

**CROW WING COUNTY
LAND SERVICES
2018 RECYCLING REPORT**

May 1, 2019
Douglas R. Morris
Crow Wing County Solid Waste Coordinator

**2018 RECYCLING REPORT
CROW WING COUNTY**

Notification List

Landfill Operator

Marvin Stroschein
Crow Wing County MMSW Landfill
15732 Hwy. 210
Brainerd, Minnesota 56401

SCORE Fund Recipients

Curbside Collection Programs

Bradley Chapulis, Administrator
City of Baxter
P.O. Box 2626
Baxter, MN 56425

Cassandra Torstenson, Administrator
City of Brainerd
501 Laurel Street
Brainerd, MN 56401

Patrick Wussow, Administrator
City of Breezy Point
8319 County Rd. 11
Breezy Point, MN 56472

Nancy Malecha, Administrator/Clerk
City of Pequot Lakes
4638 County Rd 11
Pequot Lakes, MN 56472

Melissa Knutson, Clerk/Treasurer
City of Ironton
P.O. Box 97
Ironton, MN 56455

Drop Off Programs

Carol Pundt, Clerk
Bay Lake Township
13861 County Rd 10
Deerwood, MN 56444

Lisa Sova, Clerk/Treasurer
City of Crosby
City Hall, 2 2nd St SW
Crosby, MN 56441

Coralea Bordon, Clerk
Center Township
13110 Borden Road
Merrifield, MN 56465

Char Nelson, Clerk
City of Crosslake
37028 County Rd. 66
Crosslake, MN 56442

Cari Johnson, Clerk/Treasurer
City of Emily
P.O. Box 68
Emily, MN 56447

Kristi Risnes, Clerk/Treasurer
City of Garrison
P.O. Box 239
Garrison, MN 56450

Notification List

Jon Plein, Clerk/Treasurer
Ideal Township
35458 Butternut Point Road
Pequot Lakes, MN 56472

Anna Anderson, Clerk
Mission Township
PO Box 126
Merrifield, MN 56465

Duane Ruona, Clerk
South West Townships
10069 South Oaks Road
Brainerd, MN 56401

Dewayne Collins
Merrifield Lions
16927 N Riverside Dr.
Brainerd, MN 56401

Jenny Max, Clerk/Treasurer
City of Nisswa
P.O. Box 410
Nisswa, MN 56468

Area Solid Waste Haulers

Dean Eggen
Crosslake Demolition
13116 Fawn Lake Rd.
Brainerd, MN 56401

Chad Genz
Emily Rolloff & Recycling
P.O. Box 367
Emily, MN 56447

Heather Schmit
Hengel Ready Mix & Const, Inc
12883 Upper Sylvan Road SW
Pillager, MN 56473

Bob Lemieur
Rolloff, Refuse & Recycling
14827 Pine Av
Little Falls, MN 56345

Jason Kitzman
Nisswa Rolloff Service
26526 State Hwy 371
Nisswa, MN 56468

Robert Saccoman
Pequot Lakes Sanitation
P.O. Box 639
Pequot Lakes, MN 56472

Leigh Reiner
Crosslake Rolloff & Recycling
P.O. Box 695
Crosslake, MN 56442

Paul Fischer/David McArther
Garrison Disposal/Nisswa Sanitation
P.O. Box 308
Aitkin, MN 56431

Brian Scheinost
Mille Lacs Band of Ojibwe
43408 Oodena Drive
Onamia, MN 56359

Tina Chisholm
North County Sanitation & Rolloff Service
P.O. Box 470
Pequot Lakes, MN 56472

Jim Wynn/Alan Woods
Range Disposal
P.O. Box 535
Deerwood, MN 56444

Notification List

Abby Schuft
Waste Management
7968 Industrial Park Road S.
Baxter, MN 56425

Eric Loge
Waste Partners Environmental Services
P.O. Box 677
Pine River, MN 56474

Area Recycling Centers

Grant Vanwyngaeren
Crow Wing Recycling
714 Industrial Park Rd. SW
Brainerd, MN 56401

OTHERS

Ben Crowell (SCORE)
Environmental Specialist 2
Southwest Region – Marshall Office
Minnesota Pollution Control Agency
504 Fairground Rd, Suite 200
Marshall, MN 56258

Dan Vleck (Site Engineer)

Minnesota Pollution Control Agency
7678 College Road South, Suite 105
Baxter, Minnesota 56425

Lee Field (Site Compliance Inspector)
Minnesota Pollution Control Agency
7678 College Road South, Suite 105
Baxter, Minnesota 56425

Douglas Morris
Solid Waste Coordinator
15728 State Highway 210
Brainerd, MN 56401-5724

Gary Griffin
Crow Wing County Land Services Director

Ryan Simonson
Crow Wing County Land Services Supervisor

Terry Neff
Aitkin County Environmental Services
209 2nd St. NW
Aitkin, MN 56431

Solid Waste Management
Cass County Environmental Services
PO Box 3000
Walker, MN 56484

Chuck Parins
Morrison County Solid Waste Office
213 SE 1st Av.
Little Falls, MN 56345

Brian Scheinost
Mille Lacs Band of Ojibwe
43408 Oodena Drive
Onamia, MN 56359

Michele McPherson
Mille Lacs County Solid Waste Office
635 2nd Street SE
Milaca, MN 56353

Brainerd Lakes Area Chamber of Commerce
Attn.: Matt Kilian
124 North 6th Street
Brainerd, MN 56401

Notification List

Jennifer Stockinger
Staff Writer
Brainerd Dispatch
P.O. Box 974
Brainerd, MN 56401

C-I Courier
P.O. Box 76
Crosby, MN 56441

Echo
P.O. Box 974
Brainerd, MN 56401

County Commissioners &
County Administrator

Fred Doran, P.E.
Burns & McDonnell
8201 Norman Center Drive, Suite 300
Bloomington, MN 55437

2018 RECYCLING REPORT CROW WING COUNTY

LETTER OF TRANSMITTAL NOTIFICATION LIST

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
EXECUTIVE SUMMARY-----	1
TABLE Recycling Program Overview	
Crow Wing County Integrated Solid Waste Management Facts and Figures-----	3
SECTION 1.0 INTRODUCTION-----	5
1.1 Purpose and Scope-----	6
1.2 Program Background -----	7
1.3 Recycling Program Overview-----	10
1.4 Summation-----	14
TABLE 1.1 Residential Recycling Program Overview	
TABLE 1.2 MMSW Landfill Waste Receipts	
SECTION 2.0 SCORE/COUNTY FUNDED RESIDENTIAL RECYCLING PROGRAM	16
2.1 Introduction-----	16
2.2 Background-----	16
2.3 Curbside Recycling Program-----	18
2.3.1 Baxter Program-----	19
2.3.2 Brainerd Program-----	20
2.3.3 Crosby-Ironton-Deerwood Program (CLOSED) -----	20
2.3.4 Breezy Point Program-----	21
2.3.5 Pequot Lakes Program-----	21
2.3.6 Ironton Program-----	22
2.3.7 Curbside Program Summary-----	22
2.4 Drop-off Program-----	22
2.4.1 Bay Lake Township Program-----	23
2.4.2 Center Township Program-----	23
2.4.3 Crosslake Program-----	23
2.4.4 Crosby (formally the C-I-D Program) -----	24
2.4.5 Emily Program-----	24
2.4.6 Fifty Lakes Program (CLOSED) -----	25
2.4.7 Garrison Program-----	25
2.4.8 Ideal Township Program-----	25
2.4.9 Maple Grove Township Program (CLOSED) -----	26
2.4.10 Merrifield Program-----	26
2.4.11 Mission Township Program-----	26
2.4.12 Nisswa Program-----	26
2.4.13 Roosevelt Township Program (CLOSED) -----	27
2.4.14 South Long Lake Program (CLOSED) -----	27

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
2.4.15 County Solid Waste Disposal Site-----	27
2.4.16 South West Townships Program-----	28
2.4.17 Drop-off Program Summation-----	28
2.5 Overall Residential Recycling Program Summary-----	29
TABLE 2.1 SCORE Funded Recycling Program Summary	
APPENDIX 2-A 2018 SCORE REPORT	
APPENDIX 2-B 2018 ANNUAL RECYCLING REPORT (RESIDENTIAL)	
 SECTION 3.0 COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL (CII)	
RECYCLING-----	32
3.1 Introduction-----	32
3.2 Survey for CII Recycling Effort-----	32
3.3 Large CII Recycling Efforts-----	32
3.4 Event Recycling-----	33
3.5 Overview of Entire CII Program-----	33
3.6 Summation-----	34
APPENDIX 3-A 2018 SURVEY FORM	
APPENDIX 3-B 2018 ANNUAL RECYCLING REPORT (CII)	
 SECTION 4.0 OTHER SOLID WASTE/NON-LANDFILL PROGRAMS-----	35
4.1 Introduction -----	35
4.2 Background -----	35
4.3 Yard Waste-----	36
4.3.1 Christmas Tree Recycling Program-----	39
4.3.2 Brush-----	39
4.4 Hazardous Waste -----	40
4.4.1 HHW Program-----	40
4.4.2 Waste Pesticides-----	43
4.4.3 VSQG-----	45
4.4.4 Mercury Waste-----	46
4.4.5 Pharmaceutical Waste-----	47
4.4.6 Summation-----	47
4.5 Problem Materials-----	48
4.5.1 Waste Tires-----	48
4.5.2 White Goods (Household Appliances) -----	50
4.5.3 Used Oil & Used Oil Filters-----	51
4.5.4 Vehicle Batteries-----	54
4.5.4.1 Rechargeable Batteries-----	54
4.5.5 Fluorescent & HID Lamps-----	55
4.5.6 Electronic (Brown goods/e-waste) -----	56
4.6 Source Reduction-----	59
4.6.1 Lakeland Mold Sand Core Disposal-----	60
4.6.2 Bike Program-----	60
4.7 Mattress Recycling-----	61
4.8 Education -----	62
4.8.1 Coupon-----	64
4.9 Litter/Illegal Dumping-----	65

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
4.10 Demolition -----	69
4.10.1 Chromated Copper Arsenate (CCA) Treated Wood-----	70
TABLE 4.1 CWC Hazardous Waste Program	
TABLE 4.2 Used Oil Program	
TABLE 4.3 Coupon Receipts	
TABLE 4.4 Demolition Generation Table	
APPENDIX 4-A 2018 ANNUAL RECYCLING REPORT	
SECTION 5.0 CONCLUSIONS AND RECOMMENDATIONS -----	71

EXECUTIVE SUMMARY:

This Report is intended to provide an updated overview of the solid waste/non-landfill related activities as outlined in the County Solid Waste Management Plan (November 2013). In addition, this Report presents data concerning the overall waste generation, recycling activities within the County, and data on the other solid waste/non-landfill related programs.

There are two significant benefits for a County to accomplish a County Solid Waste Management Plan, and have it approved by the State. First, it allows a county to receive SCORE grant funds which support the recycling efforts of our local residents. Second, and most important for the County Landfill, it determines a county's Certificate of Need (CON). In Minnesota, municipal solid waste (MSW) cannot be placed into a landfill until CON is obtained, which is written into the 10-year permit. A county CON is based upon the Goal Volume Table that is part of this Plan. This Table assumes at least a 35 percent recycling rate. If a county recycling rate is less than this, it runs the risk of running out of landfill space before their next 10-year permit. As a result, it could be forced to ship their waste out-of-county.

MWS/DEMOLITION GENERATION

The County experienced its ninth year of MSW waste generation growth versus a previous four years (2006 - 2009) that showed an overall decrease of 24%. The tonnage in 2018 was 51,623, or an increase of 3.2 percent over last year. Sanitary waste tonnage peaked in 2005 at 51,855 tons. Overall, the County is still below the level of tonnage received in 2005. When the industrial waste streams are removed, the County experienced an overall increase of 0.9 percent in the residential waste generated within the County for 2018.

The County experienced an overall countywide decrease in the demolition waste generation. Two of the four area's demolition landfills in the lake area experienced an increase growth in their total volume in 2018. Demolition waste also peaked in 2005 at 134,454 cubic yards; for 2018 the total volume was 64,157 cubic yards (a 13.8 percent decrease in volume from 2017). Overall, the County is at the same level of cubic yards received in 1998/1999 (40,691/90,005 cu. yd.). In 2018, the County Demolition Landfill cubic yardage was 8,072 or a decrease of 19 percent over last year.

RECYCLING

The County has a well-developed residential recycling program. In addition, some local haulers have a recycling program to offer both their residential and commercial customers. Many of the larger businesses also have recycling/waste reduction programs in place. The Table on the following page shows a summation of the recycling programs within the County. The amount of recovered materials met the overall State recycling goal of 35 percent.

COUNTY/SCORE FUNDED – Residential Recycling

The County/SCORE funded recycling programs showed a 6% increase in tonnage.

As outlined below, since the beginning the commercial recycling program is important aspect for the County to meet the State recycling goal of 35 percent.

COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (CII) RECYCLING

Commercial and industrial activities have always represented the largest portion of the ongoing recycling efforts within the County. In 2018, commercial/industrial documented recycling was 30,756 tons. Of that total, 16,031 tons were recycled using out-of-county recycling infrastructure. Commercial and industrial recycling accounts for 83.3 percent of all materials collected this year in the County. This is near the statewide average of 75 percent for CII recycling.

In 2008, two area businesses that historically accounted for 50 percent of recycling efforts closed. Prior to this, CII recycling accounted for 90 percent of the total recycling effort within the County – with the majority of this being self-marketed by the individual business.

PROBLEM MATERIALS (Yard Waste, Waste Tires, White Goods - household appliances, Vehicle Batteries, Used Oil & Used Oil Filters, Used Electronics, and Fluorescent & HID Lamps)

The County's integrated solid waste management program addresses problem materials, and prohibition of these materials into the County Landfills. The problem material challenge consists of two main components: items that reach the end of their useful life and need to be disposed of, and those items that are in stockpiles and/or storage. In many cases, the County's problem material program's complement existing retailer programs to ensure in-depth coverage. The goal is maximum recovery, and to encourage residential participation; convenient times, location, and ease of disposal are key features of the County's program. It is felt that these programs are and will continue to be successful. This accounts for 6.3 percent of all materials collected this year in the County.

HOUSEHOLD HAZARDOUS WASTE (HHW) and other hazardous waste programs

Programs that deal with hazardous waste provide a direct benefit to the County by offering proper disposal actions for these items to the residents/businesses of the County. Since 1990, over 1,037.6 tons of hazardous waste/materials were brought in through these County/State programs that would not have been otherwise. This action has greatly reduced the risk of illegal dumping, or disposal into the County Landfill. If placed in the Landfill, this quantity of chemicals would have had a profound effect on the leachate quality. If disposed of inappropriately elsewhere, these chemicals could have contaminated land, ground water or surface water, and air quality. Removal of this material from the general MSW waste stream has also minimized the health risk to waste haulers and Landfill operators staff. It is felt that these programs are and will continue to be successful.

RECYCLING PROGRAM

Year	Total MSW Tons Generated*	Total MSW Tons into Landfill*	Tons Collected for Recycling*	Residential Tons Recycled SCORE Funded	Overall Cost Residential	County*** Cost per Ton Residential	% of Recycling Effort	Residential Tons Recycled No SCORE Funding	% of Recycling Effort	C/I/I Tons Recycled In County Assets
1991	39,666	29,756	4,464	255	\$99,021	\$388.21	5.7%	0	0.0%	Unk
1992	40,706	29,886	7,230	535	\$123,250	\$230.51	7.4%	0	0.0%	Unk
1993	44,873	30,849	10,965	777	\$148,971	\$191.81	7.1%	0	0.0%	Unk
1994	47,713	34,647	14,314	1,021	\$165,460	\$162.11	7.1%	0	0.0%	Unk
1995	50,471	34,800	12,572	1,306	\$156,149	\$119.54	10.4%	0	0.0%	10,536
1996	51,470	32,537	17,148	1,044	\$170,715	\$163.46	6.1%	0	0.0%	4,785
1997	55,850	33,794	20,569	1,173	\$160,855	\$137.11	5.7%	0	0.0%	3,448
1998	68,767	34,610	32,478	1,302	\$167,705	\$128.78	4.0%	6	0.0%	4,328
1999	70,822	34,434	34,769	1,560	\$167,905	\$107.62	4.5%	26	0.1%	3,921
2000	73,185	36,345	35,118	1,798	\$171,005	\$95.09	5.1%	25	0.1%	3,798
2001	75,581	41,236	32,689	1,914	\$178,605	\$93.30	5.9%	56	0.2%	5,257
2002	76,803	41,917	33,187	2,005	\$188,772	\$94.15	6.0%	72	0.2%	4,411
2003	77,802	42,241	33,973	2,164	\$199,760	\$92.33	6.4%	180	0.5%	3,818
2004	84,234	41,981	40,599	2,721	\$205,043	\$75.35	6.7%	163	0.4%	4,661
2005	90,894	43,128	46,022	2,934	\$222,474	\$75.84	6.4%	197	0.4%	5,093
2006	90,190	40,478	48,058	3,142	\$234,424	\$74.61	6.5%	224	0.5%	6,261
2007	89,993	39,625	48,747	3,650	\$242,056	\$66.31	7.5%	265	0.5%	11,220
2008	78,119	37,025	39,519	4,066	\$261,204	\$64.24	10.3%	362	0.9%	17,335
2009	64,903	35,545	27,767	4,696	\$312,027	\$66.44	16.9%	431	1.6%	9,247
2010	65,544	35,558	28,349	4,781	\$333,850	\$69.83	16.9%	444	1.6%	10,274
2011	66,934	35,933	29,367	4,679	\$334,758	\$71.54	15.9%	471	1.6%	10,879
2012	70,439	36,563	32,272	4,523	\$351,801	\$77.79	14.0%	439	1.4%	10,823
2013	73,198	38,286	33,212	4,483	\$359,432	\$80.18	13.5%	457	1.4%	15,847
2014	91,016	40,508	48,808	4,871	\$295,662	\$60.70	10.0%	449	0.9%	17,822
2015	91,714	42,661	47,353	4,583	\$349,499	\$76.26	9.7%	305	0.6%	18,672
2016	95,938	45,359	48,879	4,464	\$378,003	\$84.68	9.1%	268	0.5%	18,305
2017	113,836	46,776	65,360	3,435	\$351,237	\$102.24	5.3%	172	0.3%	15,060
2018	85,976	47,217	37,059	3,825	\$314,534	\$82.23	10.3%	154	0.4%	14,725

Used data obtained from the annual MPCA SCORE Reports

Used data obtained from local haulers/scrap yards

* This is only the cost to the County, and does not include any additional funding by the individual programs or the haulers

** The 2012 Legislative Session Omnibus Environmental Bill eliminated these two credits

OVERVIEW

% of Recycling Effort	C/I/I Tons Recycled Self Marketed	% of Recycling Effort	C/I/I % Total	Problem/Ban Materials Tons*	% of Recycling Effort	Recycling Rate*	State Goal	Source Reduction Credit*	Yard Waste Credit*	Recycling Rate with Credits
Unk	Unk	Unk	Unk	Unk	Unk	11.0%	35.0%	0.0%	0.0%	11.0%
Unk	Unk	Unk	Unk	Unk	Unk	18.0%	35.0%	0.0%	0.0%	18.0%
Unk	Unk	Unk	Unk	Unk	Unk	24.0%	35.0%	0.0%	0.0%	24.0%
Unk	Unk	Unk	Unk	Unk	Unk	30.0%	35.0%	0.0%	0.0%	30.0%
83.8%	Unk	Unk	83.8%	730	5.8%	25.0%	35.0%	0.0%	5.0%	30.0%
27.9%	10,446	60.9%	88.8%	873	5.1%	33.0%	35.0%	3.0%	5.0%	41.0%
16.8%	14,441	70.2%	87.0%	1,507	7.3%	36.8%	35.0%	5.7%	5.0%	47.5%
13.3%	25,324	78.0%	91.3%	1,518	4.7%	47.2%	35.0%	6.0%	3.0%	56.2%
11.3%	28,036	80.6%	91.9%	1,226	3.5%	49.1%	35.0%	6.5%	5.0%	60.6%
10.8%	28,487	81.1%	91.9%	1,009	2.9%	48.0%	35.0%	8.0%	5.0%	61.0%
16.1%	24,154	73.9%	90.0%	1,308	4.0%	43.3%	35.0%	9.0%	5.0%	57.3%
13.3%	25,467	76.7%	90.0%	1,232	3.7%	43.2%	35.0%	6.7%	5.0%	54.9%
11.2%	26,186	77.1%	88.3%	1,625	4.8%	43.7%	35.0%	6.0%	5.0%	54.7%
11.5%	31,429	77.4%	88.9%	1,625	4.0%	48.2%	35.0%	6.0%	5.0%	59.2%
11.1%	36,635	79.6%	90.7%	1,164	2.5%	50.6%	35.0%	6.5%	5.0%	62.1%
13.0%	36,943	76.9%	89.9%	1,488	3.1%	53.3%	35.0%	6.9%	5.0%	65.2%
23.0%	32,253	66.2%	89.2%	1,359	2.8%	54.6%	35.0%	7.0%	5.0%	66.6%
43.9%	16,232	41.1%	84.9%	1,524	3.9%	50.6%	35.0%	7.9%	5.0%	63.5%
33.3%	11,963	43.1%	76.4%	1,430	5.1%	42.8%	35.0%	8.0%	5.0%	55.8%
36.2%	11,153	39.3%	75.6%	1,697	6.0%	43.3%	35.0%	8.0%	5.0%	56.3%
37.0%	11,841	40.3%	77.4%	1,497	5.1%	43.9%	35.0%	8.0%	5.0%	56.9%
33.5%	14,956	46.3%	79.9%	1,531	4.7%	45.8%	35.0%	N/A****	N/A****	45.8%
47.7%	10,983	33.1%	80.8%	1,442	4.3%	45.4%	35.0%	N/A****	N/A****	45.4%
36.5%	23,778	48.7%	85.2%	1,888	3.9%	53.6%	35.0%	N/A****	N/A****	53.6%
39.4%	22,098	46.7%	86.1%	1,695	3.6%	51.6%	35.0%	N/A****	N/A****	51.6%
37.4%	24,053	49.2%	86.7%	1,789	3.7%	50.9%	35.0%	N/A****	N/A****	50.9%
23.0%	44,580	68.2%	91.2%	2,114	3.2%	57.4%	35.0%	N/A****	N/A****	57.4%
39.7%	16,031	43.3%	83.0%	2,324	6.3%	43.1%	35.0%	N/A****	N/A****	43.1%

CROW WING COUNTY INTEGRATED SOLID WASTE MANAGEMENT FACTS AND FIGURES

Construction and Demolition (C&D) Debris Landfill (SW-440) (4 private sites plus our site service our County residents);

- From 1990 – 2018; 2,022,260 cubic yards have been managed, the County site has managed 24% of this waste stream.
- This waste stream peaked in 2005 at 134,454 cubic yards

Used oil/filter and antifreeze collection facility (11 located throughout the County);

- From 2002 – 2018; 534,915 gallons of used oil or 13% generated within the County, 22,207 gallons of antifreeze, and 1,074 55-gallon barrels of oil filters were collected.

Lead-acid battery collection container;

- From 1998 – 2018; 13,533 ea. or 3.23% generated within the County

Recycling drop-off centers and curbside programs (12 drop offs and 5 curbside programs located throughout the County);

- From 1991 – 2018; 77,179 tons were collected for recycling through this program for a cost of \$85.60 per ton

Used residential electronics collection area;

- From 2004 – 2018; 89,743 ea. or 2,084 tons

Mattress collection area;

- From 2006 – 2018; 40,301 ea. or 1,175 tons for recycling, 53% are now being recycled
- Saved 5,821 cubic yard of air space in the landfill, replaced with 4,043 tons of garbage

Household appliance and scrap metal collection area;

- From 1992 – 2018; 96,522 ea. or 62% of the appliances generated within the County.
- From 1996 – 2018, 8,072 tons of scrap metal was shipped

Brush disposal area;

- 2008 – 2018; 273,834 cubic yards

Pesticides partnership with Department of Agriculture;

- From 1997 – 2018; 48,204 pounds were managed
- Dept. of Ag pays for disposal; cost saving of \$48,204 to the County

Used tire collection area;

- 1994 – 2018; 189,949 ea. or 12.3% of those generated within the County
- 1996 – 2018; 2,912 tons of tires
- Since 1997, waste tire shreds have been used in the Landfill's leachate recirculation program, replacing recirculation lateral aggregate.

Yard waste composting operation;

- 1994 – 2018; 272,678 cubic yards managed at the site.
- Yard waste composting on the Landfill crown is an innovative approach to augment the nitrification-denitrification process in the leachate treatment at the Site.
- Once the compost is mature, it is used as a topsoil supplement on Landfill construction projects (e.g., final cover), and erosion control on intermediate slopes. This product has been very beneficial since the site is extremely topsoil poor.

Household Hazardous Waste facility with product exchange; and a

- 1994 – 2018; 797 tons of materials managed or 1,028; 55-gallon drums of oil based paint, 1,276; 55-gallon drums of latex paint, 213; 55-gallon drums of flammable material, and 31.6 tons of lab pack material.
- Product Exchange gave away an additional 177.8 tons of material. A cost saving of \$129,846 in cost avoidance of shipping this material. Overall 18% of material coming is managed through this program. In 2018, 17% through this program.

Pharmaceutical Program (partnership with Sheriff's Office, Community Services and local police Departments - 5 drop off sites located throughout the County)

- 2012 – 2018; 11,560 pounds were managed

SECTION 1.0 INTRODUCTION

Minnesota's statewide recycling efforts began in earnest in 1989, when the Legislature adopted comprehensive legislation based on the recommendation of the Governor's Select Committee on Recycling and the Environmental (SCORE). This set of laws, commonly referred to as SCORE, initiated a "stable" source of State funding for programs for recycling, as well as waste reduction and the improved management of household hazardous wastes and problem materials. SCORE related programs are a key element of the integrated solid waste management program initiated and managed by Crow Wing County (the County) through its Solid Waste Office within Land Services.

The County's efforts on developing a solid waste system goes back over 44 years to the permitting of the County's old unlined Landfill (SW-111) that started operations on June 17, 1974. Prior to this, many of the communities within the County had their own local dump. The development of the County's integrated municipal solid waste management system goes back over 27 years to 1991 when many of the areas recycling programs were initiated and a new lined Landfill (SW-376) was constructed.

Many elements of the integrated solid waste system are located at the County's 564-acre Solid Waste Disposal Site (Site) complex located six (6) miles east of Brainerd on State Highway 210 in Oak Lawn Township. Service provided at the Site complex includes the following:

- lined Mixed Municipal Solid Waste (MMSW) Landfill (SW-376);
- Construction and Demolition (C&D) Debris Landfill (SW-440);
- used oil/filter and antifreeze collection facility (one of 11 located throughout the County);
- lead-acid battery collection container;
- recycling drop-off center (one of 12 located throughout the County);
- used residential electronics collection area;
- mattress collection area;
- household appliance and scrap metal collection area;
- used tire collection area;
- yard waste composting operation;
- brush disposal area; and a

- Household Hazardous Waste facility with product exchange.

1.1 Purpose and Scope

This Report is intended to provide an updated overview of the solid waste/non-landfill related activities as outlined in the County Solid Waste Management Plan (November 2013). In addition, this Report presents data concerning the overall waste generation, recycling activities within the County, and data on the other solid waste/non-landfill related programs:

- Recycling (residential and commercial);
- Household Hazardous Waste (HHW) and other hazardous waste programs;
- Problem Materials (Yard Waste, Waste Tires, White Goods - household appliances, Vehicle Batteries, Used Oil & Used Oil Filters, Used Electronics, and Fluorescent & HID Lamps);
- Reduce/Reuse Activities;
- Education; and
- Littering/Illegal Dumping.

The County has met the States mandated goals since 1996, and will again exceed the recycling goal of 35 percent (115A.551 subd 2a) established by the State for the non-metro areas (Greater Minnesota). This goal was to be met by December 31, 1996 – changed in 2014 to December 31, 2030. The goal was reached by using documented residential recycling, commercial recycling, appliance recycling, used oil, used oil filters, used tires, and documented reduce/reuse activities. The most significant factor in meeting the established goal is the accurate documentation of the commercial, industrial and institutional (CII) recycling efforts within the County.

This Report is presented in five sections:

- **Section 1.0** - The Introduction; provides a historical review of previous years and summary of the Report.
- **Section 2.0** – County/SCORE Funded Residential Recycling Programs; describe the County's requirements under the statute, and provides a brief evaluation of each of the County/SCORE funded recycling programs.
- **Section 3.0** - Commercial, Industrial and Institutional Recycling section; provides a review and discussion.
- **Section 4.0** - Other Solid Waste/Non-Landfill related programs; provides comprehensive information.

- **Section 5.0** - Provides conclusions and recommendations.

1.2 Program Background

Municipal solid waste (MSW), also known as garbage, trash, refuse and rubbish, is simply what is left of products that have been used and is no longer needed. MSW does not include construction and demolition debris, hazardous, medical, and radioactive wastes, or other non-household and non-business refuse. The United States Environmental Protection Agency (USEPA) regulates the land disposal of MSW through the Resource Conservation and Recovery Act's (RCRA) Subtitle D regulations. RCRA was originally passed in 1976, and reauthorized in the mid-80's. USEPA released RCRA Subtitle D landfill standards in 1991. At that time, RCRA's purpose was to develop regulations for landfills: they had to be lined, have leachate collection systems, ground water monitoring, etc. Congress delegated the administration of Subtitle D to the states. The Minnesota Pollution Control Agency (MPCA) further regulates the disposal of MSW through the Minnesota Waste Management Act (WMA). The WMA was originally passed in 1980, with a major revision in 1989. The WMA laid the groundwork for developing an integrated solid waste program to reduce the volume and toxicity of waste, fund waste management facilities, increase the separation and recovery of materials, energy from waste, and coordinate the statewide management of waste.

As required by State Legislation, the County is using mandated State goals. To meet these goals, the County is using funding from:

- SCORE funds* dispensed by the State (funding provided through the Solid Waste Management Tax),
- County funds (provided through the \$15 Solid Waste/Recycling Assessment**); and
- starting in 2002 interest funds raised by the Greater Minnesota Landfill Cleanup Fee (GMLCF) through the tipping fee at the County MMSW Landfill***.

* SCORE legislation created a separate revenue mechanism for recycling programs (a statewide tax on the collection and disposal of solid waste). The SCORE tax was modified in 1996 to become the Solid Waste Management Tax (SWMT) under §297H. The tax rate for municipal solid waste collection is 9.75 percent for residential customers and 17 percent for commercial customers.

Initially, half of the proceeds or \$22 million, whichever was greater, went into the Solid Waste Fund, used for MPCA landfill assessment and closure cost and appropriations for solid waste programs. The remainder went into the General Revenue Fund, but then a portion went to fund MPCA and SCORE grants to counties. Starting in 2006, this was changed to the Environmental Fund. Under this concept, 70 percent of the SWMT went into the Environmental Fund, which MPCA receives funds for SCORE, HHW, competitive grants, loans for waste abatement, and MPCA's operating budget. The remaining 30

percent remained in the General Fund, and is being spent on programs not related to solid waste or the environment.

SCORE authorized grants of \$55,000 or more to counties if they meet certain requirements, including providing matching funds and having an approved solid waste management plan. The 2002 Legislature reduced the baseline from \$55,000 to \$49,500, and reduced the overall SCORE funding by \$1,401,000 or 10% for FY 2003, 2004 and 2005 in the Omnibus Budget Reduction Bill to \$12.6 million. This action was prompted by the announcement of the \$2 billion state budget shortfall for 2002-2003 biennium. The 2003 Legislature reduced the SCORE funds slightly to \$12.5 million. The projected shortfall for the 2004-2005 biennium was \$4.6 billion. For the 2008-2009 biennium the SCORE grant was increased back to the 2001 level of \$14 million and reestablished the baseline back to \$55,000. The Solid Waste Management Tax generated \$63.7 million in FY2010. Even with the projected shortfall for the 2010-2011 biennium of \$4.8 billion, the Legislature increased the SCORE funding by \$250,000. For the 2015-2016 biennium, the Legislature increased the SCORE funding to \$18,250,000 and \$17,250,000. The actual 2018-2019 biennium, the Legislature kept the SCORE funding at \$17,250,000 for each year. These manipulations have challenged the concept for this being a "stable" source of State funding.

In addition, the MPCA also utilizes SWMT funds to help support the HHW program with an annual HHW stipend. This is usually set at \$600,000 annually; part of this is then distributed to the participating counties.

- ** The solid waste service charge (\$400.08 subd. 3) was established by County Board resolution in October 1991. This fee was initially set at \$20. In 1993, it was lowered to \$15 where it has remained. All properties (seasonally used as well as year round use) with a building value greater than \$1,000 are assessed the base amount. Maximum charge per parcel is \$45.
- *** Part of the Landfill \$50 per ton tipping fee, is the \$6.67 for GMLCF (§115A.923). By statute (§115A.919), this cannot be spent on Landfill operations. The funds being raised by this fee will pay in full the closure of cells, post closure care, and financial assurance requirement of the County Landfills. Each financial assurance fund is generating interest. The interest generated is being replaced by funds raised by GMLCF. The interest generated is becoming an important funding source for the County's waste abatement programs. With the flat/fluctuating State SCORE/HHW funding, funding through this interest can fill in the State funding shortfalls to maintain and even expand the County's waste abatement programs.

State statute 115A.929 requires any political subdivision that provides solid waste management shall account for all revenue collected, including interest, separately from other revenue collected and shall report it separately. The County has set up the following funds:

- Fund 18 – Solid Waste (non-landfill); special revenue governmental fund accounts are used when proceeds of a special revenue source are restricted to expenditures for specific purposes. The County tracks solid waste (non-landfill/SCORE) revenues and expenditures as a Special Revenue Fund to accurately track SCORE (§115A.557 Subd.3 (1)) and solid waste program revenues/costs.
- Fund 50 – Landfill – Enterprise Fund; the County maintains one Proprietary Fund. This fund is used to present business-type of activities. The County tracks landfill revenues and expenditures as an Enterprise Fund.
- Fund 50550 (Demolition Landfill, SW-440), Fund 50551 (Old Landfill, SW-111) closed in 2017, and Fund 50552 (New Landfill, SW-376); since the County operates a sanitary landfill, MPCA rule 7035.2695 require that financial assurance for closure, post closure care and corrective action be established. As outlined in MPCA rule 7035.2705, the County has established trust funds for all three landfills.

Under the current County funding structure, the landfill tipping fee accurately reflects the actual cost of the landfill operations versus the total integrated solid waste system cost. This has two advantages. First, with keeping the tipping fee low at the County Landfill it can compete with alternative disposal options that are also priced to reflect the cost of disposal only. Also, Minnesota Statutes, Chapter 297H, requires a political subdivision that subsidizes solid waste services below the cost of their market price to pay the Solid Waste Management Tax (SWMT) on the difference between the subsidized price and the market price. As defined by Minnesota Statute, 297H.01, Subd. 4, *“Market price” means the lowest price available in the area, assuming transactions between separate parties that are willing buyers and willing sellers in a market.* The intent of the statute is to provide equity in payment of the SWMT where a public subsidy for service is provided from local revenue sources. Second, dependency on landfill tipping fee revenues to support other Solid Waste/SCORE programs puts these programs in direct competition with their source of funding. When all aspects of an integrated solid waste program are incorporated into a single tip fee, it allows little flexibility for change.

Fund 18 – 520; Solid Waste (non-landfill) - its primary fund revenue is the County Solid Waste Assessment and State SCORE grant. The assessment is covering the majority of the cost of the solid waste services such as recycling, yard waste, household hazardous waste, problem material management, education, illegal dumping, and the other non-landfill/SCORE related programs. The Solid Waste Assessment spreads the cost more widely than tax levies.

Fund 18 – 521; Closure/post closure - its primary fund revenue is GMLCF. This will be utilized as following to be in compliance with state statute (§115A.919 Subd.1 (a)):

- All ongoing operational/maintenance cost associated with post closure care for the old landfill, new landfill, and the closed Phase I aspect of the C & D Landfill; any future cost of cell closures for either County Landfill.

- The entire cost to establish and maintain the financial assurance trust funds; Fund 50550 (Demolition Landfill, SW-440), Fund 50551 (Old Landfill, SW-111 – ended in 2017), and Fund 50552 (New Landfill, SW-376).
- Each Financial Assurance Fund is generating interest. Initially, interest was a critical factor in ensuring these Funds would be fully funded. Starting in 2006, the interest generated is being replaced by funds raised by GMLCF. This means, all the funding within each FA Fund is from GMLCF ensuring compliance on how these funds can be utilized.

Fund 18 – 500; Interdepartmental - its primary fund revenue is the interest that is being generated from each Financial Assurance Fund. The interest generated is being replaced by funds raised by GMLCF (§115A.919 Subd.1). The interest generated can become another important funding source for the County's solid waste programs. With the flat/fluctuating State SCORE/HHW grants, funding through this interest could fill in the State funding shortfalls and inflation to maintain the County's waste abatement programs. This interest is now being utilized for interdepartmental support. Interest from Fund 18 and Fund 50 has historically been kept within General Revenue to fund other County Administrative Departmental support (i.e., Auditor, Purchasing Agent, County Attorney, etc.) to the Solid Waste Office.

Overall, the County source of funding for the integrated solid waste program has been stable and sustainable as highlighted by the fact the tipping fee first major change did not occur till April 1 2016. At that time the tipping fee went up from \$45 per ton to \$50 per ton. The solid waste assessment has not changed since 1992. The County intends to continue supporting its solid waste system through existing funding sources. This strategy was utilized to ensure those who dispose of their solid waste illegally and legally pay a portion of the total cost for solid waste management. The County will maintain the Solid Waste Assessment, and use these funds as the designated revenue source for the solid waste related activities as outline in the current Solid Waste Plan. It is not expected these will need to be changed for this 10-year planning period ending in 2023. While on the other hand, State funding has fluctuated during fiscal crisis.

1.3 Recycling Program Overview

Table 1.1 shows by year the recycling effort within the County. Below gives additional information for each year concerning the recycling program.

1991 - SCORE funded recycling programs were in their initial stages of operation during 1991, and most operated part of the year.

1992 - In 1992, the residential recycling strategy selected by the Board was essentially in place. To complete the initial strategy entirely, would require drop-off programs at Bay Lake and either Fort Ripley or St. Mathias. Plastics recycling were suspended in June 1992, due to deteriorating markets.

In late 1992 and early 1993 the Solid Waste Department surveyed business and industry within the County to learn the extent undocumented recycling was taking place. The results of the survey identified 1,864 tons of additional recycling for which had been previously unaccounted.

**TABLE 1.1
RESIDENTIAL RECYCLING PROGRAM OVERVIEW**

Year	Total MSW Tons Generated	Tons Recycled SCORE Funded	Overall Cost Residential	Cost per Ton Residential	% of Total Effort	MSW Collected for Recycling	Recycling Rate	Source Reduction Credit	Yard Waste Credit	Recycling Rate with Credits
1991	39,666	255	\$99,021	\$388.21	0.6%	4,464	11.0%	0.0%	0.0%	11.0%
1992	40,706	535	\$123,250	\$230.51	1.3%	7,230	18.0%	0.0%	0.0%	18.0%
1993	44,873	777	\$148,971	\$191.81	1.7%	10,965	24.0%	0.0%	0.0%	24.0%
1994	47,713	1,021	\$165,460	\$162.11	2.1%	14,314	30.0%	0.0%	0.0%	30.0%
1995	50,471	1,306	\$156,149	\$119.54	2.6%	12,572	25.0%	0.0%	5.0%	30.0%
1996	51,470	1,044	\$170,715	\$163.46	2.0%	17,148	33.0%	3.0%	5.0%	41.0%
1997	55,850	1,173	\$160,855	\$137.11	2.1%	20,569	36.8%	5.7%	5.0%	47.5%
1998	68,767	1,302	\$167,705	\$128.78	1.9%	32,478	47.2%	6.0%	5.0%	56.2%
1999	70,822	1,560	\$167,905	\$107.62	2.2%	34,769	49.1%	6.5%	5.0%	60.6%
2000	73,185	1,798	\$171,005	\$95.09	2.5%	35,118	48.0%	8.0%	5.0%	61.0%
2001	75,581	1,914	\$178,605	\$93.30	2.5%	32,689	43.3%	9.0%	5.0%	57.3%
2002	76,803	2,005	\$188,772	\$94.15	2.6%	33,187	43.2%	6.7%	5.0%	54.9%
2003	77,802	2,164	\$199,760	\$92.33	2.8%	33,973	43.7%	6.0%	5.0%	54.7%
2004	84,234	2,721	\$205,043	\$75.35	3.2%	40,599	48.2%	6.0%	5.0%	59.2%
2005	90,894	2,934	\$222,474	\$75.84	3.2%	46,022	50.6%	6.5%	5.0%	62.1%
2006	90,190	3,142	\$234,424	\$74.61	3.5%	48,058	53.3%	6.9%	5.0%	65.2%
2007	89,993	3,650	\$242,056	\$66.31	4.1%	48,747	54.6%	7.0%	5.0%	66.6%
2008	78,119	4,066	\$261,204	\$64.24	5.2%	39,519	50.6%	7.9%	5.0%	63.5%
2009	64,903	4,696	\$312,027	\$66.44	7.2%	27,767	42.8%	8.0%	5.0%	55.8%
2010	65,544	4,781	\$333,850	\$69.83	7.3%	28,349	43.3%	8.0%	5.0%	56.3%
2011	66,934	4,679	\$334,758	\$71.54	7.0%	29,367	43.9%	8.0%	5.0%	56.9%
2012	70,439	4,523	\$351,801	\$77.79	6.4%	32,272	45.8%	N/A*	N/A*	N/A*
2013	73,198	4,483	\$359,432	\$80.18	6.1%	33,212	45.4%	N/A*	N/A*	N/A*
2014	91,016	4,871	\$295,662	\$60.70	5.4%	48,808	53.6%	N/A*	N/A*	N/A*
2015	91,714	4,583	\$349,499	\$76.26	5.0%	47,353	51.6%	N/A*	N/A*	N/A*
2016	95,938	4,464	\$378,003	\$84.68	4.7%	48,879	50.9%	N/A*	N/A*	N/A*
2017	113,836	3,435	\$351,237	\$102.24	3.0%	65,360	57.4%	N/A*	N/A*	N/A*
2018	85,976	3,825	\$314,534	\$82.23	4.4%	37,059	43.1%	N/A*	N/A*	N/A*

* Until 2011, a State directive allows a maximum 5 percent for yard waste credit for recycling and a credit for source reduction.

1993 - Plastics recycling were resumed in May 1993 for many County programs. The complexion of recycling in the County changed during 1994. Greater opportunities for recycling continue to open and local markets began to develop. For example, Pythons of St. Cloud opened a branch in Brainerd offering recycling opportunities to many recyclable items. Volunteer activities are contracting to drop-off recyclables at Pythons, thus increasing amounts and types of recyclables. Another significant activity was the introduction of Minnesota Waste Wise.

1994 - Improved data collecting and more activity by existing programs resulted in a better recycling rate.

1995 - All recycling programs operated throughout 1995.

1996 - All recycling programs operated throughout 1996. Lower prices for recyclables resulted in a lower recycling rate within the residential programs.

1997 - The complexion of recycling in the County changed during 1997. Opportunities for recycling decreased as local markets began to close down. Pythons closed on December 1st, eliminating an opportunity to recycle many items. Due to cost and participation rates, the C-I-D Committee evaluated their program and changed its operation starting in 1998 from curbside pickup to drop-off operation. Brainerd Chamber of Commerce reintroduced Minnesota Waste Wise to its membership.

1998 - All recycling programs operated throughout 1998.

1999 - All recycling programs operated throughout 1999.

2000 - All recycling programs operated throughout 2001.

2001 - Total recycling within the County decreased for the first time. The statewide recycling rate also dropped for the first time. The major reason for this decrease for the County is a drop in the reported recycling within the commercial arena.

2002 - The decrease continued into this year. All recycling programs operated throughout 2002.

2003 - Beginning to see an increase in recycling. All recycling programs operated throughout 2003.

2004 - All recycling programs operated till November 2004. At that time South Long Lake program discontinued its services. Seen an increase for prices for recyclables, if this continues it is expected to have positive effect on the recycling efforts.

2005 - All recycling programs operated throughout 2005. The increase prices for recyclables continued to have a positive effect on the recycling efforts.

2006 - All recycling programs operated throughout 2006. The prices for recyclables have remained high, and continue its positive long term effect on the overall recycling efforts. First time saw a decrease in the amount of MSW being generated after fifteen years of record keeping.

2007 - All recycling programs operated throughout 2007. The prices for recyclables have remained high, and continue its positive long term effect on the overall recycling efforts. Continued to see the trend of the amount of MSW being generated decreasing.

2008 - Total recycling within the County decreased due to the reduction in commercial/industrial activities. All recycling programs operated throughout 2008, with Maple Grove Township starting in July. The price for recyclables has remained high till the end of the year. If low markets continue, it is expected to have negative long term effect on the overall recycling efforts in 2009. Continued to see the trend of the amount of MSW being generated decreasing.

2009 - Total recycling within the County decreased due to the reduction in commercial/industrial activities. All recycling programs operated throughout 2009, with Bay Lake Township starting in Jan. Continued to see the trend of the amount of MSW being generated decreasing.

2010 - Total recycling within the County increased. All recycling programs operated throughout 2010. The prices for recyclables remained high, and continue its positive long term effect on the overall recycling efforts. Saw the trend of the decreasing amount of MSW being generated stop, and actually saw a 1 percent increase.

2011 - Total recycling within the County increased. All recycling programs operated throughout 2011. The prices for recyclables is beginning to show signs of weakness, this may affect the previous positive long term effect on the overall recycling efforts. The trend of a 1 percent increase continued in 2011 for the amount of MSW being generated within the County.

2012 - Total recycling within the County increased. All recycling programs operated throughout 2012. The price for recyclables has remained stable; it is expected to continue to have positive long term effect on the overall recycling efforts. The trend of a 1 percent increase continued in 2012 for the amount of MSW being generated within the County.

2013 - Total recycling within the County increased. All recycling programs operated throughout 2013. The price for recyclables has remained stable. The trend of an increase continued in 2013. Until 2011, a State directive allowed a maximum 5 percent recycling credits for yard and 3 percent for source reduction. Prior to this year pallets (3,027 tons) and yard waste (1,981 tons) were accounted under those credits; now starting in 2013 it is under commercial recycling.

2014 – Total recycling within the County increased. The hauler who was servicing 12 of the 16 drop off sites dropped service for eight of them (Pequot Lakes, Nisswa, Bay Lake Twp., SW Townships - Crow Wing Twp., Maple Grove Twp., Mission Twp., Garrison, and Roosevelt Twp.). Pequot Lakes was the first as they received a letter in April that service will end on June 1st. Since then, Pequot Lakes had time and they adopted an ordinance requiring curbside recycling. On June 16th staff was informed by a representative of the hauler that they were starting to pull service from

the other seven sites with no 30-day prior notice. The hauler did maintain four of the sites (Crosby, Ironton, Deerwood, and the landfill site). Of the seven sites; Maple Grove Township and Roosevelt Township decided to drop their recycling program. Waste Management was contacted and Garrison, Crow Wing Township, Mission Township, and Bay Lake Township will now be serviced by them. Nisswa was able to change their service over to Waste Partners. The trend of an increase continued in 2014 for the amount of MSW being generated within the County (5%). The County evaluated the overall residential recycling program and came up with goals for each program. This year will be used by the program managers to meet these goals. The drop off program will use the County Landfill site as a baseline to establish the cost per ton limit. The goal for the curbside program was based from the Baxter program.

2015 – Programs that dropped their recycling program; Deerwood, Garrison, and Mission Township, but Mission and Garrison plan to restart it in 2016. Total recycling within the County decreased. Starting in 2015 the drop off program will use the County Landfill site as a baseline to establish the cost per ton limit. The goal for the curbside program was based from the Baxter program. Each City/Township will need to assist in subsidizing their community recycling program if there program cost come in over the established goals. The trend of an increase continued in 2015 for the amount of MSW being generated within the County (5.3%).

2016 – Total recycling within the County increased. The trend of an increase continued in 2016 for the amount of MSW being generated within the County (6.3%). The price for recyclables has remained low; it is expected to have a negative long term effect on the overall recycling efforts. In 2016 AAA Disposal and Blue Lakes Disposal were bought by Waste Management.

2017 – Total recycling within the County increased. The trend of an increase continued in 2018 for the amount of MSW being generated within the County (3.2%). The price for recyclables has remained low; it is expected to have a negative long term effect on the overall recycling efforts.

2018 – Total recycling within the County decreased to approximately 37,059 tons. 3,644 tons were recycled by County/SCORE funded residential recycling programs. A total of \$314,534 was dedicated to the County/SCORE funded residential recycling programs resulting in an overall cost of \$82.23 per ton. The trend of an increase continued in 2018 for the amount of MSW being generated within the County (3.2%). All recycling programs operated throughout 2018. The price for recyclables has remained low; it is expected to have a negative long term effect on the overall recycling efforts. Estimated waste generation rate of 85,976 tons, estimated recycling rate will be 43.1%.

	<u>TONS</u>		
Landfill*	47,217		
Problem Mat's not collected	1,474	Problem Mat's	- 2.7 %
On-site**	226	Res	- 4.6 %
Recycling	37,059	Ind	- 35.8 %
	-----		-----
TOTAL	85,976	TOTAL	43.1%

* Per Annual Report for SW-376

** Per Appendix A, Crow Wing County Solid Waste Management Plan (November 2013)

1.4 Summation

The Landfill tipping fee had remained at \$45.00 per ton (this includes the \$6.67 for GMLCF, but does not include state SWMT) from June 1, 1991 till its first major change on April 1, 2016. The Landfill tip fee was raised to \$50 per ton (including GMLCF). This fee represents only part of the waste disposal cost. When considering the disposal cost with collection costs, a resident in the County pays between \$100 - \$150 per ton for garbage disposal. The cost per ton for recycling for the residential program will be compared with this total cost as an upper limit as a goal. Nationally, the new axiom seems to be that recycling costs roughly three times that of landfilling. For 2018, the County's cost for the residential recycling program was \$86.31 per ton, which is beneath the goal limit of \$150. It should be noted that this goal only includes the cost to the County, and does not include any additional funding by the individual programs or the haulers. The overall true cost of the residential program would be higher.

The County has made considerable progress in achieving and maintaining the States mandated recycling goals. A key aspect for the most cost effective future increases is to provide consideration and incentive for local businesses to recycle/reduce/reuse different types of material. Table 1.2 provides a better overview and demonstrates the historical flow of MMSW to the County Landfill. The table shows 1996 had a significant decrease in the waste generation due to:

- The significant recycling/reduction/reuse accomplished by the three large generators within the County; and
- Better accounting of the recycling being accomplished in the C/I/I section through the survey. Since 2014, lack of manning has made this more difficult to accomplish.

Table 1.2 also shows that starting in 2006; another significant decrease in the waste generation was observed. This may be due to:

- In 2006, the County clarified its out-of-county waste policy. This cut off the flow of some out-of-county waste, lowering the volume of waste coming into our facility.
- In 2006 & 2007, the area suffered through a drought. The garbage has reduced moisture content. This reduced the weight of the garbage coming in.
- County may be seeing benefits from the recycling/reduction/reuse programs it has initiated.
- Largest factor was the slowdown in the areas economy.

Waste Receipts

Problem/Banned Material Management

Year	Scale* (Tons)	Residential* Bags (EA)	Loose* Garbage (cy)	Total * MSW (ton)	Asbestos* Bags (EA)	Asbestos* Bulk (cy)	Total * Asbestos (ton)	Loose ISW (ton)	Yard** Waste (cy)	Brush (cy)	Used Oil (gal)	Lead Battery (Ea)	Tires (Ea)	Tires Shipped (ton)	Used Electronics Res (Ea)	Electronics Shipped (ton)	Appliance (Ea)	Appliance Shipped (ton)	Demo ** (SW-440) (cy)
1992	25,020	3,632	26,251	29,886	1,343	135	47	N/A	Unk	Unk	N/A	Unk	3,097	N/A	N/A	N/A	1,456	Unk	15,836
1993	25,765	3,796	29,856	30,849	158	58	14	N/A	Unk	Unk	N/A	Unk	2,641	Unk	N/A	N/A	2,128	Unk	18,172
1994	27,186	4,764	34,647	34,647	1,455	34	29	N/A	3,506	Unk	N/A	Unk	4,573	Unk	N/A	N/A	2,649	Unk	18,448
1995	27,634	4,915	42,783	35,270	1,890	235	75	N/A	3,735	Unk	N/A	Unk	3,755	Unk	N/A	N/A	2,615	Unk	13,121
1996	29,076	4,891	33,876	32,537	1,141	94	36	N/A	2,278	Unk	Unk	Unk	3,486	N/A	N/A	N/A	2,890	254	16,124
1997	30,742	4,641	29,825	33,794	492	84	24	N/A	4,892	Unk	1,675	Unk	4,618	269	N/A	N/A	2,901	345	17,422
1998	29,673	5,999	33,471	33,110	1,365	124	45	N/A	7,113	Unk	2,605	386	5,843	N/A	N/A	N/A	3,758	173	17,237
1999	29,671	6,420	34,068	33,174	1,613	268	78	N/A	8,302	Unk	3,570	548	5,982	182	N/A	8	3,370	460	18,990
2000	31,754	5,845	38,899	35,731	519	293	66	N/A	12,335	Unk	3,475	606	6,923	N/A	N/A	N/A	3,235	170	19,436
2001	33,919	6,874	46,510	38,673	236	1,269	257	N/A	14,392	Unk	4,225	795	7,240	232	N/A	3	4,001	294	26,266
2002	35,911	7,939	65,994	42,630	523	1,125	233	N/A	15,056	Unk	5,141	1,040	10,221	215	N/A	10	4,457	437	22,095
2003	38,007	7,684	79,192	46,042	337	91	23	N/A	16,889	15,341	5,846	1,069	8,536	161	N/A	11	4,306	445	30,455
2004	38,961	6,875	95,377	48,602	3,044	348	115	N/A	18,132	16,499	2,053	1,177	10,138	N/A	N/A	83	4,793	377	25,361
2005	40,534	7,114	111,875	51,828	827	75	27	N/A	15,216	18,241	6,879	1,325	9,777	344	N/A	131	4,686	355	21,480
2006	37,706	7,788	94,012	47,224	489	210	49	N/A	12,353	12,968	3,064	939	9,197	131	N/A	134	4,624	610	20,386
2007	37,263	7,570	81,087	45,486	235	51	14	N/A	12,480	16,346	2,312	750	11,660	215	N/A	162	4,434	415	13,959
2008	35,172	7,132	75,479	42,827	1,393	274	76	N/A	10,590	13,557	2,657	590	8,709	76	N/A	137	3,949	388	16,950
2009	33,783	8,571	54,671	39,379	431	76	22	N/A	11,873	15,311	2,383	647	6,984	156	N/A	146	4,077	272	14,055
2010	34,109	9,490	55,905	39,842	633	7	11	N/A	10,487	12,827	3,617	532	7,145	140	N/A	152	3,801	433	13,124
2011	33,701	9,463	64,802	40,323	43	153	31	N/A	11,016	13,105	1,871	469	8,461	147	N/A	152	3,131	246	13,880
2012	34,154	9,562	59,928	40,290	10	2,332	467	N/A	9,945	13,270	3,213	376	8,828	141	N/A	144	3,025	282	32,769
2013	36,152	10,015	55,351	41,838	6	14	3	N/A	11,321	11,849	2,015	268	6,175	N/A	N/A	136	3,021	257	12,232
2014	37,131	11,096	66,071	43,905	124	100	22	N/A	11,682	16,724	1,969	337	6,393	208	N/A	156	3,149	261	13,714
2015	38,058	10,871	83,513	46,572	207	640	131	N/A	13,278	32,587	1,214	313	6,942	115	N/A	186	3,699	330	13,849
2016	39,756	12,927	92,711	49,270	38	32	7	42	11,502	22,936	3,203	370	8,789	155	N/A	207	4,098	387	12,789
2017	39,747	12,444	100,285	50,020	30	29	6	52	11,954	22,822	2,534	556	6,870	174	N/A	212	4,213	441	10,081
2018	40,919	13,232	101,028	51,623	568	51	19	384	12,351	19,154	2,913	440	6,996	154	N/A	201	4,056	443	8,178
Total	921,504	211,550	1,696,857	1,105,373	19,150	8,202	1,927	478	272,678	273,537	68,434	13,533	189,979	3,217	89,743	2,369	96,522	8,072	476,409

* Per Annual Reports for SW-376

** Per Annual Report for SW-440

MMSW Landfill Waste Receipts

Month	1991-2011* MMSW (tons)	2012* MMSW (tons)	2013* MMSW (tons)	2014* MMSW (tons)	2015* MMSW (tons)	2016* MMSW (tons)	2017* MMSW (tons)	2018* MMSW (tons)	2019* MMSW (tons)	2020* MMSW (tons)	2021* MMSW (tons)	TOTAL MMSW (tons)	09-13 AVERAGE (tons)	14-18 AVERAGE (tons)
January	51,352	2,518	2,725	2,733	2,783	2,804	3,213	3,428	0	0	0	71,556	2,571	2,992
February	45,749	2,290	2,362	2,440	2,475	2,956	2,870	2,937	0	0	0	64,079	2,309	2,736
March	54,821	2,860	2,560	2,757	3,294	3,636	3,421	3,415	0	0	0	76,764	2,787	3,305
April	63,440	3,140	3,271	3,427	3,660	3,738	3,693	3,732	0	0	0	88,101	3,239	3,650
May	74,618	3,935	4,163	4,283	4,247	4,593	4,762	5,042	0	0	0	105,643	3,799	4,585
June	77,792	3,956	4,130	4,280	4,615	4,984	5,191	5,153	0	0	0	110,141	4,004	4,853
July	81,792	4,498	4,736	4,966	5,172	5,194	5,168	5,621	0	0	0	117,147	4,429	5,224
August	81,727	4,365	4,294	4,598	4,785	5,351	5,368	5,372	0	0	0	115,860	4,273	5,095
September	70,946	3,354	3,834	4,311	4,435	4,714	4,682	4,582	0	0	0	100,858	3,640	4,545
October	67,849	3,450	3,908	3,962	4,175	4,212	4,588	4,793	0	0	0	96,937	3,512	4,346
November	59,930	3,198	2,926	2,951	3,562	3,848	3,792	3,842	0	0	0	84,049	2,999	3,599
December	55,509	2,726	2,929	3,157	3,370	3,192	3,214	3,302	0	0	0	77,399	2,773	3,247
Out-of-County**	7,654	108	109	200	0	130	141	0	0	0	0	8,341	87	94
Total Landfill	786,793	40,757	41,841	43,927	46,704	49,271	50,020	51,623	0	0	0	1,110,936	40,335	48,176
Industrial Waste	53,851	4,194	3,555	3,418	4,043	3,911	3,244	4,406	0	0	0	80,623	4,536	3,634
MSW	732,942	36,563	38,286	40,509	42,661	45,360	46,776	47,217	0	0	0	1,030,314	36,118	42,718
Total Generation	794,448	40,865	41,950	44,127	46,704	49,401	50,161	51,220	0	0	0	1,118,876	40,742	46,469
% Change Landfill		1.0%	2.7%	5.0%	6.3%	5.5%	1.5%	3.2%	-100.0%	#DIV/0!	#DIV/0!			19.4%

%
of annual Cumulative
6.44% 6.44%
5.89% 12.33%
7.11% 19.44%
7.85% 27.29%
9.87% 37.16%
10.44% 47.60%
11.24% 58.85%
10.96% 69.81%
9.78% 79.59%
9.35% 88.94%
7.75% 96.69%
6.99% 103.68%
0.20% 103.88%
-3.88% 100.00%
100.00%

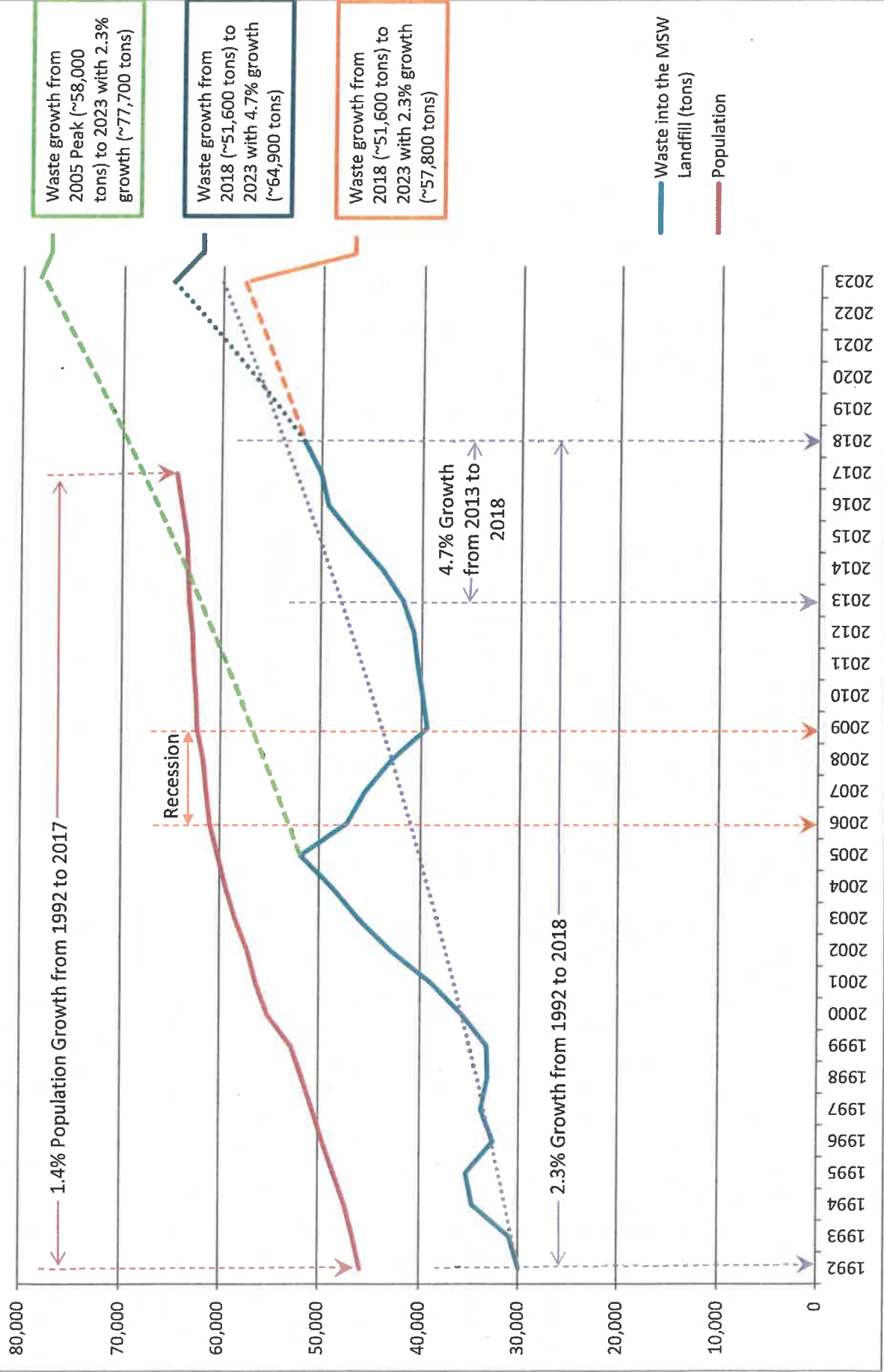
Asbestos
1,110,940

Total

	MSW	09-13 Average	14-18 Average	% Increase
Annual Growth =	1.8% (92 - 18)			
Overall Growth =	58.0% (92 - 18)			
5 Year Growth =	3.9% (14 - 18)			
5-Overall Growth =	7.3% (14 - 18)			
10 Year Growth =	3.2% (09 - 18)			
10-Overall Growth =	32.8% (09 - 18)			
Annual Growth =	2.1% (92 - 18)			
Overall Growth =	72.5% (92 - 18)			
5 Year Growth =	4.1% (14 - 18)			
5-Overall Growth =	17.5% (14 - 18)			
10 Year Growth =	3.0% (09 - 18)			
10-Overall Growth =	31.0% (09 - 18)			
	By Total Tonnage			
Annual Growth =	2.1% (92 - 18)			
Overall Growth =	72.5% (92 - 18)			
5 Year Growth =	4.1% (14 - 18)			
5-Overall Growth =	17.5% (14 - 18)			
10 Year Growth =	3.0% (09 - 18)			
10-Overall Growth =	31.0% (09 - 18)			
	Average (December - February) Winter			
	Average (March - May) Spring			
	Average (June - August) Summer			
	Average (September - November) Fall			
	Percent change from Winter to Summer			
	Percent Winter to Spring & Fall			
	Percent Spring & Fall to Summer			

2,551 2,992 14.7%
3,275 3,847 14.9%
4,235 5,057 16.2%
3,383 4,163 18.7%
66.0% 69.0%
30.5% 33.9%
27.2% 26.3%

SANITARY LANDFILL



The County did experience another year of a waste generation increase. Our sanitary waste tonnage peaked in 2005 at 51,855 tons. In 2018 tonnage was 51,623 or an increase of 3.2% over last year. This includes the following non-MSW:

- Part of the requirements of entering into the leachate recirculation phase II program was to more accurately track the industrial waste entering the Landfill. Asbestos was the only industrial waste tracked previously. All industrial waste is now being subtracted out starting in 2002. This amounted to 4,406 tons in 2017, a 1,162 ton increase from 2017.
- Starting in 2002, many of the local private demolition landfills strengthened their screening procedures. As a result, there has been a significant increase of this rejected material being deposited at the Landfill. Starting in 2002, haulers are declaring this waste as industrial waste. Industrial waste is being tracked separately from sanitary waste as outlined above.

With the above waste streams removed, the County experienced an overall increase of 0.9% in the residential waste generation within the County for 2018.

The EPA release its annual report, *Advancing Sustainable Materials Management: Facts and Figures 2013*, previously known as *Municipal Solid Waste in the United States: Facts and Figures*. Annual waste generation continued to increase until 2005. After 2005, the tons of waste generation started to decrease until 2009 when the tons of waste generation started to increase. This matches very closely to our landfill data. The decline might have been a recession-oriented decline or a combination of recession and a change in material use by various sectors. For example, manufacturers are now using more lightweight packaging and sustainability efforts. Experts are predicting when the recession is over that there will be a slower growth in waste generation, even as population grows. The continuing implementation of zero-waste goals by companies will have an impact on the size of the MSW stream. Even if this proves to be correct and waste generations flattens and recycling continues to increase, waste will still be produced and the need to manage it will continue.

County/SCORE funded recycling programs showed an increase (4.7%) in tonnage after a year of a decrease. MSW generation continues to hold steady, the recycling rate has remained level or has slightly decreased. Key issues remain - the low value for some of the recyclables, the availability/lack of markets for many of the materials, and lack of a stabilized price paid for the recyclable materials collected. Also, in Greater Minnesota the biggest cost component is shipping - moving the materials to the market.

It is felt that education and advertising can increase participation rates and amounts collected. However, the largest factor in lowering the overall cost of the program will require expanding markets for the recyclable materials and a stabilized price paid for the recyclable materials collected. The prices paid for the recyclables gathered has an enormous impact on the revenues that a recycling program can generate. When the value of recyclable materials decreases significantly, the overall cost per ton for this program will go up.

SECTION 2.0

SCORE/COUNTY FUNDED RESIDENTIAL RECYCLING PROGRAMS

2.1 Introduction

Residential recycling activities represent the second largest portion of the ongoing recycling efforts within the County. In 2018, residential recycling was 3,979 tons. Of that total, 3,825 tons were recycled using the county funded residential recycling infrastructure. Residential recycling accounts for 10.3 percent of all materials collected this year in the County.

2.2 Background

SCORE legislation passed in 1989 directs Greater Minnesota counties to achieve a recycling rate of 25 percent of MSW by December 31, 1993. Subsequent amendments set a supplementary recycling goal of 35 percent for Greater Minnesota by December 31, 1996. 2014 legislative session changed the implementation date for county recycling goals to 2030. In comparison, the USEPA has set the national recycling goal at 35 percent by 2005. Very few states have a more stringent goal. California requires cities and counties to reduce their waste by 50 percent by January 2001 compared to 1990 levels. In 2006, California reached their goal of 50% waste reduction. The national recycling rate in 2014 was 34.6 percent.

The following is a brief overview of the State's SCORE programs. Minnesota counties spent \$83 million in State and local funds for SCORE-related programs in 2016. This includes the \$17.25 million paid directly to counties from the State as a block grant. Counties spent an additional \$65.4 million in 2016 on SCORE related programs. Counties spent more than 15 times the matching funds (by law they must match 25 percent or \$4.3125 million) they are required to provide under statute. It should be noted, the block grant of \$14 million provided by the State was flat since 1991 to 2013. During the same period, Minnesota's recycling volumes increased 90 percent even though State funding stayed level. In addition, the buying power of that \$14 million, as measured by the national Consumer Price Index, declined over 48 percent or the funding would have to be at a level of \$20,692,307 million by 2017. Even with this flat investment by the State, the tonnage of recyclables processed by the counties has risen significantly. The following table shows what the counties have spent (in millions of dollars) on SCORE:

	<u>1991</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Greater Minnesota	13.5	33.5	36.3	36.0	37.2				
Metropolitan Area	<u>22.4</u>	<u>24.1</u>	<u>25.6</u>	<u>25.0</u>	<u>26.2</u>				
TOTAL	35.9	57.7	61.9	61.0	63.4		80.0	82.63	
State Share	14.2	14.3	14.3	14.1	14.3	18.25	17.25	17.25	17.25

MPCA stopped providing annual Reports starting in 2014.

The 2014 Legislature increased the amount of Environmental Fund dollars dedicated to SCORE grants to \$18.25 million in 2014 and \$17.25 million annually thereafter. The 2017 Legislature kept the amount of Environmental Fund dollars at \$17,250,000 per year for fiscal year 2018-19.

Per the recently completed 2018 County SCORE Report (see Appendix 2-A), the County spent \$904,597 on the overall SCORE-related programs, of which the State provided only \$192,307 in funds (or 21.3 percent). It should be noted that the County's cost is only what the County has expended, and does not include additional funding by cities, townships, individual programs or haulers.

The SCORE legislation requires that the County do the following:

- The County must have at least one recycling center in the County and sites for collecting recyclable materials that are located in places convenient for people to use them.

Compliance Action: Drop-off site at the Landfill Site meets the definition of a recycling center. Our present recycling system provides convenient drop-off sites to the County rural residents and curbside services in the larger cities.

- The County must insure that cities in the County with a population of 5,000 or more has either curbside pickup, centralized drop-off, or a local recycling center that accepts at least four materials.

Compliance Action: The City of Brainerd, with a population of approximately 13,679 (as of 2016), and the City of Baxter, with a population of approximately 8,318 (as of 2016) has mandatory curbside collection. Our present program meets or exceeds this requirement.

- The County must provide information on how, when, and where materials can be recycled.

Compliance Action: The Solid Waste Office provides information on how, when, and where materials can be recycled through an annual coupon mailing, County web page, and publishes ads in the Brainerd Daily Dispatch, the Crosby-Ironton Courier, Lake Country Echo, News Hopper, Vacationland brochure, Northland Arboretum Newsletter, County Fair flyers plus special ads as needed.

- The County must insure that facilities under its control collect and remove for recycling at least three recyclable materials.

Compliance Action: The County has recycling opportunities at all county buildings and county sub garages. The materials recycled are: paper (office paper, cardboard, shredding paper, and phone books), aluminum cans, batteries, used electronics, toner/ink jet cartridges, fluorescent lamps, used oil/filters, scrap steel, and antifreeze. In 1998, the County expanded its refuse pickup to incorporate a bin specifically for cardboard and another bin for mixed paper for recycling.

- The County must provide for the recycling of problem materials and major appliances.

Compliance Action: The County has recycling opportunities at the landfill site for all problem materials except fluorescent bulbs. These bulbs are managed by multiple hardware stores located throughout the County.

Table 2.1 on the following page shows a summation of the County/SCORE funded residential recycling programs. Appendix 2-B denotes the recycling each program accomplished for 2017. These programs are helping the County maintain its compliance to the State mandated recycling rates and are below the established County goal of \$150 cost per ton as an upper limit. Some programs in the more sparsely populated areas of the County will naturally have a higher cost per ton than those in more densely populated areas. However, these programs help provide convenient opportunities for the County residents to recycle. From 1994 to 2017 the County population growth was 1.4 percent; the annual growth of tonnage going into the landfill during the same period was 1.36 percent.

Curbside collection programs are mandated based on city population. Both collection systems are needed. Quantities of materials collected by the programs have been higher than the previous Solid Waste Management Plan projections suggested. These projections indicated collection of 297 pounds per year per household for the curbside collection programs and 54 pounds per year per capita for the drop-off programs. The following is a discussion of each of the SCORE Funded programs.

2.3 Curbside Recycling Program

The following are the cities that offer curbside recycling at least monthly:

1. Brainerd (Waste Management, Waste Partners, & Garrison Disposal)
2. Baxter (Waste Management, Waste Partners, & Garrison Disposal)
3. Breezy Point (Waste Partners & Pequot Lakes Sanitation) - started in 2006
4. Pequot Lakes (Waste Partners, Garrison Disposal & Pequot Lakes Sanitation) - started July 2014
5. Ironton (Waste Management – started January 2018)

The estimated population served by residential curbside recycling programs, based on Minnesota State Demographers Estimate - 2017 is the following:

	Population	Households
1. Brainerd	13,719	5,922
2. Baxter	8,360	3,303
3. Breezy Point	2,463	953
4. Pequot Lake	2,339	1,040
5. Ironton	573	263
	-----	-----
TOTAL	27,454	11,481

2.3.1 Baxter Program

The Baxter curbside collection program started in March of 1991, and was the first curbside recycling program in the County. Appendix 2-B shows the tabulated results of the program. Part of the SCORE funds for 1991 was provided to the City of Baxter in 1990 and does not appear on the table. Therefore, the cost per ton of the program appears much lower in 1991 than is actually the case. The results and funding for 1992 accurately reflect the status of this program except the portion of funding provided by the City of Baxter. In 1993, the County provided all program funding. SCORE funds are provided to the City of Baxter for operating this program.

In the 1992 Recycling Report, commercial office paper was included with the data for this program dramatically lowering the cost per ton. For the 1993 report, only residential data is included. This provides a more accurate representation of the curbside collection program.

In April 1993, Waste Management began to collect commingled recyclables and added some plastics to the materials that would be accepted. In response to this, Blue Lakes Disposal resumed accepting plastics but continued to ask that materials to be separated. The plastics each hauler accepted differ. The differing requirements caused some difficulty with the County's public information efforts.

The program offers twice per month curbside collection of recyclable materials for Baxter residents. The City contracts with Blue Lakes Disposal (sold to Waste Management November 2016), Garrison Disposal, Waste Partners, and Waste Management for this service.

When the initial estimates were projected for selecting a recycling strategy, it was projected that the Baxter program would collect 220 tons per year. The 653.53 tons collected at a cost of \$21.42 per ton in 2018; under the cost projected (\$40). The quantities collected this year has increased from 2017. Participation rates, assuming 3,303 households were approximately 396 pounds per year per household, which is over the projected figure of 297 pounds.

SCORE Funded Recycling Program Summary

TABLE 2.1

Program	2015			2016			2017			2018		
	Tons	Funding	Cost/Ton	Tons	Funding	Cost/Ton	Tons	Funding	Cost/Ton	Tons	Funding	Cost/Ton
Baxter	1,007.03	\$38,000	\$35.72	1,034.10	\$48,800	\$45.08	637.21	\$42,320	\$66.41	683.53	\$14,000	\$21.42
Bay Lake Township	67.08	\$16,470	\$242.28	35.20	\$16,470	\$420.15	34.35	\$16,470	\$291.12	42.47	\$10,000	\$235.46
Brainard	1,436.04	\$60,000	\$41.76	1,278.00	\$68,000	\$53.21	813.41	\$81,600	\$76.73	1,100.37	\$44,160	\$40.12
Center Township	N/A	N/A	N/A	N/A	N/A	N/A	10.80	\$1,000	\$92.59	25.72	\$3,000	\$116.64
C-H	360.19	\$46,100	\$128.51	273.75	\$55,000	\$201.37	234.52	\$66,000	\$281.31	180.85	\$41,400	\$228.92
Breezy Point	300.09	\$12,000	\$39.92	306.18	\$21,550	\$70.38	308.09	\$16,000	\$51.93	286.46	\$3,200	\$10.79
Crosslake	227.15	\$29,200	\$128.55	265.49	\$28,200	\$114.29	233.15	\$26,200	\$125.24	280.52	\$29,200	\$104.09
Deerwood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Emery	57.68	\$5,760	\$101.93	56.79	\$9,000	\$153.09	114.92	\$6,000	\$52.21	118.88	\$18,000	\$151.41
Fifty Lakes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garrison	19.62	\$6,692	\$351.27	9.07	\$8,000	\$882.03	8.37	\$3,000	\$320.17	1.89	\$6,000	\$3,174.60
Ideal	203.44	\$14,500	\$71.27	221.51	\$16,500	\$74.49	218.65	\$22,500	\$102.44	148.32	\$30,000	\$202.27
Ironston	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	59.63	\$3,000	\$50.31
Landfill	112.52	\$14,756	\$131.14	119.65	\$17,957	\$150.08	122.11	\$13,867	\$113.66	153.49	\$27,334	\$178.08
Maple Grove Township	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Merrifield	266.81	\$5,760	\$21.55	245.33	\$5,750	\$23.63	20.45	\$5,750	\$281.17	13.23	\$5,750	\$434.62
Mission	46.42	\$14,585	\$314.41	25.67	\$15,500	\$602.77	32.84	\$17,000	\$517.68	45.47	\$16,000	\$356.87
Nisswa	217.63	\$45,000	\$206.77	316.65	\$45,000	\$142.11	333.82	\$45,000	\$134.88	397.32	\$45,000	\$113.28
Piquet Lakes	212.62	\$10,000	\$47.03	228.20	\$10,000	\$44.21	236.66	\$10,000	\$42.27	256.04	\$6,500	\$25.39
Roosevelt	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Southwest Townships	45.51	\$9,476	\$208.22	56.15	\$9,476	\$168.76	74.34	\$10,000	\$134.52	50.85	\$10,000	\$188.68
South Long Lake	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	4,582.91	\$349,460	\$76.26	4,463.74	\$378,003	\$84.88	3,435.38	\$351,237	\$102.24	2,306.03	70,650.00	\$302.23

SCORE Funding
\$185,329

% Funded by State SCORE Grant
64%

SCORE Funding
\$185,329

% Funded by State SCORE Grant
60%

Program	Total 1991-2018		
	Tons	Funding	Cost/Ton
Baxter	10,245.08	\$873,680	\$41.47
Bay Lake Township	497.77	\$94,440	\$189.73
Brainard	24,924.41	\$2,161,443	\$87.52
Center Township	36.52	\$4,000	\$109.63
C-H	5,593.61	\$808,164	\$144.00
Breezy Point	4,206.14	\$246,925	\$58.71
Crosslake	4,529.23	\$603,659	\$133.26
Deerwood	284.33	\$12,000	\$42.20
Emery	1,223.77	\$180,705	\$147.66
Fifty Lakes	14.18	\$1,500	\$105.76
Garrison	622.33	\$82,437	\$134.53
Ideal	2,394.63	\$233,414	\$97.45
Ironston	96.63	\$3,000	\$31.03
Landfill	1,732.60	\$212,877	\$122.87
Maple Grove Township	189.34	\$36,102	\$190.67
Merrifield	4,425.17	\$112,150	\$25.34
Mission	1,188.63	\$135,635	\$114.28
Nisswa	5,028.59	\$450,481	\$89.55
Piquet Lakes	2,954.37	\$228,541	\$77.36
Roosevelt	485.57	\$92,871	\$191.26
Southwest Townships	584.50	\$137,752	\$235.67
South Long Lake	224.35	\$36,172	\$161.23
Total	77,359.65	\$6,608,126	\$85.39

SCORE Funding
\$4,127,552

% Funded by State SCORE Grant
62%

2.3.2 Brainerd Program

The Brainerd curbside collection program was started in August of 1991. Appendix 2-B shows the tabulated results of the program. The results and funding for both 1991 and 1992 accurately reflect the status of the program except that portion of the funding provided by the City of Brainerd. In 1993 funds were provided entirely by the County, consequently the results and funding accurately reflect this program. In the 1992 Recycling Report, cardboard, scrap metals, and magazines from commercial generators were included. This dramatically lowered the cost per ton of the program. For the 1993 report, only residential curbside data were included. The 1993 - 2017 numbers represent only residential curbside data.

Beginning in April 1993 and extending through the 2016 report period, Waste Management began and continued to collect commingled recyclables and some plastics. Blue Lakes Disposal continues their program directly with the City. In November 2016, Blue Lakes Disposal was bought by Waste Management. Starting in 2000, Garrison Disposal also provides recycling services. Waste Partners started to provide recycling services in 2002, and AAA Disposals started to provide recycling services in 2011. In 2016, AAA Disposal was bought by Waste Management. These programs offer weekly curbside collection of recyclable materials for residents of the City of Brainerd. SCORE funds are provided to the City of Brainerd.

When the initial estimates were projected for selecting a recycling strategy, it was anticipated the Brainerd program would collect 801 tons per year. For 2018, the program collected 1,100.37 tons at a cost of \$40.12. This exceeds the projected amount by approximately 296 tons, and costs are closer to the projected amount (\$40), due to the quantities collected increasing. Assuming 5,922 households, approximately 372 pounds per household per year were collected in 2018; over the projected figure of 297 pounds.

2.3.3 Crosby-Ironton-Deerwood (C-I-D) Program (CLOSED – 1997)

The C-I-D curbside collection program started in July 1991. Appendix 2-C shows the tabulated results of the program for 1992 - 1997. This program offered twice per month curbside collection of recyclable materials for Crosby, and once per month curbside collection for Ironton, Deerwood, and the south shore of Serpent Lake area.

When the initial estimates were made and a recycling strategy selected, it was anticipated that the C-I-D Recycling Program would collect 207 tons per year and the cost of the curbside program would be \$121 per ton. The overall cost per ton annually from 1992 - 1997 was \$342.57; \$222 more costly than the original projection.

The participation and quantity of material per household were lower than anticipated. Assuming 1,394 households, about 60.5 pounds per household for 1997 was collected rather than the 297 pounds projected. Due to cost and participation rates of a curbside program, the C-I-D Committee evaluated the program and changed operation in 1998 to a drop-off operation. Starting in the 1998 Report, this program is now listed as a drop-off program. The existing drop-off program for Deerwood was incorporated under this program starting in 1998.

2.3.4 Breezy Point Program

The Breezy Point Drop-off program has been in operation since 1991. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided to Breezy Point to operate the program. In October 1993, they contracted with Kenwood Recycling to pick up materials one Saturday each month. The collection site was staffed with volunteers. In November 1993, Nisswa Sanitation placed a permanently located bin thus allowing recyclable materials to be dropped off any time. Garrison/Nisswa Sanitation was providing a bin and hauling recyclable materials to Cass Recycling in Pine River.

In 2006 the program was changed to curbside by the city council. Waste Partners and Pequot Lakes Sanitation are providing this service to this area. The recycling tonnage for 2018 is 296 tons. Currently, the cost for recyclable is \$10.79 per ton. The quantities collected have been increasing annually, and now is stabilizing. Assuming 953 households, approximately 622 pounds per household per year were collected in 2018, which is 325 pounds over the projected figure of 297 pounds for curbside programs.

2.3.5 Pequot Lakes Program

The Pequot Lakes drop-off recycling program began in January 1991. The City contracted with Kenwood Recycling who provided recycling pick up from the drop-off site one Saturday per month. The site was staffed by volunteers.

In 1993, the City's drop off program began receiving funding from SCORE funds. In April 1993 the City contracted with Nisswa Sanitation to provide a permanently located bin at City Hall. This bin was picked up twice per month. Since that time there was a continuous need to increase the number of pickups.

In 2000 the City contracted with North Country Roll-off to provide recycling pick up program. In 2005, the drop off site allowed recyclable materials to be dropped off at any time.

In 2005 the County installed an oil tank for used oil recycling. The County also upgraded the City recycling location by installing a concrete pad for the recycling area.

In 2005 the City contracted with Nisswa Sanitation. Nisswa Sanitation provided two roll-offs located at City Hall plus a cardboard dumpster. The City's drop-off site served residents and cabin owners from many of the surrounding areas. During the summer months, it was not uncommon to have both of the roll-offs and cardboard picked up 5 times per week resulting in over 20 pulls per month.

The City took great pride in its drop-off recycling program. The City Public Works Department spent many hours with snow removal, cleaning up unwanted recycling articles, and ensuring that the site was clean.

In 2014 the City's drop-off program was changed to curbside by the City Council. This was done because Nisswa Sanitation notified the City that it would no longer be able to provide the drop-off service. The City began licensing the garbage haulers and adopted an ordinance that required all haulers in the City to provide curbside recycling service. Waste Partners, Pequot Lakes Sanitation, and Nisswa Sanitation are licensed haulers in the City of Pequot Lakes and all provide curbside recycling.

The recycling tonnage for 2018 is 256.04 tons. Assuming 1,040 households, approximately 492 pounds per household was collected, which is 195 pounds over the projected figure of 297 pounds for curbside programs. This is their fifth year, and their tonnage is continuing to increase.

2.3.6 Ironton Program

In 2018 the City's drop-off program was changed to curbside by the City Council. The City provide curbside garbage service through a contract; contract was modified to now include recycling service. Waste Partners is there contractor and all provide curbside recycling.

The recycling tonnage for 2018 is 59.63 tons. Assuming 263 households, approximately 453 pounds per household was collected, which is 156 pounds over the projected figure of 297 pounds for curbside programs. This is their first year.

2.3.7 Curbside Program Summation

In 2016, an industry nonprofit group The Recycling Partnership and the U.S. EPA released a report showing the results of an extensive study of recycling programs in more than 450 communities across the country. The 2016 State of Curbside Report noted there is no single policy or approach that will guarantee materials diversion success.

Report did find that the average pounds per household per year collected in the communities was 357 pounds which is higher than the 297 goal that was established for our County.

2.4 Drop-Off Program

The following are the active drop-off programs offered within the County:

- | | |
|----------------------------|--------------------------------------|
| 1. Bay Lake Township | 7. City of Garrison Recycling |
| 2. City of Crosby | 8. Merrifield Lions |
| 3. Center Township | 9. Mission Township Recycling |
| 4. Crosslake Recycling | 10. City of Nisswa |
| 5. City of Emily Recycling | 11. County Solid Waste Disposal Site |
| 6. Ideal Township | 12. Southwest Townships |

The projections for these programs were based on early results of the Emily Program. This resulted in an estimated 54 pounds per capita per year. Estimate appeared reasonable and the County remains optimistic, if markets expand with a value for recyclable material and outlying drop-off programs can continue to increase their recycling amounts at a reasonable cost.

2.4.1 Bay Lake Township Program

Bay Lake Township started a drop-off program in 2009. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided to the Township for the program. The County gave a \$2,000 grant in 2009 to Bay Lake Township to enhance their recycling drop-off area by installing a fence around their recycling bins. Garrison Disposal started to provide service in January 2, 2009 till June 2014. Waste Management took over the program starting July 2014. Drop-off site will allow recyclable materials to be dropped off any time. This program is operating at a cost of \$237.46 per ton at a total rate of 42.47 tons for 2018.

2.4.2 Center Township Program

Center Township started a drop-off program in 2017. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided to the Township for the program. Waste Partners Disposal started to provide service in June 2017. Drop-off site will allow recyclable materials to be dropped off any time. This program is operating at a cost of \$116.64 per ton at a total rate of 25.72 tons for 2018.

2.4.3 Crosslake Program

The Crosslake Drop-Off Program has been in operation since 1991. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided to the City of Crosslake. A curbside service began in August 1993, and ended in 1996. In 1996, a permanent drop-off service was in place by Crosslake Roll-off allowing recyclable materials to be dropped off any time. The Crosslake recycling center is open all week. A hauler started up a curbside service June 2007. Cardboard was added back as a recycled item in 2008, and plastics bottles were added in 2009.

The projected results for this program were 41 tons per year. In 2018, the drop-off program recycled 280.52 tons (including the 81.1 tons for scrap metal and 78.1 tons for cardboard). The trend for this drop-off program has been holding steady in their recycled amounts, even if the scrap metal is excluded. Currently, the cost for the recyclable material collected is \$104.09 per ton. When the curbside recycling (not funded through City) is included, the total amount of residential recycling for this area is 407.4 tons. The program has surpassed the original projection which is due to the amount of scrap metal collected.

2.4.4 Crosby (formerly the C-I-D Program)

The Deerwood Drop-Off Program began operation in July 1991. Appendix 2-B shows the tabulated results of the program. SCORE funds were provided to the City of Deerwood to operate the program. Pythons of Brainerd offered a once-a-month pick up of recyclables up to 1996. This program was operated by Range Disposal till 1997, with the collection site being staffed with volunteers. In 1998, the existing drop-off program for Deerwood was incorporated under the C-I-D program. The drop off location was located at Range Disposal shop till October 2008. In November 2008, Nisswa Sanitation provided a permanently located bin for each city that will allow recyclable materials to be dropped off any time. The County gave a \$5,681.14 grant to the City of Deerwood and \$3,000 grant to the City of Ironton for a permanent recycling drop-off area by installing a concrete pad for their recycling bins to sit on in 2009. The County gave a \$3,800 grant to the City of Crosby for a permanent recycling drop-off area by installing a concrete pad at their new location for their recycling bins to sit on in 2013. Deerwood stopped their program on August 19, 2015 due to illegal dumping. Ironton stopped their drop-off program in 2017 and converted it to a curbside program in 2018.

For Crosby only, the 2018 recycled material's amount is 180.85 tons. The cost for the recyclable material collected is \$228.92 per ton.

2.4.5 Emily Program

The Emily Drop-Off Program has been in operation since 1991. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided to the Emily Area Recycling Committee. Kenwood provided a once-a-month (third Saturday from 9 a.m. to noon) pick up of recyclables but in 1993 the committee contracted Range Disposal for this service. The contract has remained in place throughout 2007. Volunteers staff the collection site and it is open once a month. The recycling drop-off was located in a church parking lot. Due to liability issues, the City in 2007 relocated the drop-off site.

The County gave an \$8,008 grant to the City of Emily to upgrade their recycling drop-off area by installing a concrete pad for their recycling bins to sit on in 2007. The new drop-off location for recyclables started in April 2008, and allows recyclable materials to be dropped off any time. The projected results for this program were 33 tons per year. This program is operating at a cost of \$151.41 per ton at a total rate of 118.88tons for 2018. Previously this program showed a decline due to the availability of other drop-off programs, including a permanent drop-off site in Cass County. Once a full time site was up and running we saw an increase, but now it is flattening out.

2.4.6 Fifty Lakes Program - CLOSED

The Fifty Lakes Drop-Off Program began operation in November of 1991 and ended with the closure of the demolition landfill and transfer station in October 1992. Appendix 2-B tables show the results of this program. SCORE funds were provided to the City of Fifty Lakes for the program. City personnel managed the program and materials were picked up by Crow Wing Recycling. Recyclable materials were accepted during all transfer station operating hours.

The Fifty Lakes area residents have accessibility to use either Emily or Crosslake drop-off recycling sites.

2.4.7 Garrison Program

The Garrison Drop-Off Program began in August of 1991. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided to the City of Garrison for the program. In 2005, the County gave a grant of \$10,000 to Garrison to upgrade their recycling drop-off area by installing a concrete pad for their recycling bins to sit on. Initially, the City contracted with Kenwood (Pythons of Brainerd) Recycling for the pickup. Garrison Disposal was providing this service till June 2014, then Waste Management took over the program in July 2014. The program offers a drop-off service once each month, at the Garrison City Hall parking lot. In 2014 the hours of operations changed from 1 - 4 p.m. on the first Monday of every month to 24/7 starting end of March 2013. Previously the program was operated by senior volunteers who provide curbside service (seniors unload your vehicle for you). The projections for this program were 26 tons per year. Garrison stopped their program on September 18, 2015 due to illegal dumping, but restarted in 2016. For 2016, Garrison went back to a drop-off service once each month during the summer.

The 2018 recycling rate is 1.94 tons.

2.4.8 Ideal Township Program

The Ideal Drop-Off Program began September 1991. Appendix 2-B shows the tabulated results of the program. SCORE funds are being provided to the Township for their program. In 2002, the County gave a grant of \$6,000 for the Township to update their recycling shelter. This year, the tabulated result does show a percentage for scrap metal collected for recycling at the transfer station because appliances were shipped this year. Cardboard was added in 2008.

The Township accepted materials during all canister station operating hours (open Monday, Wednesday and Saturday from 8 a.m. to 4 p.m.). The Township has North Country Sanitation remove this material for recycling. The cost of their program is greater than the SCORE funds provided. SCORE funds have been limited to the estimated cost of a drop-off program.

Currently, this program accounts for 148.32 tons of recycled materials at a cost of \$202.27 per ton of recyclable material collected. This program surpassed the original projection when scrap metal and cardboard that is collected and included in the recycling total.

2.4.9 Maple Grove Township Program - CLOSED

The Maple Grove Drop-Off Program began July 2008, and was ended by the sponsor in July 2014 when the hauler would no longer provide the recycling service. Appendix 2-B shows the tabulated results of the program. SCORE funds were provided to the Township for the program. The Township initially contracted with Waste Management. Starting in 2010, Garrison Disposal was providing this service until June 2014. The drop-off site did allow recyclable materials to be dropped off any time. The drop-off location was at the South Shores Paradise Resort on South Long Lake. This site closed down when Garrison Disposal stopped their service.

During the life of this program it collected 189.34 tons of recyclables. The overall cost to collect this recyclable material was \$190.67 per ton.

2.4.10 Merrifield Program

The Merrifield Drop-Off Program began June 1992. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided to the Merrifield Lions for the program. The Lions contracts with Blue Lakes Disposal to provide weekly drop-off service (Monday - Friday from 7 a.m. to 5 p.m.). Waste Management took over the program in 2017. The drop off location is at the Blue Lakes Disposal Shop. The projected results for this program were 35 tons per year. The 2018 recycling rate is 13.23 tons, for an operating cost of \$434.62 per ton.

2.4.11 Mission Township Program

The Mission Township Drop-Off Program began June 1992. Appendix 2-B shows the results of the program. SCORE funds are provided to the Township for the program. In 2004, the County gave a grant of \$5,000 for the Township to update their recycling shelter. Previously the program was offering one Saturday (last Saturday of the month from 10 a.m. to 2 p.m.) per month drop-off at the Town Hall in the winter and at the transfer station during the summer. Starting in November 2009, the County gave another grant of \$6,000 to move/upgrade their recycling drop-off area so it is now located by the Township Hall (providing 24/7 service). These funds were used to install a concrete pad for their recycling bins and a used oil tank to sit on. The Township contract was with Blue Lakes Disposal, and starting November 2009 it is with Garrison Disposal to handle the recyclable materials. Garrison Disposal stopped service on June 2014; Waste Management took over the program. The projected results for the program were 20 tons per year. In 2018, the program accounted for 45.47tons of recycled material at a cost of \$395.87 per ton.

2.4.12 Nisswa Program

The Nisswa Drop-Off Program began September 1991. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided to Nisswa for the program. In 2010, the County as part of the installation of a used oil tank, the recycling drop-off area was upgraded by installing a concrete pad for the recycling bins to sit on - for \$8,000. The indicated totals for each month are accurate while the individual material quantities are based on percentages of the total. The City contracts with Garrison/Nisswa Sanitation to provide two containers and haul materials to Aitkin

Recycling Center until June 2014. Waste Partners took over the program in July 2014. This program provides a permanently located bin rather than a once-a-month service. The projected results for a once-a-month drop-off were 67.6 tons per year. The 2018 cost per ton was \$113.26 for 397.32 tons, with daily drop-off opportunity.

2.4.13 Roosevelt Township Program - CLOSED

The Roosevelt Drop-Off Program began August 1991. Appendix 2-B shows the tabulated results of the program. SCORE funds are provided the Township for the program. The Township contracted with Pythons of Brainerd until August 1996. At this time, Garrison Disposal was contracted to provide for a one Saturday per month service (third Saturday from 9 a.m. to noon). The County gave a \$6,000 grant to the Roosevelt Township to upgrade their recycling drop-off area by installing a concrete pad for their recycling bins to sit on in 2009, and the site location was change to be now located by the Township hall (provide 24/7 service). Because this program is in a sparsely populated area of the County, it is unlikely that the results will be comparable to another program. This program does provide a convenient opportunity for the County residents in this area to recycle. Garrison Disposal was providing service till June 2014.

Although limitations for this program exist, it did provide a service for this area of the County. Overall, the program accounted for 485.57 tons of recycled material at a cost of \$191.26 per ton.

2.4.14 South Long Lake Program - CLOSED

The South Long Lake Drop-Off Program began March 1992, and was ended by the sponsor in November 2004. SCORE funds were provided to the South Long Lake Recyclers for their program. Range Disposal provided once-a-month services up to April 1997. From March 1997 till they closed, Waste Management provided the service. For program flexibility, Waste Management stationed a trailer at the site from Friday evening until Monday morning. This site was self-monitored. Residents could commingle glass, plastic, aluminum, and tin cans into a single bin. Newspapers and magazines were placed in another bin. Instructional signs were posted at the site and area flyers help educate residents about changes. This resulted in good compliance with the self-monitoring program. The longer hours and commingle opportunities increased participation in this program.

During the life of this program it collected 224.35 tons of recyclables. The overall cost to collect this recyclable material was \$161.23 per ton.

2.4.15 County Solid Waste Disposal Site

Pythons stopped taking glass on March 15, 1998. Because of this, the local office of the OEA was able to obtain a grant for local recycling of mixed glass through Cass County and Region Five RDC (Regional Development Commission). A report for the most feasible, cost effective, and beneficial use for glass collected for recycling in this area has been accomplished. Due the readily available and cheap supply of local aggregate it was determined each county could stockpile their glass and utilize it in a construction contract or use it as select fill at the Site.

To address this issue, the County purchased a 20-cubic yard dumpster in 1998, and it was placed at the County solid waste disposal site for self-haulers to place glass into. An area is set aside for the SCORE/County funded recycling programs to stockpile the glass at the Site starting in 1998. This material is being utilized as select fill at the Site and in future construction at the Site.

A more comprehensive drop-off collection program was started in October 2003 to address additional recyclables. Appendix 2-B shows the tabulated results of the program. This program offered drop-off collection of recyclable materials for County residents whenever the Site is open. Summer operations (April - October) is Monday through Saturday, 8:00 a.m. to 5:00 p.m. Winter operations (November - March) is Monday through Friday, 8:00 a.m. to 5:00 p.m. In 2018, the program accounted for 153.49 tons of recycled material at a cost of \$178.08 per ton.

2.4.16 Southwest Townships

This is a cooperative effort between St. Mathias, Fort Ripley and Crow Wing Township. The South West Townships program started in 2003 when this was chosen to be a site under the used oil program. Also in 2003, the County gave a grant of \$8,129 for the townships to place a small building at the site for use as a recycling center. In June 2014 Garrison Disposal dropped the recycling efforts; Waste Management began to service this program recycling needs in July 2014. County/SCORE funds are provided and the program starting in 2005. Appendix 2-B shows the results of the program.

The drop-off center is located at the Crow Wing Township Hall in Barrows. The actual recycling program started May 7, 2005. The center is open the 1st and 3rd Saturday of the month from 8 a.m. to noon. The 2018 recycling rate is 50.85 tons, for an operating cost of \$196.66 per ton.

2.4.17 Drop-off Program Summation

There is no reasonable comparison between actual and projected results for the programs. The population served by an individual drop-off program is difficult to determine. The County has a large transient population.

Some programs are in a sparsely populated area of the County, it is unlikely their results will be comparable to another program. However, convenient drop-off sites assist County residents to recycle. As the data suggests, a permanently located bin appears to collect more recyclable material than does a once-a-month drop off. In the future, as costs allow, most of the programs have been expanded to provide increased opportunity by adding additional collection days.

2.5 Overall Residential Recycling Program Summation

Recycling consists of three different activities:

- Collection of the recyclable materials;
- Preparing those materials for market; and
- Conversion of these materials by manufacturers into new products.

The greatest problem facing recycling is not the ability to collect the materials. It is the ability of the markets to absorb the quantity of materials being collected and convert it into inexpensive, new products. Market development is the responsibility of the State (§115A.48 subd. 1), and a key factor that will affect the County's recycling program is the Federal and State's effort toward market development. It should be noted that the largest negative impact on the County recycling programs has been the lack of expanding recycling markets, and a stabilized price paid for the materials collected. Providing increased economic incentive for collection activities without simultaneous market development will exacerbate the situation and ultimately end in failure. A desirable end point or goal for the County, and no doubt the State, would be a recycling industry without government subsidies.

The County's programs can increase their recycling rate but the question is, "Can it be done at a reasonable cost?" Initially, recycling programs were sold on the basis that markets would be developed for recyclable material and market revenue would eventually pay for the programs. Market development has not progressed to a point where the materials can fully support these programs - and it is questionable if this would ever be reached. In Greater Minnesota, another large cost component is shipping - moving the materials to the market. Currently the recycling industry is experiencing a paradigm shift; overall value of the incoming recycling stream is decreasing. The industry is seeing some of the higher value material being lightweighted out of the recycling stream, and that is impacting the overall value of the recycling stream.

Recycling's fatal paradox is that increased demand for recyclables does not necessarily equal higher prices for recyclables. Manufacturers do not want to pay top dollar for their raw materials. Many times the low price's manufacturer's pay for recyclables is the key to their profitability.

Increased education, public advertising, and increased hours of operation can increase overall participation. However, a point can be reached when recycling practices mature and costs associated with increasing yields exceed the benefits. The recycling rate will become flat because it will reach an inevitable plateau. There is some room to improve the existing County system, but there is a limit. Any significant gains in recycling will come from either development of markets for materials presently being thrown away or development of cheaper ways to recycle. After all, waste is waste - materials for which there is no longer sufficient economic value to rescue from disposal.

Another long-term concern is the changing makeup of the waste stream. One area is the growth of plastics. More plastic is being collected for recycling, but it is dwarfed by an even larger increase in the amount of plastic being sold. The recycling rate has not kept pace with the growth of plastics.

Many businesses enter and exit a specific recycling market to insure a profit margin. This indicates a position of fiscal responsibility by the business community. Recyclers tend to compete for items having a high market price and ignore items whose volume, cost of preparation, and price makes them less attractive. The following risks are associated with the loss of profitable materials to the recycling market: the County can be left with the remaining less valuable products in County-sponsored programs and increased operating costs. Recyclable materials are usually considered property, not waste, under law. Thus, the ability to legally control recyclables at the County level is restrictive. When the markets are strong, the County will see significant quantities of valuable materials diverted from the normal County-sponsored recycling programs. The County cannot interfere with these activities since recyclables are considered property and are generally exempt from municipal solid waste regulations.

It appears County-sponsored recycling programs will never have a level playing field. The County must provide financial incentives for these programs when markets are weak and face stiff competition for products when the prices are firm. With today's mandated programs, the natural market mechanisms of supply and demand no longer work. The market was not generated by the private sector. Bottom line is that mandated recycling will not be self-sustaining, and needs to be considered a service - like water, sewer, police and fire protection. Funding a program from revenue raised by selling recyclables is not possible, and a service fee through local property tax and State grants will be required to pay for recycling programs into the foreseeable future. With a continued budget shortfall at the State level, counties have already seen a reduction in State SCORE grants and at the same time, declining State support. This will lead to additional recycling reassessments at the local level. The reality is that recycling competes for taxpayers dollars.

Another problem is that the benefits of recycling accrue globally while the costs are borne locally. Recycling is a resource conservation issue, not a public health issue. Overall, the relevant question at the local level is "how much recycling is good policy?" The reality of the situation is that recycling services require government funding. This was further highlighted in the January 2002, *Office of the Legislative Auditors Program Evaluation Report, Recycling and Waste Reduction* which states,

"before deciding if and how to pursue options to divert more waste, however, state and County officials need to assess priorities, agree on funding, and better understand the cost and benefits of various alternatives."

It is time for federal and state policy makers to consider financial measures for recycled material that would create meaningful incentives for recycling and enable local governments to keep and expand the recycling programs they offer.

Crisis is the primary driver to provoke significant change. For the past decade, garbage and recycling have not been among America's significant political issues. Tighter government budgets will make this an issue when program levels are reduced, no new programs are initiated, or programs are stopped all together, while at the same time, recycling mandates are maintained or increased.

APPENDIX 2-A
2018 SCORE REPORT

SOURCE REDUCTION

ANNUAL | 2018

Crow Wing County SCORE Program

Instructions:

Due Date April 1st

Source Reduction Includes:

- Reusing a product in its original form
- Increasing the life span of a product
- Reducing material or the toxicity of material used
- Changing procurement, consumption, or waste generation habits to result in smaller quantities of waste or lower toxicity of waste

Source reduction reduces the generation of discards or the toxicity of those discards. See examples:

Source Reduction

- Purchasing refurbished toner cartridges
- Shifting from disposal plastic to reusable utensils

Discards Management (Not Source Reduction)

- Recycling toner cartridge
- Shifting from single use disposable plastic to single use compostable

Section 1: Internal Source Reduction

Please list your county's most effective internal source reduction actions or programs. These should be activities that occur anywhere within your county operations. Provide a detailed description of each, specify any calculated environmental outcomes, and how the project ties to the County Solid Waste Plan. (Examples of relevant activities: Internal office supply reuse programs, making contracting or bid process entirely electronic, and policy to prohibit purchase of bottled water)

Activity *

Use of post-consumer recycled content material

Start Date *

01/28/2018

End Date *

12/31/2018

Description *

As part of procurement, when economically possible buy post-consumer recycled content material.

Outcomes *

By using these products, it closes the loop for recycling. Example of outcomes: Lbs. or tons source reduced, documentation of reduced paper or other purchases, increased number of printers and copiers that default to duplex or number of people trained on waste reduction activities.

Please describe how this activity directly relates to the County Solid Waste Master Plan: *

This item was outlined in the Plan as one of the items the county has implemented as a source reduction program.

Section 2: Community Source Reduction

Please list your county's most effective source reduction efforts with citizens or businesses. Provide a detailed description of each, specify any calculated outcomes, and how the project ties to the County Solid Waste Plan. (Examples of relevant activities: technical assistance at manufacturing plant reduced use of corrugated cardboard; promotion of shopping second hand increased traffic at 6 businesses in Big City; grant program resulted in implementation of reusable transport packaging at farmers market)

Activity *

Provide technical assistance to local businesses.

Start Date *

01/01/2018

End Date *

12/31/2018

Description *

The County intends to continue to encourage businesses to utilize MnTAP, Minnesota Waste Wise, ReUSE Minnesota, and MATEX for technical assistance with source reduction, recycling and pollution prevention programs. Further, the County will refer contacts resulting from telephone advice guidance to these organizations for technical assistance.

Outcomes *

The extent of source reduction/reuse activities is difficult to quantify. In an attempt to gather information, a questionnaire was sent along with a request concerning recycling to all area businesses. Since 1999, the questionnaire provided enough data to enable the County to claim a waste reduction/reuse rate greater than 3 percent. This option was available to any county that was able to demonstrate actual tons of MSW that was reduced above and beyond the 3 percent credit available through the SCORE checklist. Crow Wing County was the only one of the 87 counties that utilized this option. This survey was an annual event until 2011, starting in 2012 counties will no longer receive this credit. The survey did indicate many businesses did have some type of source reduction in place. This generally occurs as a cost-effective business practice. In fact, the normal economic pressures in a free market system guarantee that manufactures are constantly figuring out how to use fewer raw materials when making products or packages. They create less trash in the process. Lighter weight products are easier to use, less expensive to transport and more convenient for consumers. For example, steel cans contain one third less metal than they did 20 years ago. Transportation costs are particularly important. Markets, not government mandates, have given us less waste and a more efficient economy. *Example of outcomes: Lbs. or tons source reduced, documentation of reduced paper or other purchases, increased number of printers and copiers that default to duplex or number of people trained on waste reduction activities.*

Please describe how this activity directly relates to the County Solid Waste Master Plan: *

This item was outlined in the Plan as one of the items the county has implemented as a source reduction program.

Response created on: Mar 8, 2019 at 02:44 PM CST by doug.morris@crowwing.us

Response last updated on: Mar 21, 2019 at 12:51 PM CDT by doug.morris@crowwing.us

REVENUES AND EXPENDITURES

ANNUAL | 2018

Crow Wing County SCORE Program

Instructions:

Due Date April 1st

Please provide total county revenues and expenditures made during calendar year 2018) that were dedicated towards SCORE-related activities. If there were no county revenues or expenditures for a particular line item, please enter zero. Reported expenditures should only reflect direct county expenditures. No attempt should be made to quantify spending by other units of government, the private sector or citizens.

Note: Clicking the "Enter" button on your keyboard will submit the form. To navigate to a different cell/field, use the tab button on your keyboard.

Revenues

CALENDAR YEAR 2017 REVENUES (1/1/2017 TO 12/31/2017)

Balance carried-over from CY 2017 *	\$ 0.00	If negative, please indicate appropriately. Ex. -1000
Adjustment to balance carried-over from CY 2017 *	\$ 0.00	
Adjusted balance carried-over from CY 2017	\$ 0.00	

CALENDAR YEAR 2018 REVENUES (1/1/2018 TO 12/31/2018)

General revenue (special assessments, levy, prop. tax, etc.) *	\$ 0.00
Service Fee *	\$ 555,973.07
Processing facility tip fee *	\$ 125,288.50
Land disposal facility surcharge *	\$ 0.00
SCORE funds received in CY 2018 *	\$ 181,884.00
Grants *	\$ 0.00
Household hazardous waste (HHW) funding from MPCA *	\$ 8,710.57
HHW funding from regional program sponsor *	\$ 0.00
Material sales *	\$ 0.00
Other *	\$ 32,740.84
Description of Other Revenue *	
PaintCare funds and Dept. of Ag Pesticides funds.	
Total CY 2018 Revenues	\$ 904,596.98

Expenditures

SCORE planning, oversight and administration *	\$ 216,201.20
Recycling *	\$ 29,472.30
Organics *	\$ 29,071.20
Household Hazardous Waste & Problem Material Management *	\$ 311,441.84
Source Reduction *	\$ 0.00

Education *	\$ 31,210.44
Market Development *	\$ 0.00
Litter Prevention *	\$ 0.00
County Grants to Other Local Units of Government *	\$ 287,200.00
Waste to Energy Processing *	\$ 0.00
Total CY 2018 Expenditures	\$ 904,596.98

Balance

Total CY 2018 Revenues	\$ 904,596.98
Total CY 2018 Expenditures	\$ 904,596.98
Balance of carry-over to CY 2019	\$ 0.00

Financial Contact Information

Name * Douglas R. Morris

Phone * 218-824-1290

Fax 218-824-1291

E-mail * Doug.Morris@crowwing.us

Response created on: Mar 12, 2019 at 02:06 PM CDT by doug.morris@crowwing.us

Response last updated on: Mar 21, 2019 at 12:54 PM CDT by doug.morris@crowwing.us

MATERIALS COLLECTED FOR RECYCLING

ANNUAL | 2018

Crow Wing County SCORE Program

Instructions:

Due Date April 1st

For purposes of calculating recycling rates, Commercial/Industrial/Institutional (C/I/I) recycling only includes material sold by commercial, industrial or institutional establishment for the purpose of recycling. It does not include material recycled "in-house" or "mill scrap" within a manufacturing operation. Do not include materials recovered from other non-MSW waste streams such as demolition or construction debris, agricultural wastes, or non-hazardous industrial wastes. However the MPCA recognizes and encourages these activities.

Paper

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Cardboard	192.50	4,654.92
2	Mixed Paper	2,016.88	5,021.56
3	Office Paper	0.00	2.82

Total Tons of Residential Paper 2,209.38
Total Tons of C/I/I Paper 9,679.30
Total Tons Paper 11,888.68

Metal

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Aluminum Cans	97.49	3.36
2	Ferrous Metals	417.34	13,262.36

Total Tons of Residential Metal 514.83
Total Tons of C/I/I Metal 13,265.72
Total Tons Metal 13,780.55

Glass

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Mixed Glass	1,045.72	162.57

Total Tons of Residential Glass 1,045.72
Total Tons of C/I/I Glass 162.57
Total Tons Glass 1,208.29

Plastics

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Mixed Plastic Containers	209.19	188.97

Total Tons of Residential Plastics 209.19

Total Tons of C/I/I Plastics 188.97

Total Tons Plastic 398.16

Other Recyclables

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Major appliances	704.78	
2	Electronic devices*	64.62	
3	Mattresses and Box Springs	150.00	
4	Waste tires	313.22	
5	Pallets	0.00	4,052.37
6	Textiles	0.00	273.00
7	Other PLEASE SPECIFY Rechargeable Batteries	2.44	0.00
8	Other PLEASE SPECIFY Wood	0.00	0.88

*This includes all covered and non-covered electronic devices as defined in the Minnesota Electronic Recycling Act.

What specific recycling initiatives did the county implement this year to progress towards meeting the recycling goal established in 115A.511?

We have meet the recycling goal of 35% established by 115A.511

Total Tons of Other Residential Recyclables 1,235.06

Total Tons of Other C/I/I Recyclables 4,326.25

Total Tons Other Recyclables 5,561.31

Organics

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Food to People	0.00	174.27
2	Other PLEASE SPECIFY Waste Grease	0.00	526.72
3	Source Separated Composting	0.00	2,436.18
4	Other PLEASE SPECIFY Fat & bones	0.00	9.30

What specific composting initiatives did the county implement this year to progress towards meeting the composting goal established in 115A.551?

Total Tons of Residential Organics 0.00
Total Tons of C/I/I Organics 3,146.47
Total Tons Organics 3,146.47

Hazardous Waste

Report all residential and commercial hazardous waste here to ensure that you get full recycling credit for your recycled hazardous waste.

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Fluorescent and HID Lamps	0.00	21.31
2	Vehicle Batteries	312.22	0.00
3	Latex Paint	397.16	0.00
4	Used Oil	51.61	0.00
5	Oil Filters	53.35	0.00
6	Antifreeze	3.95	248.80

Total Tons of Residential Hazardous Waste 818.29
Total Tons of C/I/I Hazardous Waste 270.11
Total Tons of Hazardous Waste 1,088.40

Totals

Total Tons of All Residential Recyclables 5,214.18 *Hazardous Waste is not Included*
Total Tons of All C/I/I Recyclables 30,769.28 *Hazardous Waste is not Included*
Total Tons All Recyclables 35,983.46 *Hazardous Waste is not Included*

Total Tons of All Residential Recyclables 6,032.47 *Hazardous Waste Included*
Total Tons of All C/I/I Recyclables 31,039.39 *Hazardous Waste Included*
Total Tons All Recyclables 37,071.86 *Hazardous Waste Included*

Response created on: Mar 12, 2019 at 02:50 PM CDT by doug.morris@crowwing.us

Response last updated on: Mar 29, 2019 at 10:00 AM CDT by doug.morris@crowwing.us

WASTE GENERATION

ANNUAL | 2018

Crow Wing County SCORE Program

Instructions:

Due Date April 1st

Total MSW Generation

Total MSW to Landfill:

46,776.00 tons per year

Total MSW to Waste to Energy:

0.00 tons per year

On-site-disposal of uncollected MSW

To estimate the quantity of waste generated in the county that is not collected and disposed of in the formal waste management system, please estimate the county population without MSW collection service that does not self-haul *

539 persons

Estimated tons of MSW managed on-site using the following formula: (# of persons x 2.3 lbs./person x 365 days)/(2000 lbs./ton). The result is the total tons of county waste considered to be disposed on-site each year.

226.25 tons per year

Managed MSW

Estimate the percent of MSW generated by the C/I/I sector *

36.00 percent

Have all the licensed haulers in the county reported to MPCA? *

☒ Yes

☐ No

Please provide licensed hauler data for all haulers that have not reported to MPCA.

	HAULER NAME *	DESTINATION *	RESIDENTIAL MSW/TRASH *	COMMERCIAL MSW/TRASH *
1	North Country Sanitation & Rolloff	Crow Wing County MSW Landfill SW-376 - SW-376	1.00	1.00
2	Range Disposal	Crow Wing County MSW Landfill SW-376 - SW-376	1.00	1.00
3	Pequot Lakes/Gull Lakes Sanitation	Crow Wing County MSW Landfill SW-376 - SW-376	1.00	1.00
4	Emily Rolloff & Recycling	Crow Wing County MSW Landfill SW-376 - SW-376	1.00	1.00

Response created on: Mar 13, 2019 at 10:35 AM CDT by doug.morris@crowwing.us

Response last updated on: Mar 21, 2019 at 12:56 PM CDT by doug.morris@crowwing.us

LICENSED HAULERS

ANNUAL | 2018

Crow Wing County SCORE Program

Licensed Haulers Operating in County

Please list all of the licensed haulers operating within your county.

	HAULER NAME	PHONE #	EMAIL	COLLECTION (Check all that apply)
1	Milacs Band of Ojibwe	320-532-7437		<input type="checkbox"/> C&D <input type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
2	Garrison/Nisswa Disposal	218-927-6435		<input checked="" type="checkbox"/> C&D <input checked="" type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
3	Waste Partners	218-824-8727		<input type="checkbox"/> C&D <input checked="" type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
4	Crosslake Rolloff & Recycling service	218-692-3902		<input checked="" type="checkbox"/> C&D <input checked="" type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
5	Nisswa Rolloff	218-963-0014		<input checked="" type="checkbox"/> C&D <input checked="" type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
6	North Country Sanitation & Rolloff	218-543-4701		<input checked="" type="checkbox"/> C&D <input type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
7	Range Disposal	218-546-5200		<input type="checkbox"/> C&D <input type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
8	Waste Management	800-777-8408		<input checked="" type="checkbox"/> C&D <input checked="" type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
9	Pequot Lakes/Gull Lake Sanitation	218-568-4630		<input checked="" type="checkbox"/> C&D <input type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
10	Hengals Ready Mix & Construction	218-746-3355		<input checked="" type="checkbox"/> C&D <input type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
11	Emily Rolloff & Recycling	218-821-3330		<input checked="" type="checkbox"/> C&D <input type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW
12	Bob Lemieur Rolloff, Refuse & Recycling	320-632-5212		<input checked="" type="checkbox"/> C&D <input type="checkbox"/> Recycling <input checked="" type="checkbox"/> MSW

APPENDIX 2-B
2018 ANNUAL RECYCLING REPORT
(RESIDENTIAL)

(GARRISON/Mpls)

Crosby

WEIGHT IN TONS

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
Crosby														
1/31/2018	2,920				26,724		753	1,129		7,152	1,882			40,560
2/28/2018	2,440				19,880		560	840		5,320	1,400			30,440
3/31/2018	4,200				19,880		560	840		5,320	1,400			32,200
4/30/2018	2,920				18,361		517	776		4,913	1,293			28,780
5/31/2018	2,440				20,278		571	857		5,428	1,428			31,000
6/30/2018	4,200				22,976		651	971		6,148	1,618			36,564
7/31/2018	0				0		0	0		0	0			0
8/31/2018	0				0		0	0		0	0			0
9/30/2018	0				99,400		2,800	4,211		26,600	7,000			140,011
10/31/2018	0				0		0	0		0	0			0
11/30/2018	Waste Management				0		0	0		0	0			0
12/30/2018	0				15,165		266	547		4,952	1,191			22,141
Subtotal LB	19,120	0	0	0	242,683	0	6,678	10,170	0	65,632	17,212	0	0	361,636
Subtotal TN	9.56	0.00	0.00	0.00	121.34	0.00	3.34	5.09	0.00	32.92	8.61	0.00	0.00	180.85
SCORE FUNDS/COST PER TON													\$41,400.00	\$228.92

Ironton
(W/M/Pls)

Iron ton												
1/31/2018	0				5,396	426	640	2,878	320			10,560
2/28/2018	0				5,268	351	527	2,371	263			8,760
3/31/2018	0				5,890	392	598	2,646	294			9,000
4/30/2018	0				5,664	378	566	2,549	283			9,440
5/31/2018	0				5,364	358	536	2,114	268			8,940
6/30/2018	0				4,608	307	461	2,074	230			7,690
7/31/2018	0				5,148	343	515	2,317	257			8,580
8/31/2018	0				7,332	489	733	3,239	367			12,220
9/30/2018	0				6,744	450	674	3,035	337			11,240
10/31/2018	0				8,304	554	830	3,737	415			13,840
11/30/2018	0				5,340	356	534	2,403	267			8,900
12/30/2018	0				5,508	367	551	2,479	275			8,180
Subtotal LB	0	0	0	0	71,536	4,771	7,155	32,202	3,576	0	0	119,260
Subtotal TN	0.00	0.00	0.00	0.00	35.78	2.39	3.58	16.10	1.79	0.00	0.00	\$59.63
SCORE FUNDS/COST PER TON												\$3,000.00

SCORE FUNDS/COST PER TON

[illegible]

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY
 2018
 WEIGHT IN TONS

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018					3,236		57	117		1,055	254			4,719
2/28/2018					2,588		45	93		844	203			3,773
3/31/2018					2,588		45	93		844	203			3,773
4/30/2018					3,236		57	117		1,055	254			4,719
5/31/2018					2,588		45	93		844	203			3,773
6/30/2018					7,248		127	261		2,363	568			10,567
7/31/2018					9,059		159	326		2,954	710			13,208
8/31/2018					9,059		159	326		2,954	710			13,208
9/30/2018					7,248		127	261		2,363	568			10,567
10/31/2018					3,236		57	137		1,055	254			4,739
11/30/2018					3,624		64	131		1,182	284			5,285
12/30/2018					4,530		79	163		1,477	355			6,604
Subtotal LB	0	0	0	0	58,240	0	1,021	2,118	0	18,590	4,566	0	0	84,935
Subtotal TN	0.00	0.00	0.00	0.00	29.12	0.00	0.51	1.06	0.00	9.50	2.28	0.00	0.00	42.47
SCORE FUNDS/COST PER TON										\$10,000.00				\$235.47

Breezy Point

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018					6,228		386	1,620		4,706	772			13,712
2/28/2018					3,133		323	1,356		3,938	646			9,396
3/31/2018					6,889		351	1,473		4,279	702			13,494
4/30/2018					2,955		366	1,537		4,468	732			10,056
5/31/2018					7,180		533	2,238		6,500	1,066			17,517
6/30/2018					7,130		567	2,380		6,912	1,133			18,122
7/31/2018					7,630		821	3,446		10,011	1,841			23,549
8/31/2018					3,022		677	2,844		8,262	1,355			16,160
9/30/2018					3,042		519	2,178		6,328	1,037			13,104
10/31/2018					7,047		571	2,399		6,968	1,142			18,127
11/30/2018					6,202		545	2,291		6,654	1,091			16,783
12/30/2018					5,296		544	2,285		6,538	1,088			15,851
Subtotal LB	0	0	0	0	65,554	0	6,203	26,047	0	75,662	12,405	0	0	195,871
Subtotal TN	0.00	0.00	0.00	0.00	32.78	0.00	3.10	13.02	0.00	37.83	6.20	0.00	0.00	92.94

(PEQUOT LAKES SANITATION/Pine River Recycling Center)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018					16,841		474	712		4,507	1,186			23,720
2/28/2018					17,033		480	720		4,558	1,200			23,990
3/31/2018					19,177		540	810		5,132	1,351			27,010
4/30/2018					21,385		602	904		5,723	1,506			30,120
5/31/2018					25,901		730	1,094		6,931	1,824			36,480
6/30/2018					26,994		760	1,141		7,224	1,901			38,020
7/31/2018					28,024		789	1,184		7,499	1,974			39,470
8/31/2018					28,301		797	1,196		7,573	1,993			39,860
9/30/2018					24,509		690	1,036		6,559	1,726			34,520
10/31/2018					28,024		789	1,184		7,499	1,974			39,470
11/30/2018					28,301		797	1,196		7,573	1,993			39,860
12/30/2018					28,509		690	1,036		6,559	1,726			34,520
Subtotal LB	0	0	0	0	288,998	0	8,141	12,211	0	77,338	20,352	0	0	407,040
Subtotal TN	0.00	0.00	0.00	0.00	144.50	0.00	4.07	6.11	0.00	39.67	10.18	0.00	0.00	203.52
Total LB	0	0	0	0	354,552	0	14,344	38,258	0	153,000	32,757	0	0	592,911
Total TN	0.00	0.00	0.00	0.00	177.28	0.00	7.17	19.13	0.00	76.50	16.38	0.00	0.00	296.46
SCORE FUNDS/COST PER TON										\$3,200.00				\$10.79

Residue
439
352
352
439
352
984
1,230
1,230
984
439
482
615
7,908
84,935

Residue
231
194
210
220
320
340
492
406
311
343
327
326
3,720
1,96

592,911

296.46

(CROSSLAKE/Pine River Recycling Center)

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY
2018

WEIGHT IN TONS

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	Electronics	TOTAL
1/31/2018	3,160				7,180		0	0	0	7,060	2,080			19,480
2/28/2018	3,000	Cardboard picked up separately			0		0	0	0	0	1,500			4,500
3/31/2018	7,240				8,780		860	1,020	42,000	6,820	2,040			68,760
4/30/2018	5,100				9,740		0	2,000	0	6,900	2,540			26,280
5/31/2018	12,180				6,960		1,845	0	20,240	5,030	3,260			49,485
6/30/2018	11,168				8,040		405	2,380	12,420	12,240	4,840			51,483
7/31/2018	16,180				13,880		2,780	1,840	20,220	19,120	8,360			82,380
8/31/2018	27,540				6,660		900	0	20,720	13,680	4,400			73,800
9/30/2018	23,940				7,020		1,595	2,000	26,020	13,740	3,000			77,315
10/31/2018	16,420				7,200		960	0	0	6,720	3,560			34,860
11/30/2018	18,380				8,540		805	1,960	20,620	6,360	2,860			59,525
12/30/2018	11,880				0		0	0	0	0	1,280			13,160
Subtotal LB	166,188	0	0	0	84,000	0	10,150	11,200	162,240	97,540	39,720	0	0	561,038
Subtotal TN	78.09	0.00	0.00	0.00	42.00	0.00	5.08	5.60	81.12	48.77	19.86	0.00	0.00	280.52
SCORE FUNDS/COST PER TON													\$29,200.00	\$104.09

(WASTE PARTNERS/Pine River Recycling Center)

1/31/2018					8,502		527	2,212		6,425	1,053			18,719
2/28/2018					4,276		441	1,850		5,375	881			12,823
3/31/2018					9,131		479	2,011		5,842	958			18,421
4/30/2018					4,034		500	2,089		6,096	999			13,728
5/31/2018					9,802		727	3,055		8,873	1,455			23,912
6/30/2018					9,733		773	3,248		9,435	1,547			24,736
7/31/2018					10,415		1,120	4,705		13,606	2,240			32,146
8/31/2018					4,126		925	3,883		11,279	1,849			22,062
9/30/2018					4,162		708	2,974		8,638	1,416			17,888
10/31/2018					9,619		780	3,275		9,512	1,559			24,745
11/30/2018					8,467		745	3,127		9,084	1,489			22,912
12/30/2018					7,229		743	3,120		9,062	1,486			21,840
Subtotal LB	0	0	0	0	89,486	0	8,468	35,559	0	103,287	16,932	0	0	253,732
Subtotal TN	0.00	0.00	0.00	0.00	44.74	0.00	4.23	17.78	0.00	51.64	8.47	0.00	0.00	126.87
Total LB	156,188	0	0	0	173,486	0	18,618	48,759	162,240	200,827	56,652	0	0	814,770
Total TN	78.09	0.00	0.00	0.00	86.74	0.00	9.31	23.38	81.12	100.41	28.33	0.00	0.00	407.39
COST PER TON														

Emily

(WASTE MANAGEMENT/PELTZ, St Cloud & LP)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018					9,059		159	326		2,954	710			13,208
2/28/2018					7,248		127	281		2,363	568			10,567
3/31/2018					7,248		127	281		2,363	568			10,567
4/30/2018					9,059		159	326		2,954	710			13,208
5/31/2018					7,248		127	281		2,363	568			10,567
6/30/2018					14,495		254	522		4,727	1,137			21,135
7/31/2018					20,707		363	746		6,753	1,624			30,193
8/31/2018					20,707		363	746		6,753	1,624			30,193
9/30/2018					10,354		182	373		3,376	812			15,097
10/31/2018					12,942		227	464		4,220	1,015			18,669
11/30/2018					20,707		363	746		6,753	1,624			30,193
12/30/2018					23,296		408	839		7,957	1,827			33,967
Subtotal LB	0	0	0	0	163,070	0	2,859	5,871	0	53,176	12,787	0	0	237,763
Subtotal TN	0.00	0.00	0.00	0.00	81.54	0.00	1.43	2.84	0.00	26.59	6.39	0.00	0.00	118.88
SCORE FUNDS/COST PER TON													\$18,000.00	\$151.41

Residue	316
	264
	287
	300
	436
	464
	672
	556
	425
	466
	447
	446
	5,080
	2.54

814,770

407.39

Residue	1,230
	984
	984
	1,230
	984
	1,968
	2,812
	2,812
	1,406
	1,758
	2,812
	3,164
	22,144
	237,763
	11.07

237,763

118.88

Ideal

148.32

296,641

397.32

794,645

57.60

06/15/11

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY
2018

Piquet Lakes

WEIGHT IN TONS

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
(GARRISON/Pine River Recycling Center)														
1/31/2018	0	0	0	0	3,706	0	104	157	0	932	261	0	0	5,220
2/28/2018	0	0	0	0	2,755	0	78	116	0	737	194	0	0	3,880
3/31/2018	0	0	0	0	2,407	0	68	102	0	644	170	0	0	3,390
4/30/2018	0	0	0	0	3,003	0	85	127	0	804	211	0	0	4,230
5/31/2018	0	0	0	0	2,571	0	72	109	0	688	180	0	0	3,620
6/30/2018	0	0	0	0	3,238	0	91	137	0	866	228	0	0	4,560
7/31/2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/31/2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/30/2018	0	0	0	0	7,100	0	200	300	0	1,900	500	0	0	10,000
10/31/2018	0	0	0	0	2,703	0	76	114	0	723	190	0	0	3,808
11/30/2018	0	0	0	0	2,607	0	73	110	0	688	184	0	0	3,673
12/30/2018	0	0	0	0	1,954	0	55	83	0	623	138	0	0	2,753
Subtotal LB	0	0	0	0	32,045	0	902	1,355	0	8,575	2,255	0	0	45,133
Subtotal TN	0.00	0.00	0.00	0.00	16.02	0.00	0.45	0.68	0.00	4.29	1.13	0.00	0.00	22.57
(WASTE PARTNERS/Pine River Recycling Center)														
1/31/2018	0	0	0	0	2,923	0	181	761	0	2,209	362	0	0	6,436
2/28/2018	0	0	0	0	1,470	0	151	636	0	1,848	303	0	0	4,408
3/31/2018	0	0	0	0	3,140	0	165	692	0	2,009	329	0	0	6,335
4/30/2018	0	0	0	0	1,387	0	172	722	0	2,006	344	0	0	4,721
5/31/2018	0	0	0	0	3,370	0	250	1,050	0	3,051	500	0	0	8,221
6/30/2018	0	0	0	0	3,347	0	266	1,117	0	3,244	532	0	0	8,506
7/31/2018	0	0	0	0	3,581	0	385	1,618	0	4,659	770	0	0	11,053
8/31/2018	0	0	0	0	1,419	0	318	1,335	0	3,878	636	0	0	7,586
9/30/2018	0	0	0	0	1,428	0	243	1,022	0	2,970	487	0	0	6,150
10/31/2018	0	0	0	0	3,308	0	268	1,126	0	3,271	536	0	0	8,509
11/30/2018	0	0	0	0	2,911	0	256	1,076	0	3,123	512	0	0	7,878
12/30/2018	0	0	0	0	2,486	0	255	1,073	0	3,116	511	0	0	7,441
Subtotal LB	0	0	0	0	30,770	0	2,910	12,228	0	35,514	5,822	0	0	87,244
Subtotal TN	0.00	0.00	0.00	0.00	15.39	0.00	1.46	6.11	0.00	17.76	2.91	0.00	0.00	43.62
(PEQUOT LAKES SANITATION/Pine River Recycling Center)														
1/31/2018	0	0	0	0	14,321	0	403	605	0	3,832	1,009	0	0	20,170
2/28/2018	0	0	0	0	16,287	0	459	688	0	4,359	1,147	0	0	22,940
3/31/2018	0	0	0	0	18,247	0	514	771	0	4,893	1,285	0	0	25,700
4/30/2018	0	0	0	0	20,927	0	590	884	0	5,600	1,474	0	0	29,475
5/31/2018	0	0	0	0	23,515	0	662	994	0	6,293	1,656	0	0	33,120
6/30/2018	0	0	0	0	25,042	0	705	1,068	0	6,701	1,764	0	0	35,270
7/31/2018	0	0	0	0	26,142	0	736	1,105	0	6,956	1,841	0	0	36,820
8/31/2018	0	0	0	0	26,206	0	738	1,107	0	7,013	1,846	0	0	36,910
9/30/2018	0	0	0	0	23,274	0	656	983	0	6,228	1,639	0	0	32,780
10/31/2018	0	0	0	0	26,142	0	736	1,105	0	6,996	1,841	0	0	36,820
11/30/2018	0	0	0	0	26,206	0	738	1,107	0	7,013	1,846	0	0	36,910
12/30/2018	0	0	0	0	23,274	0	656	983	0	6,228	1,639	0	0	32,780
Subtotal LB	0	0	0	0	269,563	0	7,594	11,391	0	72,142	18,985	0	0	379,695
Subtotal TN	0.00	0.00	0.00	0.00	134.79	0.00	3.80	5.70	0.00	36.07	9.49	0.00	0.00	189.85
Total LB	0	0	0	0	332,398	0	11,406	24,974	0	116,231	27,062	0	0	512,072
Total TN	0.00	0.00	0.00	0.00	166.20	0.00	5.70	12.49	0.00	58.12	13.53	0.00	0.00	256.04
COST PER TON														\$25.39

Residue
109
91
99
103
150
180
231
191
146
161
154
153
1,748
0.87

512,072

256.04

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY

2018

2018

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
(WASTE MANAGEMENT/PEL T.Z. St Cloud, & LPI)														
1/31/2018					35,712		2,381	3,571		16,070	1,788			59,520
2/28/2018					29,412		1,961	2,941		13,235	1,471			49,020
3/31/2018					32,808		2,187	3,281		14,764	1,640			54,560
4/30/2018					31,598		2,108	3,160		14,218	1,580			52,660
5/31/2018					29,952		1,997	2,995		13,478	1,498			49,920
6/30/2018					25,892		1,713	2,569		11,561	1,285			42,820
7/31/2018					28,716		1,914	2,872		12,922	1,436			47,860
8/31/2018					40,884		2,726	4,068		18,398	2,044			68,140
9/30/2018					37,632		2,509	3,763		16,934	1,882			62,720
10/31/2018					46,320		3,088	4,632		20,844	2,316			77,200
11/30/2018					29,772		1,985	2,977		13,397	1,489			49,620
12/30/2018					30,744		2,050	3,074		13,835	1,537			51,240
Subtotal LS	0	0	0	0	399,240	0	26,617	39,923	0	179,566	19,964	0	0	665,400
Subtotal TN	0.00	0.00	0.00	0.00	198.62	0.00	13.31	19.96	0.00	89.93	9.98	0.00	0.00	332.70

(GARRISON/Pine River Recycling Center)														
1/31/2018	0				23,501		662	993		6,289	1,655			33,100
2/28/2018	0				24,140		680	1,020		6,460	1,700			34,000
3/31/2018	0				26,980		760	1,140		7,220	1,900			38,000
4/30/2018	0				30,629		863	1,294		8,197	2,157			43,140
5/31/2018	0				46,044		1,297	1,946		12,322	3,241			64,850
6/30/2018	0				42,934		1,209	1,814		11,489	3,024			60,470
7/31/2018	0				0		0	0		0	0			0
8/31/2018	0				0		0	0		0	0			0
9/30/2018	0				166,140		4,690	7,020		44,460	11,700			234,000
10/31/2018	0				40,550		1,142	2,856		10,951	2,856			57,113
11/30/2018	0				39,112		1,102	1,653		10,467	2,754			55,068
12/30/2018	0				19,543		551	826		5,230	1,376			27,525
Subtotal LB	0	0	0	0	499,673	0	12,946	19,419	0	122,695	32,363	0	0	647,285
Subtotal TN	0.00	0.00	0.00	0.00	228.79	0.00	6.47	9.71	0.00	61.49	16.18	0.00	0.00	323.64

(WASTE PARTNERS/Pine River Recycling Center)															
1/31/2018					29,756		1,843	7,741		22,486	3,686				65,512
2/28/2018					14,967		1,542	6,477		18,813	3,084				44,883
3/31/2018					31,959		1,676	7,039		20,446	3,352				64,472
4/30/2018					14,119		1,749	7,346		21,337	3,498				48,049
5/31/2018					34,305		2,548	10,691		31,055	5,091				83,688
6/30/2018					34,066		2,707	11,369		33,024	5,414				86,580
7/31/2018					36,454		3,920	16,466		47,830	7,841				112,511
8/31/2018					14,440		3,236	13,590		39,476	6,472				77,214
9/30/2018					14,533		2,478	10,408		30,231	4,956				62,608
10/31/2018					33,668		2,729	11,461		33,292	5,458				86,608
11/30/2018					29,634		2,606	10,945		31,793	5,212				80,190
12/30/2018					25,301		2,600	10,919		31,716	5,199				75,735
Subtotal LB	0	0	0	0	313,202	0	29,632	124,452	0	361,499	69,263	0	0	0	888,048
Subtotal TN	0.00	0.00	0.00	0.00	156,610	0.00	14,82	62,23	0.00	190,75	29,63	0.00	0.00	0.00	444,02

Total LB	-0	0	0	0	1,172,015	0	69,195	183,794	0	664,140	111,590	0	0	2,200,733
Total TN	0.00	0.00	0.00	0.00	596.01	0.00	34.60	91.90	0.00	332.07	55.80	0.00	0.00	1,100.37
SCORE FUNDS/COST PER TON														
												\$44,160.00	\$40.12	

Baxter

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY
2018

WEIGHT IN TONS

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
(WASTE MANAGEMENT/PELTZ, St Cloud & LPI)														
1/31/2018					21,382		375	770		6,973	1,677			31,177
2/28/2018					17,605		309	634		5,741	1,381			25,670
3/31/2018					19,638		344	707		6,404	1,540			28,633
4/30/2018					18,910		332	681		6,167	1,483			27,573
5/31/2018					17,931		314	646		5,847	1,408			26,144
6/30/2018					15,384		270	554		5,017	1,206			22,431
7/31/2018					17,178		301	619		5,602	1,347			25,047
8/31/2018					24,489		429	881		7,979	1,919			35,677
9/30/2018					22,524		395	811		7,345	1,766			32,841
10/31/2018					27,731		386	999		9,043	2,175			40,334
11/30/2018					17,818		312	642		5,811	1,397			25,980
12/30/2018					18,395		323	663		5,999	1,443			26,823
Subtotal LB	0	0	0	0	238,965	0	4,090	8,607	0	77,928	18,740	0	0	348,330
Subtotal TN	0.00	0.00	0.00	0.00	119.48	0.00	2.05	4.30	0.00	36.96	9.37	0.00	0.00	174.17
(GARRISON/Pine River Recycling Center)														
1/31/2018	0				16,713		471	706		4,473	1,177			23,540
2/28/2018	0				17,040		480	720		4,560	1,200			24,000
3/31/2018	0				19,880		560	840		5,320	1,400			28,000
4/30/2018	0				17,552		494	742		4,697	1,235			24,720
5/31/2018	0				22,834		643	965		6,110	1,608			32,160
6/30/2018	0				19,155		540	809		5,128	1,350			26,980
7/31/2018	0				0		0	0		0	0			0
8/31/2018	0				0		0	0		0	0			0
9/30/2018	0				68,160		1,920	2,880		18,240	4,800			96,000
10/31/2018	0				10,813		305	457		2,894	762			15,230
11/30/2018	0				10,430		294	441		2,791	735			14,690
12/30/2018	0				17,588		485	743		4,707	1,239			24,773
Subtotal LB	0	0	0	0	220,166	0	6,202	9,303	0	58,917	15,505	0	0	310,083
Subtotal TN	0.00	0.00	0.00	0.00	110.08	0.00	3.10	4.65	0.00	29.46	7.75	0.00	0.00	155.05
(WASTE PARTNERS/Pine River Recycling Center)														
1/31/2018					21,735		1,346	5,654		16,424	2,692			47,851
2/28/2018					10,932		1,126	4,731		13,741	2,253			32,783
3/31/2018					23,344		1,224	5,141		14,924	2,448			47,091
4/30/2018					10,313		1,277	5,365		15,385	2,555			35,095
5/31/2018					25,057		1,859	7,809		22,683	3,719			61,127
6/30/2018					24,882		1,977	8,304		24,121	3,954			63,238
7/31/2018					26,627		2,864	12,027		34,936	5,727			82,181
8/31/2018					10,547		2,363	9,927		28,834	4,727			56,398
9/30/2018					10,615		1,810	7,602		22,082	3,620			45,729
10/31/2018					24,592		1,993	8,371		24,317	3,986			63,259
11/30/2018					21,645		1,903	7,995		23,222	3,807			58,572
12/30/2018					18,481		1,899	7,975		23,166	3,798			55,319
Subtotal LB	0	0	0	0	228,770	0	21,641	90,901	0	284,045	43,286	0	0	648,643
Subtotal TN	0.00	0.00	0.00	0.00	114.39	0.00	10.82	45.45	0.00	132.02	21.64	0.00	0.00	324.32
Total LB	0	0	0	0	687,901	0	31,933	108,811	0	400,840	77,531	0	0	1,307,066
Total TN	0.00	0.00	0.00	0.00	343.95	0.00	15.97	54.41	0.00	200.45	38.77	0.00	0.00	653.53
SCORE FUNDS/COST PER TON														\$21.42
														\$14,000.00

653.53

1,307,066

0

Residue
2,904
2,391
2,667
2,568
2,435
2,089
2,333
3,323
3,059
3,766
2,420
2,498
32,453
16,23

Residue
808
676
734
766
1,116
1,186
1,718
1,418
1,086
1,186
1,142
1,139
12,985
6,48

(WM/Market)

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY

2018

WEIGHT IN TONS

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018	0	0	0	0	5,177	0	91	186	0	1,688	406	0	0	7,548
2/28/2018	0	0	0	0	4,141	0	73	149	0	1,351	325	0	0	6,039
3/31/2018	0	0	0	0	4,141	0	73	149	0	1,351	325	0	0	6,039
4/30/2018	0	0	0	0	5,177	0	91	186	0	1,688	406	0	0	7,548
5/31/2018	0	0	0	0	4,141	0	73	149	0	1,351	325	0	0	6,039
6/30/2018	0	0	0	0	4,659	0	82	168	0	1,519	385	0	0	6,783
7/31/2018	0	0	0	0	6,471	0	113	233	0	2,110	507	0	0	9,434
8/31/2018	0	0	0	0	5,177	0	91	186	0	1,688	406	0	0	7,528
9/30/2018	0	0	0	0	5,177	0	91	186	0	1,688	406	0	0	7,528
10/31/2018	0	0	0	0	6,471	0	113	233	0	2,110	507	0	0	9,434
11/30/2018	0	0	0	0	5,177	0	91	186	0	1,688	406	0	0	7,548
12/30/2018	0	0	0	0	6,471	0	113	233	0	2,110	507	0	0	9,434
Subtotal LB	0	0	0	0	62,380	0	1,095	2,244	0	20,322	4,891	0	0	90,932
Subtotal TN	0.00	0.00	0.00	0.00	31.19	0.00	0.55	1.12	0.00	10.16	2.45	0.00	0.00	45.47
SCORE FUNDS/COST PER TON										\$16,000.00				\$395.90

(WM/Market)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018	0	0	0	0	1,726	0	30	62	0	563	135	0	0	2,516
2/28/2018	0	0	0	0	1,380	0	24	50	0	450	108	0	0	2,012
3/31/2018	0	0	0	0	1,380	0	24	50	0	450	108	0	0	2,012
4/30/2018	0	0	0	0	1,726	0	30	62	0	563	135	0	0	2,516
5/31/2018	0	0	0	0	1,380	0	24	50	0	450	108	0	0	2,012
6/30/2018	0	0	0	0	1,380	0	24	50	0	450	108	0	0	2,012
7/31/2018	0	0	0	0	1,526	0	30	62	0	563	135	0	0	2,316
8/31/2018	0	0	0	0	1,380	0	24	50	0	450	108	0	0	2,012
9/30/2018	0	0	0	0	1,380	0	24	50	0	450	108	0	0	2,012
10/31/2018	0	0	0	0	1,726	0	30	62	0	563	135	0	0	2,516
11/30/2018	0	0	0	0	1,380	0	24	50	0	450	108	0	0	2,012
12/30/2018	0	0	0	0	1,726	0	30	62	0	563	135	0	0	2,516
Subtotal LB	0	0	0	0	18,090	0	318	660	0	5,965	1,431	0	0	26,464
Subtotal TN	0.00	0.00	0.00	0.00	9.05	0.00	0.16	0.33	0.00	2.98	0.72	0.00	0.00	13.23
SCORE FUNDS/COST PER TON										\$5,750.00				\$434.55

(WM/Market)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018	No Service	0	0	0	0	0	0	0	0	0	0	0	0	0
2/28/2018	No Service	0	0	0	0	0	0	0	0	0	0	0	0	0
3/31/2018	No Service	0	0	0	0	0	0	0	0	0	0	0	0	0
4/30/2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/31/2018	431	0	0	0	431	0	8	16	0	141	34	0	0	630
6/30/2018	431	0	0	0	431	0	8	16	0	141	34	0	0	630
7/31/2018	431	0	0	0	431	0	8	16	0	141	34	0	0	630
8/31/2018	431	0	0	0	431	0	8	16	0	141	34	0	0	630
9/30/2018	431	0	0	0	431	0	8	16	0	141	34	0	0	630
10/31/2018	No Service	0	0	0	0	0	0	0	0	0	0	0	0	0
11/30/2018	No Service	0	0	0	0	0	0	0	0	0	0	0	0	0
12/30/2018	No Service	0	0	0	2,586	0	48	96	0	846	204	0	0	3,780
Subtotal LB	0	0	0	0	1,29	0.00	0.02	0.05	0.00	0.42	0.10	0.00	0.00	1.89
Subtotal TN	0.00	0.00	0.00	0.00										\$3,174.60
SCORE FUNDS/COST PER TON										\$6,000.00				\$3,174.60

Garrison

Residue
703
562
562
703
562
653
703
703
879
703
879
8,471

90,932

45.47

Residue
234
1,006
187
1,006
234
1,258
1,006
187
1,006
187
234
1,188
187
1,006
187
234
2,479

26,464

13.23

Residue
0
0
0
0
59
59
59
59
59
0
0
354

3,780

1.89

Misc - Residential (PEQUOT LAKES SANITATION/Peine River Recycling Center)

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY
2018
WEIGHT IN TONS

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018					316		9	13		85	22			445
2/28/2018										177	47			224
3/31/2018										177	47			324
4/30/2018										386	102			2,032
5/31/2018										564	146			2,970
6/30/2018										701	185			3,090
7/31/2018										869	229			4,570
8/31/2018										0	0			0
9/30/2018										0	0			0
10/31/2018										283	709			14,170
11/30/2018										78	116			3,920
12/30/2018										79	198			3,950
Subtotal LB	0	0	0	0	29,094	0	820	1,229	0	817	215	0	0	40,977
Subtotal TN	0.00	0.00	0.00	0.00	14.55	0.00	0.41	0.61	0.00	3.89	1.02	0.00	0.00	20.49
SCORE FUNDS/COST PER TON														\$0.00

Landfill (WMMARKET) scaled at landfill

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018					13,391		377	566		3,583	943			18,960
2/28/2018										2,565	675			13,500
3/31/2018										3,441	852			17,040
4/30/2018										505	756			25,280
5/31/2018										636	1,588			31,760
6/30/2018										688	1,003			33,420
7/31/2018										662	1,655			33,100
8/31/2018										511	1,278			24,820
9/30/2018										456	1,241			25,560
10/31/2018										666	1,864			33,280
11/30/2018										564	1,409			28,178
12/30/2018										444	1,110			22,209
Subtotal LB	0	0	0	0	217,956	0	6,140	9,207	0	58,326	15,349	0	0	306,978
Subtotal TN	0.00	0.00	0.00	0.00	108.98	0.00	3.07	4.60	0.00	29.16	7.67	0.00	0.00	153.49
SCORE FUNDS/COST PER TON														\$27,334.00

Center Township (WASTE PARTNERS/Peine River Recycling Center)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018					2,093		36	152		441	72			2,794
2/28/2018										486	80			3,215
3/31/2018										486	80			3,215
4/30/2018										463	76			3,593
5/31/2018										574	94			4,053
6/30/2018										684	112			3,879
7/31/2018										795	130			5,101
8/31/2018										795	130			5,276
9/30/2018										617	134			4,962
10/31/2018										795	130			4,928
11/30/2018										750	123			5,205
12/30/2018										795	130			5,450
Subtotal LB	0	0	0	0	38,897	0	647	2,715	0	7,881	1,291	0	0	51,431
Subtotal TN	0.00	0.00	0.00	0.00	19.45	0.00	0.32	1.36	0.00	3.94	0.65	0.00	0.00	25.72
SCORE FUNDS/COST PER TON														\$3,000.00

GRAND TOTAL

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018					4,033,765		194,879	527,268		2,091,437	418,375			7,958,748
2/28/2018										1,045,172	209,19			3,979,12
3/31/2018										153,71				514.83
4/30/2018														
5/31/2018														
6/30/2018														
7/31/2018														
8/31/2018														
9/30/2018														
10/31/2018														
11/30/2018														
12/30/2018														
Subtotal LB	0	0	0	0	2,076,88	0	97.49	263.63	0	2,091,437	418,375	0	0	7,958,748
Subtotal TN	0.00	0.00	0.00	0.00	22,093.39	0.00	0.32	1.36	0.00	3.94	0.65	0.00	0.00	25.72
SCORE FUNDS/COST PER TON														\$314,534.00

GOAL/COST PER TON

\$150.00

3,979.12 7,477.301 3,738.65

Residue
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

Residue
22
24
24
23
28
34
39
39
40
39
37
39
388
0.19

SECTION 3.0

COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (CII) RECYCLING

3.1 Introduction

Commercial and industrial activities represent the largest portion of the ongoing recycling efforts within the County. In 2018, commercial/industrial documented recycling was 30,756 tons. Of that total; 16,031 tons were recycled using out-of-county recycling infrastructure. Commercial and industrial recycling accounts for 83.0 percent of all materials collected this year in the County. This higher than the statewide average of 75 percent for CII recycling.

3.2 Survey of CII Recycling Effort

In late 1992 and early 1993, the Solid Waste Department sent a survey to most businesses to learn if there was unreported commercial recycling and to detect barriers to recycling. Almost 61 percent of the businesses did not respond to the survey. To ensure comprehensive data for business recycling, an annual mass mailing to local business was started in 1996 and was continued to 2010. This provides an opportunity for business to request information from the County Solid Waste Office. Starting in 2011, the Solid Waste Office will only mailed survey to those businesses whose recyclables in previous years was not incorporated within the local haulers recycling reports. In the future, readdress the need to do a mass mailing to all businesses. The survey serves as the source of the documented in-county commercial recycling total. Lack of reporting from business interest remains a significant barrier.

The following are the results of this survey (Appendix 3-A):

- The survey identified approximately 16,031 tons of out-of-county recycling. This is the bases of the documented in-county commercial recycling total.

The survey provides a more accurate picture of the recycling effort within the CII sector. Also, handouts of the following resources were provided as part of the survey:

- Used Electronic Equipment Questionnaire
- Very Small Quantity Generator (VSQG) Questionnaire

3.3 Large CII Recycling Efforts

A significant portion of the County's CII recycling rate is related to the reduction/reuse/recycling efforts of our large CII in the County. Much of the materials generated by these industries (i.e., Lakeland Mold) have historically been accepted at the County MMSW facility. The large CII has reduced their volume of waste going to the Landfill as noted in the 1996 Recycling Report.

3.4 Event Recycling

In 2008, staff worked with the County Fair Board to establish a new recycling program for the county fair. By working with local Pepsi distributorship, recycling containers were obtained in the shape of a bottle. This recycling program is primarily targeting cardboard and beverage containers.

Also in 2008, a grant proposal was submitted to the State and received ten recycling bins in the shape of a beverage container. Two containers are located at Chamber of Commerce information facilities south of Brainerd and in Pequot Lakes, two are located at Ideal Township hall, two are at the Brainerd Civic Center, four went to the county fairgrounds, and remaining two are at the Solid Waste Office to sign out for special occasions. In January 2012, six recycling bins were given to Mat Seamore to establish a beverage container recycling program at the Pine and College Square gas stations. Five recycling bins were also given the Crosby school for their recycling program.

Initially, six of these bins were utilized at the County Campus. In 2013, the county upgraded to new recycling bins. Two of the Message in a Bottle recycling containers was given to Lowell Elementary in Brainerd. The 4th graders will be responsible for the collection of recycling. In 2014, two of the Message in a Bottle recycling containers was given to Brainerd High School South Campus and two were given to Forestview Middle School.

3.5 Overview of Entire CII Program

Appendix 3-B is the tabulated data regarding the CII recycling effort for which data is available. Due to concerns voiced in 1996, the information gathered to document the CII recycling effort; business's had an option if they wanted to be identified by name in this Report. Those choosing not to be identified are consolidated and listed under "Proprietary." The data is presented to eliminate double counting of materials, i.e., the material collected by the Baxter Curbside Program does not appear with the data for Waste Management. The large commercial recycling in the County consists primarily:

In-County Assets:

Waste Management	(1,270 tons)
Garrison Recycling	(279 tons)
Waste Partners	(1,117 tons)

If Appendix 3-B appears cryptic, perhaps the following explanation will help. "OCC" are old corrugated containers or cardboard boxes. The other headings should be self-explanatory.

3.6 Summary

While the County has selected and carried out a comprehensive residential recycling strategy, it has not developed a business recycling system other than providing information concerning waste prevention and recycling opportunities. Although unintended, the Landfill tipping fee increased from \$25 to \$45 per ton in mid-1991, in 1996 the solid waste management tax for commercial/industrial waste going into a MMSW landfill was set at 17 percent, and on April 1, 2016 the tipping fee was increased further to \$50 per ton; these actions greatly increased the incentive for businesses to recycle/reuse/reduce. Waste generation prevention is likely having an impact in the business sector. Many businesses, through a combination of waste prevention and recycling, have significantly reduced the amount of solid waste sent to the Landfill. This resulted in large savings to them by reducing operational expenses such as time, labor, storage, procurement, and in avoidance costs for collection and disposal. It remains less costly to landfill material, except perhaps where a relatively homogenous recyclable waste stream is generated. Nonetheless, some businesses have recycled significant amounts of material with limited County support.

Nationally, starting in 2007 waste volumes has fallen due to the recession. When the recession is over, some experts expect that the commercial and industrial waste streams will continue to decline. They have discovered the value of producing less waste. They now view what they once called “waste” as a material to be managed in the most productive way possible. Businesses have demonstrated that they see bottom line benefits in producing less waste.

Another important factor making the business programs more viable than residential programs is their waste streams, in some cases, contain a high quantity of quality recyclables. In addition, businesses wishing to be certified for ISO 9000 and ISO 14000 need to establish an infrastructure for waste-reduction and recycling, and documentation to qualify for certification. This including the economic factors discussed above makes business recycling the most beneficial avenue for County support.

APPENDIX 3-A
2018 SURVEY FORM

December 20, 2018

Anderson Brothers
PO Box 669
Brainerd, MN 56401

Re: 2018 Area Commercial, Industrial, and Institutional (CII) Recycling Data Collection

Thank you for your cooperation in sending the information I requested in the previous year. Due in part to your inputs, the County was able to document **exceeding the established recycling goal of 35%** of our Waste Management stream as required by the State Legislature. Your continual support and assistance are critical in tracking our recycling rate, and to ensure Crow Wing County will continually to exceed the established goal. I now ask your cooperation in completing the enclosed questionnaires concerning your businesses 201 efforts.

Many businesses in Crow Wing County recycle large quantities of many types of materials, using recycling services such as local garbage/recycling haulers. It is important that recycling totals are not duplicated. Since I receive information from the local haulers and recyclers listed on the top of the attached questionnaire, complete tonnage information **ONLY** for materials that you market directly to an end-user or for which you use a recycling collection firm other than the ones listed on the top of the questionnaire.

As in previous years, results of these questionnaires will be compiled in aggregate and used by my office to complete the required annual SCORE Report, which is sent to the Minnesota Pollution Control Agency. A special concern is the disposal of electronic equipment and small quantities of hazardous waste. An additional questionnaire is enclosed to assist you.

The enclosed questionnaires are for your use in reporting your recycling activities. Please send the completed questionnaires back to my office. This information needs to be sent **by February 1, 2019**. If you would like to send us your information to us electronically, please scan your information, and e-mail to: doug.morris@crowwing.us

Thank you for completing the attached questionnaires, and please call if you have questions or concern

Sincerely,
Doug Morris

Douglas R. Morris
Solid Waste Coordinator
Enc.

Gary Griffin, Director
Land Services Department
322 Laurel Street, Suite 15
Brainerd, MN 56401
Office: (218) 824-1010
Fax: (218) 824-1126
www.crowwing.us

Crow Wing County
2018 Commercial, Industrial & Institutional (CII) Questionnaire

Company Name: _____ Fax: _____
Contact: _____ Phone: _____
Mailing Address: _____ Date: _____
E-mail Address: _____

PLEASE COMPLETE AND RETURN TO CROW WING COUNTY SOLID WASTE OFFICE IN THE ENCLOSED ENVELOPE BY February 1, 2018.

The following is a listing of materials that are **banned** from being landfilled. To ensure proper management of these items, please annotate how you dispose of these items. If you have any questions concerning the proper disposal of these items please contact my office (824-1290) or the Regional office of the MPCA at 218-828-2492. (Circle appropriate units)

1. Material: **Fluorescent and/or HID Bulbs** Delivered to/Picked up by: _____
Quantity: _____ (lbs, # of 4' bulbs, # 8' bulbs, # of bulbs) per: (week, month, quarter, year)
2. Material: **Lead Acid Batteries and/or Household Rechargeable** Delivered to/Picked up by: _____
Quantity: _____ (lbs, tons, ea) per: (week, month, quarter, year)
3. Material: **Used Oil and/or Oil Filters** Delivered to/Picked up by: _____
Quantity: _____ (lbs, gallons) per: (week, month, quarter, year)
4. Material: **Waste Tires** Delivered to/Picked up by: _____
Quantity: _____ (# car, # truck, lbs, tons) per: (week, month, quarter, year)
5. Material: **Major Appliances** Delivered to/Picked up by: _____
Quantity: _____ (lbs, tons, ea) per: (week, month, quarter, year)
6. Material: **Used Electronic Equipment** Delivered to/Picked up by: _____
Quantity: _____ (lbs, tons, ea) per: (week, month, quarter, year)
7. Material: **Hazardous Waste** Delivered to/Picked up by: _____
Quantity: _____ (lbs, tons, ea) per: (week, month, quarter, year)

Our organization recycles **YES** **NO** (Circle appropriately)

Do you recycle materials through any of the following businesses?

_____	Waste Management	_____	Waste Partners
_____	Nisswa/Garrison Disposal	_____	Crow Wing Recycling
_____	Crosslake Recycling	_____	Pequot Lakes Sanitation
_____	Range Disposal	_____	

Any materials that are recycled through the above businesses **DO NOT** need to be included in the amounts recycled below. **IF YOU RECYCLE MATERIALS ONLY THROUGH THE ABOVE BUSINESSES, STOP NOW WITH THIS QUESTIONNAIRE.**

The County needs to track the amount of materials leaving the County to document the proper tonnage of items being recycled. Example, you directly haul your cardboard to Minneapolis: (Circle appropriate units)

1. Material: **Reuse Pallets**

Quantity: _____ (lbs, tons, ea) per: (week, month, quarter, year)

2. Material: **Cardboard**

Delivered to: _____

Quantity: _____ (# Bales, lbs, tons) per: (week, month, quarter, year)
(If bales, approximate weight of bale is: _____)

3. Material: **Scrap Metal**

Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

4. Material: **Textiles**

Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

5. Material: **Used Electronics**

Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

6. Material: **Other**

Material: Paper - _____ Delivered to: _____
(Type - Magazines, Office Paper, Etc.)

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

7. Material: _____

Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

8. Material: _____

Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

9. Material: _____ Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

10. Material: _____ Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

The information gathered from this questionnaire will be utilized to document the CII recycling effort within the County for the annual State SCORE report. Also, this information will be used for the County recycling report. **Please choose one of the following:**

YES My business can be identified by name in the County report.

NO Do not identify my business (All these efforts will be consolidated and listed under Proprietary).

Notes for completing this Questionnaire:

1. Recycling quantities should not include materials recovered from other waste streams such as demolition debris.
2. Do not include prepared or unprepared steel scrap such as I-beams, structural steel, heavy machinery, cast iron, automobile parts, or agricultural machinery under scrap metal.

We track the amount of demolition recycling within the county. Please complete this form to account for all the materials that is being recycled.

List of materials that are collected in-county? (Circle appropriate units)

1. Material: **Asphalt** Delivered to: _____

Quantity: _____ (tons, Cu yds) per: (week, month, quarter, year)

2. Material: **Concrete** Delivered to: _____

Quantity: _____ (tons, Cu yds) per: (week, month, quarter, year)

3. Material: **Other**

Material: _____ Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

Material: _____ Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

Material: _____ Delivered to: _____

Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

The information gathered from this survey will be utilized to document the demolition recycling effort within the County for the annual State SCORE report. Also, this information will be used for the county recycling report. **Please choose one of the following:**

YES My business can be identified by name in the County report.

NO Do not identify my business (All these efforts will be consolidated and listed under Proprietary).

ATTENTION CROW WING COUNTY BUSINESS

DISPOSING OF HAZARDOUS WASTE (VSQG)

Crow Wing County has an agreement with Stearns County Environmental Services to take business waste.

If your company needs to dispose of hazardous waste, you will need to contract Stearns County Environmental Services at 320.656.3613 or 800.450.0852. Point of Contact: Troy Freidhammer.

If you have any questions concerning business hazardous waste please contact my office at 218-824-1290 or the Regional office of the MPCA at 218-828-2492.

ATTENTION CROW WING COUNTY BUSINESS USED ELECTRONIC EQUIPMENT DISPOSAL

A special concern to MPCA is the disposal of electronic equipment. To ensure proper management of these items, the Crow Wing County Solid Waste Office will host a two (2) one day collection event in 2017 – the third Wednesday of May and September for government/public entities. These events will be held at the Crow Wing County Landfill site.

If you wish to participate, in the 2017 Electronics Equipment Disposal the dates will be third Wednesday of May and September, and the hours are from 9 am to 1 pm at the Crow Wing County Landfill. You will be required to stop at the Landfill Office so your load can be weighed in on the landfill certified scale. You will then be directed to the drop-off area. Once you have been unloaded; you will then need to be reweighed at the Landfill Office to finalize your weight and billing.

The County will utilize Dynamic Recycling. The overall cost is \$0.30 per pound processing and billing fee for businesses. Billing will be accomplished through the Landfill Office. Credit cards or checks will be accepted. This fee is due the day of the event or within 30 days of receipt of invoice for those businesses that already have a charge account at the Landfill.

Government agencies that are eligible for the State Contract rates will be handled differently. They will be billed directly by Dynamic Recycling. You will also need to stop at the Landfill Office. You will be receiving your weight of the material brought in. You will be receiving a bill from Dynamic Recycling.

1. If you are interested in participating, please send an e-mail to: Doug.Morris@crowwing.us, or call our office at: 218-824-1290.
2. **COSTS ARE CALCULATED BASED ON THE TYPE AND AMOUNT OF WASTE TO BE DISPOSED.** You will be responsible for paying for the disposal cost.
3. You will be responsible for transporting the waste to the County collection site.

PLEASE KEEP FOR YOUR FILE

APPENDIX 3-B
2018 ANNUAL RECYCLING REPORT
(CII)

ANNUAL RECYCLING REPORT (C/I)
CROW WING COUNTY
2018
WEIGHT IN TONS

Waste Partners (In-County Hauler)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	SCRAP METAL	OIL FILTERS	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018	125,472				28,620					12,600				166,692
2/28/2018	132,810				19,116					12,700				164,626
3/31/2018	124,641				24,624					18,160				167,425
4/30/2018	122,936				21,816					13,840				158,592
5/31/2018	162,779				21,492					14,440				198,711
6/30/2018	215,288				25,272					24,700				265,260
7/31/2018	252,250				24,624					22,380				299,254
8/31/2018	191,888				24,516					23,720				240,124
9/30/2018	156,606				23,868					18,160				198,634
10/31/2018	170,135				21,708					16,460				208,303
11/30/2018	109,246				22,787					16,460				148,493
12/30/2018	133,540				26,406					14,360				174,306
Subtotal LB	1,741,403	0	0	0	284,849	0	0	0	0	207,980	0	0	0	2,234,232
Subtotal TN	870.70	0.00	0.00	0.00	142.42	0.00	0.00	0.00	0.00	103.99	0.00	0.00	0.00	1,117.12

Waste Management (In-County Hauler)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2018	164,300				0		0	0	0	0	0			164,300
2/28/2018	178,800				0		0	0	0	0	0			178,800
3/31/2018	201,800				0		0	0	0	0	0			201,800
4/30/2018	230,800				0		0	0	0	0	0			230,800
5/31/2018	222,260				0		0	0	0	0	0			222,260
6/30/2018	211,100				0		0	0	0	0	0			211,100
7/31/2018	270,360				0		0	0	0	0	0			270,360
8/31/2018	235,300				0		0	0	0	0	0			235,300
9/30/2018	191,600				0		0	0	0	0	0			191,600
10/31/2018	205,200				0		0	0	0	0	0			205,200
11/30/2018	209,000				0		0	0	0	0	0			209,000
12/30/2018	220,400				0		0	0	0	0	0			220,400
Subtotal LB	2,540,920	0	0	0	0	0	0	0	0	0	0	0	0	2,540,920
Subtotal TN	1,270.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,270.46
Subtotal LB	2,540,920	0	0	0	0	0	0	0	0	0	0	0	0	2,540,920
Subtotal TN	1,270.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,270.46
PG SUBTOTAL LB	4,282,323	0	0	0	284,849	0	0	0	0	207,980	0	0	0	4,775,152
PG SUBTOTAL TN	2,141.16	0.00	0.00	0.00	142.42	0.00	0.00	0.00	0.00	103.99	0.00	0.00	0.00	2,387.58

ANNUAL RECYCLING REPORT (C/I)

CROW WING COUNTY

2018

WEIGHT IN TONS

Garrison Recycling
(In-County Hauler)
(Residential Recycling Programs subtracted out)

BUSINESS AREA	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
2018	558,220	0	0	0	0	0	0	0	0	0	0	0	0	558,220
Subtotal LB	558,220	0	0	0	0	0	0	0	0	0	0	0	0	558,220
Subtotal TN	279.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	279.11

North County Roll-Off

(In-County Hauler)
(Residential Recycling Programs subtracted out)

BUSINESS AREA	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Range

(In-County Hauler)
(Residential Recycling Programs subtracted out)

BUSINESS AREA	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
2018	0	0	0	0	0	0	0	0	0	117,160	117,160	0	0	117,160
Subtotal LB	0	0	0	0	0	0	0	0	0	117,160	117,160	0	0	117,160
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.58	58.58	0.00	0.00	58.58

PG SUBTOTAL LB
PG SUBTOTAL TN

558,220	0	0	0	0	0	0	0	0	0	117,160	0	0	0	875,380
279.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.58	0.00	0.00	0.00	337.69

ANNUAL RECYCLING REPORT (C/I)
CROW WING COUNTY
2018
WEIGHT IN TONS

BUSINESS	OCC	News	Office Paper	Mags	Mixed Paper	Phone Books	Alum.	Tin Cans	Scrap Metal	Glass	Plastic	Food Waste	Other	Total
<u>Christmas Lights Program</u>														
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>Christmas Tree Program</u>														
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>Central Converting</u>														
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>Goodwill</u>														
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>Lakeland Molds</u>														
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>Midwest Grease</u>														
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>MN Community NET/Quality Enterprise</u>														
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>PROPRIETARY (NAMES NOT LISTED IN REPORT)</u>														
Subtotal LB	4,469,306	0	5,636	0	9,758,245	0	6,722	0	26,439,716	0	277,937	1,112,243	840,143	42,909,947
Subtotal TN	2,234.65	0.00	2.82	0.00	4,879.12	0.00	3.36	0.00	13,219.86	0.00	138.97	556.12	420.07	21,454.97
<u>St Joseph's Med Center (Essential Health)</u>														
Subtotal LB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>PG SUBTOTAL LB</u>	4,469,306	0	5,636	0	9,758,245	0	6,722	0	26,439,716	0	377,937	1,473,942	1,154,793	43,771,296
<u>PG SUBTOTAL TN</u>	2,234.65	0.00	2.82	0.00	4,879.12	0.00	3.36	0.00	13,262.36	0.00	188.97	736.97	577.40	21,885.65

ANNUAL RECYCLING REPORT (C/I)
CROW WING COUNTY
 2018
 WEIGHT IN TONS

BUSINESS	OCC	News	Office Paper	Mags	Mixed Paper	Phone Books	Alum.	Tin Cans	Scrap Metal	Glass	Plastic	Food Waste	Other	Total
TOTAL LB	9,309,849	0	5,636	0	10,043,094	0	6,722	0	26,524,716	325,140	377,937	1,473,942	1,154,793	49,221,828
TOTAL TN	4,654.92	0.00	2.82	0.00	5,021.55	0.00	3.36	0.00	13,262.36	162.57	188.97	736.97	577.40	24,610.91
TOTAL - UTILIZING IN COUNTY RECYCLER														
TOTAL LB	4,840,543	0	0	0	284,849	0	0	0	24,000,000	325,140	0	0	0	29,450,532
TOTAL TN	2,420.27	0.00	0.00	0.00	142.42	0.00	0.00	0.00	12,000.00	162.57	0.00	0.00	0.00	14,725.27
TOTAL - NOT UTILIZING AN IN COUNTY RECYCLER														
TOTAL LB	4,469,306	0	5,636	0	9,758,245	0	6,722	0	2,524,716	0	377,937	1,473,942	1,154,793	19,771,296
TOTAL TN	2,234.65	0.00	2.82	0.00	4,879.12	0.00	3.36	0.00	1,262.36	0.00	188.97	736.97	577.40	9,885.65

SECTION 4.0

OTHER SOLID WASTE/NON-LANDFILL PROGRAMS

4.1 Introduction

Problem/ban material recycling activities represent the third and last portion of the ongoing recycling efforts within the County. In 2018, problem/ban material was 2,324 tons, using both the County and commercial recycling infrastructure. Problem/banned material recycling accounts for 6.3 percent of all materials collected this year in the County.

4.2 Background

Other aspects of the County's integrated solid waste program are; yard waste management, household hazardous waste (HHW) management, problem material (items banned from the Landfill) management, waste reduction, public education, and illegal dumping. In many cases, the County's problem material program complement existing retailer programs to ensure in-depth coverage. The goal is maximum recovery, and to encourage residential participation; convenient times, location, and ease of disposal are key features of the County's program.

The County's Solid Waste Disposal Site complex is located between the two major population centers for the County: Brainerd/Baxter and Crosby/Ironton/Deerwood. The "One-Stop-Service" provides convenient access for proper disposal for these materials at a reasonable price. Prices are set to promote the proper management of waste, eliminate illegal dumping, and halt backyard burn barrels. Programs have been established to be sustainable, economically feasible, and environmentally sound. The status of the County's efforts in each of these areas and others are discussed within this chapter. Appendix 4-A is the tabulated data regarding these programs within the County.

The lined municipal solid waste (MSW) Landfill, which opened in November 1991, is the foundation of the County's integrated solid waste management program. The Landfill was the first greenfield MSW landfill in Minnesota that met RCRA Subtitle D requirements. The initial construction included a leachate management system with two treatment and storage ponds. This expedited permit and construction was recognized in 1992 as one of the Seven Wonders of Engineering by the Minnesota Society of Professional Engineers.

The Solid Waste Association of North America (SWANA) has an Excellence in Solid Waste Management Awards Program that recognizes members and their programs that promote socially, environmentally and economic waste management. In 2004, Crow Wing County won the GOLD Special Waste Excellence Award. Although all the County's special waste management programs provide environmental benefits, the application for this award focused on HHW, yard waste, used oil/filters, antifreeze, and tires.

The North America Hazardous Material Management Association (NAHMMA) has an Awards Program to promote and recognize programs engaged in pollution prevention, hazard reduction, and waste stream toxicity reduction. In 2004, Crow Wing County won the Program Excellence Award. This recognizes outstanding programs which addresses household and CESQG hazardous waste management at the state or local level. The County application for this award focused on HHW, used oil/filters, antifreeze, electronics, lead-acid batteries, and our Very Small Quantity

Generator (VSQG) program.

Through both awards, the entire special waste management has been recognized nationally for its excellence.

The Interagency Pollution Prevention Advisory Team (IPPAT) recognizes projects that demonstrate a high degree of commitment and leadership and provide substantial benefit to the environment. They give out the Minnesota Government Reaching Environmental Achievements Together (MnGREAT!) Awards to recognize environmental achievements by government employees in the areas of pollution prevention, toxicity reduction, waste reduction and recycling. Our used oil collection program received a MnGREAT! Award in 2004.

The Minnesota Environmental Initiative (MEI) builds innovative partnerships to develop solutions to Minnesota's environmental problems. MEI works with nonprofit, business and government partners to develop consensus on critical issues and move collectively toward action that has positive impacts. Under their 2006 Environmental Initiative Awards - Public Sector Innovations, Crow Wing County was one of the top three finalist concerning our used oil program. These awards recognize projects that have used collaborative methods to produce tangible environmental outcomes.

The U.S. EPA Landfill Methane Outreach Program was launched in 1994 to reduce methane emissions by facilitating the development of projects that capture and utilize landfill gas as a source of energy. The Crow Wing County Sanitary Landfill On-Site Landfill Gas Recovery Project was selected to receive a 2010 LMOP Project of the Year Award. This project was also chosen as a 2010-11 Local Government Innovations Award winner. The Local Government Innovation Awards recognize outstanding cities, counties, and schools that demonstrate results in improving local services. The Hubert H. Humphrey Institute of Public Affairs at the University of Minnesota partnered with the Association of Minnesota Counties (AMC), the League of Minnesota Cities (LMC), and the Minnesota School Boards Association (MSBA). This was their 5th annual Local Government Innovation Awards. In addition, the National Association of Counties (NACo) recognized this project as a 2011 Achievement Award Program. For more than three decades, they have administered this non-competitive awards program to recognize innovative county government programs that modernize and streamline county government and increase its service to its citizens.

4.3 Yard Waste

The State of Minnesota banned yard trimmings (§115A.931) from all landfills within the State in 1992. By 1998, 24 states representing more than 50 percent of the nation's population had legislation reducing disposal of yard trimmings. Most bans were put in place over fears of shrinking landfill space. In recent years there has been a trend of states reversing this ban. Iowa overturned its ban in 2015; Georgia and Florida have already repealed their ban.

The pre-ban estimate for yard waste was 18 percent of the State's waste stream. Immediately afterward, it declined to 2.7 percent. Through two waste composition studies, the State has concluded yard waste making its way to landfills declined by more than 80 percent as soon as the ban went into effect. A second composition study conducted in 1999 found a nominal decrease in yard waste to 2.3 percent of the waste stream, providing no evidence of backsliding. A third composition study conducted in 2013 found yard waste at 2.8 percent of the waste stream. The

increased use of mulching lawn mowers has also reduced the amount of yard waste generated. Until 2011, a State directive allowed a maximum 5 percent recycling credits for yard waste.

During the course of the development of the yard waste compost program there have been no odor, leachate or other public health risks at yard waste compost sites within the County. The following are the locations of the yard waste collection programs within the County:

- Yard Waste Drop-off Sites:

- Northland Arboretum
- Breezy Point
- County Landfill Site
- Emily (Leaves only)
- Mission Township Canister Station
- Ideal Township Canister Station
- Roosevelt Township
- City of Baxter
- Pelican Lake Conservation Club

- Yard Waste Curbside Collection Program: Crosby
Ironton

Estimated population served by residential curbside yard waste program: (Population based on Minnesota State Demographers Estimate - 2017)

1. Crosby	2,362
2. Ironton	573

TOTAL	2,935

The County's yard waste (leaves, grass clippings, pine needles, garden debris) management program includes a yard waste compost area at the Site complex, and the prohibition of yard waste in the County's Landfill. Yard waste is taken from the residents for free at the Site complex. A separate area was set aside at the Site for composting leaves and yard waste. With the increased number of self-haulers and quantities of composting material coming in, the existing area had become congested. In 2000, the layout of the drop-off area was moved away from the tipping deck.

As part of the County's leachate recirculation efforts, a yard waste composting area was established on the bermed intermediate crown of Cells 1 and 2 of the MSW Landfill in 2002. Annually, the Landfill operator transfers the accumulated yard waste to Cells 1 and 2, placing a three to six-foot lift. Pretreated leachate from the leachate ponds is then sprayed over the yard waste, approximately three to five times per month, from April through October. A typical application ranges between 20,000 and 70,000 gallons. Application of the leachate is accomplished by using a trailer mounted spray gun.

Leachate recirculation in the MSW Landfill has resulted in an accumulation of ammonia and a depletion of carbon (i.e., reduction of biochemical oxygen demand - BOD) in the leachate. Yard waste composting on the Landfill crown is an innovative approach to augment the nitrification-denitrification process in the leachate. Due to aerobic conditions and the addition of organic carbon material from the yard waste, nitrification is promoted. The leachate then enters an

anaerobic environment as it migrates into the Landfill, promoting denitrification, thus reducing the nitrogen fraction within the leachate as nitrate is converted to nitrogen gas. The compost layer also serves as a biofilter for the emission of landfill gas (LFG) through the intermediate cover, including methane and volatile organics.

Once the compost is mature, it is removed from the Landfill crown and stockpiled to be used as a topsoil supplement on Landfill construction projects (e.g., final cover), and erosion control on intermediate slopes. This product has been very beneficial since the site is extremely topsoil poor. One growing season is required to generate a mature product. Testing completed by the County verifies that the compost has a high nutrient content with no concern of contamination. Fresh yard waste is subsequently applied on the Landfill crown to renew the composting process.

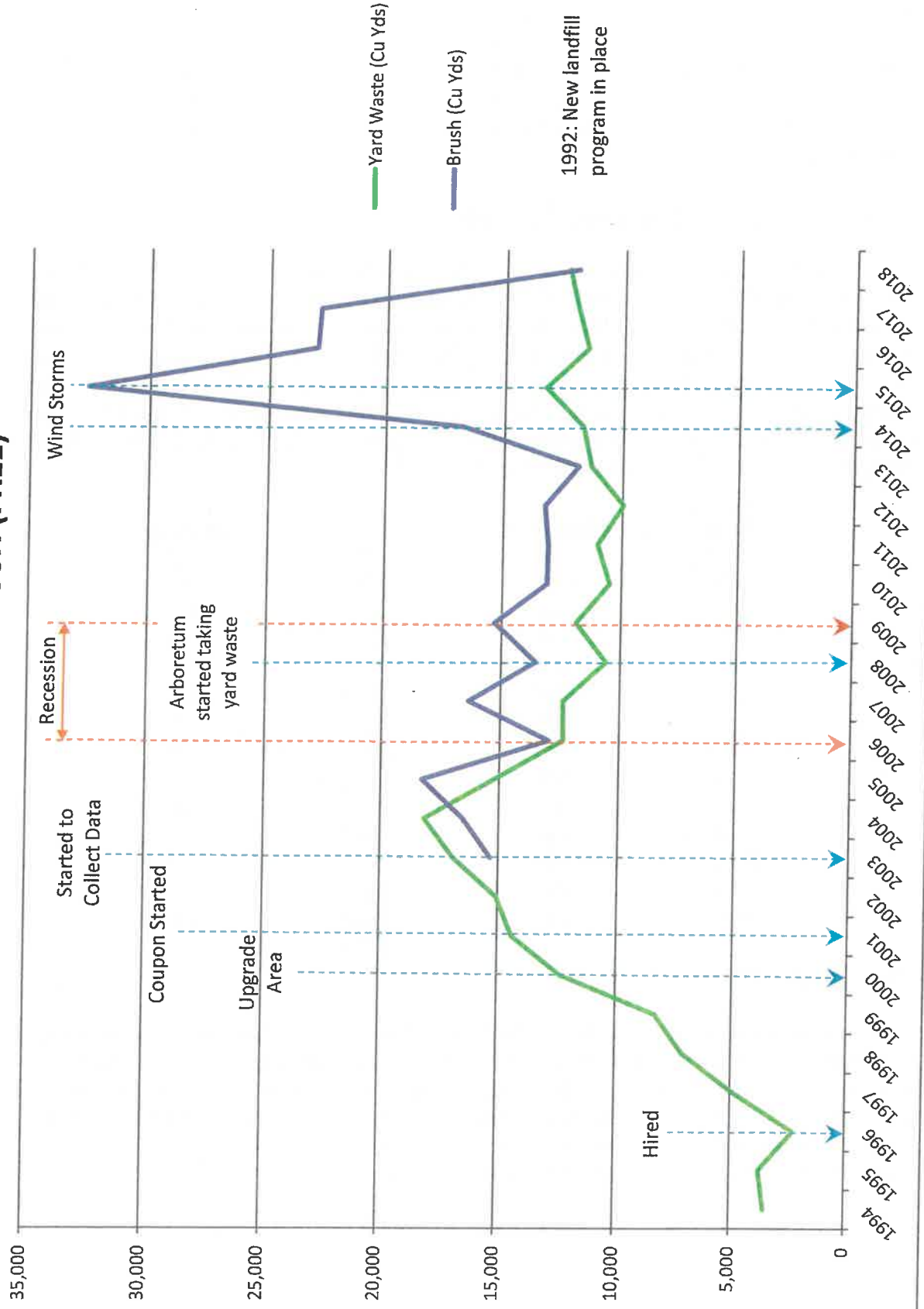
Cost savings are also realized by the County when yard waste compost is used to amend topsoil on construction projects. Delivery of topsoil from off-site sources costs about \$10 per cubic yard. If the compost is blended 50:50 with site soil to create a topsoil mix, the County saves about \$5,000 per acre of construction. This assumes a 6-inch thick topsoil or erosion control lift and some costs to move and blend the material on-site. As an example, the total savings due to compost utilization for a partial closure of the demolition landfill in 2004 is estimated to be \$12,000. This material was used in conjunction with the construction of Cell 4 and Pond 4 in 2007. The savings in this project is estimated to be \$21,000. In 2008, this material was used in conjunction with the construction of the new leachate land application area for an estimated savings of \$50,000. This material was critical to ensure a viable seed bed material for the success of this project.

In 2006, the County utilized 60 cubic yards of this compost to construct rain gardens as part of the Judicial Center construction. The islands within the Judicial Center parking lot were designed as rain gardens. Research has shown that rain gardens can trap and retain up to 99 percent of pollutants in urban runoff, protecting against metals, oils, fertilizers, etc. Rain gardens significantly reduced the impact of storm water reaching storm drains. These will serve as an example and to promote storm water management techniques for all new construction county wide.

In April 2007, the Master Gardeners in conjunction with the Extension Office contacted the County about having a composting system similar to Morrison County. They brought the issue to the Board on the Sept 18th Committee of the Whole meeting. The County was open in providing support through a grant to help them construct any needed infrastructure. A request was received from the Northland Arboretum (this was a group effort, the City of Brainerd, the City of Baxter, the Master Gardeners, and the Arboretum) in 2008. The County provided a grant of \$13,785, and the facility opened on October 14, 2008.

In October 2010, the MPCA awarded a waste reduction grant (\$41,615) to the Crow Wing Soil and Water Conservation District (SWCD) to establish a backyard composting program throughout the County. SWCD has partnered with the CWC Master Gardeners, and the Northland Arboretum to host regional workshops on backyard composting, sell low-cost backyard compost bins, and test and turn the Northland Arboretum compost site. Compost bins and workshops have been available to County residents since spring 2011. By the end of 2012, over 500 compost bins were sold by the Northland Arboretum; municipalities and the SWCD selling an additional 300 backyard compost bins; over 19 workshops with 290 adults in attendance were held in the Brainerd Lakes area; and provided backyard composting school lessons for 450 students.

YARD WASTE & BRUSH (FREE)



Prior to 1994, yard waste data was not recorded at the Site, yard waste was handled separately prior to this. The following graph shows the quantities of yard waste handled at the Site complex since 1994.

This is a free service to our residents; the source of funding for this program is through the \$15 County Solid Waste/Recycling Assessment charged to every resident. The County Board established this rate. The County will maintain its current program with no substantial changes anticipated.

4.3.1 Christmas Tree Recycling Program

As a result of cooperative advertising in 2018, the Christmas tree recycling program collected 50 trees. Minnesota Power, Brainerd Public Utilities, Crow Wing Power, and Lake State Tree Service provided the tree shredding service. Waste Management, Waste Partners, Nisswa Sanitation, and Range Disposal assisted. The Brainerd, Baxter, Crosby, and Ironton area is serviced by this program. Christmas tree chips are used for trail maintenance at the Northland (formerly Paul Bunyan) Arboretum located in Brainerd. In addition, Mille Lacs Electric Cooperative also started a Christmas tree recycling program in 1998, servicing the Garrison area. Christmas trees are dropped off at the ball field behind the fire hall in Garrison.

<u>Year</u>	<u>Amount (ea.)</u>	<u>Year</u>	<u>Amount (ea.)</u>
1992	1,122	2005	600
1993	Unk	2006	300
1994	Unk	2007	300
1995	Unk	2008	30
1996	815	2009	500
1997	1,500	2010	100
1998	800	2011	320
1999	1,000	2012	300
2000	1,200	2013	100
2001	500	2014	202
2002	300	2015	351
2003	300	2016	35
2004	600	2017	50
2005	600	<u>2018</u>	<u>400</u>
		TOTAL	11,425

4.3.2 Brush

A separate area was set aside at the Site for brush. With the increased number of self-haulers and quantities of material coming in, the existing area had become congested. In 2000, the layout of the drop off area was moved away from the tipping deck. Open burning is prohibited at the Site, with the exception of brush and grass which is allowed by Minnesota Department of Natural Resources Burning Permit. This service is free to residents of the County. The graph shows the quantities of brush handled at the Site since 2003.

With the growth of a biomass market, in 2009 there was a vendor who utilized much of the brush material on a trial basis. Approximately 221.6 tons of woody biomass were produced at the Landfill and transported to Benson, Minnesota. It was used by a facility that generates electricity using a single, biomass stoker boiler and a conventional steam turbine generator. This facility generates 50 MW of electricity. Poultry litter comprises over 75% of the biomass with woody biomass being one of the secondary vegetative matter.

4.4 Hazardous Waste Program

4.4.1 HHW Program

Following the passage of RCRA in 1976 hazardous waste from industrial and commercial sources came under cradle to grave regulation, but hazardous waste from households was left unregulated. Beginning in the early 1990s the MPCA was required by Minn. Stat. §115A.96 to establish a statewide program to manage HHW. Minn. Stat. §115A.96, subdivision 3, provides that the statewide HHW program may be provided directly by the State or by contract with public or private entities.

Chemical-based products from a single home may seem insignificant, but the cumulative effects of all households that handle and dispose of hazardous material improperly can become a major problem. According to the USEPA, Americans generate 1.6 million tons of household hazardous wastes (HHW) per year. The average home can contain as much as 100 pounds of HHW. HHW makes up less than 1 percent of the solid waste stream, but can contribute significantly to the level of toxins in the total waste stream. For example, paint can contain volatile organic compounds as well as fungicides. Old paint can include hazardous metals such as lead, mercury, cadmium, and hexavalent chromium.

State law (§115A.96 subd. 6) required counties to include a section on HHW management as part of their solid waste management plan. Minnesota rule (7035.2535, subp. 6) also requires that HHW management must be addressed as part of any application to permit/repermit a MSW sanitary landfill in the State. MPCA provides technical assistance and grant funding to counties that administer a HHW program. In addition, counties can utilize a statewide disposal contract negotiated by MPCA. The statewide disposal contract has made managing HHW more affordable for the counties. In 2002, the law was changed to also provide indemnification to the counties for any waste disposed of through the State contract.

The County HHW Facility was built as part of a Landfill Maintenance Building in 1992, and opened in August 1993. The HHW operation began to utilize the entire building in 2002, when the Landfill operator was moved to a new maintenance facility located at the site complex. The HHW Facility is 40 feet by 78 feet with areas for storage, processing and bulking, product exchange, and administration. County personnel operate the Facility with assistance provided by the County's Sentence-to-Serve (STS) program since 1997. Between 1997 and 2018, the amount of STS personnel available to us has shrunk significantly. Starting in October 2017, the STS program is no longer being run by the State, but County personnel. The County's HHW Facility is open 2 days per month, the second Saturday and Wednesday each month, May through October. Starting in 2018, the October dates will change to the first Saturday and first Wednesday. In the winter, November through April, the facility is open by appointment only.

In 2003, the County started its own Regional Program. Previously, the County was a member of the Tri-County (Stearns, Benton, and Sherburne) Regional Household Hazardous Waste Program. Morrison and Todd County joined Crow Wing County's Regional Program in 2003. The program was created to provide local program managers with central fiscal disbursement, an ongoing technical education program for HHW management, processing, information and a materials clearinghouse. Additional benefits include recommendations about equipment, a conduit to MPCA's HHW Program staff, and meeting location for local program managers.

All HHW is either reused in product exchange, recycled, fuel blended, or incinerated. The HHW vender (through the state contract) transports solvent-based and other flammable liquid waste (that does not contain unwanted constituent) to be used for fuel in high-temperature cement kilns. These kilns are EPA approved.

A can crusher was purchased in 1997 to help bulk oil-base and latex paint. An aerosol can crusher was purchased in 2002 to bulk those contents. This equipment, along with the STS personnel, has enabled staff to process the increased traffic volume. An additional benefit is the crushed metal cans are recycled versus being disposed of in the landfill. The following is the amount recycled and the cost savings of avoiding landfill disposal:

<u>Year</u>	<u>Amount (tons)</u>	<u>Cost Saving</u>	<u>Year</u>	<u>Amount (tons)</u>	<u>Cost Saving</u>
1997	7.8	\$402	2008	10.9	\$562
1998	8.4	\$433	2009	6.7	\$545
1999	10.2	\$526	2010	13.4	\$693
2000	7.5	\$388	2011	9.8	\$504
2001	8.2	\$421	2012	8.0	\$411
2002	9.1	\$470	2013	9.9	\$509
2003	9.7	\$500	2014	11.3	\$583
2004	8.9	\$456	2015	18.4	\$948
2005	9.3	\$476	2016	8.9	\$511
2006	13.6	\$698	2017	4.9	\$279
2007*	10.6	\$545	<u>2018</u>	<u>4.0</u>	<u>\$228</u>
			TOTAL	209.5	\$10,990

* Starting to see more plastic 1-gallon containers

A local company, Central Converting Inc., started to take #2 HDPE plastic 5-gallon containers for recycling in 2009. In 2010, the company also took the black plastic 1-gallon containers on a trial basis for recycling. An additional benefit is the plastic containers are recycled versus being disposed of in the landfill. Under PaintCare, all paint containers are now being shipped to them, no longer bulking paint. The following is the amount of containers (3 lb. each) recycled and the cost savings of avoiding landfill disposal:

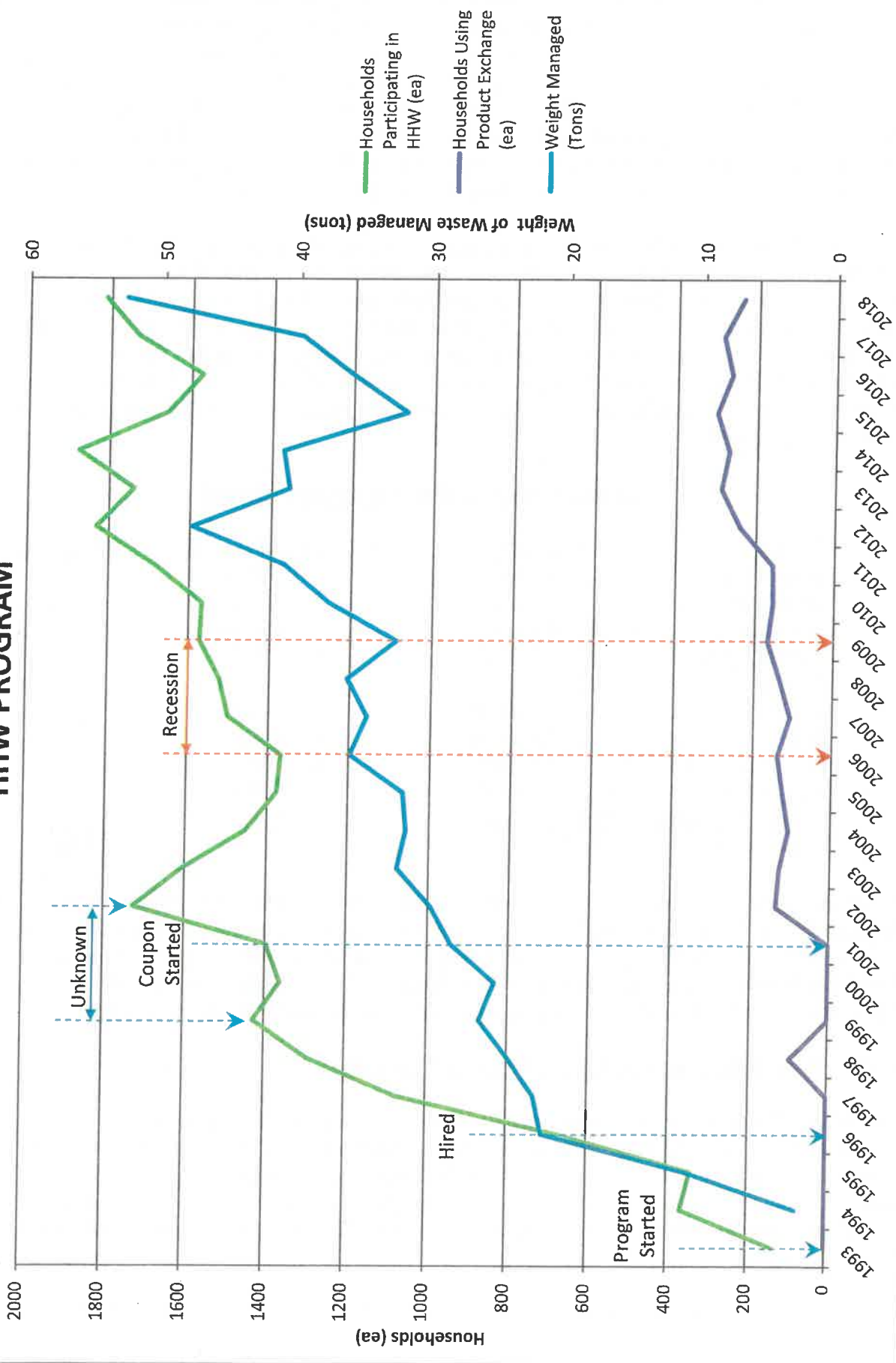
<u>Year</u>	<u>Amount (ea)</u>	<u>Cost Saving</u>
2009	1,000	\$77.28
2010	600	\$46.37
2011	500	\$38.64
2012	547	\$42.27
2013	550	\$42.40
2014	530	\$40.96
2015	405	\$31.30
2016	716	\$61.62
<u>2017</u>	<u>465</u>	<u>\$40.02</u>
TOTAL	5,313	\$420.86

Table 4.1 and the attached graph on the following pages provides an idea how the County residents are using this service. As Table 4.1 shows, in the past five years, over 10 percent of the County households utilized this service annually. Factoring in repeat customers and nonresidents, approximately 53 percent of the total County households (including seasonal homeowners) have utilized this service at least once since this program started in 1993. In 2018, 71.1 tons of material was managed through the County programs. In the past five (5) years, the average amount of HHW disposed through this program is 68 pounds per household. To put this in perspective, a full one gallon can of paint weights about 10 pounds.

As Tables 4.1 shows, old paint (latex/oil-base) is the largest item and thus the largest cost when the County conducts HHW collection events. The USEPA estimates that between 8.8 percent and 20 percent of all paint sold could become leftovers headed for the waste stream. In 2007, Minnesota was chosen to undertake a paint product stewardship initiative by the National Paint and Coating Association. A statewide demonstration was desired in order to best inform the creation of the national system and Minnesota was chosen as the state for the demonstration project. The bill that would have authorized the establishment of a paint stewardship organization funded by a fee was vetoed by the Governor in 2008 and 2009. Oregon then initiated this program, and in addition California, Connecticut, and in 2012 Rhode Island has enacted the PaintCare program. In 2013, HF967, the Omnibus Environmental bill that contained provisions for the paint stewardship program was passed and signed by the Minnesota Governor. The paint stewardship plan was sent to MPCA on March 1, 2014; program was to commence on July 1, 2014 but was delayed till November 1, 2014. PaintCare was able to resolve issues with the MPCA and the counties by July 2015. In 2015 there was five commercial PaintCare sites located within the County; Hirschfield's (Baxter), Sherwin-Williams (Baxter), Carson Hardware of Nisswa, Crosslake Ace Hardware, and Emily Ace Hardware. Starting November 2014 counties will no longer pay for disposal or transportation of architectural latex/oil paint. Plus Counties will be reimbursed for items given away through Product Exchange and bulking their paint. Started in 2015, as part of the HHW program started to accept architectural latex coating from contractors and businesses for free as part of the PaintCare Program. Below is the amount of funds that have been reimburse back to the County by PaintCare.

<u>Year</u>	<u>Cost Saving</u>
2015	\$23,436.00
2016	\$29,550.43
2017	\$32,205.97
2018	\$28,516.17

HHW PROGRAM



The participation rate went up slightly in 2018, and the percentage of repeat customers increased to the highest level yet - 61%. With this increase of participation and increase in repeat customers; we saw the amount of waste per load increase. This increase may be due to the aging population and they are moving. Previously having high repeat customers usually resulted in less material than people using the service for the first time, and we see a better quality of material that can be placed on the Product Exchange shelf. As more people become aware of this county service, it has resulted in less to just an occasional "large" load of HHW. These large residential stockpiles of HHW within the County are slowly being brought into the program.

In 2018, 17 percent of the material coming in is being reused through the Product Exchange Program as outlined in Table 4.1. This action has reduced the amount of material being disposed of as hazardous waste. The County will accept HHW for Product Exchange if a product is usable, stored in the original container, and is in good condition (i.e., latex/oil-based paint, automotive supplies, etc.). Any resident or organization of the County can utilize the product for free. Examination of the program indicates that 26 percent of the material brought in the last five years was reused through this program. The quantity of usable products from the HHW facility for 2018 is provided is as follows:

Quantities of Hazardous Materials Collected

<u>Product</u>	<u>Quantity</u>	<u>Cost Saving(disposal)</u>	<u>Shipping</u>
Latex Paint	298 Gallons	\$ 600.41	
Oil-Base Paint	95 Gallons	\$ 165.21	
Aerosols	3,373 ea.	\$ 1,581.94	
Auto Supplies	2,850 Pounds	\$ 2,622.00	
Reused Fuel	1,130 Gallons	\$ 1,015.73	
Acid	66 Gallons	\$ 604.90	
Base	888 Pounds	\$ 816.50	
Compressed Gas	87 Cylinders	\$ 80.04	
Anti-Freeze	99 Gallons	\$ 99.00	
<u>Household Supplies</u>	<u>2,312 Pounds</u>	<u>\$ 2,127.04</u>	
2018 TOTAL	23,502 Pounds	\$ 9,712.77	\$ 374.00

Since the HHW program is available to all residents with no direct costs, the primary source of funding for this program is through the \$15 County Solid Waste/Recycling Assessment charged to every resident with about 10 percent coming from an annual MPCA grant. Funding through PaintCare is becoming a significant source of funding. The County Board established this rate. The County will maintain its current program with no substantial changes anticipated.

4.4.2 Waste Pesticides and Empty Pesticide Containers

The Waste Pesticide Program was created in 1990 as required by Minn. Stat. §18B.065, and administered through the Minnesota Department of Agriculture (MDA). Initially MDA provided (with County assistance) a waste pesticide collection program for the area every two years by Statute. In 2009 this was modified to every two years for agricultural waste pesticides, and annually for nonagricultural waste pesticides. The last MDA sponsored event for our County was August 22, 2012.

There was no cost for the participants under this program. Funding is through the Pesticide

There was no cost for the participants under this program. Funding is through the Pesticide Regulatory Account (PRA) that is funded by a fee charged to pesticide manufacturers for both agricultural and nonagricultural products that sell pesticide in Minnesota. The fee is set at 0.4 percent of the annual gross pesticide sales within the State. This was agreed to by the manufactures and legislature as an effective product stewardship policy for proper disposal of unwanted or unusable waste pesticides, with the costs paid up-front. Initially by statute, at least \$600,000 per fiscal year must be transferred from PRA to the Waste Pesticide Account. In the 2003 Legislation, this was lowered to \$300,000 and the fee remained at the same level.

Initially the program had two parts - the first part was an empty pesticide container collection effort, and the second part consisted of the collection of actual pesticides. These events were previously held at Barrett Ag Supply south of Brainerd on Highway 25. Starting in 2000, the event was held at the HHW Facility located at the Site. Collection and disposal cost was managed through the MDA. The following is a comparison of the empty pesticide container collection effort. Due to the low number, this aspect of the program was discontinued after 2000:

Empty Pesticide Containers Collected

	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>Total</u>
# of Containers Collected	469	577	600	150	1,330	699	3,825

Additionally all pesticides, including aerosols, gathered under the County's HHW program was disposed through the MDA program at no cost to the County. This started in mid-1997 (state fiscal year starts midyear), and the County's second shipment of pesticides for that year went through this program. Starting in 1998, all household pesticide was managed through this program.

Initially in 2002, counties were informed there will be no more shipping of household pesticides through the MDA. This decision was based on the MDA's revised budget for the waste pesticide program, a revision prompted by the announcement of the \$2 billion state budget shortfall for 2002-2003 biennium. All expenses not directly related to waste pesticide events including organization and collection of waste from farms, businesses and other pesticide end users were to be cut. The shortfall for the 2004-2005 biennium of \$4.6 billion reduced the amount of funds from \$600,000 to \$300,000. The aspect of the MDA organizing and collecting waste from farms was discontinued after 2003. Starting in 2004, the MDA set up a Pesticide Partnership. Under this program, the MDA was promoting Waste Pesticide Collection Program Agreements with county HHW programs. In the Agreement, the MDA pays up to a certain limit for any farm and household pesticides that is brought into a county HHW facility. It acted as a "debit card." When a county makes a shipment of HHW, they annotate the drums that are pesticides and MDA will pay for its disposal charges up to the limit set for each county. Starting in 2009 the MDA modified this program, removing any limits that the counties could take in, but required in-depth inventory and weights of the material brought in. In 2013, the Legislature changed the statutory language and suspended the recording requirement for waste pesticides types at collection points. With this change, the County did sign their Agreement.

Table 4.1 has a comparison of the second part (actual collection of pesticides) of this effort. Minnesota's program ranks among the top five states nationally in total pounds of waste pesticide collected. A summary of pesticides addressed through our County's HHW program is provided in the following table:

<u>Year</u>	<u>Number of People Who brought in Pesticides</u>	<u>Amount Disposed (pounds)</u>	<u>Cost Savings</u>
1999	180	1,036	\$ 746
2000	196	1,216	\$ 876
2001	201	894	\$ 796
2002	157	787*	\$ 701
2003	267	450**	\$ 401
2004	257	2,728***	\$ 2,455
2005	261	1,080	\$ 972
2006	268	970	\$ 873
2007	272	1,280	\$ 1,006
2008	267	1,199	\$ 980
2009	269	2,448	\$ 2,001
2010	293	2,000	\$ 1,640
2011	286	1,267	\$ 1,039
2012	351	1,379	\$ 1,130
2013	343	3,405	\$ 3,548****
2014	380	3,591	\$ 3,742
2015	352	2,182	\$ 2,365
2016	358	2,879	\$ 3,076
2017	377	2,793	\$ 3,320
<u>2018</u>	<u>417</u>	<u>3,910</u>	<u>\$ 2,384</u>
TOTAL	5,752	33,584	\$33,066

* MDA did take HHW pesticides that were collected up to July 2002.

** From July - June

*** July 2003 - Nov 2004

**** Prior to and including 2012 - cost saving was only disposal cost
2013 and forward - cost saving included disposal, transportation, and replacement drums.

4.4.3 VSQG (Very Small Quantity Generator)

Federal law prohibits the disposal of certain quantities of hazardous waste into the solid waste stream. This type of waste must be managed separately. Minnesota hazardous waste rules allow Very Small Generators (VSQGs), those who generate 220 pounds or less hazardous waste per month, to deliver their own waste in their own vehicle to a licensed VSQG collection program. Collection programs consolidate waste from many businesses, and then ship it to a permitted treatment, recycling or disposal facility. Although program participants still pay the disposal charges, the programs are intended to provide a convenient and cost-effective disposal option. Each program determines the waste(s) it will accept, the area it serves, its hours of operation and associated charges.

Under the existing County HHW program through the MPCA, organization and business hazardous waste is prohibited at this time. Due to the limited amount of waste generated, many businesses find cost-effective methods to dispose of their hazardous waste very limited. This was an area of concern to the County for the following reasons:

1. In 1993, the Lake Superior Basin did door-to-door site visits to locate hazardous waste generators. Through this effort, 611 additional generators were identified, accounting for 54 percent of the known generators at that time. Of those newly identified generators, 360 or 59 percent was mismanaging a total of 40 tons of hazardous waste; and
2. In addition, Olmsted County, another Greater Minnesota County, completed a survey in 1995. This survey indicated that 9 out of 10 businesses produce hazardous waste. This county has about 3,500 businesses of which only 700 were listed in the State's database, for an estimated compliance rate of 23.3 percent. Crow Wing County maintains an active database that lists more than 2,000 businesses.

With the two case studies listed above, there exists a need to provide assistance to smaller businesses in Greater Minnesota. In most cases, there are inadequate technical and financial resources for obtaining information, assessing waste management methods, and developing and applying waste reduction techniques. Starting in 2002, in conjunction with the Northwest Minnesota Household Hazardous Waste program located in Bagley, Minnesota, the County hosted two VSQG days - Spring and Fall. They were unable to continue the support for the County VSQG program in 2005. Stearns County has a mobile VSQG collection vehicle, and Crow County was able to utilize this VSQG program starting in 2005. Stearns County could not continue the support for the County VSQG program in 2008. In 2008, Crow Wing went back to the Northwest Minnesota Household Hazardous Waste program located in Bagley, Minnesota. Due to staffing issues, this was discontinued in 2011. In 2011, the County was able to utilize Stearns County program again, provided the business could transport the waste to St. Cloud. On August 21, 2016 received a notice from Stearns County that they will only accept VSQG wastes from within its program region and counties with HHW facilities/mobile agreements. At this time there is no VSQG program within the County.

The result of the VSQG efforts is outlined in Table 4.1.

4.4.4 Mercury Waste

In 1992, the Legislature enacted legislation prohibiting disposal of waste mercury thermostats, thermometers, electric switches, gauge, or medical or scientific instruments from businesses and households from which the mercury has not been removed for reuse or recycling (Minn. Stat. §115A.932 and 119.92).

The national Thermostat Recycling Corporation (TRC) was formed in 1997 to operate a national wholesaler reverse-distribution system. For a nominal deposit, TRC provides postpaid bins that hold about 100 thermostats. The program was expanded to HVAC contractors in 2005. In 2006, Minnesota's HHW program was part of a test program with TRC. After the test program, the entire household hazardous waste programs in Minnesota are eligible to obtain bins and participate directly in the TRC program. MPCA obtained and provided a TRC bin to our HHW program in 2008. In 2008, all local HVAC and electrical contractors have been notified of this disposal option for any thermostats they need to dispose of. This notification was accomplished again in 2015 and 2016. In 2009, demolition contractors were also notified of this program being available through our HHW program. The first shipment of thermostats was shipped in 2009, and the next shipments were in 2014 - 2018. Each mercury thermostat contains approximately 4 grams of mercury.

Prior to this, the County HHW program could only handle thermostats from residents and had to pay the disposal cost for this item. The County is now able to take both residential and business thermostats, and dispose of them for free through TRC. Today more than 3,600 businesses and communities in 48 states are enrolled in the program. Since the beginning to 2015 over 2.1 million mercury-containing thermostats have been collected, which is about 10 tons of mercury.

4.4.5 Pharmaceutical Waste

In the spring of 2011, the Drug Enforcement Administration (DEA) and its national and community partners/the County Sheriff gave the public an opportunity to prevent pill abuse and theft by ridding homes of potentially dangerous expired, unused, and unwanted prescription drugs. On Saturday, April 30th, from 10 a.m. to 2 p.m., DEA and its partners held their second National Prescription Drug Take-Back Day at sites nationwide. The service was free and anonymous, no questions asked.

This initiative addresses a vital public safety and public health issue. Medicines that languish in home cabinets are highly susceptible to diversion, misuse, and abuse. Rates of prescription drug abuse in the U.S. are alarmingly high--more Americans currently abuse prescription drugs than the number of those using cocaine, hallucinogens, and heroin combined, according to the 2009 National Survey on Drug Use and Health. Studies show that a majority of abused prescription drugs are obtained from family and friends, including from the home medicine cabinet. Crime associated with prescription drug abuse also is on the rise. Another issue is pharmaceuticals have been detected in water samples collected from U.S. waterways that are considered susceptible to contamination from various wastewater sources.

The Crow Wing County program to address the disposal of old residential pharmaceutical medications was initiated in 2012. As part of a regional effort, our County also assisted Cass County with five sites, and one site at the Aitkin County Sheriff's Department. The Crow Wing County sites are at: Crow Wing County Law Enforcement Center, Breezy Point Police Department, and Crosby Police Department. The program officially started on April 9th for the Breezy Point and Crosby site, and April 10th for the Law Enforcement Center. In 2014, City of Nisswa request to be part of the program. Their program official started on August 18th. Early in 2015, CVS Pharmacies offered free pharmaceutical drop off bins to any law enforcement agency. Pequot Lakes was able to obtain one of these, and was incorporated into our program on August 11, 2015. Crosslake was also able to obtain one in 2016; program started up in August.

The result of Crow Wing's pharmaceutical efforts in 2018 is 1,980 pounds, and is outlined in Table 4.1.

4.4.6 Summation

This waste stream does require special handling. Even though handling HHW is more costly, time consuming, and subject to more regulatory oversight than any other of the components of the waste stream that we manage; these programs that deal with hazardous waste provide a direct benefit to the County by offering proper disposal actions for these items to the residents/businesses of the County. As Table 4.1 outlines, since 1990 over 1,037.6 tons of hazardous waste/materials were brought in through these County/State programs that would not have been otherwise. This action has greatly reduced the risk of illegal dumping, or disposal into the County Landfill. If placed in the Landfill, this quantity of chemicals would have had a profound effect on the leachate quality.

If disposed of inappropriately elsewhere, these chemicals may contaminate land, ground water or surface water, and air quality. Removal of this material from the general MSW waste stream has also minimized the health risk to waste haulers and Landfill operator staff. It is felt that these programs are and will continue to be successful. The State should continue to bear the risks for the transportation, management, and disposal of household hazardous waste and pesticides collected in the County.

County staff foresees the volume accepted at the HHW facility to remain near the current disposal level. Initially, much of the waste going through the facility was manufactured over 10-years ago. A reason may be homes in the rural area historically did not have a high turnover rate as in the Metro area. A farmstead or home in the County may stay in the family for multi-generations allowing a buildup of HHW versus throwing it away - the old adage, "We may need it!" When things are cleaned up, there is a significant quantity of HHW and some of it was quite old. Now the County staff is seeing much of the waste going through the facility was manufactured within 10-years. Overall, it will take time before all of the existing waste is disposed of properly.

4.5 Problem Materials

Counties shall also provide for the recycling of problem materials and major appliances (§115A.552 subds. 1). The County's integrated solid waste management program addresses problem materials, and prohibition of these materials in our County Landfills. The problem material challenge consists of two main components: items that reach the end of their useful life and disposed of, and those items that are in stockpiles and/or storage. As outlined below, many of the County's problem material programs compliment retailer programs ensuring in-depth coverage.

4.5.1 Waste Tires

There exist many reasons to regulate the management and disposal of waste tires. The primary concern is public health. Tires can become a prime breeding ground of disease carrying mosquitoes, and a potential fire hazard. This became an issue starting in 2016 concerning the Zika virus; tire management is important as one method to mitigate mosquitoes breeding in tires. In addition, burying tires in a landfill consumes valuable landfill space and wastes a resource. Waste tires represent approximately two (2) percent of total solid waste generation in the United States

Typical scrap tire management before 1985 consisted of sending whole tires to landfills for burial. Another means of managing scrap tires was for someone to collect scrap tires and place them onto a pile. In 1985, Minnesota enacted the first legislation in the nation specific to scrap tires. Since then, the State of Minnesota has enacted a landfill ban (§115A.904) on tires. Currently, 38 states have banned whole tires from landfills.

To address the stockpile issue, the County worked closely with MPCA under a grant program to remediate inactive waste tire disposal sites within the County in 1991. Approximately 100,000 tires or 1,456.5 tons were collected from motor vehicle salvage yards and other stockpiles. Of which, 423.44 tons were from the County Landfill. Today, there are no longer any large stockpiles located within the State or any known "large" tire dumps within the County. As part of the 2002 Legislative actions, Chapter 382 repealed the authority for the MPCA to make grants and loans to eliminate waste tires stockpiles.

In 2005, per the Rubber Manufacturers Association, the annual tire replacement amounted to 299 million tires nationwide. In 2007, it was estimated that the end-use markets consumed 89.3 percent by weight of the annual take off produced. By comparison, in 2005, about 82 percent of tires were consumed by weight. In 1990, only eleven percent of tires were consumed on a per tire basis. Scrap tire for energy is currently the largest market. In 2007, 54 percent of scrap tires disposed of in the US was used for tire derived fuel.

As done nationally, local tire retailers are processing the majority of the used tires generated annually within the County. Since April 1, 1989 in Minnesota, retailers who sell tires have been required by statute (Minn. Stat. §325E.32) to take one waste tire for each new tire they sell. The local retailers are allowed, and do charge a small fee for this disposal service. According to a document distributed by Goodyear titled "Scrap Tires Recovery, An Analysis of Alternatives," 90 percent are returned by the consumer to the thousands of retail locations across the country when worn out tires are replaced by new ones. EPA estimates that 95 percent of tires are collected through the commercial waste stream, and only five (5) percent or less through the household waste stream.

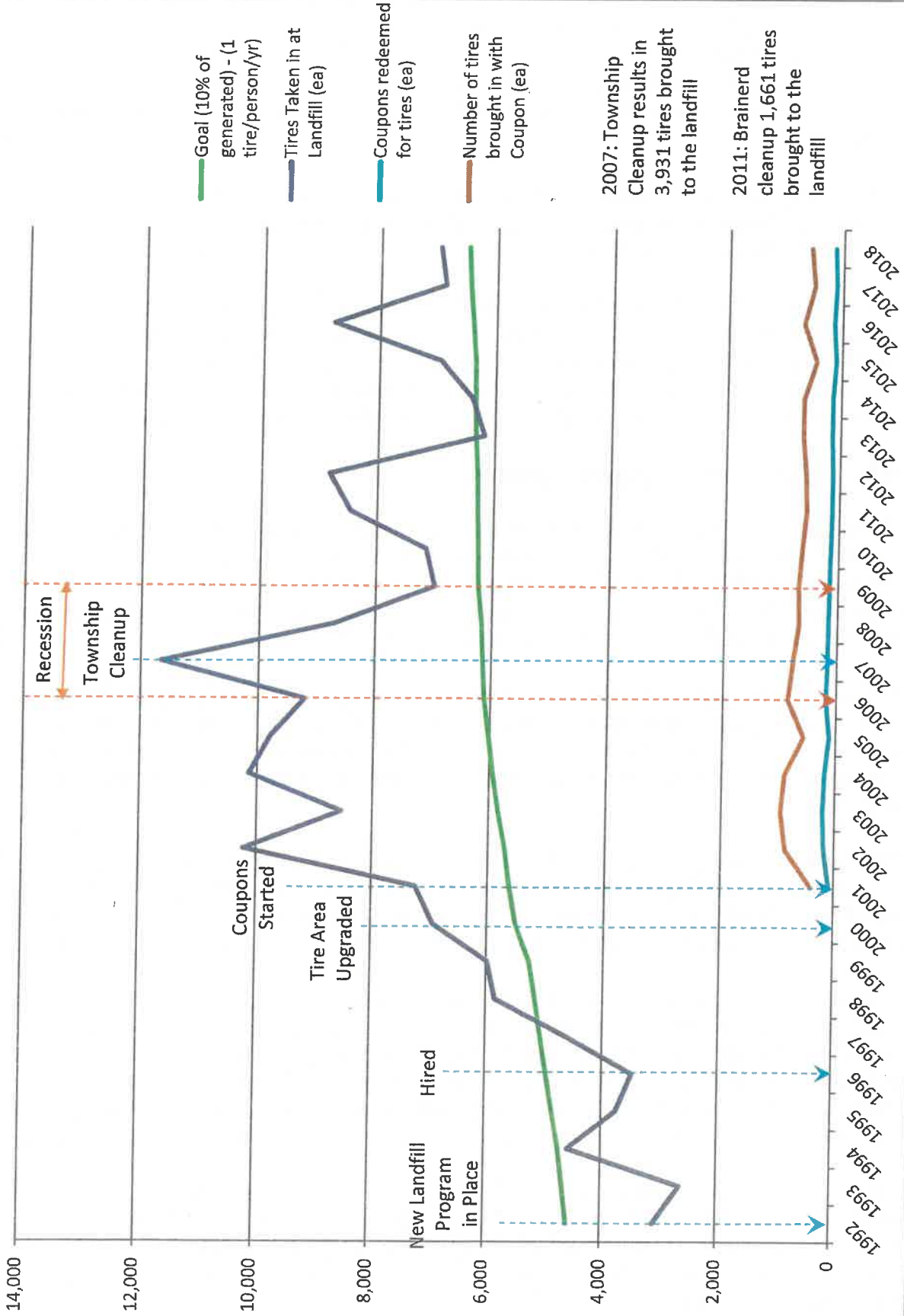
To address the remaining five - ten percent that is not returned by the consumer to the retail locations across the County when worn out tires are replaced by new ones, there is a drop-off location for waste tires at the Landfill Site Complex for the residents. Mission and Ideal Township canister stations also handle tires. In addition, another disposal option people utilize is the many area "Cleanup Days". These events offer residents convenient opportunities to bring waste tires to a central location for disposal at a minimum charge. The tires gathered at these events are brought either to the Site complex or to an area tire retailer.

The Site complex is permitted to store up to 10,000 tires. The County does not accept tires from the local tire retailers. The tire disposal area was upgraded in 2000 to provide improved access for the residents and maintenance by the Landfill operator. Waste tires are accepted at the Site complex for reuse/recycling for a fee. The Site complex receives mostly tires that have been on residential property, and residents are willing to utilize the One-Stop-Service disposal system at the Site complex.

The attached graph shows how the five – ten percent goal is being met. The graph shows the quantities of tires that are being handled just at the Site complex since 1992.

Waste tires collected by private retailers are disposed/recycled through arrangements between the retailer and a collection/recycling transporter. At this time, the County has no contract with a tire disposal/recycling facility. When sufficient tires have accumulated, they are sent to the facility with the lowest prices. Historically, waste tires collected at the County Landfill drop-off location were sent to BFI. BFI transported the tires to South Dakota where they have them chipped and used for road bedding material. Some chipped tires may have been used in a WTE facility. Since 1997, waste tire shreds have been used in the Landfill's leachate recirculation program, replacing recirculation lateral aggregate. Tire shreds are also used during liner construction, placed to mark the top of the drainage sand around a cell perimeter and at LFG well locations. The tire shreds provide a warning indicator to Landfill equipment operators when excavating near the liner system.

TIRES



The County's tire program has become self-sustaining with all tires reused at the Site complex. All tires collected have been shredded and used on-site for recirculation lateral and liner construction. The difference in price between washed aggregate and shredded tires is about \$16 per in place cubic yard. Currently, twenty-seven (27) recirculation laterals have been installed, each having an average length of 420-feet within a 4-foot by 4-foot trench. This is equivalent to about 5,724 cubic yards and a construction cost savings of almost \$107,520. Metal rims are recycled.

The County has used First-State Tire in East Bethel, Greenman Technology, Monitor Tire, and Liberty in Minnesota for tire processing. Unfortunately, there are only two processors left within the State (Liberty and First-State Tire).

The source of funding for this program is primarily through the tire tipping fee at the Site complex, which is established by the County Board. This fee is set at a level sufficient to cover the cost of handling and low enough not to encourage illegal dumping. The County will maintain its current program with no substantial changes anticipated – added a new category in 2015; semi tires. This year, the County will use the weight from the tire vender for the SCORE report.

4.5.2 White Goods (Household Appliances)

By weight, the typical appliance consists of about 60 percent steel. The steel used in appliances is made with a minimum of 25 percent recycled steel. The purpose of a ban is to extend the life of the State's landfills and require the public sector to carry out the recycling of these goods. The most recent data available (2013) concerning the nationwide appliance recycling rate was 82.0 percent. The overall steel recycling rate in 2014 is 86 percent.

White goods are large items defined by statute (Minn. Stat. §115A.03, subd. 17a) as refrigerators, freezers, dishwashers, heat pumps, furnaces, garbage disposal, clothes washers and dryers, ranges and stoves, hot water heaters, conventional and microwave ovens, dehumidifiers, trash compactors, and air conditioners. These products comprise about 2 percent of the MSW produced in the US.

The State of Minnesota has enacted a landfill ban for appliances, and tasked each county (§115A.9561, subd. 2) to ensure there is an opportunity for its residents to recycle used major appliances. As of 2000, 18 states enacted landfill bans for appliances, which helps drive successful recycling toward an ultimate goal of total recycling. This strategy appears to be working.

Appliance disposal options are provided at the Site complex, area "Cleanup Days," Mission and Ideal Township canister stations, and an area private scrap metal dealer for a fee per appliance. The area at the Site complex was upgraded in 2000 to provide improved access for the residents and the contracted processor. Appliances collected from the Site complex are processed by Curtis Whitegoods (bought out by Cohasset White Goods/Bass Brook Recycling in 2005) and transported to a scrap yard. The Site fee to accept appliances for recycling is five dollars per appliance.

The County has an agreement with the Landfill operator to remove Freon (§116A.731), PCB contaminated capacitors and mercury switches (§115A.932). The Landfill operator is certified with all applicable local, state and federal regulations for proper capture of hazardous products contained in the appliances. Disposal of the PCB capacitors and mercury switches is accomplished through the County HHW program.

At the Site complex the Servel gas refrigerator rebate program is promoted. This refrigerator was popular in hunting cabins, vacation cottages and remote areas where electricity was unavailable and gas was the preferred energy source. Servel manufactured between 1933 and 1957 are linked to 22 deaths from carbon monoxide poisoning nationwide. Proper disposal of a Servel refrigerator will receive a \$100 rebate from the manufacturer.

The Site complex is accepting a significant amount of used appliances generated within the County. In addition, a local scrap metal dealer (Crow Wing Recycling) accepts a large amount of used appliances. With this in mind, the County is generating more than the State/national average. This may be due to people who live on the lakes and people who are cleaning up their property. Nonresidents with summer lake homes bring old appliances from their permanent residence for use at their lake homes and dispose of them in our County. This transient population, which is not included in our population total, may be adding a significant amount of appliances to our solid waste system. The attached graph shows the quantities of appliances handled at the Site complex since 1992. The other graph shows the quantities of scrap metal coming into the Site.

The source of funding for this program is primarily through the appliance tipping fee at the Site complex, which is established by the County Board. This fee is set at a level sufficient to cover the cost of handling the appliances per §115A.552, subds. 1 and low enough not to encourage illegal dumping. The Site fee to accept appliances for recycling is five dollars per appliance. There will be no substantial changes to the existing major appliance program. This year, the County did not use the State's estimated weight for appliances, but actual tonnage from Cohasset Recycling.

4.5.3 Used Oil & Used Oil Filters

Due to its potential value, the EPA term is “used oil” rather than “waste oil.” After it is collected, nearly 89 percent of used motor oil from vehicles is recycled/reused for use as industrial fuel or space heating. Because it usually has a thicker viscosity, used oil possesses more energy than #2 fuel oil. A typical gallon of used oil contains 163,000 to 240,000 BTU -- more than twice the energy value of LP gas or coal. This creates a valuable form of energy, which helps our economy by avoiding the need to refine new commercial heating from imported crude oil.

The State of Minnesota has enacted a landfill ban for these items (§115A.916). In 1987, legislation was passed (§325E11 (a)(1)) in Minnesota requiring all retailers of motor oil to collect used oil or post signs saying where the nearest location for acceptance of used oil is found. In 2004, the County contacted and provided a sign (94 were posted in area motor oil retailers) promoting the eight used oil drop-off sites to all the motor oil retailers located within the County. During this visit only 2 of the 94 stores had a sign posted. In addition, motor oil legislation (§325E112, subd. 1, (2)) was passed in Minnesota in 1997 specifically requiring the industry to ensure each county has at least one free site, in addition to any free government site. Currently, this site is Valvoline Oil in Baxter. Valvoline Oil will take up to 5 gallons of used oil and 10 oil filters. A local business (Waste Partners) provides residential/commercial used oil filters collection service in the County. Tonnage from this business is used in the SCORE Report.

The County informs residents through its public education program that disposal of motor oil in or on the land is banned and that improperly disposed waste oil impacts ground and surface water, human health, and the environment. All retailers of motor oil must either offer collection of used oil to the public, or indicate the nearest collection site.

Area service stations or shops specializing in oil changes are processing the majority of the used oil/filters generated in the County. The sites outlined below are geared toward “do-it-yourselfers” (DIY) to utilize as their disposal system. In addition, people bring in used oil during the HHW collection events are informed of the used oil tanks and their availability.

The January 1999 MPCA report, “Do-It-Yourselfers Used Oil and Filter Recycling - A Report to the Environmental and Natural Resources Committees of the Senate and the House of Representative” estimates that there are approximately 3.5 million gallons of DIY used oil generated annually in Minnesota. The total amount of used oil collected from DIY’s in Minnesota is approximately 2.5 million gallons. Approximately 775,000 gallons or 22% is mismanaged (e.g., illegally disposed) and approximately 225,000 gallons is burned for heat or reused.

This is further strengthened by the *1999 Used Motor Oil and Oil Filter Study* (OEA, January 2000), according to a telephone survey, 68 percent of vehicle owners pay to have their oil changed at a service station or shop specializing in oil changes. Eighteen percent change their oil at home, and another 14 percent changes their oil both at home and commercially. As this outlines, the majority of people are utilizing commercial oil changing opportunities versus doing-it-yourself. However, there still remains a significant amount of people who change their oil at home, and there seems to be an increase in utility vehicles (lawnmowers, four wheelers, etc.) that have oil filters requiring people to change their own oil.

The County Solid Waste Office and Highway Department entered into a joint venture to install above ground waste oil storage tanks (560 gallons) at four locations in the County in 1995. This was part of the OEA used oil storage tank grant program. These locations are at the following County Highway garages:

- Pequot Lakes (Shop closing in 2004)
- Deerwood
- Emily (upgraded 2003)
- Pine Center

An additional tank was installed at the Site. Collection of used oil at the Site started in 1995 and data collection began in 1997. The following are the quantities of used oil collected at the Site complex from 1997 through 2002:

<u>Year</u>	<u>Amount (gal.)</u>	<u>Generated</u>	<u>Estimated* % Handled at Site</u>
1997	1,675	202,312	0.83 %
1998	2,605	206,420	1.26 %
1999	3,570	210,792	1.69 %
2000	3,475	220,396	1.58 %
2001	4,225	225,124	1.88 %
<u>2002</u>	<u>5,161</u>	<u>228,528</u>	<u>2.26 %</u>
TOTAL	20,711	1,293,572	1.60 %

* Estimated generation rate is 4 gallons/person/year

The County's 2002 Comprehensive Local Water Plan identified illegal dumping of used oil as a pollution source of concern and recommended the development of a program for used oil collection. The reuse and recycling of these fluids would remove the potential for environmental impacts to the County's water resources.

The County received an additional grant in 2002 from OEA to assist in the upgrade of the used oil storage tank at the Site complex and to install a tank in the City of Crosby in addition to six other sites. The majority of the funding came from the County. These were initially 4,000 gallon underground storage tanks (UST). The placement of the drop-off sites offers convenience for County residents; each location has been strategically placed to be within 10 miles of any County resident. Most collection sites are self-service centers that are open 24 hours, seven days a week. In 2003, the additional six (6) sites were installed throughout the County. The following are the location of these six sites:

- | | | | | | |
|---|----------|---|-----------|---|---------------------------------|
| - | Brainerd | - | Baxter | - | Fort Ripley Area/Crow Wing Twp. |
| - | Garrison | - | Crosslake | - | Emily |

2004 was the first year all 8 sites listed above was operational for the entire year. In 2005, a ninth UST was installed at Pequot Lakes. A tenth tank, a 2,000 gallon aboveground storage tank (AST), was installed in 2009 for Mission Township by their township hall/fire station. An eleventh tank, another 2,000 gallon AST, was installed in 2010 for the City of Nisswa.

The County has granted ownership to the host cities and townships and the sites have been a welcomed addition by the communities and residents. The host cities and township are responsible for inspection and maintenance of the tanks and sites. This used oil collection service is offered at no charge to County residents, with oil filter and antifreeze disposal offered for a small fee of: \$1 per gallon for antifreeze, and \$0.50 per oil filter. The program relies on the honor system for oil filter and antifreeze payments. A payment collection box is located at each drop-off site.

A licensed used oil hauler services these tanks. Used oil is a source of fuel for asphalt production. This alternative fuel option conserves other fuels such as natural gas, heating oil, and diesel fuel. Used oil filters are crushed and the metal is recycled. Antifreeze is shipped for refurbishing and reuse.

Annually the Solid Waste Office uses about 1,500 gallons of used oil collected from the County Highway Department and Landfill Operators vehicle maintenance shops to heat the HHW Facility. The used oil heater was purchased in 1999. Review of the heating bill for propane in the four years prior to 1999 indicates an average annual cost of \$2,800. Since the heater installation, the County only uses propane as a backup in early fall and late spring. As a result, the costs have gone down to less than \$650 per year. The initial cost of the heater was \$8,900; therefore, the program has provided a 4 to 5-year payback.

The primary source of funding for this program is through the \$15 County Solid Waste/Recycling Assessment charged to every resident with a small amount coming from an OEA's grant for the installation of the tanks. The County Board established this rate. The County will maintain its current program with no substantial changes anticipated.

Table 4.3

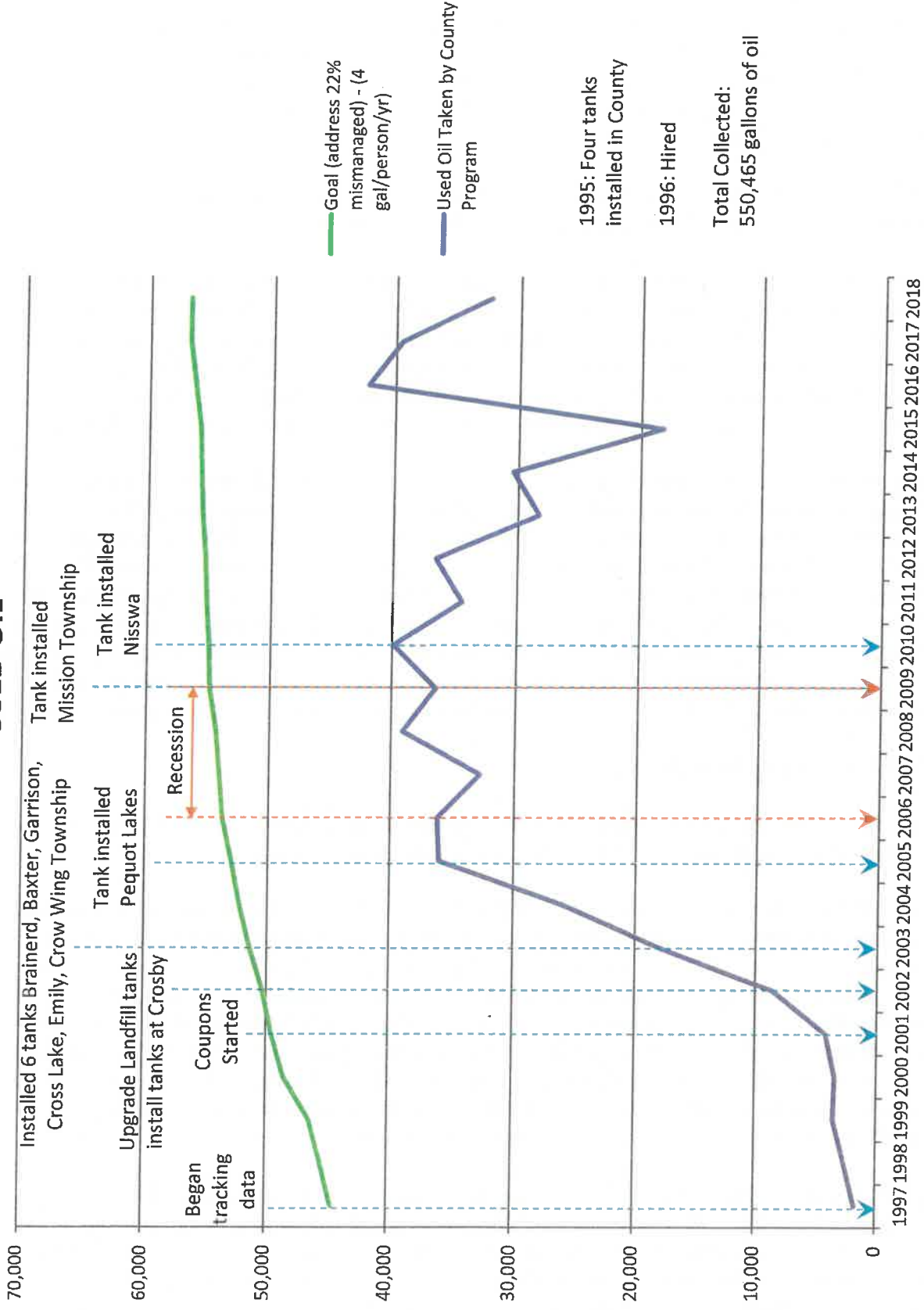
Site	2012				2013				2014				2015				2016			
	Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	Oil Filters 55-gal drum	Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	Oil Filters 55-gal drum	Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	Oil Filters 55-gal drum	Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	Oil Filters 55-gal drum	Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	Oil Filters 55-gal drum
1 Baxter	4,668	245	9.00	3,504	190	10.00	3,917	100	10.00	1,954	45	11.00	5,235	54	11.00	5,235	54	11.00	5,235	54
2 Brainerd	8,511	305	17.00	8,437	335	15.50	8,335	360	17.00	6,966	136	20.00	9,777	346	20.00	9,777	346	20.00	9,777	346
3 Crosby	3,886	180	10.00	3,304	191	8.00	2,789	127	7.00	1,954	116	11.00	5,105	200	11.00	5,105	200	11.00	5,105	200
4 Crosslake	2,292	45	5.00	1,815	75	2.00	2,062	35	4.00	651	0	8.00	3,253	54	8.00	3,253	54	8.00	3,253	54
5 Crow Wing Twp	2,222	100	2.00	1,160	95	3.00	1,506	50	3.00	478	36	3.00	2,881	50	3.00	2,881	50	3.00	2,881	50
6 Emily	2,465	85	5.00	1,440	95	3.50	2,980	61	7.00	822	36	7.00	2,492	61	7.00	2,492	61	7.00	2,492	61
7 Garrison	1,416	40	1.50	1,095	50	3.00	1,105	86	3.00	694	100	5.00	2,365	86	5.00	2,365	86	5.00	2,365	86
8 Nisswa	2,702	80	4.00	1,785	90	3.00	1,720	80	3.00	2,046	72	5.00	2,862	72	5.00	2,862	72	5.00	2,862	72
9 Mission Twp	535	40	2.00	420	35	1.00	549	0	2.00	843	0	3.00	580	0	3.00	580	0	3.00	580	0
10 Pequot Lake	4,666	219	9.00	3,349	175	6.00	3,508	110	7.00	550	40	9.00	4,424	90	9.00	4,424	90	9.00	4,424	90
11 Landfill Site	3,213	1,130	6.00	2,015	90	4.00	1,960	296	8.00	1,214	222	8.00	3,203	141	8.00	3,203	141	8.00	3,203	141
Deerwood	0	N/A	0.00	0	N/A	0.00	0	N/A	0.00	0	N/A	0.00	0	N/A	0.00	0	N/A	0.00	0	N/A
Pine Center	0	N/A	N/A	0	N/A	N/A	0	N/A	N/A	0	N/A	N/A	0	N/A	N/A	0	N/A	N/A	0	N/A
TOTAL	36,576	2,469	70.50	28,324	1,421	59.00	30,431	1,305	71.00	18,172	803	90.00	42,177	1,154	90.00	42,177	1,154	90.00	42,177	1,154
Estimated * Generated	251,504			252,864			253,484			253,924			256,000			256,000			256,000	
% by DIY**	22%			22%			22%			22%			22%			22%			22%	
% Handled	14.5%			11.2%			12.0%			7.2%			16.5%			16.5%			16.5%	

Site	2017				2018				TOTAL (2002 - 2018)			
	Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	Used Oil (Gallons)	Antifreeze (Gallons)	Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	Used Oil (Gallons)
1 Baxter	6,512	85	8.25	3,384	50	9.25	76,282	2,109	76,282	2,109	148.00	76,282
2 Brainerd	9,144	346	20.00	8,292	172	13.50	145,742	4,837	145,742	4,837	275.00	145,742
3 Crosby	3,592	213	8.25	2,615	72	6.00	66,051	6,149	66,051	6,149	149.00	66,051
4 Crosslake	2,323	36	6.00	1,981	36	4.50	33,257	883	33,257	883	72.75	33,257
5 Crow Wing Twp	2,366	36	3.50	1,929	36	2.00	23,021	689	23,021	689	30.00	23,021
6 Emily	3,650	172	7.00	2,389	50	5.00	40,583	1,245	40,583	1,245	98.00	40,583
7 Garrison	1,385	0	2.00	1,193	36	2.00	22,893	628	22,893	628	40.25	22,893
8 Nisswa	2,702	0	5.50	2,929	36	6.50	18,219	480	18,219	480	35.00	18,219
9 Mission Twp	949	0	2.00	1,128	0	2.00	7,277	75	7,277	75	17.00	7,277
10 Pequot Lake	4,307	54	6.00	3,564	86	6.00	45,701	1,500	45,701	1,500	94.00	45,701
11 Landfill Site	2,534	122	8.00	2,913	158	4.00	53,435	3,602	53,435	3,602	103.25	53,435
Deerwood	0	N/A	0.00	0	N/A	0.00	0	N/A	0	N/A	12.00	0
Pine Center	0	N/A	N/A	0	N/A	N/A	0	N/A	0	N/A	N/A	0
TOTAL	39,474	1,074	76.50	32,317	732	60.75	534,915	22,207	534,915	22,207	1,074.25	534,915
Estimated *	258,068			258,068			4,211,488		4,211,488			4,211,488
% by DIY**	22%			22%			22%		22%			22%
% Handled	15.3%			12.5%			12.7%		12.7%			12.7%

* Generation rate is 4 gallons/person/year

** Do-it-yourselfers (DIY), Oil generated by this sector, goal is to reach this level

USED OIL



4.5.4 Vehicle Batteries

Lead-acid batteries have the highest recycling rate of any product sold in the United States. Based on Battery Council International, the national recycling rate for batteries is more than 99 percent. This is because batteries are easily returned when a new battery is purchased and because battery's lead and plastic components have value. Typically a new battery contains 60 to 80 percent recycled lead and plastic.

The State of Minnesota has enacted a landfill ban for lead acid batteries (§115A.915). It has been illegal since January 1, 1988 to place these in the waste stream.

Minnesota law (§325E.1151 subd. 1) established a five-dollar refundable surcharge when a motor vehicle battery is purchased; this was changed to a ten-dollar refundable surcharge in 2010. The law (§325E.1151, subd. 2) also requires motor vehicle battery retailers to accept up to five (5) motor vehicle batteries free of charge, whether or not the consumer is making a purchase. When a new battery is purchased, the customer may avoid the surcharge by turning in a used motor vehicle battery. Lead-acid battery laws in 44 states require the collection and recycling of batteries.

The private sector provides the primary collection opportunities for lead-acid batteries. Battery disposal options are also provided at the Site complex, area "Cleanup Days," Mission and Ideal Township canister stations, and a local private Recycling Facility. There is a receptacle for the lead-acid batteries at the Site complex. A new container was purchased in 2000. The lead-acid batteries are removed as required for recycling. Lead-acid battery recycling is a free service to County residents. The Site complex typically receives used batteries that have been stored at residential properties, and are delivered when residents are utilizing the One-Stop-Service disposal system at the Site complex. Collection of batteries at the Site complex started in 1992 and data collection began in 1998. The attached graph shows the quantity of batteries managed at the Site.

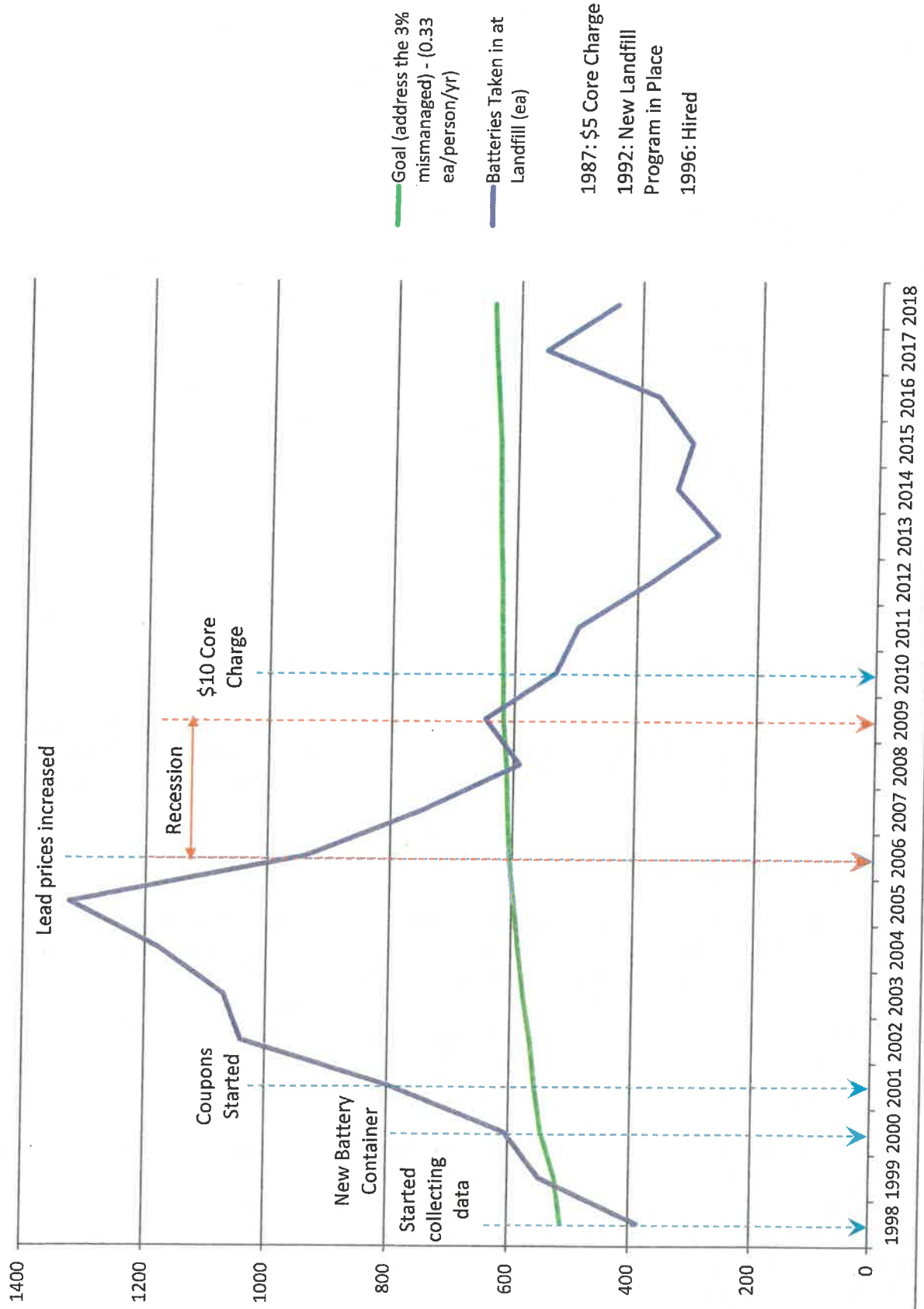
4.5.4.1 Rechargeable Batteries

The State of Minnesota has enacted a landfill ban for rechargeable batteries (§115A.9157). It has been illegal since January 1, 1988 to place these in the waste stream.

The private sector provides the primary collection opportunities for rechargeable batteries. The Rechargeable Battery Recycling Corporation (RBRC) has a national program that works with local interested retailers with a no-cost recycling service through its Call2Recycle initiative. The RBRC is a nonprofit group, funded by more than 300 manufacturers and marketers of portable rechargeable batteries and products. More than 30,000 North America retailers, businesses and communities serve as collection points. In addition, the County gives residents a disposal option for Ni-Cad and other rechargeable batteries through the HHW program. Batteries are subsequently disposed through Call2Recycle for the HHW program. It is estimated the rechargeable battery recycling rate in 2002 to be at 10 to 13 percent nationwide.

[Call2Recycle](#), recently revealed its program's top performing battery recycling states by comparing collection performance with state population. According to the company, Vermont topped the list, with Delaware, Tennessee, Minnesota, New Hampshire, California, Pennsylvania, Washington, Maryland and Texas rounding out the top 10. Through the Call2Recycle program, more than 8 million pounds of batteries were recycled in the U.S. in 2017. The following are local businesses that also will accept used Ni-Cd batteries:

BATTERIES COLLECTED



Brainerd	ACE Hardware
	Batteries Plus
Baxter	Best Buy
	Office Max
	Home Depot
	Wal-Mart
Crosby	True Value Hardware
Nisswa	Carson Hardware

Below is the generation data from Call2Recycle/RBRC and others for collection sites located within the County:

<u>Year</u>	<u>Amount (lbs.)</u>	<u>Year</u>	<u>Amount (lbs.)</u>
2006	4,585	2016	4,907
2007	2,872	2017	5,080
2008	1,787	<u>2018</u>	<u>4,998</u>
2009	1,989	TOTAL	54,469
2010	6,569		
2011	6,875		
2012	4,040		
2013	4,877		
2014	5,105		
2015	5,184		

Conventional dry cell and alkaline batteries are disposed along with the MSW.

Since this is a free service to residents, the source of funding for this program is through the \$15 County Solid Waste/Recycling Assessment charged to every resident. The County Board established this rate. The County will maintain its current program with no substantial changes anticipated.

4.5.5 Fluorescent & HID Lamps

Fluorescent lights and other high-intensity discharge (HID) lights are banned (§115A932) from disposal in MSW. This ban became effective August 1, 1994 and applies to households as well as businesses, and includes all shapes of fluorescent lights. Per the EPA's *Characterization of Products Containing Mercury in the United States*, they estimate fluorescent lamps account for 0.09 percent of all solid waste. In 2008, legislation was passed (§325E127) in Minnesota requiring any person who sells fluorescent lamps at retail to post a notice visible to consumers stating that the light bulbs contain mercury and must be recycled at the end of use.

According to the Association of Lighting and Mercury Recyclers, the national lamp recycling rate in 2003 was 23 percent. Since lamps are banned from the MSW in Minnesota, the recycling rate will be much higher for Minnesota than the national average due to the success of local programs and multiple recyclers locally. The amount of mercury contained in fluorescent lamps has declined significantly, from an average of 48.2 mg per four-foot bulb in 1995 to less than 5 mg in the Philips Alto lamp. At the same time, the quantity of fluorescent lamps in use has increased.

There are businesses in the County and throughout the State offering disposal opportunities for fluorescent tubes and HID intensity lamps. Many local business interests have a direct contract with a commercial establishment too pickup and dispose of lamps. Residents can properly dispose of their lamps through area hardware stores or during some of the area "Cleanup Days" for a fee per bulb. In addition, some of the power companies give out coupons that give \$0.50 off the recycling fee for each bulb people recycle at designated hardware stores within the County. Every city within the County has a business that will take these bulbs. For this reason, the County does not handle this item through the HHW program.

As part of the annual SCORE report, the County used actual tonnage. This is based on responses received back from mass mailing to individual businesses and from the commercial interests processing these items. It appears the majority of bulbs are recycled versus illegal disposal. The following is the amount of bulbs recycled:

<u>Year</u>	<u>Amount (lbs)</u>	<u>Equivalent 4 foot bulbs*</u>	<u>Year</u>	<u>Amount (lbs)</u>	<u>Equivalent 4 foot bulbs*</u>
1997	25,372	40,595	2008	37,708	60,333
1998	30,858	49,373	2009	36,708	58,733
1999	23,871	38,194	2010	29,795	47,672
2000**	63,930	102,288	2011	26,079	41,726
2001	34,400	55,040	2012	56,182	89,891
2002	39,920	63,872	2013	64,019	102,430
2003	26,421	42,274	2014	38,669	61,870
2004	39,135	62,616	2015	37,312	59,699
2005	46,112	73,779	2016	26,915	43,064
2006	39,517	63,227	2017	26,419	42,270
2007	37,129	59,406	<u>2018</u>	<u>42,617</u>	<u>67,472</u>
			<u>TOTAL</u>	<u>623.4 tons</u>	<u>1,265,996</u>

* 4 foot bulb is 0.625 pounds

** Started to received data directly from bulb recyclers for Crow Wing County

There will be no substantial changes to the existing program.

4.5.6 Electronic (Browngoods/e-waste)

As much as 40 percent of the heavy metals (including lead, mercury and cadmium) found in landfills come from electronic equipment discards. End-of-life (EoL) electronics continues to grow rapidly and contribute two (2) percent of the municipal solid waste stream, if we continue to replace old or outdated electronic equipment at our current rate, this percentage will continue to grow.

In 1999, OEA partnered with Sony Electronics, Inc., the Asset Recovery Group of Waste Management, Inc., and the American Plastic Council to examine and evaluate recycling options for used household electronic products. Their report came out July 2001 concerning this effort. The northern Minnesota counties of Beltrami, Cass, Clearwater, Crow Wing, Hubbard, Norman, Red Lake, Lake of the Woods, and Roseau participated in this project. In total, collections were held at 64 sites in 32 counties. Through this program, the County collected eight (8) tons of

material. The entire program collected 575 tons of used products during the three-month collection phase of the project.

On April 1, 2000, Massachusetts became the first state to ban cathode-ray tubes (CRTs) from landfills. Twenty four (24) states, including Minnesota, currently have e-waste legislation in place. A 2010 report by the Hinkley Center for Solid and Hazardous Waste Management, funded by Florida Department of Environmental Protection, has found that the peak quantities of CRTs being disposed or recycled in the Sunshine State will occur in "the next few years, between 2012-2016."

In 2003, Minnesota required that CRTs may not be placed in municipal solid waste after July 1, 2005. In 2005, this ban (§115A.9565) was extended to July 1, 2006 due to the legislature body unable to come to an agreement on a management strategy for waste electronics. In 2007, additional legislation (Minnesota Electronics Recycling Act – §115A.1310) was passed. Under this new law, manufacturers of video display devices sold to Minnesota households must recycle 60% the first year (starting July 1, 2007) and 80% of the total weight of video display devices (VDDs) sold in subsequent years of the program.

Federal law required television broadcasters to switch from analog to digital transmission signals in 2009. An estimated 21 million US households, or 19 percent, own analog TV sets that receive only free broadcasts. When the analog broadcasts stopped, those viewers had to connect their old sets to converter boxes to get programming, whether delivered via broadcast, cable or satellite.

In 2013, Samsung chose Forest View Middle School in Brainerd as one of the five winners for Samsung's Solve for Tomorrow contest; where over \$100,000 in technology and an electronics recycling day were awarded to each winning school. Forest Middle School held an electronics recycling day on July 17th, 2013. They took in 49,322 pounds of electronics.

To assist local government agencies in the proper management of these items, the County in 2001 coordinated a one-day drop-off event for all government/public entities in the County. Used electronics collected from the commercial program are processed through the State contract (Asset Recovery). The event was held on September 21, 2001 to coincide with National Pollution Prevention Week, a week dedicated to pollution prevention awareness and publicity. The drop-off location was the County HHW facility. This program was expanded in 2002 to two events - spring and fall - and to include businesses. County personnel with assistance provided by the County's Sentence-to-Serve (STS) program makes this program possible. Under this program, the business only has to pay the disposal cost for their used electronics. The County paid for the transportation and to have the contractor at the Site complex.

<u>Year</u>	<u>Amount (tons)</u>	<u>Participants</u>	<u>Year</u>	<u>(tons)</u>	<u>Participants</u>
1999	8.0	152 (OEA Pilot Program)			
2000	N/A	N/A	2010	13.9	34
2001	3.0	5	2011	11.6	21
2002	9.7	20	2012	13.0	40
2003	10.7	33	2013	7.8	22
2004	16.1	41	2014	7.9	22
2005	30.4	56	2015	15.6	33
2006	24.7	48	2016	15.1	33
2007	23.5	62	2017	17.6	37
2008	20.0	58	<u>2018</u>	<u>20.7</u>	<u>43</u>
2009	15.0	36	TOTAL	284.5	

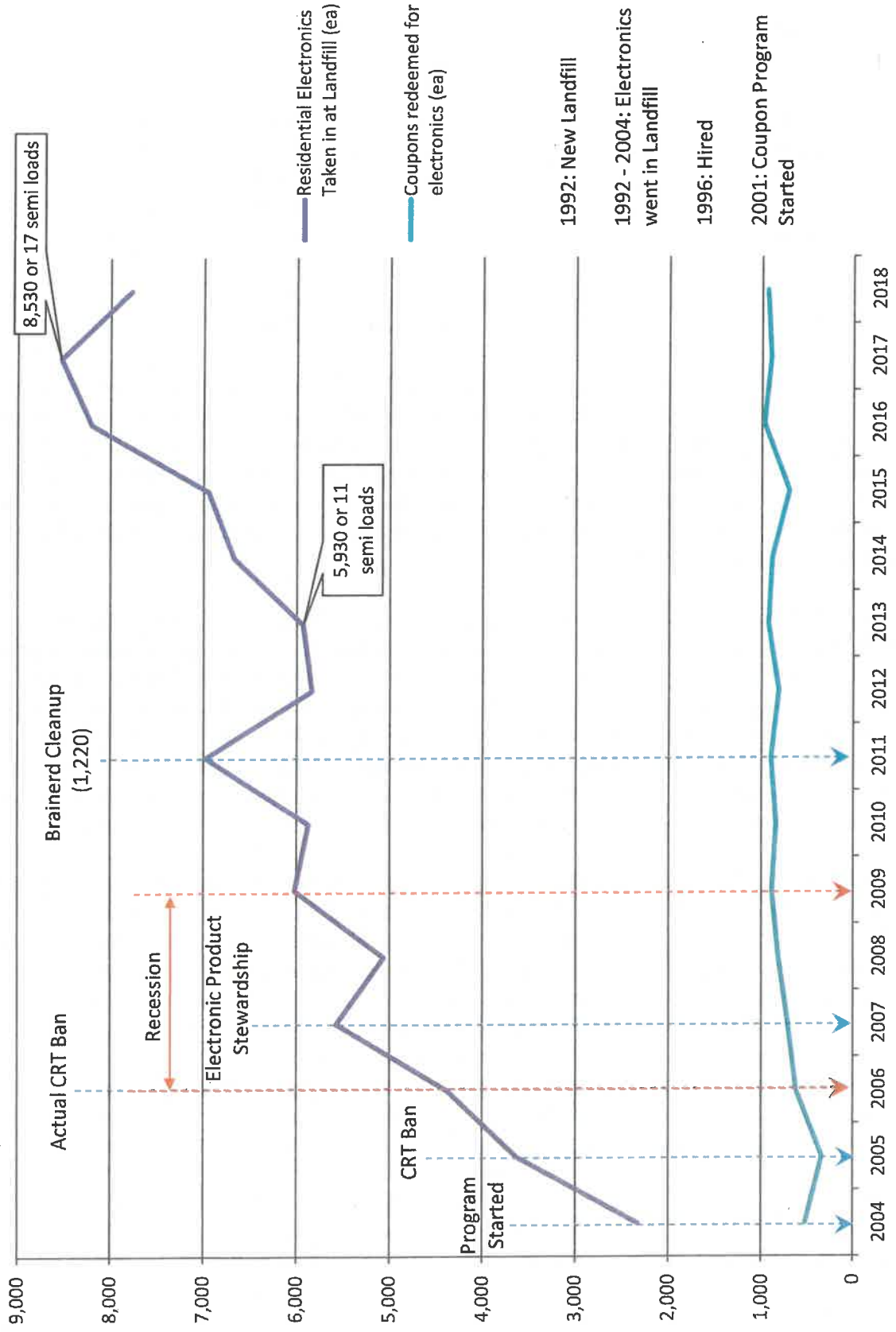
A residential used electronics storage facility was built at the Site in 2003, and opened in May 2004. The County residential electronic waste program (Computers/Laptops and Components - CPU, monitor, keyboard, and mouse - Fax, Copier/Printer, Microwave*, TVs, VCRs/DVDs, Scanners, Electric Typewriter, and Stereos) has a per item fee of \$5. Other used electronic disposal options are provided at area "Cleanup Days," Mission and Ideal Township canister stations for a fee. County personnel with assistance provided by the County's Sentence-to-Serve (STS) program makes this program possible.

Prior to 2008 utilized the state contract. In 2008 went out for our own contract for the disposal of residential electronics. In 2011, Cass County received an electronic collection improvement project grant from MPCA to explore potential avenues for electronics within our region. Working with Crow Wing and Hubbard; Cass County received quotes from vendors to provide this service starting July 2012. The low quote received took electronics for no cost, plus no cost for transportation. This contract met our goal of reducing the cost for this program, plus provided a partnership opportunity with surrounding counties. Unfortunately the vendor - Materials Processing Corporation (MPC) could not honor the new three-year contract after the first year.

Manufacturers' obligation to fund recycling is decreasing while the amount of e-waste and recycling costs are increasing. The law requires manufacturers to recycle e-waste based on 80% of the weight of their current sales (manufacturers' obligation). This obligation has decreased because today's electronics continue to get smaller and lighter, while Minnesotans continue to recycle their old, heavy electronics. It all worked until commodity prices dropped and the metal in the TVs became so cheap that recycling companies had to charge counties more to take the material starting in 2014. In 2014, the manufactures obligation was for 15 million tons, but 35 million tons came in. The gap between manufacturer recycling obligations and the amount of recycling actually collected means manufacturers don't have to pay the full cost of managing their electronic waste. Explicitly requiring manufacturers to pay for transporting video display devices (VDDs) to a recycler and recycling them will relieve much of the financial burden on counties and residents. VDDs account for the vast majority of household electronic waste and are the most expensive type of electronics to recycle without damaging the environment. Purpose of the E-Waste Act of 2016 is to address this gap. This has not occurred as hoped.

The attached graph shows the quantities of used residential electronics handled at the Site complex since 2004.

ELECTRONICS RECYCLING



The primary source of funding for this program is through the \$5 tip fee, with remaining amount coming from the \$15 County Solid Waste/Recycling Assessment charged to every resident. The County Board established this rate. The County will maintain its current program with no substantial changes anticipated.

4.6 Source Reduction/Reuse

In 1995, the Minnesota Legislature established a statewide goal to reduce the amount of waste generated by 10 percent by the year 2000. Waste reduction (sometimes called source reduction) refers to actions taken to prevent the generation of waste. Source reduction activities affect the waste stream at or before the point of generation. MSW is considered to have been generated if it is placed at curbside, in a receptacle such as a dumpster for pickup, or it is taken by the generator to another site for disposal or other management alternative.

Source reduction can be accomplished through changes in product designs to use less material and by changes in consumer practices that reduce the amount of MSW produced. This is different from recycling and reuse, which while being able to extend the life of some materials, by and large are delaying tactics to disposal.

Source reduction measures encompass a very broad range of activities by private citizens, communities, commercial establishments, institutional agencies, manufacturers and distributors. In general, source reduction activities include:

- Designing products or packages to reduce the quantity of resultant waste materials or the toxicity of the materials used and waste material generated;
- Reducing amounts of products or packaging used through modification of current practices;
- Reusing products or packaging already manufactured;
- Lengthening the life of products to postpone disposal; and
- Managing non-product organic waste (food wastes, yard waste) through backyard composting or other on-site alternatives to disposal.

The extent of source reduction/reuse activities is difficult to quantify. In an attempt to gather information, a questionnaire was sent along with a request concerning recycling to all area businesses. Since 1999, the questionnaire provided enough data to enable the County to claim a waste reduction/reuse rate greater than 3 percent (reference Table 2.4). This option was available to any county that was able to demonstrate actual tons of MSW that was reduced above and beyond the 3 percent credit available through the SCORE checklist. Crow Wing County was the only one of the 87 counties that utilized this option. In 2011, as with the previous four years, the County received an 8 percent credit for quantifiable source reduction activities. The 2012 Legislation removed this credit beginning in 2012.

This survey was an annual event until 2011, starting in 2012 counties will no longer receive this credit. The survey did indicate many businesses did have some type of source reduction in place. This generally occurs as a cost-effective business practice. In fact, the normal economic pressures in a free market system guarantee that manufactures are constantly figuring out how to use fewer raw materials when making products or packages. They create less trash in the process. Lighter weight products are easier to use, less expensive to transport and more convenient for consumers. For example, steel cans contain one third less metal than they did 20 years ago. Transportation

costs are particularly important. Markets, not government mandates, have given us less waste and a more efficient economy.

In an EPA report, *Municipal Solid Waste in the United States: 2000 Facts and Figures*, chronicle the solid waste generation and recovery rates over the past few decades. The EPA estimates if the level of source reduction did not occur in 1999, 22 percent more MSW would have been generated. On-site yard waste composting, use of mulching mowers, and reduction in the weight of beverage containers have been the main reason for the 22 percent reduction. One of the major problems with source reduction for residents is that it runs counter to the public's present-day consumption ethic. Also, it is felt significant source reduction for residents require actions outside a county's sphere of influence, and a large reduction in waste production would require national influences. With industry, source reduction does have an impact on their ledger. Manufactures will continue to find ways to use fewer materials to make more products - light weighting is a guaranteed economic reality.

4.6.1 Lakeland Mold Sand Cores Disposal

The sand molds discarded by Lakeland Mold were significantly reduced. Lakeland Mold was also one of the largest waste generators in the County. The Lakeland Mold Company installed equipment which breaks-up the molds that were previously delivered whole to the Landfill. They received a grant from the OEA in 1994 for \$20,000, and are now reusing its sand molds that were previously delivered whole to the County Landfill (SW-376). This not only reuses the sand, but has a savings of \$5,000 in annual purchasing expenses for the company. Also, benefiting from this reclamation process is the County. The sand cores were problematic at the Landfill. First, there are a large number of them. Second, the sand cores are large, difficult to handle, and do not break apart easily. This causes voids in the fill and inefficient use of space. Crushing the molds back to near the original fineness of the sand has proven beneficial to Lakeland Mold, our Landfill operation, and is helping the State meet its reuse/source reduction goals. This program has shown to local industry that taking the initiative to reduce waste can make a difference to a company profit.

4.6.2 Bike Program

In 1998, a bike reuse program was initiated. This program was through a couple of avenues. First, several local organizations (Wal Mart in Baxter, Shriners, Kiwanis, local haulers, and other county agencies) worked together to reuse bikes that individuals no longer have a use for. Second, the juvenile Sentence to Serve (STS) work crew is working with two Brainerd bicycle shops, Easy Rider Bicycle and Sport Shop and Trailblazer Bikes. The juveniles learned the skills of bike repair alongside professionals at these two shops. The program was geared to provide a bike to people in need throughout the county; age is not an issue with senior citizens being as eligible for repaired bikes as youngsters.

In 2001, the Brainerd Rotary Club took over the bike program. They fixed the bikes up for shipment to Haiti. They collected about 300 bikes, of which, 2/3 of them came from the Landfill and the "cleanup" days held throughout the County - Crosby, Southeast Brainerd, Kiwanis (Wal-Mart) and Nisswa Lions. Of the 300 bikes collected, 150 bikes were disassembled and boxed and about 50 more are worthy of boxing up for shipment to Haiti. The remainder will be stripped for parts or "recycled." The Rotary's planned the "Bikes for Haiti" to be an ongoing project. Overall, they consider the project a huge success. In 2002, it is estimated they collected 200 bikes. No

other organization took up this program from 2003 - 2007. Kinship Partners picked up the program in 2008 and has continued it to 2013. In 2013 they did 55 bikes.

4.7 Mattress Recycling

Bulky items are an ongoing issue for residents, haulers, and County Landfill operations. A large concern was mattresses. Haulers find them difficult to deal with, and they are an operational issue in landfill operations. For example, the wire from mattresses tends to wrap around the wheels of the trash compactor and cause maintenance problems. In addition, the average mattress consumes a cubic yard of landfill space and does not compact as normal refuse would, thus cause a loss of valuable landfill space.

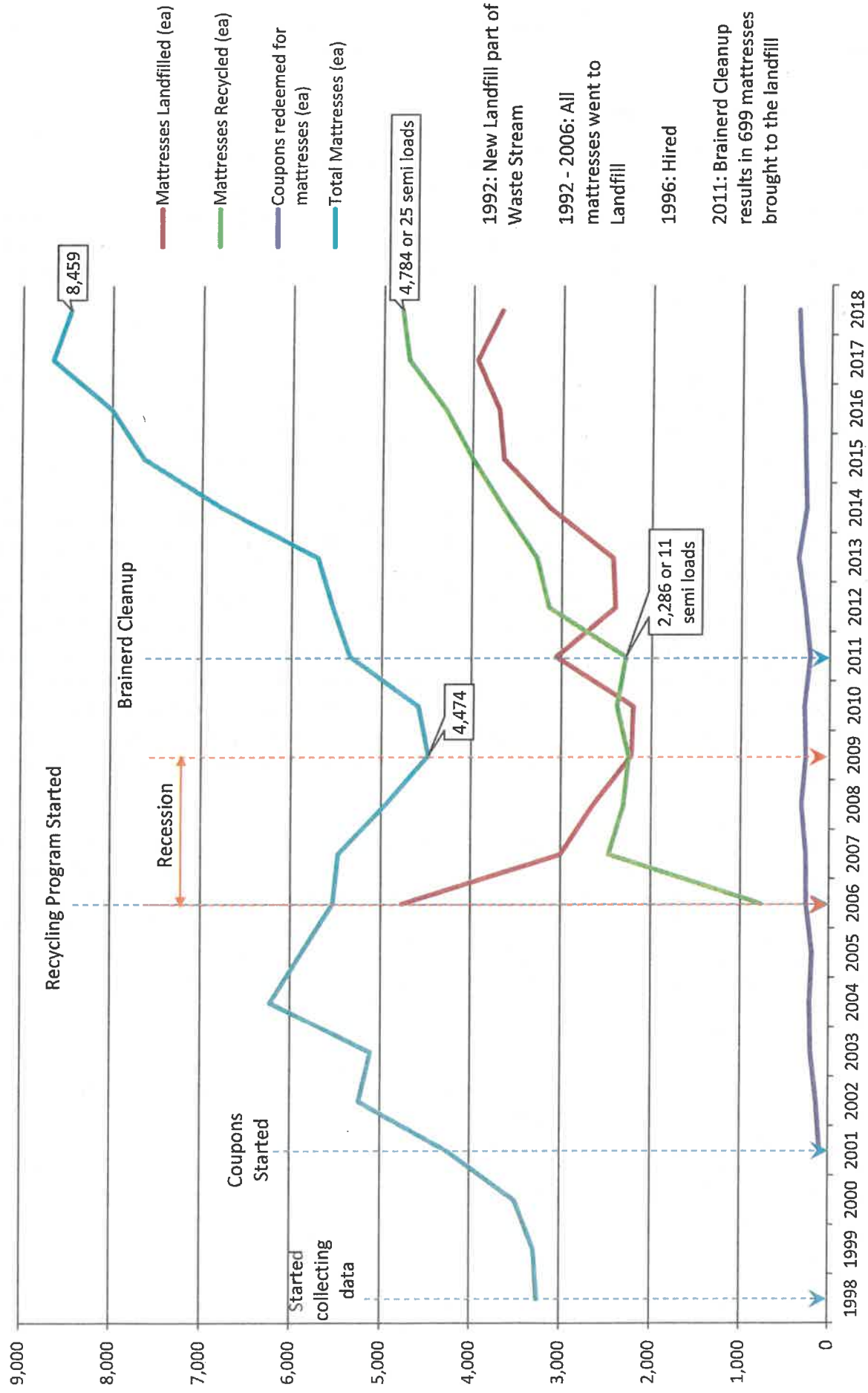
Western Lake Superior Sanitary District (WLSSD) established a local pilot program in Minnesota in 2000 with the federal prison. WLSSD, OEA, and members of NEWAC established a Mattress Recycling/Disposal Work Group (Crow Wing County was part of this group) in 2003 for the purpose of developing and implementing a program to deal with mattress disposal practices in the region. This is a public-private partnership between Goodwill Industries (GWI), the northeast counties, retail sales operations, and other businesses and institutions that collectively generate a steady stream of used mattresses. The goal of the program was to establish a stable, self-supporting market mechanism to divert mattresses from the waste stream, recycle by-products, and provide training and employment for individuals working within GWI. The small-scale pilot testing began in June 2004. By January 2005, larger scale pilot operations began as other county partners implement some form of mattress collection with full scale operation being initiated in June 2005. Crow Wing County started to utilize this program on August 17, 2006. Starting November 2017, a local business (Green Forest) started a mattress program. We are now utilizing their services. With this item now being recycled, it will increase the County recycling rate, remove an operational issue at the landfill, and extend the life of the County Landfill. County personnel with assistance provided by the County's Sentence-to-Serve (STS) program makes this program possible.

The Minnesota Environmental Initiative (MEI) builds innovative partnerships to develop solutions to Minnesota's environmental problems. MEI works with nonprofit, business and government partners to develop consensus on critical issues and move collectively toward action that has positive impacts. Under their 2012 Environmental Initiative Awards – the mattress recycling program won the Business and Environmental Sector Innovations aspect. These awards recognize projects that have used collaborative methods to produce tangible environmental outcomes. In this case, a decade-long collaboration to reduce landfill space, create jobs and revolutionize the mattress recycling industry.

Connecticut passed a law in 2013 to launch the first statewide mattress recycling program. Retailers will charge a \$9 fee at purchase.

Mattresses must be clean and dry to be recycled, if not they go into the landfill. Started to track the amount of used mattresses collected at the Site complex in 1998, the attached graph shows show the quantities handled at the site.

MATTRESS RECYCLING



The cost to drop off a recyclable mattress at the Landfill is \$7; one going into the landfill has a disposal cost of \$14.00. The primary source of funding for this program is through the tip fee with a small amount coming from the \$15 County Solid Waste/Recycling Assessment charged to every resident. The County Board established this rate. The County will maintain its current program with no substantial changes anticipated except for a cost increase from \$6 to \$7 in 2016.

4.8 Education

The public education program is designed to complement existing retailer programs and to target the portion of the population that has improperly or illegally disposed of waste in conjunction with maintaining adequate site infrastructure. The County believes maintaining aesthetics and updating infrastructure at the Site has a parallel effect to a proficient public education program. A proficient education program will bring customers to utilize the solid waste disposal resources, but facility infrastructure that is aesthetically pleasing and user friendly will ensure customers will return.

The County has used all forms of media exposure (television, Internet, newspaper and radio, fact sheets, and brochures) to encourage the public and the business community to reduce, reuse and recycle. This same media has been used to identify improper and illegal disposal methods; and manage problem materials such as used oil and used oil filters; lead acid batteries, used tires, major appliance disposal, electronics, mattresses, and household hazardous waste. Other areas of educational activity include:

- Monthly advertising (May – October) concerning HHW events through Brainerd Dispatch, Crosby Courier, Lakes Country Echo, and News Hopper;
- Advertising of Landfill hours and services in the Northland Arboretum – ArbLIFE yearly four editions.
- Advertising in County Fair Brochure.
- Advertising of Landfill and used oil program in the Crosslake Area & Crow Wing County Fun Spot Map. Map distributed by the Crosslake Fire Fighters Relief Association.
- Quarterly advertising concerning recycling and used oil program through the News Hopper;
- Lakeland News bits concerning various programs;
- Press releases concerning County programs;
- Partnership with Dept. of Ag for their pesticide program;
- A booth at the Crow Wing County Fair;
- Bill-board campaign concerning certain aspects of the Counties programs;
- Public speaking engagements and/or tours of the County disposal site for Central Lakes Community College, area schools, professional service organizations, volunteer groups, and other organizations;
- The County web page;
- County information updated on Earth 911 data base (www.Earth911.org);
- On-site education to residents and businesses experiencing illegal waste disposal problems;
- One-on-one educational opportunities for elected township officials;
- Distribution of a \$5 coupon for services provided at the County disposal site; and
- Distribution of brochures and fact sheets.

In 2018, Land Services through the Solid Waste Office revised the brochures for HHW, recycling, demolition, and yard waste program. In addition, the following are other activities accomplished by our office:

- April, continued the \$5 coupon for services provided at the County Site. 40,438 coupons were mailed. Part of the mailing included information on the area recycling programs and problem material management programs.
- As part of each HHW event, all participants received the following items:
 - Trash bag for their car
 - County brochure on our HHW program
 - County brochure concerning Demolition and Yard Composting
 - Magnet with pertinent County Solid Waste Services listed
- Bill Board campaign this year was concerning recycling.
- Advertising of the used oil and HHW program in the Vacation Land Highway 6 Map.
- Advertising of the recycling in Nisswa, Baxter and Brainerd Map.
- Advertising of Landfill hours and services in the Northland Arboretum – ArbLIFE yearly four editions.
- Advertising in County Fair Brochure.
- Advertising of Landfill and used oil program in the Crosslake Area & Crow Wing County Fun Spot Map. Map distributed by the Crosslake Fire Fighters Relief Association
- Monthly advertising (May – October) concerning HHW events through Brainerd Dispatch, Crosby Courier, Lakes Country Echo, and News Hopper.
- Quarterly advertising concerning recycling and used oil program through the News Hopper.
- March Press Release concerning Landfill summer hours.
- April Press Release, County recycling.
- April Press Release, the first HHW event on April 26th.
- May Press Release, start-up of commercial latex paint program
- May 18th, assisted in the 3rd Fairfield Township cleanup day.
- May Press Release, Business Electronics day on May 15th.

- June 1st, assisted in the Garrison cleanup day.
- Aug 1st – Aug 3rd, fair booth to promote the Counties integrated solid waste management programs.
- Advertising of Landfill services in the Crow Wing County Fair Information Booklet.
- Sept Press Release concerning the fall business electronics event on Sept 16th.
- Sept Press Release concerning the last HHW events on Oct 9th and 12th.
- Oct Press Release concerning the Landfills winter hours of operations.
- Dec, in coordination with Kenwood Recycling, and Sunrise Sertoma accomplished an advertising campaign concerning the collection of Christmas lighting and extension cords.
- Dec, in coordination with Minnesota Power, Brainerd Public Utilities, Crow Wing Power, Lake State Tree Service, Waste Management, Waste Partners, Nisswa Sanitation, Range Disposal, Blue Lakes Disposal, and Northland Arboretum accomplished an advertising campaign concerning the collection of Christmas trees.
- Dec, mailing to local businesses.

4.8.1 Coupon

In 2001, a \$5 coupon for services provided at the Site complex was initiated. Labels are obtained through the Auditors' office for the households that paid the County \$15 solid waste assessment. The County has one of the largest nonresident ownership populations in Minnesota. About 1/3 of the coupons mailed are to these seasonal recreational property owners. The rationale for this program are:

- Reduce illegal dumping. With this coupon, residents can now get rid of items for free at the Landfill, for example - 5 tires or 1 appliance. This is an issue with large bulky items. People have small garbage cans and larger discards (e.g., appliances, broken furniture, mattresses, etc.) typically do not get thrown away as part of their service.
- Provide a monetary saving back to the residents. Previously it was discussed during the Board meeting that lowering tipping fees will not necessarily be passed to the residents by the haulers.
- Incentive to get people to utilize the solid waste disposal services being provided by the County, and it will prevent some of the ongoing illegal burning and dumping that is occurring.
- Excellent education opportunity/tool to provide information to all our residents on the services the County is offering as part of its integrated solid waste management system. Part of the mailing includes information on the area recycling programs and problem material management.

TABLE 4.1
Coupon Receipts

Year	Demolition # Coupons	Demolition \$ Coupons	Garbage # Coupons	Garbage \$ Coupons	Furniture # Coupons	Furniture \$ Coupons	Mattress # Coupons	Mattress \$ Coupons	Appliance # Coupons	Appliance \$ Coupons	Electronics # Coupons	Electronics \$ Coupons	Oil Filter Coupons	\$ Coupons	# of Coupons Sent out
2001	228	\$1,123.60	754	\$3,727.17	97	\$485.00	87	\$435.00	329	\$1,645.00	0	\$0.00	0	\$0.00	28,977
2002	258	\$1,290.40	1,035	\$5,060.26	195	\$975.00	128	\$640.00	486	\$2,430.00	0	\$0.00	0	\$0.00	27,675
2003	356	\$1,754.80	1,320	\$6,450.18	257	\$1,285.00	195	\$975.00	548	\$2,740.00	0	\$0.00	1	\$4.50	27,351
2004*	318	\$1,558.40	1,548	\$7,590.51	218	\$1,090.00	206	\$1,030.00	540	\$2,700.00	521	\$2,605.00	0	\$0.00	29,909
2005	237	\$1,157.00	1,462	\$7,181.65	192	\$960.00	181	\$905.00	534	\$2,670.00	340	\$1,700.00	0	\$0.00	30,343
2006	230	\$1,122.40	1,531	\$7,495.64	255	\$1,275.00	251	\$1,255.00	603	\$3,015.00	623	\$3,115.00	1	\$5.00	31,200
2007	221	\$1,079.00	1,506	\$7,368.43	209	\$1,045.00	254	\$1,270.00	539	\$2,695.00	712	\$3,560.00	3	\$15.00	34,192
2008	234	\$1,142.80	1,574	\$7,711.45	239	\$1,195.00	307	\$1,532.70	606	\$3,030.00	817	\$4,085.00	1	\$5.00	34,454
2009	261	\$1,241.00	1,611	\$7,809.00	258	\$1,290.00	261	\$1,305.00	651	\$3,255.00	889	\$4,445.00	1	\$7.00	35,271
2010	299	\$1,420.00	1,681	\$8,115.00	222	\$1,110.00	279	\$1,409.00	695	\$3,475.00	841	\$4,205.00	1	\$2.00	34,811
2011	307	\$1,452.00	1,753	\$8,523.00	225	\$1,125.00	211	\$1,055.00	532	\$2,660.00	896	\$4,480.00	0	\$0.00	35,366
2012	313	\$1,469.00	1,703	\$8,307.00	254	\$1,270.00	269	\$1,343.00	535	\$2,675.00	815	\$4,075.00	3	\$6.00	35,345
2013	264	\$1,277.00	1,739	\$8,553.00	283	\$1,415.00	351	\$1,758.00	584	\$2,920.00	925	\$4,625.00	0	\$0.00	37,217
2014	233	\$1,121.00	1,595	\$7,821.00	304	\$1,520.00	259	\$1,295.00	571	\$2,855.00	886	\$4,430.00	0	\$0.00	37,774
2015	252	\$1,175.00	1,743	\$8,502.00	312	\$1,560.00	276	\$1,380.00	538	\$2,690.00	699	\$3,495.00	0	\$0.00	33,697
2016	234	\$1,170.00	1,711	\$8,351.07	264	\$1,320.00	290	\$1,572.00	561	\$2,805.00	973	\$4,865.00	0	\$0.00	36,287
2017	241	\$1,205.00	1,982	\$9,728.66	336	\$1,680.00	336	\$1,679.00	571	\$2,855.00	898	\$4,490.00	3	\$9.50	40,438
2018	160	\$800.00	2,020	\$9,952.69	349	\$1,745.00	359	\$1,795.00	597	\$2,985.00	938	\$4,690.00	3	\$6.00	41,527
Total	4,646	\$22,558.40	28,268	#####	4,469	\$22,345.00	4,500	\$22,513.70	10,020	\$50,100.00	11,773	\$58,865.00	18	\$65.00	611,834
Year	Tires # Coupons	Tires \$ Coupons	Asbestos # Coupons	Asbestos \$ Coupons	Scrap Metal Coupons	Scrap Metal \$ Coupons	Brush Coupons	Brush \$ Coupons	Scale Coupons	Scale \$ Coupons	Propane Tank Coupons	Propane Tank \$ Coupons	Total # Coupons	Total \$ Coupons	
2001	88	415	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	1,583	\$7,835.77	
2002	188	875	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	2,290	\$11,295.66	
2003	216	965	43	\$1,034.00	43	\$182.00	0	\$0.00	0	\$0.00	0	\$0.00	2,936	\$14,425.48	
2004	188	899	1	\$2.56	57	\$243.00	0	\$0.00	0	\$0.00	0	\$0.00	3,597	\$17,729.97	
2005	121	576	0	\$0.00	53	\$235.00	4	\$20.00	0	\$0.00	0	\$0.00	3,124	\$15,358.15	
2006	185	864	1	\$2.56	75	\$321.00	2	\$10.00	0	\$0.00	0	\$0.00	3,757	\$18,491.60	
2007	164	780	0	\$0.00	85	\$371.00	1	\$5.00	1	\$4.00	4	\$18.00	3,699	\$18,213.93	
2008	161	690	0	\$0.00	63	\$280.00	7	\$35.00	0	\$0.00	0	\$0.00	4,009	\$19,792.95	
2009	153	700	3	\$15.00	89	\$387.00	3	\$15.00	1	\$4.00	0	\$0.00	4,181	\$20,487.00	
2010	140	653	1	\$2.20	99	\$440.00	2	\$10.00	1	\$4.00	0	\$0.00	4,260	\$20,868.70	
2011	130	585	3	\$14.40	89	\$330.00	5	\$25.00	0	\$0.00	0	\$0.00	4,152	\$20,286.90	
2012	130	608	1	\$5.00	95	\$340.00	5	\$20.00	0	\$0.00	0	\$0.00	4,123	\$20,120.00	
2013	150	664	0	\$0.00	96	\$312.00	5	\$21.00	0	\$0.00	0	\$0.00	4,398	\$21,572.50	
2014	150	664	2	\$7.20	98	\$344.00	10	\$46.00	0	\$0.00	0	\$0.00	4,108	\$20,117.70	
2015	102	451	1	\$5.00	92	\$358.00	5	\$25.00	1	\$5.00	0	\$0.00	4,021	\$19,668.00	
2016	145	683	1	\$5.00	125	\$544.00	11	\$55.00	0	\$0.00	0	\$0.00	4,315	\$21,245.07	
2017	115	509	1	\$4.29	135	\$547.00	5	\$25.00	1	\$5.00	0	\$0.00	4,624	\$22,752.45	
2018	141	567	1	\$4.29	139	\$515.00	5	\$25.00	0	\$0.00	0	\$0.00	4,712	\$23,154.48	
Total	2,667	12,148	16	\$67.50	1,433	\$5,749.00	70	\$337.00	5	\$22.00	4	\$18.00	67,889	\$333,416.31	

TOTAL			%		
Demolition	\$22,558.40	7%	# send out	611,834	
MMSW	\$160,682.21	48%	Return Rate	11.1%	
SCORE	\$150,175.70	45%			
TOTAL	\$333,416.31	100%			

* Electronics were taken in as appliance, following year electronics listed separate. Estimated electronics for this year.

The following gives an idea of the amount of items brought in:

<u>Year</u>	<u>Coupons Sent out</u>	<u>Coupons Returned</u>	<u>Used for Appliances</u>	<u>Used for Mattress</u>	<u>Used for Furniture</u>	<u>Used for Tires</u>
2001	28,977	1,583	329	87	97	88 for 415 Tires
2002	27,675	2,290	486	128	195	188 for 875
2003	27,351	2,936	548	195	257	216 for 965
2004	29,909	3,597	1,061*	206	218	188 for 899
2005	30,343	3,124	534	181	192	121 for 576
2006	31,200	3,757	603	251	255	185 for 864
2007	34,192	3,699	539	254	209	164 for 780
2008	34,454	4,009	606	307	239	161 for 690
2009	35,271	4,181	651	261	258	153 for 700
2010	34,811	4,260	695	279	222	140 for 653
2011	35,366	4,152	532	211	225	130 for 585
2012	35,345	4,123	535	269	254	130 for 608
2013	37,217	4,398	584	351	283	150 for 664
2014	37,774	4,108	571	259	304	150 for 664
2015	33,697	4,021	538	276	312	102 for 451
2016	36,287	4,315	561	290	264	145 for 683
2017	40,438	4,624	571	336	336	115 for 509
2018	41,527	4,712	597	359	349	141 for 567

* includes electronics. Following year, electronics was listed separately.

4.9 Litter/Illegal Dumping

The County discourages and prevents illegal and onsite disposal of MSW through promotion of proper alternatives, waste education, and enforcement of the solid waste ordinance and MPCA rules. The methodology generally used is:

- Receive notification of a potential ordinance violation;
- Conduct initial on-site inspection;
- Meet with property owners or responsible individual (s);
- Discuss rule and ordinance violation;
- Issue a Cease and Desist Order or Citation, if necessary;
- Send a letter to responsible party with copy to the County Attorney, MPCA, and District Commissioner, if appropriate;
- DNR staff is notified for burn barrel violations;
- Identify time line for cleanup;
- Require receipts for proof of proper disposal;
- Cleanup complete - close the file

The County also has a policy that outlines the procedures under which solid waste collected in a cleanup project may be disposed of at the County Landfill Facilities at no cost to the organization doing the cleanup. The County Board addresses requests on a case-by-case basis. Additionally, there are programs within the County funding their own cleanups. The following are recent and previous cleanup projects held within the County:

- Fairfield Township Cleanup (May 18, 2018)
- Garrison Lions Cleanup (June 1, 2018)
- City of Pequot Lakes Cleanup by the Pequot Lakes Lions (May 7, 2016)
- City of Emily-Fifty Lakes Cleanup (September 17, 2016)
- City of Brainerd Cleanup (June 15, 2013)
- City of Crosby Cleanup day (May 19, 2012)
- City of Brainerd residential curbside pick-up of unwanted items (May 9 – 13, 2011)
- Annual KIWANIS Cleanup Blitz (May 7, 2011)
- Mission Township Cleanup (April 2009)
- Nisswa Lions Cleanup (May 2009)
- Annual Mineland/Cuyuna Country Recreation Area Cleanup Program (May 2009); starting in 2001 Project Green Touch (cooperative sponsorship between Touchstone Energy, Crow Wing Power and Mille Lacs Electric) took over organizing this effort from CREDI (Cuyuna Range Economic Development, Inc.)
- NE and North Brainerd Cleanup (May 30, 2009)
- CINOSAM Cleanup (August 2008)
- Crow Wing Township Cleanup (May 19, 2007)
- Roosevelt Township Cleanup (June 2005)
- Bay Lake Township Cleanup (August 2005)
- Manhattan Beach, roadside Cleanup (April 20, 2002)
- Deerwood Township, roadside Cleanup (April, 27, 2002)
- First Annual North Brainerd Cleanup (May 18, 2002)
- Merrifield Marathons Snowmobile Club, picked up 500 miles of snowmobile trails in Center and Mission Township (June 10, 2002)
- City of Breezy Point Spring Cleanup Days
- Borrows Junk Car Cleanup Program (October 12, 2002)
- First Annual Northeast Brainerd Cleanup (May 4, 2002)

These community “cleanup” days are becoming increasingly more important. According to Parkinson’s Law on Garbage “when people have small garbage cans, larger discards (e.g., appliances, broken furniture, mattresses, etc.) typically do not get thrown away.” They often sit in basements and garages. When homeowners are provided with these cleanup days, they now have a new option. This seems to be more of an issue for communities as the distance from the landfill increases.

Other programs include: the MN Department of Natural Resources (DNR), Adopt-a-River Program and; and the MN Department of Transportation (Mn/DOT), Adopt-a-Highway Program. These are approaches which encourage a volunteer’s response to the public rubbish problem.

An example of the Adopt-a-River Program is the Brainerd Kiwanis Club’s cleaning of Boone Park. The Club has, for the past 11 years, been cleaning the banks of the Mississippi River. The spring 2000 cleanup event included about 100 - 4th grade students. At that time, for approximately 10 years, each of Brainerd’s ten parks has been adopted by a different classroom of 4th graders.

Besides the Mn/DOT program, the County Highway Department also addresses litter along County roads. The County Highway Department encourages public participation in the cleanup of roadsides by area groups, conservation clubs, service organizations and other who desire to perform a public service by litter pickup and general cleanup along public roads. The County Highway Department will provide plastic bags, reflective vests, pick up the bags, and haul the trash to the landfill at no charge. The County Highway Department pays for the tipping fee at the landfill.

Mn/DOT is required by Minnesota Statute 161.242 to regulate the operation of junkyards on lands adjacent to Minnesota's Truck Highway System. Illegal or non-conforming junkyards must be removed, relocated on-site or screened to become compliant with this statute. Furthermore, MPCA has a publication and education program for operators of junk/salvage facilities.

The County intends to continue the educational program on the hazards of onsite and illegal disposal. The program will attempt to bring more rural residents into the solid waste system. With continuing education targeting the environmental hazards of onsite and illegal disposal, and the increasing availability of rural collection service and enforcement activities, the County intends to reduce on-site disposal of solid waste. These actions will assist in the mitigation of impacts to air, surface water, groundwater, public health and will help to avoid nuisance conditions.

Civil citations can be and are issued by the MPCA to individuals for disposing of solid waste on someone else's property. The DNR can also issue citations for burning solid waste, i.e., burn barrels. Several property owners have voluntarily cleaned up their properties. The Land Services Department will continue to pursue enforcement against the property owner as needed.

During 1998, in conjunction with Land Services (then Planning and Zoning), a dedicated position was created for enforcement. Starting in 1999, the enforcement officer has had the authority to issue civil citations regarding violations.

Effective September 2, 2008, Crow Wing County initiated a site based model to help landowners comply with county zoning requirements. The model provides a high level of customer service by verifying permits and potential violations in the field which in turn protects our natural resources. The county is divided up into three zones geographically with each zone covered by a Land Service Specialist who is responsible for building permit approval, septic system inspection during installation and enforcement of the Land Use Ordinance. Land Service Specialists meet individual landowners and contractors on-site to discuss land use issues. Another improvement with the site based model is enforcement. In the past there was one Enforcement Office, and now the County has three Land Service Specialists to handle enforcement. Landowners are made aware of land use violations and given solutions and options to bring the property into compliance. It is always the goal of Environmental Services to obtain voluntary compliance with a landowner. When voluntary compliance cannot be obtained, a citation may be issued requiring an appearance in court. As of January 1, 2008 there were approximately 1,100 open violation cases. As of January 1, 2012 there are 25 remaining. In 2011 there were 113 cases with 88 being closed for a closure rate of 75%.

The Land Services staff reviews annually the enforcement activities with the intent to develop recommendations that will improve this critical tool for waste management.

- Some sites may not be cleaned-up without some assistance or administrative action by the County. Assistance may be in the form of a reduced tipping fee or a guaranteed loan. Flexibility may be warranted on a case-by-case basis. Notwithstanding, this action would not qualify under our current cleanup project tipping fee policy, if the party responsible for the solid waste is the property owner. A potential idea is to set up a revolving fund similar as discussed to upgrading sewers within the County.
- Continue to help townships/municipalities/county with cleanup of sites on government property. Utilize Sentence to Serve crews to cleanup abandoned dumpsites. Each government entity is responsible for paying the tipping fee incurred.

Previously, there was conflicting information in the county ordinances. The County junk/salvage yards ordinance is an example of an ordinance needing to be updated in such a manner that provides methodology addressing the numerous complaints received each year. In 2006, the Zoning Ordinance revision for junk/salvage was approved and became effective on August 1, 2006.

The County plans to continue its educational program on the hazards of onsite and illegal disposal for rural residents and will attempt to bring more rural residents into the solid waste system. With education on the environmental hazards of onsite and illegal disposal, increasing availability of rural collection service and enforcement activities, the County intends to reduce the amount of waste disposed onsite.

The following is the number of complaints handled by the Solid Waste Office/Land Services Department since 1993:

<u>Year</u>	<u>Amount (ea.)</u>	<u>Year</u>	<u>Amount (ea.)</u>	
1993	69	2006	16	
1994	75	2007	18	
1995	52	2008	22	
1996	68	2009	15	
1997	63	2010	48	
1998	60	2011	42	
1999	31	2012	27	
2000*	13	2013	19	
2001	44	2014	21	
2002	31	2015	8**	
2003	18	2016	65**	<u>Open</u>
2004	40	<u>2017</u>		
2005	29	<u>TOTAL</u>	<u>829</u>	

- The Enforcement Officer position was vacant for approximately 5 months, which may account for the few complaints reported during 2000.

** Any cases not closed from previous year are listed in following year.

4.10 Demolition

Demolition debris is managed at six demolition debris land disposal facilities as outlined below. Note, the County facility only handles approximately 20 percent of the demolition being generated within the County.

The Phase I aspect of the County demolition Landfill was constructed and began to accept waste in 1993. The County obtained permit SW-440 to utilize a site of approximately 4.59 acres of land for the demolition Landfill on August 19, 1993. Also, incorporated into it is an old permit-by-rule demolition landfill. This permit-by-rule landfill was permitted for disposal of 15,000 cubic yards of demolition debris through July 31, 1992. The total disposal capacity for Phase I is 85,900 cubic yards, not including final cover.

A permit that was reissued September 11, 2002 utilizing the remaining disposal capacity at the permitted area (Phase I) and incorporated Phase II. The Phase II expansion is the area located just west of the existing facility. The design was developed to provide an in-place capacity of 203,000 cubic yards for compacted demolition debris and intermediate cover. The Phase II area is 4.71 acres. Construction of the demolition expansion was tied into the Potlatch Phase I upgrade, and was completed in 2000. The Phase I aspect accepted its last waste in July 2003. The Phase II aspect began to accept waste in August 2003. Based on the annual survey waste rates, Phase II is projected to reach capacity in 2023.

The last permit reissuance was on May 15, 2015 to utilize the remaining disposal capacity at the permitted area (Phase II) and incorporated Phase III. The Phase III expansion is the area located north of the existing facility.

County residents also utilize privately owned demolition facilities: Crosslake (SW-412) located within Crow Wing; Hengel (SW-291), Jim Adrian Demolition Debris (SW-556), and Hengel's Westside Demolition Landfill (SW-539) located in Cass County; and Voyageurs/Oak Ridge (SW-428) located in Aitkin County.

The Lakes Area Habitat for Humanity ReStore is a retail store that accepts and sells donated building material supplies. They accept materials such as cabinets, appliances, furniture, flooring, doors, windows and more. For more information visit their website at www.lakesareahabitat.org. Since 2004, the ReStore has diverted over 9,000 tons of materials from the landfill. All donated items are tax deductible and help build Habitat homes in partnership with families in need in Cass, Crow Wing and Hubbard Counties.

Last year Anderson Brothers, a local contractor, recycled 119,531 tons of asphalt and 38,773 tons of concrete. The Hengel Demolition landfill, located just west of Brainerd and their Westside Demolition landfill recycles the concrete and asphalt taken in at the site. Hengel also recycles scrap metal (steel, copper and aluminum) at both sites. Last year 3,223 cu yds of concrete, 346 cu yds of asphalt, and 300 cubic yards of scrap metal was recycled. A Permit-by-Rule was given to Knife River to recycle concrete at their operation located in Crow Wing starting in 2000. In 2014, 53 tons of concrete were crushed. Oak Ridge/Voyagers demolition landfill is also recycling metals.

Crow Wing County Demolition Waste Management System

[illegible]

Per conversations with Crosslake Demolition landfill and Jim Adrian, the volume of asphalt and concrete is not large enough to incorporate a concrete crusher into their operations, but both do recycle metal.

In 2005, the new runway at the Brainerd Lakes Regional Airport showcased area recycling efforts. The project's second phase used 109,000 tons of 100 percent recycled concrete from area redevelopment projects as base material beneath the new paved surfaces. In phase three, the base material was created by combining about 56,000 tons of "bed rock," or unwanted mine tailing from a closed mine pit in Trommald, with another 24,000 tons of recycled concrete. Asphalt used in the project contained 20 percent recycled bituminous (ground up from old roads and parking lots).

4.10.1 Chromated Copper Arsenate (CCA) Treated Wood

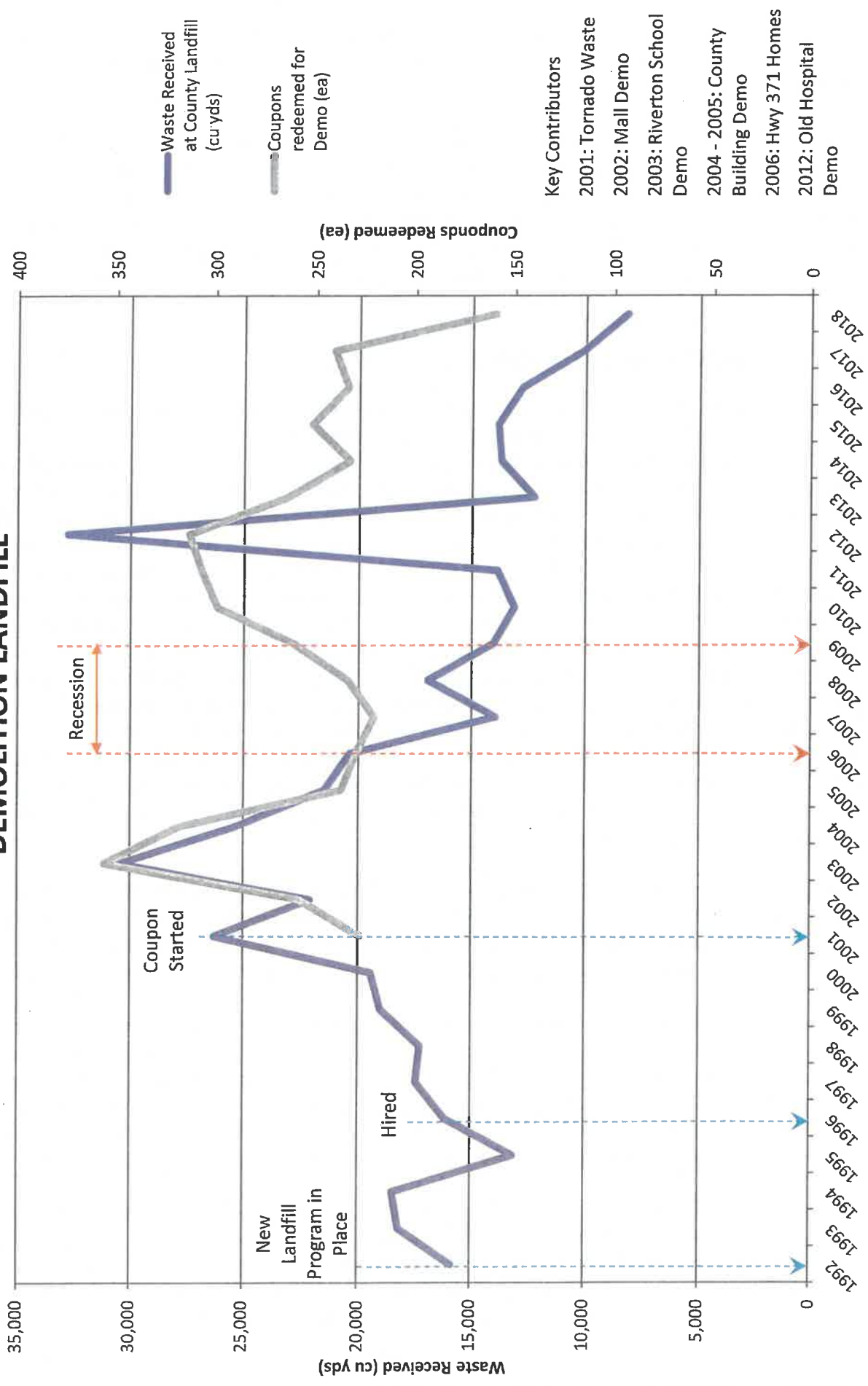
In approximately 15 years, the amount of CCA-treated wood headed for disposal is expected to peak. It is expected there will be a seven-to-tenfold increase in the amount of CCA-treated wood appearing at the site in the next 10 to 20 years as decks and outdoor structures are replaced. Other common wood preservatives include creosote and pentachlorophenol, but the predominant preservative used was CCA. CCA-treated wood was not widely used until the early 1970s. Previously CCA-treated wood represents nearly 80 percent of the market, with more than 450 million cubic feet being sold in the United States. CCA-treated wood is a concern for research indicates arsenic is leaching from it at levels above the national safe drinking water standard. Environmental Protection Agency officials and representatives of the wood-preservative industry reached a deal in 2002 to end the manufacturing of lumber permeated with CCA. They will cut production under graduated caps, allowing time to move to alternative treatments. Relative to waste disposal, any CCA-waste from new construction will decrease in the future. However, future demolition of CCA-treated wood projects will provide a source of this waste for decades. The copper act as a fungicide and the arsenic is an insecticide. Chromium adheres those materials to the wood and creates lumber that can withstand decades of outdoor use. Burning this material concentrates the metal content and creates a toxic ash. Currently, the only viable option is disposing of this material into a landfill.

Minnesota is unique in that it did not adopt federal hazardous waste exemption for CCA-treated wood. Treated wood is classified as an industrial solid waste in Minnesota and must go into a MMSW landfill versus a demolition landfill. The current policy being administered at the County landfill is that treated wood is disposed in the MMSW landfill and not the demolition landfill.

The problem is that CCA-treated wood is difficult to separate out at the disposal site. New CAA-treated wood is easy to identify due to its greenish color, but when this material is exposed to sun and rain, the treated surface often turns a similar color as weathered, untreated wood. Once this happens, treated and untreated wood is commingled, they can be very difficult to distinguish from one another. To have sorting at the site would require an additional setup and labor costs. Also, with this entering into our MMSW landfill, we are seeing elevated arsenic in our leachate quality.

The key is to source separate it prior to disposal. Contractors and the haulers must separate this material from their demolition load and ensure it is brought in as a solid waste versus a demolition waste. To assist in this, the existing Haulers Manual and Demolition Manual was upgraded in 2002 to address this issue. These are provided annually to all the license haulers in the County and major haulers of demolition, and starting in 2013 it is posted on the County website.

DEMOLITION LANDFILL



APPENDIX 4-A
2018 ANNUAL RECYCLING REPORT

[illegible]

SECTION 5.0

CONCLUSIONS AND RECOMMENDATIONS

The County has a well-developed residential recycling program, and many of the larger businesses also have a well-developed recycling/waste reduction program in place. Recycling offers a vital environmental benefit, and in conjunction with the County state-of-the-art Landfill provides a safe, reliable, and essential disposal option for our residents. The County is lucky to have both options - recycling and landfill at its disposal.

Considerable quantities of MSW will continue to be generated long into the foreseeable future, and it is imperative that the County continues to invest in its facilities and systems to manage the solid waste generated within the County in an economically and environmentally sound manner.

It is being forecasted that the declining waste trend of the recent decade is here to stay. How much waste being made, what's in it, and how it is being managed have evolved dramatically in the last decade. In the past, waste generation has been a function of population growth, economic growth, and the material utilized in our daily lives. In the last decade population growth has exceeded the growth in the waste stream. Less waste may be for three reasons: "the evolving ton," source reduction, and zero waste initiatives by manufacturers and retailers. "The evolving ton" is a phrase coined by Republic Services that refers to the changes in the contents of the waste stream. Less paper, more plastic and smaller electronic products are the hallmark of this trend.

Paper generation is off by 17 million tons, or 20 percent, in the last 11 years. Virtually this entire decline came in printed grades such as newspaper and printing and writing paper. This decline in paper also has an effect on the existing recycling processing systems, because these systems were designed to have a certain amount of paper. While use of plastic products increased by 25 percent in the same period, they have replaced heavier products. As for electronics products, smart phone combines the functions of a telephone, video camera, watch, music player, and more plus it fits into your pocket. Think of all the products that replaces, not only in the homes, but in the waste stream.

Source reduction is also playing a huge role in the waste decline. Primarily referring to waste reduction techniques such as grasscycling and backyard composting along with product lightweighting. Examples of the latter can be found for products made out of plastic, metals, paper, and glass. It now takes 11,000 more aluminum cans to make a ton of aluminum than it did five or six years ago. PET bottles are 30 percent lighter. Now seeing some of the higher value materials being lightweighted out of the stream and that is impacting the overall value of the stream.

Zero waste initiatives by manufacturers and retailers have had both the largest effect and the hardest to quantify impact. In the past, these businesses were content to pay to have their waste products hauled away. Now they are aggressively turning a cost center into a profit center. Examples of this include "zero waste to landfill" factories; grocers and food processors donating edible unsold food products to food banks; factories redesigning production procedures to eliminate defects; and breweries selling their spent grains for animal feed. Zero waste is simply smart capitalism.

These changes in quantity and quality have not come without a price. Material Recovery Facilities (MRFs) have to adjust to the revenue impact of less paper and more plastic. Recycling rates will seem to experience little growth. Recycling is measured in weight, not in number of actual items collected. Lightweighting has had the effect of stalling diversion rates and perhaps falsely suggesting that programs have become ineffective. Fuel and vehicle maintenance cost have increased, making it more expensive to collect. Labor and capital cost have also increased, making it more expensive to process those loads. And with each load yielding less material by weight, revenues per load have decreased, widening the expense/revenue gap. Landfills, especially small local landfills, will struggle with less supply. These changes are here to stay; we have no choice except to adapt.

The amount of recovered materials within the County met the overall State recycling goal of 35 percent. If, in the future, the County fails to reach the State mandated goal for recycling, the Board can consider making participation in the recycling programs mandatory. In addition, statute requires the County to:

- a. notify county residents of failure to achieve the goal and why the goal was not met, and
- b. provide county residents with information on recycling programs offered by the County.

An annual report such as this on the status of the County's solid waste programs will be prepared for the County Board and program managers. This will allow the progress or lack thereof, to be tracked.

A key issue: maintain the states mandated 35 percent recycling goal. For this to happen markets must exist and expand greatly for recyclable materials if County programs are to expand further and to be economical. One major flaw in the existing integrated management system established by the State is it has continued to promote a supply side approach to recycling (i.e., collect and the markets will follow). This approach has not significantly strengthened markets for recyclable commodities and has even led to backsliding in market development for commodities such as plastics. Bottom line is: Mandated recycling will not be self-sufficient, and needs to be considered a service - like water, sewer, police and fire protection. Funding a program from revenues raised by selling recyclables is not possible, and a service fee through local property tax and State grants will be required to pay for recycling programs into the foreseeable future. Overall, the relevant question is: "How much recycling is good policy?". This is further highlighted as a Major Finding in the January 2002, *Office of the Legislative Auditors Program Evaluation Report, Recycling and Waste Reduction*:

"Before deciding if and how to pursue options to divert more waste, however, state and county officials need to assess priorities, agree on funding, and better understand the cost and benefits of various alternatives."

Curbside collection programs will be continued and consideration given the following:

- Much depends on expanding markets for recyclable materials to make the programs cost effective.
- Efforts can be made to increase participation in the curbside collection programs. A more active public information program would likely promote participation in the programs.
- Starting in 2015 the funding for the curbside programs will be based on cost per ton. All four will be set to a level, since Baxter had the lowest will use their cost per ton as a baseline.

The Drop-off Programs will be continued with consideration given the following:

- Much depends on expanding markets for recyclable materials to make the programs cost effective.
- Efforts can be made to increase the participation in the drop-off collection programs. A more active public information program would likely promote participation in the programs.
- The County has moved toward providing permanently located bins at the drop-off locations. These bins provide a more convenient opportunity to recycle and collect much more materials than the once-a-month drop-off programs.
- The issue for the drop off programs is maximizing the weight for each load since the cost is based on the “pull”. For this program, starting in 2015 the funding will be based on a cost per ton similar to the County cost.

Follow-ups to the annual business survey have reduced many barriers in this sector. This will provide additional opportunity in meeting our recycling/reuse/reduce goals. One key issue remains, the low return rate to the annual questionnaire. There is still recycling that is occurring that the County is not getting credit for.

The County should continue radio and newspaper advertising. Additional ads may be developed if required. The ads are structured to promote proper yard waste disposal, waste reduction, and proper problem materials disposal.

Even though area retailers are handling used materials (i.e., used tires, used oil, lead-acid batteries, and white goods), we continue to see a quantity of these items being deposited at the drop-off areas located at the Site complex. It appears to adequately address problem materials, the County needs to have a program in conjunction with the private retailers.

Key issues the State needs to work on, and the County needs too follow-up on are:

1. Funding a recycling program from revenues raised by selling recyclables is not possible, and a service fee through local property tax and State grants will be required to pay for recycling programs into the foreseeable future. State funding for SCORE comes from a portion of sales tax on solid waste management. The tax rate for municipal solid waste collection is 9.75 percent for residential customers and 17 percent for commercial customers. This tax has remained untouched; the State is just diverting more of these funds to General Revenue. Counties have seen no increase in their state SCORE grants till 2014. At that time the Legislature increased the amount of Environmental Fund dollars dedicated to SCORE grants to \$18.5 million in 2015 and \$17.25 million annually thereafter. Only issue if you inflation-adjusted the value of the \$14 million back to 1991. The 1991, \$14 million is now worth \$8 million in 2014. So the \$4 million increase in 2015 still does not get us back to the initial worth of the \$14 million in 1991. This will lead to additional recycling reassessments at the local level. The reality is recycling competes for taxpayers dollars;
2. How to make up for the 8% credits (yard waste and source reduction) that was lost in 2012? In 2013 only 51% of counties achieved the base recycling rate without the source reduction and yard waste credits. If these credits were included, the number of counties meeting their recycling goal would be much greater; as high as 71%. For many counties, these credits were critical for them to make the State goal of 35%. Removal of these credits with no additional funding or lowering of the State goal left counties in a very awkward position. Many counties are going through zero levies and SCORE funding has been flat since 1991; unable to fund any programs to offset the 8% credit loss. This becomes a greater issue when a county Solid Waste Plan comes due.
3. Per MPCA letter dated December 24, 2013; subject – SCORE reporting for 2013 data. "One recommendation of the *SCORE Implementation Plan* is to rely on documented numbers, not estimates. The removal of credits for source reduction and yard waste was the first step in this direction. The next step toward fully achieving this goal is to move away from estimated recycling rates. This change will take effect for Calendar Year 2014 data, therefore, **estimated recycling rates will be accepted for Calendar Year 2013.**"
4. The February 2015, OLA Evaluation Report; Recycling and Waste Reduction;

"We heard about the importance of market development for recyclable material from all corners of the waste management industry. Staff from counties, cities, businesses, waste haulers, and others emphasized to us that having adequate outlets for reachable material is key for the state to reach its recycling goals."

Market development for recyclables collected (promote the demand side). Initially, recycling programs were sold to the counties on the basis that markets would be developed (by the State) for recyclable material and that this would eventually pay for the programs. Markets have not developed enough to fully support these

programs fiscally. The largest factor remains the lack of expanding recycling markets, and a stabilized price paid for the materials collected. The demand for recovered commodities continues to fluctuate;

5. Insure state agencies and other government departments are following existing state laws regarding solid waste management, recycling, and waste reduction/reuse;
6. Address “problem” components of the waste stream having high environmental costs and that have not become strong components of the recycling marketplace (i.e., plastic). Plastic products and packaging exhibit an ever-increasing share of the market, however, the ability to recycle this material has been shrinking. Historically there were only two types of plastic that were commonly recycled - No. 1 for PETE and No. 2 for HDPE. We are beginning to see 1 – 6 being recycled. Even then, the economics is marginal;
7. Electronics. Manufacturers’ obligation to fund recycling is decreasing while the amount of e-waste and recycling costs are increasing. The law requires manufacturers to recycle e-waste based on 80% of the weight of their current sales (manufacturers’ obligation). This obligation has decreased because today’s electronics continue to get smaller and lighter, while Minnesotans continue to recycle their old, heavy electronics. It all worked until commodity prices dropped and the metal in the TVs became so cheap that recycling companies had to charge counties more to take the material starting in 2014. In 2014, the manufactures obligation was for 15 million tons, but 35 million tons came in. The gap between manufacturer recycling obligations and the amount of recycling actually collected means manufacturers don’t have to pay the full cost of managing their electronic waste. Explicitly requiring manufacturers to pay for transporting video display devices (VDDs) to a recycler and recycling them will relieve much of the financial burden on counties and residents. VDDs account for the vast majority of household electronic waste and are the most expensive type of electronics to recycle without damaging the environment. Purpose of the E-Waste Act of 2016 is to address this gap.

The primary goals for the Solid Waste Office in 2019 concerning the Solid Waste programs are:

1. Continue to manage the existing problem material management programs;
2. Continue to work with outlying cities/townships within the County to host spring/fall cleanup days to address problem and bulky items;
3. The County is still meeting the recycling goals within the County, but in recent years seen a decrease in the amount being recycled by businesses due to the amount of area businesses that have closed. Continue to investigate and develop programs to increase commercial recycling efforts and reporting within the County;
4. Work with the residential recycling program managers on lowering their cost and increase their recycling rates;

