appendix D for additional data regarding recycling.

Rural Residential Collection System

There are 12 rural residential collection sites spread throughout the county, of which the County owns the property for four. There are two staffed sites in the northern portion of the County and 10 collection sites on the east and west side of Coeur d'Alene lake and in the southern portion of the county. The challenge is to keep this waste stream confined to household waste from Kootenai County residents. Over the years, changes implemented include staffing sites and increasing public awareness for unacceptable material at these sites. Another challenge is to restrict out of county/out of state use and ensure they are used by the citizens who pay for the system.

Rural sites received 18,042 tons of waste in 2021. This is only 36 tons less than 2020, which had a 14% increase over 2019. This reflects the high growth in the rural sections of Kootenai County. Customers removed 290 tons of material by placing items into the recycling bins provided at these sites.

The two staffed northern sites are open the same hours and days as the transfer stations. These sites assisted 205,526 site visits in 2021. This is a decrease of 14,862 or 7% from the total

customers reported in 2020. These two staffed sites processed 6,996 tons of waste, which is down 654 tons or 8.5% from last year.

The roadway improvements of North Ramsey Road in Rathdrum included a new entrance for the Chilco rural site in 2021. The new entrance is off of East Chilco Road.



Ten other collection sites make up the remaining portions of the rural collection system. Waste collected from these other sites equaled 11,046 tons which is an increase 6% or 619 tons.

The Department focused on site surveillance during the year. In addition to video surveillance and lighting improvements in 2021, we collaborated with the Kootenai County Sheriff's Office for additional patrolling by funding a full-time officer position to help patrol our rural sites.

Household Hazardous Waste (HHW)

Both transfer stations operate year-round HHW collection facilities. The Ramsey site is open Wednesdays and Saturdays from 8:00 a.m. to 4:00 p.m. The Prairie site is open on Fridays and Saturdays at the same hours. These facilities accept up to ten (10) gallons from residential customers only. Commercial hazardous waste is not accepted at any County sites.

Most communities offer limited HHW collection (some only a few days per year). The Department offers these services over 200 days per year. Limiting days is necessary as trained and certified technicians are responsible for safe identification, acceptance, material handling, packaging, shipping, etc. to avoid spills, contaminations, injuries, or improper storage of materials.

Only household hazardous waste is accepted. There are restrictions on types and volumes of materials set forth in the Panhandle Health District Critical Materials Regulation/Certification and the facility operating permit. Transfer stations are Tier II facilities which are permitted to accept municipal solid waste and no industrial or commercial hazardous waste.

A total of 7,678 customers took advantage of the HHW services in 2021. The Prairie site had 1,768 customer site visits and the Ramsey site saw 5,910 customers. The Department processed approximately 191 tons of special waste through the HHW program. See Appendix D for the breakdown of these materials.



All paint is collected in the HHW programs at the transfer stations. Staff sort and separate the paint and set aside latex paint for shipment to the landfill. Landfill staff mix the latex paint with a Posi-shell© material and spray it over the face of the landfill as daily cover. This unique approach provides the department with a cost-effective and environmentally safe alternative cover and reduces expenses for transportation of HHW disposal. This cover system also saves very valuable landfill air space.

A large time component in processing special waste each day is the removal of refrigerants from units (refrigerators, freezers, AC units) brought into the transfer station. The number of units processed by the staff in 2021 was 5,306, which is 744 more units than in 2020. Within the last 5-years, the department has decommissioned almost 24,000 units.

See Appendix E for additional data relating to HHW collection.

Appendix A-1: Inspections and Reports

Below are the inspections and/or reports completed during calendar year 2021:

- a) On March 9, 2021, the department submitted the 2020 Waste Stream Analysis Report to DEQ and Panhandle Health District. DEQ accepted and approved the report in March of 2021.
- b) On March 22, 2021, DEQ conducted an Underground Storage Cathodic Protection Test at the Ramsey Transfer Station with a pass result. A copy of this report is included herein.
- c) Panhandle Health District conducted a Critical Materials inspection on July 14, 2021 at the Prairie Transfer Station. A copy of the Compliance Certificate is included herein.

Appendix A-2: Tier 1 Operating Air Quality Permit

The Department has maintained compliance with the Tier 1, Title V Air Quality Permit. Copies of the semi-annual and annual reports to the EPA are included in the electronic version of this report.

Idaho DEQ approved a new Tier 1 Operating Permit effective October 25, 2016. The permit and reporting documents can be reviewed at the Idaho DEQ office in Coeur d'Alene, Idaho or at the administration office of the Solid Waste Department.

- a) The AQ-C4 for the reporting period of July 1, 2021 to December 31, 2021 is included herein.
- b) The AQ-C1 for the reporting period of July 1, 2020 to June 30, 2021 is included herein.

Appendix A-3: Kootenai County Farm Landfill Closure and Post-Closure Plan

No changes were made to the Closure and Post-Closure Plan since 2010. The plans are available for inspection at the Idaho DEQ office in Coeur d'Alene and the administration office of the Kootenai County Solid Waste Department.

Appendix A-4: Financial Assurance for Closure and Post-Closure Activities

Enclosed is a letter of Financial Assurance from the Kootenai County Finance Director stating that Kootenai County meets the financial obligations of Closure and Post-Closure for the Fighting Creek Farm Landfill.



Kootenai County Auditor

Jim Brannon · Clerk

451 Government Way · P.O. Box 9000 · Coeur d'Alene, ID 83816-9000

Phone (208)446-1650 · Fax (208)446-1662

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February 22, 2021

Idaho Department of Environmental Quality
Attn: Matt Plaisted, Technical Engineer
2110 Ironwood Parkway
Coeur d'Alene, ID 83814

RE: Kootenai County Farm Landfill - Closure and Post-Closure Funding

Dear Mr. Plaisted;

The financial liability associated with monitoring the closure and post-closure responsibilities, assumed by Kootenai County, is fully funded for the portion of the Kootenai County Farm Landfill (Fighting Creek) that has been depleted to date. The estimated liability at the end of our most recently completed fiscal year is defined and summarized on the attached schedule, which indicates an accrued obligation balance of \$9,578,000.

Additionally, this information will be included in our (Audited) Comprehensive Annual Financial Report for Kootenai County, Idaho for the year ending September 30, 2020. The restricted cash balance for closure and post-closure will be displayed in the Business-type Activities column under the Assets section of the report and will support or exceed the total noted above.

Please contact me for further questions or additional assistance. I can be reached at the address above, or by phone at 446-1665.

Sincerely,

Dena Darrow
Finance Director

cc: Solid Waste
BOCC

Attachment

Appendix A-5 Landfill Gas Reports for Ramsey and Fighting Creek Farm Landfills

The Fighting Creek Farm Landfill is required to report to the EPA twice a year under the Tier 1 annual compliance requirements. Copies of these reports are attached to the electronic version of this report.

The gas system at the old Ramsey Landfill does not fall under the same reporting requirements. The annual gas system report for Ramsey is attached to the electronic version of this report. An excerpt from the report shows below.

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January 25, 2022
Parametrix No. 373-1660-046 (03.02)

John Phillips, Director
Kootenai County Solid Waste Department
3650 N. Ramsey Road
Coeur d'Alene, ID 83815

Re: The Ramsey Road Landfill Gas Control Annual Report for 2021

Dear JP:

This letter is an annual summary of the landfill gas monitoring and landfill gas management activities performed at the Ramsey Road Landfill in 2021. It is specific only to the landfill gas control system. This letter can be forwarded to Idaho Department of Environmental Quality and Panhandle Health District to communicate gas information and evaluations.

The annual letter report includes the follow sections:

- Introduction
- Description of Facilities
- System Monitoring Results
- Conclusions
- Recommendations

INTRODUCTION

The Ramsey Road Landfill is owned by Kootenai County (County) and is located at 3650 N. Ramsey Road, Coeur d'Alene, Idaho 83815. Ramsey Road divides the site into east and west areas. The landfill, which was a municipal solid waste landfill, is now closed. The landfill began accepting waste in 1963 and closed in 1993.

During the summers of 1992 and 1993, a gas control system was installed at the site in both the east and west areas. The gas control system consists of in-refuse wells, perimeter (native soil) wells, horizontal trenches, collection manifold and laterals, condensate traps, and a blower/flare station. Landfill settlement throughout the landfill made it difficult to locate and repair all the pipe failures, resulting in low methane and high oxygen concentrations. Consequently, in December 2002 and January 2003, the buried polyvinyl chloride (PVC) manifold and lateral piping was replaced with

Appendix A-6: Ground Water Summary

The bi-annual monitoring requirements for ground water were completed as required in 2021.

The following is an excerpt from the 2020 Ground Water Monitoring Report prepared for Kootenai County Farm Landfill by the Engineering Firm of Parametrix. The full reports are available for review at the Idaho DEQ office in Coeur d'Alene and the administration office of the Solid Waste Department.

Ground water quality results as stated in Sections 2.5 and 3.2 of the Summary Report were below primary state or federal groundwater quality criteria.

2.5 Summary and Conclusions

The groundwater quality results for downgradient monitoring wells were below primary state and federal groundwater quality criteria with the exception of pH in four wells (M-9, M-16, M-17, and M-19). There appears to be a seasonal component with lower pH values occurring in the dry season event (October). Two of the four wells (M-9 and M-17) were compliant in the April monitoring event and out of compliance in the October monitoring event. M-16 and M-19 were out of compliance for pH during both events (Tables A-1 and A-3).

No volatile organic compounds (Table A-2) were detected in any of the active landfill monitoring wells except for acetone in M-18 in the April monitoring event. Acetone is a common laboratory contaminant and may be related to the preservative in the sampling vials. No acetone was detected in M-18 in the October monitoring event (Table A-4).

Nitrate concentrations have increased in well M-9 over the past few years but remain well below the groundwater quality criteria. Nitrate concentrations in well M-17 have also been above the UPL since the April 2016 event, and nitrate concentrations in well M-16 have been above the UPL since October 2018. Since nitrate concentrations have also shown increases in East Expansion Landfill upgradient well M-15, it is recommended that continued monitoring of nitrate without verification resampling be conducted at wells M-9, M-16, and M-17.

Chloride concentrations in wells M-16 and M-17 were above the seasonally adjusted UPL beginning in April 2017 and April 2020, respectively. The chloride exceedances in well M-17 were not verified in April or October 2021. Chloride concentrations in well M-16 showed an increasing trend during the background data collection period but recent concentrations have been lower than the high observed in October 2018 and remain substantially below the secondary MCL. Therefore, it is recommended that continued monitoring of chloride without verification resampling be conducted at well M-16.

The TOC concentration in well M-16 was above the UPL in October 2021. This exceedance will be verified in April 2022.

Trends in ammonia concentrations are continuing to be monitored. Concentrations of other leachate indicator parameters in downgradient wells did not show evidence of landfill impacts.

3.2 Groundwater Quality Results

The analytical data for the 2021 domestic well semiannual events are summarized in Table A-5 (Appendix A). For the October 2021 monitoring event, the laboratory reports and chain-of-custody forms are provided in Appendix B. The April 2021 laboratory and field data were presented in the semiannual groundwater monitoring report (Parametrix 2021). Field data are provided in Appendix C. A review of the laboratory data was conducted including a check of holding times, method blanks, and trip blanks. No data were qualified as a result of this review.

The data collected from the domestic wells indicate that the concentrations of dissolved iron and dissolved manganese in both the Brand and Shriner wells, and chloride in the Brand well were above secondary state and federal drinking water standards. Iron and manganese have periodically exceeded water quality criteria in both wells during previous sampling events, which reflects natural occurrences of these minerals in groundwater.

Time-series plots for parameters that were detected in the domestic wells during the last few years are presented in Appendix D-2. The plots also include data for Original Landfill upgradient and downgradient monitoring wells and the MCL, if applicable. For the Brand well, the time-series plots show upward trends in some parameters (including conductivity, chloride, iron, and manganese) since approximately 2008, and the chloride concentrations have been above water quality criteria since April 2020. These trends are likely unrelated to the landfill, since similar increases have not been observed in the landfill monitoring wells.

Appendix A-7: Kootenai County Farm Landfill Leachate Report

A copy of the report to Idaho DEQ outlining the volume of leachate processed in 2021 and the methods used is attached in the electronic version of this report. In 2021 a total leachate processed was 6,085,288 gallons.



KOOTENAI COUNTY

SOLID WASTE

March 10, 2022

Mr. Matt Plaisted, P.E.
%Division of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, ID 83814

Re: 2021 Annual Leachate Report – Fighting Creek Farm Landfill

Dear Mr. Plaisted,

Attached you will find a spreadsheet that lays out how the Solid Waste Department managed leachate during the 2021 season. The Department processed a total of 6,085,288 gallons of leachate. This year we utilized the misting system for processing leachate. Leachate hauled offsite 722,700 gallons to the Hayden Area Regional Sewer District.

We continue to consult with Mike Brady of the engineering firm, Parametrix, to review the results of our leachate and gas systems. Mr. Brady will continue to look for any inconsistencies or trends appearing from the data collected at the landfill. Leachate quality data will be included within the semiannual and annual groundwater reports.

Please let me know if you have any questions or concerns about this information.

Sincerely,

A handwritten signature in blue ink that reads "Doug Goodwin".

Doug Goodwin
Operations Manager

Appendix A-8: Kootenai County Farm Landfill Surface Water Reporting

The Solid Waste Department complied with the regulations of the EPA regarding the MSGP and SWPPP. Copies of these reports were provided to Idaho DEQ at the time they were submitted. Courtesy copies of the submittals have been included on the CD provided to Idaho DEQ and Idaho Panhandle Health District.

DMR Copy of Record

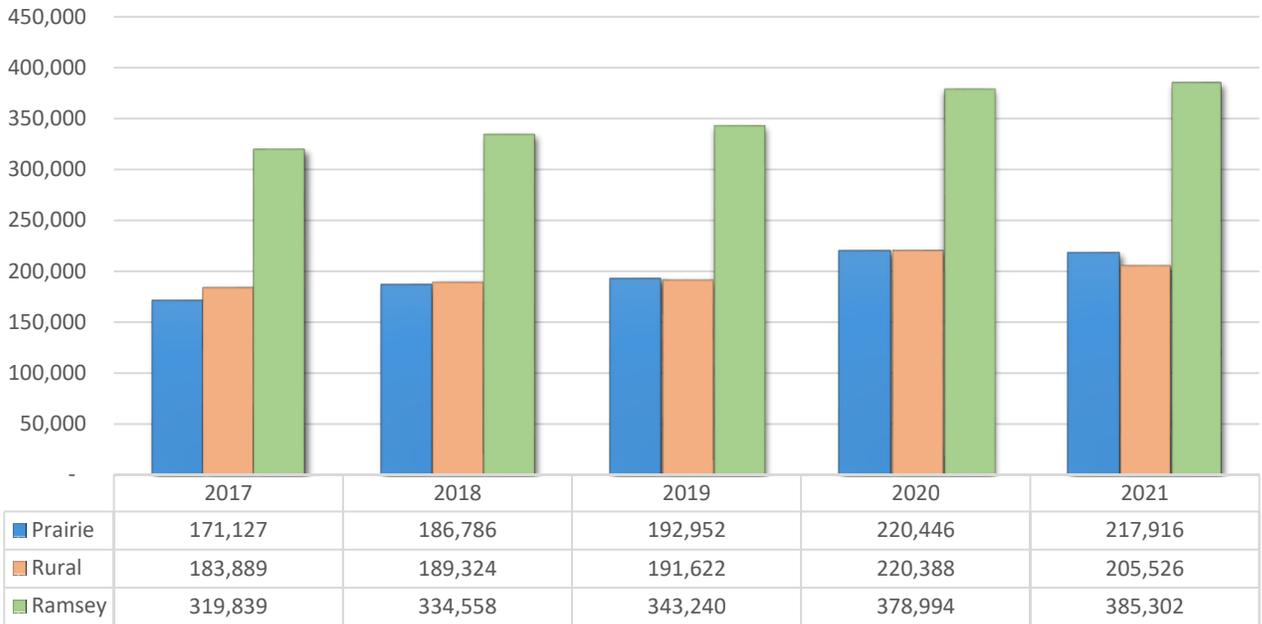
Permit		Permittee: KOOTENAI COUNTY SOLID WASTE		Facility: KOOTENAI COUNTY FIGHTING CREEK FARM LANDFILL														
Permit #: IDR053195	Major: No	Permittee Address: 22089 S. Hwy 95 Coeur D Alene, ID 83814		Facility Location: 22089 S. HWY 95 3850 N. RAMSEY ROAD COEUR D ALENE, ID 83814														
Permitted Feature: SW21 External Outfall		Discharge: SW21-L1 All Landfill, Land Application Sites and Open Dumps																
Report Dates & Status																		
Monitoring Period: From 10/01/21 to 12/31/21		DMR Due Date: 02/28/22		Status: NetDMR Validated														
Considerations for Form Completion																		
Principal Executive Officer																		
First Name: John		Title: Director		Telephone: 208-446-1430														
Last Name: Phillips																		
No Data Indicator (NODI)																		
Form NODI: -																		
Code	Parameter Name	Monitoring Location	Season #	Param. NODI	Quantity or Loading			Quality or Concentration			# of Ex.	Frequency of Analysis	Sample Type					
					Qualifier 1	Value 1	Qualifier 2	Value 2	Units	Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units		
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample										26.0	19 - mg/L	01/90 - Quarterly	GR - GRAB
					Permit Req.										100.0 MAXIMUM	19 - mg/L	01/90 - Quarterly	GR - GRAB
					Value NODI													
Submission Note																		
If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.																		
Edit Check Errors																		
No errors.																		
Comments																		
Attachments																		
No attachments.																		
Report Last Saved By																		
KOOTENAI COUNTY SOLID WASTE																		

Appendix A-9: Plans & Specifications

No construction projects or plans completed in 2021 required submittal as part of current permits.

Appendix “B” Customer Statistics

Total Department Customers Total 808,744

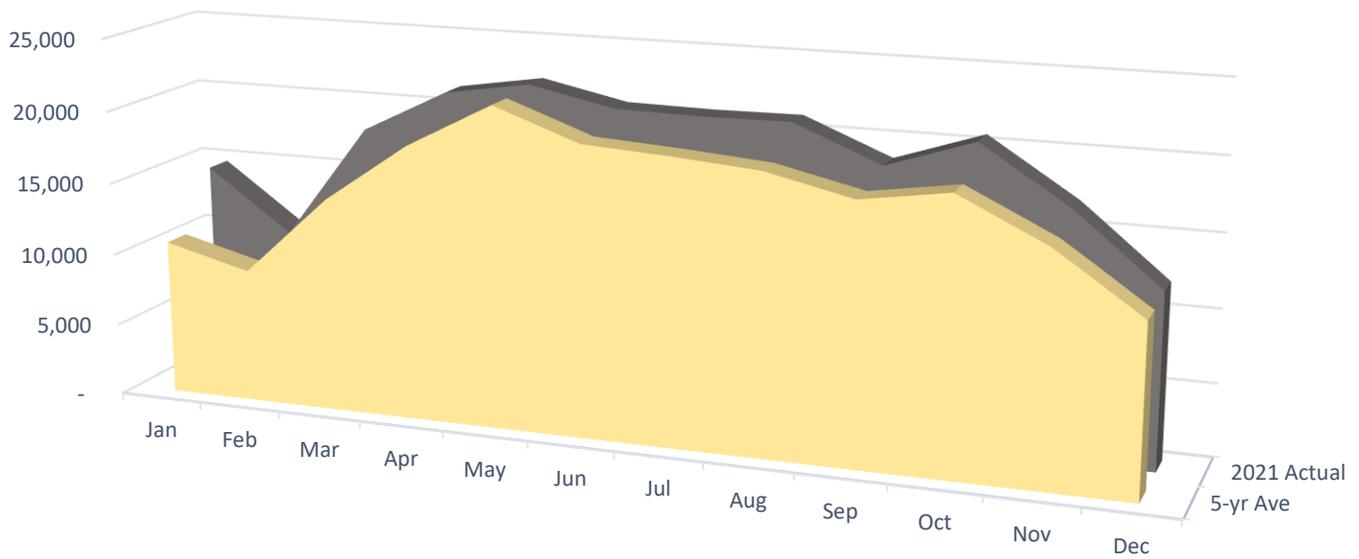


Transfer Stations - Customer History

6% Average customer growth

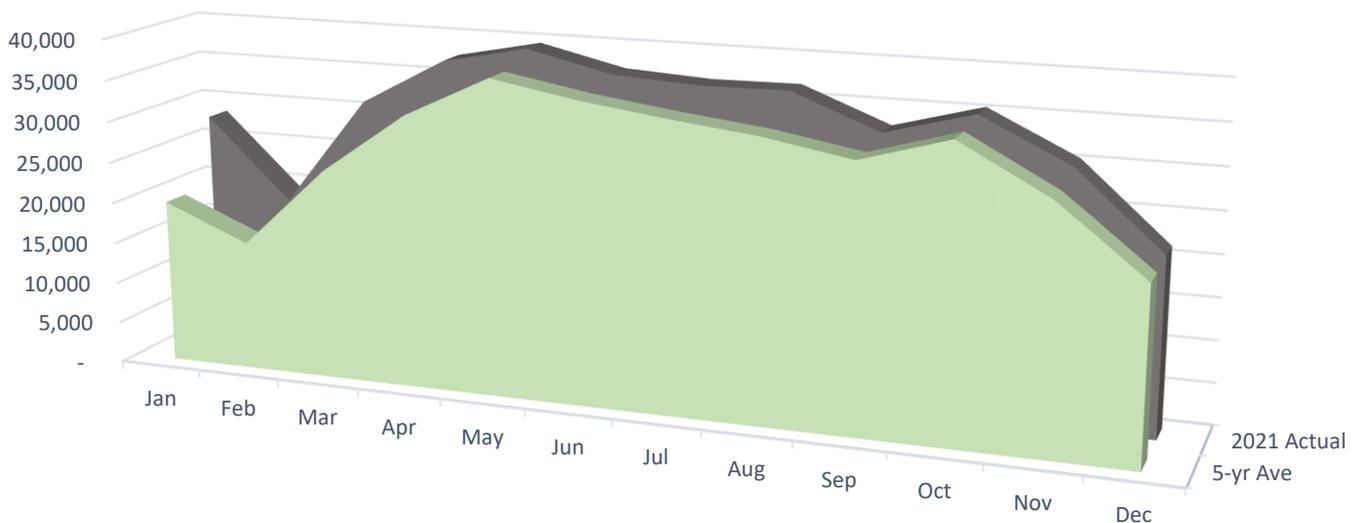


Prairie Monthly Customers 2021 Actual v. 5-Year Average



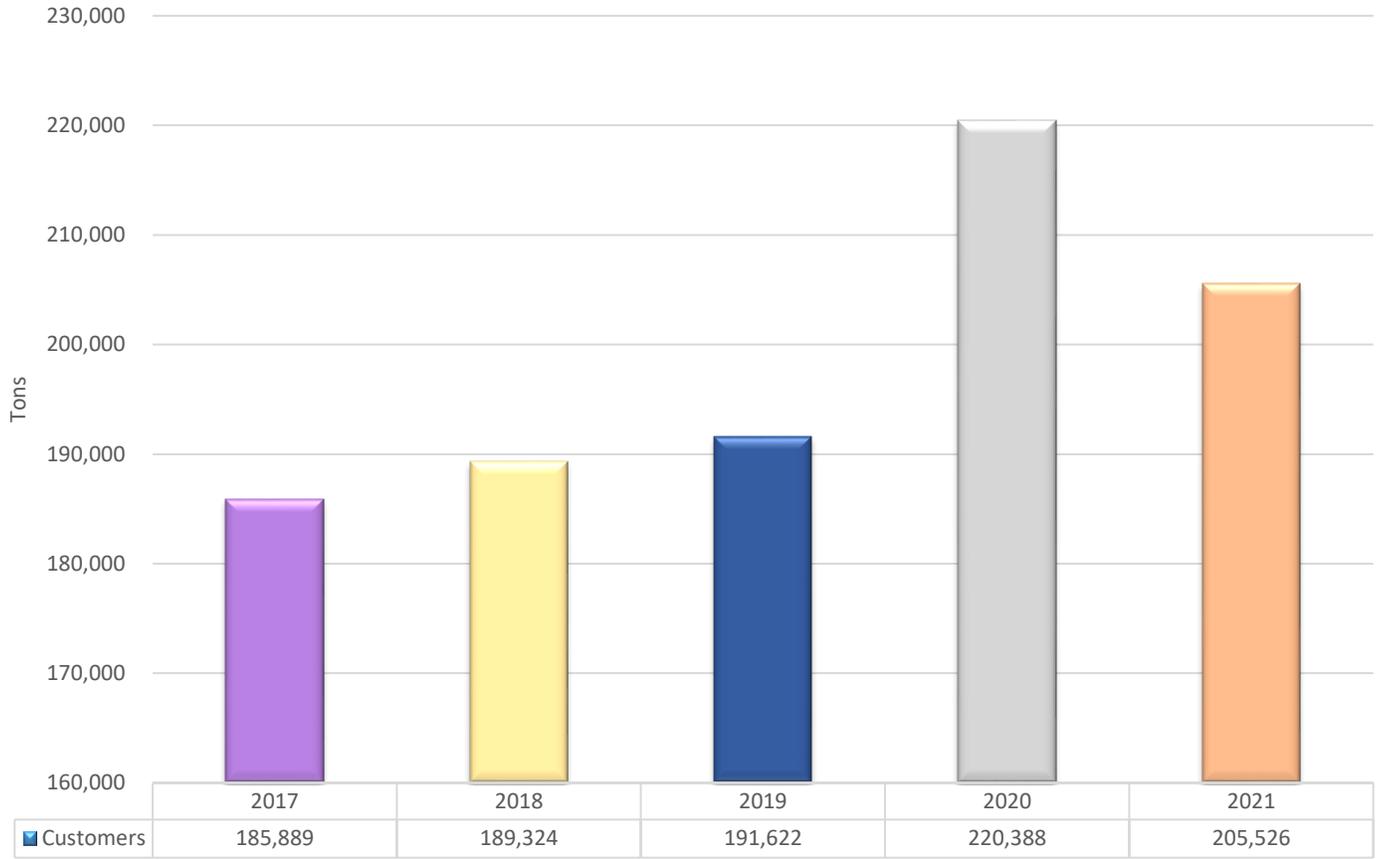
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5-yr Ave	10,692	9,196	14,705	18,873	22,016	19,889	19,537	19,073	17,720	18,656	15,761	11,726
2021 Actual	14,676	10,458	18,305	21,308	22,270	21,031	20,941	21,008	18,581	20,604	16,770	11,964

Ramsey Monthly Customers 2021 Actual v. 5-Year Average

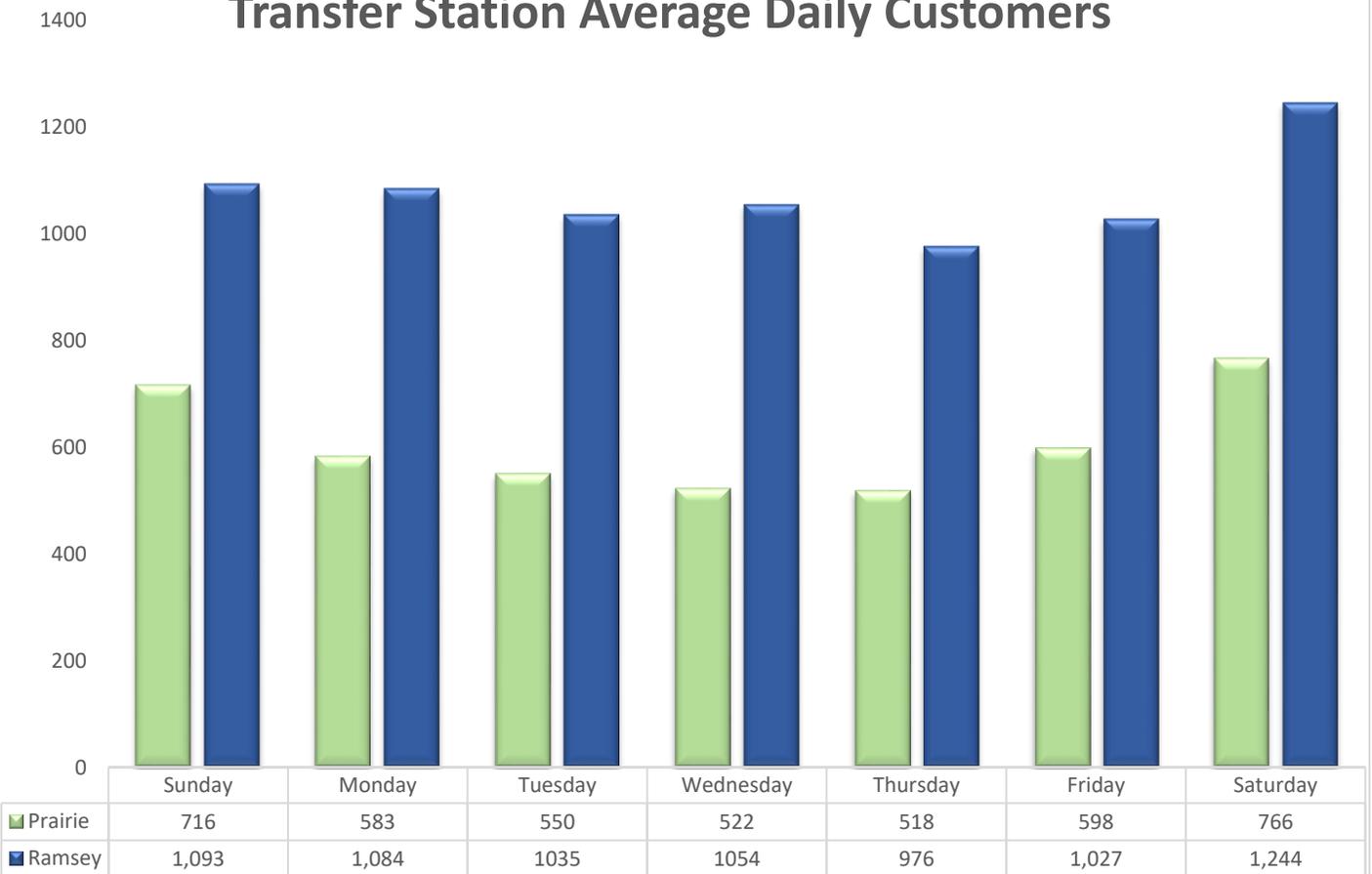


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5-yr Ave	19,841	15,641	25,421	32,831	37,902	36,067	34,682	33,480	31,673	34,773	29,107	20,970
2021 Actual	28,306	18,561	31,680	37,386	39,505	37,112	36,507	36,626	32,560	35,427	30,378	21,254

Rural Staffed Site Customers

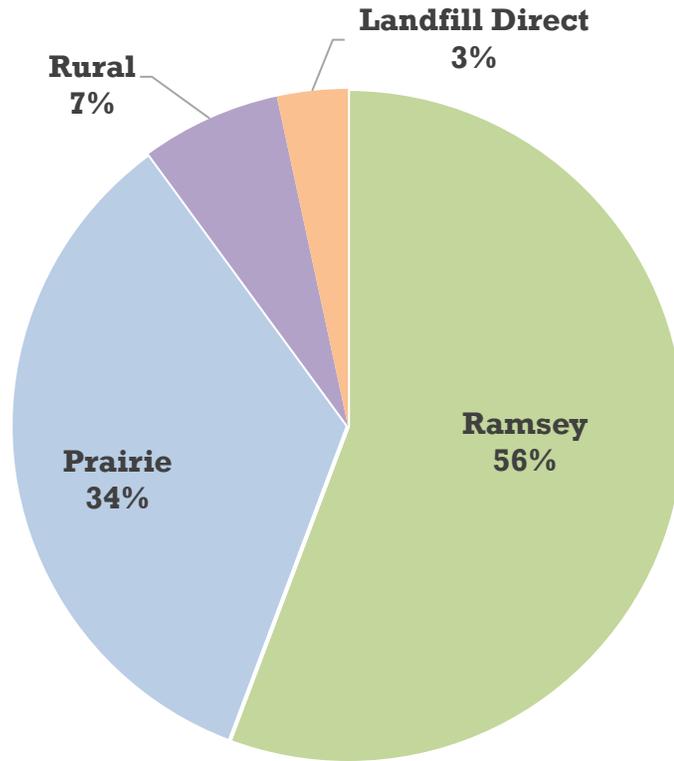


Transfer Station Average Daily Customers

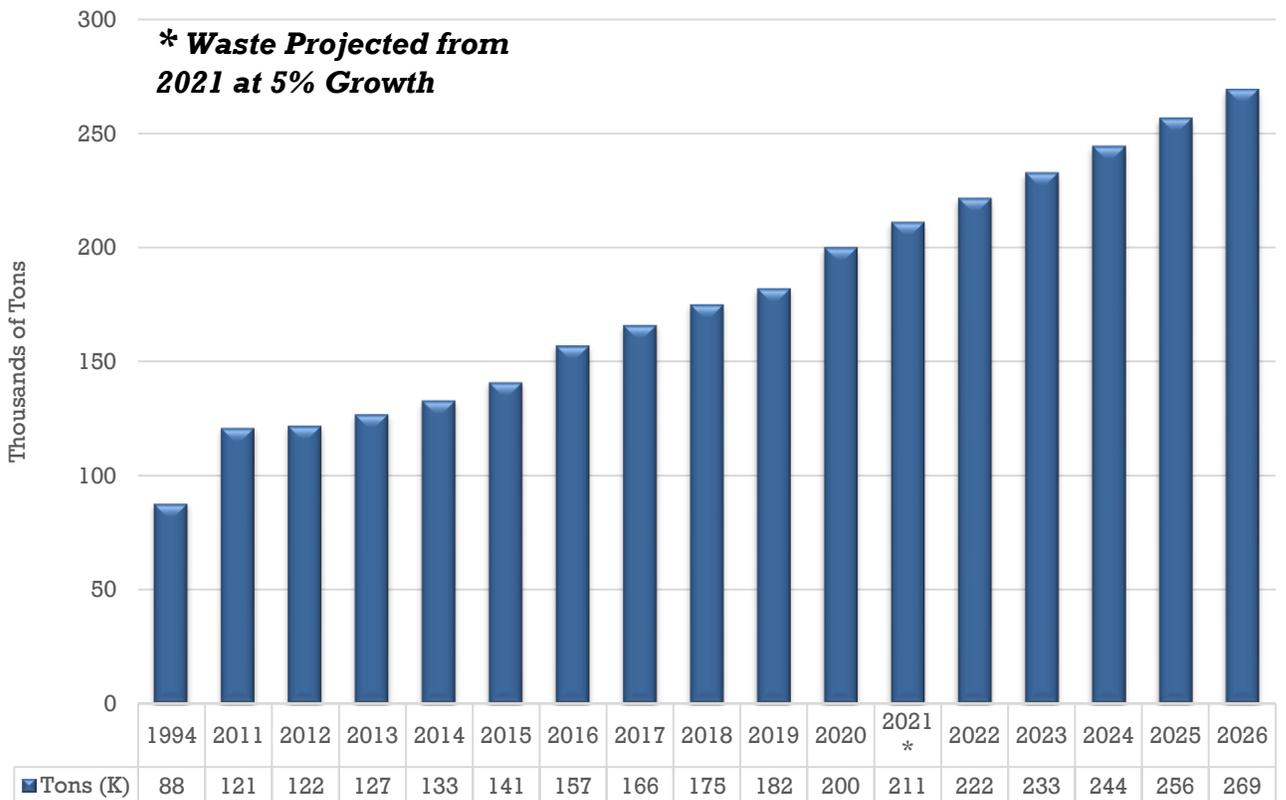


Appendix “C”
Waste Statistics

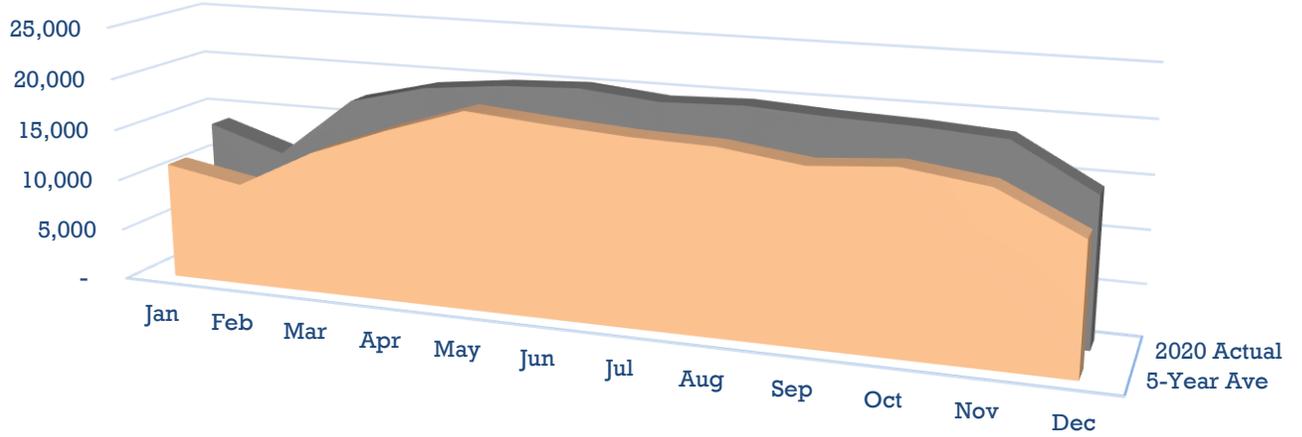
Waste Stream by Location



Landfilled Waste History & Projection*

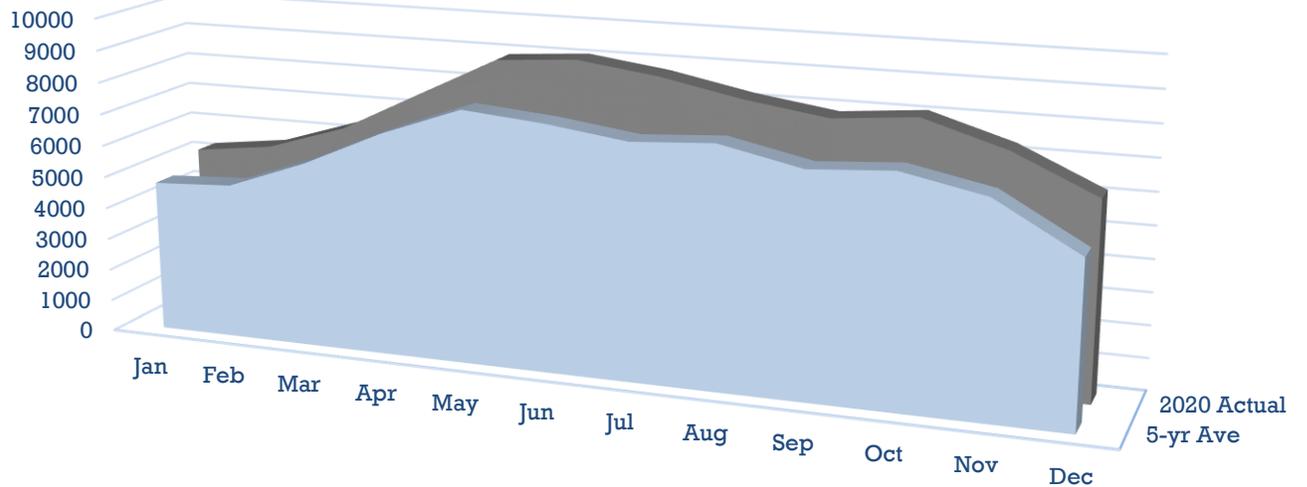


Landfill Monthly Tons 2021 Actual v. 5-Year Average



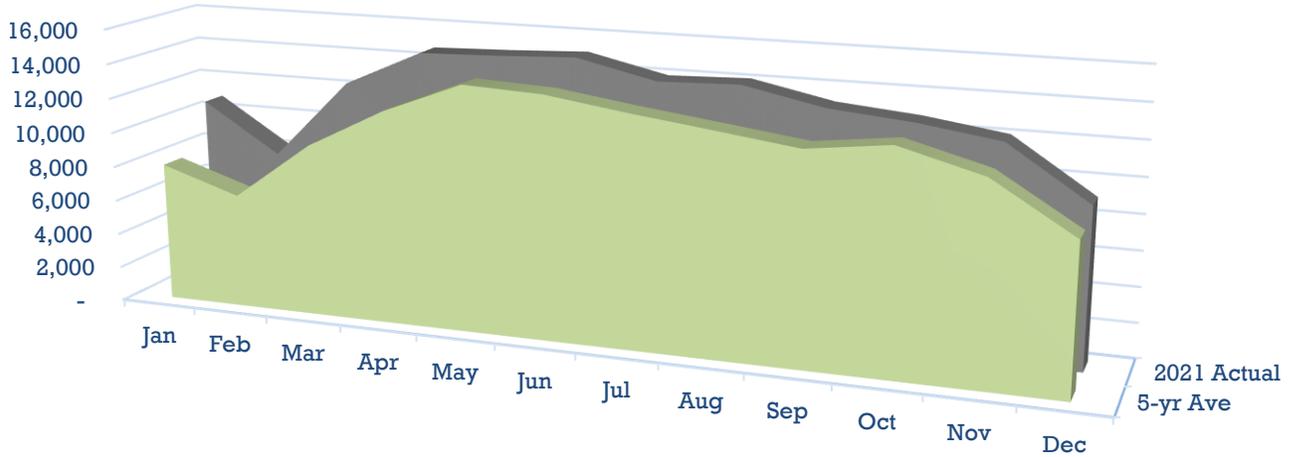
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5-Year Ave	11,359	10,003	13,813	16,598	19,047	18,392	17,863	17,623	16,591	17,182	16,122	12,419
2020 Actual	13,739	11,367	17,254	19,086	19,863	20,185	19,443	19,693	19,239	18,972	18,448	14,177

Prairie Monthly Tons 2021 v. 5-Year Average



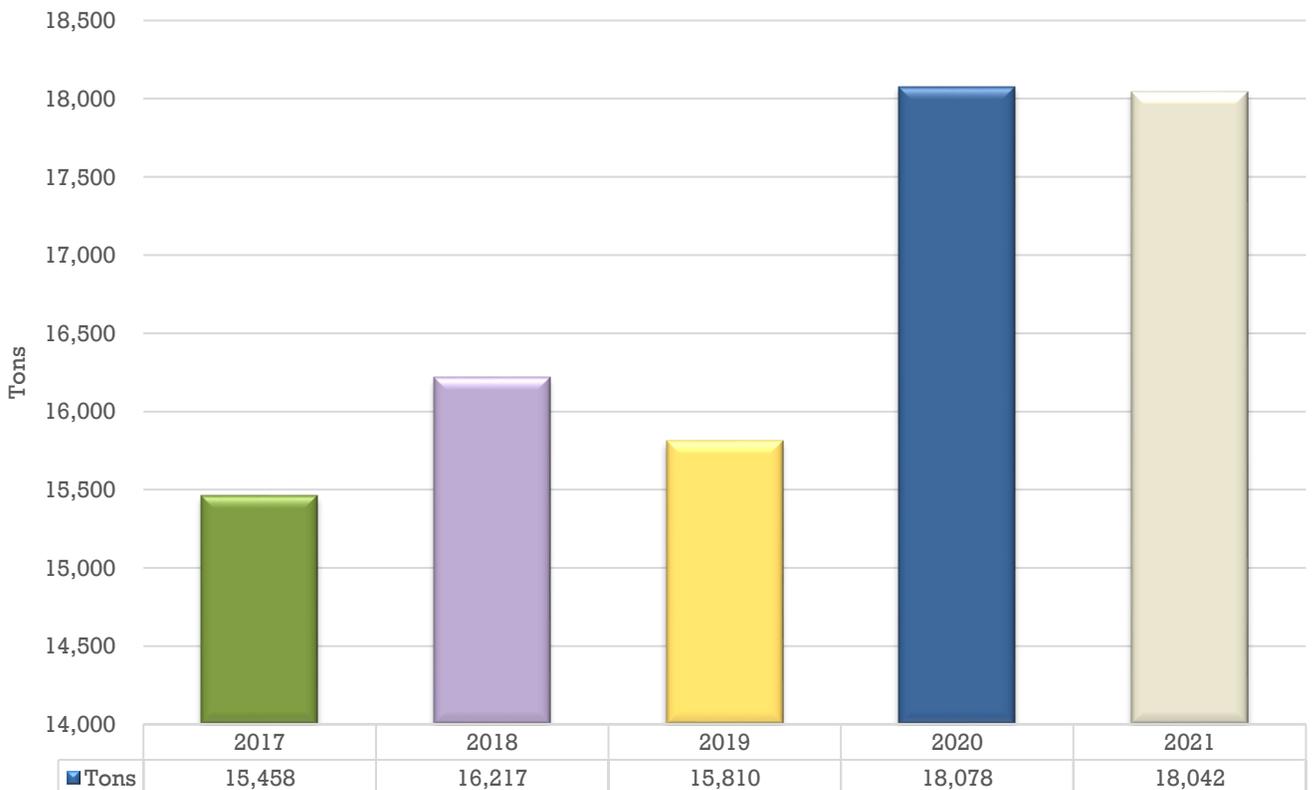
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5-yr Ave	4742	4878	5797	6935	7853	7634	7297	7459	6918	7091	6571	5116
2020 Actual	5232	5543	6341	7612	8869	9051	8713	8208	7838	8068	7295	6127

Ramsey Monthly Tons 2021 Actual v. 5-year Average



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
■ 5-yr Ave	8,003	6,564	9,879	12,209	14,007	13,794	13,136	12,556	11,954	12,526	11,274	8,501
■ 2021 Actual	10,817	7,985	12,561	14,635	14,773	14,970	13,939	14,085	13,130	12,713	12,047	9,062

Rural Systems Tons 2017 - 2021

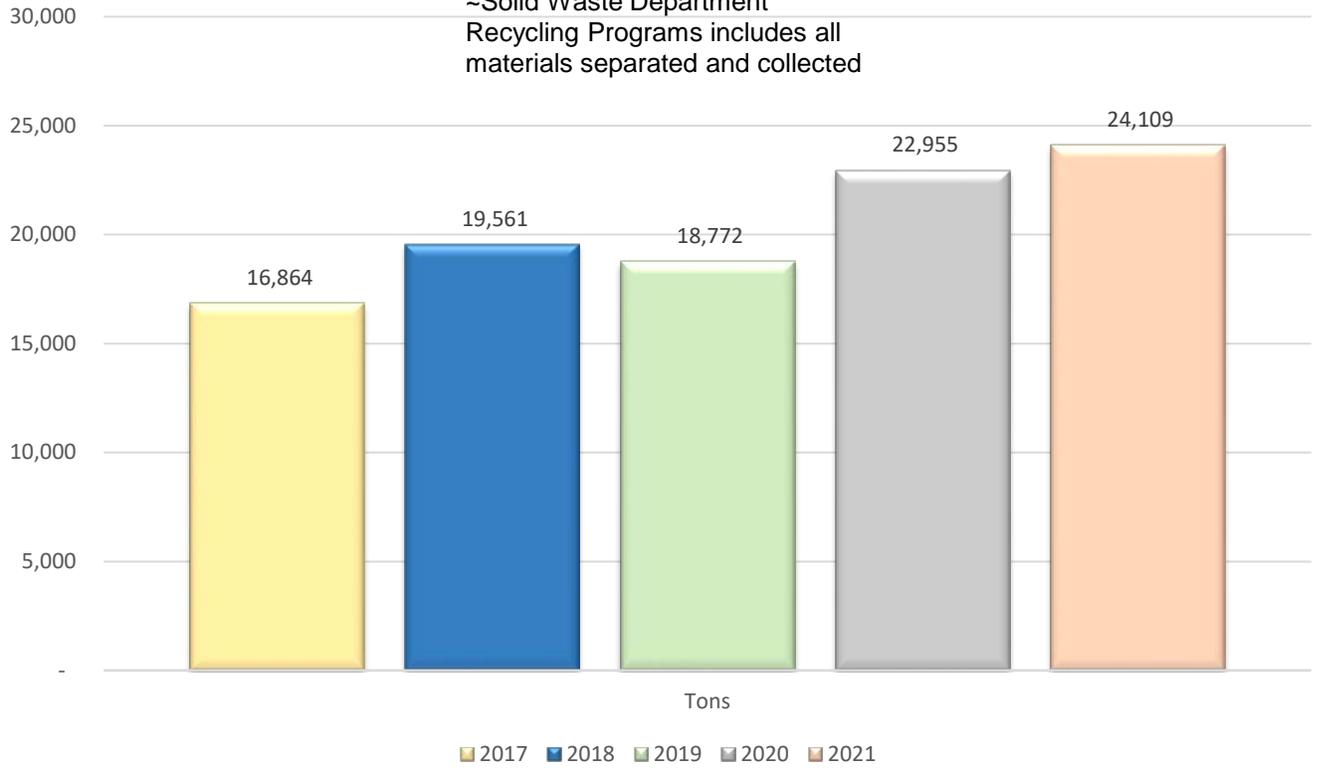


	2017	2018	2019	2020	2021
■ Tons	15,458	16,217	15,810	18,078	18,042

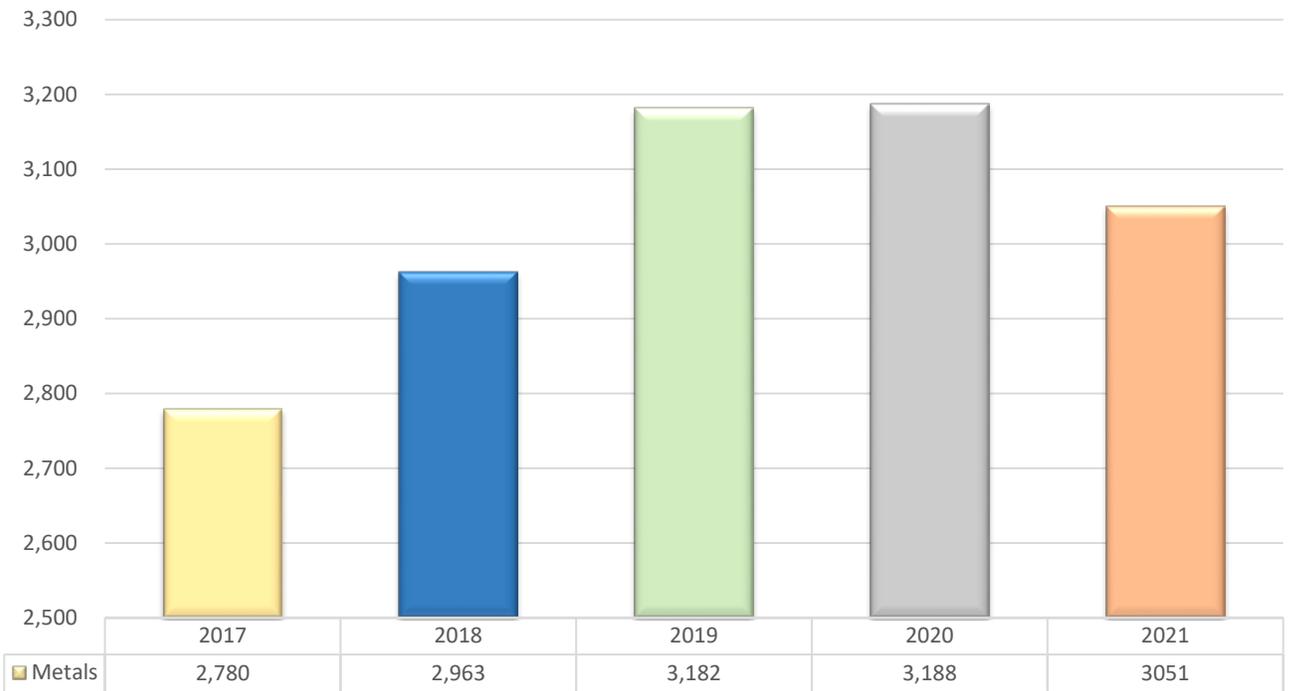
Appendix “D” Recycling

Solid Waste Department Recycling Programs~

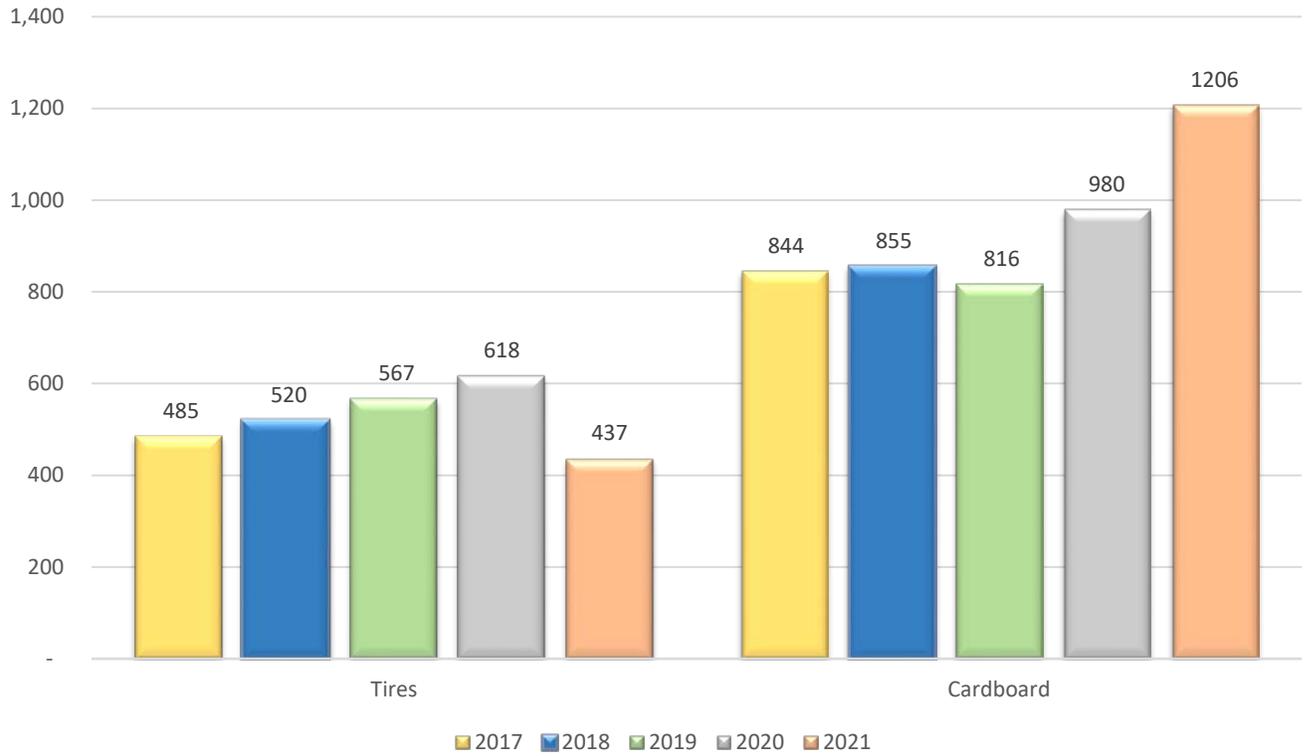
~Solid Waste Department
Recycling Programs includes all
materials separated and collected



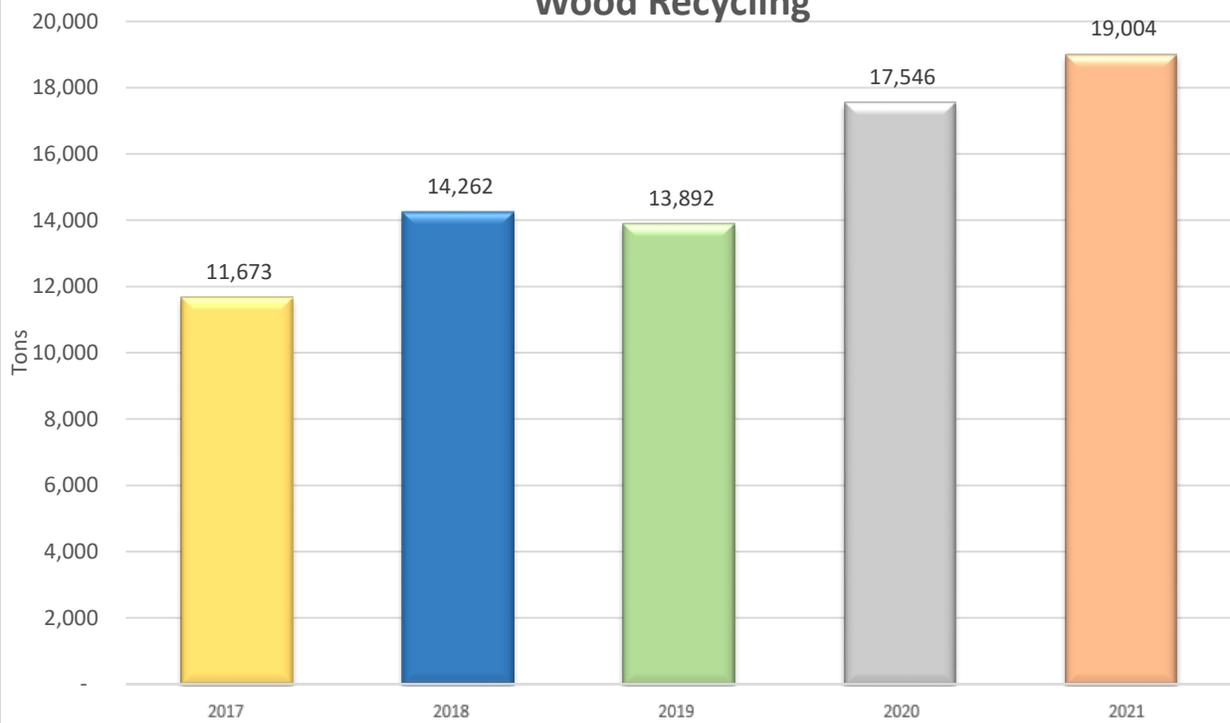
Metals Recycling



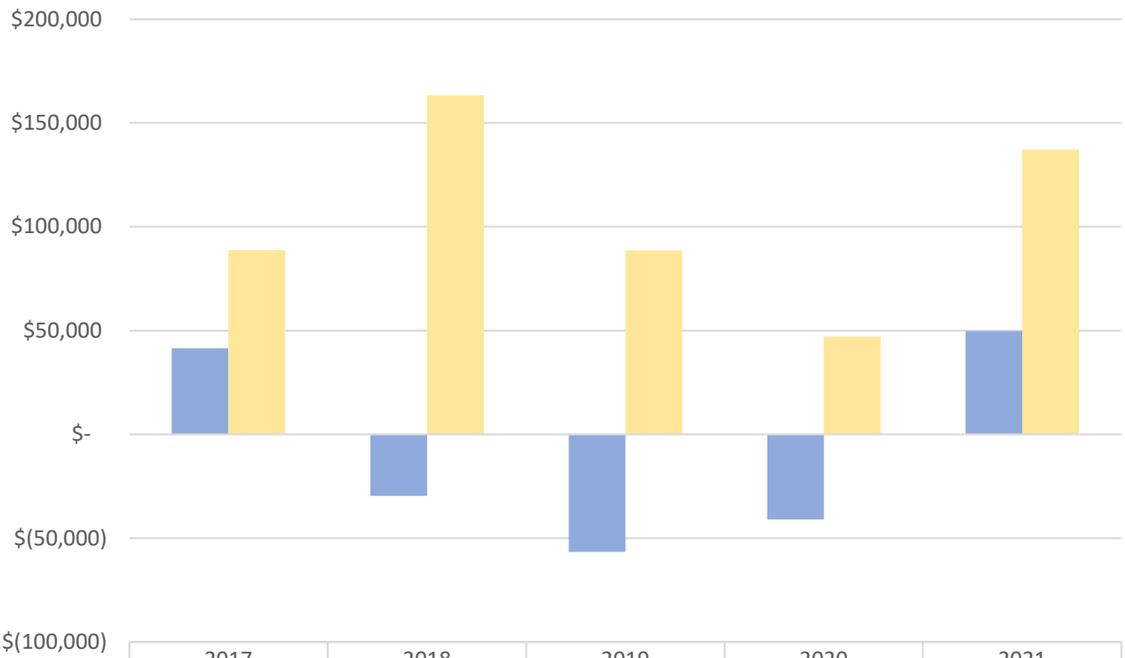
Tires & Cardboard Recycling



Wood Recycling



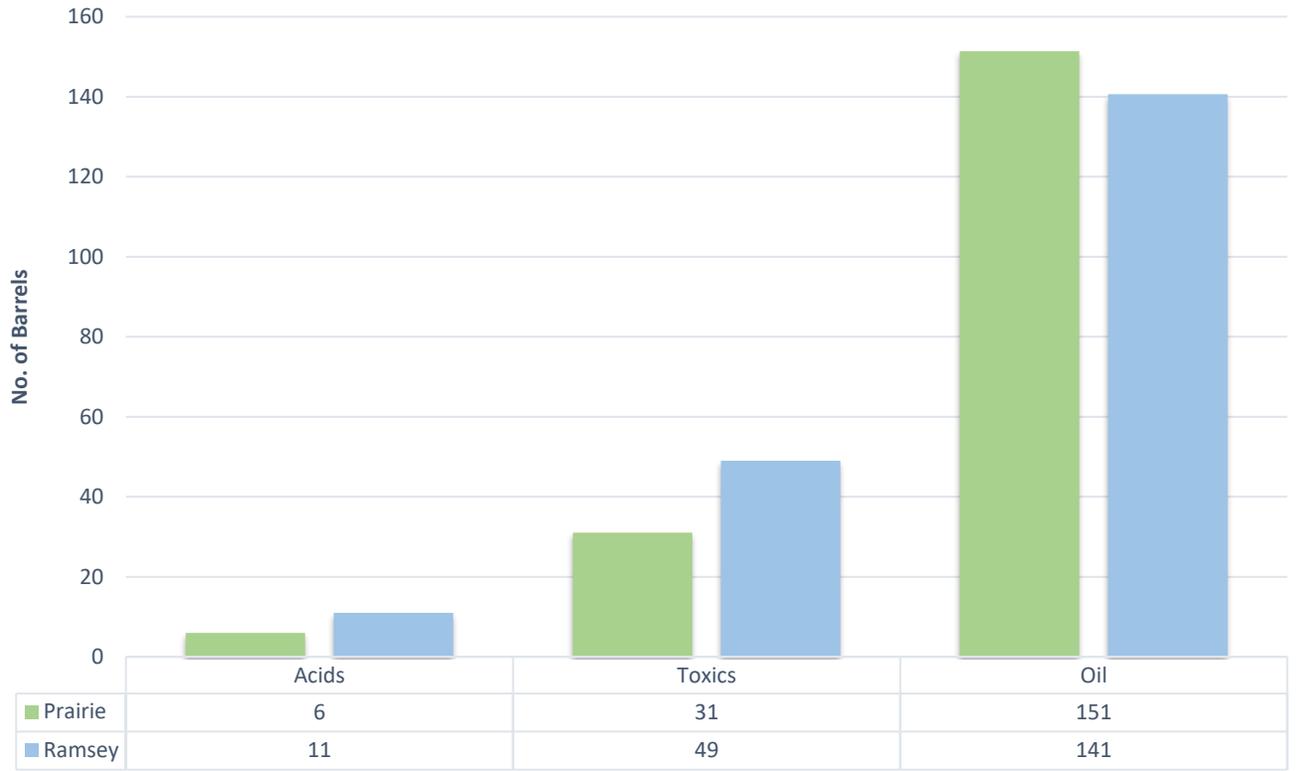
Recycling Revenue



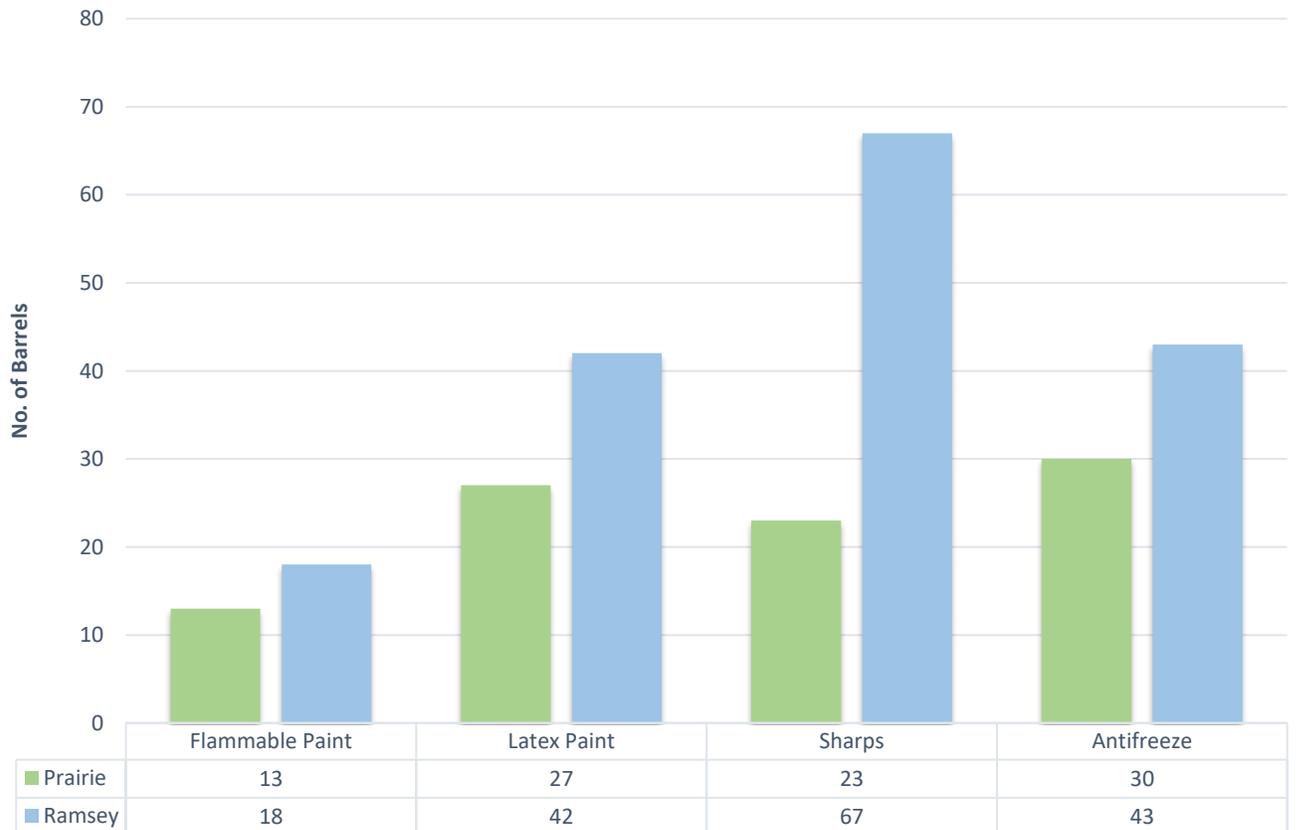
	2017	2018	2019	2020	2021
■ Non-Metal Recycling*	\$41,564	\$(29,692)	\$(56,567)	\$(40,892)	\$49,770
■ Metal Recycling#	\$88,749	\$163,418	\$88,569	\$46,987	\$137,096

Appendix “E”
Household Hazardous Waste (HHW)

HHW Processed - Acids, Toxics and Oil



HHW Processed - Paint, Sharps and Antifreeze



CFC Units* Processed (5,306 units)

