

Kootenai County Solid Waste Department 2017 Solid Waste Analysis

KOOTENAI COUNTY SOLID WASTE DEPARTMENT
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KOOTENAI COUNTY

SOLID WASTE

March 1, 2018

I am pleased to present the 2017 Solid Waste Report for Kootenai County. 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.

Detailed reports and information can be viewed at the Idaho DEQ office in Coeur d'Alene or the Administration Office of the Kootenai County Solid Waste Department.

In 2017, the solid waste facilities experienced a jump in overall waste generation attributed to the growing local economy. In reviewing historic data, the increase appears to be directly related to increased development and construction opposed to simply population changes.

The transfer facilities and staffed rural sites served 674,855 customers – an increase of 6,729 customers in one year. The landfill realized a 5.3% increase in tonnage which, thankfully, was less than last years' increase of 12%. The landfill managed a total of 165,544 tons, an increase of 8,414 tons.

The County-owned and operated landfill is the cornerstone of the solid waste system and as waste volumes grow, it is critical to carefully plan for short and long-term operational and development changes. The key project in 2017 was to develop and construct an interim closure cover for the landfill to manage leachate production.

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

If you have any questions, please do not hesitate to contact us.

Sincerely,

Cathy Mayer
Solid Waste Director



Summary

2017 Waste Stream Analysis

This section contains an overview of the Solid Waste System and some of the planning tools used to help meet the needs of Kootenai County residents.

The Solid Waste Department is committed to provide our citizens with affordable and efficient waste disposal. The Solid Waste Department is an affordable asset to Kootenai County providing financial stability to the County in that we generate revenue and are fiscally responsible.

The Solid Waste Department consists of the following:

- Fighting Creek Farm Landfill (open 6 days a week)
- Ramsey Transfer Station (open 7 days a week) and closed landfill
- Granite Landfill (Closed)
- Prairie Transfer Station (open 7 days a week)
- 13 Rural Residential Collection Sites

Flexibility is the key to success. It takes many talents and skills to keep the Department running smoothly and successfully. There are a total of 60 full-time employees, with additional seasonal staff for the summer months.

The County owned and operated landfill is the key to this goal and the department is always researching alternative methods of disposal and management of leachate. In addition, material reuse or recycling is encouraged to reduce the amount landfilled.

BUDGET

The Solid Waste Department carefully plans all activities to provide for the maximum benefit of available funding which is critical in today's economy. As an enterprise fund, the solid waste program is operated more like a business than the typical tax based government entity. Solid waste dollars are acquired through fees and kept in a Solid Waste Fund. Since dollars are through fees, the Department does not compete for tax dollars.

For detailed information about the financial records of the Department, you may view the Comprehensive Annual Report prepared by the Auditor's office on the Kootenai County website: <http://www.kcgov.us/departments/auditor/financials/downloads.asp>

The Department maintains strategic long-term financial plans and works to finance the required operation and expansion of services within the solid waste system in Kootenai County.

As an enterprise fund, other County departments are paid for the services they provide. In 2017, the Solid Waste Department paid \$808,326 to Kootenai County for services provided by other departments.

Operational expenditures are broken down into the following categories. All salaries necessary to support these activities are contained within these budget categories.

Activity	Budget
Administration	\$ 389,002
Ramsey Transfer Station	\$ 2,711,927
Prairie Transfer Station	\$ 2,139,370
Rural Systems	\$ 1,090,171
Landfill	\$ 2,747,436
Interfund Services	\$ 808,326
Closure/Post Closure	\$ 450,000
Total Budget	\$ 10,336,232



Kootenai County Mission Statement

It is the mission of Kootenai County Government to provide professional service with regard to public safety, essential service, preservation of natural resources and the responsible management of public assets for the common well-being of our citizens.

Vision Statement

An innovative, cost effective government the community can be proud of, committed to a high quality of life and excellence in public service.

Values and Operating Principles

- **Customer Focus**
 - Responsive, Prompt, Compassionate, Quality Service
- **Accountability**
 - Responsible, Cost Effective Use of Public Resources
- **Teamwork**
 - Creative Cooperation
- **Communication**
 - Open and Honest Sharing of Information and Ideas
- **Professionalism**
 - Innovative, Qualified, Honesty, Integrity, Personal Excellence

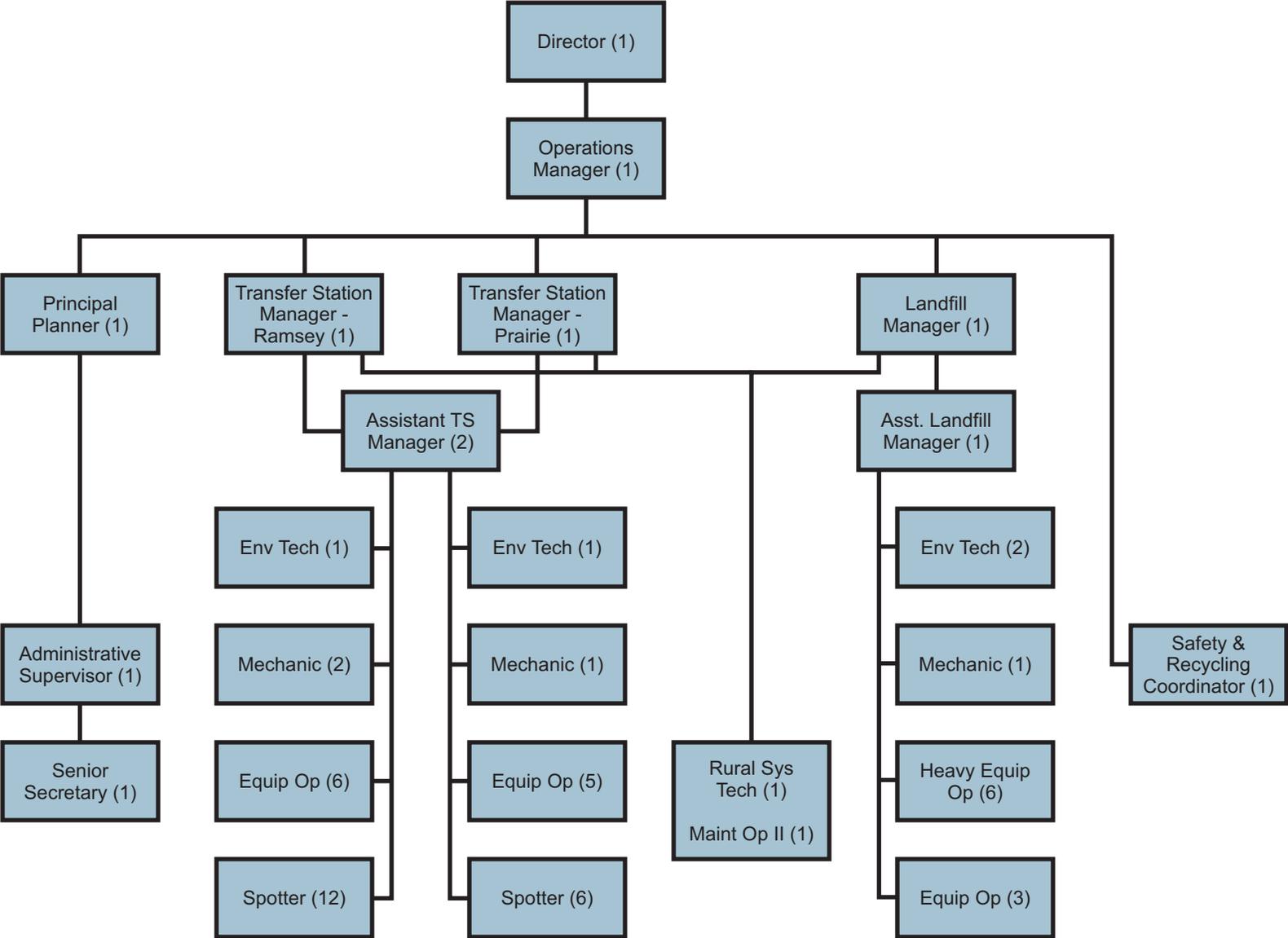


Kootenai County Solid Waste Department Mission Statement

It is the mission of the Kootenai County Solid Waste Department to:

- Protect the public health and well being for all citizens affected directly and indirectly, now and in the future.
- Provide environmentally sound facilities and operations before, during and after dispose of solid waste
- Provide effective and efficient means of solid waste disposal to the citizens of Kootenai County
- Insure the equity of solid waste disposal costs among all citizens

Solid Waste Department



Kootenai County Solid Waste System



LANDFILL 2017

Kootenai County owns and operates a fully permitted municipal solid waste landfill located approximately 16 miles south of the city limits of Coeur d' Alene, Idaho. The Kootenai County Farm Landfill at Fighting Creek, also referred to as the Fighting Creek Landfill, is situated on over 600 acres owned by Kootenai County with a portion dedicated for landfill. The life cycle of the currently permitted area is estimated to allow for waste disposal into the year 2042.



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

The landfill is the cornerstone of the solid waste system in Kootenai County, operating 6-days a week (Monday through Saturday). The general public must use the Transfer Stations or the rural residential collection locations since waste from individual public loads are not currently accepted at the landfill. The removal of recyclable and reusable materials from the waste stream prior to landfilling is imperative to save landfill space. The Fighting Creek Landfill received a total of 165,544 tons of refuse during the calendar year of 2017. This was an increase of 5.3% or 8,414 tons over 2016.

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

On June 14, 2016 placement of waste in Phase E2 of the East Cell of the landfill began. A total of 251,182 tons of material has been placed in this section of the landfill from June 2016 through the end of 2017. The Phase E1 section of the East Cell of the landfill received waste from 8/5/2013 through 6/23/2016 with a total of 389,759 tons. The original landfill footprint that commenced filling in 1993 reached interim closure elevation with 2,350,597 tons of material in place as of August 2013.

The *Kootenai County Farm Landfill 2015 Life Cycle Update*, prepared by the engineering firm CH2M Hill, estimated the near term effective waste density for Cell E1 to be 1,050 pounds per cubic yard (lb/cy). Over the longer term (beyond 2026), the waste density is expected to increase to 1,500 lb/cy. The lower waste density in the short term is attributed to less compacted material in the base of the two newer cells.

The Life Cycle Update is a planning tool to help understand how well we are doing in managing and disposing of waste within the landfill. Based on these tools, we have determined that our overall long term growth rate for planning is 3%. The Life Cycle Update of 2015 estimates that the original footprint and the East Cell of the Landfill will reach final closure capacity in 2042.

LEACHATE

Leachate is a liquid byproduct that results from the compaction of saturated refuse and/or the migration of natural precipitation through garbage. Under current rules, we must treat and dispose of all leachate that is produced at the Fighting Creek Landfill. Our leachate is not characterized as hazardous material but does contain soluble, suspended material that is from the waste.

Not allowing storm water to contact garbage is the best way to minimize leachate production. In 2017 Kootenai County had approximately 16 acres of plastic cover liner installed on the old cell of the landfill to limit such contact. Ten (10) acres of this material may someday qualify as final cover while the top six (6) acres is temporary in nature. This installation will prevent millions of gallons of clean storm water from becoming leachate, thus reducing the quantity of leachate to manage on-site.

Leachate at the Fighting Creek Landfill has been controlled by a variety of methods with ultimate disposal by one of three alternatives: recirculation, evaporation, or off-site delivery to a waste water treatment facility. Hauling leachate to an off-site wastewater treatment plant has occurred rarely over the last 10 years. Heavy precipitation during 2016/2017 created abnormal amounts of leachate and forced us to haul approximately 2.3 million gallons to the Hayden Area Regional treatment facility.

Landfill staff remain focused on solutions for managing leachate. A misting basin was designed and constructed at the landfill to help minimize wastewater via evaporation. The basin is comprised of a 302' x 538' area lined with 30 mil reinforced polyethylene, pipe system with over 892 spray heads, and three 50 HP pumps used to transfer leachate from the holding ponds to the basin. Non-evaporated wastewater and remaining solids return to the adjacent leachate pond.

The misting system began operation in July 2014. It is closely monitored and not operated on windy days, during high humidity periods, and/or rainy times. Environmental sampling of surrounding surface water(s) is conducted as required under our Multi-Sector General Permit for sector "L" Landfills.

The following represents the leachate processed and disposed utilizing the misting system over the last 4 seasons:

- July-September 2014 - 5 million gallons
- April-August 2015 - 5.7 million gallons
- April-September 2016 – 4.8 million gallons
- April-October 2017—5.5 million gallons



Leachate from the landfill is conveyed through the system within a series of gravity feed pipes located at the bottom of the landfill. Lift stations move this byproduct from the new east landfill cells to the pond system. Currently four leachate collection ponds are on-site with over 7 million gallons of rated capacity.



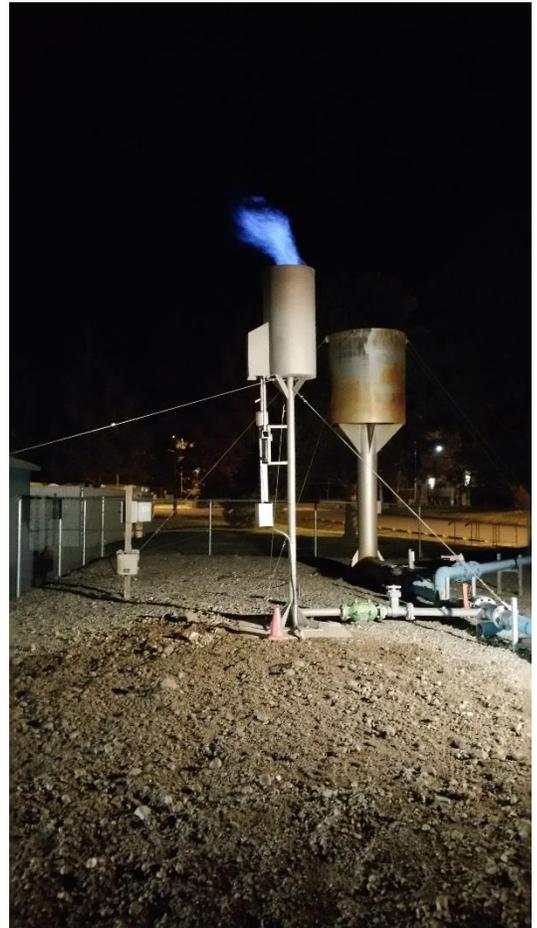
The leachate ponds are aerated through mechanical injection of air into the lagoons. This keeps dissolved oxygen levels high while helping to control odors.

GAS SYSTEM

The Fighting Creek Landfill has a fully operational gas extraction system, which currently includes 249 landfill gas wells in the original footprint as well as 19 collection points in the East Cell. This extensive gas well and trench system collects gas and conveys it to a collection point that feeds two operational ground flares, a leachate evaporator (which has not been used since 2015) and a landfill gas to energy facility. This system is regularly monitored and adjusted to ensure compliance.

The first blower/flare was installed in 1994 and the gas system activated in 1995. A second enclosed flare was installed in 2000. Kootenai County continues to install landfill gas control devices well ahead of State and Federal requirements.

In March 2012, a Landfill Gas to Energy Project between the Solid Waste Department and Kootenai Electric Cooperative became operational. At full production, the facility will produce 3.2 MW of power sufficient to service approximately 2,000 homes.



Closed Landfills

In addition to the Fighting Creek Farm Landfill, 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 finished accepting waste in 1993 upon the opening of the Fighting Creek site. The Ramsey Landfill utilizes an active gas extraction system combined with an impermeable cover. Landfill gas from the Ramsey landfill is flared on-site. The older portion of this landfill (located on the west side of Ramsey Road) no longer produces measurable quantities of gas. In 2007, it became necessary to downsize the candlestick flare at the Ramsey facility because gas generation had substantially decreased.

The closed Granite Landfill, is located on the northern border of Kootenai County. This facility was shared between Kootenai and Bonner Counties and stopped accepting waste in the 80's. For many years, this location was far from any dwellings. The sale of adjacent property and the establishment of a rural residential development required us to fence this facility. A passive gas probe system was installed in 2008 to verify the absence of meaningful methane production on this site.

Complete landfill gas reports are available for review at the Idaho DEQ, Coeur d' Alene Office or the Kootenai County Solid Waste Department.

SURFACE WATER MONITORING



The Federal EPA and Idaho Department of Environmental Quality have established rules for surface water monitoring at the Fighting Creek Landfill. Over time, an extensive surface water treatment infrastructure has been established to assure any surface waters leaving site are clean.

A series of sedimentation ponds have been established throughout the landfill to accept run-off from all of the local drainage areas. These ponds mainly function to aid in removing suspended solids. Each pond is designed with specific retention times for adequate sediment control. Ponds are cleaned, as necessary, during the summer months if silt has significantly reduced the holding capacity of water in the pond.

On-site surface water retention ponds typically drain through large pre-designed vegetated drainages. This allows for natural filtration and aids in further cleaning of the water. Within the drainage there also exists a series of rock "finishing dams" designed to slow down the run-off allowing more time for sediment to drop/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 our wetlands each year to nest.

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

GROUND WATER

The landfill operating permit requires us to establish and operate a groundwater monitoring system. Currently, a total of 9 ground water monitoring wells are sampled biannually on the property. The location of these monitoring wells are both up gradient and down gradient from landfilling activities. Such positioning of sampling points allows for a comparative analysis to background conditions of natural groundwater. Results enable our engineers to discern if any ground water degradation has occurred as a result of landfill operations.

As part of a community outreach program, two domestic wells are also sampled during the semi-annual sampling events.

To date no landfill related degradation of ground water, at the landfill or the domestic well sites, has been found.

LANDFILL FUTURE DEVELOPMENT



The Solid Waste Department regularly reviews/updates its development strategy. Necessary future work is planned to include site development for future material sources for landfill cover, perimeter road expansion/build out, corridor development, Phases E3 & E4 development, and south cell permitting/engineering.

The landfill property includes an area to the South and West of the original landfill. This area is estimated to provide for solid waste disposal needs for Kootenai County through approximately 2070.

The Department is also working on finalizing the interim capping project for the original footprint to further reduce infiltration and leachate generation.

Customer Service – Collection Sites 2017

CUSTOMERS

The Kootenai County Solid Waste System is totally owned by the citizens of Kootenai County and exists solely for their use. The Solid Waste Department is an affordable asset to Kootenai County with a positive customer service reputation. 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 2017, staff assisted a total of 674,855 customers – an increase of 4,730 from last year. Customers used the Ramsey site 319,838 times, the Prairie site 171,127 times, and the staffed rural sites 183,889 times. These totals do not take into account the eleven other rural sites that are being used throughout the County.

The Ramsey Transfer Station saw a slight decrease of 2.1% or 7,189 less customers from last year. On average 890 customers per day were served with Saturday being the busiest day of the week (average of 1,079), and Thursday the lowest with an average of 793 customers. The least busy day was December 24, 2017 with 193 customers and busiest day, May 30, 2017, with 1,637 customers. The high/low months were June with a total of 34,662 and February with 13,153. A tidbit of trivia – the Ramsey facility serves 47% of the total department customers.

The Prairie Transfer Station saw a slight increase of 2,343 or 1.3% over last year. On average 477 customers per day used this facility. Saturdays averaged 643 per day and Thursday averaged the lowest with 385 customers. Only 122 customers used this facility on February 4, 2017, and 969 found their way to Prairie on May 21, 2017. June was the busiest customer month with 17,743, with February coming in with the least at 7,377. Trivia note – from 2009 through 2017, 1,158,349 customers have used the Prairie facility.

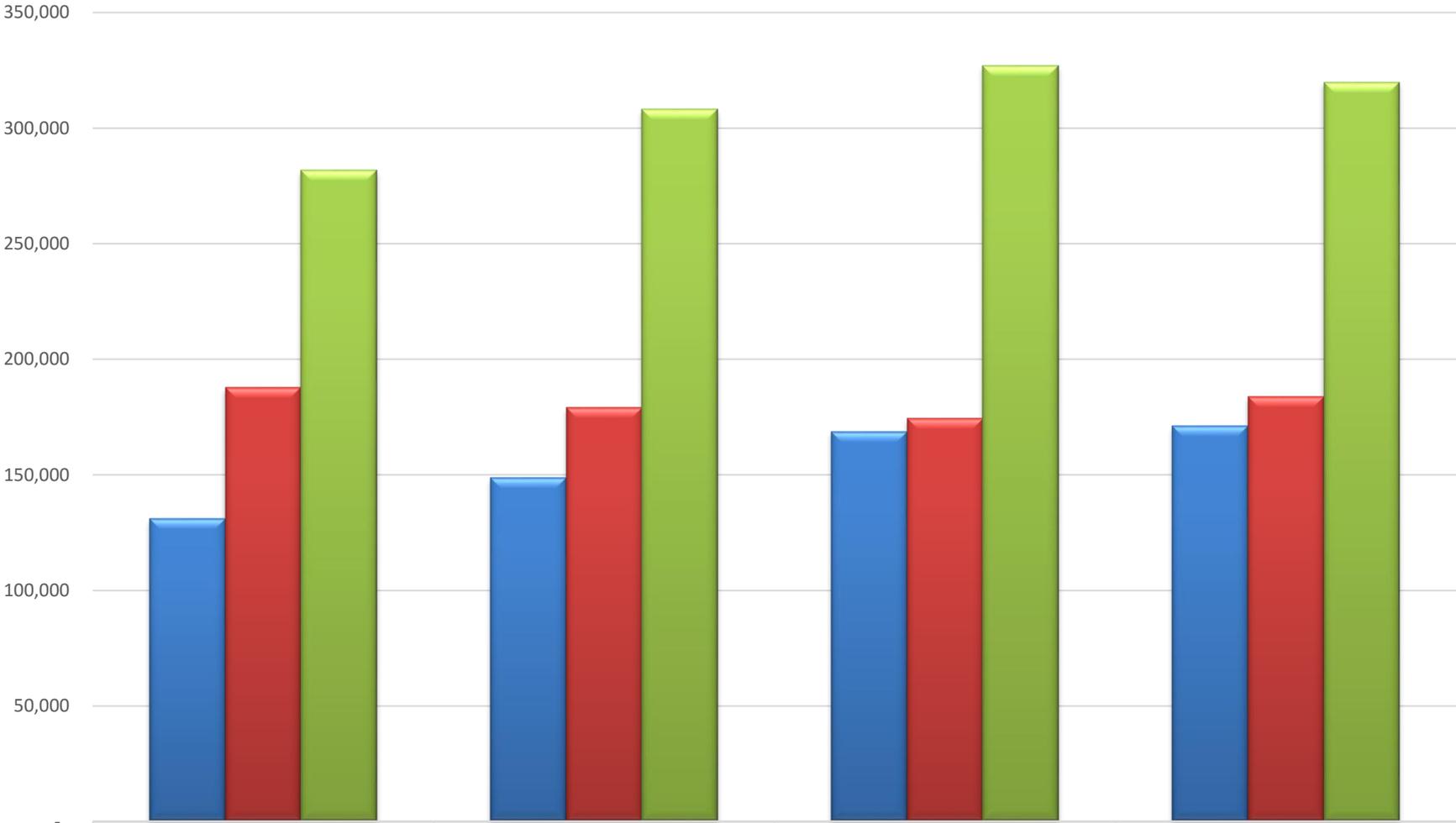


The slight decrease at Ramsey and minimal increase in customers at Prairie is attributed to exceptionally high customer counts in 2016 partly due to wood and building debris from the fall windstorm of 2015. This debris material was delivered throughout 2016. Many of these customers delivered very light loads and made a lot of trips to the sites.

In addition to the two transfer stations, Kootenai County has 13 rural residential collection sites. The Chilco and Athol sites in the north are staffed for safety and assistance. The Department will continue to plan and prepare to purchase additional property and staff the rural sites that are provided by Kootenai County and consolidate or expand services in the coming years.

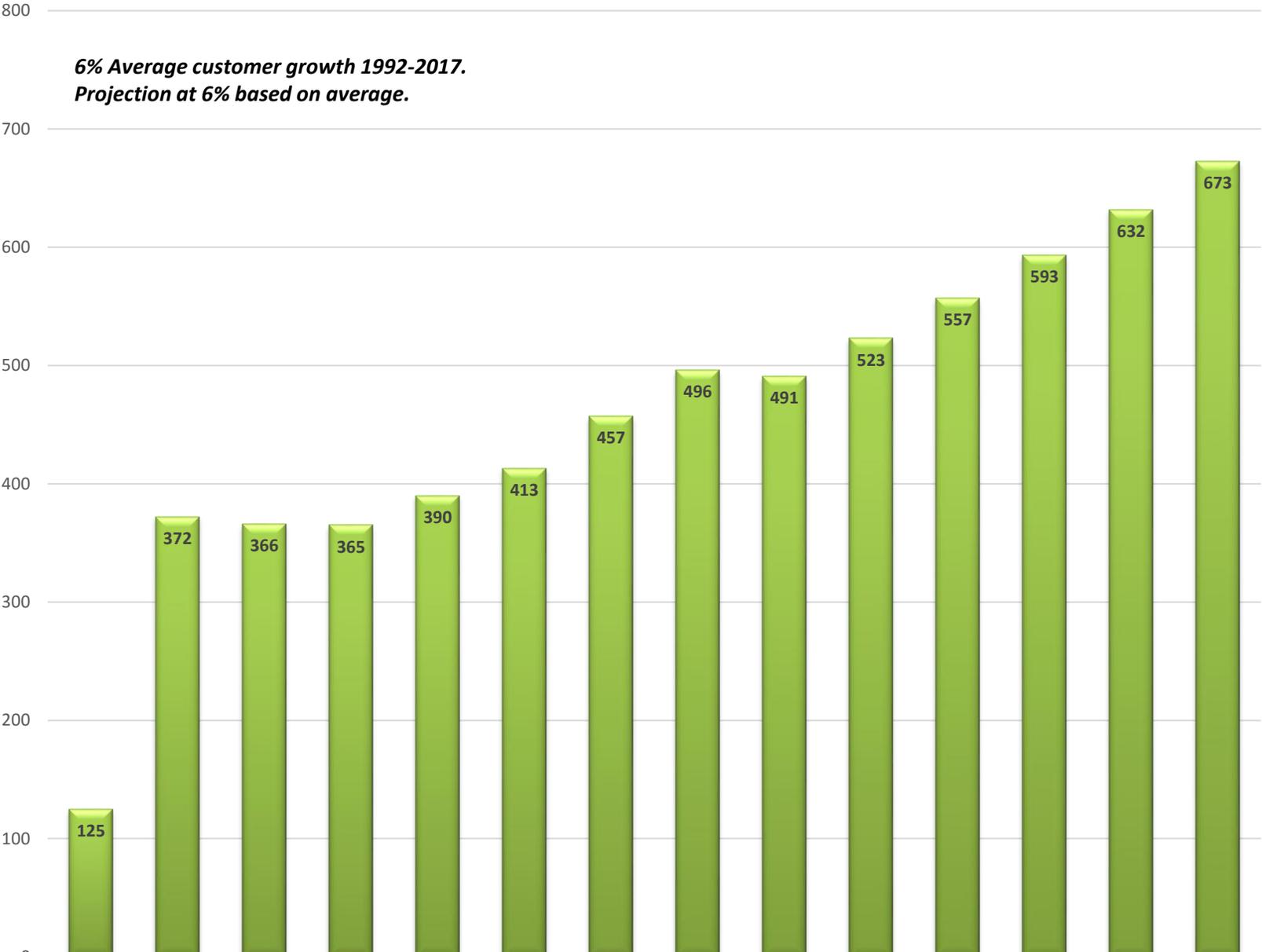
Total Department Customers

Total 674,855



	2014	2015	2016	2017
■ Prairie	130,981	148,617	168,784	171,127
■ Rural	187,592	179,005	174,314	183,889
■ Ramsey	281,752	308,047	327,027	319,839

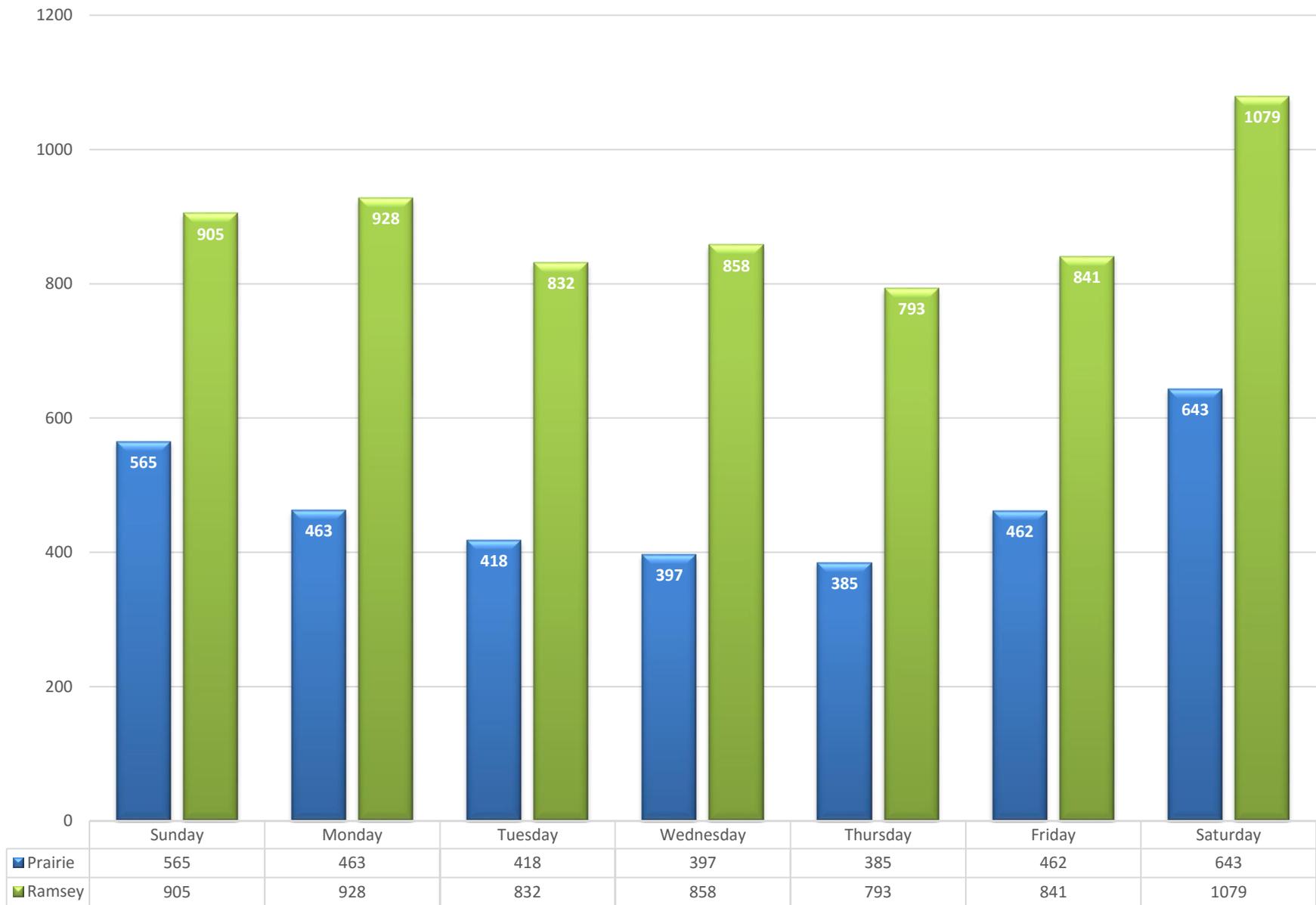
Transfer Stations - Customer History



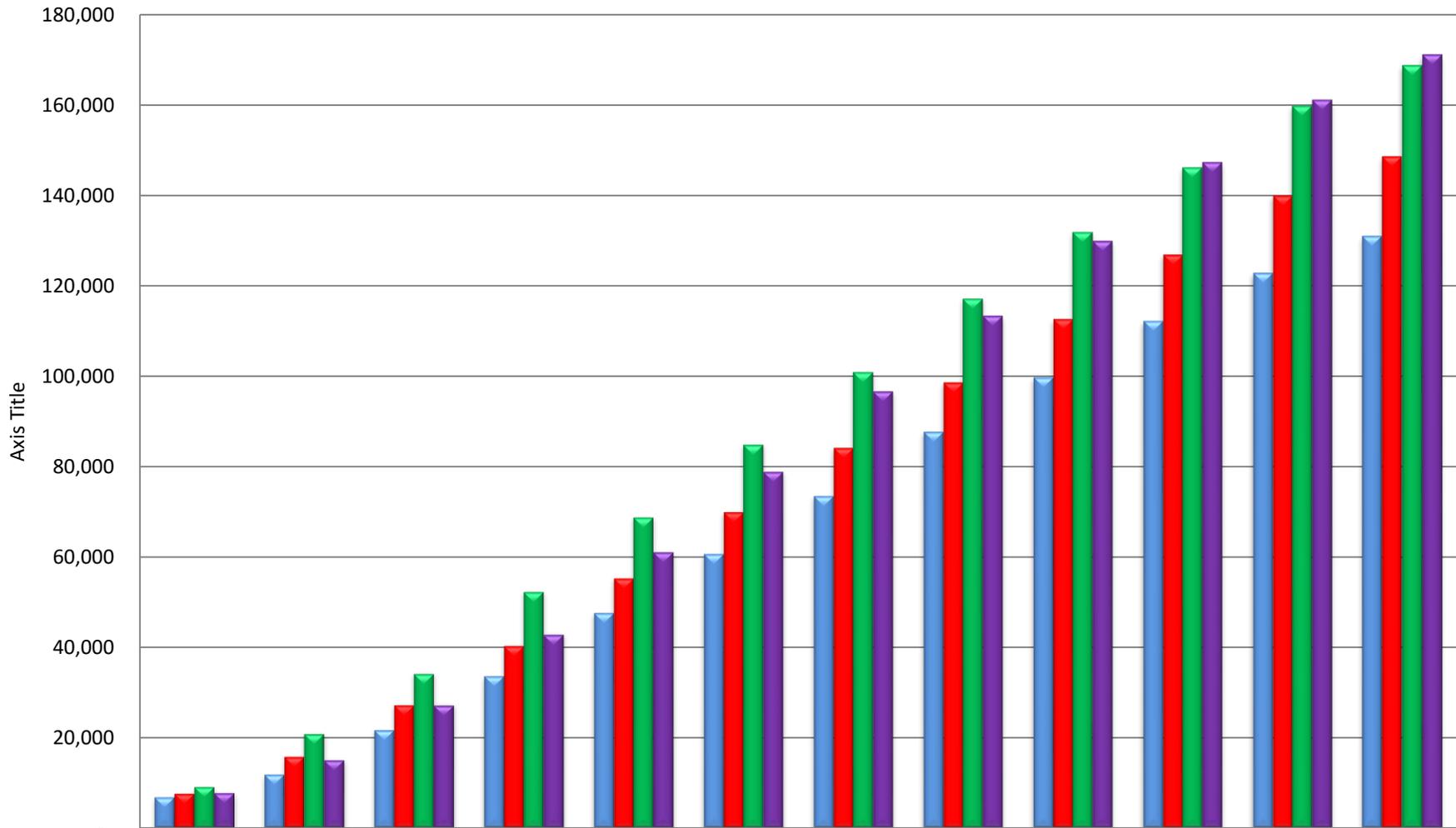
■ Customers (K)

1992	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
125	372	366	365	390	413	457	496	491	523	557	593	632	673

Transfer Station Average Daily Customers

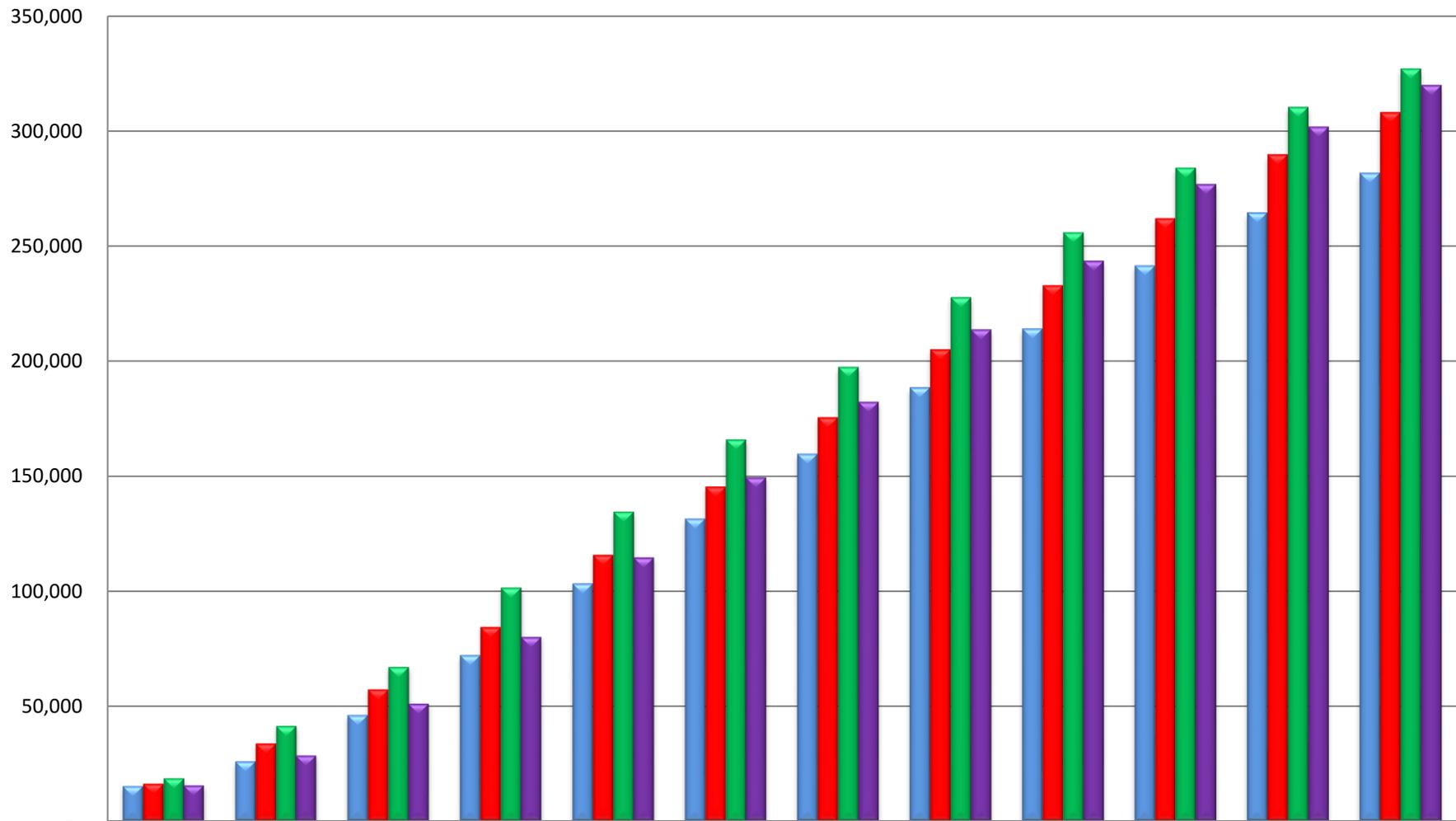


Prairie Cumulative Customers



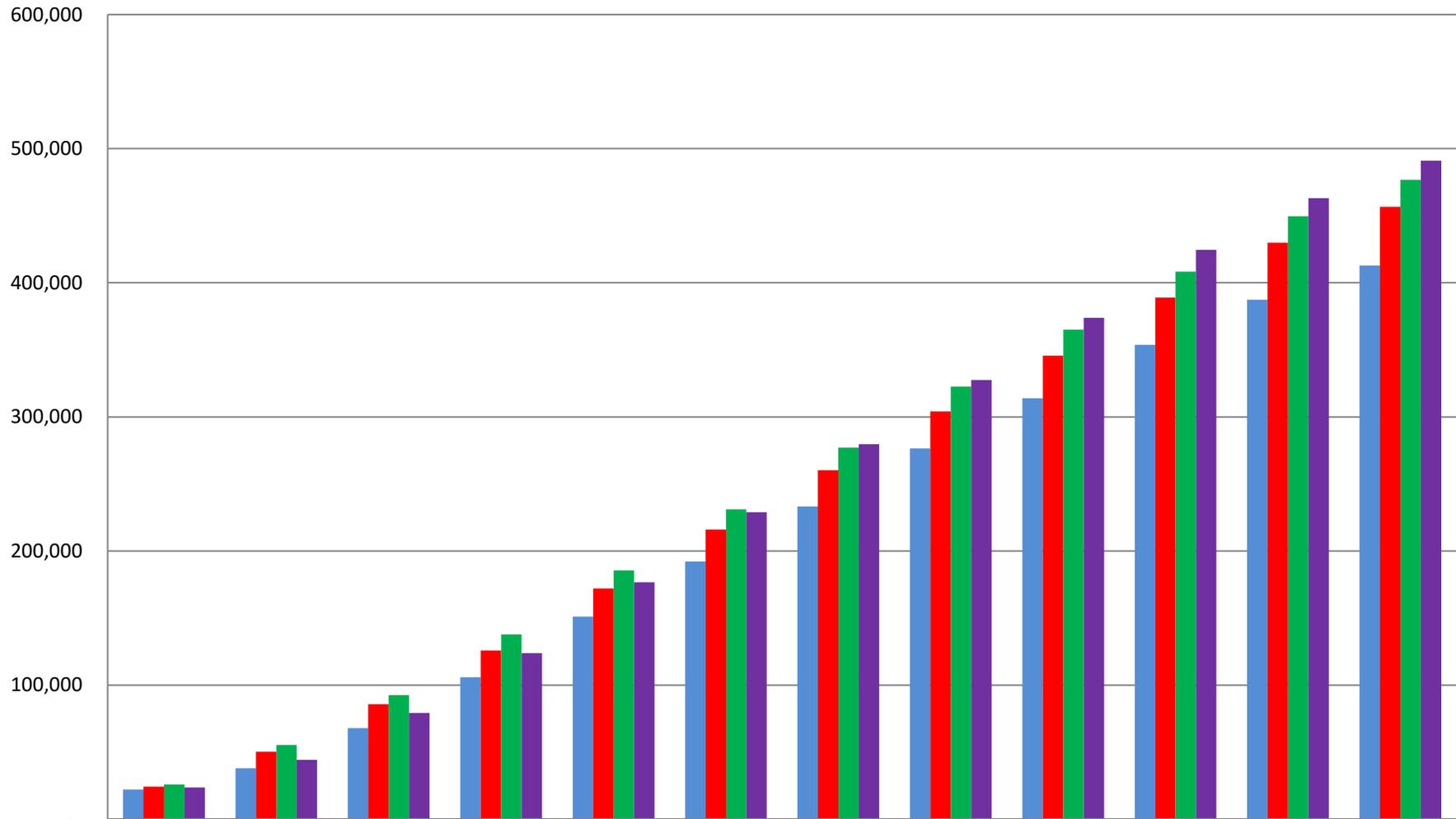
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	6,854	11,914	21,747	33,742	47,704	60,759	73,530	87,753	99,762	112,237	122,835	130,981
2015	7,760	16,040	27,594	40,647	55,574	70,182	84,338	98,758	112,745	126,934	140,009	148,617
2016	9,258	21,159	34,573	52,663	69,103	85,088	101,133	117,322	131,980	146,286	159,864	168,784
2017	7,918	15,295	27,653	43,252	61,436	79,179	96,902	113,596	130,050	147,447	161,154	171,127

Ramsey Cumulative Customers



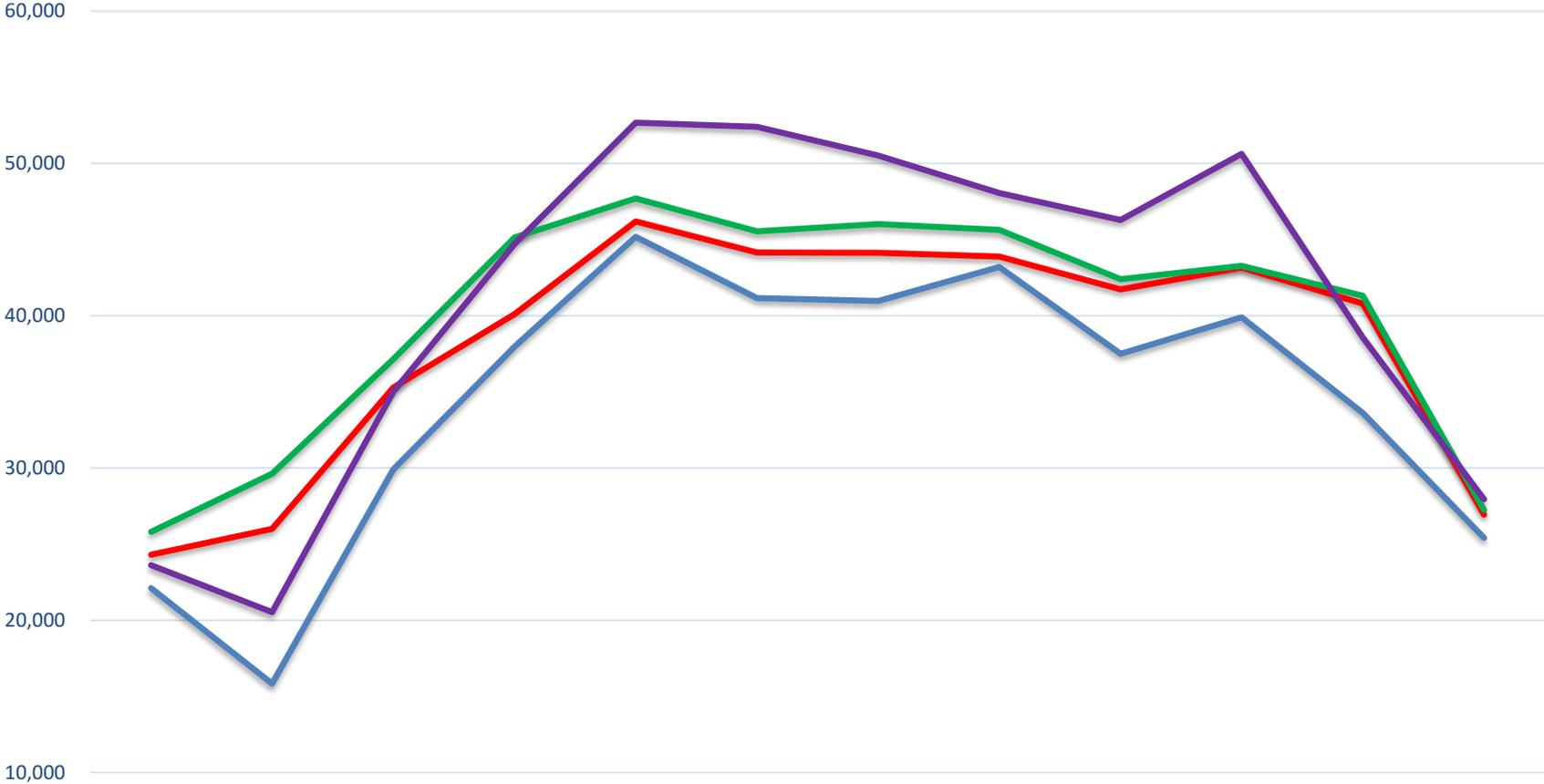
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	15,258	26,035	46,114	72,098	103,317	131,411	159,605	188,570	214,057	241,486	264,487	281,752
2015	16,546	34,262	57,999	85,050	116,312	145,860	175,831	205,286	233,022	261,993	289,719	308,047
2016	18,713	41,529	67,218	101,722	134,706	166,087	197,534	227,830	256,030	284,042	310,386	327,027
2017	15,708	28,861	51,513	80,627	115,120	149,782	182,569	213,939	243,766	277,008	301,859	319,839

Monthly Cumulative Customers - Transfer Stations



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	22,122	37,959	67,871	105,850	151,031	192,180	233,145	276,333	313,829	353,733	387,332	412,743
2015	24,306	50,302	85,593	125,697	171,886	216,042	260,169	304,044	345,767	388,927	429,728	456,664
2016	25,804	55,421	92,572	137,713	185,415	230,948	276,964	322,608	365,002	408,281	449,585	476,833
2017	23,626	44,156	79,166	123,878	176,555	228,960	279,470	327,534	373,815	424,454	463,012	490,965

Customers by Month - Transfer Stations



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	22,122	15,837	29,912	37,979	45,181	41,149	40,965	43,188	37,496	39,904	33,599	25,411
2015	24,306	25,996	35,291	40,104	46,189	44,156	44,127	43,875	41,723	43,160	40,801	26,936
2016	25,804	29,617	37,151	45,141	47,702	45,533	46,016	45,644	42,394	43,279	41,304	27,248
2017	23,626	20,530	35,010	44,712	52,677	52,405	50,510	48,064	46,281	50,639	38,558	27,953

WASTE STREAM 2017

In 2017 the Solid Waste System processed a total of 194,767 tons through the two transfer stations. This represents an increase of 2.6% (5,072 tons) from last year for waste coming into the facilities. We then divert materials from the waste stream to reduce what goes into the landfill.

Waste shipped to the landfill in 2017 was 165,544 tons, which is up 5.3% or (8,414 tons) from 2016. The landfill received 8,603 loads of material from the two transfer stations. The upturn to the economy with additional construction and new business opportunities in Kootenai County are more than likely the cause for this increase.

A chart is included depicting the waste stream by source. This shows that 57% of the waste through the transfer stations comes from residential use, 39% from commercial activity and 4% from the rural systems. An interesting footnote is that 54% of the residential waste is brought to the transfer station by individual vehicles.

PRAIRIE TRANSFER STATION

The Prairie Transfer Station received 72,039 tons of material in 2017. This represents 37% of the waste processed in Kootenai County, and an increase of 1,686 tons or 2.3% from last year. The measurement of the Prairie Waste Stream is the weight of all commodities that entered the Prairie Transfer Station during the calendar year.

The average tons received daily was 201 (up from 195 last year). The heaviest tonnage day was August 4, 2017 with 515 tons. It should be noted that the Prairie site was processing all commercial and garbage truck waste for the Department on that day due to emergency pit repairs being completed at Ramsey. The lowest tonnage day was December 24, 2016 with 15.5. June was the highest month with 7,441 tons received and January the lowest with 3,994 tons received. The days of the week for the average tons (highest – Friday and lowest - Sunday) remained the same as 2015. Friday's average tonnage increased to 265.55. Sunday's average tonnage remained the same at 105 tons.

After processing, the Prairie Transfer Station shipped 62,014 tons or 3,032 trailer loads of waste to the landfill. From January 2009 through the end of 2017, the Prairie Transfer Station has processed 480,851 tons of material.

RAMSEY TRANSFER STATION

The Ramsey Transfer Station received 122,728 tons of material in 2017. This represents 63% of the waste processed in Kootenai County, and an increase of 3,389 tons or 2.8% from last year. The measurement of the Ramsey Waste Stream is the weight of all commodities that entered the Ramsey Transfer Station during the calendar year.

The average tons received daily was 342 (up from 332). The heaviest tonnage day was May 30, 2017 with 632 tons. The lowest tonnage day was February 4, 2017 with 35.0 tons. June was the highest tonnage month with 12,985 tons and January the lowest month with 6,377 tons received. The days of the week for the average tons are Thursday for highest and lowest on Sunday. Thursday's average tonnage came in at 425 and Sunday's average tonnage remained the same at 163 tons.

After processing, the Ramsey Transfer Station shipped 99,765 tons or 5,571 trailer loads of waste to the landfill. From January 1992 through the end of 2017, the Ramsey facility has processed 3,305,174 tons of material.

FIGHTING CREEK LANDFILL

We operate a fully permitted and environmentally safe landfill. This facility is the key to keeping customer costs to a minimum. The Fighting Creek Landfill received 165,544 tons of refuse in 2017. This reflects an increase of 8,414 tons or 5.3% of waste placed into the landfill from last year.

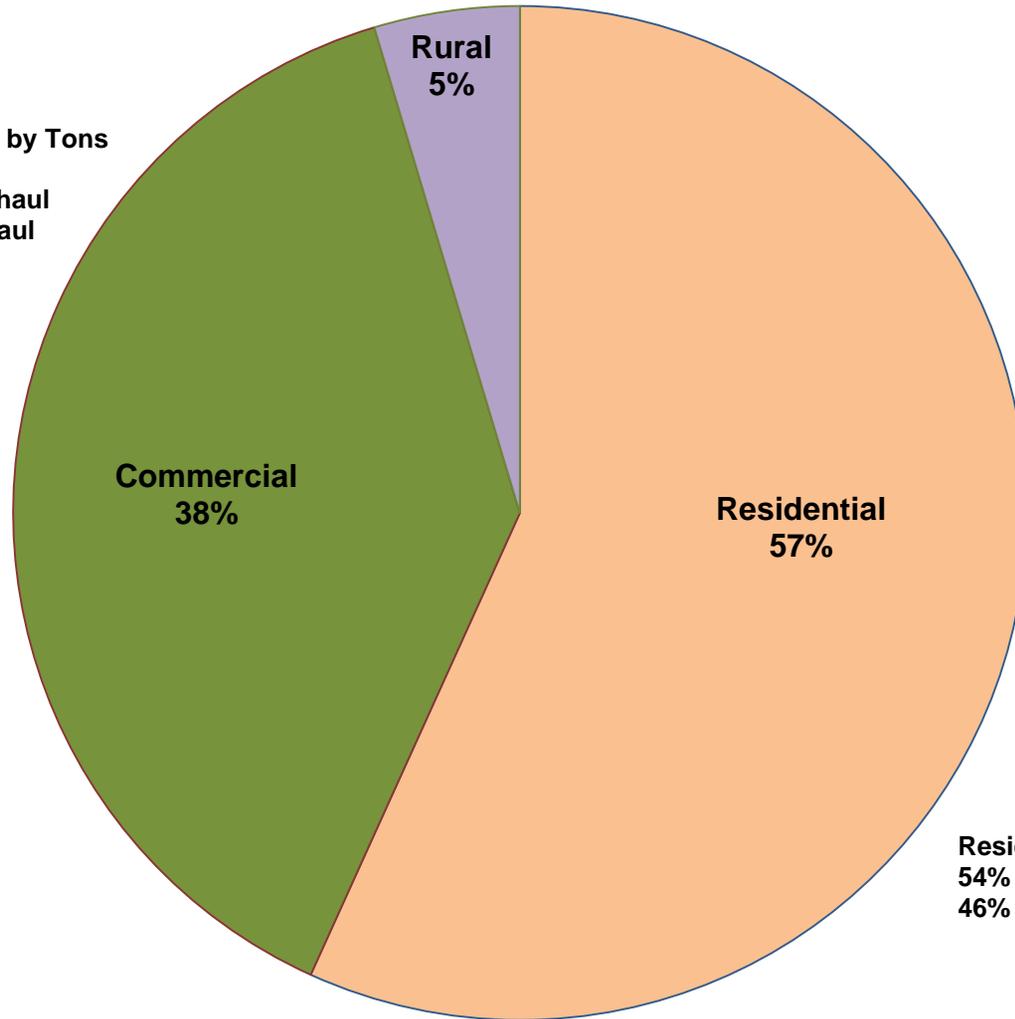
There has been a steady increase in waste going to the landfill since 2011. The 2015 Life Cycle Analysis used a growth figure of 3% for historic average growth. Although for the last several years the Department has experienced an increase greater than 3%, the overall projected long term growth has not exceeded this planning standard. These figures will be examined again upon completion of the next landfill life cycle analysis.

On June 23, 2016 waste placement in Phase 2 of the East Cell of the landfill began. As of December 31, 2017, the Department has placed 251,182 tons of waste into this phase of the landfill.

The Solid Waste Department is always looking at ways to decrease the amount of waste placed to extend the life expectancy of the landfill.



Waste Stream by Source

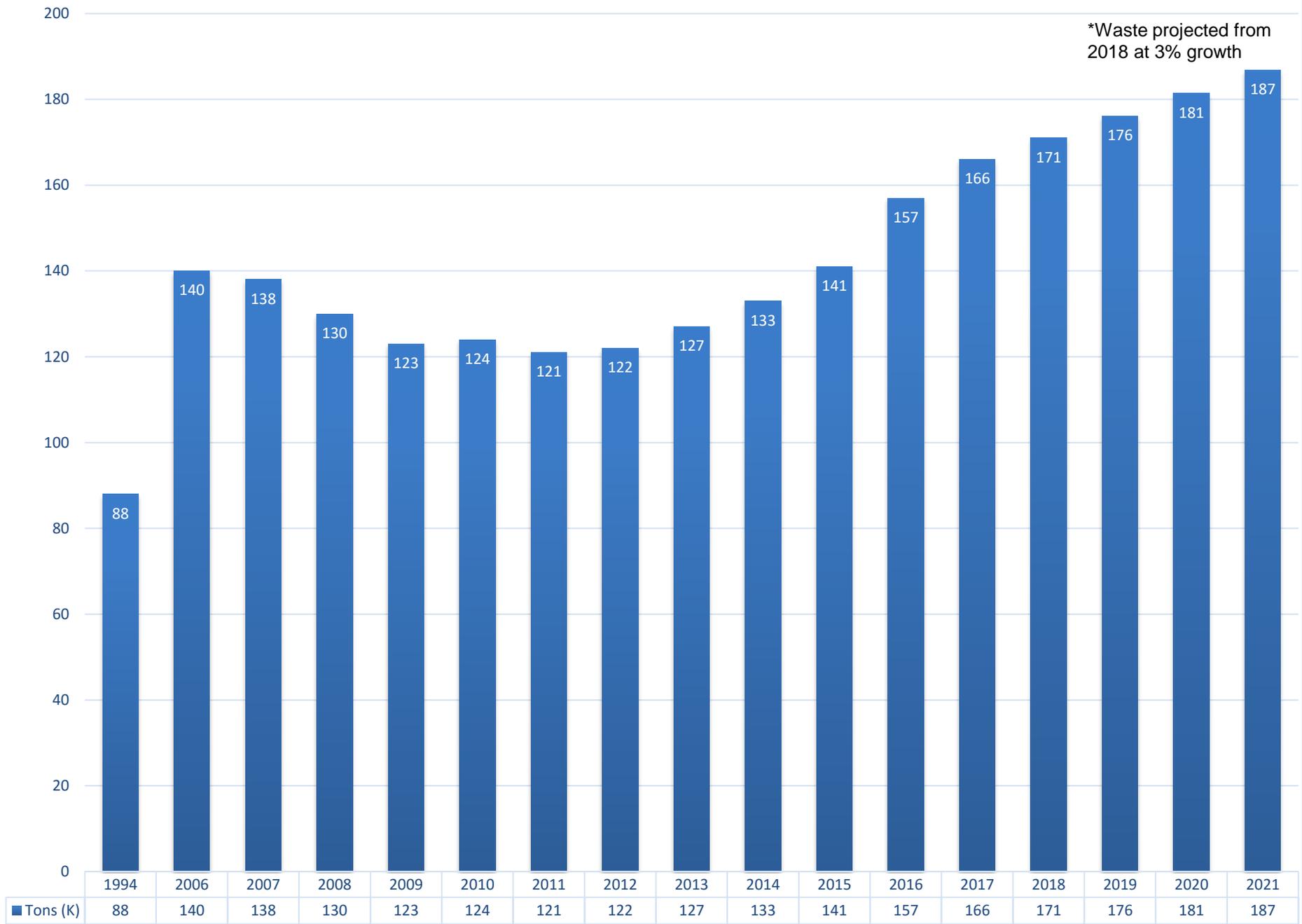


Commercial Breakdown by Tons
61% = garbage haulers
29% = commercial self haul
10% = residential self haul

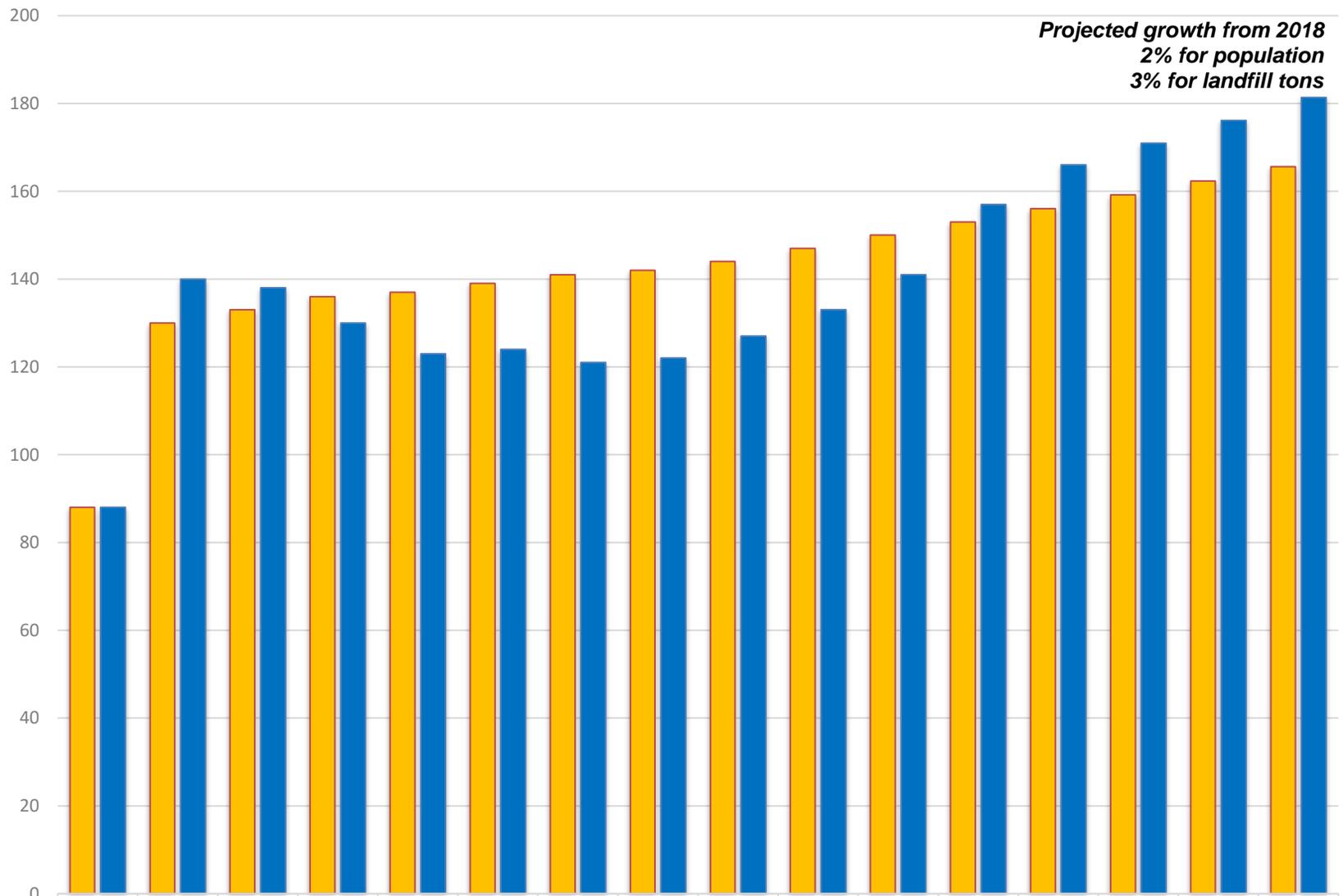
Residential Breakdown by Tons
54% = self haul
46% = garbage haulers

Landfilled Waste History & Projection*

*Waste projected from 2018 at 3% growth

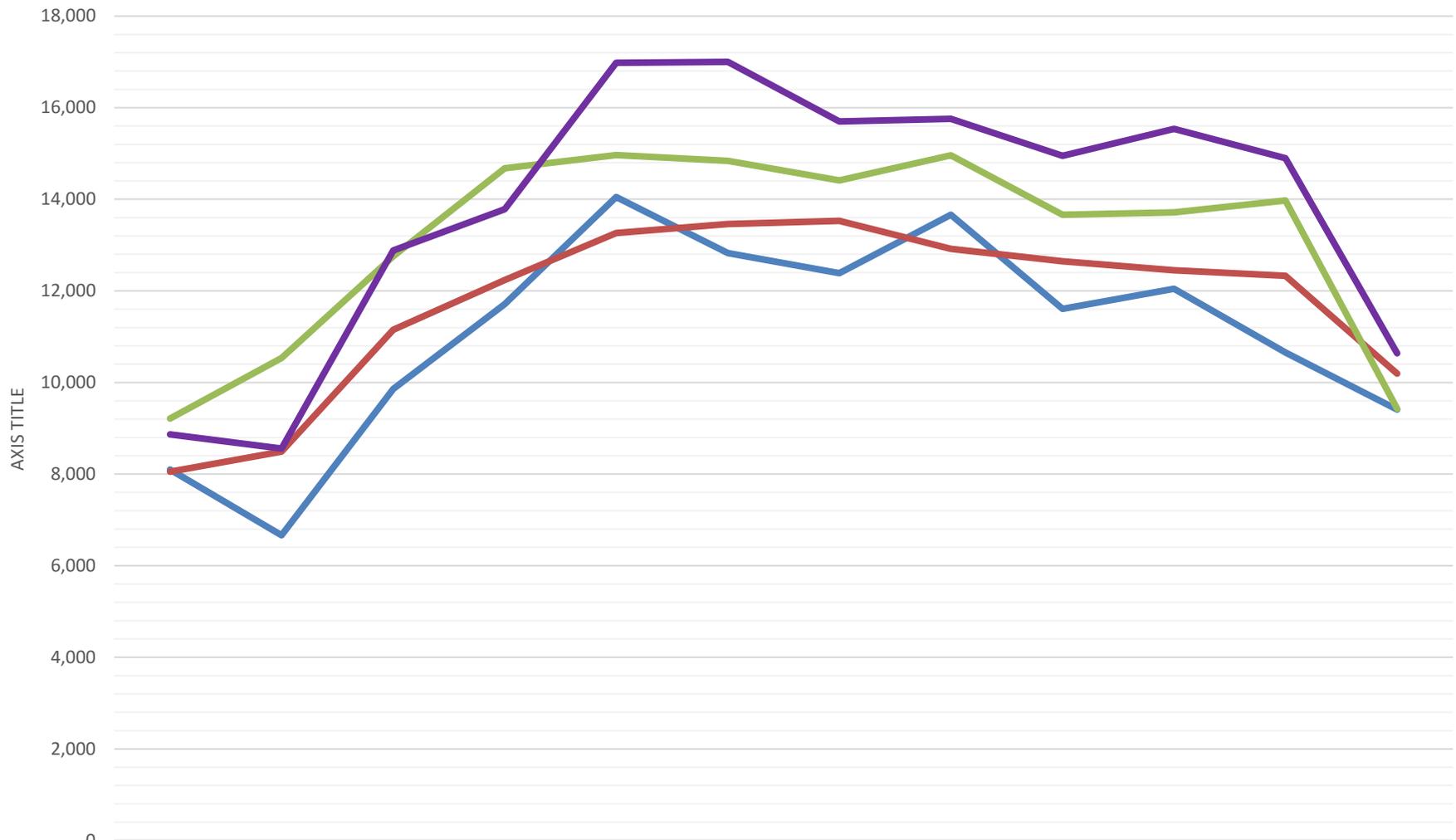


Population and Landfill Tons



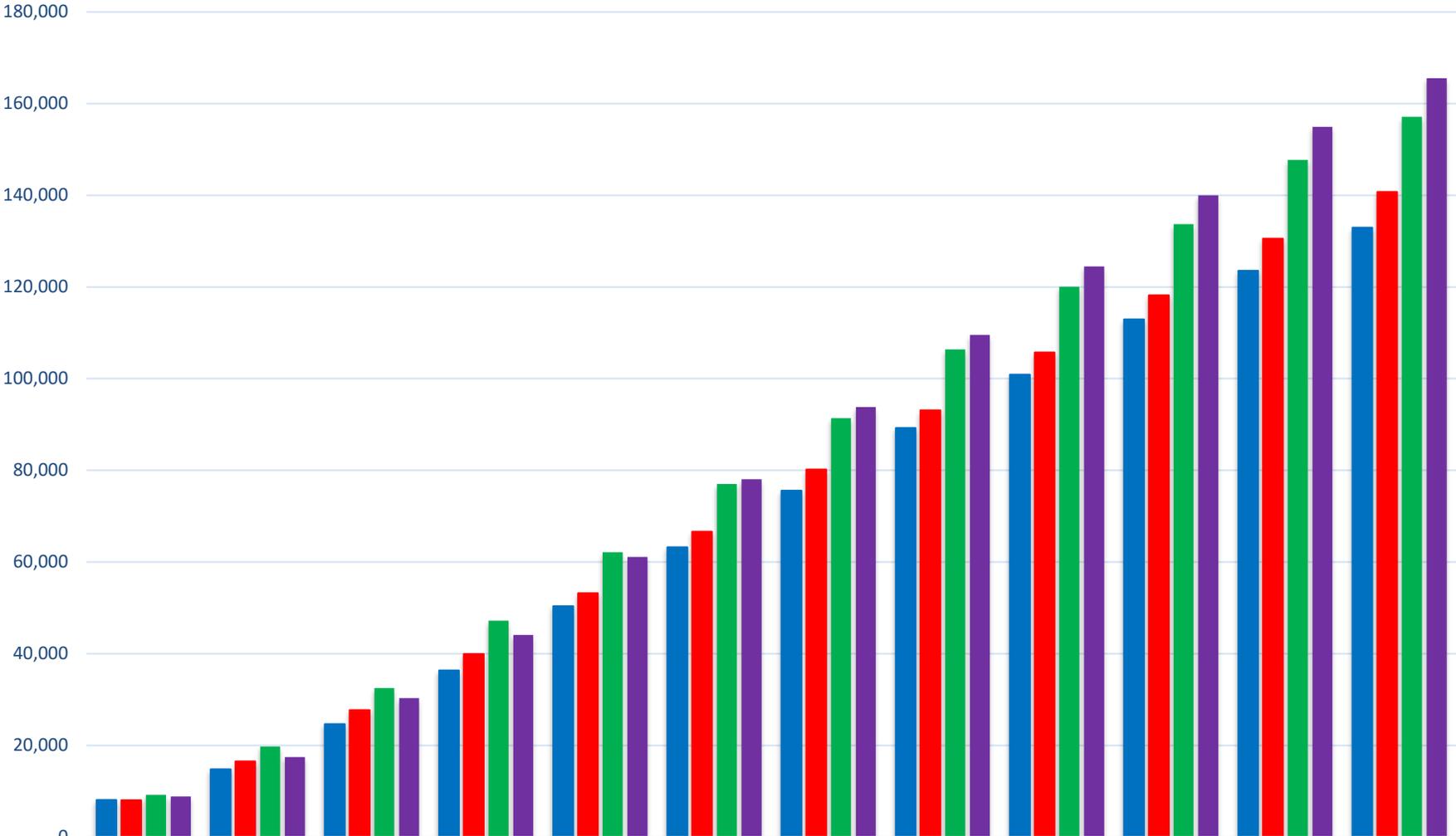
	1994	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Population (K)	88	130	133	136	137	139	141	142	144	147	150	153	156	159	162	166
Tons (K)	88	140	138	130	123	124	121	122	127	133	141	157	166	171	176	181

LANDFILLED WASTE BY MONTH



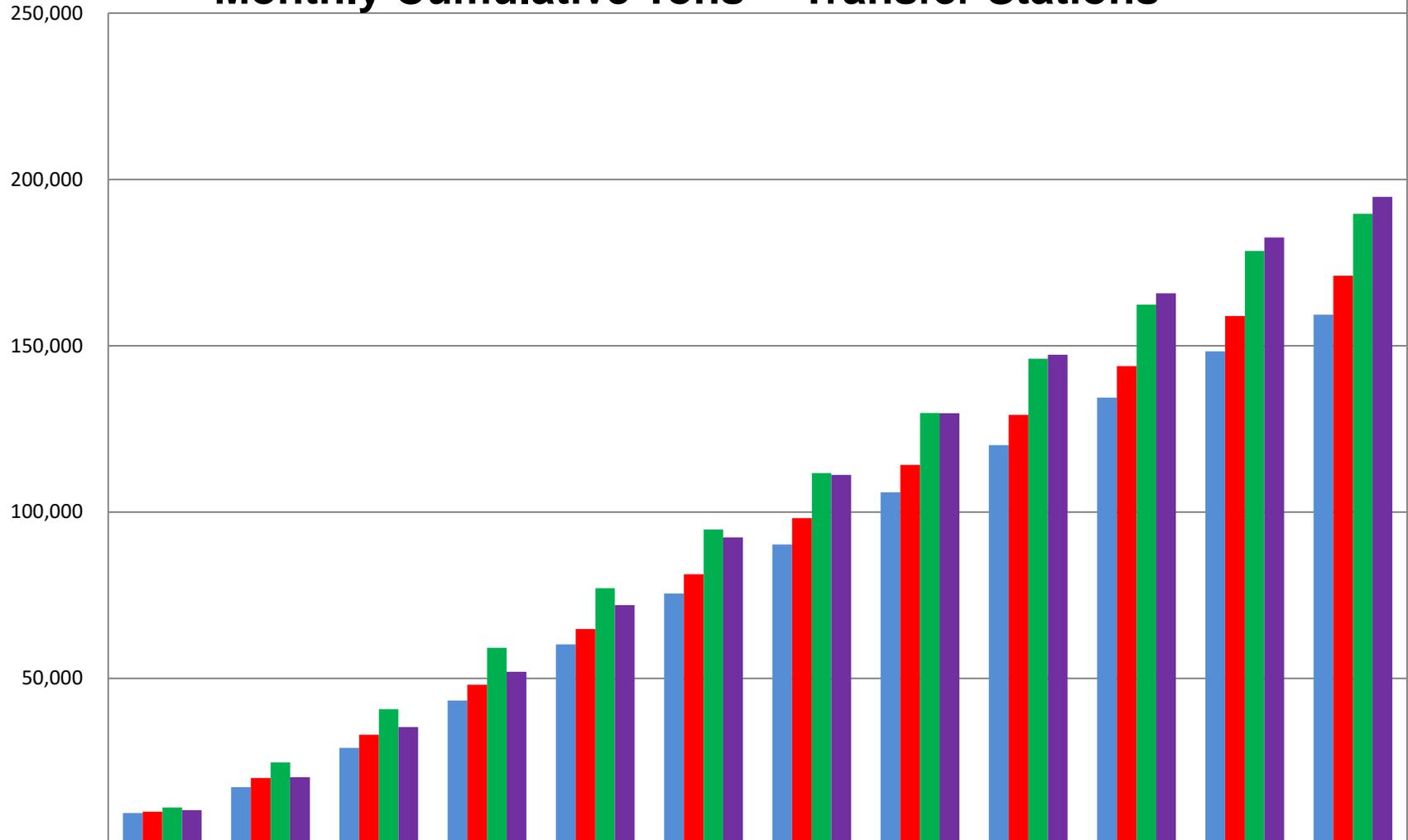
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	8,101	6,665	9,861	11,712	14,050	12,823	12,387	13,665	11,609	12,044	10,653	9,408
2015	8,052	8,489	11,152	12,236	13,265	13,458	13,529	12,920	12,649	12,452	12,329	10,191
2016	9,213	10,536	12,754	14,678	14,966	14,838	14,413	14,961	13,660	13,713	13,971	9,427
2017	8,868	8,558	12,881	13,783	16,981	17,000	15,697	15,756	14,947	15,537	14,900	10,636

Total Cumulative Tons - Landfill



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
■ 2014	8,101	14,766	24,627	36,339	50,389	63,212	75,599	89,264	100,873	112,917	123,570	132,978
■ 2015	8,052	16,541	27,693	39,929	53,194	66,652	80,181	93,101	105,750	118,202	130,531	140,722
■ 2016	9,213	19,749	32,503	47,181	62,147	76,985	91,398	106,359	120,019	133,732	147,703	157,130
■ 2017	8,868	17,426	30,307	44,090	61,071	78,071	93,768	109,524	124,471	140,008	154,908	165,544

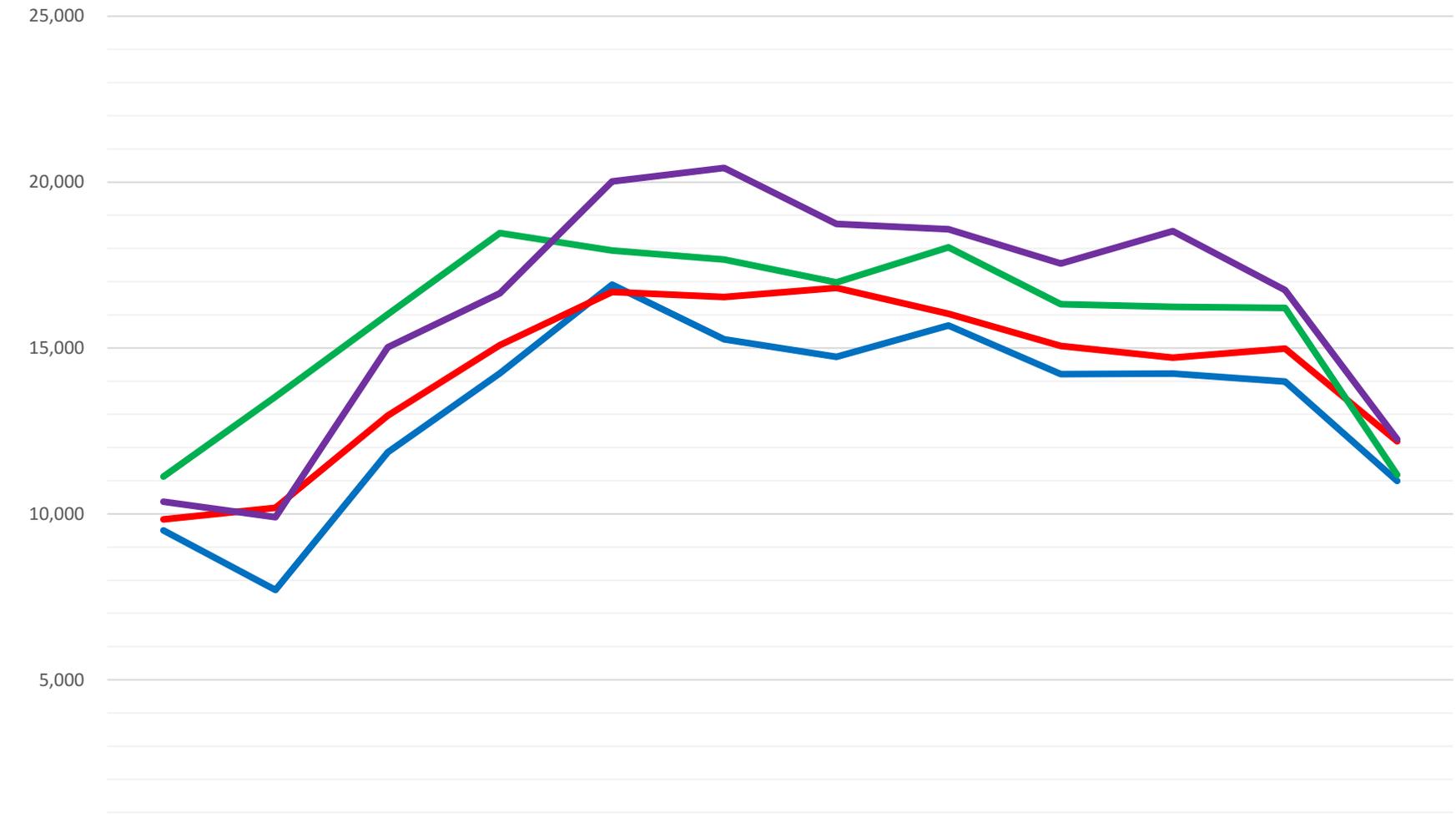
Monthly Cumulative Tons* - Transfer Stations



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	9,502	17,209	29,068	43,304	60,213	75,473	90,206	105,887	120,103	134,329	148,319	159,308
2015	9,835	20,016	32,982	48,071	64,758	81,294	98,105	114,136	129,194	143,903	158,885	171,068
2016	11,124	24,653	40,668	59,132	77,068	94,737	111,710	129,743	146,065	162,308	178,516	189,695
2017	10,372	20,273	35,296	51,946	71,962	92,389	111,129	129,705	147,249	165,769	182,513	194,767

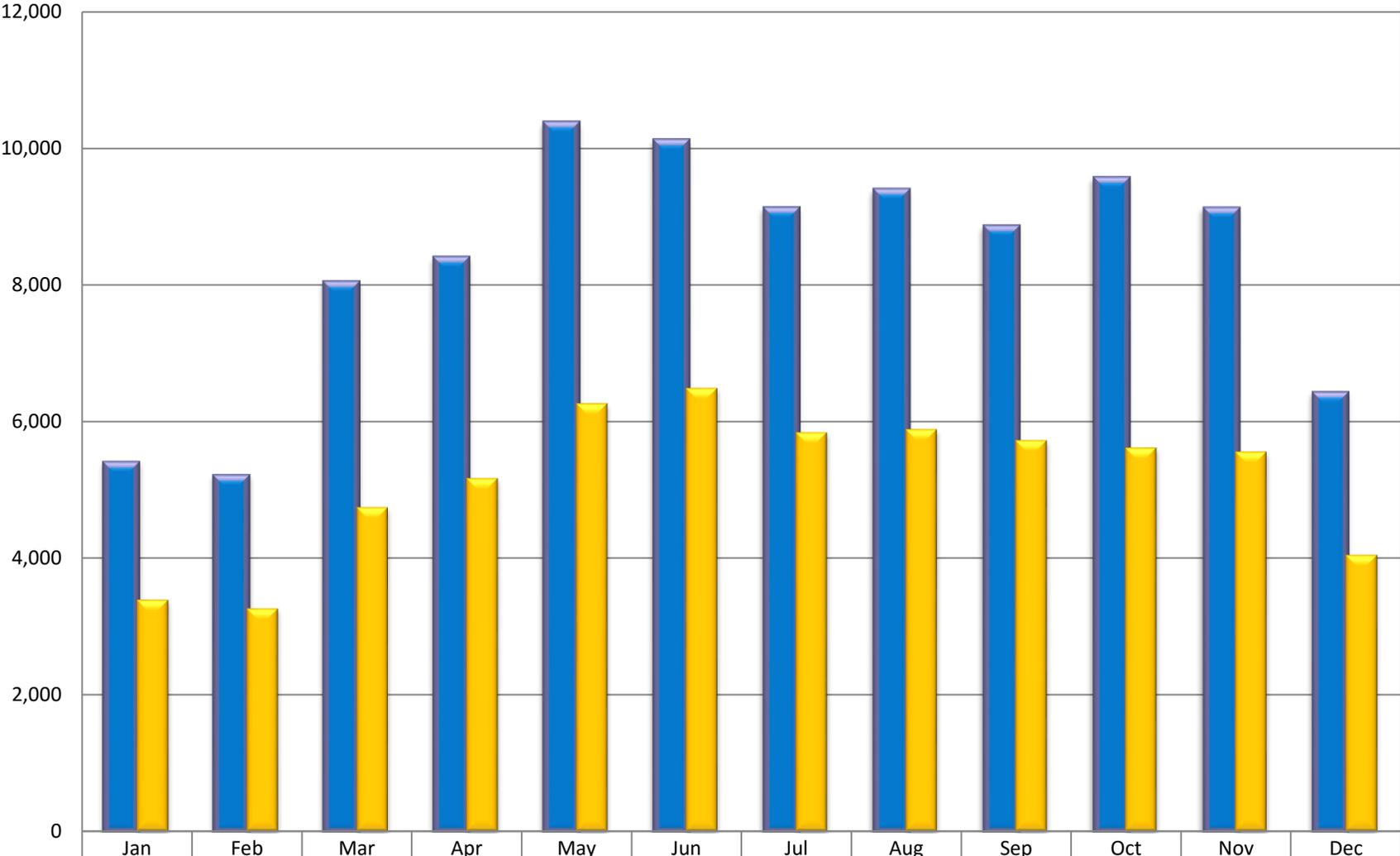
*Tons In - Before Recycling

Tons by Month - Transfer Stations



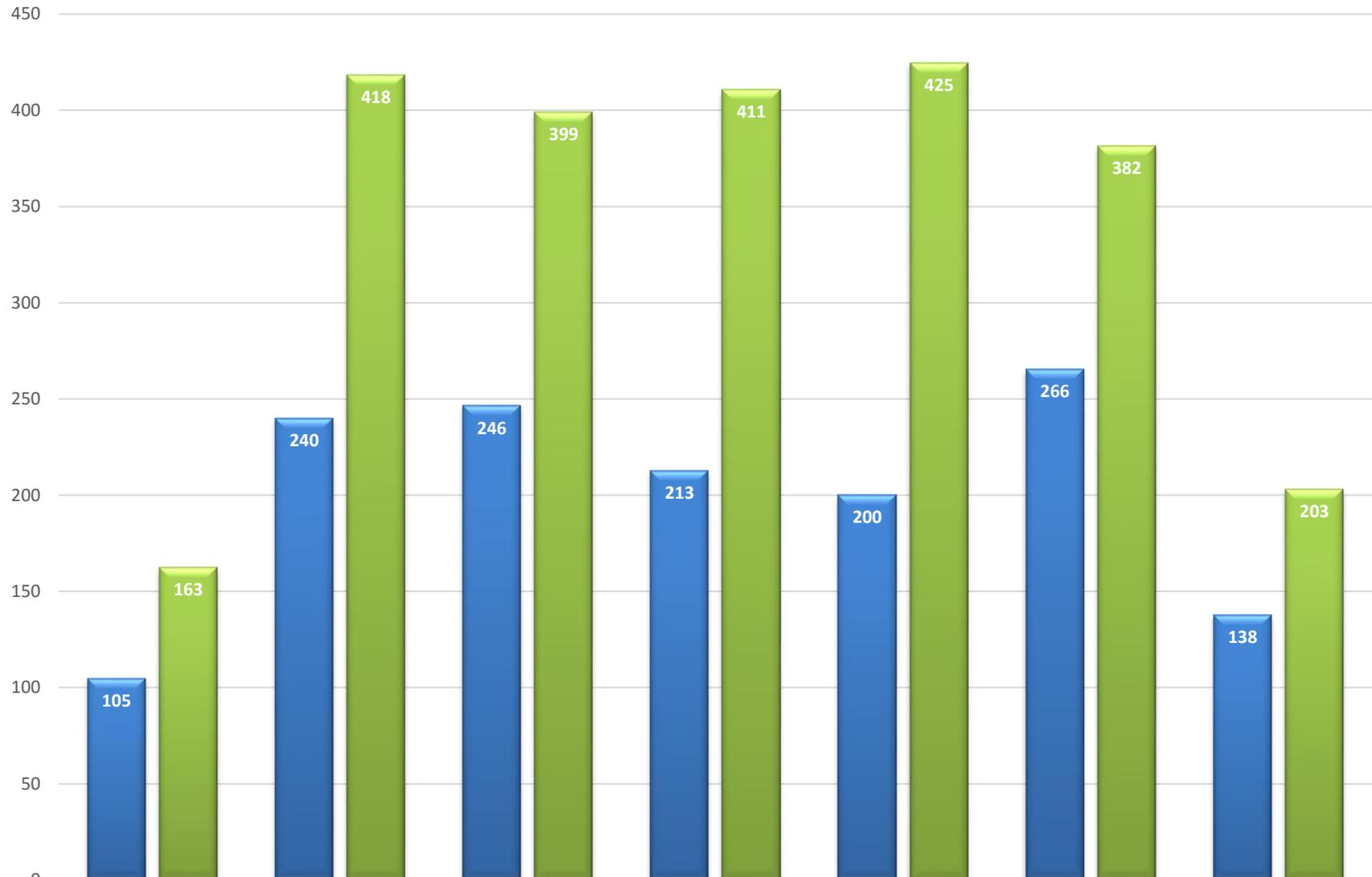
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	9,502	7,707	11,859	14,236	16,909	15,260	14,733	15,681	14,216	14,226	13,990	10,989
2015	9,835	10,181	12,966	15,089	16,687	16,536	16,811	16,031	15,058	14,709	14,982	12,183
2016	11,124	13,529	16,015	18,464	17,936	17,669	16,973	18,033	16,322	16,243	16,208	11,179
2017	10,372	9,901	15,023	16,650	20,016	20,426	18,740	18,577	17,543	18,520	16,745	12,254

Monthly Waste to Landfill by Transfer Station



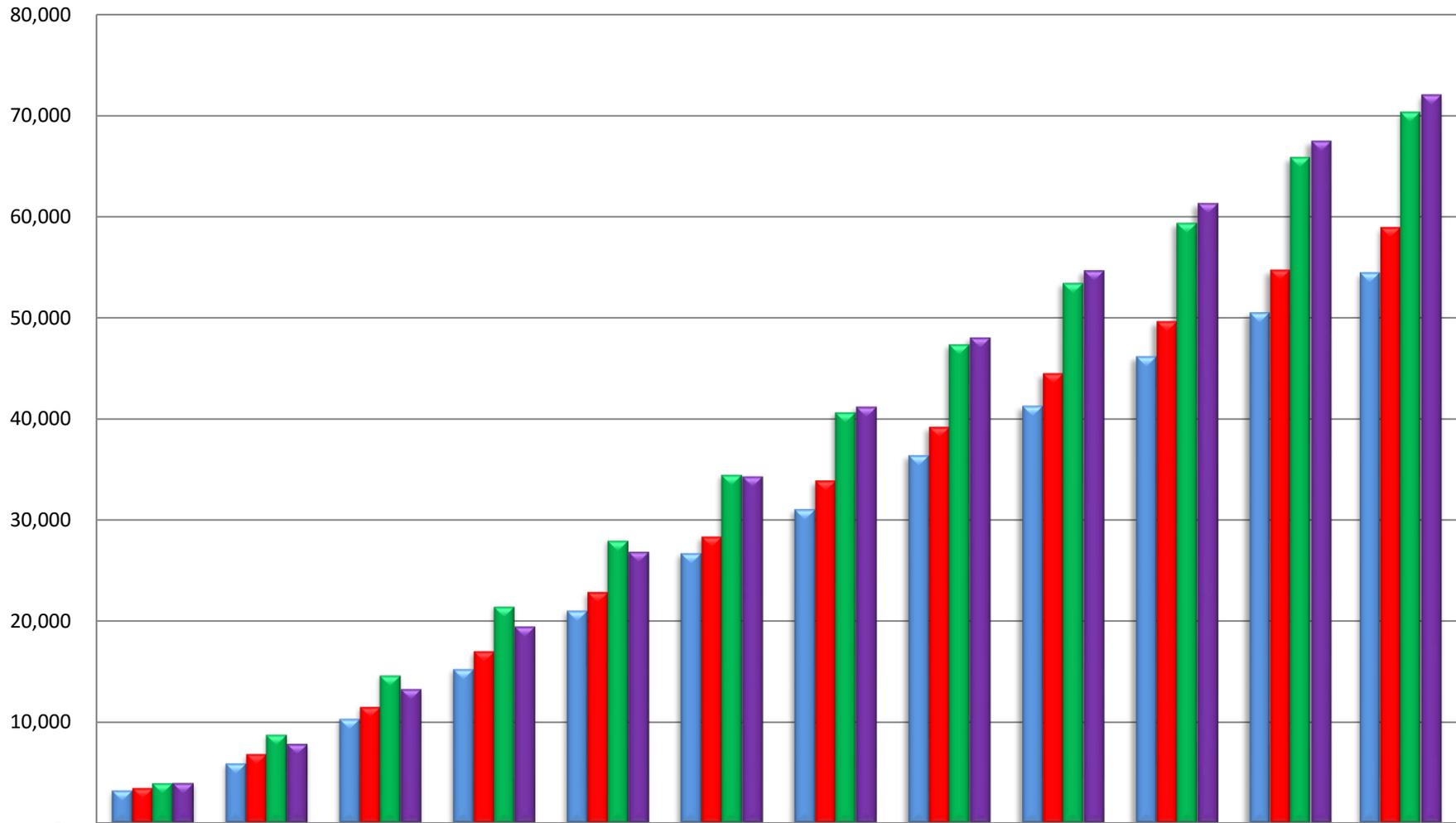
■ Ramsey	5,387	5,192	8,020	8,380	10,351	10,092	9,102	9,370	8,833	9,541	9,095	6,403
■ Prairie	3,392	3,264	4,746	5,171	6,265	6,491	5,843	5,888	5,726	5,619	5,561	4,048

Transfer Stations Average Daily Tons



	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
■ Prairie	105	240	246	213	200	266	138
■ Ramsey	163	418	399	411	425	382	203

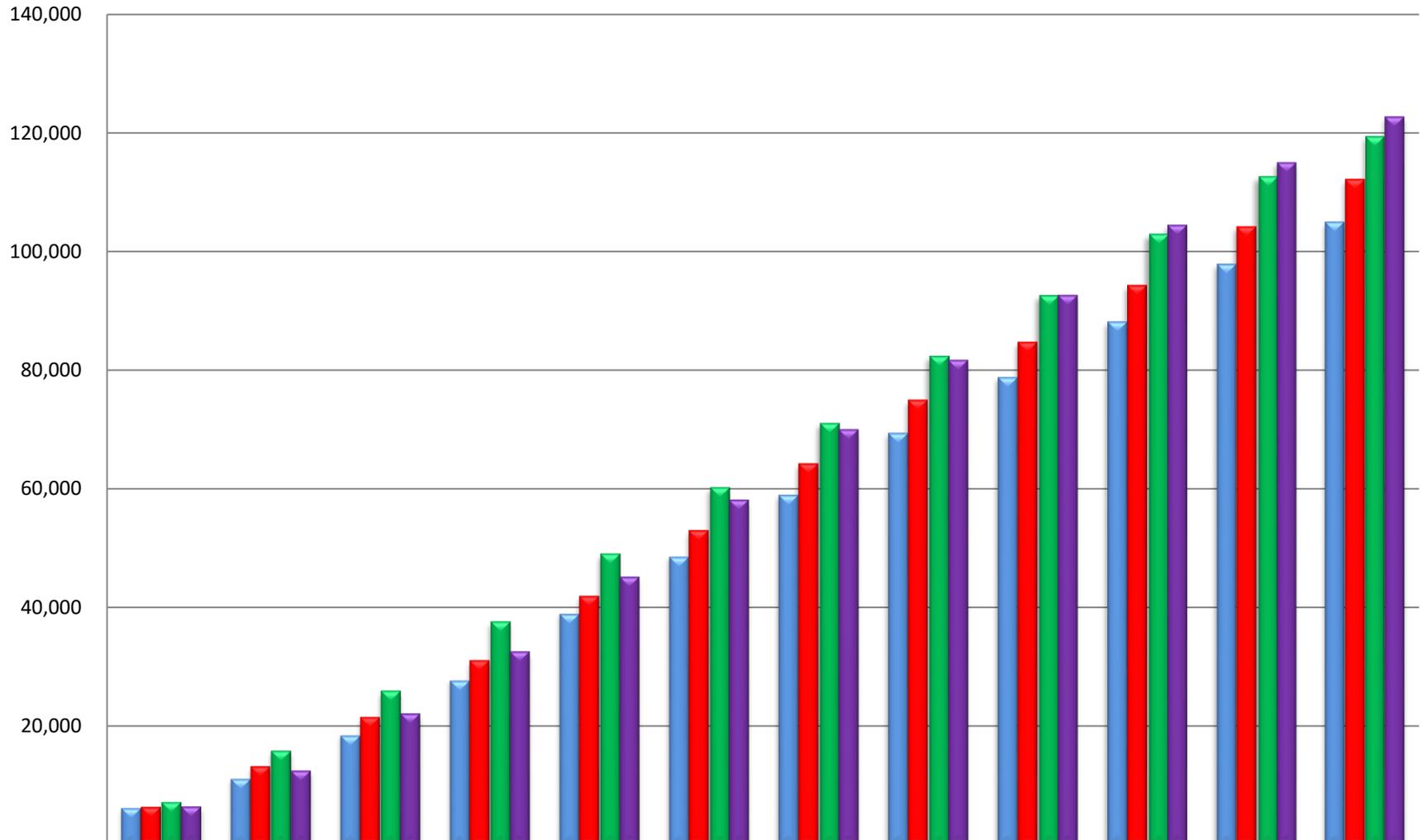
Prairie Cumulative Tons*



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	3,262	5,956	10,379	15,320	21,071	26,724	31,076	36,380	41,253	46,152	50,466	54,407
2015	3,499	6,866	11,516	17,039	22,887	28,348	33,887	39,191	44,487	49,621	54,705	58,908
2016	4,013	8,865	14,780	21,566	28,054	34,574	40,723	47,416	53,485	59,403	65,885	70,353
2017	3,994	7,863	13,321	19,501	26,894	34,335	41,207	48,038	54,664	61,329	67,485	72,039

*Tons In - Before Recycling

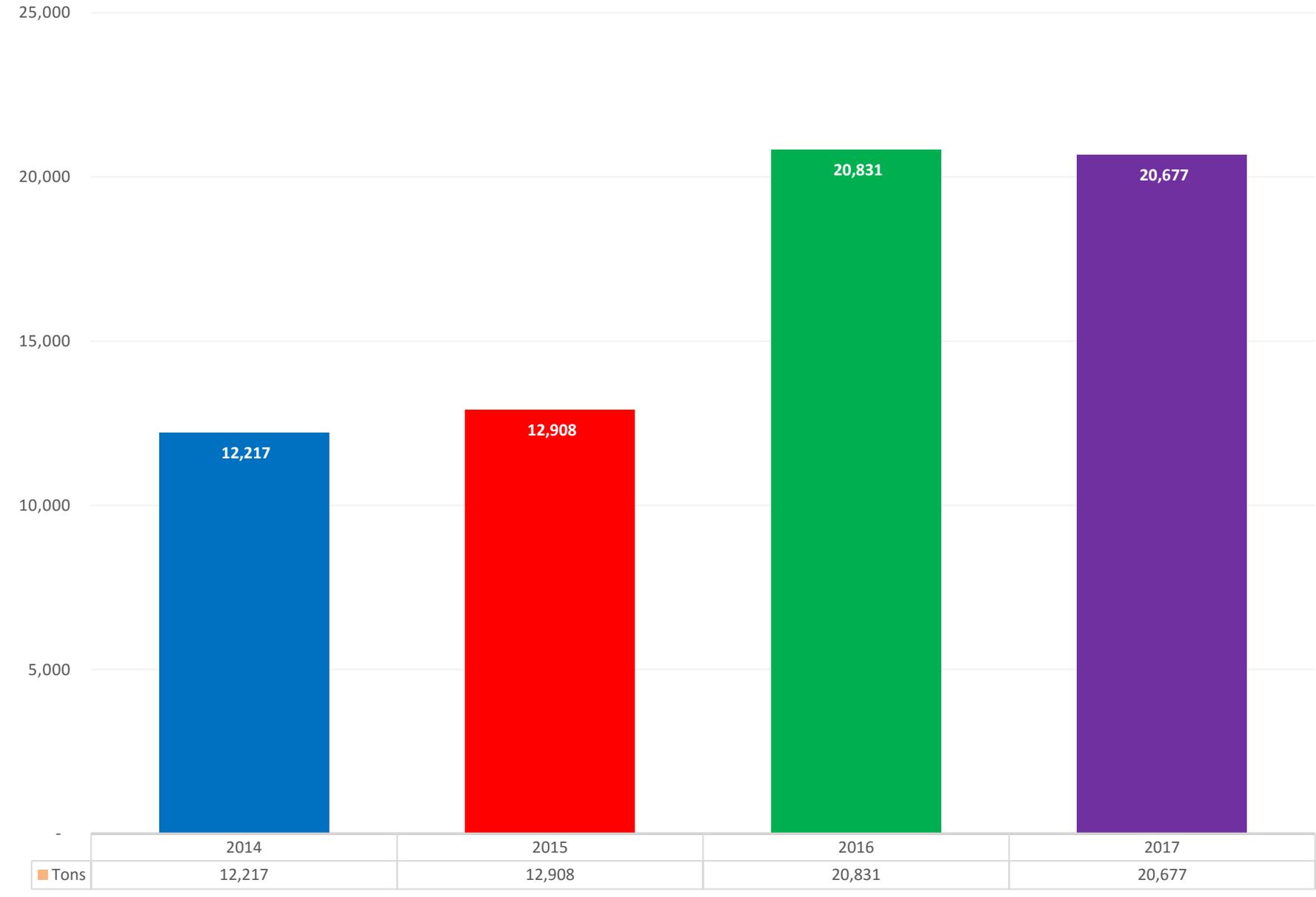
Ramsey Cumulative Tons*



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	6,240	11,253	18,689	27,984	39,142	48,749	59,129	69,506	78,849	88,176	97,852	104,901
2015	6,336	13,151	21,466	31,032	41,870	52,946	64,218	74,944	84,708	94,282	104,181	112,160
2016	7,111	15,789	25,887	37,566	49,014	60,163	70,987	82,326	92,579	102,904	112,631	119,341
2017	6,378	12,410	21,975	32,444	45,069	58,054	69,922	81,668	92,585	104,440	115,028	122,728

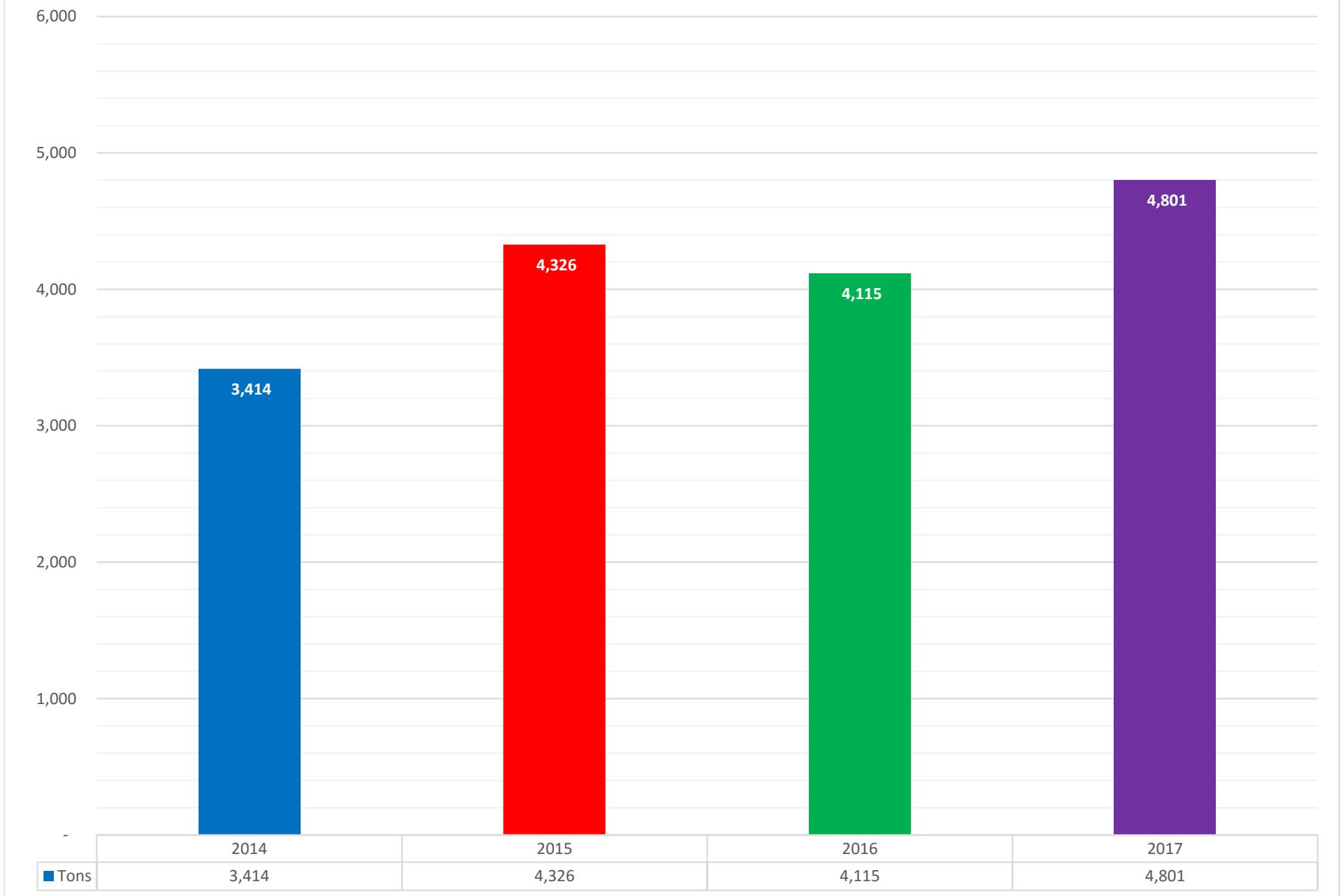
*Tons In - Before Recycling

Construction & Demolition Waste*



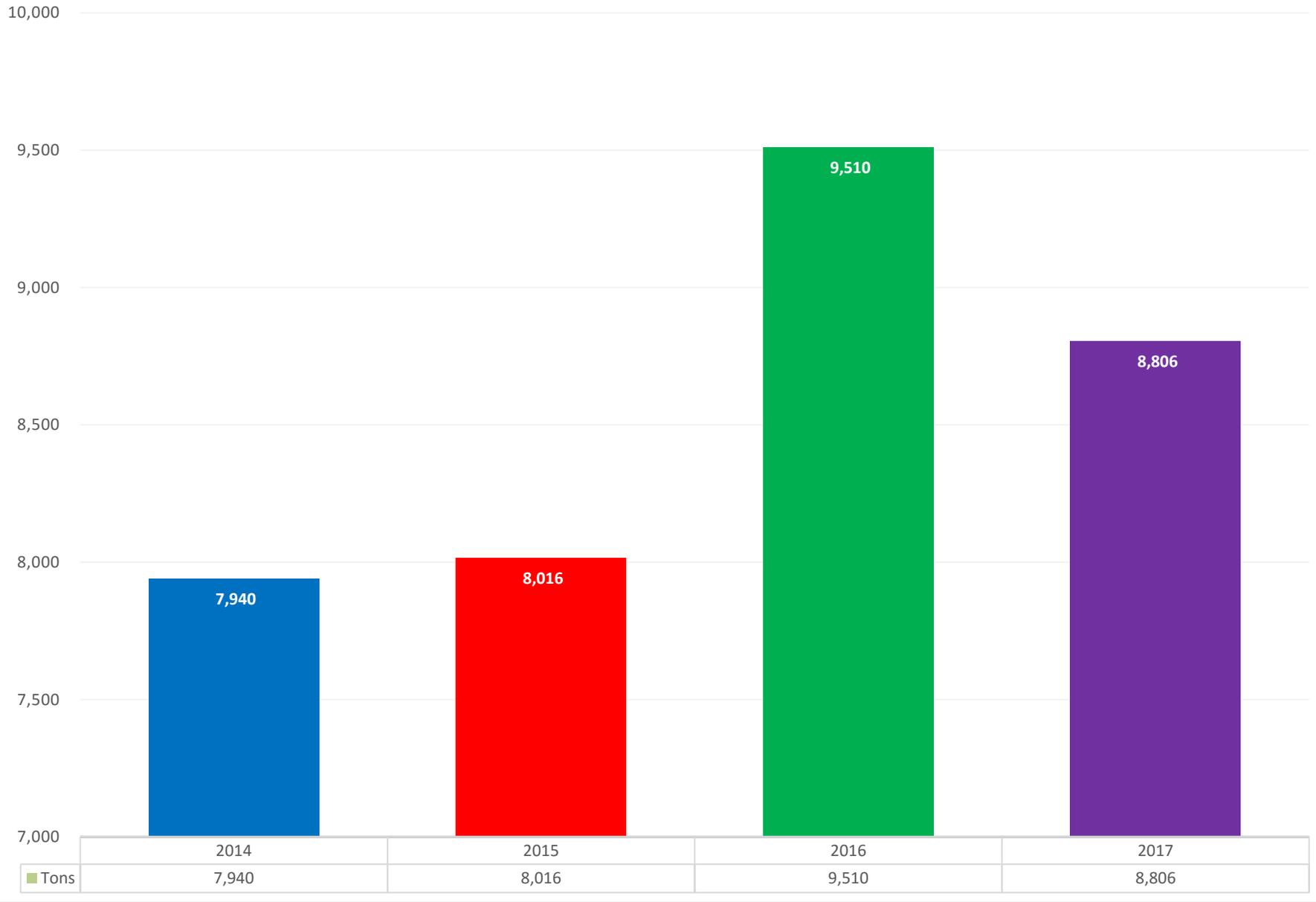
*Includes Construction/Demolition, Mixed Demolition, and Roofing

Inert Material*



*Inert Material includes Inert Material and Cover Material

Yard Debris



RECYCLING 2017



Kootenai County encourages waste diversion, reduction, reuse and recycling before material becomes a part of the County solid waste system but does not mandate or control what is collected outside of 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 and recycled include, but are not limited to, single-stream material; cardboard, newspaper, plastics and other segregated recyclables; textiles; automotive batteries; scrap metal; used oil; electronics; wood waste and other material.

The County offers recycling drop-off stations at the Ramsey and Prairie Transfer sites and some rural residential solid waste sites. These facilities are owned and operated as part of the County system and self-haulers (generators) deliver the segregated material directly to the County drop-off stations. Materials accepted at the Ramsey and Prairie Transfer Stations include:

Cardboard	Newspaper	Mixed Paper	Mixed Plastic
Plastic Bags	Aluminum Cans	Tin Cans	Metal
Automotive Batteries	Tires	Used Oil	Textiles

The program is modified dependent on current markets, challenges with marketing material, and problems with contamination of the material when disposers throw prohibited items in the bins.

During 2017, after several years of dramatic drop in prices, we saw an uptake to some commodities in the recycling market. Recycling is influenced by domestic and international markets for recycled materials and the economics of recycling has been impacted by many factors.

The Department entered into a three-year agreement with a local recycling processing company to handle the materials generated at the transfer stations and the rural residential collection sites. Fees associated with recycling processing were charged and the revenue for the materials collected shared.

Private haulers and cities have also been impacted by processing facility fees. The haulers collect single-stream mixed recycling which requires extensive sorting and is more costly to manage than the segregated material that is collected at County sites.

Recycling can provide an effective means of reducing landfill space. However, recycling is not a free service as it takes money to collect, sort, transport, and manage the material. These costs are volatile and dependent on markets to receive, and pay, for the material. The programs must be economically and environmentally sustainable.

The Solid Waste Department system is supported by solid waste fees charged to property owners and fees at transfer sites. Waste and recycling programs offered by private businesses are not a County function; however, the County recognizes savings in landfill space and implemented a rebate program to provide some financial support to encourage continued collection of the single-stream residential material.

The recycling programs operated by Kootenai County diverted a total of 16,864 tons of material from the landfill. This represents a decrease of 25% or 5,587 tons less than 2016. The majority of the decrease (5,143 tons) was wood that came into the transfer stations following a very large windstorm in November 2015.

The table below provides a breakout of recycling efforts for Kootenai County and local haulers. Further details are provided in this section.

	WMI Curbside*	CG Curbside^	Rural Sites ⁺	Solid Waste [~]
2013	2,341	1,077	542	14,862
2014	2,286	2,007	472	15,110
2015	2,320	1,926	442	16,524
2016	1,326	3,218	412	22,039
2017	254	4,423	417	16,447
Totals	8,527	12,651	2,285	84,982

***WMI Curbside** – includes the City of Coeur d’Alene single stream program and other curbside recycling programs picked up by Waste Management of Idaho through June 30, 2016.

^**CG Curbside** – includes the City of Post Falls single stream program and other curbside recycling programs picked up by Coeur d’Alene Garbage/Post Falls Sanitation. As of July 1, 2016, CG became the contractor for the City of Coeur d’Alene.

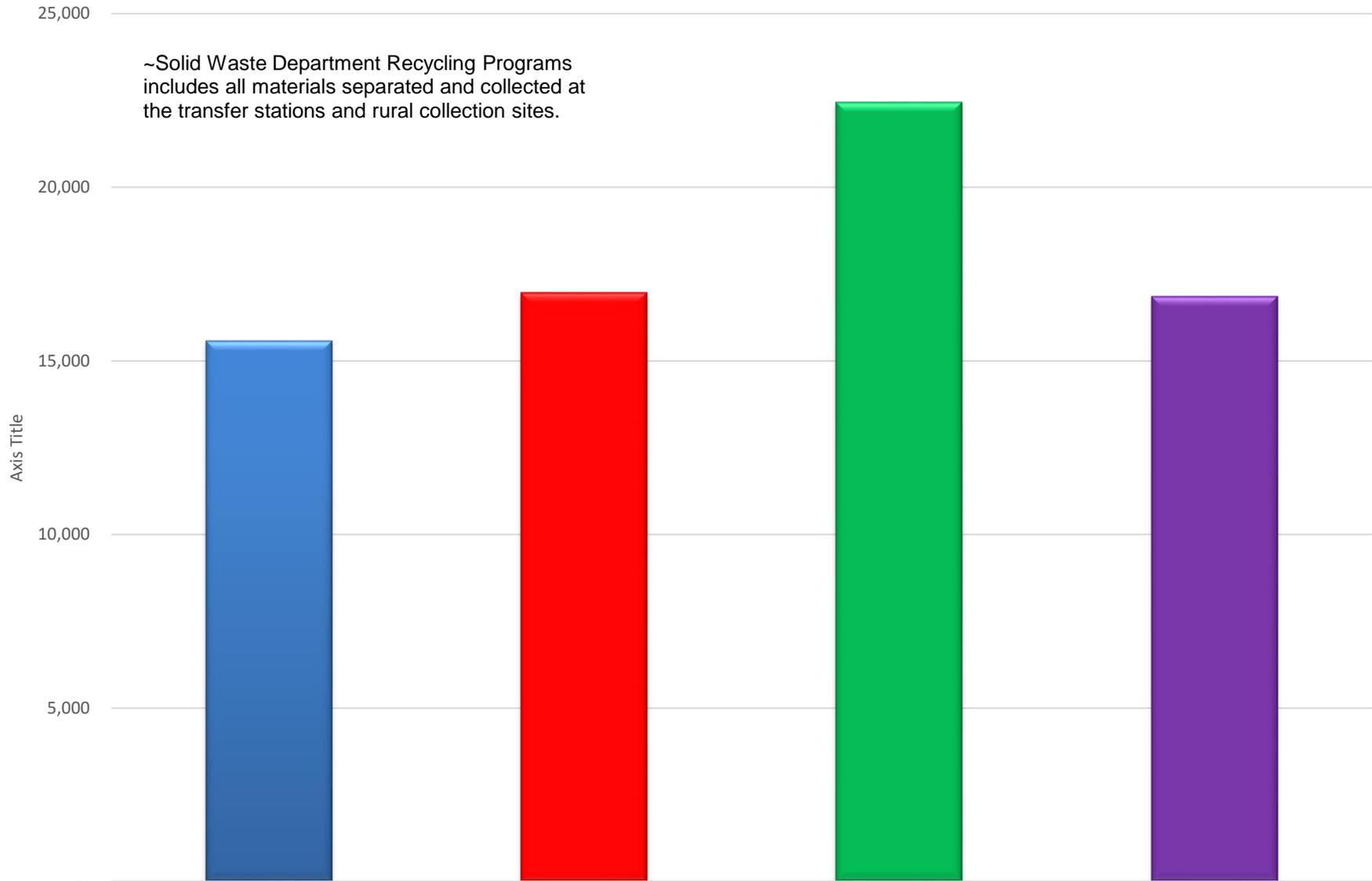
+**Rural Sites** – includes co-mingled collection of paper, aluminum cans and cardboard available at rural residential collection sites managed and picked up by Kootenai County Solid Waste.

~**Solid Waste** – includes all materials collected at the Ramsey and Prairie transfer stations.



Solid Waste Department Recycling Programs~

~Solid Waste Department Recycling Programs includes all materials separated and collected at the transfer stations and rural collection sites.



■ Tons

2014

2015

2016

2017

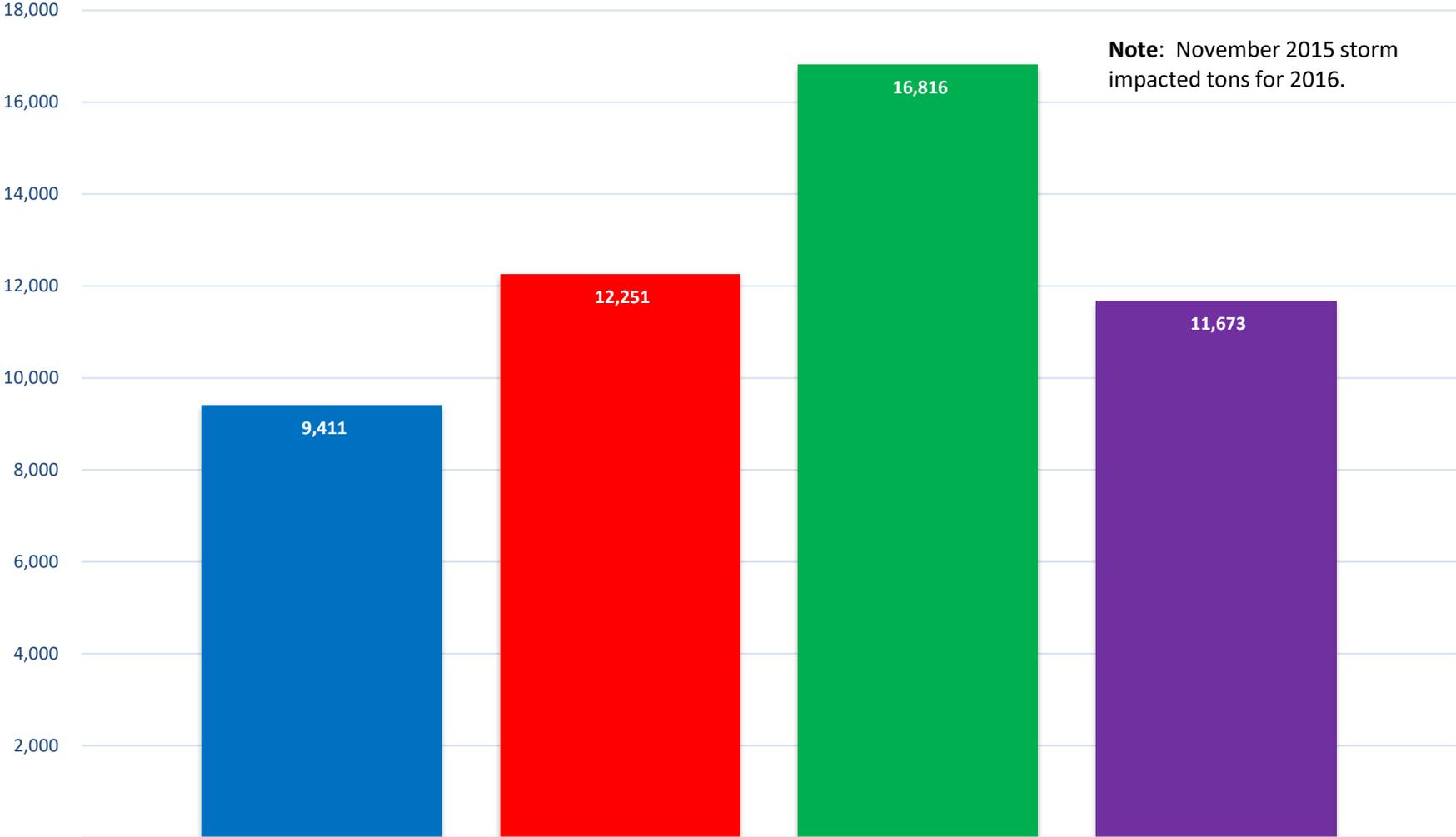
15,582

16,966

22,451

16,864

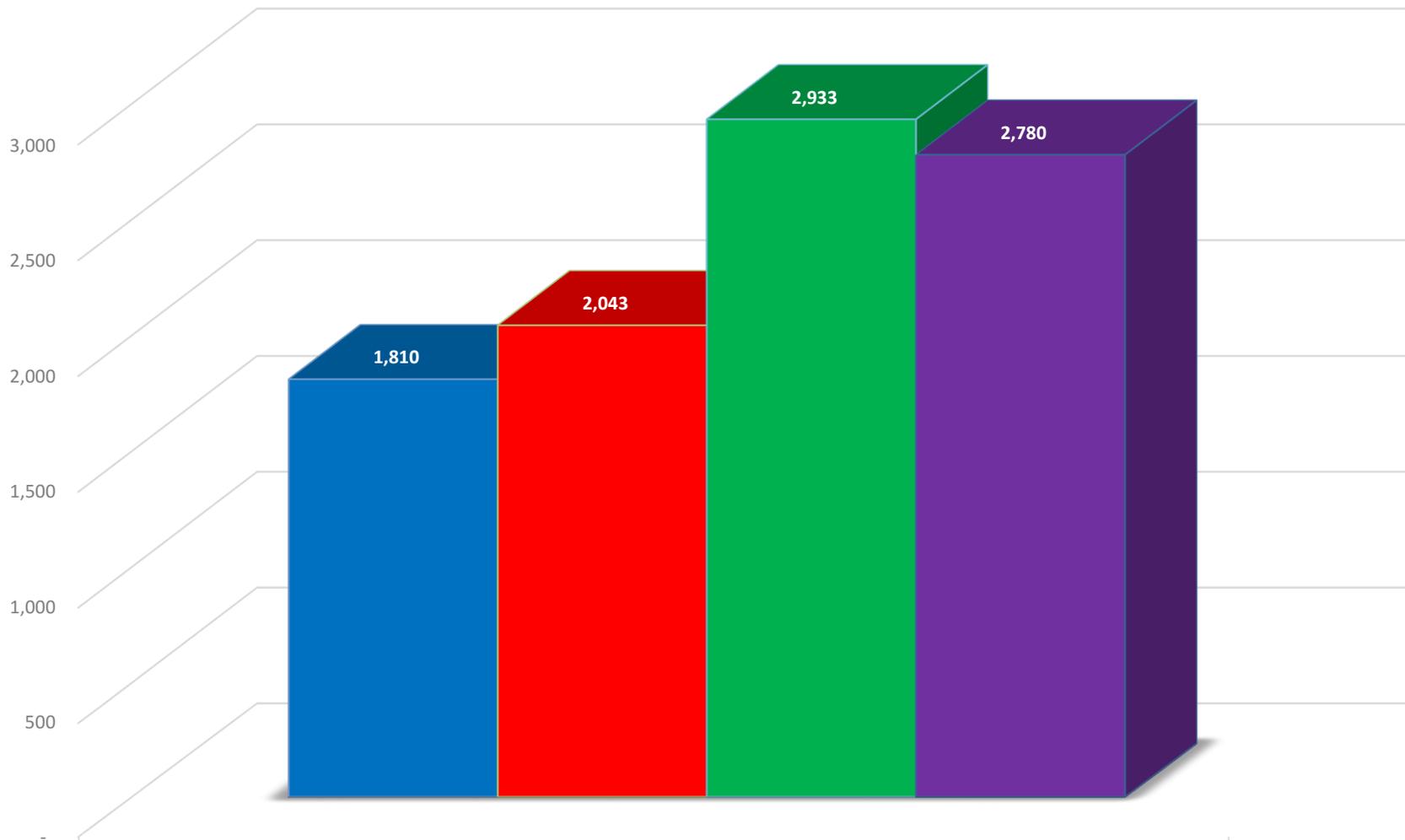
Wood Recycling



Note: November 2015 storm impacted tons for 2016.

	Tons
■ 2014	9,411
■ 2015	12,251
■ 2016	16,816
■ 2017	11,673

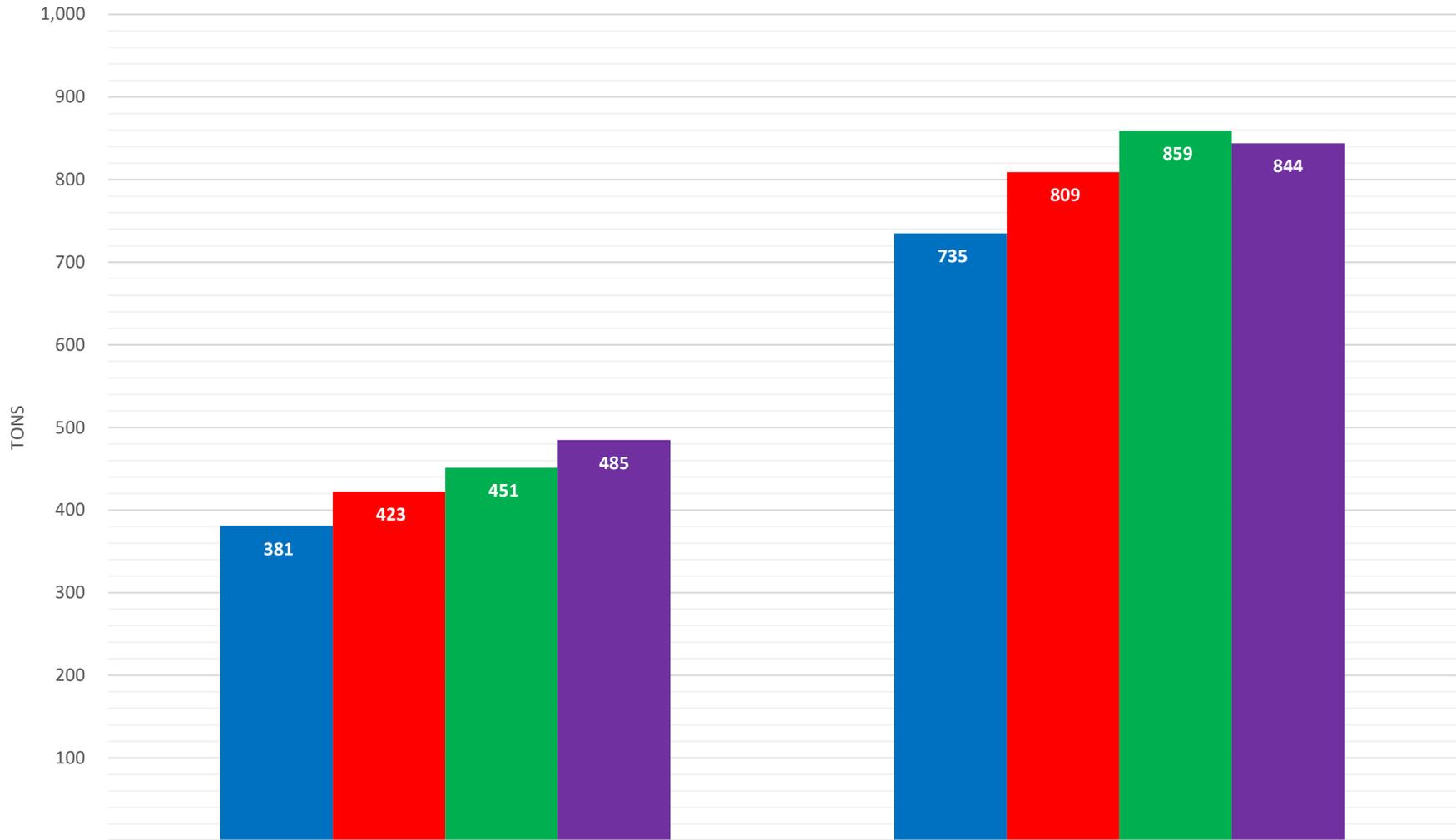
Metals Recycling



	Metals*
■ 2014	1,810
■ 2015	2,043
■ 2016	2,933
■ 2017	2,780

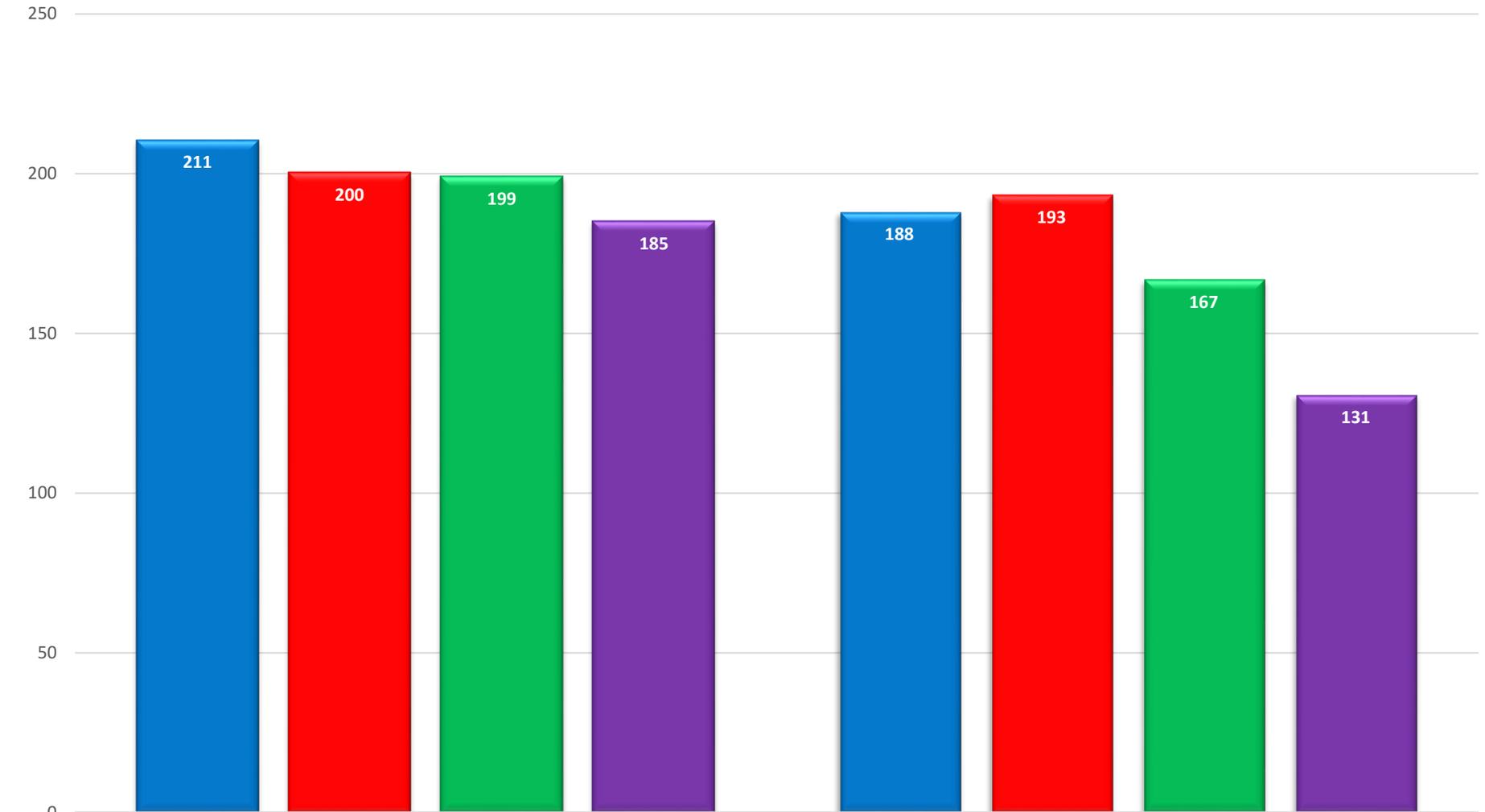
*Metals Recycling includes loose metal, aluminum cans, tin cans and batteries.

Tire & Cardboard Recycling



	Tires	Cardboard
■ 2014	381	735
■ 2015	423	809
■ 2016	451	859
■ 2017	485	844

Paper Recycling - Totals*



	Mixed Paper	Newspaper
2014	211	188
2015	200	193
2016	199	167
2017	185	131

*reported in tons

RURAL RESIDENTIAL COLLECTION SYSTEM 2017

There are 13 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 11 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 residential household waste and over the years the Department has implemented changes to meet this challenge by staffing sites and increasing public awareness as to what can and cannot be accepted at these sites. Another challenge is to restrict out of county/out of state use at these facilities and ensure they are used only by the citizens who pay for the system.

A total of 15,458 tons of garbage was collected from the rural sites in 2017. This is an increase of 6% or 884 tons from last year. A total of 417 tons of material was removed from the waste stream by customers placing them into the recycling bins on sites.

NORTH RURAL SYSTEM

There are two staffed rural sites (Athol and Chilco) in the northern portion of Kootenai County. The staffed sites are open the same hours and days as the transfer stations.

The staffed sites assisted a total of 183,889 customers in 2017. This is an increase of 9,575 or 5% from the total customers reported in 2016. A total of 6,688 tons of waste was collected from the north rural sites in 2017, which up 40 tons from last year.



SOUTH RURAL SYSTEM

The south rural routes have two subsets, Harrison and Worley. There was 8,725 tons of garbage collected from these 11 sites which is a 10% (799 tons) increase from last year.

The Harrison Route is on the eastern side of Coeur d' Alene Lake and bounded by Shoshone County to the east and Benewah County to the south. There are eight collection sites on this route. The Worley Route has three collection sites. This route is on the western side of Coeur d' Alene Lake, south of Coeur d' Alene and bounded on the south by Benewah County and Washington on the west.

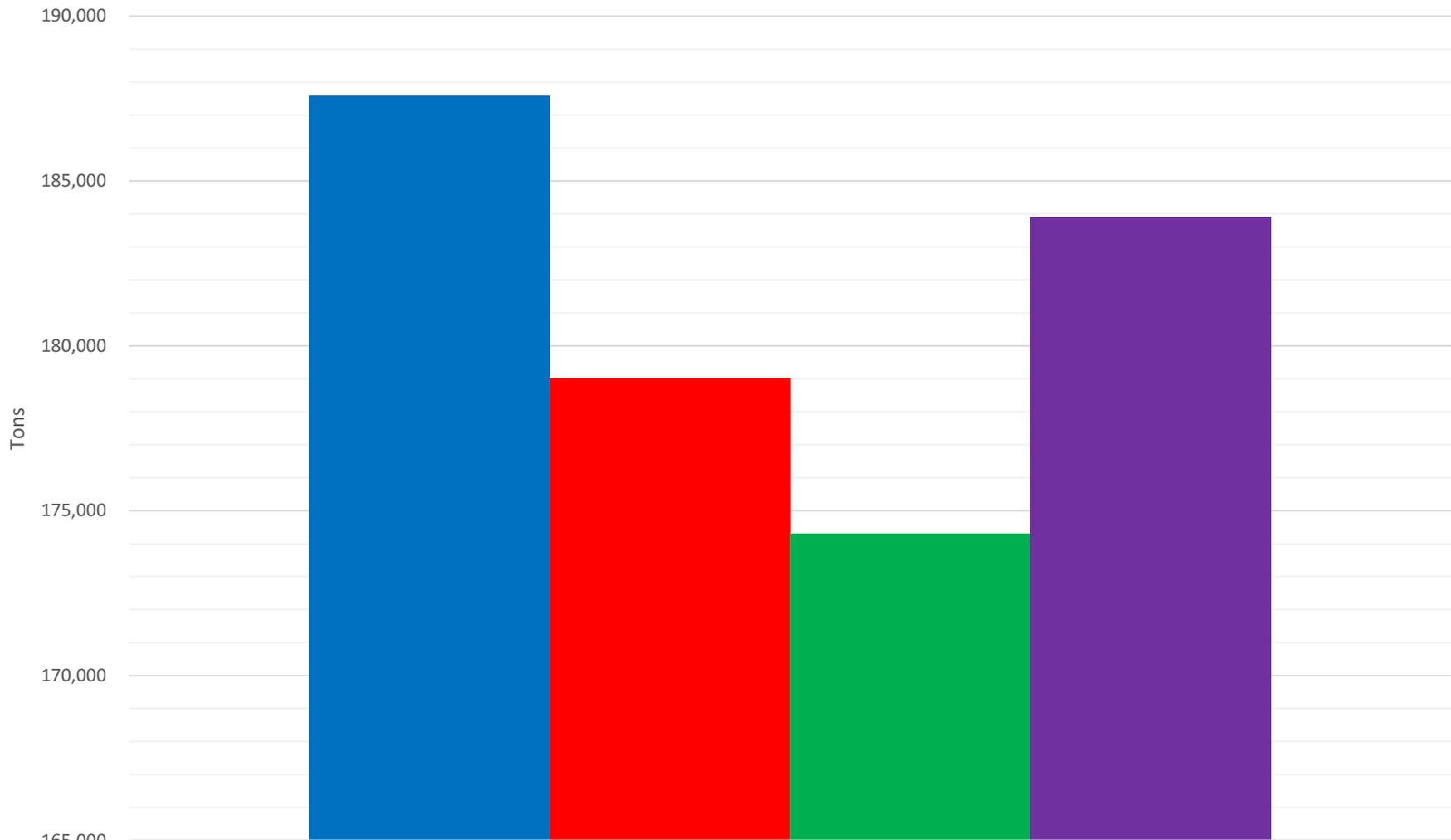
The Department has been actively working on construction bids for a consolidated site in Rose Lake. This new site will be completed and operational by Fall 2018.



The Department, along with the contracted hauling company, spends a significant amount of time and effort to maintaining the rural residential collection sites. Several times a week the Department removes improperly disposed items from these sites. These sites are for residential waste only, large bulky items such as appliances, furniture, tires, remodel waste and yard debris must be taken to a transfer station for proper disposal. The photos show improper disposal that required clean up by the Department.



Rural Systems Cumulative Customers



- 2014
- 2015
- 2016
- 2017

Number of Customers

187,592

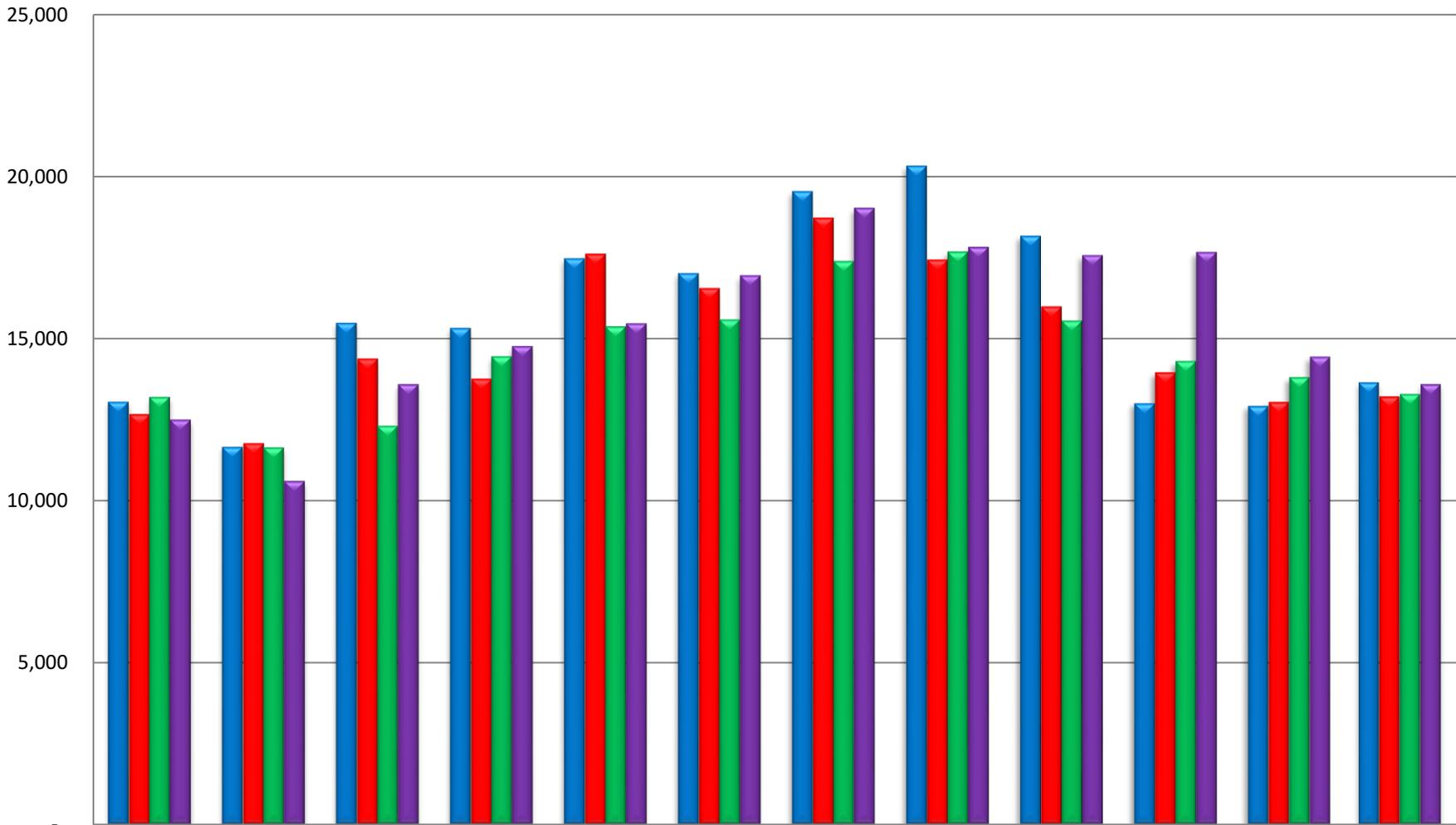
179,005

174,314

183,889

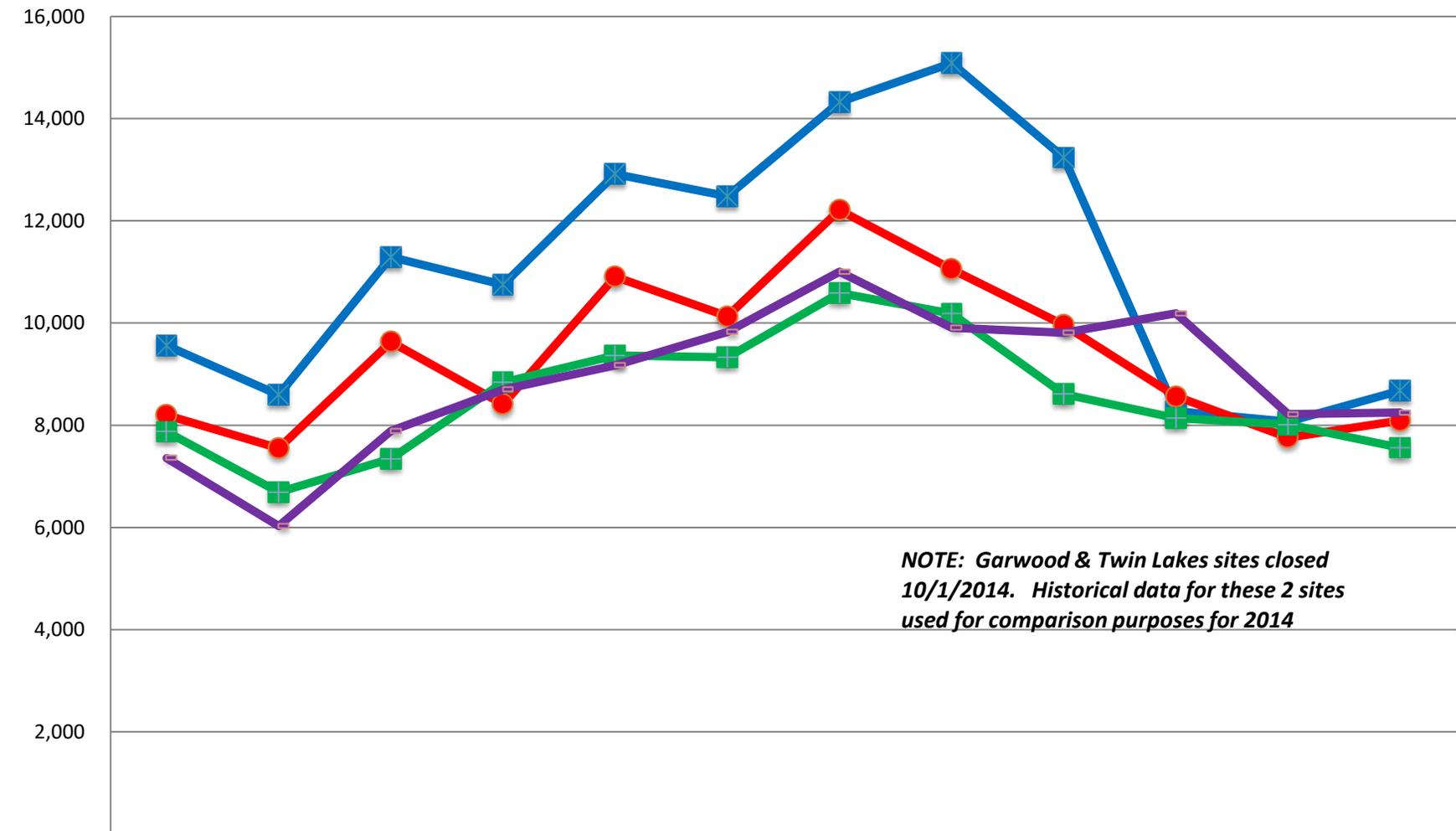
NOTE: Garwood and Twin Lakes sites closed 10/1/2014. Historical data for these 2 sites used for comparison purposes for 2014.

Rural Systems Cumulative Customers



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	13,063	11,669	15,484	15,325	17,461	17,005	19,527	20,314	18,157	13,007	12,929	13,651
2015	12,662	11,760	14,372	13,756	17,600	16,543	18,712	17,424	15,981	13,949	13,037	13,209
2016	13,176	11,612	12,282	14,428	15,354	15,567	17,365	17,661	15,530	14,285	13,788	13,266
2017	12,485	10,599	13,581	14,753	15,460	16,943	19,026	17,814	17,565	17,656	14,426	13,581

Chilco Customers

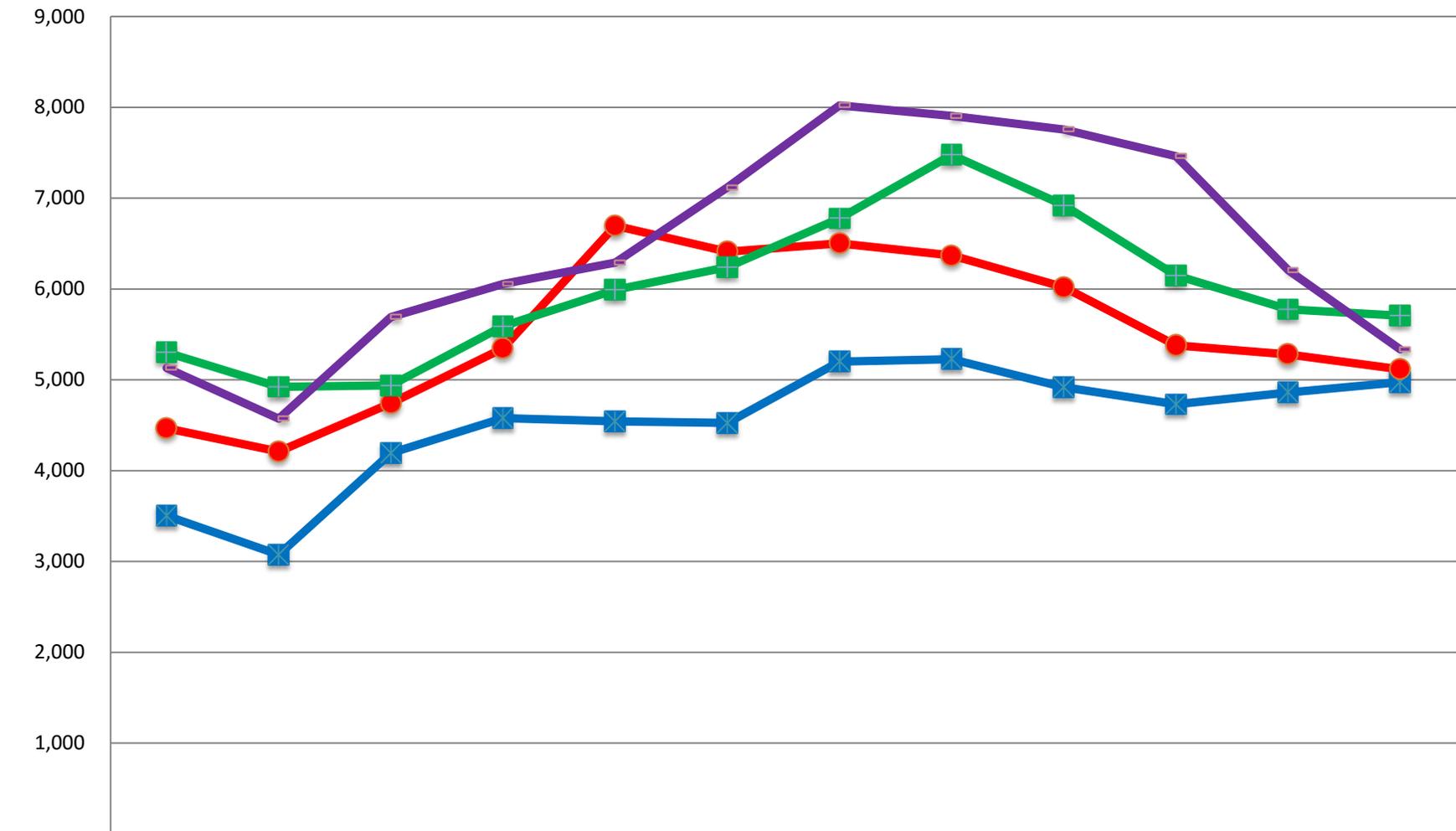


NOTE: Garwood & Twin Lakes sites closed 10/1/2014. Historical data for these 2 sites used for comparison purposes for 2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	9,559	8,594	11,292	10,748	12,918	12,481	14,326	15,087	13,238	8,277	8,069	8,676
2015	8,197	7,550	9,631	8,408	10,904	10,132	12,211	11,054	9,962	8,568	7,756	8,094
2016	7,875	6,690	7,343	8,838	9,364	9,328	10,587	10,185	8,609	8,137	8,011	7,561
2017	7,354	6,027	7,890	8,697	9,170	9,825	11,005	9,909	9,809	10,193	8,217	8,246

NOTE: Garwood Twin Lakes sites closed 10/1/2014. Historical data for these 2 sites used for comparison purposes for 2014

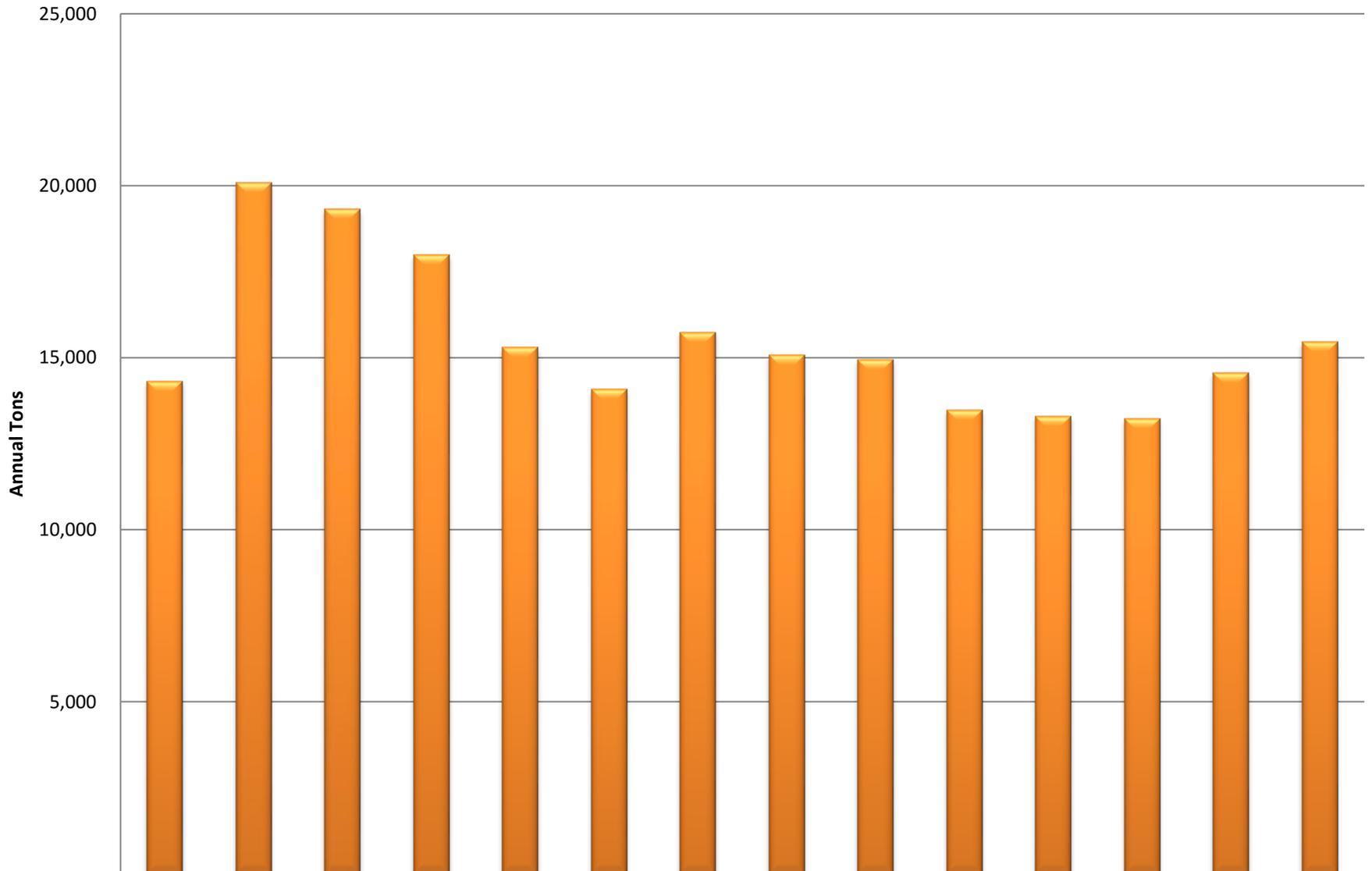
Athol Customers



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	3,504	3,075	4,192	4,577	4,543	4,524	5,201	5,227	4,919	4,730	4,860	4,975
2015	4,465	4,210	4,741	5,348	6,696	6,411	6,501	6,370	6,019	5,381	5,281	5,115
2016	5,301	4,922	4,939	5,590	5,990	6,239	6,778	7,476	6,921	6,148	5,777	5,705
2017	5,131	4,572	5,691	6,056	6,290	7,118	8,021	7,905	7,756	7,463	6,209	5,335

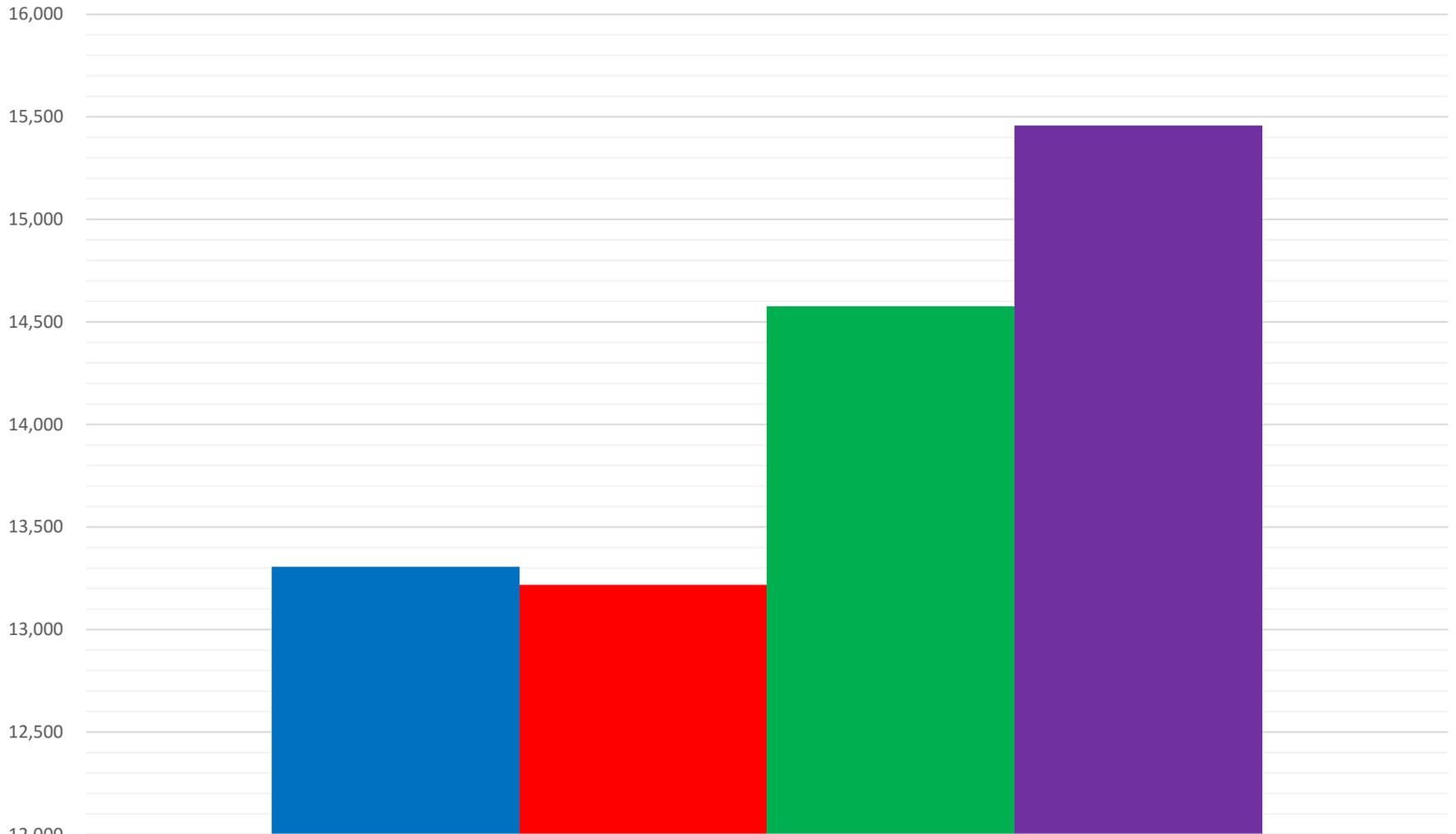
Note:

Rural System Tonnage Comparison



■ Tons	14,314	20,085	19,320	17,985	15,300	14,082	15,740	15,083	14,957	13,486	13,304	13,218	14,574	15,458
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Rural Systems Cumulative Tons



- 2014
- 2015
- 2016
- 2017

Tons

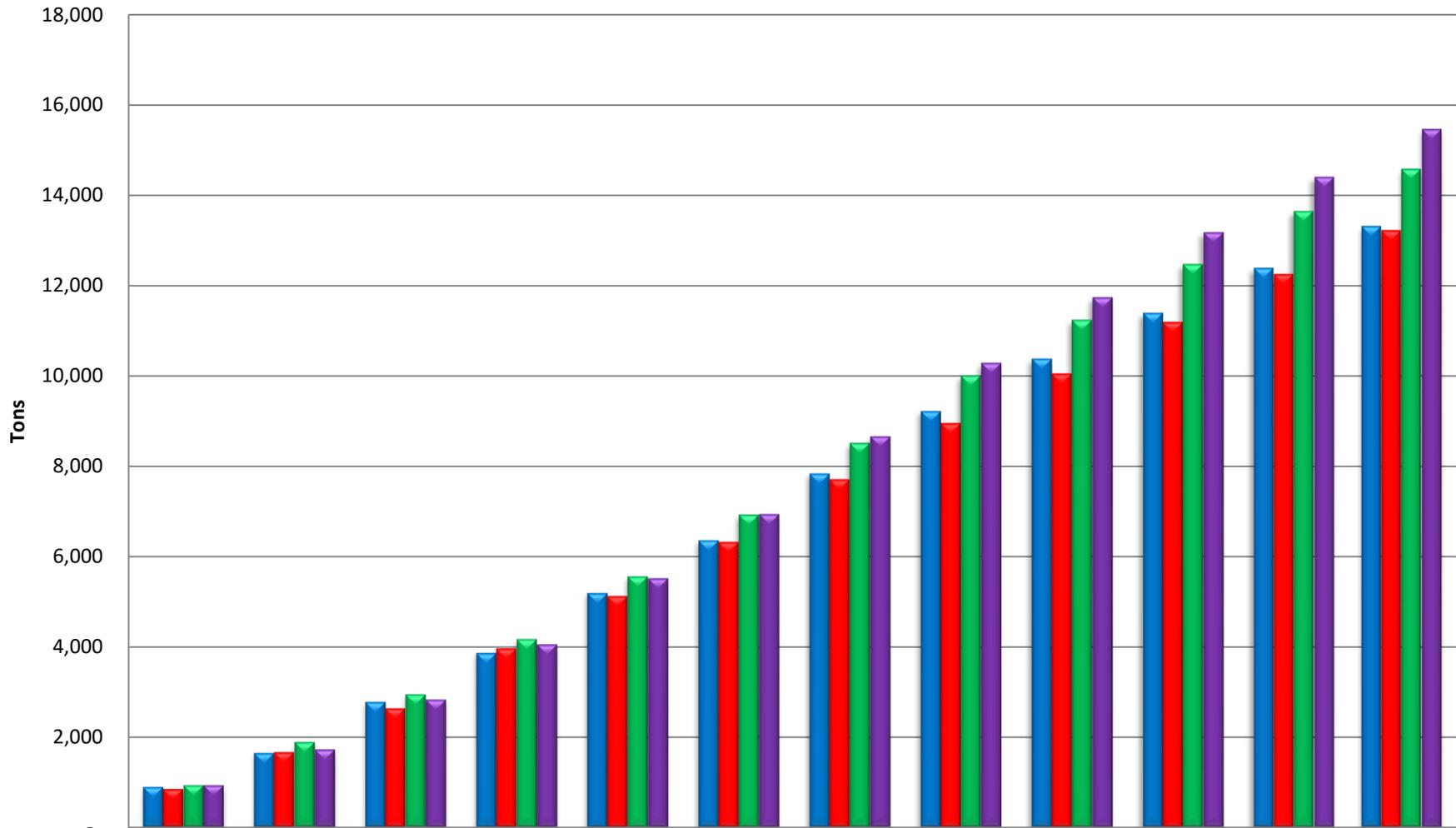
13,305

13,218

14,575

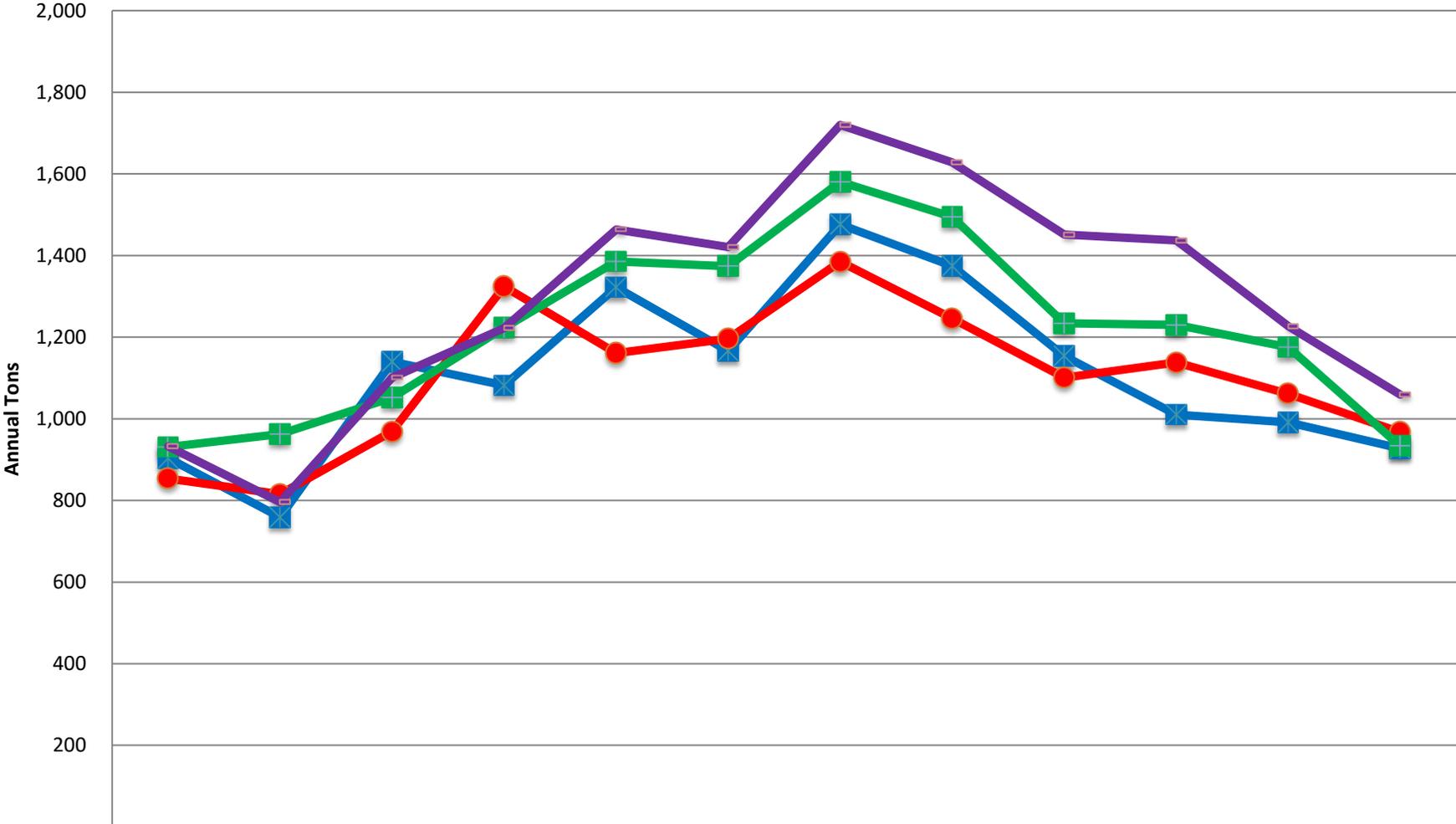
15,458

Rural Systems Cumulative Tons



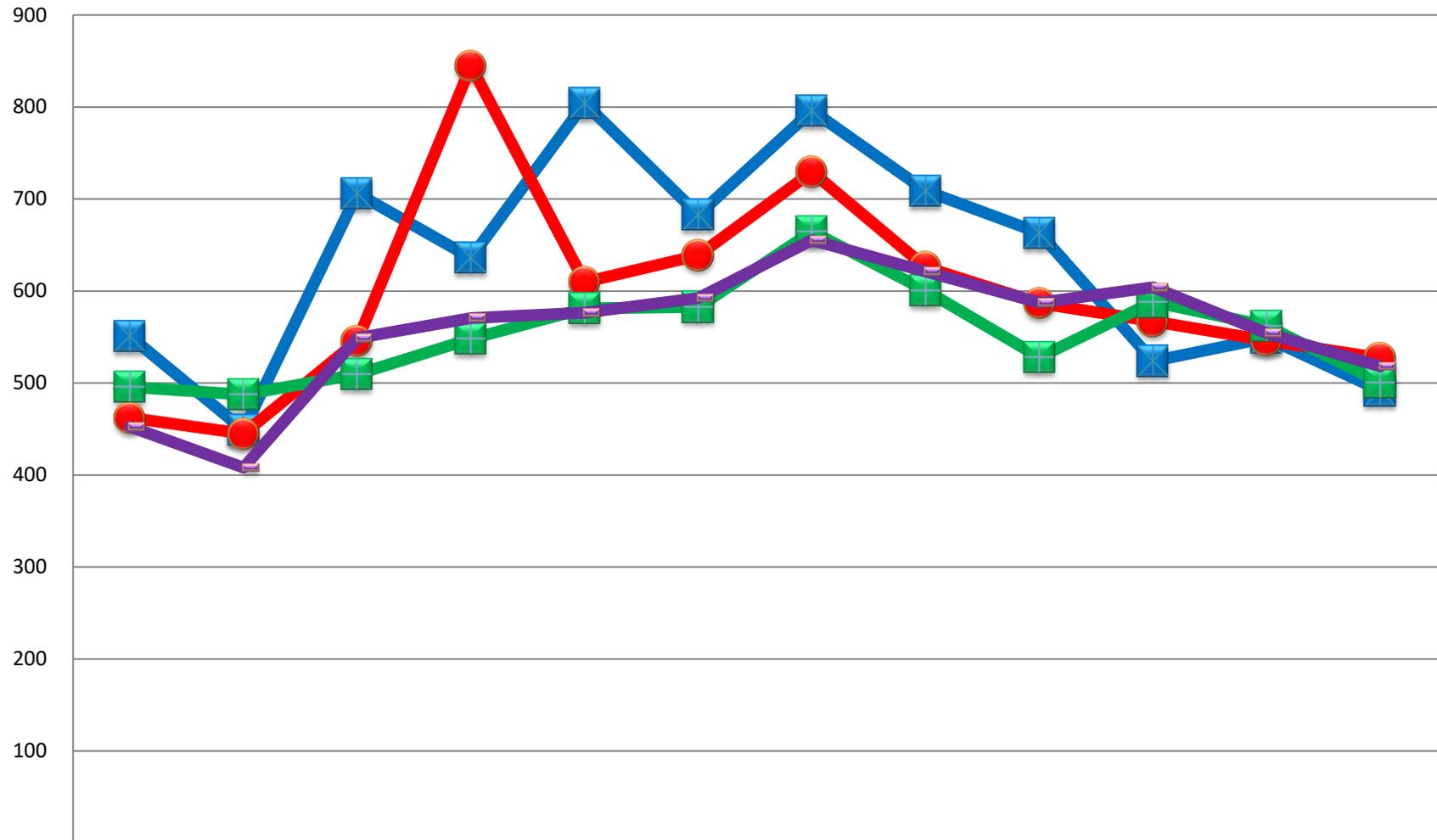
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
■ 2014	904	1,663	2,803	3,885	5,207	6,373	7,849	9,223	10,377	11,387	12,378	13,305
■ 2015	853	1,669	2,638	3,962	5,123	6,319	7,704	8,950	10,051	11,189	12,250	13,218
■ 2016	931	1,894	2,945	4,168	5,553	6,927	8,508	10,002	11,236	12,466	13,642	14,575
■ 2017	933	1,728	2,829	4,052	5,515	6,936	8,655	10,284	11,735	13,172	14,399	15,458

Rural Systems Tons by Month



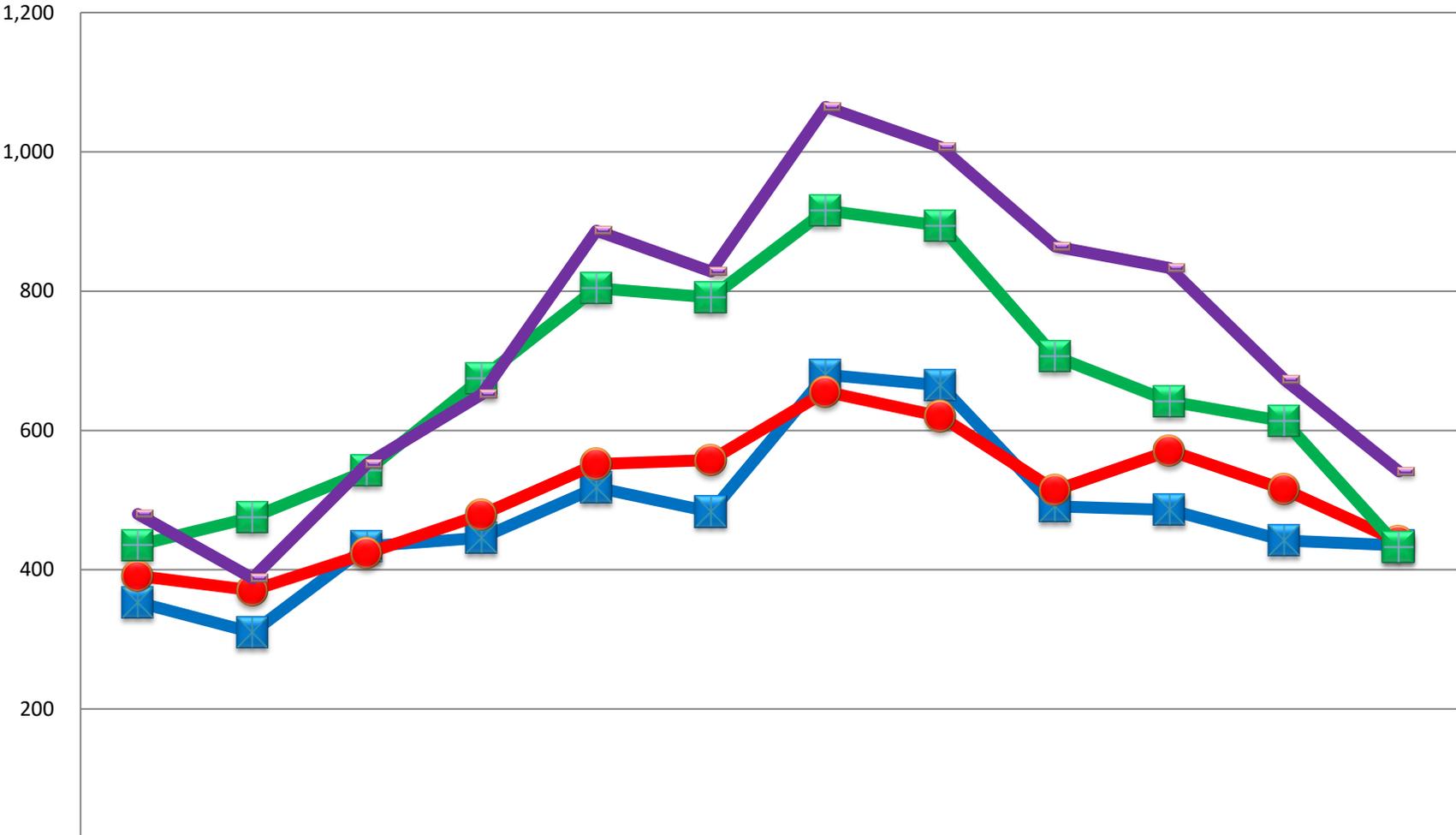
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	904	759	1,140	1,082	1,322	1,166	1,476	1,374	1,154	1,010	991	927
2015	853	815	969	1,324	1,161	1,196	1,385	1,246	1,101	1,138	1,061	967
2016	931	963	1,052	1,223	1,385	1,374	1,581	1,494	1,234	1,230	1,175	933
2017	933	796	1,101	1,222	1,463	1,420	1,720	1,628	1,451	1,437	1,227	1,059

Rural Systems North Tons



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	551	449	706	636	804	683	796	709	663	524	549	492
2015	462	445	545	845	610	639	729	626	587	567	546	527
2016	496	487	510	548	581	583	665	600	528	588	562	501
2017	453	408	549	571	576	592	655	621	587	604	554	518

Rural Systems South Tons



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	353	310	434	446	518	483	680	665	491	486	442	435
2015	391	370	424	479	552	557	656	620	514	571	515	440
2016	435	475	542	675	804	791	916	894	706	642	613	432
2017	480	388	552	652	887	828	1,065	1,007	864	833	673	541

HOUSEHOLD HAZARDOUS WASTE 2017

The Kootenai County Solid Waste Department operates year-round Household Hazardous Waste (HHW) collection facilities at the Ramsey and Prairie Transfer Stations. The Ramsey (HHW) facility is opened from 8:00 a.m. until 4:00 p.m. Wednesday and Saturday. The Prairie Transfer Station has the same hours of operations but operates on Friday and Saturday. These facilities accept up to ten gallons from residential customers. ***Commercial hazardous waste is not accepted.***



Most communities offer limited HHW collection days (some only a few days annually). Kootenai County Solid Waste Department offers over 200 days/year. Limiting days is necessary as trained and certified technicians are responsible for safe identification, acceptance, material handling, packaging, shipping, etc. to avoid spills, explosions, contaminations or injury.

Only HHW can be accepted and there are also restrictions on type and volume of material as called out in the Panhandle Health District Critical Materials Regulation/Certification and facility operating permit. Transfer stations are Tier II Facilities - permitted to accept municipal solid waste and no industrial or commercial hazardous waste.

Between May and September of 2017, the Ramsey Transfer Station offered an additional day per week (Friday) for acceptance of HHW. It is anticipated that the additional day will continue to be offered during the summer months at the Ramsey location.

A total of 8,994 customers took advantage of HHW services at both transfer stations in 2017. The Prairie Transfer Station had 2,654 customers. The Ramsey site saw 6,340 customers. This represents a 3% increase over the customer count from 2016. Customers that utilized the added Friday collection day at the Ramsey site during the summer equaled 768 which was a 25% increase from 2016. Wednesdays at Ramsey see the majority of the customers with 45% of the total number. Saturdays at Prairie are the most popular with 57% of the total number.

The Department processed approximately 237 tons of special waste through the HHW collection days. The breakdown of this material is shown in the charts for this section of the annual report.

The Ramsey collection “shed” is outdated and has limited functionality and very restricted traffic and user drop off areas/lanes. Options to develop a new special/hazardous waste structure or expand the current collection area are being explored with potential construction taking place in 2018/2019.

A valuable exchange program, which addresses the growing awareness of the problems of household hazardous waste in the environment, is also offered. By signing off on a release of liability form, customers may shop (free of charge) at the exchange cart for items such as pesticides, herbicides, paint, and many other household products. Department staff tries to ensure that the containers with product are labeled, but we are unable to guarantee the product, thus the liability waiver.

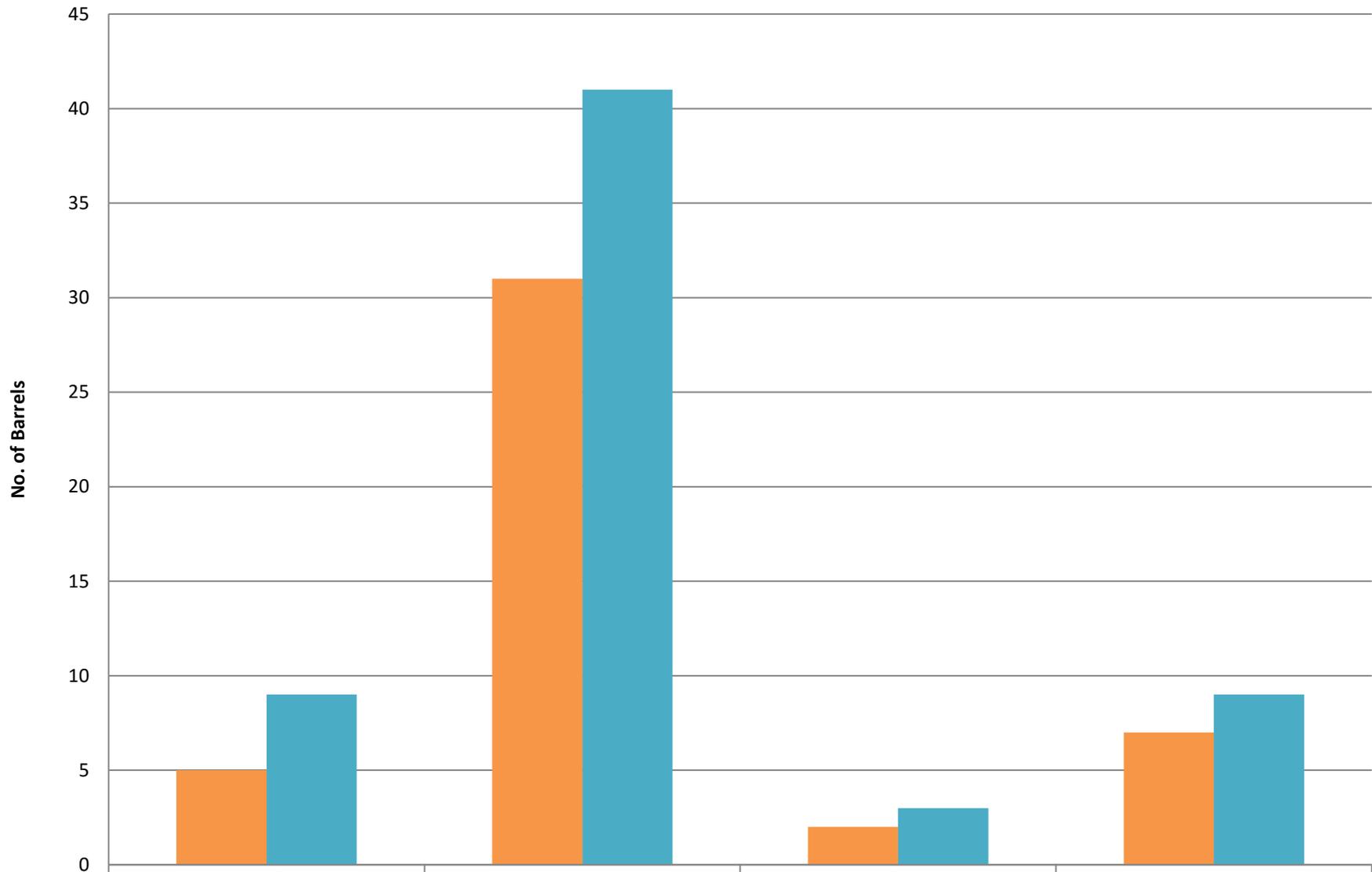
For the most part, the breakdown of materials shipped out as HHW remained the same, with the exception of a large increase in Mixed Paint. In 2017, the Department implemented a process to better track the amount of latex paint that is utilized at the landfill as daily alternative cover. This resulted in a substantial increase in the mixed paint.

The Department continues to use mixed latex paint as an additive to the existing alternative daily cover for the landfill. All paint possible is collected in the HHW programs at the transfer stations. Staff sorts and separates the paint collected and set aside latex paint for shipment to the landfill. Landfill staff mixes the latex paint with a Posi-Shell® material and sprays it over the working 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 chart is included demonstrating the program for reuse of used waste oil throughout facilities. The chart shows the amount of waste oil used in heating maintenance shops at Ramsey, Prairie and Fighting Creek. The excess waste oil brought into the facilities is then shipped out to be reused elsewhere as fuel, asphalt emulsion, and other uses.

Kootenai County Solid Waste, working together with Panhandle Health District, Idaho Department of Environmental Quality and the Spokane River Forum, launched the Kootenai Waste Directory (www.kootenaiwastedirectory.org) to assist people and businesses with questions on how to properly dispose of materials. Links to this website can be found on the Department's webpage.

Household Hazardous Waste - Processed



■ Prairie
■ Ramsey

Acids

Toxics

Oxidizers

Strong Bases

5

31

2

7

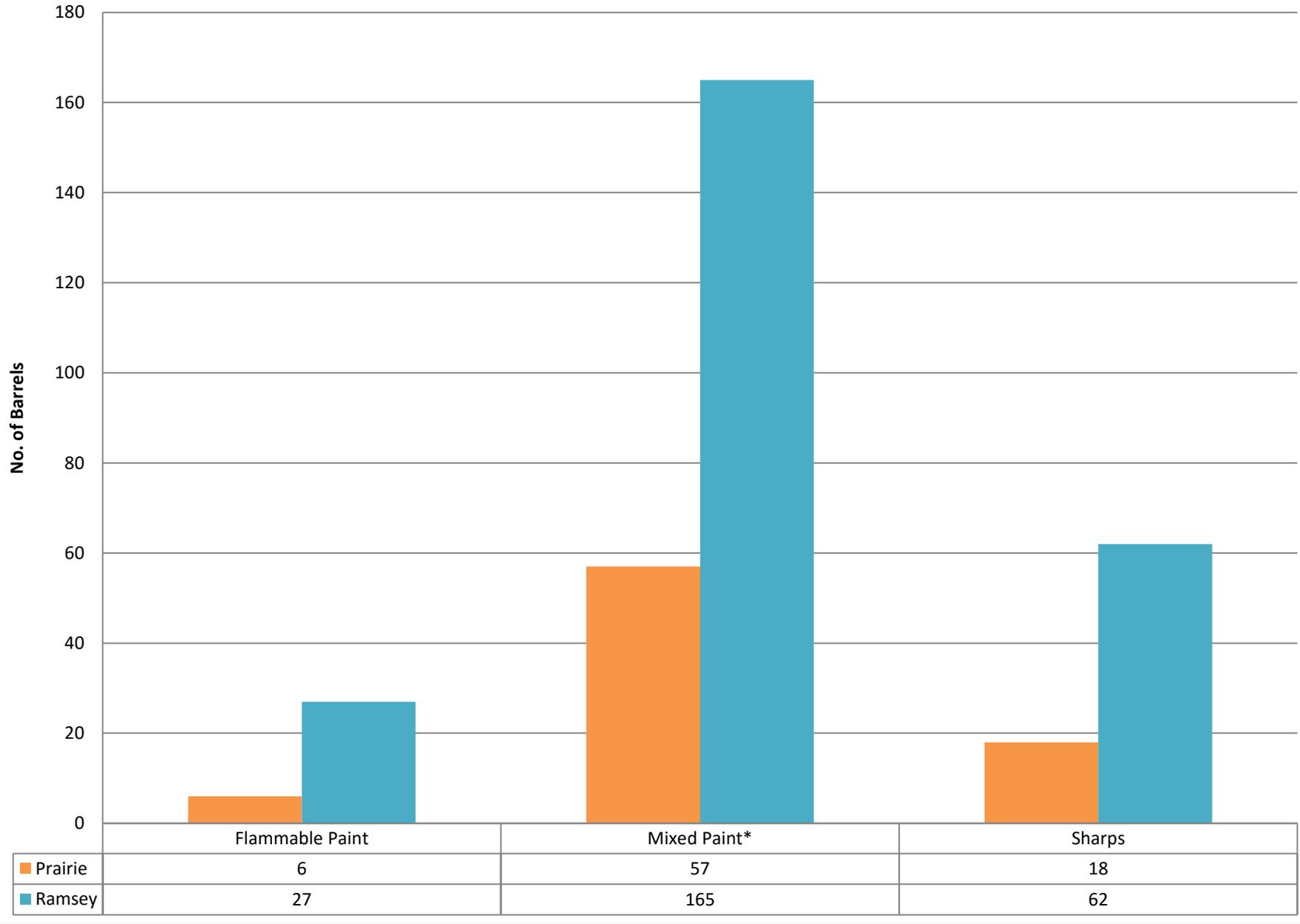
9

41

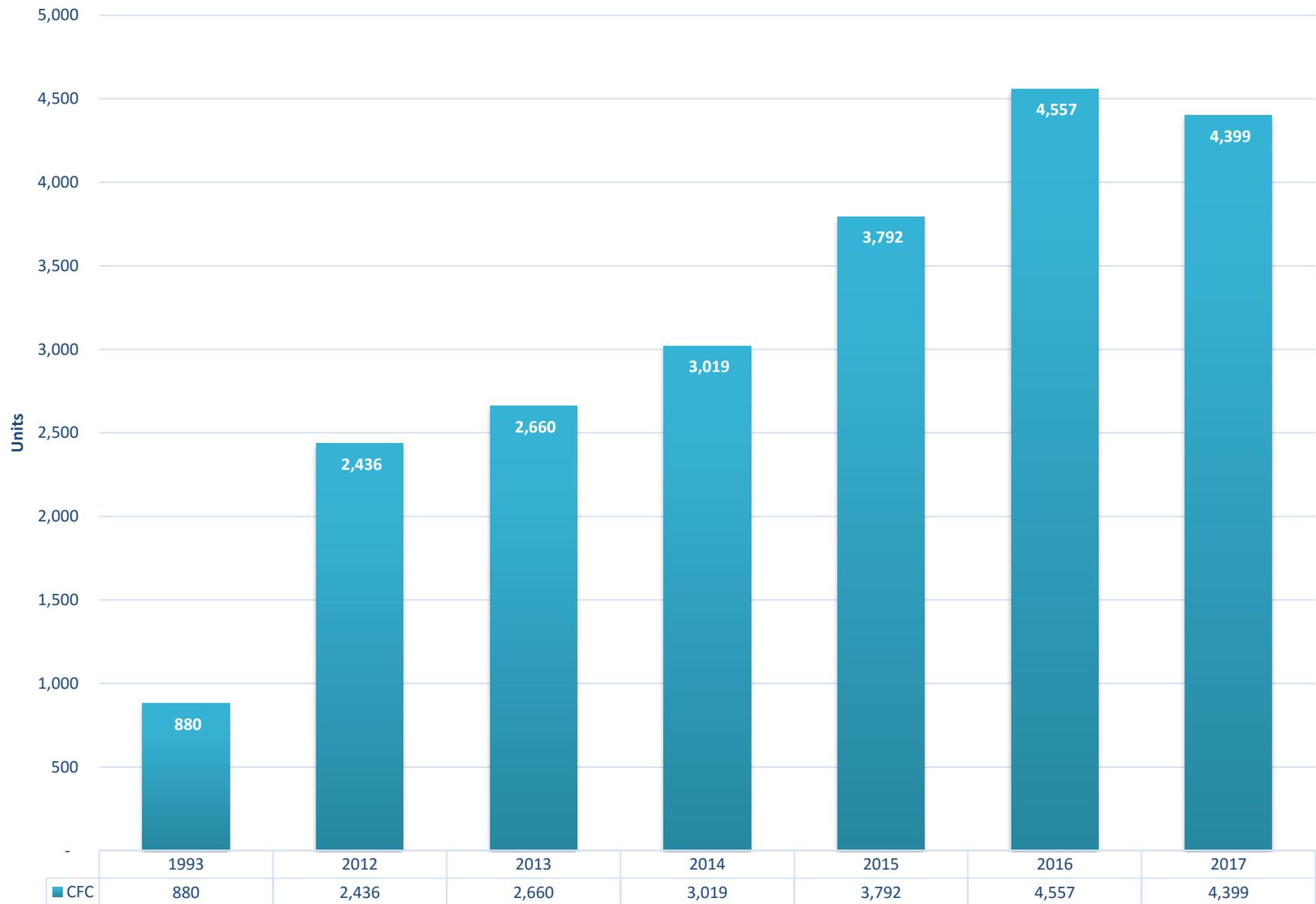
3

9

Household Hazardous Waste - Paint/Sharps



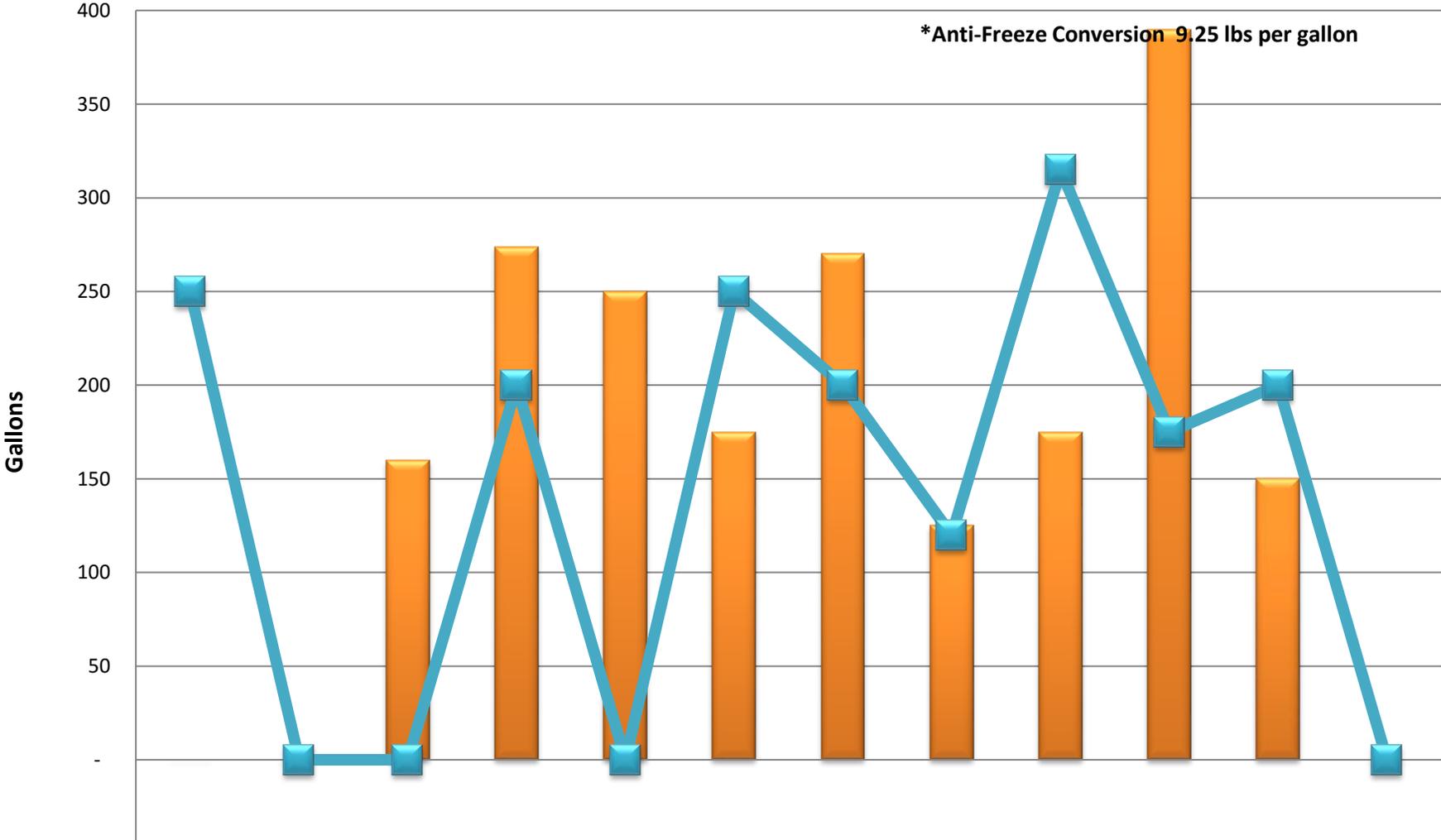
CFC Units* (4,399 units)



*includes Refrigerators, Freezers, AC Units, etc.

Anti-Freeze (17.02 tons*)

*Anti-Freeze Conversion 9.25 lbs per gallon



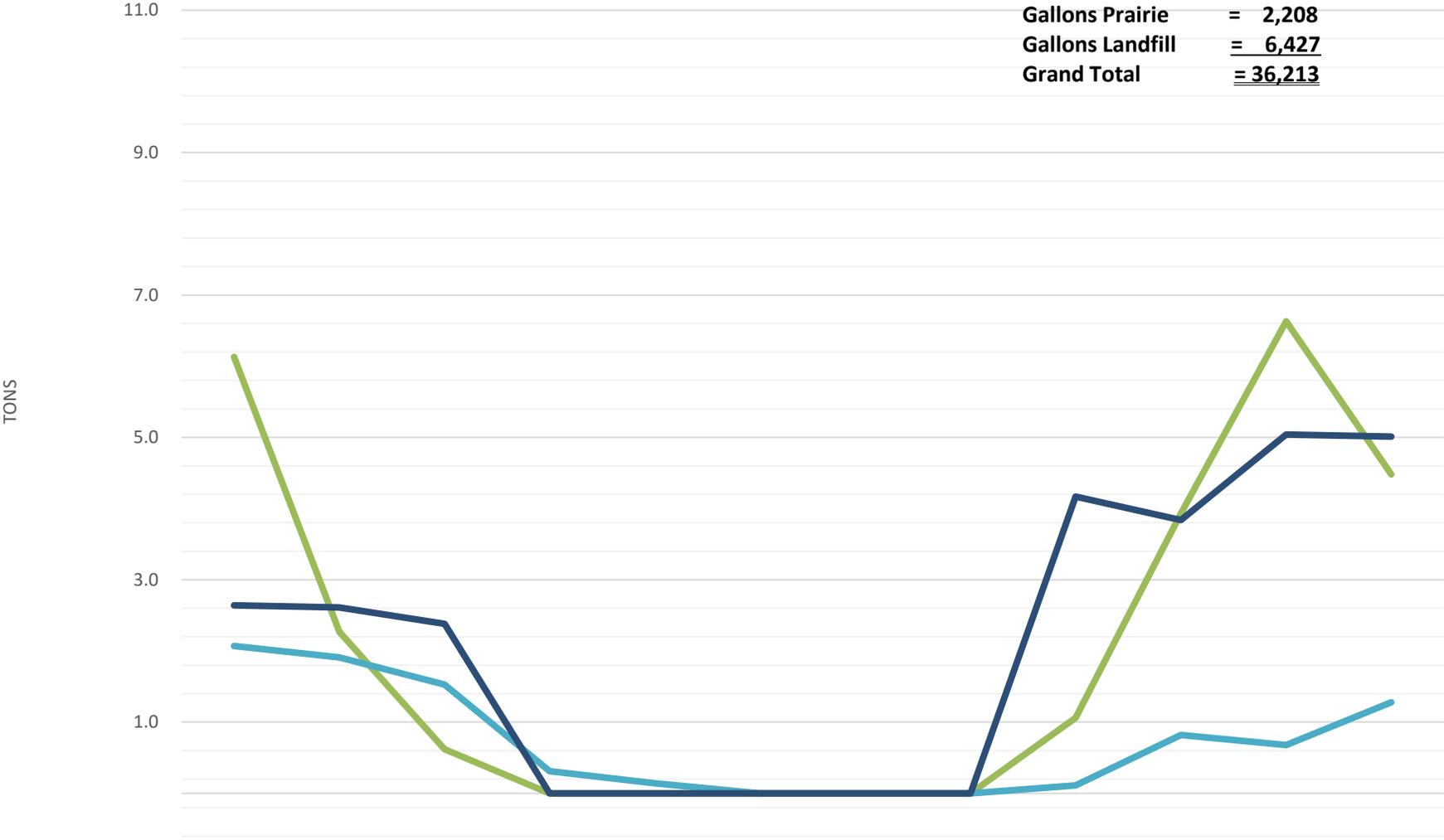
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ramsey	-	-	160	274	250	175	270	125	175	390	150	-
Prairie	250	-	-	200	-	250	200	120	315	175	200	-

Used Motor Oil

Conversion rate is 8 lbs per Gallon

2017 Totals

Gallons shipped out	= 21,453
Gallons Ramsey	= 6,125
Gallons Prairie	= 2,208
Gallons Landfill	= 6,427
Grand Total	= 36,213



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ramsey	6.1	2.3	0.6	-	-	-	-	-	1.1	3.9	6.6	4.5
Prairie	2.1	1.9	1.5	0.3	0.1	-	-	-	0.1	0.8	0.7	1.3
Fighting Creek	2.6	2.6	2.4	-	-	-	-	-	4.2	3.8	5.0	5.0

Department of Environmental Quality Reporting

The following is a summary of the electronic information provided to Idaho Department of Environmental Quality (DEQ) and Idaho Panhandle Health District (PHD) with this annual report.

A. **Inspections and Reports:**

- a. The 2017 Waste Stream Analysis is attached hereto and incorporated herein by reference. All required documents relevant to this annual report are included on a CD saved as PDF documents and provided to Idaho Department of Environmental Quality (DEQ) and Idaho Panhandle Health District (PHD) each year.
- b. In April, 2017 Idaho DEQ conducted an Underground Storage Tank Field Inspection at the Fighting Creek Landfill. A copy of this report is included with the CD provided to DEQ and PHD. No violations were found.
- c. In June, 2017, Idaho DEQ conducted an Underground Storage Tank Field Inspection at the Ramsey Transfer Station. A copy of this report is included with the CD provided to DEQ and PHD. No violations were found.
- d. In May, 2017, Idaho DEQ conducted a NESHAPs Subpart M – Asbestos inspection at the Fighting Creek Landfill. It was determined that the site was operating in apparent compliance. A copy of this report is included with the CD provided to DEQ and PHD.
- e. On February 19, 2018 Panhandle Health District issued a letter of approval of the 2017 Operations Manual Update for the Fighting Creek Farm Landfill.

- B. **Tier 1 Operating Air Quality Permit:** Copies of all Tier 1, Title V Air Quality Permit documents and reports have been provided and can be viewed at the Idaho DEQ office in Coeur d'Alene.
- C. **Closure and Post-Closure Plan:** There were no changes or modifications to the Closure Plan in 2017.
- D. **Financial Assurance Plan (FAP):** Updated information regarding monies spent and set aside to fund future closure and post-closure requirements per §39-7417 of Idaho Code has been included in the electronic version of this report. A copy of the letter and supporting documents from Kootenai County, Finance Director, Deena Darrow, is attached hereto and incorporated herein by reference. A copy of this same information is included as a PDF document in the electronic version of this report.
- E. **Landfill Gas Reporting:** Fighting Creek gas system reports were included in the required reporting to the EPA, a copy of which is included in the electronic version of this report. The Ramsey gas system report is included in the electronic version of this annual report.
- F. **Ground Water Summary:** The electronic reports and data from bi-annual ground water monitoring as described in the Ground Water Monitoring Plan is included in the electronic version of this report.
- G. **Leachate Report:** A summary of the performance of the leachate treatment and disposal system during the preceding calendar year containing the same

information as previously reported in the annual leachate report is included in the electronic version of this report.

- H. **Surface Water:** The Department complied with the regulations of the EPA regarding MSGP and SWPPP. Copies of these reports have been provided, previously, to DEQ, but are included in the CD accompanying this report to DEQ.
- I. **Plans and Specifications:** No new construction was completed in 2017 that required approval of plans and specifications.

Inspections and Reports

Idaho DEQ approved the 2016 Solid Waste Analysis on February 14, 2018. It should be noted, however, that there is a discrepancy regarding the date the 2016 Annual Report was received by DEQ. Kootenai County submitted the report to DEQ on April 4, 2017. A copy of said approval is included with this report and represented below.



State of Idaho
Department of
Environmental Quality

2110 Ironwood Parkway • Coeur d'Alene, ID 83814 • (208) 769-1422

C. L. "Butch" Otter, Governor
John H. Tippetts, Director

February 24, 2018

Cathy Mayer
Kootenai County Solid Waste Department
3650 N Ramsey Rd
Coeur d'Alene, ID 83815
cmayer@kccgov.us

Subject: Kootenai County Solid Waste – 2016 Solid Waste Analysis

Dear Ms. Mayer:

The Department of Environmental Quality (DEQ) has reviewed the Kootenai County Solid Waste Department 2016 Solid Waste Analysis dated 03/23/2017. This report contains an overview of the Kootenai County Solid Waste facilities and operations. Included with the analysis are the 2016 Financial Assurance, and the Leachate Report. The groundwater monitoring report has not been reviewed at this time, but will be reviewed separately from this solid waste analysis.

DEQ finds the 2016 Solid Waste Analysis to be acceptable. Thank you for providing this report. Should you have any questions, please contact me at 208-666-4622.

Sincerely,

A handwritten signature in blue ink, appearing to read "M. Plaisted".

Matt Plaisted, P.E.
Engineering Manager
Matthew.Plaisted@deq.idaho.gov

c: Erik Ketner, eketner@phd1.idaho.gov
Gary Stevens, gary.stevens@deq.idaho.gov
Mollie Mangarich, mollie.magarich@deq.idaho.gov
Laureen Chaffin, lchaffin@kccgov.us
File: TRIM_Kootenai County Landfill (2011BAZ2174/2018BAB70)

Attachment "A"

Underground Storage Tank Field Inspections at Landfill and Ramsey



Idaho Department of Environmental Quality Underground Storage Tank Field Inspection Report

Inspection Result: Passed		Inspection Date: 4/14/2017	
Facility ID:	1-280415	Inspector:	MARC KALBAUGH
Facility Name:	KOOTENAI COUNTY SOLID WASTE 2	Reason:	3 yr Compliance
Facility Address:	22089 S HWY 95 COEUR D ALENE, ID 83814	Inspection Type:	
		Permission:	Yes
Active Insurance: Financial Resp. Met: Yes			
Renewal Date:	Insurance Type:		
5/1/2017	State Fund		
Operator Training Results: Passed			
Contact Type:	Contact Information:		

Tank ID: 2 - Currently In Use (1000 gallons) - Installed: 10/1/1991			
Construction:	Cathodically Protected Steel (Galvanic)	Substance:	Regular Gasolins
Tank Options:	None		
Spill Prevention:	Spill Protected, Overflow Alarm		
Release Detection:	Automatic Tank Gauging		
Piping = 2			
Construction:	Fiberglass Reinforced Plastic	Pump Type:	Safe Suction
Piping Options:	Double-Walled		
Release Detection:	BLANK		
2 GPH Method:	BLANK	3 GPH Method:	BLANK
Tank ID: 3 - Currently In Use (3000 gallons) - Installed: 10/1/1991			
Construction:	Cathodically Protected Steel (Galvanic)	Substance:	Diesel
Tank Options:	None		
Spill Prevention:	Spill Protected, Overflow Alarm		
Release Detection:	Automatic Tank Gauging		
Piping = 2			
Construction:	Fiberglass Reinforced Plastic	Pump Type:	Safe Suction
Piping Options:	Double-Walled		
Release Detection:	BLANK		
2 GPH Method:	BLANK	3 GPH Method:	BLANK

Narrative Comments:
Operator Training can be found at: <https://www.accessidaho.org/deq/tankhelp>

Violations:
No violations found.



Idaho Department of Environmental Quality Underground Storage Tank Field Inspection Report

Inspection Result: Passed		Inspection Date: 6/1/2017	
Facility ID:	1-280609	Inspector:	MARC KALBAUGH
Facility Name:	KOOTENAI COUNTY SOLID WASTE 1	Reason:	3 yr Compliance
Facility Address:	3650 N RAMSEY RD COEUR D ALENE, ID 83814	Inspection Type:	
		Permission:	Yes
Active Insurance: Financial Resp. Met: Yes			
Renewal Date:	Insurance Type:		
Operator Training Results: Passed			
Contact Type:	Contact Information:		
Class A Operator since 9/12/2008	DOUG GOODWIN, 3650 N RAMSEY RD COEUR D ALENE, ID 83814, Phone: (208) 446-1440, Phone2/Mobile: 208-665-0883, Email: dgoodwin@kcp.gov		
Class B Operator since 9/12/2008	DOUG GOODWIN, 3650 N RAMSEY RD COEUR D ALENE, ID 83814, Phone: (208) 446-1440, Phone2/Mobile: 208-665-0883, Email: dgoodwin@kcp.gov		

Tank ID: 1 - Currently In Use (2000 gallons) - Installed: 7/1/1991			
Construction:	Cathodically Protected Steel (Galvanic)	Substance:	Diesel
Tank Options:	Double-Walled		
Spill Prevention:	Flapper, Spill Protected		
Release Detection:	Automatic Tank Gauging		
Piping = 1			
Construction:	Fiberglass Reinforced Plastic	Pump Type:	Safe Suction
Piping Options:	None		
Release Detection:	BLANK		
2 GPH Method:	BLANK	3 GPH Method:	BLANK

Narrative Comments:
None

Violations:
No violations found.

DEQ – Asbestos Inspection 2017



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hillon • Boise, Idaho 83706 • (208) 373-0502
www.deq.idaho.gov

C.L. "Butch" Otter, Governor
John H. Tiggett, Director

July 28, 2017

Cathy Mayer, Director
Kootenai County Solid Waste
3650 N. Ramsey Road
Coeur d'Alene, Idaho 83815

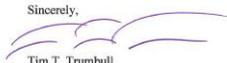
Subject: May 25, 2017 NESHAPs-Asbestos Inspection of the Kootenai County Farm Landfill operated by Kootenai County in Coeur d'Alene, Idaho; Facility ID No. 055 – 00044

Dear Ms. Mayer:

On May 25, 2017 the Idaho Department of Environmental Quality (DEQ) conducted a NESHAPs-Subpart M - Asbestos inspection of the Kootenai County Farm Landfill located South of Coeur d'Alene, Idaho. Mr. Jim Hagenbarth, Landfill Manager, assisted me during the inspection. At the time of the inspection, the Kootenai County Farm Landfill was determined by DEQ personnel to be operating in apparent compliance with 40 CFR 61, NESHAPs Subpart M - Asbestos.

Thank you for your cooperation and assistance during this inspection. A copy of the inspection report is attached. If you have any questions concerning the inspection, or the inspection report, please contact me at (208) 373-0433.

Sincerely,


Tim T. Trumbull
Compliance Analyst
Technical Services Division (EE/GIS)
Idaho Department of Environmental Quality
1410 N. Hillon
Boise, Idaho 83706

TT:sjt
Attachment

EC: Steve Bacom, Compliance & Enforcement Coordinator, Air Quality Division
Marilyn Seymore, Air Quality Division
Mollie Mangerich, Waste Management and Remediation Division
Shawn Sweetapple, Coeur d'Alene Regional Office

C: Source File (asbestos)
Reading File (Ltr Only)

Attachment "A"

Panhandle Health District approved the 2017 Kootenai County Farm Landfill Operations Manual 2017 Update on February 19, 2018.



Panhandle Health District

Healthy People in Healthy Communities

Environmental Health
8500 N Atlas Road
Hayden, Idaho 83835
Phone: 208-415-5200
Fax: 208-415-5201
www.phd1.idaho.gov

February 19, 2018

Lauren Chaffin
Principal Planner
Kootenai County Solid Waste
3650 N. Ramsey Road
Coeur d' Alene, ID 83815
lchaffin@kcgov.us

Re: Kootenai County Farm Landfill Operations Manual 2017 Update Approval

Dear Ms. Chaffin:

The 2017 update to the operations manual for the Kootenai County Farm Municipal Solid Waste Landfill (MSWLF) has been reviewed by the Panhandle Health District (PHD). A MSWLF operations plan is required per 40 CFR 258 Subpart C, and Idaho Statute 39-7412. Idaho Statute 39-7419 also requires that MSWLF operations plans be recertified at intervals of no more than three (3) years. The updated operations plan was submitted to PHD on August 2, 2017.

The 2017 update to the Kootenai County Farm Landfill Operations Manual was reviewed and found to be in compliance with applicable requirements specified in 40 CFR 258 and the Idaho Solid Waste Facilities Act.

If you have any questions please contact me directly at (208) 415-5224.

Sincerely,

Erik Ketner
Environmental Health Section Manager

cc: Cathy Mayer, Solid Waste Director, Kootenai County cmayer@kcgov.us
J.P. Phillips, Operations Manager, Kootenai County jphillips@kcgov.us
Matt Plaisted, Engineering Manager, IDEQ, matthew.plaisted@deq.idaho.gov

Attachment "A"

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 can be reviewed at the Idaho DEQ office in Coeur d'Alene, Idaho or at the administration office of the Solid Waste Department.

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.

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

<http://www.kcgov.us/departments/auditor> · Email kcauditor@kcgov.us

February 20, 2018

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 \$8,045,000.

Additionally, this information will be included in our (Audited) Comprehensive Annual Financial Report for Kootenai County, Idaho for the year ending September 30, 2017. 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

Attachment "D"

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.

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

719 2ND AVENUE, SUITE 200 | SEATTLE, WA 98104 | P 206.394.3700

January 23, 2018
Parametrix No. 553-1660-041 (02/02)

Cathy Mayer, 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 2017

Dear Cathy:

This letter is an annual summary of the landfill gas monitoring and landfill gas management activities performed at the Ramsey Road Landfill in 2017. It is specific only to the landfill gas control system. This letter can be forwarded to Division of Environmental Quality and Panhandle District Health Department 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 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

Ground Water Summary

The bi-annual monitoring requirements for ground water were completed as required in 2017.

The following is an excerpt from the 2017 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 Section 2.5 of the Summary Report were below primary state or federal groundwater quality criteria.

2.5 Summary and Conclusions

Groundwater quality results were below primary state or federal groundwater quality criteria, except for pH in October 2017 in downgradient well M-16. Volatile organic compounds were not detected in any of the landfill wells.

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 were also above the UPL during both the March 2017 and October 2017 events. Since nitrate concentrations have also shown increases in East Cell upgradient well M-15, it is recommended that continued monitoring of nitrate without verification resampling be conducted at both wells M-9 and M-17.

The chloride concentrations in well M-16 were above the seasonally adjusted UPLs during both the March and October 2017 events. Chloride concentrations in this well showed an increasing trend during the background data collection period, but remain substantially below the MCL. Therefore it is recommended that continued monitoring of chloride without verification resampling be conducted at well M-16.

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.

“Domestic” Water Well Monitoring results as stated in Section 3.2 of the Summary Report indicate that the concentrations of iron and manganese in the Brand well were above secondary state and federal drinking water criteria. These parameters have regularly exceeded water quality criteria during previous sampling events, which is a reflection of natural occurrence of these minerals in groundwater. Iron and manganese concentrations in the Shriner well have fluctuated over the past few years, and were below the criteria in 2016.

3.2 Groundwater Quality Results

The analytical data for 2017 are summarized in Table A-5 (Appendix A). For the October 2017 monitoring event, the laboratory reports and chain-of-custody forms are provided in Appendix B, and field data are provided in Appendix C. The March 2017 laboratory and field data were presented in the semiannual groundwater monitoring report (Parametrix 2017b). 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.

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.

The data collected from the domestic wells indicate that the concentrations of iron and manganese in the Brand well were above secondary state and federal drinking water criteria. These parameters have regularly exceeded water quality criteria in both wells during previous sampling events, which is a reflection of natural occurrence of these minerals in groundwater. Iron and manganese concentrations in the Shriner well have fluctuated over the past few years, but were below the criteria in 2017.

For the Brand well, the time-series plots show upward trends in some parameters (including conductivity, chloride, sulfate, iron, and manganese) in the last several years. These trends are not attributed to the landfill, since similar increases have not been observed in the landfill monitoring wells.

Kootenai County Farm Landfill Leachate Report

A copy of the report to Idaho DEQ outlining the volume of leachate processed in 2017 and the methods used is attached in the electronic version of this report. The total of 7,844,700 gallons of leachate were processed in 2017.



KOOTENAI COUNTY

SOLID WASTE

February 22, 2018

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

Re: 2017 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 2017 season. The Department processed a total of 7,844,700 gallons of leachate.

This year we utilized the misting system for the majority of the leachate. Unfortunately, we found it necessary to haul over 2.2 million gallons of leachate to the Hayden Regional Wastewater facility for treatment.

Below is a breakdown of the methods and gallons used for processing leachate this year.

Misting	5,545,600 gallons
Hauled offsite	2,299,100 gallons
Total	7,844,700 gallons

We continue to consult with Steve Emge of the engineering firm, Parametrix, to review the results of our leachate and gas systems. Mr. Emge 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 "John Phillips".

John Phillips
Operations Manager

cc: Eric Ketner, PHD
Steve Emge, Parametrix;

Attachment "G"

Kootenai County Solid Waste Department

2017 Annual Leachate Report

Week of	Pond 1 Gallons	Pond 2 Gallons	Pond 3 Gallons	Pond 4 Gallons	Misting Evaporation (Gallons)	Leachate Hauled Offsite (Gallons)
7-Nov-16	-	-	2,106,000	-	-	-
14-Nov-16	-	-	2,176,000	-	-	-
21-Nov-16	-	-	2,400,000	-	-	-
28-Nov-16	-	-	2,583,000	-	-	-
5-Dec-16	-	-	2,779,000	-	-	-
12-Dec-16	-	-	2,921,000	-	-	-
19-Dec-16	-	-	3,049,000	-	-	-
26-Dec-16	-	-	3,159,000	-	-	-
2-Jan-17	-	-	3,234,000	-	-	-
9-Jan-17	-	-	3,290,000	-	-	-
16-Jan-17	-	-	3,366,000	-	-	-
23-Jan-17	-	-	3,539,000	-	-	-
30-Jan-17	-	-	3,755,000	-	-	-
6-Feb-17	-	-	3,997,000	-	-	-
13-Feb-17	-	372,000	4,058,000	-	-	-
20-Feb-17	34,700	1,263,000	4,203,000	-	-	-
27-Feb-17	316,000	1,263,000	4,224,000	-	-	-
6-Mar-17	748,000	1,287,000	4,266,000	-	-	-
13-Mar-17	1,009,000	1,295,000	4,128,000	409,000	-	-
20-Mar-17	1,001,000	1,295,000	4,079,000	1,379,000	-	90,000
27-Mar-17	1,001,000	1,063,000	4,203,000	1,653,000	-	612,800
3-Apr-17	1,001,000	609,000	4,203,000	1,745,000	-	500,000
10-Apr-17	1,030,000	64,000	4,224,000	2,082,000	-	-
17-Apr-17	1,113,100	773,400	4,244,700	1,838,600	-	-
24-Apr-17	1,120,100	1,246,600	4,244,700	1,653,000	-	270,000
1-May-17	854,200	1,230,800	4,244,700	1,815,000	-	283,700
8-May-17	551,800	1,183,900	4,223,700	1,992,700	-	255,600
15-May-17	300,700	1,183,900	4,219,600	2,156,900	-	287,000
22-May-17	164,200	1,215,100	4,244,600	2,429,200	-	-
29-May-17	574,300	765,700	4,186,300	2,442,500	49,600	-
5-Jun-17	788,300	1,027,700	4,144,800	2,032,000	156,800	-
12-Jun-17	846,700	1,113,600	3,988,700	2,032,000	99,200	-
19-Jun-17	877,900	1,151,600	3,988,700	2,032,000	241,400	-
26-Jun-17	879,200	1,153,100	3,827,000	1,995,100	377,200	-
3-Jul-17	885,500	1,160,800	3,640,500	1,862,300	420,900	-
10-Jul-17	885,500	1,145,400	3,358,400	1,721,700	304,100	-
17-Jul-17	860,400	1,122,600	3,066,900	1,630,400	647,300	-
24-Jul-17	841,800	1,107,600	2,778,600	1,389,500	265,700	-
31-Jul-17	829,500	1,092,600	2,839,000	1,143,800	581,600	-
7-Aug-17	805,100	1,077,700	2,814,100	672,400	237,000	-
14-Aug-17	793,000	1,062,900	2,849,700	483,000	84,800	-
21-Aug-17	781,100	1,062,900	2,831,900	483,000	392,500	-
28-Aug-17	775,100	1,062,900	2,501,300	483,000	260,100	-
4-Sep-17	757,400	686,000	2,690,800	483,000	370,700	-
11-Sep-17	745,700	290,600	2,782,200	483,000	353,800	-
18-Sep-17	741,100	-	2,778,600	483,000	271,400	-
25-Sep-17	763,300	-	3,022,900	-	220,600	-
2-Oct-17	757,400	-	2,864,000	-	210,900	-
9-Oct-17	757,400	-	2,708,300	-	-	-
16-Oct-17	759,800	-	2,864,000	-	-	-
23-Oct-17	799,100	-	3,030,200	-	-	-
30-Oct-17	800,300	-	3,133,200	-	-	-
Evaporated with Misting System (Gallons)						5,545,600
Leachate Hauled Offsite						2,299,100
Grand Total Gallons of Leachate Processed						7,844,700

Kootenai County Farm Surface Water

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.

Plans & Specifications

No construction projects or plans were completed in 2017 that require submittal as part of current permits.