

2018

Hastings Recycling Report



Greg & Willie Tennis

Tennis Sanitation

1/31/2019

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TENNIS RECYCLING



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TENNIS RECYCLING



January 31st, 2019

City of Hastings
101 4th St East
Hastings, MN 55033

RE: LETTER OF PURPOSE

Dear City of Hastings Recycling Coordinator,

This 2018 Year-end recycling report has been prepared for the City of Hastings.

The report contains summaries of recycling data for single family dwellings, composite study information, environmental impact report, a market report of recycling markets along with a final summary of the report.

The data in this report will assist us in developing a better understanding of the past, present and future progress of the City of Hastings recycling program.

Our goal is to develop future strategies to enhance the recycling programs already in place.

Sincerely,

Greg & Willie Tennis

Greg and Willie Tennis
Tennis Sanitation



RECYCLING DATA SUMMARY

In this report we have compiled annual data from single family dwellings. This data includes:

- Net tonnage of all residential dwellings combined
- Break-out of single family tonnage
- Break-out of single family recycling materials by type and weight

The data is compiled from recyclable materials collected from our drivers on designated Hastings routes. Loads are weighed; weights are then compiled over a month's period of time. Weights are broken out based on a composite ratio of the entire load.

RECYCLING DATA SUMMARY

2018 RECYCLE TONNAGE DATA	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL TONS	
MONTHLY DATA/RT	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	TYPE
Single Family RECYCLED MATERIALS	Percentage Break-out												TONS	Description
Cardboard:	39.64	31.40	37.85	38.81	48.29	42.35	42.80	44.12	38.26	42.78	43.87	40.83	491.00	TONS
Paper:	66.02	52.30	63.04	64.64	80.42	70.52	71.28	73.48	63.72	71.24	73.06	67.99	817.71	TONS
Scrap Metal:	2.65	2.10	2.53	2.60	3.23	2.83	2.86	2.95	2.56	2.86	2.94	2.73	32.84	TONS
Large Plastic:	0.78	0.62	0.75	0.76	0.95	0.83	0.84	0.87	0.75	0.84	0.86	0.80	9.65	TONS
Z-Bale Plastic:	3.75	2.97	3.58	3.67	4.56	4.00	4.04	4.17	3.62	4.04	4.15	3.86	46.41	TONS
PET Plastic:	5.31	4.20	5.07	5.20	6.46	5.67	5.73	5.91	5.12	5.73	5.87	5.47	65.74	TONS
Tin:	2.34	1.85	2.24	2.29	2.85	2.50	2.53	2.61	2.26	2.53	2.59	2.41	29.00	TONS
NiHot Glass	28.09	22.25	26.83	27.51	34.22	30.01	30.33	31.27	27.12	30.32	31.09	28.93	347.97	TONS
Aluminum:	2.50	1.98	2.38	2.44	3.04	2.67	2.70	2.78	2.41	2.69	2.76	2.57	30.92	TONS
Linens	2.40	1.24	1.49	2.01	1.90	1.67	1.84	1.74	1.51	1.92	1.73	1.61	21.06	TONS
Milk Cartons:	0.47	0.37	0.45	0.46	0.57	0.50	0.51	0.52	0.45	0.51	0.52	0.48	5.81	TONS
TOTAL TONS	153.95	121.28	146.21	150.39	186.49	163.55	165.46	170.42	147.78	165.46	169.44	157.68	1898.11	TONS
# of HOMES ON ROUTE	5,704	5,704	5,704	5,704	5,704	5,704	5,704	5,704	5,704	5,704	5,704	5,704		
AVERAGE LBS / HOME / MONTH	53.98	42.52	51.27	52.73	65.39	57.35	58.02	59.75	51.82	58.02	59.41	55.29	55.46	Avg Lbs./Unit
LINENS	1,170	88	461	366	625	261	175	-	609	101	94	614	4,564	LBS
% of residuals	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%		
Residuals (Tons)	1.34	1.06	1.28	1.32	1.64	1.44	1.45	1.50	1.30	1.45	1.49	1.38	16.64	Tons



RECYCLING DATA (SINGLE FAMILY)

The Single Family Data in was compiled from the single family homes collected on each route. From this data – we are able to illustrate the weight per home (in lbs.) per month.

In analyzing the single family data, we are able to provide the following observations:

- **2018 Average lbs. per household per month = 55.46 lbs. per month**
 - 2017 Average lbs. per household per month = 56.32 lbs. per month
 - 2016 Average lbs. per household per month = 57.43 lbs. per month
 - 2015 Average lbs. per household per month = 64.42 lbs. per month
 - 2014 Average lbs. per household per month = 55.47 lbs. per month
 - 2013 Average lbs. per household per month = 52.41 lbs. per month.
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- **2018 Annual Net total tons collected for single family were 1,898.11**
 - 2017 Annual Net total tons collected for single family were 1,927.43
 - 2016 Annual Net total tons collected for single family were 1,965.37
 - 2015 Annual Net total tons collected for single family were 2,204.62
 - 2014 Annual Net total tons collected for single family were 1,898.44
 - 2013 Annual Net total tons collected for single family were 1,793.61



LINENS SUMMARY – We started a new partnership with Simple Recycling for our Linen recycling as of March 2017. We have seen a decrease on linen weights this year after the 2017 roll out of the new partnership, but still significantly higher than the last few years.

Linens for the year 2018 totaled 4,564 pounds

2017 totaled	10,533 pounds
2016 totaled	347 pounds
2015 totaled	3,096 pounds
2014 totaled	5,425 pounds
2013 totaled	4,279 pounds



Regarding the composite study, we kept all loads from the entire week's worth of material and processed only Hastings's material through our MRF on Saturday. The sorting floor was cleared and the three was sorted into the categories, as listed below. All of the categories were then weighed and documented. The results of the composite study were then entered back into the monthly report.

Why do a composite study?

Having a good understanding of the recycling composition provides us with data that may assist us in adjusting it to fit the needs of the Residents of Hastings. With on-going changes in the economy, cultural and even changes in the home we can develop more available markets, increase processing technologies to handle more items and enhance educational materials to instruct residents on proper recycling procedures.

Tennis Sanitation, L.L.C.

651-459-1887

"Recycling is Everyone's Future"

RE: COMPOSITE BREAK-OUT PERCENTAGE

Tennis Sanitation is pleased to provide the following composite sample break-out detailing the percentage ratios of each type of recycling category.

TYPE	RATIO %	DESCRIPTION
Cardboard:	25.40%	Includes all cardboard boxes
Paper:	42.30%	Includes cardboard, paper, newspaper and junk mail
Scrap Metal:	1.70%	Metal pans and misc metal
Large Plastic:	0.50%	Toys, patio furniture and large containers
Z-Bale Plastic:	2.40%	Food and beverage containers
PET Plastic:	3.40%	Food and beverage containers
Tin:	1.50%	Includes all bi-metal and tin cans
NiHot Glass:	18.00%	Includes all clear, brown and green colors
Aluminum:	1.60%	Includes all aluminum cans
Linens	1.00%	Reusable clothing and shoes
Milk Cartons:	0.30%	Beverage cartons
Residuals (Trash):	1.90%	Includes all residuals and trash
	100.00%	Net total recycling for the month

The above percentage break-out of recycling material was based on the annual materials analysis for the facilities recycling stream as a whole.

Sincerely,

Willie Tennis

Willie Tennis

Tennis Sanitation

ENVIRONMENTAL IMPACT ANALYSIS

Using the detailed recycling data from this report, we are able to provide the City of Hastings with some unique ways that the residents recycling efforts have made a difference. Over the years, recycling markets have been able to recycle more and more items out of the waste stream. They have also been able to determine what resources are saved by recycling various materials.

In this report we were able to convert the types of recycling materials into resources saved.

ENVIRONMENTAL IMPACT ANALYSIS

CITY OF HASTINGS RECYCLING 2018

Recycling Type	MW total Tons	Resource Units	Calc/ Resource	Total Resources Saved	Type
Paper	1,315	tons	Trees	1 ton = 17 Trees	22,347 trees
Paper	1,315	tons	Electricity	1 ton = 601 Kw Hours	790,027 Kw hours of electricity
Paper	1,315	tons	Oil	1 ton = 1.7 barrels of oil	2,235 barrels of oil
Aluminum	31	tons	Ore	1 ton = 4 tons of ore	124 tons of ore
Aluminum	31	tons	Electricity	1 ton = 14,000 Kw Hours	432,880 Kw hours of electricity
Aluminum	31	tons	Oil	1 ton = 40 barrels of oil	1,237 barrels of oil
Tin/bi-metal	62	tons	Ore	1 ton = 1.49 tons of ore	92 tons of ore
Tin/bi-metal	62	tons	Electricity	1 ton = 642 Kw Hours	39,701 Kw hours of electricity
Tin/bi-metal	62	tons	Oil	1 ton = 1.8 barrels of oil	111 barrels of oil
Plastics	122	tons	Oil	1 ton = 6.3 barrels of oil	767 barrels of oil
Plastics	122	tons	Electricity	1 ton = 5,774 Kw Hours	487 Kw hours of electricity
Plastics	122	tons	Natural Gas	1 ton = 98,000,000 btu's	11,936,400,000 BTU's of fuel
Glass	348	tons	Sand	1 ton = 1,330 tons of sand	462,800 tons of sand
Glass	348	tons	Electricity	1 ton = 42 Kw Hours	14,615 Kw hours of electricity
Glass	348	tons	Oil	1 ton = .12 gallons of oil	42 barrels of oil
Glass	348	tons	Natural Gas	1 ton = 714,000 btu's	248,450,580 BTU's of fuel

Environmental Impact Summary

Resources	Amounts	Units Saved
Trees saved	22,347	Trees saved



Electricity saved	1,277,710	Kw Hours saved
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Oil saved	4,392	Barrels of oil saved
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Natural Gas saved	12,184,850,580	BTU's of natural gas saved
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**Disclaimer: The above numbers represent conversions from industrial and recycling markets. These numbers are ESTIMATED resources saved. All calculations are taken from annual total tons from Hastings Final Recycling Report.

MARKET REPORT

2018 continued with steady markets for metal and plastic commodities. The market for cardboard and paper continued to fluctuate with a plateau this autumn on the low end. The market has been driven by the new recycling regulations for export to China; luckily we have had no issues with getting our material to end market recyclers as we only use domestic vendors.

The glass market is somewhat limited because there is only one processor available to sort glass. Their newest technology sorts broken glass using computerized optical sorters and a complex but innovative blower system. 90% of the broken glass is now being processed into post-consumer food and beverage containers.

The outlook for 2019

Future markets continue to look weak with little to no change with China's regulations and how they influence the pricing for the recycling around the world. However we do foresee slight inclines on some of the commodities this coming year.



SUMMARY OF YEAR-END RECYCLING REPORT

The 2018 Hastings Year-end Recycling Report provides up-to-date information from the City's recycling activities over the past year. Each section of this report reflects the various ways data was collected, entered and calculated to contribute in meeting our combined goals.

In the report we have illustrated more detailed composition of recyclables and itemized volumes of recyclables from single family dwellings as they relate to each break-out of each separate commodity and added comparison data from the last two years. We also provide information on how the City's recycling efforts will impact our environment.

Together with the support of The City of Hastings we will maintain an aggressive recycling program within the Hastings community.

