

**CROW WING COUNTY
LAND SERVICES
2016 RECYCLING REPORT**

April 6, 2017
Douglas R. Morris
Crow Wing County Solid Waste Coordinator

**2016 RECYCLING REPORT
CROW WING COUNTY**

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2016 RECYCLING REPORT CROW WING COUNTY

LETTER OF TRANSMITTAL
NOTIFICATION LIST

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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 did experience a seventh year of MSW waste generation increase versus a previous four years (2006 - 2009) that showed an overall decrease of 24%. The tonnage in 2016 was 49,270, or an increase of 5.5 percent over last year. Sanitary waste tonnage peaked in 2005 at 51,855 tons. Overall, the County is at the same level of tonnage received in 2004/2005 (48,717/51,855 tons). When the industrial waste streams are removed, the County experienced an overall increase of 6.3 percent in the residential waste generated within the County for 2016.

The County experienced an overall county wide demolition waste generation increase. Two area demolition landfills in the lake area saw an increase growth in their total volume in 2016. Demolition waste peaked in 2005 at 134,454 cubic yards; for 2016 the total volume was 74,220 cubic yards (a 13 percent increase in volume from 2015). Overall, the County is at the same level of cubic yards received in 1998/1999 (40,691/90,005 cu. yd.). In 2016, the County Demolition Landfill cubic yardage was 12,789 or a decrease of 7.7 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 2.6 % decrease in tonnage.

As outlined below, starting in 2008 the residential recycling program is becoming more important 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 2016, commercial/industrial documented recycling was 42,358 tons. Of that total, 24,053 tons were recycled using out-of-county recycling infrastructure. Commercial and industrial recycling accounts for 86.7 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 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 3.7 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 905.1 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. It is felt that these programs are and will continue to be successful.

RECYCLING PROGRAM OVERVIEW

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**	% 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
1991	39,666	29,756	4,464	255	\$99,021	\$388.21	5.7%	0	0.0%	Unk	Unk	Unk	Unk	Unk	Unk	Unk	11.0%	35.0%	0.0%	0.0%	11.0%
1992	40,706	29,886	7,230	535	\$123,250	\$230.51	7.4%	0	0.0%	Unk	Unk	Unk	Unk	Unk	Unk	Unk	18.0%	35.0%	0.0%	0.0%	18.0%
1993	44,873	30,849	10,965	777	\$148,971	\$191.81	7.1%	0	0.0%	Unk	Unk	Unk	Unk	Unk	Unk	Unk	24.0%	35.0%	0.0%	0.0%	24.0%
1994	47,713	34,647	14,314	1,021	\$165,460	\$162.11	7.1%	0	0.0%	Unk	Unk	Unk	Unk	Unk	Unk	Unk	30.0%	35.0%	0.0%	0.0%	30.0%
1995	50,471	34,800	12,572	1,306	\$156,149	\$119.54	10.4%	0	0.0%	10,536	83.8%	Unk	Unk	83.8%	730	5.8%	25.0%	35.0%	0.0%	5.0%	30.0%
1996	51,470	32,537	17,148	1,044	\$170,715	\$163.46	6.1%	0	0.0%	4,785	27.9%	10,446	60.9%	88.8%	873	5.1%	33.0%	35.0%	3.0%	5.0%	41.0%
1997	55,850	33,794	20,569	1,173	\$160,855	\$137.11	5.7%	0	0.0%	3,448	16.8%	14,441	70.2%	87.0%	1,507	7.3%	36.8%	35.0%	5.7%	5.0%	47.5%
1998	68,767	34,610	32,478	1,302	\$167,705	\$128.78	4.0%	6	0.0%	4,328	13.3%	25,324	78.0%	91.3%	1,518	4.7%	47.2%	35.0%	6.0%	3.0%	56.2%
1999	70,822	34,434	34,769	1,560	\$167,905	\$107.62	4.5%	26	0.1%	3,921	11.3%	28,036	80.6%	91.9%	1,226	3.5%	49.1%	35.0%	6.5%	5.0%	60.6%
2000	73,185	36,345	35,118	1,798	\$171,005	\$95.09	5.1%	25	0.1%	3,798	10.8%	28,487	81.1%	91.9%	1,009	2.9%	48.0%	35.0%	8.0%	5.0%	61.0%
2001	75,581	41,236	32,689	1,914	\$178,605	\$93.30	5.9%	56	0.2%	5,257	16.1%	24,154	73.9%	90.0%	1,308	4.0%	43.3%	35.0%	9.0%	5.0%	57.3%
2002	76,803	41,917	33,187	2,005	\$188,772	\$94.15	6.0%	72	0.2%	4,411	13.3%	25,467	76.7%	90.0%	1,232	3.7%	43.2%	35.0%	6.7%	5.0%	54.9%
2003	77,802	42,241	33,973	2,164	\$199,760	\$92.33	6.4%	180	0.5%	3,818	11.2%	26,186	77.1%	88.3%	1,625	4.8%	43.7%	35.0%	6.0%	5.0%	54.7%
2004	84,234	41,981	40,599	2,721	\$205,043	\$75.35	6.7%	163	0.4%	4,661	11.5%	31,429	77.4%	88.9%	1,625	4.0%	48.2%	35.0%	6.0%	5.0%	59.2%
2005	90,894	43,128	46,022	2,934	\$222,474	\$75.84	6.4%	197	0.4%	5,093	11.1%	36,635	79.6%	90.7%	1,164	2.5%	50.6%	35.0%	6.5%	5.0%	62.1%
2006	90,190	40,478	48,058	3,142	\$234,424	\$74.61	6.5%	224	0.5%	6,261	13.0%	36,943	76.9%	89.9%	1,488	3.1%	53.3%	35.0%	6.9%	5.0%	65.2%
2007	89,993	39,625	48,747	3,650	\$242,056	\$66.31	7.5%	265	0.5%	11,220	23.0%	32,253	66.2%	89.2%	1,359	2.8%	54.6%	35.0%	7.0%	5.0%	66.6%
2008	78,119	37,025	39,519	4,066	\$261,204	\$64.24	10.3%	362	0.9%	17,335	43.9%	16,232	41.1%	84.9%	1,524	3.9%	50.6%	35.0%	7.9%	5.0%	63.5%
2009	64,903	35,545	27,767	4,696	\$312,027	\$66.44	16.9%	431	1.6%	9,247	33.3%	11,963	43.1%	76.4%	1,430	5.1%	42.8%	35.0%	8.0%	5.0%	55.8%
2010	65,544	35,558	28,349	4,781	\$333,850	\$69.83	16.9%	444	1.6%	10,274	36.2%	11,153	39.3%	75.6%	1,697	6.0%	43.3%	35.0%	8.0%	5.0%	56.3%
2011	66,934	35,933	29,367	4,679	\$334,758	\$71.54	15.9%	471	1.6%	10,879	37.0%	11,841	40.3%	77.4%	1,497	5.1%	43.9%	35.0%	8.0%	5.0%	56.9%
2012	70,439	36,563	32,272	4,523	\$351,801	\$77.79	14.0%	439	1.4%	10,823	33.5%	14,956	46.3%	79.9%	1,531	4.7%	45.8%	35.0%	N/A****	N/A****	45.8%
2013	73,198	38,286	33,212	4,483	\$359,432	\$80.18	13.5%	457	1.4%	15,847	47.7%	10,983	33.1%	80.8%	1,442	4.3%	45.4%	35.0%	N/A****	N/A****	45.4%
2014	91,016	40,508	48,808	4,871	\$295,662	\$60.70	10.0%	449	0.9%	17,822	36.5%	23,778	48.7%	85.2%	1,888	3.9%	53.6%	35.0%	N/A****	N/A****	53.6%
2015	91,714	42,661	47,353	4,583	\$349,499	\$76.26	9.7%	305	0.6%	18,672	39.4%	22,098	46.7%	86.1%	1,695	3.6%	51.6%	35.0%	N/A****	N/A****	51.6%
2016	95,938	45,359	48,879	4,464	\$378,003	\$84.68	9.1%	268	0.5%	18,305	37.4%	24,053	49.2%	86.7%	1,789	3.7%	50.9%	35.0%	N/A****	N/A****	50.9%

* 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 Environmenal Bill eliminated these two credits

Pesticides partnership with Department of Agriculture;

- From 1997 – 2016; 37,000 pounds were managed
- Dept of Ag pays for disposal, cost saving of \$27,367 to the County

Used tire collection area;

- 1994 – 2016; 176,111 ea. or 12.3% of those generated within the County
- 1996 – 2016; 2,888 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 – 2016; 248,373 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.
- 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 – 2016; 701 tons of materials managed or 931 55-gallon drums of oil based paint, 1,083 55-gallon drums of latex paint, 198 55-gallon drums of flammable material, and 29 tons of lab pack material.
- Product exchange gave away an additional 147.2 tons of material. A cost saving of \$109,000 in cost avoidance of shipping this material. Overall 17% of material coming is managed through this program. Last year 32% 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 – 2016; 7,500 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 42 years to the permitting of the County's old unlined Landfill (SW-111) that started operations in 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 25 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 filters, used tires, documented reduce/reuse activities, and State provided estimates for used oil. 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 integrated programs 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. For the proposed 2017-2018 biennium, the Legislature propose to increase the SCORE funding to \$17,750,000 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. 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), and Fund 50552 (New Landfill, SW-376); since the County operates a landfill, MPCA rule 7035.2695 require that financial assurance for closure, postclosure 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), 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. The interest generated can become another important funding source for the County's solid waste programs. With the flat/fluctuating State SCORE/HHW funding, 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. 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*

* 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 1998. 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; it is expected to continue to have positive long term effect on the overall recycling efforts. The trend of an increase continued in 2013 for the amount of MSW being generated within the County (2.7%). 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.

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, Iron-ton, 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 – Total recycling within the County decreased. Program that decided to drop their recycling program; Deerwood. Garrison, and Mission Township dropped it in the fall, but plan to restart it in 2016. 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 to approximately 48,879 tons. 4,464 tons were recycled by County/SCORE funded residential recycling programs. A total of \$378,003 was dedicated to the County/SCORE funded residential recycling programs resulting in an overall cost of \$84.68 per ton. 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. Estimated waste generation rate of 95,938 tons, estimated recycling rate will be 50.9%. In 2016 AAA Disposal and Blue Lakes Disposal were bought by Waste Management.

	<u>TONS</u>		
Landfill*	45,359		
Problem Mat's not collected	1,474	Problem Mat's -	1.8 %
On-site**	226	Res -	4.9 %
Recycling	48,879	Ind -	44.2 %
	-----		-----
TOTAL	95,938	TOTAL	50.9%

* 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 2016, the County's cost for the residential recycling program was \$84.68 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.

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.

The County did experience another year of a waste generation increase versus the previous four years of a steady decrease. Our sanitary waste tonnage peaked in 2005 at 51,855 tons. In 2016 tonnage was 49,270 or an increase of 5.5% over last year. This includes the following non-MSW:

TABLE 1.2

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	44,037	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	Unk	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	8,302	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	7,113	Unk	3,570	548	5,982	182	N/A	N/A	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	Unk	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	15,341	6,879	1,325	9,777	N/A	2,321	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	3,635	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	4,378	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	5,570	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	5,059	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	6,020	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	5,872	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	6,983	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	5,836	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	5,930	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	6,675	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	6,953	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	8,789	207	4,098	387	12,789
Total	840,838	185,874	1,495,544	1,003,729	18,552	8,122	1,902	42	248,373	231,561	62,987	12,537	176,113	2,888	74,021	1,957	88,253	7,188	458,150

* Per Annual Reports for SW-376

** Per Annual Report for SW-440

TABLE 1.2
MMSW Landfill Waste Receipts

Month	1991-2001* MMSW (tons)	2002* MMSW (tons)	2003* MMSW (tons)	2004* MMSW (tons)	2005* MMSW (tons)	2006* MMSW (tons)	2007* MMSW (tons)	2008* MMSW (tons)	2009* MMSW (tons)	2010* MMSW (tons)	2011* MMSW (tons)
January	22,286	2,746	3,023	2,967	3,198	3,355	3,116	3,049	2,621	2,403	2,588
February	19,982	2,402	2,584	2,806	2,974	2,839	2,617	2,653	2,251	2,293	2,348
March	23,687	2,502	3,058	3,586	3,810	3,577	3,236	2,850	2,695	3,074	2,746
April	26,870	3,638	3,646	4,253	4,314	3,803	3,592	3,538	3,156	3,432	3,198
May	32,244	4,040	4,454	4,334	5,292	4,619	4,452	4,284	3,607	3,454	3,838
June	33,725	4,080	4,495	4,935	5,652	4,548	4,326	4,099	3,818	4,047	4,067
July	35,058	4,873	4,993	5,047	4,987	4,570	4,742	4,609	4,469	4,272	4,172
August	35,590	4,603	4,585	4,902	5,422	5,102	4,776	4,039	4,040	4,234	4,434
September	30,633	3,861	4,407	4,413	4,559	4,068	3,899	4,096	3,602	3,737	3,671
October	29,251	3,824	4,173	3,933	4,224	3,971	4,357	3,915	3,387	3,187	3,627
November	26,905	3,061	3,208	4,042	3,890	3,730	3,491	2,734	2,933	2,984	2,952
December	25,110	3,000	3,415	3,384	3,507	3,041	2,882	2,962	2,802	2,726	2,680
Out-of-County**	6,685	85	90	0	0	108	354	113	0	113	106
Total Landfill	342,008	42,863	46,065	48,717	51,855	47,273	45,500	42,903	39,403	39,854	40,352
Industrial Waste	2,144	1,031	3,914	6,851	8,754	6,795	5,875	5,915	3,856	4,295	4,421
MSW	339,864	41,832	42,151	41,866	43,101	40,478	39,625	36,988	35,547	35,559	35,931
Total Generation	348,694	42,948	46,154	48,717	51,856	47,380	45,854	43,017	39,403	39,967	40,458
% Change Landfill		10.1%	7.5%	5.8%	6.4%	-8.8%	-3.8%	-5.7%	-8.2%	1.1%	1.2%

TABLE 1.2
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)	07-11 AVERAGE (tons)	12-16 AVERAGE (tons)
January	51,352	2,518	2,725	2,733	2,783	2,804	0	0	0	0	0	64,915	2,755	2,713
February	45,749	2,290	2,362	2,440	2,475	2,956	0	0	0	0	0	58,272	2,432	2,505
March	54,821	2,860	2,560	2,757	3,294	3,636	0	0	0	0	0	69,928	2,920	3,021
April	63,440	3,140	3,271	3,427	3,660	3,738	0	0	0	0	0	80,676	3,383	3,447
May	74,618	3,935	4,163	4,283	4,247	4,593	0	0	0	0	0	95,839	3,927	4,244
June	77,792	3,956	4,130	4,320	4,615	4,984	0	0	0	0	0	99,797	4,071	4,401
July	81,792	4,498	4,736	4,966	5,172	5,194	0	0	0	0	0	106,358	4,453	4,913
August	81,727	4,365	4,294	4,598	4,785	5,351	0	0	0	0	0	105,120	4,305	4,679
September	70,946	3,354	3,834	4,311	4,435	4,714	0	0	0	0	0	91,594	3,801	4,130
October	67,849	3,450	3,908	3,962	4,175	4,212	0	0	0	0	0	87,556	3,695	3,941
November	59,930	3,198	2,926	2,951	3,562	3,848	0	0	0	0	0	76,415	3,019	3,297
December	55,509	2,726	2,929	3,157	3,370	3,192	0	0	0	0	0	70,883	2,810	3,075
Out-of-County**	7,654	108	109	200	0	130	0	0	0	0	0	8,200	137	109
Total Landfill	786,793	40,757	41,841	43,927	46,704	49,270	0	0	0	0	0	1,009,292	41,572	44,365
Industrial Waste	53,851	4,194	3,555	3,418	4,043	3,911	0	0	0	0	0	72,973	4,872	3,824
MSW	732,942	36,563	38,286	40,509	42,661	45,359	0	0	0	0	0	936,319	36,730	40,675
Total Generation	794,448	40,865	41,950	44,127	46,704	49,400	0	0	0	0	0	1,017,493	45,502	44,609
% Change Landfill		1.0%	2.7%	5.0%	6.3%	5.5%	-100.0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			6.7%

Total

	MSW	All Waste
Annual Growth =	1.8% (92 - 16)	2.1% (92 - 16)
Overall Growth =	51.8% (92 - 16)	64.6% (92 - 16)
5 Year Growth =	4.8% (12 - 16)	4.1% (12 - 16)
5-Overall Growth =	7.2% (12 - 16)	20.9% (12 - 16)
10 Year Growth =	1.1% (07 - 16)	0.4% (07 - 16)
10-Overall Growth =	14.5% (07 - 16)	8.3% (07 - 16)
By Total Tonnage		
Annual Growth =	2.4%	
Overall Growth =	3.3%	
5 Year Growth =		
5-Overall Growth =		
10 Year Growth =		
10-Overall Growth =		

	07-11 Average	12-16 Average	% Increase
Average (December - February) Winter	2,666	2,764	3.5%
Average (March - May) Spring	3,410	3,571	4.5%
Average (June - August) Summer	4,276	4,664	8.3%
Average (September - November) Fall	3,505	3,789	7.5%
Percent change from Winter to Summer	60.4%	68.7%	
Percent Winter to Spring & Fall	29.7%	33.1%	
Percent Spring & Fall to Summer	23.7%	26.7%	

- Part of the requirements of entering into the leachate recirculation phase II program was too 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 3,907 tons in 2016, a 136 ton decrease from 2015.
- 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 6.3% in the residential waste generation within the County for 2016.

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 a decrease (2.6%) in tonnage after a year of an increase. 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 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 2016, residential recycling was 7,732 tons. Of that total, 4,464 tons were recycled using the county funded residential recycling infrastructure. Residential recycling accounts for 9.6 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 \$63 million in State and local funds for SCORE-related programs in 2013. This includes the \$18.25 million paid directly to counties from the State as a block grant. Counties spent an additional \$49.1 million in 2013 on SCORE related programs. Counties spent more than 13 times the matching funds (by law they must match 25 percent or \$4.5625 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 43 percent or to \$8 million by 2013. 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>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
Greater Minnesota	13.5	35.0	33.7	33.5	36.3	36.0	37.2		
Metropolitan Area	<u>22.4</u>	<u>22.9</u>	<u>22.4</u>	<u>24.1</u>	<u>25.6</u>	<u>25.0</u>	<u>26.2</u>		
TOTAL	35.9	57.9	56.1	57.7	61.9	61.0	63.4		
State Share	14.2	13.8	14.1	14.3	14.3	14.1	14.3	18.25	17.25

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 2016 Legislature increased the amount of Environmental Fund dollars dedicated to SCORE by \$500,000 to \$17,750,000 per year.

Per the recently completed 2016 County SCORE Report (see Appendix 2-A), the County spent \$849,455 on the overall SCORE-related programs, of which the State provided only \$193,876 in funds (or 22.8 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 13,671 (as of 2015), and the City of Baxter, with a population of approximately 8,065 (as of 2015) 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 2016. 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 2015 the County population growth was 1.41 percent; the annual growth of tonnage going into the landfill during the same period was 1.43 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, & Blue Lakes)
2. Baxter (Waste Management, Waste Partners, Garrison Disposal & Blue Lakes)
3. Breezy Point (Waste Partners & Pequot Lakes Sanitation) - started in 2006
4. Pequot Lakes (Waste Partners & Pequot Lakes Sanitation) - started July 2014

The estimated population served by residential curbside recycling programs, based on Minnesota State Demographers Estimate - 2015 is the following:

	Population	Households
1. Brainerd	13,671	5,893
2. Baxter	8,065	3,163
3. Breezy Point	2,420	933
4. Pequot Lake	2,280	1,010
	-----	-----
TOTAL	26,436	10,999

SCORE Funded Recycling Program Summary

TABLE 2.1

Program	2011			2012			2013			2014		
	Tons	Funding	Cost/Ton	Tons	Funding	Cost/Ton	Tons	Funding	Cost/Ton	Tons	Funding	Cost/Ton
Baxter	993.25	\$32,300	\$32.52	904.79	\$32,300	\$35.70	898.86	\$32,300	\$35.83	1,014.81	\$21,700	\$21.38
Bay Lake Township	56.10	\$4,000	\$71.30	67.57	\$5,500	\$81.40	63.26	\$8,000	\$126.46	50.53	\$8,000	\$158.32
Brainerd	1,503.39	\$84,390	\$56.13	1,372.41	\$84,390	\$61.49	1,494.28	\$84,390	\$56.48	1,596.45	\$64,493	\$40.40
C-I-D	364.59	\$48,000	\$131.65	342.99	\$58,000	\$167.15	330.26	\$58,000	\$167.88	330.26	\$58,000	\$175.62
Breezy Point	227.13	\$14,000	\$61.64	228.64	\$14,000	\$60.96	246.58	\$14,000	\$56.75	388.79	\$14,000	\$36.01
Crosslake	214.75	\$30,000	\$139.70	184.51	\$30,000	\$162.59	173.15	\$30,000	\$173.26	348.63	\$30,000	\$86.05
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
Emily	93.14	\$16,000	\$171.78	111.45	\$16,000	\$143.66	79.41	\$16,000	\$201.49	57.57	\$16,000	\$277.92
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	35.60	\$3,840	\$107.87	33.53	\$4,140	\$123.47	33.51	\$4,800	\$143.24	28.66	\$5,800	\$202.37
Ideal	70.46	\$8,000	\$113.54	58.37	\$8,000	\$137.06	61.61	\$9,500	\$154.20	150.32	\$9,500	\$63.20
Landfill	81.45	\$11,978	\$147.06	80.38	\$13,721	\$170.70	84.58	\$14,192	\$167.79	93.17	\$15,068	\$161.72
Maple Grove Township	27.02	\$10,000	\$370.10	42.40	\$10,000	\$235.85	39.71	\$10,000	\$251.63	20.49	(\$7,148)	(\$348.85)
Merrifield	381.47	\$4,250	\$11.14	411.40	\$4,250	\$10.33	379.40	\$6,000	\$15.16	310.99	\$5,750	\$92.97
Mission	59.70	\$3,500	\$58.63	62.18	\$6,000	\$96.49	64.28	\$6,000	\$93.34	214.44	\$30,000	\$139.90
Nisswa	265.65	\$27,000	\$101.64	269.14	\$27,000	\$100.32	223.59	\$30,000	\$134.17	137.24	\$0	\$0.00
Pequot Lakes	201.59	\$18,000	\$89.29	244.34	\$18,000	\$73.67	200.96	\$16,000	\$79.62	20.74	\$8,500	\$409.84
Roosevelt	48.87	\$7,500	\$153.47	48.22	\$8,500	\$176.28	53.23	\$8,500	\$159.68	43.23	\$10,000	\$231.32
Southwest Townships	55.16	\$12,000	\$217.55	55.28	\$12,000	\$217.08	41.49	\$12,000	\$289.23	N/A	N/A	N/A
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	4,679.32	\$334,758	\$71.54	4,522.60	\$351,801	\$77.79	4,483.48	\$359,432	\$80.17	4,870.86	\$295,662	\$60.70

SCORE Funding

\$153,908

\$153,908

\$153,265

\$173,778

% Funded by State SCORE Grant

46%

44%

43%

59%

Program	2015			2016			Total 1991-2016		
	Tons	Funding	Cost/Ton	Tons	Funding	Cost/Ton	Tons	Funding	Cost/Ton
Baxter	1,007.93	\$36,000	\$35.72	1,034.10	\$46,600	\$45.06	14,954.34	\$617,360	\$41.28
Bay Lake Township	67.98	\$16,470	\$242.28	39.20	\$16,470	\$420.15	420.95	\$66,440	\$157.83
Brainerd	1,436.84	\$60,000	\$41.76	1,278.00	\$68,000	\$53.21	23,010.63	\$1,991,303	\$86.54
C-I-D	360.19	\$66,100	\$183.51	273.75	\$68,000	\$248.87	5,183.14	\$706,764	\$136.36
Breezy Point	300.59	\$12,000	\$39.92	306.18	\$21,550	\$70.38	3,601.59	\$243,725	\$67.67
Crosslake	227.15	\$29,200	\$128.55	255.49	\$29,200	\$114.29	4,015.56	\$545,258	\$135.79
Deerwood	N/A	N/A	N/A	N/A	N/A	N/A	284.33	\$12,000	\$42.20
Emily	57.66	\$8,760	\$151.93	58.79	\$9,000	\$153.09	989.87	\$156,705	\$158.29
Fifty Lakes	N/A	N/A	N/A	N/A	N/A	N/A	14.18	\$1,500	\$105.78
Garrison	19.62	\$6,892	\$351.27	9.07	\$8,000	\$882.03	611.07	\$83,437	\$136.54
Ideal	203.44	\$14,500	\$71.27	221.51	\$16,500	\$74.49	1,936.66	\$180,914	\$93.42
Landfill	112.52	\$14,756	\$131.14	119.85	\$17,957	\$150.08	1,457.00	\$171,676	\$117.83
Maple Grove Township	N/A	N/A	N/A	N/A	N/A	N/A	189.34	\$36,102	\$190.67
Merrifield	266.81	\$57,500	\$215.55	243.33	\$57,500	\$236.63	4,331.49	\$100,650	\$22.92
Mission	46.42	\$14,595	\$314.41	25.67	\$16,500	\$642.77	1,110.32	\$100,835	\$90.82
Nisswa	217.63	\$45,000	\$206.77	316.65	\$45,000	\$142.11	4,297.65	\$390,461	\$90.85
Pequot Lakes	212.62	\$10,000	\$47.03	226.20	\$10,000	\$44.21	2,461.78	\$212,041	\$86.13
Roosevelt	N/A	N/A	N/A	N/A	N/A	N/A	485.57	\$92,871	\$191.25
Southwest Townships	45.51	\$9,476	\$208.22	56.15	\$9,476	\$168.76	459.31	\$117,752	\$256.37
South Long Lake	N/A	N/A	N/A	N/A	N/A	N/A	224.35	\$36,172	\$161.23
Total	4,582.91	\$349,459	\$76.26	4,463.74	\$378,003	\$84.68	70,099.23	\$5,863,965	\$83.65

SCORE Funding

\$188,952

\$185,329

\$3,756,924

% Funded by State SCORE Grant

54%

43%

64%

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 1,034 tons collected at a cost of \$45.06 per ton in 2016 are close to the cost projected (\$40). The quantities collected have been flat since 2008. Participation rates, assuming 3,163 households were approximately 653 pounds per year per household, which is over the projected figure of 297 pounds.

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 was 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 - 2016 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 2016, the program collected 1,278 tons at a cost of \$53.21. This exceeds the projected amount by approximately 477 tons, and costs are above the projected amount (\$40), due to the quantities collected decreasing. Assuming 5,893 households, approximately 434 pounds per household per year were collected in 2016. This is the ninth year it has been over the projected figure of 297 pounds.

2.3.3 Crosby-Ironton-Deerwood (C-I-D) Program

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 2016 is 306 tons. Currently, the cost for recyclable is \$70.38 per ton. The quantities collected have been increasing annually. Assuming 933 households, approximately 656 pounds per household per year were collected in 2016, which is 359 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 2016 is 226 tons. Assuming 1,010 households, approximately 448 pounds per household per year were collected in 2016, which is 151 pounds over the projected figure of 297 pounds for curbside programs. This is their third year, and it is expected there tonnage will continue to increase in future years.

2.3.6 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 drop-off programs offered within the County:

- | | |
|--|--------------------------------------|
| 1. Bay Lake Township | 7. Merrifield Lions |
| 2. C-I Area Recycling (Merger of the C-I-D and Deerwood program) | |
| - Crosby | |
| - Ironton | 8. Mission Township Recycling |
| 3. Crosslake Recycling | 9. City of Nisswa |
| 4. City of Emily Recycling | 10. County Solid Waste Disposal Site |
| 5. Ideal Township | 11. Southwest Townships |
| 6. City of Garrison Recycling | |

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 \$420.15 per ton at a total rate of 39.2 tons for 2016.

2.4.2 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 2016, the drop-off program recycled 255.5 tons (including the 75.5 tons for scrap metal and 50.3 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 \$114.29 per ton. When the curbside recycling (not funded through City) is included, the total amount of residential recycling for this area is 418.6 tons. The program has surpassed the original projection which is due to the amount of scrap metal collected.

2.4.3 Deerwood/C-I 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. The 2016 recycled material's amount is 274 tons. The cost for the recyclable material collected is \$211.87 per ton.

Deerwood stopped their program on August 19, 2015 due to illegal dumping.

2.4.4 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 \$153.09 per ton at a total rate of 58.8 tons for 2016. 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.

2.4.5 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.

2.4.6 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. The 2016 recycling rate is 9 tons, for an operating cost of \$882.03 per ton.

Garrison stopped their program on September 18, 2015 due to illegal dumping, but to restart it in 2016. For 2016, Garrison went back to a drop-off service once each month.

2.4.7 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 5 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 221.5 tons of recycled materials at a cost of \$74.49 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.

2.4.8 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.

2.4.9 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.). The drop off location is at the Blue Lakes Disposal Shop. The projected results for this program were 35 tons per year. The 2016 recycling rate is 243.3 tons, for an operating cost of \$23.63 per ton.

2.4.10 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 2016, the program accounted for 25.7 tons of recycled material at a cost of \$642.77 per ton.

2.4.11 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 2016 cost per ton was \$142.11 for 316.7 tons, with daily drop-off opportunity.

2.4.12 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. Program has not started up again.

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.

2.4.13 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.

2.4.14 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 2016, the program accounted for 119.7 tons of recycled material at a cost of \$150.08 per ton.

2.4.15 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 2016 recycling rate is 56.2 tons, for an operating cost of \$168.76 per ton.

2.4.16 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 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
2016 SCORE REPORT

SOURCE REDUCTION

Member: Crow Wing County SCORE Program Year: 2016 Cycle: Annual

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 *

01/01/2016

End Date *

12/31/2016

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 businesses

Start Date *

01/01/2016

End Date *

12/31/2016

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 manufacturers 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: Jan 31, 2017 at 07:53 AM CST by doug.morris@crowwing.us

Response last updated on: Jan 31, 2017 at 07:53 AM CST by doug.morris@crowwing.us

REVENUES AND EXPENDITURES

Member: Crow Wing County SCORE Program Year: 2016 Cycle: Annual

Instructions:

Due Date April 1st

Please provide total county revenues and expenditures made during calendar year 2016 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 2015 revenues (1/1/2015 to 12/31/2015)

Balance carried-over from CY 2015 *	\$ 0.00 <i>If negative, please indicate appropriately. Ex. -1000</i>
Adjustment to balance carried-over from CY 2015 *	\$ 0.00
Adjusted balance carried-over from CY 2015	\$ 0.00

Calendar year 2016 revenues (1/1/2016 to 12/31/2016)

General revenue (special assessments, levy, prop. tax, etc.) *	\$ 0.00
Service Fee *	\$ 500,227.69
Processing facility tip fee *	\$ 124,098.40
Land disposal facility surcharge *	\$ 0.00
SCORE funds received in CY 2016 *	\$ 185,329.00
Grants *	\$ 0.00
Household hazardous waste (HHW) funding from MPCA *	\$ 8,546.85
HHW funding from regional program sponsor *	\$ 0.00
Material sales *	\$ 0.00
Other *	\$ 31,252.67
Description of Other Revenue *	
PaintCare and Dept of Ag (Reasonable Overhead Cost - ROC) for HHW program	
Total CY 2016 Revenues	\$ 849,454.61

Expenditures

SCORE planning, oversight and administration *	\$ 193,479.43
Recycling *	\$ 24,844.85
Organics *	\$ 10,452.00
Household Hazardous Waste & Problem Material Management *	\$ 228,279.52
Source Reduction *	\$ 0.00
Education *	\$ 21,255.36
Market Development *	\$ 0.00
Litter Prevention *	\$ 11,097.45
County Grants to Other Local Units of Government *	\$ 360,046.00
Waste to Energy Processing *	\$ 0.00
Total CY 2016 Expenditures	\$ 849,454.61

Balance

Total CY 2016 Revenues	\$ 849,454.61
Total CY 2016 Expenditures	\$ 849,454.61
Balance of carry-over to CY 2017	\$ 0.00

Financial Contact Information

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Response created on: Jan 31, 2017 at 07:33 AM CST by doug.morris@crowwing.us

Response last updated on: Feb 2, 2017 at 08:31 AM CST by doug.morris@crowwing.us

MATERIALS COLLECTED FOR RECYCLING

Member: Crow Wing County SCORE Program Year: 2016 Cycle: Annual

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	512.79	6,166.14
2	Mixed Paper	2,427.01	6,643.16
3	Newspaper		153.16
4	Office Paper		2.79

Total Tons of Residential Paper 2,939.80

Total Tons of C/I/I Paper 12,965.25

Total Tons Paper 15,905.05

Metal

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Aluminum Cans	102.05	1.48
2	Ferrous Metals	403.50	22,587.98

Total Tons of Residential Metal 505.55

Total Tons of C/I/I Metal 22,589.46

Total Tons Metal 23,095.01

Glass

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Other Glass	953.86	206.86
	PLEASE SPECIFY		
	Mixed color		

Total Tons of Residential Glass	953.86
Total Tons of C/I/I Glass	206.86
Total Tons Glass	1,160.72

Plastics

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
	Other Rigid Plastic	332.28	154.63
1	PLEASE SPECIFY mixed plastics		

Total Tons of Residential Plastics	332.28
Total Tons of C/I/I Plastics	154.63
Total Tons Plastic	486.91

Other Recyclables

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
	Other		0.61
1	PLEASE SPECIFY wood		
2	Textiles		238.94
3	Pallets		2,812.40
4	Major appliances		646.15
5	Waste tires		155.29
6	Electronic devices*	158.50	100.31
7	Mattresses and Box Springs		148.00
	Other		2.45
8	PLEASE SPECIFY Rechargeable Batteris		

*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?

Total Tons of Other Residential Recyclables	158.50
Total Tons of Other C/I/I Recyclables	4,104.15
Total Tons Other Recyclables	4,262.65

Organics

	MATERIAL *	RESIDENTIAL TONS	C/I/I DOCUMENTED TONS
1	Yard Waste Composting		2,595.25
2	Source Separated Composting		94.30
3	Food to People		130.09
	Other		568.07
4	PLEASE SPECIFY		
	Grease		

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

Total Tons of C/I/I Organics 3,387.71

Total Tons Organics 3,387.71

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	Used Oil		51.37
2	Oil Filters		58.95
3	Vehicle Batteries		419.60
4	Fluorescent and HID Lamps		13.46
5	Antifreeze	0.48	1.37
6	Latex Paint	35.36	

Total Tons of Residential Hazardous Waste 35.84

Total Tons of C/I/I Hazardous Waste 544.75

Total Tons of Hazardous Waste 580.59

Totals

Total Tons of All Residential Recyclables 4,889.99 *Hazardous Waste is not included*

Total Tons of All C/I/I Recyclables 43,408.06 *Hazardous Waste is not included*

Total Tons All Recyclables 48,298.05 *Hazardous Waste is not included*

Total Tons of All Residential Recyclables 4,925.83 *Hazardous Waste included*

Total Tons of All C/I/I Recyclables 43,952.81 *Hazardous Waste included*

Total Tons All Recyclables

48,878.64 *Hazardous Waste included*

Response created on: Feb 15, 2017 at 06:18 AM CST by doug.morris@crowwing.us

Response last updated on: Mar 23, 2017 at 07:01 AM CDT by doug.morris@crowwing.us

WASTE GENERATION

Member: Crow Wing County SCORE Program Year: 2016 Cycle: Annual

Instructions:

Due Date April 1st

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*

Response created on: Jan 31, 2017 at 07:43 AM CST by doug.morris@crowwing.us

Response last updated on: Jan 31, 2017 at 07:43 AM CST by doug.morris@crowwing.us

APPENDIX 2-B
2016 ANNUAL RECYCLING REPORT
(RESIDENTIAL)

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY
2016
WEIGHT IN TONS

(GARRISON/Imp/ls)

C-1

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
Crosby														
1/31/2016	5,427				15,595		233	496		4,373	5,947			32,071
2/28/2016	5,193				17,125		256	544		4,802	6,530			34,450
3/31/2016	6,637				15,162		227	482		4,251	5,781			32,540
4/30/2016	6,142				20,046		300	637		5,621	7,644			40,390
5/31/2016	4,943				15,574		233	495		4,367	5,938			31,550
6/30/2016	7,424				20,057		300	637		5,624	7,648			41,690
7/31/2016	6,676				23,363		349	742		6,551	8,909			46,590
8/31/2016	5,356				18,142		271	576		5,087	6,916			36,348
9/30/2016	6,112				11,893		178	378		3,335	4,535			26,431
10/31/2016	4,906				12,353		185	393		3,464	4,710			26,011
11/30/2016	4,728				14,236		213	452		3,992	5,428			29,049
12/30/2016	7,033				17,623		264	560		4,941	6,720			37,141
Subtotal LB	70,577	0	0	0	201,169	0	3,009	6,392	0	56,408	76,706	0	0	414,261
Subtotal TN	35,29	0.00	0.00	0.00	100,58	0.00	1,50	3,20	0.00	28,20	38,35	0.00	0.00	207.13
Ironton														
1/31/2016	3,328				2,536		38	81		711	967			7,661
2/28/2016	3,026				3,643		54	116		1,022	1,389			9,250
3/31/2016	4,848				4,029		60	128		1,130	1,536			11,731
4/30/2016	3,451				3,312		50	105		929	1,263			9,110
5/31/2016	3,346				5,634		84	179		1,580	2,148			12,971
6/30/2016	4,729				3,290		49	105		923	1,255			10,351
7/31/2016	3,945				6,377		95	203		1,788	2,432			14,840
8/31/2016	2,545				653		10	21		183	249			3,661
9/30/2016	4,853				4,061		61	129		1,139	1,548			11,791
10/31/2016	3,729				5,034		75	160		1,412	1,920			12,330
11/30/2016	3,067				8,095		58	1,214		1,094	1,487			15,015
12/30/2016	5,131				5,291		87	184		1,625	2,209			14,527
Subtotal LB	45,988	0	0	0	51,955	0	721	2,625	0	13,536	18,403	0	0	133,238
Subtotal TN	23,00	0.00	0.00	0.00	25,98	0.00	0.36	1.31	0.00	6.77	9.20	0.00	0.00	66.62
Total LB	116,575	0	0	0	253,124	0	3,730	9,017	0	69,944	95,109	0	0	547,499
Total TN	58,29	0.00	0.00	0.00	126,56	0.00	1.87	4.51	0.00	34.97	47.55	0.00	0.00	273.75
SCORE FUNDS/COST PER TON													\$58,000.00	\$211.87

Bay Lake Township (WM)

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY

2016

2016

WEIGHT IN TONS

[illegible]

Breezy Point

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
(WASTE PARTNERS/Pine River Recycling Center)														
1/31/2016					14,611		339	1,425		4,139	679			21,193
2/28/2016					18,849		310	1,302		3,782				20,863
3/31/2016					8,967		357	1,501		4,360	715			15,900
4/30/2016					17,539		439	1,846		5,362	879			26,165
5/31/2016					11,759		363	2,369		6,873	1,127			22,688
6/30/2016					23,320		517	2,171		6,306	1,034			33,348
7/31/2016					12,073		886	3,720		10,806	1,771			29,256
8/31/2016					22,280		840	3,529		10,250	1,660			36,579
9/30/2016					11,736		463	1,944		5,648	926			20,717
10/31/2016					10,171		411	1,725		5,011	822			18,140
11/30/2016					10,481		397	1,667		4,842	794			18,181
12/30/2016					16,862		384	1,613		4,687	768			24,314
Subtotal LB	0	0	0	0	174,748	0	5,906	24,809	0	72,066	11,815	0	0	289,344
Subtotal TN	0.00	0.00	0.00	0.00	87.37	0.00	2.95	12.40	0.00	36.03	5.91	0.00	0.00	144.67

(PEQUOT LAKES SANITATION/Pine River Recycling Center)

PEQUO LAKES SANITATION (Pine River Recycling Center)											
1/31/2016				15,237		429	644	4,077	1,073		21,460
2/28/2016				15,595		439	659	4,171	1,098		21,950
3/31/2016				17,651		497	746	4,723	1,243		24,860
4/30/2016				18,829		530	795	5,039	1,326		26,520
5/31/2016				21,612		609	913	5,784	1,522		30,440
6/30/2016				22,947		645	970	6,141	1,616		32,320
7/31/2016				22,848		644	965	6,114	1,609		32,180
8/31/2016				19,703		555	833	5,273	1,388		27,750
9/30/2016				20,107		565	850	5,381	1,416		28,320
10/31/2016				19,965		562	844	5,343	1,406		28,120
11/30/2016				17,523		494	740	4,889	1,234		24,680
12/30/2016				17,331		488	732	4,638	1,221		24,410
Subtotal LB	0	0	0	229,337	0	6,450	9,690	0	61,372	16,151	0
Subtotal TN	0.00	0.00	0.00	114,67	0.00	3,23	4,85	0.00	30,69	8,08	0.00
Total LB	0	0	0	404,085	0	12,366	34,499	0	133,438	27,966	0
Total TN	0.00	0.00	0.00	202,04	0.00	6,18	17,25	0.00	66,72	13,98	0.00
											\$21,550.00
											\$70.38
SCALE FUNDS/CAST PER TON											

(CROSSLAKE/PINE RIVER RECYCLING CENTER)

2016
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
1/31/2016	5,500				0		890	0	0	7,540	1,540			15,470
2/28/2016	3,220	Cardboard picked up separately			9,960		0	0	5,960		2,240			21,380
3/31/2016	4,340				0		850	2,140	28,700	6,480	2,240			44,750
4/30/2016	8,200				11,800		0	0	21,440	6,760	2,960			50,580
5/31/2016	10,020				9,060		820	1,580	20,300	7,580	3,780			53,140
6/30/2016	12,080				860		860	0	0	14,140	4,560			53,140
7/31/2016	10,220				10,220		2,200	2,180	4,900	20,160	5,940			66,500
8/31/2016	14,320				16,780		1,490	0	26,940	18,860	5,080			66,500
9/30/2016	11,060				8,960		0	2,200	0	6,420	4,560			72,320
10/31/2016	10,160				8,880		615	0	9,980	7,060	3,160			32,320
11/30/2016	6,820				9,540		870	0	25,640	6,400	2,240			37,275
12/30/2016	7,000						0	0	0	7,220	2,460			42,150
Subtotal LB	7,860				8,380		0	0	0	6,300	2,460			33,160
Subtotal TN	100,520	0	0	0	94,780	0	8,595	8,100	151,080	107,720	40,180	0	0	510,975
	50.26	0.00	0.00	0.00	47.39	0.00	4.30	4.05	75.54	53.86	20.09	0.00	0.00	255.49

(WASTE PARTNERS/Pine River Recycling Center)

[illegible]

Emily (WASTE MANAGEMENT/PELTZ, St Cloud & LPI)

[illegible]

Residue	
229	24,119
210	23,731
242	18,168
297	29,794
381	25,959
350	37,946
599	33,581
588	44,060
313	23,669
276	20,725
268	20,763
280	27,970
3,993	330,185
2,00	

837,167

418.58

Residue	859	1074	1081
	859	1080	12601
	859	1080	1080
	859	1080	1080
	859	1080	1080
	859	1080	1080
	859	1080	1080
	1074	12601	1080
	859	1080	1080
	859	1080	1080
	859	1080	1080
	1074	12601	1080
	10963	128324	12601
	5,48		8.5%

117,571

58.79

ANNUAL RECYCLING REPORT (RESIDENTIAL)

2016
CROW WING COUNTY

(NORTH COUNTRY/Pine River Recycling Center)

WEIGHT IN TONS

Ideal

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2016	0	0												0
2/28/2016	0	0												0
3/31/2016	24,000	0			7,540		657	938		6,191	1,595			40,920
4/30/2016	0	0												0
5/31/2016	0	0												0
6/30/2016	68,400	0			11,800		1,483	2,118		13,979	3,601			101,380
7/31/2016	0	0												0
8/31/2016	95,700	0			13,880		3,289	3,870		25,542	6,579			148,860
9/30/2016	0	0							99,000					99,000
10/31/2016	0	0												0
11/30/2016	29,700	0			11,600		809	1,156		7,630	1,965			52,860
12/30/2016	217,800	0	0	0	44,820	0	6,237	8,082	99,000	53,341	13,739	0	0	443,020
Subtotal TN	108,90	0.00	0.00	0.00	22.41	0.00	3.12	4.04	49.50	26.67	6.87	0.00	0.00	221.51
SCORE FUNDS/COST PER TON									\$16,500.00					\$74.49

443,020

221.51

Nisswa (WASTE PARTNERS/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
1/31/2016					17,127		765	3,213	4,980	9,333	1,530			31,968
2/28/2016					15,939		651	2,734	4,980	8,442	1,302			34,048
3/31/2016					17,367		851	3,574	8,040	11,382	1,702			42,916
4/30/2016					14,570		768	3,226	7,580	10,370	1,536			38,050
5/31/2016					21,298		1,094	4,595	8,450	14,347	2,188			51,982
6/30/2016					25,380		1,281	5,380	7,300	16,628	2,562			58,531
7/31/2016					27,212		4,146	17,413	11,160	51,581	8,292			119,804
8/31/2016					24,444		1,850	7,770	10,520	23,570	3,700			71,854
9/30/2016					24,888		1,182	4,964	7,640	15,420	2,364			56,459
10/31/2016					20,840		1,081	4,540	8,480	14,188	2,162			51,091
11/30/2016					16,588		972	4,082	5,340	12,858	1,944			43,784
12/30/2016					14,344		747	3,137	2,980	10,113	1,494			32,815
Subtotal TN	0.00	0.00	0.00	0.00	241,798	0.00	15,388	64,628	82,480	198,232	30,776	0.00	0.00	633,302
SCORE FUNDS/COST PER TON									\$45,000.00					\$142.11

316.65

1.4%

33,263

448

583

649

709

72,984

77,168

84,367

91,091

97,448

103,815

110,183

116,551

122,922

129,292

135,660

142,028

148,396

154,764

161,132

167,500

173,868

180,236

186,604

192,972

199,340

205,708

212,076

218,444

224,812

231,180

237,548

South West Townships (WMMARKET)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER e-waste	TOTAL
1/31/2016	4,800				2,710		48	98		884	213		135	8,888
2/28/2016	4,800				3,388		59	122		1,105	266		0	9,740
3/31/2016	4,800				2,710		48	98		884	213		0	8,753
4/30/2016	4,800				3,388		312	98	380	884	213		0	9,357
5/31/2016	4,800				2,710		59	122		1,105	266		96	9,786
6/30/2016	4,800				2,710		48	98	0	884	213		92	8,945
7/31/2016	4,800				2,710		48	98		884	213		0	8,753
8/31/2016	4,800				3,388		59	122		1,105	266		0	9,740
9/30/2016	5,100				2,710		48	98		884	213		0	9,053
10/31/2016	7,200				3,388		59	122		1,105	266		0	12,140
11/30/2016	5,100				2,710		48	98		884	213		0	9,053
12/30/2016	4,200				2,710		48	98		884	213		0	8,153
Subtotal TN	60,000	0.00	0.00	0.00	35,182	0.00	884	1,272	380	11,492	2,768	0.00	323	112,301
SCORE FUNDS/COST PER TON														\$58.15

58.15

\$9,476.00

0.16

56.15

56.15

56.15

56.15

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ANNUAL RECYCLING REPORT (RESIDENTIAL)

CROW WING COUNTY

2016

WEIGHT IN TONS

MONTH	OC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2016					19,320		1,288	1,932		8,694	966			32,200
2/28/2016					28,020		1,968	2,802		12,609	1,401			46,700
3/31/2016					21,840		1,456	2,184	0	9,828	1,092			36,400
4/30/2016					22,835		1,522	2,284		10,276	1,142			38,060
5/31/2016					15,240		1,016	1,524		6,858	762			25,400
6/30/2016					32,820		2,188	3,282		14,769	1,541			54,700
7/31/2016					15,360		1,024	1,536		6,912	768			25,600
8/31/2016					10,200		680	1,020		4,590	510			17,000
9/30/2016					6,720		448	672		3,024	336			11,200
10/31/2016					13,992		933	1,399		6,296	700			23,320
11/30/2016					31,187		2,079	3,119		14,034	1,559			51,978
12/30/2016					23,569		1,571	2,357		10,805	1,178			39,281
Subtotal LB	0	0	0	0	241,104	0	16,073	24,111	0	108,496	12,055	0	0	401,839
Subtotal TN	0.00	0.00	0.00	0.00	120.55	0.00	8.04	12.06	0.00	54.25	6.03	0.00	0.00	200.92
(GARRISON/Pine River Recycling Center)														
1/31/2016	4,676				29,068		435	924		8,156	11,091			54,370
2/28/2016	4,673				33,405		500	1,061		9,366	12,738			54,340
3/31/2016	5,370				29,682		444	943		8,322	11,318			62,440
4/30/2016	4,771				25,477		381	810		7,143	9,716			55,480
5/31/2016	4,095				39,520		591	1,256		11,081	15,069			73,670
6/30/2016	6,353				42,463		635	1,349		11,906	16,191			79,370
7/31/2016	8,826				68,325		1,022	2,171		19,157	26,053			127,711
8/31/2016	10,983				30,629		458	973		8,588	11,679			57,251
9/30/2016	4,924				28,960		433	920		8,120	11,043			54,131
10/31/2016	4,655				37,967		562	1,194		10,533	14,325			70,220
11/30/2016	6,039				19,988		299	635		5,604	7,621			37,360
12/30/2016	3,213				414,176	0	6,195	13,160	6.58	116,127	157,927	0	0	774,163
Subtotal LB	66,578	0	0	0	207.09	0.00	3.10	6.58	0.00	58.06	78.96	0.00	0.00	387.08
Subtotal TN	33.29	0.00	0.00	0.00	207.09	0.00	3.10	6.58	0.00	58.06	78.96	0.00	0.00	387.08
(WASTE PARTNERS/Pine River Recycling Center)														
1/31/2016					39,428		916	3,845		11,170	1,831			57,190
2/28/2016					40,069		837	3,514		10,206	1,673			56,299
3/31/2016					24,197		964	4,051		11,767	1,929			42,908
4/30/2016					47,600		1,186	4,981		14,469	2,372			70,608
5/31/2016					31,731		1,520	6,385		18,548	3,041			61,225
6/30/2016					62,929		1,395	5,859		17,018	2,790			89,991
7/31/2016					32,579		2,390	10,038		29,159	4,760			78,946
8/31/2016					60,123		2,267	9,522		27,660	4,534			104,106
9/30/2016					31,670		1,249	5,247		15,240	2,498			55,904
10/31/2016					27,446		1,108	4,655		13,523	2,217			48,949
11/30/2016					28,283		1,071	4,498		13,065	2,142			49,059
12/30/2016					45,501		1,037	4,354		12,647	2,073			65,612
Subtotal LB	0	0	0	0	471,556	0	15,940	66,949	0	194,472	31,880	0	0	780,792
Subtotal TN	0.00	0.00	0.00	0.00	235.78	0.00	7.97	33.47	0.00	97.24	15.94	0.00	0.00	390.40
(BLUE LAKES/Pine River Recycling Center)														
1/31/2016	11,355				23,776		3,601	5,401		13,010	1,042			58,185
2/28/2016	10,790				23,331		3,706	5,559		12,959	1,060			57,405
3/31/2016	11,025				24,079		4,233	6,354		13,192	1,049			59,932
4/30/2016	10,840				22,742		3,881	5,822		13,341	973			57,600
5/31/2016	9,955				23,022		4,047	6,068		13,831	977			57,929
6/30/2016	10,955				23,791		3,993	5,969		14,314	1,021			60,092
7/31/2016	11,295				25,451		4,313	6,219		13,621	1,163			62,063
8/31/2016	10,948				23,752		5,074	6,277		13,376	1,041			60,468
9/30/2016	11,983				24,362		4,676	7,014		13,442	1,185			62,661
10/31/2016	12,103				23,348		5,463	7,195		12,675	1,078			62,862
11/30/2016	0	Nov 11. Sold to Waste Management			0		0	8,195		0	0			0
12/30/2016	0				0		0	0		0	0			0
Subtotal LB	111,309	0	0	0	237,655	0	42,988	62,897	0	133,759	10,590	0	0	599,198
Subtotal TN	55.65	0.00	0.00	0.00	118.83	0.00	21.49	31.45	0.00	66.88	5.29	0.00	0.00	299.60
Total LB	177,887	0	0	0	1,364,491	0	81,196	167,117	0	552,854	212,452	0	0	2,555,997
Total TN	88.94	0.00	0.00	0.00	682.25	0.00	40.60	83.56	0.00	276.43	106.23	0.00	0.00	1,278.00
SCORE FUNDS/COST PER TON														
														\$68,000.00
														\$53.21

Total Weight % Residue
401,839 0.0%

Residue
0
0.00

57,739
56,801
43,487
71,320
62,137
90,828
80,380
105,466
56,654
49,614
49,702
56,234
59,565
790,362
1.2%

Residue
549
502
579
712
912
837
1,434
1,360
750
665
643
622
9,565
4,778

2,555,997

1,278.00

ANNUAL RECYCLING REPORT (RESIDENTIAL)
CROW WING COUNTY
2016

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)														
1/31/2016					2,677		75	113		716	189			3,770
2/28/2016					1,789		50	76		479	126			2,520
3/31/2016					1,342		38	57		359	95			1,890
4/30/2016					1,143		32	48		306	81			1,610
5/31/2016					1,385		39	59		371	98			1,950
6/30/2016					1,882		53	80		504	133			2,650
7/31/2016					4,182		118	177		1,119	295			5,890
8/31/2016					5,247		148	222		1,404	370			7,390
9/30/2016					4,033		114	170		1,079	284			5,680
10/31/2016	427				2,654		40	84		744	1,012			4,961
11/30/2016	357				2,097		31	67		588	800			3,420
12/30/2016	348				2,167		32	69		608	826			4,050
Subtotal LB	1,132	0	0	0	30,997	0	770	1,221	0	8,277	4,306	0	0	45,301
Subtotal TN	0.57	0.00	0.00	0.00	15.30	0.00	0.39	0.61	0.00	4.14	2.15	0.00	0.00	23.15
(WASTE PARTNERS/Pine River Recycling Center)														
1/31/2016					4,733		110	462		1,341	220			6,865
2/28/2016					4,811		100	422		1,295	201			6,759
3/31/2016					2,905		116	486		1,413	232			5,152
4/30/2016					5,715		142	598		1,737	285			8,477
5/31/2016					3,810		183	767		2,227	365			7,352
6/30/2016					7,555		167	703		2,043	335			10,603
7/31/2016					3,911		287	1,205		3,501	574			9,478
8/31/2016					7,218		272	1,143		3,321	544			12,498
9/30/2016					3,802		150	630		1,830	300			6,712
10/31/2016					3,295		133	559		1,623	266			5,876
11/30/2016					3,396		129	540		1,569	257			5,891
12/30/2016					5,463		124	523		1,518	249			7,877
Subtotal LB	0	0	0	0	56,614	0	1,913	8,038	0	23,348	3,828	0	0	93,741
Subtotal TN	0.00	0.00	0.00	0.00	28.31	0.00	0.96	4.02	0.00	11.67	1.91	0.00	0.00	46.87
(PEQUOT LAKES SANITATION/Pine River Recycling Center)														
1/31/2016					13,632		384	576		3,648	960			19,200
2/28/2016					14,299		403	604		3,827	1,007			20,140
3/31/2016					16,053		452	678		4,296	1,131			22,610
4/30/2016					17,608		496	744		4,712	1,240			24,800
5/31/2016					19,397		546	820		5,191	1,366			27,320
6/30/2016					20,043		565	847		5,364	1,412			28,230
7/31/2016					20,810		566	879		5,569	1,466			29,310
8/31/2016					18,796		529	794		5,030	1,324			26,473
9/30/2016					19,092		538	807		5,109	1,345			26,890
10/31/2016					22,117		623	935		5,919	1,568			31,150
11/30/2016					20,121		567	850		5,385	1,417			28,340
12/30/2016					19,802		558	837		5,293	1,395			27,890
Subtotal LB	0	0	0	0	221,771	0	6,247	9,371	0	59,347	15,618	0	0	312,353
Subtotal TN	0.00	0.00	0.00	0.00	110.89	0.00	3.12	4.89	0.00	29.67	7.81	0.00	0.00	156.18
Total LB	1,132	0	0	0	308,981	0	8,930	18,629	0	90,972	23,751	0	0	452,395
Total TN	0.57	0.00	0.00	0.00	154.49	0.00	4.47	9.31	0.00	45.49	11.88	0.00	0.00	226.20
COST PER TON														\$44.21

452,395

226.20

6,932
6,819
5,221
8,587
7,437
10,903
9,650
12,661
163
90
6,802
5,956
77
5,968
7,952 % Residue
94,888
1.2%

Residue
66
60
69
110
85
100
172
163
90
80
77
75
1,147
0.57

ANNUAL RECYCLING REPORT (RESIDENTIAL)

CROW WING COUNTY

2016

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)														
1/31/2016					24,092		422	868		7,857	1,889			35,128
2/28/2016					14,995		263	540		4,890	1,176			21,864
3/31/2016					18,571		326	669		6,056	1,456			27,078
4/30/2016					18,885		331	680		6,158	1,481			27,535
5/31/2016					16,250		285	585		5,289	1,274			23,693
6/30/2016					23,339		409	841		7,811	1,830			34,030
7/31/2016					23,967		420	863		7,816	1,879			34,945
8/31/2016					11,419		200	411		3,724	895			16,649
9/30/2016					19,449		341	701		6,343	1,525			28,359
10/31/2016					19,951		350	719		6,506	1,565			29,081
11/30/2016					30,877		541	1,112		10,069	2,421			45,020
12/30/2016					23,066		414	850		7,698	1,851			34,419
Subtotal LB	0	0	0	0	245,401	0	4,302	8,839	0	80,027	19,242	0	0	357,811
Subtotal TN	0.00	0.00	0.00	0.00	122.70	0.00	2.15	4.42	0.00	40.01	9.62	0.00	0.00	178.91
(GARRISON/Pine River Recycling Center)														
1/31/2016	2,346				14,595		218	464		4,092	5,565			27,280
2/28/2016	2,602				15,189		242	514		4,539	6,173			30,259
3/31/2016	1,989				13,375		185	393		3,470	4,719			23,131
4/30/2016	2,113				13,156		197	418		3,689	5,016			24,591
5/31/2016	2,800				17,420		260	554		4,884	6,642			32,560
6/30/2016	2,922				15,692		235	499		4,400	5,983			29,331
7/31/2016	2,108				13,113		196	417		3,677	5,000			24,511
8/31/2016	2,436				15,151		227	481		4,248	5,777			28,320
9/30/2016	2,106				13,102		196	416		3,674	4,996			24,490
10/31/2016	2,691				16,740		250	532		4,694	6,383			31,290
11/30/2016	1,655				10,293		154	327		2,866	3,925			19,240
12/30/2016	1,784				11,096		166	353		3,111	4,231			20,741
Subtotal LB	27,154	0	0	0	168,922	0	2,526	5,368	0	47,364	64,410	0	0	315,744
Subtotal TN	13.59	0.00	0.00	0.00	84.46	0.00	1.26	2.68	0.00	23.68	32.21	0.00	0.00	157.87
(WASTE PARTNERS/Pine River Recycling Center)														
1/31/2016					35,132		816	3,426		9,953	1,632			50,959
2/28/2016					35,704		745	3,131		9,094	1,491			50,165
3/31/2016					21,561		859	3,609		10,485	1,719			38,233
4/30/2016					42,414		1,057	4,438		12,892	2,113			62,914
5/31/2016					32,506		1,355	5,690		16,527	2,709			56,787
6/30/2016					63,522		1,243	5,220		15,164	2,466			87,635
7/31/2016					29,029		2,130	8,945		25,982	4,259			70,345
8/31/2016					53,573		2,020	8,485		24,647	4,040			92,765
9/30/2016					28,220		1,113	4,675		13,560	2,226			49,814
10/31/2016					24,456		988	4,148		12,050	1,975			43,617
11/30/2016					25,201		954	4,008		11,642	1,908			43,713
12/30/2016					40,544		924	3,880		11,269	1,847			58,454
Subtotal LB	0	0	0	0	431,962	0	14,204	59,655	0	173,285	28,405	0	0	707,411
Subtotal TN	0.00	0.00	0.00	0.00	215.93	0.00	7.10	29.83	0.00	86.64	14.20	0.00	0.00	353.71
(BLUE LAKES/Pine River Recycling Center)														
1/31/2016	18,850				40,916		718	1,077		10,597	1,796			74,054
2/28/2016	16,900				41,061		737	1,106		11,253	1,843			72,900
3/31/2016	14,560				42,152		698	1,047		11,069	1,745			71,290
4/30/2016	13,975				40,236		638	957		10,026	1,596			67,428
5/31/2016	14,207				40,594		668	1,004		10,417	1,673			68,563
6/30/2016	14,473				41,935		695	1,042		10,973	1,736			70,853
7/31/2016	14,972				40,289		632	979		10,004	1,631			68,537
8/31/2016	15,010				37,791		597	896		8,807	1,736			64,838
9/30/2016	15,010				37,791		597	896		8,807	1,736			64,838
10/31/2016	12,854				37,171		636	954		10,723	1,590			63,928
11/30/2016	0	Nov 11 Sold to Waste Management			0		0	0		0	0			0
12/30/2016	0				0		0	0		0	0			0
Subtotal LB	150,811	0	0	0	399,946	0	6,638	9,957	0	102,796	17,081	0	0	687,229
Subtotal TN	75.41	0.00	0.00	0.00	199.97	0.00	3.32	4.98	0.00	51.40	8.54	0.00	0.00	343.61
Total LB	177,965	0	0	0	1,246,131	0	27,670	83,819	0	403,472	129,138	0	0	2,068,195
Total TN	88.98	0.00	0.00	0.00	623.07	0.00	13.84	41.91	0.00	201.74	64.57	0.00	0.00	1,034.10
SCORE FUNDS/COST PER TON														\$45,600.00

Residue
38,400
23,900
2,036
2,522
29,600
30,100
2,565
2,207
23,693
34,030
3,169
37,199
34,945
3,255
19,200
1,551
26,411
31,000
2,709
4,193
49,213
37,625
391,137
8.5%
33,328
16.66

Residue
51,448
50,612
447
38,749
516
63,548
59,600
813
746
88,381
1,278
71,623
1,212
93,977
50,482
593
44,210
44,286
573
554
59,018
715,934
1.2%
8,523
4.26

2,068,195

1,034.10

0

\$45,600.00

0

(WMMMarket)

ANNUAL RECYCLING REPORT (RESIDENTIAL)

CROW WING COUNTY

2016

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
1/31/2016	0	0			2,710		48	98		884	213			3,953
2/28/2016	0	0			3,388		59	122		1,105	266			4,940
3/31/2016	0	0			2,710		48	98		884	213			3,953
4/30/2016	0	0			2,710		48	98		884	213			3,953
5/31/2016	0	0			3,338		59	122		1,105	266			4,890
6/30/2016	0	0			2,710		48	98		884	213			3,953
7/31/2016	0	0			2,710		48	98		884	213			3,953
8/31/2016	0	0			3,388		59	122		1,105	266			4,940
9/30/2016	0	0			2,710		48	98		884	213			3,953
10/31/2016	0	0			3,388		59	122		1,105	266			4,940
11/30/2016	0	0			2,710		48	98		884	213			3,953
12/30/2016	0	0			2,710		48	98		884	213			3,953
Subtotal TB	0.00	0.00	0.00	0.00	35,182	0.00	620	1,272	0.00	11,492	2,768	0.00	0.00	51,334
Subtotal TN	0.00	0.00	0.00	0.00	17,59	0.00	0.31	0.64	0.00	5.75	1.38	0.00	0.00	25.67
SCORE FUNDS/COST PER TON										\$16,500.00				\$642.85

Merrifield (BLUE LAKES/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
1/31/2016	8,915				20,705		1,169	1,754		6,486	948			39,975
2/28/2016	8,915				20,896		1,376	2,065		7,027	981			41,240
3/31/2016	8,705				21,128		1,326	1,989		7,008	950			41,106
4/30/2016	8,430				21,282		1,237	1,856		6,890	953			40,336
5/31/2016	9,064				22,106		1,226	1,859		7,362	984			42,580
6/30/2016	9,197				21,906		1,329	1,993		6,847	956			42,227
7/31/2016	8,856				23,760		1,414	2,121		8,168	1,062			45,401
8/31/2016	8,995				23,356		1,330	1,995		2,795	1,050			39,522
9/30/2016	9,215				23,982		1,322	1,983		7,894	1,108			45,504
10/31/2016	8,231				21,469		1,171	1,763		6,805	949			40,389
11/30/2016	0	Nov 11 Sold to Waste Management			24,080		422	867		7,653	1,888			35,110
12/30/2016	0				22,812		400	822		7,439	1,789			33,262
Subtotal TB	88,523	0	0	0	267,480	0	13,723	21,047	0	82,283	13,595	0	0	466,652
Subtotal TN	44.26	0.00	0.00	0.00	133.74	0.00	6.86	10.52	0.00	41.14	6.80	0.00	0.00	243.33
SCORE FUNDS/COST PER TON										\$5,750.00				\$23.63

Garrison (WMMMarket)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2016	0	0			0		0	0		0	0			0
2/28/2016	0	0			0		0	0		0	0			0
3/31/2016	0	0			0		0	0		0	0			0
4/30/2016	0	0			0		0	0		0	0			0
5/31/2016	0	0			1,318		23	47		430	103			1,921
6/30/2016	0	0			627		11	23		205	49			85
7/31/2016	0	0			3,137		55	113		1,023	246			4,574
8/31/2016	0	0			2,397		42	86		782	188			3,495
9/30/2016	0	0			2,196		39	79		716	172			3,202
10/31/2016	0	0			2,133		37	77		696	167			3,110
11/30/2016	0	0			627		11	23		205	49			915
12/30/2016	0	0			0		0	0		0	0			0
Subtotal TB	0	0	0	0	12,435	0	218	448	0	4,057	974	0	0	18,132
Subtotal TN	0.00	0.00	0.00	0.00	6.22	0.00	0.11	0.22	0.00	2.03	0.49	0.00	0.00	9.07
SCORE FUNDS/COST PER TON										\$8,000.00				\$882.42

Residue
4,321
5,400
4,321
368
4,321
368
4,321
460
5,350
368
4,321
368
4,321
460
5,400
4,321
368
4,321
368
4,321
56,118
51,334

8.5%

Residue
39,975
41,240
41,106
40,336
42,580
42,227
45,401
39,522
45,504
40,389
35,110
38,380
36,360
493,020
486,652
243.33

1.3%

Residue
0
0
0
0
0
179
85
1,000
5,000
4,574
3,495
3,820
3,500
3,400
1,000
85
18,132
19,820
9.07

8.5%

(PEQUOT LAKES SANITATION/Pine River Recycling Center)

2016

WEIGHT IN TONS

[illegible]

Landfill
(GARRISON/MARKET)

[illegible]

Misc. - Residential
(BLUE LAKES/Pine River Recycling Center)

[illegible]

GRAND TOTAL

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
	1,025.589	0	0	0	4,854,011	0	204,103	474,054	332,940	1,907,719	664,562	0	323	9,463,301
TOTAL TN	512.79	0.00	0.00	0.00	2,427.01	0.00	102.05	237.03	166.47	953.86	332.28	0.00	0.16	4,731.65
							- PAPER TOTAL		505.55	- METAL TOTAL				
							2,339.80							

SCORE FUNDS/COST PER TON

GOAL/COST PER TON

1000

\$378,002.81

\$150.00

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 2016, commercial/industrial documented recycling was 42,358 tons. Of that total; 24,053 tons were recycled using out-of-county recycling infrastructure. Commercial and industrial recycling accounts for 86.7 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 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 24,053 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 has 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	(871 tons)
Garrison Recycling	(561 tons)
Blue Lakes Recycling	(846 tons) – Sold to WM in November 2016
Waste Partners	(1,154 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 increase 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
2016 SURVEY FORM



December 20, 2016

Re: 2016 Area Commercial, Industrial, and Institutional (CII) Recycling Data Collection

Thank you for your cooperation in sending the information I requested for 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 exceed the established goal. I now ask your cooperation in completing the enclosed questionnaires concerning your businesses 2016 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 our 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. Additional information is enclosed to assist you in disposing of these items.

The enclosed questionnaires are for your use in reporting your recycling and source reduction/reuse activities. Please send the completed questionnaires back to my office. This information needs to be sent **by February 1, 2017**.

If you would like to send us your information 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 concerns.

Sincerely,
Doug Morris

Douglas R. Morris
Solid Waste Coordinator
Enc.

Mark B. Liedl, Director
Land Services Department
322 Laurel Street, Suite 15
Brainerd, MN 56401

Office: (218) 824-1010
Fax: (218) 824-1126
www.crowwing.us

Our Vision: Being Minnesota's favorite place.

Our Mission: Serve well. Deliver value. Drive results.

Our Values: Be responsible. Treat people right. Build a better future.

Crow Wing County
2016 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, 2017.

The following is a listing of materials that are **banned** from being landfill. 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 at 218-824-1290 or the Regional office of the MPCA at 218-828-2492.

(Circle appropriate units)

1. Material: **Fluorescent/CFLs and/or HID Bulbs** _____
Quantity: _____ per: _____ Delivered to/Picked up by: _____
(Lbs, # of 4' bulbs, # 8' bulbs, # of bulbs) per: (week, month, quarter, year)
2. Material: **Lead Acid Batteries and/or Household Rechargeable Batteries**
Quantity: _____ (lbs, tons, ea) Delivered to/Picked up by: _____
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: _____ per: (week, month, quarter, year)
(# car, # truck, lbs, tons)
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)

THANK YOU FOR YOUR TIME

Crow Wing County
2016 Commercial, Industrial & Institutional (CII) Recycling Questionnaire

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

PLEASE COMPLETE AND RETURN TO CROW WING COUNTY SOLID WASTE OFFICE BY FEBRUARY 1, 2017.

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

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**
Quantity: _____ (# Bales, lbs, tons) per: (week, month, quarter, year)
(If bales, approximate weight of bale is: _____)
3. Material: **Scrap Metal**
Quantity: _____ (lbs, tons) per: (week, month, quarter, year)
Delivered to: _____
4. Material: **Textiles**
Quantity: _____ (lbs, tons) per: (week, month, quarter, year)
Delivered to: _____
5. Material: **Used Electronics**
Quantity: _____ (lbs, tons) per: (week, month, quarter, year)
Delivered to: _____

6. Material: **Food Donation/Grease** Delivered to: _____
 Quantity: _____ (lbs, tons) per: (week, month, quarter, year)
7. Material: **Other**
 Material: Paper - Delivered to: _____
 (Type - Magazines, Office Paper, Etc.)
 Quantity: _____ (lbs, tons) per: (week, month, quarter, year)
8. Material: _____ Delivered to _____
 Quantity: _____ (lbs, tons) per: (week, month, quarter, year)

Does your business provide any recycling opportunities to the public concerning these materials? (Please Circle)

- | | | | |
|----|-----------------------------------|------------|-----------|
| 1. | Material: Recyclable Batteries | Yes: _____ | No: _____ |
| 2. | Material: Car Batteries | Yes: _____ | No: _____ |
| 3. | Material: Used Oil | Yes: _____ | No: _____ |
| 4. | Material: Fluorescent Tubes/CFLs | Yes: _____ | No: _____ |
| 5. | Material: Cell Phones/Electronics | Yes: _____ | No: _____ |

Other:

- | | | | |
|----|-----------------|------------|-----------|
| 6. | Material: _____ | Yes: _____ | No: _____ |
| 7. | Material: _____ | Yes: _____ | No: _____ |

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:

- Recycling quantities should not include materials recovered from other waste streams such as demolition debris.
- 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.

THANK YOU FOR YOUR TIME

**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 Freihammer.

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 weight 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 reweight 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 business 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.

APPENDIX 3-B

**2016 ANNUAL RECYCLING REPORT
(CII)**

ANNUAL RECYCLING REPORT (C/I)
CROW WING COUNTY
2016
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
1/31/2016	90,077	42,408			10,584				0	16,060				159,129
2/28/2016	87,720	43,760			13,284				0	16,000				160,764
3/31/2016	127,110	47,484			24,300				0	20,240				219,134
4/30/2016	119,658	43,308			22,428				0	17,940				203,334
5/31/2016	114,188	37,710			12,096				0	16,140				180,134
6/30/2016	210,630	46,440			25,620				0	27,200				309,890
7/31/2016	177,100	36,270			26,352				0	26,120				265,842
8/31/2016	150,573	8,946			26,568				0	32,780				218,867
9/30/2016	180,780	0			22,248				0	22,540				225,568
10/31/2016	136,025	0			25,380				0	22,540				183,945
11/30/2016	100,011	0			20,196				0	21,020				141,227
12/30/2016	104,317	0			21,492				0	15,160				140,969
Subtotal LB	1,497,669	306,326	0	0	250,548	0	0	0	0	253,740	0	0	0	2,306,283
Subtotal TN	748.83	153.16	0.00	0.00	125.27	0.00	0.00	0.00	0.00	126.87	0.00	0.00	0.00	1,154.14

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
1/31/2016	105,700	0			0		0	0	0	0	0			105,700
2/28/2016	108,620				0		0	0	0	0	0			108,620
3/31/2016	90,100				0		0	0	0	0	0			90,100
4/30/2016	112,600				0		0	0	0	0	0			112,600
5/31/2016	217,380				0		0	0	0	0	0			217,380
6/30/2016	138,160				0		0	0	0	0	0			138,160
7/31/2016	104,000				0		0	0	0	0	0			104,000
8/31/2016	243,000				0		0	0	0	0	0			243,000
9/30/2016	148,240				0		0	0	0	0	0			148,240
10/31/2016	165,600				0		0	0	0	0	0			165,600
11/30/2016	134,180				0		0	0	0	0	0			134,180
12/30/2016	175,160				0		0	0	0	0	0			175,160
Subtotal LB	1,742,740	0	0	0	0	0	0	0	0	0	0	0	0	1,742,740
Subtotal TN	871.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	871.37
(Residential Recycling Programs subtracted out)														
Subtotal LB	1,742,740	0	0	0	0	0	0	0	0	0	0	0	0	1,742,740
Subtotal TN	871.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	871.37
PG SUBTOTAL LB	3,240,409	306,326	0	0	250,548	0	0	0	0	253,740	0	0	0	4,051,023
PG SUBTOTAL TN	1,620.20	153.16	0.00	0.00	125.27	0.00	0.00	0.00	0.00	126.87	0.00	0.00	0.00	2,025.51

ANNUAL RECYCLING REPORT (C/I)
CROW WING COUNTY

2016
WEIGHT IN TONS

Blue Lakes (In-County Hauler - Commercial Accounts to Pine River)

MONTH	OCC	NEWS	OFFICE PAPER	MAGS	MIXED PAPER	PHONE BOOKS	ALUM. CANS	TIN CANS	SCRAP METAL	GLASS	PLASTIC	FOOD WASTE	OTHER	TOTAL
1/31/2016	168,645									4,685				173,330
2/28/2016	168,543									3,675				172,218
3/31/2016	171,235									3,175				174,410
4/30/2016	163,677									3,850				167,527
5/31/2016	168,465									3,368				171,833
6/30/2016	167,677									3,930				171,607
7/31/2016	162,292									4,873				167,165
8/31/2016	162,967									5,147				168,114
9/30/2016	157,993									3,754				161,747
10/31/2016	160,720									3,754				164,474
11/30/2016	0	Nov 11, Sold to Waste Management								0				0
12/30/2016	0									0				0
Subtotal LB	1,652,214	0	0	0	0	0	0	0	0	40,211	0	0	0	1,692,425
Subtotal TN	826.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.11	0.00	0.00	0.00	846.21

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
2016	1,121,520													1,121,520
Subtotal LB	1,121,520	0	0	0	0	0	0	0	0	0	0	0	0	1,121,520
Subtotal TN	560.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	560.76

North Country 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
2015	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
2016														
Subtotal LB	0	0	0	0	0	0	0	0	0	119,760	0	0	0	119,760
Subtotal TN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.88	0.00	0.00	0.00	59.88
PG SUBTOTAL LB	2,773,734	0	0	0	0	0	0	0	0	159,971	0	0	0	2,933,705
PG SUBTOTAL TN	1,386.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.99	0.00	0.00	0.00	1,466.85

ANNUAL RECYCLING REPORT (C/I)
CROW WING COUNTY
2016
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	Wood	1,225
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	0.61	0.61
<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>Garrison Disposal</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	Cloth & Fiber	100,000
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	50.00
<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>Kenwood</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	6,318,137	0	5,572	0	13,035,764	0	2,958	0	45,090,961	0	209,252	1,223,229	164,981	66,050,853
Subtotal TN	3,159.07	0.00	2.79	0.00	6,517.88	0.00	1.48	0.00	22,545.48	0.00	104.63	611.61	82.49	33,025.43
<u>St Joseph's Med Center (Essentia 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	0.45	0.45
PG SUBTOTAL LB	6,318,137	0	5,572	0	13,035,764	0	2,958	0	45,175,961	0	309,252	1,584,928	479,106	66,911,677
PG SUBTOTAL TN	3,159.07	0.00	2.79	0.00	6,517.88	0.00	1.48	0.00	22,587.98	0.00	154.63	792.46	239.55	33,455.84

ANNUAL RECYCLING REPORT (C/I)
CROW WING COUNTY

2016

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	12,332,280	306,326	5,572	0	13,286,312	0	2,958	0	45,175,961	413,711	309,252	1,584,928	479,106	73,896,405
TOTAL TN	6,166.14	153.16	2.79	0.00	6,843.16	0.00	1.48	0.00	22,587.98	206.86	154.63	792.46	239.55	36,948.20
TOTAL - UTILIZING IN COUNTY RECYCLER														
TOTAL LB	6,014,143	306,326	0	0	250,548	0	0	0	24,000,000	413,711	0	0	0	30,984,728
TOTAL TN	3,007.07	153.16	0.00	0.00	125.27	0.00	0.00	0.00	12,000.00	206.86	0.00	0.00	0.00	15,492.36
TOTAL - NOT UTILIZING AN IN COUNTY RECYCLER														
TOTAL LB	6,318,137	0	5,572	0	13,035,764	0	2,958	0	21,175,961	0	309,252	1,584,928	479,106	42,911,677
TOTAL TN	3,159.07	0.00	2.79	0.00	6,517.88	0.00	1.48	0.00	10,587.98	0.00	154.63	792.46	239.55	21,455.84

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 2016, problem/ban material was 1,789 tons, using both the County and commercial recycling infrastructure. Problem/banned material recycling accounts for 3.7 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 overturn 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 - 2015)

1. Crosby	2,362
2. Ironton	571

TOTAL	2,933

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.

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

<u>Year</u>	<u>Amount (cy vds)</u>	<u>Year</u>	<u>Amount (cy vds)</u>	<u>Year</u>	<u>Amount (cy vds)</u>
1994	3,506	2005	15,216	2016	11,502
1995	3,735	2006	12,353***	TOTAL	248,373
1996	2,278	2007	12,380		
1997	4,892	2008	10,590****		
1998	7,113	2009	11,873		
1999	8,302	2010	10,487		
2000*	12,335	2011	11,016		
2001**	14,392	2012	9,945		
2002	15,056	2013	11,321		
2003	16,889	2014	11,682		
2004	18,132	2015	13,278		

* Upgraded yard waste disposal area

** Annual solid waste coupon initiated

*** Area went through a major drought

**** Northland Arboretum Program started

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 2016, the Christmas tree recycling program collected xxx 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, Range Disposal, and Blue Lakes 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	<u>2016</u>	<u>35</u>
2004	600	TOTAL	10,975
2005	600		

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 following are the quantities of brush handled at the Site since 2003:

<u>Year</u>	<u>Amount (cy vds)</u>	<u>Year</u>	<u>Amount (cy vds)</u>
2003	15,341	2010	13,124
2004	16,499	2011	13,015
2005	18,241	2012	13,270
2006	12,968	2013	11,849
2007	16,346	2014	16,724
2008	13,557	2015	32,587*
2009	15,311	<u>2016</u>	<u>22,936**</u>
		TOTAL	231,858

* July Storm

** July/August Storm

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. The County's HHW Facility is open 2 days per month, the second Saturday and Wednesday each month, May through October. 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. Also, the HHW vender transports bulk latex paint to be used as a feedstock at cement kilns.

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; MPCA stopped the use of this on January 2017. 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	<u>2016</u>	<u>8.9</u>	<u>\$511</u>
2006	13.6	\$698	TOTAL	200.6	10,393
2007*	10.6	\$545			

* 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. 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
<u>2016</u>	<u>716</u>	<u>\$61.62</u>
TOTAL	4,848	\$380.84

Table 4.1 on the following page provides an idea how the County residents are using this service. As Table 4.1 shows, in the past five years, over 11 percent of the County households utilized this service annually. Factoring in repeat customers and nonresidents, approximately 50 percent of the total County households (including seasonal homeowners) have utilized this service at least once since this program started in 1993. In 2016, 55.5 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 47 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

CROW WING COUNTY HAZARDOUS WASTE PROGRAM

Table 4.1

	1990-2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	TOTAL	12-2016 5-YEAR
Number of Households Assume 30% nonresidents	25,193	25,271	26,399	26,484	26,577	26,577	26,577	0	0	0	0	0	
Households to Site	18,588	1,479	1,624	1,558	1,673	1,504	1,440	0	0	0	0	0	27,976
Households Participating	21,754	1,830	1,737	1,875	1,656	1,572	1,572	0	0	0	0	0	7,799
% Participation - residents	6.4%	7.0%	6.5%	7.1%	6.2%	5.9%	5.9%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	32,110	8,670
Repeat User Rate	54%	54%	52%	55%	57%	55%	55%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Households (exclude repeat)	12,538	772	843	831	845	708	658	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	17,194	3,885
Participating (Excluding repeat, including nonresidents)								#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	50%	11%
Types of Waste													
Items bulked into 55-gallon drums													
Oil Base Paint (Non-PaintCare)	646	50	54	47	53	16	12	0	0	0	0	0	878
Oil Base Paint (PaintCare)	N/A	N/A	N/A	N/A	N/A	26	27	0	0	0	0	0	53
Latex Paint (PaintCare)	683	70	76	70	69	54	61	0	0	0	0	1,083	330
Antifreeze	181	22	45	26	24	16	23	0	0	0	0	337	134
Fuel Blend	153	11	8	7	5	5	6	0	0	0	0	198	34
# of 55-gal drums	1,653	153	163	151	153	117	129.08	0	0	0	0	2,549	733
Est Weight (Pounds)	87,910	80,520	94,820	79,310	80,740	62,110	67,795	0	0	0	0	1,343,206	384,776
Est Weight PaintCare Latex/Oil Base (tons)						22.9	25.3						
Items labpacked													
Commercial Latex (PC) - tote (lbs)	N/A	N/A	N/A	N/A	N/A	N/A	702	0	0	0	0	0	702
55-Gal drum	189	3	3	6	4	5	6	0	0	0	0	216	197
30-Gal drum	84	3	1	0	0	0	1	0	0	0	0	89	24
17-Gal drum	48	0	0	0	0	0	0	0	0	0	0	48	0
10-Gal drum	2	0	0	0	0	0	0	0	0	0	0	2	0
5-Gal drum	27	3	0	1	1	2	8	0	0	0	0	42	10
Weight Sub Total	46,901	1,440	851	1,984	1,486	1,926	3,365	0	0	0	0	57,954	9,613
SUBTOTAL WEIGHT (TONS)													
Waste Disposed per household (pounds)	43	40.98	47.84	40.65	41.11	32.02	35.58	0.00	0.00	0.00	0.00	701	197
Waste Brought in per household (pounds)	50	49	53	49	46	40	47	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	45	47
Product Exchange (Pounds)	147,047	16,955	21,903	21,811	22,015	30,115	34,512	0	0	0	0	294,368	130,355
Cost Saving (Disposal & shipping)	\$58,942	\$5,355	\$8,386	\$8,392	\$9,113	\$8,963	\$9,881	\$0	\$0	\$0	\$0	\$109,032	44,735
% Reused	13%	17%	18%	20%	20%	31%	32%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	17%	24%
AG Pesticide Program (Pounds)													
- Farm	8,415	145	0	0	0	225	115	0	0	0	0	8,903	340
- Household	18,377	1,122	1,379	3,405	3,591	1,957	2,764	0	0	0	0	32,569	13,096
VSQG (Pounds)													
# of Businesses Participating	47,671	40	4,580	6,269	6,975	190	0	0	0	0	0	65,725	18,014
- DEA		1	2	3	5	1	0	0	0	0	0	0	0
- County		84	0	0	0	0	0	0	0	0	0	84	0
Pharmaceuticals (Pounds)													
TOTAL Haz Waste HHW (tons)	573.2	50.2	62.1	56.8	58.1	49.3	55.5	0.0	0.0	0.0	0.0	905.1	281.8
PaintCare - Commercial Sites													
Crosslake Ace Hardware													
Oil Base	N/A	N/A	N/A	N/A	N/A	N/A	1,217	1156	0	0	0	2,373	2,373
Latex	N/A	N/A	N/A	N/A	N/A	N/A	4,578	3870	0	0	0	8,448	8,448
Hirstfields													
Oil-Base	N/A	N/A	N/A	N/A	N/A	N/A	5,133	2020	0	0	0	8,153	8,153
Latex	N/A	N/A	N/A	N/A	N/A	N/A	19,309	10109	0	0	0	29,418	29,418
Sherwin Williams													
Oil-Base	N/A	N/A	N/A	N/A	N/A	N/A	4,653	3995	0	0	0	8,648	8,648
Latex	N/A	N/A	N/A	N/A	N/A	N/A	17,503	13374	0	0	0	30,877	30,877
Emily Ace Hardware													
Oil-Base	N/A	N/A	N/A	N/A	N/A	N/A	257	386	0	0	0	643	643
Latex	N/A	N/A	N/A	N/A	N/A	N/A	969	1253	0	0	0	2,262	2,262
Carlson Hardware of Nisswa													
Oil-Base	N/A	N/A	N/A	N/A	N/A	N/A	1,908	1455	0	0	0	3,343	3,343
Latex	N/A	N/A	N/A	N/A	N/A	N/A	7,180	4802	0	0	0	11,962	11,962
Oil Base Est Weight (Pounds)													
Latex Est Weight (Pounds)													
TOTAL Haz Waste PaintCare	N/A	N/A	N/A	N/A	N/A	N/A	13,168	9,992	0	0	0	23,160	23,160
							49,539	33,448	0	0	0	82,987	82,987
							31.4	21.7	0.0	0.0	0.0	53.1	53.1

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 reimburse for items given away through Product Exchange and bulking their paint. 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

The participation rate went down slightly in 2016, but the percentage of repeat customers increase to the highest level yet - 58%. With this decrease of participation and increase in repeat customers; we saw a conflicting result - an increase in the amount of waste per load in 2016. This increase maybe due to the recent back to back storm damage cleanups we have seen in the past two years. 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 2016, 32 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 24 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 2016 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	1,117 Gallons	\$ 2,251.93	
Oil-Base Paint	210 Gallons	\$ 364.76	
Aerosols	2,269 ea.	\$ 1,045.16	
Auto Supplies	2,241 Pounds	\$ 2,106.54	
Reused Fuel	1,449 Gallons	\$ 1,410.52	
Acid	38 Gallons	\$ 359.55	
Base	339 Pounds	\$ 318.19	
Compressed Gas	77 Cylinders	\$ 72.38	
Anti-Freeze	100 Gallons	\$ 100.00	
<u>Household Supplies</u>	<u>2,077 Pounds</u>	<u>\$ 1,951.91</u>	

2016	TOTAL	34,512 Pounds	\$ 9,980.93	\$ 374.00
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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 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
TOTAL	4,958	30,791	\$27,367

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

** From July - June

*** July 2003 - Nov 2004

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 it program region and counties with HHW facilities/mobile agreements.

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, 2015 and 2016. 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 2016 is 2,540 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 900.1 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 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 table below shows how the five – ten percent goal is being met. The following are the quantities of tires that are being handled just at the Site complex since 1992:

<u>Year</u>	<u>Amount (ea.)</u>	<u>Estimated*</u> <u>Generation</u>	<u>%</u> <u>Handled at Site</u>	<u>Tonnage</u> <u>Shipped</u>
1992	3,097	45,772	6.8 %	N/A
1993	2,641	46,512	5.7 %	Unk
1994	4,573	47,299	9.7 %	Unk
1995	3,755	48,437	7.8 %	Unk
1996	3,486	49,560	7.0 %	N/A
1997**	4,618	50,578	9.1 %	269.21
1998	5,843	51,605	11.3 %	N/A
1999	5,982	52,698	11.4 %	182.45
2000***	6,923	55,099	12.6 %	N/A
2001****	7,240	56,281	12.9 %	231.52
2002	10,221	57,132	17.8 %	215.47
2003	8,536	58,391	14.6 %	161.13
2004	10,138	59,395	17.1 %	N/A
2005	9,777	60,194	16.0 %	343.76
2006	9,197	61,038	15.1 %	130.74
2007 *****	11,660	61,390	18.7 %	215.43
2008	8,709	61,739	14.1 %	76.32
2009	6,984	62,370	11.0 %	156.49
2010	7,145	62,500	11.4 %	139.57
2011*****	8,461	62,745	13.5 %	146.93
2012	8,828	62,876	14.0 %	140.98
2013	6,175	63,216	9.8 %	N/A
2014	6,393	63,371	10.1 %	208.15
2015	6,942	63,481	10.9 %	115.48
2016	8,789	64,218	10.4 %	155.29
TOTAL	176,113	1,427,897	12.3 %	2,888

- * Estimated generation is 1 tire/person/year
- ** County began assisting area "Cleanup Day" events
- *** Upgraded tire disposal area
- **** Annual solid waste coupon initiated
- ***** 3,931 came from a one day cleanup event held at Crow Wing Township
- ***** 1,661 came from a cleanup event held at Brainerd

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.

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-three (23) 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 \$91,591. 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 is 81 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 following are the quantities of appliances handled at the Site complex since 1992: (Note tonnage also includes scrap metal)

<u>Year</u>	<u>Amount (ea.)</u>	<u>Estimated*</u> <u>Generation</u>	<u>%</u> <u>Handled at Site</u>	<u>National**</u> <u>Recycling</u> <u>Rate</u>	<u>Tonnage</u> <u>Shipped</u>
1992	1,456	4,577	32 %	55.0 %	Unk
1993	2,128	4,651	46 %	61.8 %	Unk
1994	2,649	4,730	56 %	70.2 %	Unk
1995	2,615	4,844	54 %	74.3 %	Unk
1996	2,890	4,956	58 %	76.4 %	253.72
1997***	2,901	5,058	57 %	81.0 %	344.61
1998	3,758	5,161	73 %	72.1 %	172.54
1999****	3,370	5,270	64 %	77.3 %	460.12
2000*****	3,235	5,510	59 %	84.0 %	169.73
2001*****	4,001	5,628	71 %	85.0 %	293.89
2002	4,457	5,713	78 %	86.5 %	437.10
2003	4,306	5,839	74 %	89.7 %	445.01
2004	4,793	5,940	81 %	89.4 %	377.00
2005	4,686	6,019	77 %	90.0 %	354.60
2006	4,624	6,104	76 %	90.0 %	610.38
2007	4,434	6,139	71 %	90.0 %	414.65

2008*****	3,949	6,174	64 %	90.0 %	387.54
2009*****	4,077	6,237	65 %	90.0 %	271.62
2010*****	3,801	6,250	61 %	90.0 %	432.79
2011*****	3,131	6,275	50 %	90.0 %	245.71
2012*****	3,025	6,288	48 %	90.0 %	282.25
2013	3,021	6,322	47 %	82.0 %	257.02
2014	3,149	6,337	50 %		260.81
2015	3,699	6,348	58 %		329.95
2016	4,098	6,422	64 %		387.17
TOTAL	88,253	142,790	62 %		7,188.21

- * Estimated generation rate is 0.1 item/person/year
- ** Per the Steel Recycling Institute
- *** County began assisting area "Cleanup Day" events
- **** Area scrap metal recycler began to work in conjunction with the local Cleanup day efforts. Scrap metal is no longer coming to Site from these events.
- ***** Upgraded appliance collection area
- ***** Annual solid waste coupon initiated
- ***** Scrap steel prices, record highs – people utilizing local Recyclers to obtain cash.

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 shop 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)
- Emily (upgraded 2003)
- Deerwood
- 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 %
2002	5,161	228,528	2.26 %
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. Starting in 2010, these items no longer have a disposal fee.

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		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)	Oil Filters 55-gal drum		Used Oil (Gallons)	Antifreeze (Gallons)	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	
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	27.00	
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	10.00	
4	Crosslake	2,292	45	5.00		1,815	75	3.00		2,062	35	4.00		651	0	8.00		3,253	54	6.00	
5	Crow Wing Twnp	2,222	100	2.00		1,160	95	3.00		1,506	50	3.00		478	36	3.00		2,881	50	3.00	
6	Emily	2,465	85	5.00		1,440	95	3.50		2,980	61	7.00		822	36	7.00		2,492	61	8.00	
7	Garrison	1,416	40	1.50		1,095	50	3.00		1,105	86	3.00		694	100	5.00		2,365	86	3.00	
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	
9	Mission Twnp	535	40	2.00		420	35	1.00		549	0	2.00		843	0	3.00		580	0	1.00	
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	8.00	
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	6.00	
	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	
	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	
	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	88.00	
	Estimated * Generated	251,504				252,864				253,484				253,924				253,924			
	% by DYI**	22%				22%				22%				22%				22%			
	% Handled	14.5%				11.2%				12.0%				7.2%				16.6%			

	Site	TOTAL (2002 - 2015)			
		Used Oil (Gallons)	Antifreeze (Gallons)	Oil Filters 55-gal drum	
1	Baxter	66,386	1,964	130.50	
2	Brainerd	128,306	4,319	241.50	
3	Crosby	59,844	2,485	134.75	
4	Crosslake	28,953	811	54.25	
5	Crow Wing Twnp	25,534	627	24.50	
6	Emily	36,664	1,023	86.00	
7	Garrison	20,305	592	36.25	
8	Nisswa	12,588	444	23.00	
9	Mission Twnp	5,200	75	13.00	
10	Pequot Lake	41,092	1,360	82.00	
11	Landfill Site	47,988	3,436	91.25	
	Deerwood	0	N/A	12.00	
	Pine Center	2,454	N/A	N/A	
	TOTAL	475,314	17,136	929.00	
	Estimated * Generated	3,693,276			
	% by DYI**	22%			
	% Handled	12.9%			

* Generation rate is 4 gallons/person/year

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

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:

<u>Year</u>	<u>Amount (ea.)</u>	<u>Estimated*</u> <u>Generation</u>	<u>%</u> <u>Handled at Site</u>
1998	386 (April - Dec)	17,030	2.27 %
1999	548	17,390	3.15 %
2000**	606	18,183	3.32 %
2001***	795	18,573	4.28 %
2002	1,040	18,854	5.49 %
2003	1,069	19,269	5.55 %
2004	1,177	19,600	6.01 %
2005	1,325	19,864	6.67 %
2006	939****	20,143	4.66 %
2007	750****	20,259	3.70 %
2008	590****	20,374	2.90 %
2009	647****	20,582	3.14 %
2010	532****	20,625	2.58 %
2011	469****	20,706	2.27 %
2012	376****	20,749	1.81 %
2013	268****	20,861	1.27 %
2014	337****	20,912	1.61 %
2015	313****	20,949	1.49 %
<u>2016</u>	<u>370</u>	<u>21,192</u>	<u>1.75 %</u>
TOTAL	12,537	376,114	3.33 %

- * Estimated generation rate is 0.33 batteries/person/year
- ** Upgraded battery drop-off area
- *** Annual solid waste coupon initiated
- **** Recyclers offering fee, people removing batteries from container to obtain the fee.

.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. The following are local businesses that also will accept used Ni-Cd batteries:

Brainerd	ACE Hardware
	Batteries Plus
Baxter	Best Buy
	Office Max
	Home Depot
	Wal-Mart
Crosby	True Value 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	<u>2016</u>	<u>4,907</u>
2007	2,872	TOTAL	48,890
2008	1,787		
2009	1,989		
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 to 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	<u>2016</u>	<u>26,915</u>	<u>43,064</u>
2006	39,517	63,227	TOTAL	588.9 tons	1,216,082
2007	37,129	59,406			

- * 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 Samsun'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	<u>2016</u>	<u>15.1</u>	<u>33</u>
2007	23.5	62	TOTAL	246.3	
2008	20.0	58			
2009	15.0	36			

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.

Starting in 2008 utilized low bid for the disposal of residential electronics; previously was utilizing the state contract. 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 manufacturer's 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.

Below are the quantities of used residential electronics handled at the Site complex since 2004:

<u>Year</u>	<u>Weight (tons)</u>	<u>Amount (ea)</u>
2004	66.6	2,321
2005	100.2	3,635
2006*	108.8	4,378
2007	138.5	5,570
2008	117.2	5,059
2009	130.9	6,020
2010	138.2	5,872
2011	140.0	6,983**
2012	131.1	5,836
2013	128.1	5,930
2014	148.6	6,675
2015	170.1	6,953
2016	191.8	8,203
TOTAL	1,710.0	73,435

* Starting in May 19, 2006 microwaves were recycled with the other appliances/white goods

** 1,220 came from a cleanup event held at Brainerd

The primary source of funding for this program is through the \$5 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.

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. 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:

Year	Landfilled Amount (ca.)	Weight (tons)*	Recycled Amount (ca.)	Weight (tons)	Estimated** Generated
1998	3,244	89.2	N/A	0	7,225
1999	3,283	90.3	N/A	0	7,378
2000	3,494	96.1	N/A	0	7,714
2001	4,254	117.0	N/A	0	7,879
2002	5,232	143.9	N/A	0	7,998
2003	5,106	140.4	N/A	0	8,175
2004	6,224	171.2	N/A	0	8,315
2005	5,694	156.6	N/A	0	8,427
2006***	4,761	130.9	768	22.1	8,545
2007	3,004	82.7	2,467	67.8	8,595
2008	2,646	72.8	2,304	63.4	8,643
2009	2,223	61.1	2,251	61.9	8,732
2010	2,203	60.6	2,383	65.5	8,750
2011	3,061****	84.2	2,286	62.9	8,784
2012	2,405	66.1	3,138	86.3	8,803
2013	2,434	66.9	3,275	90.1	8,850

2014	3,122	85.9	3,645	100.2	8,872
2015	3,649	100.3	3,993	109.8	8,887
<u>2016</u>	<u>3,706</u>	<u>101.9</u>	<u>4,299</u>	<u>128.2</u>	<u>8,991</u>
TOTAL	69,745	1,918.0	30,809	847.2	159,564

* Estimated weight, 55 lbs/mattress

** Estimated generation rate is 0.14 mattress/person/year

*** Recycling program started August 17, 2006

**** 669 came from a cleanup event held at Brainerd, sat outside and before they could be picked up they were rained on - could not use the mattress recycle program

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 2016, 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. 36,287 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 used oil drop off sites.
- 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 29th.
- May Press Release, start-up of commercial latex paint program
- May 7th, assisted in the Pequot Lake cleanup day.
- May 21st, assisted in the 1st Fairfield Township cleanup day.
- May Press Release, Business Electronics day on May 20st.
- June 11th, assisted in the Garrison cleanup day.
- June 18th, participated in the EarthCare Fair held at the Lutheran Church of the Cross in Nisswa.
- Aug 2 – Aug 6th, manned fair booth to promote the Counties integrated solid waste management programs. Fair Board, fourth year of having a recycling program for the fair.
- Advertising of Landfill services in the Crow Wing County Fair Information Booklet.
- Sept 17th, assisted in the Emily cleanup day.
- 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.

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

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

TABLE 4.3
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	29,009
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	1	\$5.00	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	\$1,452.00	561	\$2,805.00	973	\$4,865.00	0	\$0.00	0
Total	4,245	\$20,553.40	24,266	\$118,566.36	3,784	\$18,920.00	3,805	\$19,039.70	8,852	\$44,260.00	9,937	\$49,685.00	12	\$49.50	493,582
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	\$ Coupons	Total # Coupons	Total \$ Coupons
2001	88	\$420.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	1,583	\$7,835.77
2002	188	\$900.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	2,290	\$11,295.66
2003	216	\$1,034.00	0	\$0.00	43	\$182.00	0	\$0.00	0	\$0.00	0	\$0.00	0	2,936	\$14,425.48
2004	188	\$910.50	1	\$2.56	57	\$243.00	0	\$0.00	0	\$0.00	0	\$0.00	0	3,597	\$17,729.97
2005	121	\$529.50	0	\$0.00	53	\$235.00	4	\$20.00	0	\$0.00	0	\$0.00	0	3,124	\$15,358.15
2006	185	\$875.00	1	\$2.56	75	\$321.00	2	\$10.00	0	\$0.00	0	\$0.00	0	3,757	\$18,491.60
2007	164	\$783.50	0	\$0.00	85	\$371.00	1	\$5.00	0	\$0.00	4	\$18.00	0	3,699	\$18,213.93
2008	161	\$776.00	0	\$0.00	63	\$280.00	7	\$35.00	0	\$0.00	0	\$0.00	0	4,009	\$19,792.95
2009	153	\$714.00	3	\$15.00	89	\$387.00	3	\$15.00	0	\$0.00	0	\$0.00	0	4,181	\$20,487.00
2010	140	\$680.50	1	\$2.20	99	\$440.00	2	\$10.00	0	\$0.00	0	\$0.00	0	4,260	\$20,868.70
2011	130	\$618.50	3	\$14.40	89	\$330.00	5	\$25.00	1	\$4.00	0	\$0.00	0	4,152	\$20,286.90
2012	130	\$610.00	1	\$5.00	95	\$340.00	5	\$20.00	0	\$0.00	0	\$0.00	0	4,123	\$20,120.00
2013	150	\$686.50	0	\$0.00	96	\$312.00	5	\$21.00	0	\$0.00	0	\$0.00	0	4,398	\$21,572.50
2014	150	\$678.50	2	\$7.20	98	\$344.00	10	\$46.00	0	\$0.00	0	\$0.00	0	4,108	\$20,117.70
2015	102	\$473.00	1	\$5.00	92	\$358.00	5	\$25.00	1	\$5.00	0	\$0.00	0	4,021	\$19,668.00
2016	145	\$678.00	1	\$5.00	125	\$544.00	11	\$55.00	0	\$0.00	0	\$0.00	0	4,315	\$21,245.07
Total	2,411	\$11,367.50	14	\$58.92	1,159	\$4,687.00	60	\$287.00	4	\$17.00	4	\$18.00	4	\$58.53	\$287,509.38

	TOTAL	%
Demolition	\$20,553.40	7%
MMSW	\$137,562.28	48%
SCORE	\$129,393.70	45%
TOTAL	\$287,509.38	100%
# send out 493,582 Return Rate 11.9%		

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

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 21, 2016)
- City of Pequot Lakes Cleanup by the Pequot Lakes Lions (May 7, 2016)
- Garrison Lions Cleanup (June 4, 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)
- Cynosam 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 Departments 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	2005	29	
1994	75	2006	16	
1995	52	2007	18	
1996	68	2008	22	
1997	63	2009	15	
1998	60	2010	48	
1999	31	2011	42	
2000*	13	2012	27	
2001	44	2013	19	
2002	31	2014	21	
2003	18	2015	8**	<u>Open</u>
2004	40	<u>2016</u>	<u>65**</u>	13
		TOTAL	829	

- 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.

The permit was reissued September 11, 2002 utilized 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 2021. The last permit reissuance was on March 31, 2008.

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.

Crow Wing County Demolition Waste Management System

* Starting in 2004, went from reporting compacted to gate yardage

Crow Wing County Demolition Waste Management System

PROJECTED VOLUME TABLE													
	YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	(2011-2020) 10 YEAR TOTALS
	Population	62,500	62,745	62,876	63,216	63,371	63,481	64,964	65,284	65,719	66,483	67,255	
	Annual pop. change % =	1.1%											
	Overall pop. change % =	7.2%											
DEMOLITION DEBRIS DISPOSAL - cubic yards													
	Crow Wing County Landfill (SW-440)	13,124	13,880	32,769	12,232	13,714	13,849	12,789	12,935	13,082	13,231	13,382	151,864
	Cross Lake Demolition Landfill (SW-412)*	16,540	17,998	25,741	28,719	25,682	20,146	15,857	16,038	16,221	16,406	16,593	199,399
	Hengel Demolition Landfill (SW-291) (Cass County)	33,882	28,235	28,057	27,599	14,744	17,245	32,285	32,653	33,026	33,402	33,783	281,029
	Oak Ridge/Voyagers (SW-428) (Aitkin County)	2,417	1,016	702	932	789	759	398	700	708	716	724	7,443
	Hengel's Westside Demolition Landfill (SW-539) (Cass County)	1,722	0	0	0	0	0	0	0	0	0	0	0
	Griming Bear Demolition Debris Disposal (SW-556) (Cass County)	6,335	8,114	9,372	6,594	9,045	13,698	12,891	13,038	13,187	13,337	13,489	112,764
	Permit-by-Rule sites	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL Demolition Disposal Need - cu yds	74,020	69,243	96,640	76,076	63,974	65,697	74,220	75,364	76,223	77,092	77,971	752,500
	Overall	(annual)	-6.5%	39.6%	-21.3%	-15.9%	2.7%	13.0%					
	County Demo	(annual)	5.8%	136.1%	-62.7%	12.1%	1.0%	-7.7%					
	Overall	2005 - 2016	-40.5%										
	County Demo	2005 - 2016	-40.5%										

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 4,300 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.

This year Anderson Brothers, a local contractor, recycled 107,722 tons of asphalt and 31,492 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. This year 2,494 cu yds of concrete, 2,008 cu yds of asphalt, and 210 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.

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. This is a concern for research indicates arsenic is leaching from CCA-treated wood 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.

APPENDIX 4-A
2016 ANNUAL RECYCLING REPORT

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.
- The curbside programs, starting in 2015 the funding will be based on cost per ton. All three will be set to a level, since Baxter has 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), 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, 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 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. In February 2008, the preliminary climate change action plan was submitted to the House and Senate. The final report of the Minnesota Climate Change Advisory Group (MCCAG) is forth-coming. The state’s goal is to reduce greenhouse gas emissions to a level at least 15 percent below 2005 levels by 2015, to a level at least 30 percent below 2005 levels by 2026, and to a level at least 80 percent below 2005 levels by 2050 (MN Stat. sec 219H.02, Subd. 1). Under Waste Management, the MCCAG goal is to have 0% increase in waste generation per capital by 2020 (3% reduction by 2025); a 50% recycling rate by 2011 (60% by 2025); a 10% composting rate by 2012 (15% by 2020), and recycling and composting achieve a total of 75% diversion of waste from land disposal or waste to energy by 2025. This is a very aggressive goal, currently under 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. If implemented, the impacts of this program will greatly affect our existing County’s solid waste program both fiscally and operationally since the County operates a landfill system.
8. The MPCA is responsible for drafting a Solid Waste Policy Report (SWPR) for the Legislature this year. One of the issues that maybe in this Report is supporting the 75% goal outlined in the climate change action plan.
9. 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 2017 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 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;
5. Potential bio-mass markets. Once a long term demand is established, develop a contract for utilizing the brush that comes into the landfill.