

Carlton County
Integrated Solid Waste
Management Plan



Carlton County

Final
March 4, 2011

Carlton County Integrated Solid Waste Management Plan

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Table of Contents

	<u>Page</u>
I. Executive Summary	1
A. Introduction.....	1
B. State Solid Waste Management History	1
C. Regional Efforts	3
1. Duluth Centroid.....	3
2. Western Lake Superior Sanitary District (WLSSD)	3
D. Overview of the County’s 2010 Integrated Solid Waste Management System	4
E. Scope of the 2010 Solid Waste Management Plan	5
F. Summary of Solid Waste Management Programs and Goals	5
1. Waste Reduction and Recycling Goals	5
2. Solid Waste Reduction	6
3. Solid Waste Education	7
4. Recycling.....	7
5. Yard Waste	8
6. Source-separated Organics.....	8
7. Problem Materials	8
8. Household Hazardous Waste (HHW) Management.....	9
9. Construction and Demolition Debris.....	9
G. Solid Waste Management System Summary and Costs	10
II. Background Information	12
A. History of Solid Waste Planning in Carlton County	12
1. Western Lake Superior Sanitary District (WLSSSD)	12
2. Carlton County.....	12
B. Demographic and Socio-Economic Conditions and Forecasts.....	13
1. Setting and Land Use	13
2. Population	14
3. Population and Household Forecasts	15
4. Economy and Economic Conditions	16
C. Summary.....	18
III. Existing Integrated Solid Waste Management System	20
A. Solid Waste Generation.....	20
B. Solid Waste Collection	22
C. Solid Waste Disposal.....	24
D. On-site and Illegal Disposal	25
E. Waste Management Facilities in Carlton County	25
1. Public Waste Management Facilities	25

2.	Private Waste Management Facilities	25
F.	Waste Reduction, Reuse and Education.....	27
1.	Waste Reduction.....	27
2.	Reuse	28
3.	Solid Waste Education	28
G.	Recycling	29
1.	Recycling Facilities.....	29
2.	Composition of Recycled Materials	30
3.	Specialized Recycling Programs	30
H.	Household Hazardous Waste (HHW) Management	32
1.	Electronic Products	33
2.	Major Appliance Management	34
3.	Automobile Related Problem Materials	35
4.	Pharmaceutical Collection Program	36
5.	Construction and Demolition Debris.....	36
I.	Yard Waste Program	39
J.	Fond du Lac Reservation Waste Management Program.....	40
IV.	Existing Program Management and Administration	41
A.	Solid Waste Ordinance.....	41
B.	Solid Waste Funding and Expenditures	42
1.	Revenues.....	43
2.	Expenditures	44
3.	SCORE Revenues and Expenditures	45
C.	Solid Waste Administration	46
D.	Plan Review and Public Participation	46
V.	Proposed Integrated Solid Waste Management Plan.....	48
A.	Waste Management Constraints & Opportunities	48
B.	Changes from 2000 Solid Waste Management Plan	48
1.	New Statewide Policies and Statutes	48
2.	Regional and WLSSD Waste Management Changes	49
3.	New County Programs and Services	49
C.	Regional (Duluth Centroid) Goals.....	49
D.	Carlton County General Solid Waste Goals and Policies	50
E.	Carlton County Solid Waste Management Programs and Policies	51
1.	Solid Waste Reduction.....	52
2.	Solid Waste Education	54
3.	Recycling.....	54
4.	Yard Waste	56
5.	Source-separated Organics.....	57

6.	Problem Materials	58
7.	Household Hazardous Waste (HHW) Management.....	60
8.	Construction and Demolition Debris.....	61
F.	Solid Management Costs and Financing	62
1.	Funding Principles.....	62
2.	Projected Budget	63
G.	Carlton County Goal/Volume Table	63

List of Figures

Figure 1	Regional Location	4
Figure 2	Carlton County Cities and Townships.....	13
Figure 3	Carlton County Household Density	14
Figure 4	1999 WLSSD Waste Characterization.....	21
Figure 5	Carlton County Waste Management Facilities	26
Figure 6	Carlton County Yard Waste Facilities.....	39
Figure 7	Waste Stream Breakdown.....	64

List of Tables

Table 1	MSW Disposal and Recycling Goals (tons) 2009 - 2019	6
Table 2	Waste Generation and MSW Disposal 2009 - 2019.....	6
Table 3	Projected Recycling 2014 and 2019	7
Table 4	Summary of Solid Waste System Components 2009 - 2019	10
Table 5	Summary of Solid Waste System Projected Revenues and Expenditures 2009 - 2019.....	11
Table 6	Carlton County Population and Household Estimates 2000 - 2009	15
Table 7	Carlton County Population and Household Forecasts	15
Table 8	Leading Employers.....	16
Table 9	Carlton County Labor Force Data.....	17
Table 10	Duluth Centroid Counties Unemployment Rate	17
Table 11	Carlton County Total Waste Generated (tons)	20
Table 12	Summary of 2009 WLSSD MSW Sort Combined Residential and Non-Residential Results	22
Table 13	Licensed Solid Waste Haulers	23
Table 14	Carlton County MSW and Industrial/Demolition Waste Disposal (Tons)	24
Table 15	Carlton County Recycling (Tons).....	30

Table 16	Carlton County Composition of Recycled Waste (Tons).....	30
Table 17	Use of Carlton County HHW Facility	32
Table 18	Carlton County Recycled Banned (Problem) Materials.....	33
Table 19	Carlton County Electronic Recycling Fees.....	34
Table 20	Northern Minnesota Construction/Demolition Recycling Markets.....	38
Table 21	Carlton County Solid Waste Revenues and Expenditures 2008-2010.....	42
Table 22	Carlton County Solid Waste Management Fee	43
Table 23	SCORE Revenues and Expenditures 2005 - 2009.....	45
Table 24	Duluth Centroid Waste Management Goals	49
Table 25	Waste Generation and MSW Disposal 2014 and 2019	53
Table 26	Projected Recycling 2014 and 2019	56
Table 27	Projected Recycling of Certain Materials 2014 and 2019	56
Table 28	Recycling of Problem Materials (Tons) 2014 and 2019	59
Table 29	Goal-Volume Table Summary	65

Appendices

Appendix A	Definitions
Appendix B	Carlton County WLSSD Joint Powers Agreement
Appendix C	Resolution No's. 95-019 and 95-021
Appendix D	Carlton County Waste Management Facilities Information Sheet
Appendix E	Carlton County Ordinance No. 17
Appendix F	North Carlton County Transfer Station Gate Fees
Appendix G	Duluth Centroid Implementation Plan
Appendix H	Goal/Volume Tables
Appendix I	Proposed Integrated Solid Waste Management System Budget 2010-2020

I. Executive Summary

A. Introduction

The Carlton County 2010 Integrated Solid Waste Management Plan has been developed in accordance with the revised rules of the Minnesota Pollution Control Agency (MPCA) governing the development, adoption and implementation of solid waste management plans in outstate Minnesota. The MPCA adopted the revised rules (Chapters 9215.0500 - 9215.0880) in 2009 to:

- ✓ reflect current solid waste management practices,
- ✓ eliminate rule requirements that were redundant or no longer needed,
- ✓ encourage regional planning where viable and beneficial to those counties involved, and
- ✓ provide counties more flexibility in choosing waste abatement strategies and integrated solid waste management systems that reflect demographic, geographic, regional and solid waste system differences that exist in Greater Minnesota.

This Plan describes the existing integrated waste management system for Carlton County and presents policies and strategies to guide the County's solid waste planning programs over the next ten years. Definitions of terms pertaining to solid waste planning are included in Appendix A.

The County integrated waste management system is designed in accordance with the waste management goal of the State, as follows:

"to foster an integrated waste management system in a manner appropriate to the characteristics of the waste stream and thereby protect the State's land, air, water, and other natural resources and the public health. The following waste management practices are in order of preference:

- a. waste reduction and reuse;
- b. waste recycling;
- c. composting of yard waste and food waste;
- d. resource recovery through mixed municipal solid waste composting or incineration;
- e. land disposal which produces no measurable methane gas or which involves the retrieval of methane gas as a fuel for the production of energy to be used on-site or for sale; and
- f. land disposal which produces measurable methane and which does not involve the retrieval of methane gas as a fuel for the production of energy to be used on-site or for sale."

The Carlton County integrated solid waste management system has proven to be very successful over the past decades. The program's success is built on the strategy of providing waste reuse and reduction education, solid waste disposal services and a variety of waste management facilities that include convenient recycling opportunities readily accessible to the public.

B. State Solid Waste Management History

Before 1970, the State, including northeastern Minnesota, faced significant concerns related to

managing solid and hazardous waste. Specifically, the practice of open burning and uncontrolled dumping of solid waste led to significant environmental problems, including fires, the release of toxins into the air, and the leaching of hazardous chemicals into the land and groundwater.

In the 1970s through the 1990s, federal and state government responded to state and regional concerns by passing key pieces of legislation that changed how the state and counties manage solid waste:

- In the early 1970's the State generally prohibited open burning of garbage, established a solid waste permitting process, and upgraded requirements for landfills.
- As a matter of policy, the State began in establishing rules and authorities for sanitary landfill developments and disposal facility permits that met basic design and operational standards.
- In 1971, the County Solid Waste Management Act was passed that empowered counties outside the Twin Cities metropolitan area to conduct solid waste management programs.
- In 1976, Congress passed the Federal Resource Conservation and Recovery Act (RCRA). The RCRA established the solid waste hierarchy, which places emphasis on recycling, resource conservation and resource recovery. In addition, the RCRA established Subtitle D, which required solid waste planning and new regulations for landfills.
- In 1980, the State passed the Waste Management Act, establishing the goal of fostering an integrated waste management system and a preference of reduction, reuse, recycling, composting, and resource recovery over placing solid waste in landfills.
- In 1985, the solid waste planning rules for counties were adopted with authority for administration given to the MPCA.
- In 1989, the addition of SCORE (Select Committee on Recycling and the Environment) legislation to the Waste Management Act established recycling goals, required political subdivisions to develop and implement programs or practices to meet their recycling goals, and provided funding for recycling, waste reduction and market development activities.
- In the late 1980s through the 1990s, the Legislature passed other waste management requirements including the landfill ban of waste tires, vehicle batteries, motor oil, yard waste, major appliances, certain dry cell batteries, rechargeable batteries, various mercury-containing thermostats and equipment, fluorescent tubes, additional motor vehicle fluids, telephone directories, and clarification that source-separated recyclable materials may not be disposed at public resource recovery facilities.
- In 2000, the Solid Waste Policy report issued by the State Office of Environmental Assistance (OEA) proposed new policies aimed at resource efficiency by promoting waste reduction, recycling and recovery, and set a goal of eliminating landfilling of unprocessed MSW by 2008. This was followed in 2003 by a task force recommendation for a new statewide vision, goals and action items for solid waste management.
- In 2002, SCORE funding was reduced by Legislature from \$14.1 million to \$12.6 million, and in 2003, SCORE Funding was "unallotted" by the Governor. Subsequently in 2004, SCORE funding was restored by the legislature to level before unallotment, but remained \$1.6 million short of SCORE funding levels prior to 2002.
- In 2005, a new state law took effect that banned the placement of an electronic product containing a cathode ray tube in MSW. The legislature extended the ban in 2005 to become effective in 2006.
- In 2005, a legislative task force was created to examine the management of organic wastes, alternative methods for a statewide system for electronic waste disposal and the potential for expanding current landfills and siting new landfills.

- In 2005, the OEA became part of the MPCA.
- In 2009, new rules governing the preparation of County Comprehensive Solid Waste Management Plans became effective. The process to draft the rules started in 2004 and culminated in requirements for Counties to prepare plans that emphasis an integrated solid waste management system.

Since 2000, there are new solid waste challenges that stem from the effect of changing demographics, population, and employment patterns on the type and amount of waste generation. Recently, the significant downturn in the economy and strains placed upon public services have contributed to statewide trends of a stagnant recycling rate, limited capacity to process waste, and continuing reliance on landfilling of solid waste. The management of solid waste is further challenged by the ongoing introduction of new products and packaging in the market that contain toxic components and composite materials that are difficult to recycle.

C. Regional Efforts

1. Duluth Centroid

In 2007, the MPCA began a process to bridge the goals of the Waste Management Act and the Minnesota Climate Change Advisory Group's greenhouse gas emission reduction targets for the solid waste sector. The MPCA developed a geographically based process to identify potential integrated waste reduction strategies for the four most densely populated regions in the state where the majority of waste is generated. The four regions termed "centroids" and include the areas surrounding the cities of Duluth, Rochester, St. Cloud, and the Twin Cities metropolitan area. The combined municipal solid waste (MSW) generated in these four centroid regions comprises approximately 70 percent of the total waste generated, by tonnage, in Minnesota. The Duluth Centroid accounted for approximately six percent of the total MSW generated in Minnesota in 2009.

Carlton County is part of the Duluth Centroid planning area, and in 2008, generated approximately nine percent of the waste within the centroid. In 2009, the County began participating in planning activities with the Duluth Centroid, which includes Cook, Lake, St. Louis and Carlton Counties. The Western Lake Superior Sanitary Sewer District (WLSSD) is an additional planning partner within the centroid. The Duluth Centroid is working with the MPCA on projects, programs and cooperative efforts to reduce greenhouse gas emissions and develop more efficient and effective regional or sub-regional waste management programs.

2. Western Lake Superior Sanitary District (WLSSD)

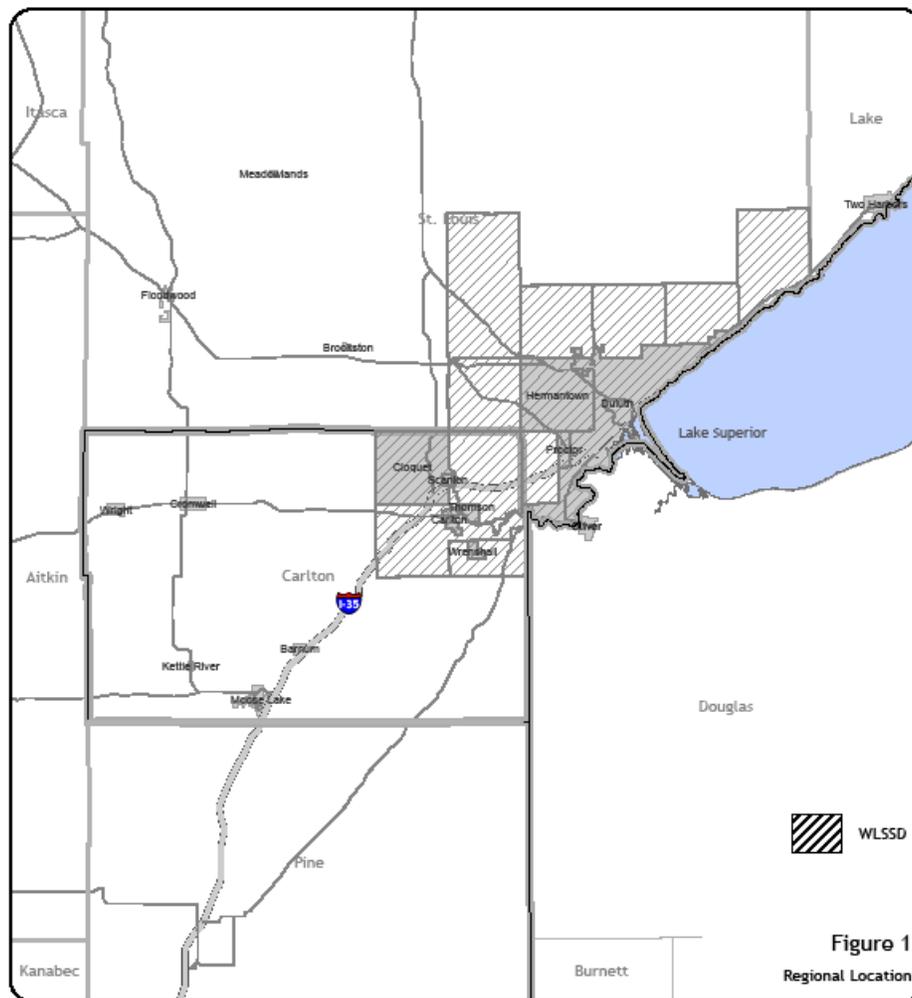
A portion of Carlton County is part of the sub-regional planning effort, through the WLSSD, as shown on Figure 1. The WLSSD has provided sanitary sewer and other waste management services to its residents and businesses for over forty years. Through a series of Joint Powers Agreements, the northeasterly portion of Carlton County has been included in several WLSSD solid waste management programs, including access to problem materials and organics management facilities, recycling and MSW disposal facilities.

Currently, the County's solid waste involvement with the WLSSD includes:

- ✓ Waste disposal and recycling services provided by private haulers with oversight by the WLSSD in the cities of Cloquet, Carlton, Scanlon, Thomson and Wrenshall, and the townships Silver Brook, Thomson, and Twin Lakes.
- ✓ The use of the WLSSD solid waste disposal contract with the City of Superior, Wisconsin.
- ✓ Cooperation with the WLSSD to provide educational and public relations support for the County's recycling efforts.

- ✓ The operation of separate, but cooperative, household hazardous waste facilities.
- ✓ Participation in joint programs and efforts aimed at waste reduction and reuse, education, and other similar activities.

This Plan has been developed with recognition of the on-going cooperative efforts and respective goals of the County and the WLSSD to continue to provide waste management education and services. However, the majority of the information included in this Plan is directed towards the County waste management services and activities, located outside of the WLSSD, and cooperation with regional planning efforts, including the WLSSD.



D. Overview of the County's 2010 Integrated Solid Waste Management System

The following Plan has been prepared based upon the Minnesota Pollution Control Agency (MPCA) rules published January 16, 2009 and incorporates the successful components of the previous Carlton County Solid Waste Management Plan adopted in February 2000. A concerted effort has been made to develop the plan in accordance with the goals and planned targets of the:

- ✓ State solid waste planning efforts, and the
- ✓ Integrated Solid Waste Management Plan recommendations developed by the Duluth Centroid

The 2010 Plan includes:

- Background, historical and socio-economic data.
- A description of the County's existing waste management system.
- Waste reduction and reuse, and recycling education and efforts to minimize the amount of waste that is disposed of in landfills.
- Overall goals and policies directed at the next decade of management and operation of the County's waste management services to 2020.
- Components of the proposed ten year integrated solid waste management plan.
- Projected waste and recycling volumes, meeting state recycling goals.
- A projected budget for County waste management activities through 2020.

Additional information pertaining to the County's waste management program and other waste information is provided in the appendices.

E. Scope of the 2010 Solid Waste Management Plan

The scope of the 2010 Solid Waste Management Plan is ten years, from 2010 to 2019, although budgeting data is provided through 2020. Historical solid waste management data is presented in the Plan for the years dating from 2000 to provide historical and trend information regarding the County's socio-economic characteristics and solid waste management collection statistics. Much of the background information utilized in this plan has been obtained from the previous Solid Waste Management Plan prepared in 2000, the Carlton County Comprehensive Plan, adopted by the County Board in 2001, and available state and local data.

Carlton County is located directly west of the City of Duluth and Lake Superior in northeastern Minnesota (see Figure 1). A portion of the County is located within the WLSSD established within the Duluth regional area. The State legislature created the WLSSD in 1971 to manage the disposal of sewage and solid waste in the lower St. Louis River basin. The district is comprised of portions of northeastern Minnesota counties, including the northeastern part of Carlton County.

Waste management programs in Carlton County are provided by the County, the WLSSD, the Fond du Lac Reservation Tribal Council, and local municipalities. The following solid waste management plan includes information and policies applicable to programs operated by the County. Additionally, program information is provided for solid waste initiatives operated through the WLSSD and the Fond du Lac Reservation that are applicable to Carlton County residents and businesses within each respective service area. The County maintains a cooperative relationship with the WLSSD and the Fond du Lac Reservation, and values shared solid waste management goals with other governmental units within the County.

F. Summary of Solid Waste Management Programs and Goals

1. Waste Reduction and Recycling Goals

Carlton County is planning a reduction in the MSW hauled to the Superior, Wisconsin landfill over the next ten years. To achieve the reduction in MSW and other waste, the County is implementing solid waste reduction programs as described later in this Plan. Table 1 is a summary of the annual tonnages of materials that must be recovered in five and ten years to achieve the MSW reduction goals. The full goal volume table is in Appendix H.

Table 1
MSW Disposal and Recycling Goals (tons) 2009 - 2019

	2009 (actual tonnage) ¹	2014	2019
MSW to Superior, WI landfill	12,471	12,107	11,941
Residential Recycling	3,879	4,037	4,198
Recycling	3,847	4,004	4,164
Mattresses	32	33	34
Commercial/industrial/ Institutional Recycling	1,473	1,652	1,789
Problem Materials Recycling	968	973	974
Source Separated organics	233	620	842
Total Recycling	6,553	7,281	7,803

¹2009 SCORE Report

2. Solid Waste Reduction

The State continues to pursue programs to reduce the amount and toxicity of the MSW stream. Carlton County is committed to support solid waste reduction, reuse and recycling programs that meet State solid waste reduction goals and compliance with Waste Management Act rules. Further, the County will continue existing programs and implement additional cost effective waste reduction strategies that will contribute to achieving the regional goals for the Duluth Centroid.

The County plans to continue the existing solid waste reduction programs and activities to qualify for the MPCA three percent source reduction credit on an annual basis throughout the period covered by this plan. Generally, the existing and future solid waste reduction activities are based on education and strategies that motivate residents and businesses to manage waste in a manner that reduces overall waste generation.

The County projects growth in the annual amount of solid waste generated in the County due to forecasts of modest increased population and business growth to 2019 as depicted in Table 2. However, the County projects that the per capita amount of waste generation will remain level at approximately .59 tons per person annually due to waste reduction education and private stewardship activities. The County projects that the amount of MSW sent to the Superior, Wisconsin landfill will be reduced over the next ten years. Table 2 depicts the estimated reduction in MSW from 2009 to 2019.

Table 2
Waste Generation and MSW Disposal 2009 - 2019

	2009(actual tonnage) ²	2014	2019
Projected population ¹	34,266	34,957	35,662
Waste generated (tons)	20,245	20,650	21,050
Per capita waste generated (tons)	0.59	0.59	0.59
MSW to Superior, WI landfill (tons)	12,471	12,107	11,941

¹Source: State Demographer

²2009 SCORE Report

3. Solid Waste Education

Much of the County's efforts to reduce the amount of solid waste disposal includes educational efforts and waste management programs. The County believes that continued public education about waste reduction, reuse and recycling is a primary priority that contributes to achieving waste reduction goals and program activities. Therefore, the County is committed to providing ongoing public education in all elements of the integrated solid waste management program.

The County plans to continue to provide waste education information to residents, businesses and organizations about reducing waste through reuse, reduction and recycling strategies. Additionally, the County will provide waste education information to the public to discourage improper disposal and illegal dumping of waste materials through local media, locally produced pamphlets, newsletters and community education programs.

The County believes it is important to inform the public about the environmental and health consequences of improper waste disposal. Therefore, the County will provide educational materials to discourage the improper disposal and illegal dumping of waste materials through community education programs and inform residents and businesses of the Ordinance 17 enforcement measures and other State laws and regulations pertaining to proper waste disposal.

4. Recycling

The existing recycling program developed by the County has been very successful in maximizing the effectiveness of recycling collection in a predominately rural area. The County has met and exceeded the State mandated recycling goal of 35 percent over the past years. Continued success in the recycling program is dependent on waste education and subsidies.

The County will continue to operate the North Carlton County Transfer Station and recycling sheds for residents that do not have curbside recycling or prefer to self-haul. Although the County plans for continued efforts to increase the amount of recycling over the next ten years, the staffing levels for the program will not change unless additional revenue sources become available to the County.

Funding and support for specialized recycling projects, composting programs, and community event program and education campaigns (Christmas tree, cell phone, rechargeable battery) is an important component of the recycling program. A new activity that the County implemented in 2006 is mattress recycling. The County will continue to participate with other northeastern Minnesota counties to collect mattresses and box springs at the North Carlton County Transfer Station for deconstruction and recycling by other partners.

The County anticipates that the greatest opportunities for increasing the amount of recycling lie with the business community and institutional organizations that are located within the County. The County is committed to supporting increased efforts by the business community and institutions to recycle.

Table 3 depicts the projected increase in the collection of recyclables from 2009 to 2019, in five year increments and the percentage of recyclables of total MSW generated with and without the MPCA credits for yard waste and source reduction programs.

Table 3
Projected Recycling 2014 and 2019

	2009 (actual) ¹	2014	2019
Total recycled materials - tons	6,553	7,281	7,803
% Recycled materials (without MPCA credit)	32.4%	35.3%	37.1%
% Recycled materials (with MPCA credit)	40.4%	43.3%	45.1%

¹2009 SCORE Report

If the projections in Table 3 continue into the future, the County should approach the Duluth Centroid recycling goal of 51.9 percent in 2025.

5. Yard Waste

Carlton County receives the full yard waste credit from the MPCA. Over the next ten years, the County will continue to operate the yard waste and compost site located at the North Carlton County Transfer Station and will continue to provide education to residents that include yard waste reduction techniques such as backyard composting and other methods for source reduction.

The County will continue to work with residents to encourage collection of yard waste through current waste collection programs. Additionally, the County plans to promote and provide educational materials and host or attend events to encourage yard waste reduction, backyard composting and other methods to reduce yard waste and encourage composting.

6. Source-separated Organics

The existing organic waste management program includes education to residents about composting and to businesses about the processing/reuse of organic material (e.g. food-to-people, food-to-animals, anaerobic digestion). For several years, the County has provided education to residents about back yard composting through the County's recycling newsletter and advertized the availability of compost bins at a reduced rate, and other techniques and information available through the University of Minnesota Extension Service.

The County plans to place a greater emphasis on opportunities for County businesses and institutions to participate in source-separated organics programs. In 2009, the WLSSD adopted an ordinance to divert pre-consumer organic waste and implemented an organics collection program which involves Carlton County businesses within the WLSSD.

Businesses and institutional uses in Carlton County contract for organics hauling service to adhere to ordinance requirements. The WLSSD is currently working with the Black Bear Casino in the Carlton area and other large commercial and industrial businesses in the WLSSD portion of the County to develop and implement an organics waste separation and disposal program.

In addition to supporting and collaborating with the WLSSD efforts into the future, Carlton County plans to work with large public institutions to develop and implement individualized organic waste management programs. The County staff has suggested that the Moose Lake Correctional facility review its current recycling policy and determine the feasibility of developing a source separated organics program at the facility.

The County projects that the amount of source-separated organics to increase over the next ten years. The efforts to increase source-separated organics is planned to result in a growth percentage from just over one percent of the waste stream in 2009 to four percent in 2019 (see Appendix H).

7. Problem Materials

Carlton County plans to continue existing programs for recycling of certain problem materials including the collection of waste tires, electronic products, appliances, automotive mercury switches and motor vehicle fluids at the North Carlton County Transfer Station site. The County will provide residents and businesses with safe and convenient recycling and disposal opportunities for electronics and other recyclable problem materials. Additionally, the County will provide educational resources (including environmental consequences) and programs for the reuse and disposal of problem materials to businesses, community groups and civic organizations.

The County does not permit residents to dispose discarded electronics, cell phones or computer components that are hazardous or recyclable. The County will support and promote initiatives by manufacturers and retailers to practice mandatory and voluntary product stewardship, particularly as it relates to electronics, reuse and recycling.

In 2009, the County initiated reporting the actual amount of problem materials collected for recycling for all materials (except vehicle batteries). The County plans to continue reporting the tonnage of materials collected at the transfer station in accordance with SCORE guidelines and requirements. Likewise, the County plans to continue to participate in regional and other state programs to analyze and reduce toxic materials in the waste stream. The County will continually evaluate the collection, recovery and disposal methods available for problem materials.

As a result of these programs, the County projects that the amount of materials collected for recycling of problem materials will increase over the next ten years, particularly in the electronics category.

8. Household Hazardous Waste (HHW) Management

The Carlton County HHW management program includes educational efforts to reduce and properly dispose of HHW, and the operation of the HHW facility to recycle certain HHW materials properly and dispose of discarded materials. Carlton County plans to continue to operate the HHW site and participate in the regional MPCA HHW program operated at the WLSSD regional facility serving Carlton, St. Louis, Lake, Cook, Koochiching, Itasca, and Aitkin Counties over the next ten years.

The County HHW facility is located at the North Carlton County Transfer Station and many of the materials are recycled including rechargeable and button batteries, fluorescent bulbs, latex paint and antifreeze. The County plans to continue operation of the HHW site at the transfer station including the product exchange area, and to continue the public education program and activities for the proper disposal of HHW at the transfer station or the WLSSD regional HHW facility over the next ten years.

Additionally, the County is currently working on adding a new program to safely dispose of household pharmaceutical wastes (over the counter and prescription drugs) to prevent disposal in the sanitary sewer and solid waste stream as well as illicit drug prevention. The program will be directed towards all controlled and non-controlled pharmaceuticals that residents may anonymously deposit in a non-retrievable container.

9. Construction and Demolition Debris

Carlton County requires that mixed construction and demolition debris, and large bulky items such as furniture and equipment, industrial non-hazardous waste, wood, fencing, etc. be separated, and managed separately from MSW, recyclables, HHW and other problem waste materials in accordance with State law. In 2009, construction and demolition debris, and other bulky items comprised approximately 23 percent of the total waste disposed from Carlton County at the Superior, Wisconsin Landfill. Generally, less than half of this debris was comprised of construction and demolition debris with the remaining comprised of miscellaneous bulky items.

The County anticipates that the amount of construction and demolition debris generated will remain stable for the next several years. However, it is believed that the amount of construction and demolition waste landfilled will decrease, due to increased educational efforts to recycle certain materials and programs that promote the reuse of marketable materials.

Carlton County plans to continue the existing construction and demolition debris program that includes education regarding the reuse and recycling of recoverable materials to reduce the amount of material deposition in landfills. Educational efforts are directed towards the promotion of the Minnesota Materials Exchange (MME) Alliance program, the WLSSD Materials Recovery Center, and the Minnesota Recycling Markets Directory for the reuse and recycling of construction and demolition materials. Also, the County plans to continue to participate in the MPCA sponsored Northeast Minnesota Building Deconstruction Work Group that encourages and publicizes sources for reusable materials and markets for recyclables.

The County will monitor the success of the construction and demolition debris program by review

of the annual amounts collected at the transfer station.

G. Solid Waste Management System Summary and Costs

Carlton County currently manages approximately 20,245 tons of waste per year. Table 4 shows the general components of the current solid waste system and the percent of solid waste managed through solid waste reduction, reuse and recycling, and land disposal for 2009, and five year projections for 2014 and 2019. Appendix H contains the goal-volume table that depicts an annual estimate of the County solid waste system to 2019.

Table 4
Summary of Solid Waste System Components 2009 - 2019

	2009 (actual)	2014	2019
Waste Generated	20,245	20,650	21,050
Source Reduction	3.0%	3.0%	3.0%
Yard Waste	5.0%	5.0%	5.0%
Recycling			
Residential	19.2%	19.5%	19.9%
Commercial/Industrial/Institutional	7.3%	8.0%	8.5%
Source Separated Organics	1.1%	3.0%	4.0%
Problem Materials (inc. electronics and latex paint)	4.8%	4.7%	4.6%
Recycle Total	32.4%	35.2%	37.0%
On-Site Disposal	3.40%	3.40%	3.40%
Problem Materials NOT Recycled	2.70%	2.70%	2.80%
Landfill	61.6%	58.6%	56.7%

Carlton County has benefitted from certain State subsidies, such as SCORE funding, the authority granted by the State to levy service charges and participation with the WLSSD in funding programs and facilities. It is expected that the financing methods for the solid waste management system historically utilized by the County will continue in the same manner over the next decade. However, the County recognizes that solid waste management program costs will continue to increase and the provision of State subsidies may not be as significant as in the past.

Carlton County plans to fund the solid waste program primarily through a solid waste management fee, licensing fees, tipping fees and State funding. In general, incoming funds will be adjusted, as needed, to accommodate increasing program expenses. The increase in expenses is due, in part, to funding new or expanded programs designed to meet statewide initiatives to protect environmental resources and reduce greenhouse gases. During the next decade, the County will continue to analyze funding mechanisms necessary to achieve the goals of the proposed integrated solid waste management program.

Funding amounts and expenses for the solid waste program are divided between the North Carlton County Transfer Station and recycling categories of the annual County budget. Table 5 presents a summary of the expenditures and revenues for 2009, and projections in five year increments are shown for 2014 and 2019 based upon the County's waste management programs and the anticipated volumes of solid waste and recyclables.

Table 5
Summary of Solid Waste System Projected Revenues and Expenditures
2009 - 2019

	2009 (actual)	2014	2019
Transfer Station/Refuse Disposal			
Revenues	\$1,157,313	\$1,218,109	\$1,324,971
Expenditures	\$1,020,027	\$1,077,443	\$1,203,246
Revenues-expenditures net	\$137,286	\$140,666	\$121,725
Transfer Station/Refuse Disposal - cost per person	\$29.77	\$30.82	\$33.74
Transfer Station/Refuse Disposal - cost per household	\$74.95	\$73.97	\$80.98
Recycling			
Revenues	\$188,869	\$250,726	\$403,741
Expenditures	\$182,008	\$250,726	\$403,741
Revenues-expenditures net	\$6,861	\$0	\$0
Recycling - cost per person	\$5.31	\$7.17	\$11.32
Recycling - cost per household	\$13.37	\$17.21	\$27.17
Grand Total - transfer station and recycling			
cost per person	\$35.08	\$37.99	\$45.06
cost per household	\$88.32	\$91.19	\$108.15

II. Background Information

The Background Information chapter of this Plan presents recent demographic and socio-economic conditions in Carlton County as well as forecasts of future population and economic trends, and anticipated land uses. The background information is provided to assist Carlton County policymakers to analyze County needs for the management of existing and future solid waste systems, education and programs.

A. History of Solid Waste Planning in Carlton County

1. Western Lake Superior Sanitary District (WLSSSD)

The State legislature created the Western Lake Superior Sanitary District (WLSSD) in 1971 to manage wastewater in the lower St. Louis River basin that includes a large area around Duluth and includes over 500 square miles as shown on Figure 1. In 1974, the legislature added authority and responsibility to the WLSSD for the management of solid waste within the district boundaries. The WLSSD has the authority to act as a county in the regulation of solid waste management programs, to license the collection of solid waste and collect fees. Additionally, WLSSD has the authority to plan for and regulate recycling programs.

The northeastern portion of Carlton County is within the jurisdiction of the WLSSD, including the cities of Carlton, Cloquet, Scanlon, Thomson and Wrenshall; and Thomson, Twin Lakes and Silver Brook Townships. Private haulers provide waste disposal and recycling services within these communities in Carlton County. The County recycling sheds, North Carlton County Transfer Station, household hazardous waste services are also available within these communities. The WLSSD provides some educational services and certain specialized programs to Carlton County residents. Additionally, the County and the WLSSD currently operate under a Joint Powers Agreement (see Appendix B) for the use of a landfill for mixed municipal solid waste (MSW) and demolition/industrial waste disposal.

2. Carlton County

The Carlton County Planning and Zoning office administers the County's solid waste and recycling program that serves the entire County, including the portion within the WLSSD. Additionally, the County cooperates and participates with the WLSSD to provide certain services, education and programs. The County and the WLSSD have operated under a Joint Powers Agreement since 1985, with amendments as required.

Since its inception, the Carlton County waste management program has expanded to meet state recycling goals and other solid waste management initiatives. The first Solid Waste Management Plan for Carlton County was approved by the State in 1985. Subsequently, this plan was updated in 1991 and 2000. Over the last thirty years, the County has broadened solid waste services to provide:

- ✓ Expanded recycling services,
- ✓ Education to residents and businesses for waste reduction and reuse, conservation, and household hazardous waste management,
- ✓ Additional staff to manage the solid waste and recycling programs and services,
- ✓ Administration of the Solid Waste Ordinance, as amended, to require and regulate the disposal of solid waste and implement recycling programs,

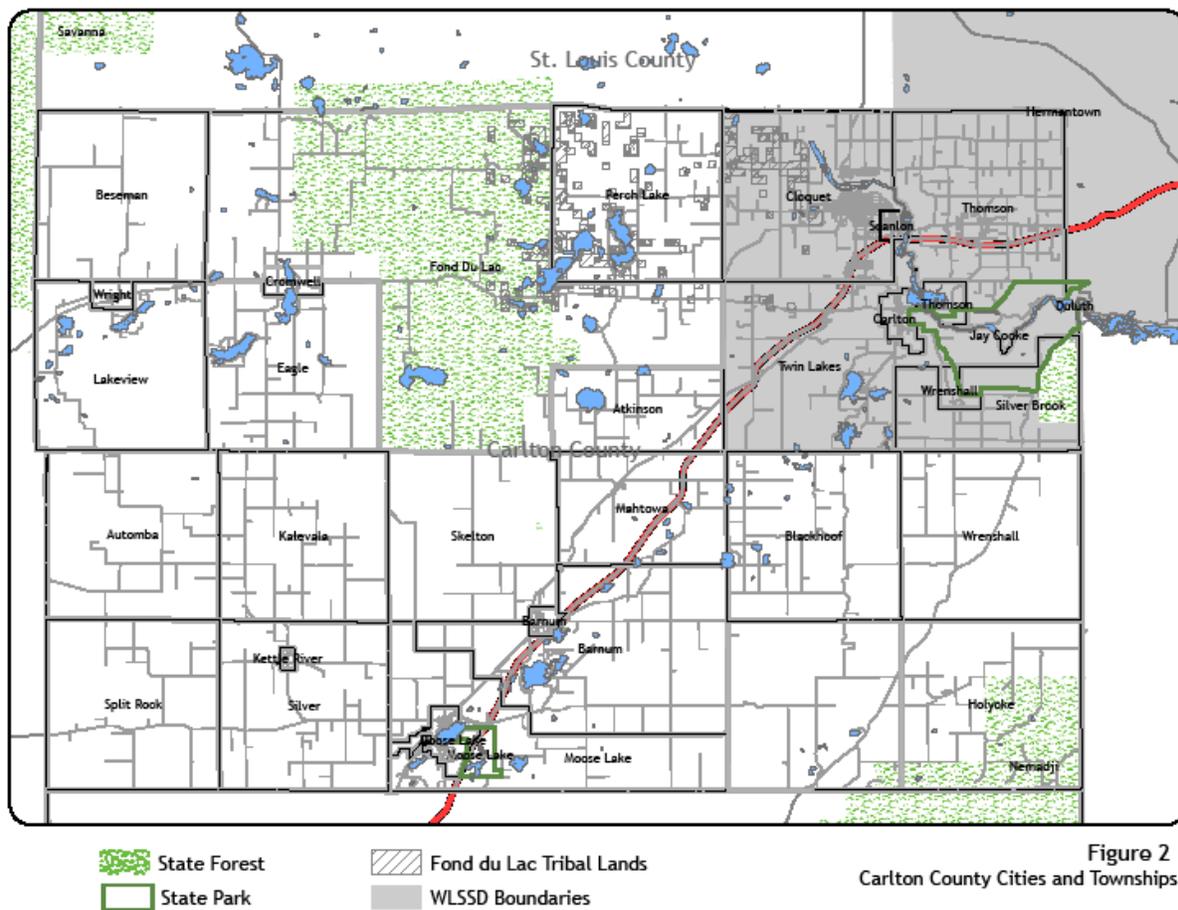
Participation with the Minnesota Pollution Control Agency (MPCA), the WLSSD, the Duluth Centroid

in demonstration projects (for example, mattress recycling) and solid waste and recycling planning efforts.

B. Demographic and Socio-Economic Conditions and Forecasts

1. Setting and Land Use

Carlton County includes 862 square miles and consists of ten cities, 20 townships, five unorganized townships and Fond du Lac tribal lands as shown on Figure 2. The County retains a rural character except along the I-35 corridor that traverses the eastern half of the County, connecting Duluth and the Arrowhead region to the Twin Cities. Similar to other northern counties, Carlton County has experienced slow economic growth over the past ten years.



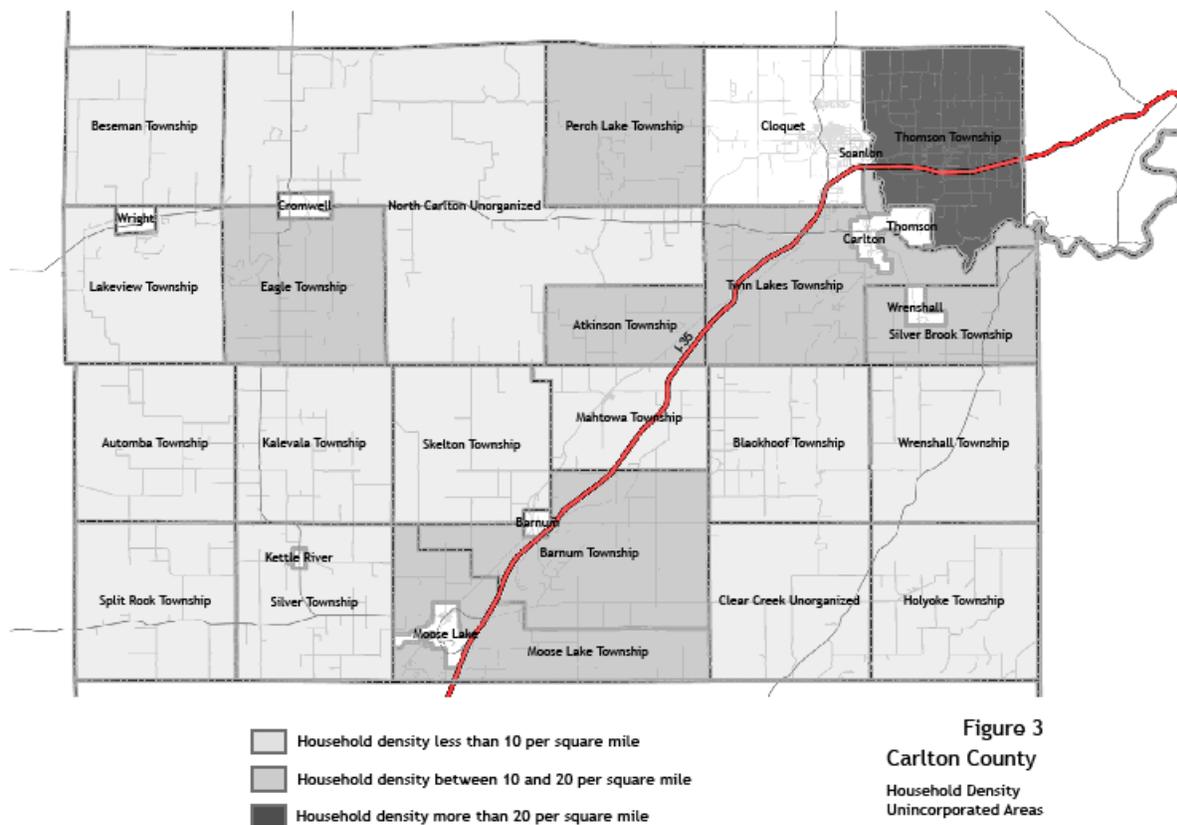
According to the Carlton County Comprehensive Plan, the existing land uses in Carlton County are centered upon timber/agricultural production and open space. Much of the County is forested although there are vast areas of pasture and cultivated lands, especially in the southeast and western portions of the County. The northeastern and south central portions of the County are more developed, contain a larger population and are more urban character than the other parts of the County.

The Fond du Lac and Nemadji State Forests are located in the County, as well as Jay Cooke State Park and Moose Lake State Park. Additionally, a large percentage of the County is occupied by wetlands, lakes and rivers.

The County’s future land use planning efforts are directed towards maintaining the rural and open space land uses. Future planning efforts directed at land development include encouraging future residential and business growth in and around Carlton County communities where municipal services are available.

2. Population

The population of Carlton County in 2000 was 31,671 and included 12,017 households according to the US Census. In 2000, the population of Carlton County was classified as rural (63 percent), according to the Census, with 37 percent of the population classified as urban. Figure 3 indicates the distribution of households within the townships in 2000, with the majority of households located in townships along I-35 and Highway 210, and including the cities of Moose Lake, Barnum, Carlton and Cloquet.



The population within the Carlton County portion of the WLSSD was 20,192 in 2000 and represented 64 percent of the County’s total population. Similarly, the number of households within the Carlton County portion of the WLSSD was 7,899 and represented 66 percent of total County households.

The State Demographer has prepared annual estimates of the population and household growth within County subdivisions since 2000. These estimates, categorized by the area within and outside the WLLSD in the County, are depicted on Table 6:

Table 6
Carlton County Population and Household Estimates 2000 -2009

Year	Population		Households	
	WLSSD	Non-WLSSD	WLSSD	Non-WLSSD
2000 (Census)	20,192	11,479	7,899	4,118
2001	20,435	11,711	8,039	4,254
2002	20,595	11,952	8,120	4,384
2003	20,885	12,269	8,248	4,520
2004	21,168	12,580	8,369	4,625
2005	21,357	12,739	8,477	4,731
2006	21,539	12,681	8,571	4,786
2007	21,592	12,398	8,646	4,789
2008	21,644	12,484	8,717	4,786
2009	21,759	12,507	8,799	4,811
Increase from 2000	7.8 %	9.0 %	11.4 %	16.8 %

Source: State Demographer's Office

The State estimates indicate a slight increase in population and households in Carlton County since the last census in 2000. Generally, the County has grown by about 2,600 persons and nearly 1,600 households since 2000. The State estimates between 2000 and 2009 reveal an increase of 1,567 people and 900 households within the WLSSD and an increase of 1,028 people and 693 households outside the WLSSD.

3. Population and Household Forecasts

Additionally, the State Demographer prepares forecasts of future population and households for Minnesota counties outside of the Twin Cities Metropolitan area. The forecasts for Carlton County are depicted in Table 7.

Table 7
Population and Household Forecasts

Year	Population	Households
2000 (Census)	31,671	12,017
2010	36,970	14,800
2015	39,640	16,260
2020	41,950	17,730
2025	43,850	19,050
2030	45,300	20,230
2035	46,600	21,270

Source: State Demographers Office

The State forecasts indicate that Carlton County will continue to experience an increase in population and households. The population is projected to increase approximately 26 percent and the number of households is projected to increase by nearly 44 percent between 2010 and 2035. These forecasts reflect an average annual increase of 1.04 percent in population and 1.76 percent in new households, countywide.

In 2000, the largest age groups of the population were those between 35 and 49 years old and the 10 to 19 years old. Similar to the State, the population in Carlton County is projected to age with

a higher percentage of people over 75 years old than in the past. The largest age group in Carlton County in 2035 is projected to be in the 40 and 54 age bracket.

4. Economy and Economic Conditions

Agriculture and the wood products industry were the primary economic activity occurring within Carlton County before 2000. Although agriculture remains a primary activity in the rural portions of the County, the income of persons involved in agricultural activities is often supplemented by other employment. The wood products industry remains a major employer within the County and Sappi Fine Paper, USG Interiors and Jarden Home Brands provide a strong employment base.

In 2010, the majority of Carlton County workers were employed in the entertainment, health care, public administration, manufacturing and retail trade industries. Table 8 shows the largest employers in Carlton County and the number of employees within these companies.

**Table 8
Leading Employers**

Company	City	Function	Employees
Black Bear Casino Resort/Golf Course	Carlton	Entertainment and Recreation	907
Fond du Lac Reservation	Cloquet	Public Administration	879
Sappi Fine Paper North America	Cloquet	Manufacturing	780
Cloquet Public Schools	Cloquet	Educational Services	400
USG Interiors	Cloquet	Manufacturing	400
Upper Lakes Foods	Cloquet	Wholesale Trade	360
Minnesota Correctional Facility	Moose Lake	Public Administration	338
Carlton County	Carlton	Public/Administration	325
Community Memorial Hospital & Sunnyside Health Care Center	Cloquet	Health Care/Social Assistance	324
Mercy Hospital & Health Care Center	Moose Lake	Health Care/Social Assistance	279
Boldt Construction	Cloquet	Construction	265
Walmart Supercenter	Cloquet	Retail Trade	184
Jarden Home Brands (Diamond Div.)	Cloquet	Manufacturing	125
Carlton Nursing Home	Carlton	Health Care/Social Assistance	102
Carlton Public Schools	Carlton	Educational Services	102
Moose Lake Public Schools	Moose Lake	Educational Services	78
Super One Foods	Cloquet	Retail Trade	78
Cromwell Public Schools	Cromwell	Educational Services	60
Nels Nelson & Sons	Cloquet	Construction	60
Lake State Federal Credit Union	Moose Lake	Finance and Insurance	58
Members Cooperative Credit Union	Cloquet	Finance and Insurance	58
City of Moose Lake	Moose Lake	Public Administration	52
Pinewood Inc.	Cloquet	Health Care/Social Assistance	50
K1 Sportswear Corporation	Cloquet	Manufacturing	48
Villa Vista Retirement Home	Cromwell	Health Care/Social Assistance	36

Source: The Northland Connection and Carlton County

According to the State Department of Employment and Economic Development (DEED), the average weekly wage for all employed persons in 2008 was \$645 in Carlton County compared to \$881 for the statewide average. In 1999, the median household income was \$40,021 with approximately eight percent living below the poverty level according to the Census. The median household income is projected to increase to \$49,664 in 2013 according to The Northland Connection, a non-profit economic development consortium that serves northeastern Minnesota.

According to the National Bureau of Economic Research, between 2007 and 2009 the national economy has been in the longest and deepest recession since the Great Depression. The recent recession has affected the State as well as Carlton County, as evidenced by job losses and commensurate increases in unemployment, a weak labor market, dwindling household wealth and home value exacerbated by losses in the investment and stock markets, high debt and tight credit.

Most leading economic indicators began to show a turnaround in late 2009, leading to a turnaround in economic growth forecasts. Current debate among Minnesota economic leaders focuses on the speed of the recovery in the state and on when job growth will resume. Table 9 depicts historical labor force data for Carlton County obtained from the DEED.

Table 9
Carlton County Labor Force Data

	1990	1995	2000	2005	2010
Labor Force	12,966	14,958	15,714	17,040	17,718
Employment	11,811	13,580	14,677	15,592	15,934
Unemployment	1,155	1,378	1,037	1,448	1,784
Unemployment Rate	8.9	9.2	6.6	8.5	10.1

Source: State Department of Employment and Economic Development (DEED)

In 2010, the labor force (both employed and unemployed persons) residing in Carlton County totaled 17,718. Between 1990 and 2000, the number of persons in the labor force and those employed increased by 21 and 24 percents, respectively while the number of unemployed persons and the unemployment rate experienced a decrease. However, between 2000 and 2010, while there was still an increase in the labor force and the number of employed persons, the rate was significantly lower than that experienced in the previous decade. Additionally, the number of unemployed persons and unemployment rate grew rather than decreased, as experienced between 1990 and 2000.

For comparison purposes, Table 10 provides the unemployment rates for Carlton County, the other counties within the Duluth Centroid planning area and the State.

Table 10
Duluth Centroid Counties Unemployment Rate

	2000	2005	2010
Carlton County	6.6	8.5	10.1
Cook County	6.0	7.1	9.0
Lake County	5.4	5.3	8.9
St. Louis County	5.3	6.4	9.0
State of Minnesota	3.9	5.3	8.1

Source: State Department of Employment and Economic Development (DEED)

Carlton County experienced the highest unemployment rates of the Counties within the planning

area for the years 2000, 2005 and 2010. The overall State unemployment during this period was generally lower than the Duluth Centroid counties. DEED is projecting a moderate job growth statewide starting in 2010 with the level of employment statewide reaching the pre-recession rate in late 2012. It is uncertain how this projection will affect the employment levels in Carlton County or the Duluth Centroid counties.

The Carlton County Comprehensive Plan indicates that future economic growth and development will be influenced by continued interest and emphasis on tourism and recreation, and the availability of emerging technology. Current tourism and recreational facilities have been broadened with the construction and expansion of the Black Bear Casino and investment in facilities that broaden access to the northeastern Minnesota natural amenities. The ability of local businesses and individuals to access high speed telecommunication networks will allow Carlton County to compete effectively with other areas.

C. Summary

Carlton County has been actively involved in solid waste management for over thirty years. The County solid waste management programs over the years have resulted in expanded waste reduction efforts, improved recycling rates, expanded materials recycling, improved education efforts, and expanded problem materials management. The northeasterly portion of the County is located within the Western Lake Superior Sanitation District. Carlton and the WLSSD have coordinated solid waste management planning (within the jurisdiction of the District) via joint powers agreements for the past 25 years.

The majority of Carlton County is rural in nature while the northeastern portion of the County represents the area where population and household growth has historically occurred. Land uses in the non-WLLSD portion of the County consist of small cities, a state park, two state forests, lakes and rivers, and forested lands. Additionally, the Fond du Lac Reservation occupies portions of the County.

The five Carlton County cities and three townships that lie within the WLSSD accounted for nearly two-thirds of the County's population and households in 2000. In 2000, the Carlton County portion of the WLSSD contained a household density of slightly over 50 homes per square mile. This compares to an average density of less than 10 households per square mile in the balance of Carlton County in 2000. The low population and household density of the rural portion of the County outside the WLSSD are factors that discourage organized waste collection.

Population growth in Carlton County from 2000-2009 was a relatively modest increase of 2,595 persons, which is an average annual rate of less than one percent. Household growth for the same period was an increase of 1,593 households, which represents and an average annual rate of slightly more than one percent.

The State Demographer forecasts an increase in population of 4,980 persons between 2010 and 2020, an average annual increase of slightly more than one percent, a higher rate than the last decade. The projected increase in the number of households from 2010 to 2020 is 2,930, an average annual increase of nearly two percent. The State Demographer's forecasted population and household growth rates to 2020 may be optimistic given the current recession and "flat" growth rates over the past decade.

While the employed labor force in Carlton County has grown over the last 20 years to nearly 16,000 in 2000, the current (2010) unemployment rate is estimated at over ten percent. Carlton County has maintained the highest unemployment rate of the counties within the Duluth Centroid and higher than the State unemployment rate over the last ten years.

The low density and rural nature of Carlton County make the participation and cost effectiveness of waste management programs challenging. The forecasted growth rates in the County indicate

that there will be no significant change in the character of the County. However, similar to state and national trends, demographers project that the population will continue to age and household size will continue to decline. The current rates of unemployment and economic downturn create stress for funding or expanding participation in waste management programs. Carlton County will do well to maintain the waste management programs it currently administers.

III. Existing Integrated Solid Waste Management System

The current integrated solid waste management system in Carlton County consists of the following components:

- Management of Solid Waste Generation, Collection and Disposal
- Solid Waste Reduction, Reuse and Education
- Recycling
- Household Hazardous Waste Facility
- Program Administration and Enforcement
- Solid Waste Facility Operation and Maintenance

The 2000 Carlton County Solid Waste Management Plan stated goals are to:

- ✓ Comply with the Minnesota Waste Management Act, and
- ✓ Provide waste education and convenient recycling opportunities to the public.

Over the last ten years, Carlton County has successfully achieved these goals by operating an integrated solid waste management system. The County has consistently received credit from the MPCA for source reduction, yard waste composting activities, and the reuse and recycling program.

A. Solid Waste Generation

In 2009, Carlton County generated approximately 20,240 tons of solid waste, including municipal solid waste (MSW) disposed at a sanitary landfill, an estimate of MSW not collected, recycled materials, and problem materials not recycled.

Annually, Carlton County submits solid waste information to the State (known as the SCORE report) for all areas within the County boundary including waste reduction activities, recycling, household hazardous waste programs, and problem materials collection.

Historical information regarding MSW and recycling obtained from the 2000 - 2009 SCORE Reports for Carlton County is depicted on Table 11.

Table 11
Carlton County Total Waste Generated (tons)

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Estimated tons of MSW not collected	2,212	2,212	996	997	881	696	685	685	685	685
Problem materials not collected for recycling	797	779	811	836	836	858	863	852	861	531
Tons to MSW disposal/processing facilities	12,004	12,278	11,427	11,867	12,693	13,060	13,137	13,278	12,602	12,471
Tons collected for recycling	4,976	3,819	5,693	5,986	5,250	5,213	4,907	5,699	6,191	6,552
Total tons generated	19,988	19,088	18,926	19,686	19,660	19,826	19,592	20,514	20,338	20,240

Source: 2000-2009 SCORE Reports, Carlton County and Minnesota Pollution Control Agency

Although there have been slight fluctuations per year (plus or minus five percent), the County has had an average annual generation of approximately 20,000 tons of municipal solid waste (MSW). The average annual waste generated per person in the County has ranged between 1,163 pounds and 1,262 during the past ten years.

The majority of the waste generated in Carlton County is from the residential sector. In 2009, it was estimated that 55 percent of MSW was generated by Carlton County residents and 45 percent of MSW was generated by the commercial/industrial sector. The large commercial waste generators include public institutions such as the school district facilities, the Moose Lake correctional facility, and other institutional uses. Most of the industrial waste in Carlton County is generated by Sappi Fine Paper North America (formerly Potlatch Inc.) and USG Interiors. Sappi Paper disposes of most of industrial waste (pulp and papermaking byproducts) at its on-site landfill or land application of residues in compliance with MPCA requirements. Most other industrial waste generated within the County is disposed of at the Voyageur Landfill in Canyon located in St. Louis County.

The County has not conducted a study of the composition of MSW or performed a sort of collected waste materials. The most recent information applicable to outstate Minnesota is included in the Statewide MSW Composition Study, published in 2000 for the Solid Waste Management Coordinating Board and waste sorts performed by the WLSSD in 1999. The St. Louis County Regional Landfill (excluding industrial or demolition materials) was one of the sites for the Statewide MSW Composition Study and the waste sort was conducted in 1999. The aggregate results of the Statewide MSW Composition Study indicated that paper, organic materials, other waste (problem materials), and plastic comprised the major landfill materials.

The 1999 WLSSD waste sort was conducted to define the character of MSW within the District and included the following four objectives:

- To characterize the composition and quantity of MSW;
- To characterize the composition and quantity of recyclable materials;
- To characterize the composition and quantity of household hazardous waste (HHW); and
- To characterize the composition and quantity of materials that could be considered "wet" and "dry".

The results of the sort are depicted below in Figure 4.

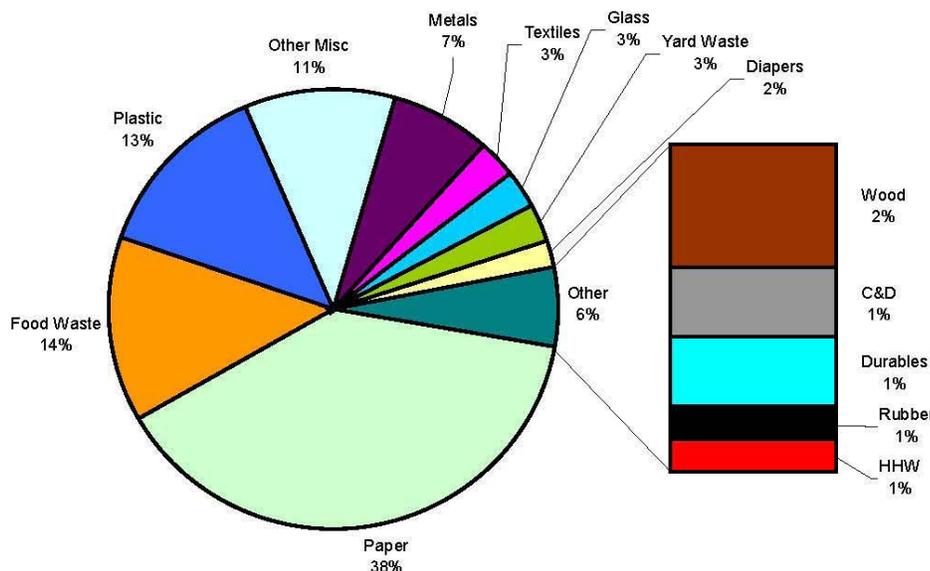


Figure 4
1999 WLSSD Waste Characterization

Source: WLSSD

The WLSSD concluded that based on the 1999 waste sort, opportunities exist for additional recycling of:

- Residential newspapers
- Residential/commercial/industrial uncoated corrugated cardboard
- Commercial/industrial office grade paper products
- Residential/commercial/industrial mixed recyclable paper
- Residential textiles
- Residential yard waste
- Residential/commercial/industrial food waste
- Residential/commercial/industrial glass containers (clear cullet)
- Residential/commercial/industrial ferrous scrap
- Residential/commercial/industrial film plastic

Further, it was determined that there is potential for the WLSSD to collect and compost residential/commercial/industrial organics and additional recovery opportunities of other non-recyclable materials in the waste stream.

The WLSSD conducted waste sorts in 2009 to assess the composition of certain recyclables compared to goals, determine progress since the St. Louis County waste sort conducted in 1999, and to determine seasonal variation. The waste sort involved collection of data for plastics, metal, glass and corrugated cardboard. The waste sort did not include a separate determination of food wastes and other materials. Waste sorts were conducted from only waste deliveries by packer/front load trucks servicing residential and commercial/industrial/institutional customers in the St. Louis County area of the WLSSD.

The complete results of the 2009 waste sort are available at the WLSSD offices. A summary of the results of the sorts are shown on Table 12.

Table 12
Summary of 2009 WLSSD MSW Sort Combined Residential and Non-Residential Results

Waste Category	Oct. 2009	Dec. 2009
Plastic	1.48%	1.65%
Metals	0.89%	1.31%
Glass	1.18%	2.87%
Corrugated cardboard	0.74%	0.92%
Percentage of total waste	4.30%	6.76%

Source: WLSSD

B. Solid Waste Collection

Private waste haulers collect the majority of solid waste produced by County residents and businesses, and haulers operate under an open collection system. In 2009, an estimated 73 percent of all households contracted with a private hauler for waste collection services. Those residents and businesses that do not contract for solid waste services haul their own solid waste to the North Carlton County Transfer Station, landfills outside of Carlton County or use another means of disposal such as on-site disposal.

All waste haulers that provide service to Carlton County residents and businesses are required (by Ordinance No. 17) to obtain an annual Collector's License from the County. The ordinance

requires all license holders to offer collection or provide a facility for the collection of recyclable materials, and prohibits license holders from placing recyclables in the MSW stream. The County collects an annual license fee for private haulers and licensed nine private waste haulers in 2009. Typically, the annual licensing of waste haulers by the County Board occurs in June.

Table 13 indicates the solid waste haulers licensed by the County in 2009.

Table 13
Licensed Solid Waste Haulers

<u>Name</u>	<u>Carlton Co. Area Served</u>	<u>MSW Type</u>	<u>Additional Services Offered</u>
A-1 Disposal	Carlton, Cloquet, Esko	residential, business	demolition debris, recycling
Carlton County Disposal	Carlton, Cloquet, Esko, Barnum, Wrenshall	residential, business	recycling
Cloquet Sanitary Service	Barnum, Carlton, Cloquet, Cromwell, Esko, Mahtowa, Moose Lake, Sawyer, Wrenshall, Wright	residential, business	appliances, demolition debris recycling, yard waste
Heikes Garbage Inc	Esko	residential	
Lake Sanitary Service	Cromwell, Wright	residential, business	
Mike's Sanitation	Holyoke, Moose Lake	residential, business	
Nordic Waste Services Inc	Northeast Carlton County	residential, business	
Nordstrom's Sanitation	Barnum, Kettle River, Moose Lake	residential, business	appliances, demolition debris recycling
Waste Management	Barnum, Carlton, Cloquet, Esko, Moose Lake	residential, business	demolition debris recycling

Source: Carlton County Planning and Zoning Office

The current license fee schedule for licensed collectors is as follows:

Solid waste: \$50/company plus \$25 per vehicle

Recycler: \$25/company plus \$10 per vehicle

In 2009, the County collected \$1,795 in license fees from solid waste/recycler haulers which including the licensing of 52 vehicles.

All licenses holders are required to utilize a volume based rate structure and report annual MSW and recycling tonnage to the County. The customer pricing rates of the private haulers vary depending upon the location in the County, frequency of collection, and other factors. Haulers are required to submit their rates as a condition of licensure, and rates are based on the amount of waste collected. In 2009, the monthly rate for a 30 gallon weekly pick-up ranged from approximately \$20 to \$29. The County periodically verifies the rate structures of each waste hauler to determine compliance with County ordinance requirements.

Licensed collectors haul MSW collected in the County to the North Carlton County Transfer Station, located in Twin Lakes Township where waste is consolidated and transferred by truck to a landfill.

C. Solid Waste Disposal

The County operated its own landfills until the mid-1990's. The north Carlton County landfill (permit no. SW-102), opened in 1972, is located in Twin Lakes Township near the current transfer station was permitted by the MPCA to accept 322,000 cubic yards of waste. The landfill ceased accepting MSW in 1985, but accepted large bulky items and other resource recovery rejects from the WLSSD until 1993. The landfill was totally closed in 1994 and it came into the MPCA Closed Landfill Program in 1997.

The south Carlton County landfill (permit no. SW-253) is located in Moose Lake Township and started accepting waste in 1983 from the City of Moose Lake and southern Carlton County. The MPCA permitted the landfill to accept 77,000 cubic yards of waste. In 1990, the landfill stopped accepting waste and came into the MPCA Closed Landfill Program in 1996.

In 1985, the North Carlton County Transfer Station was constructed and opened for MSW collection and transport for landfilling. In 1994, an addition to the transfer station was opened for large bulky items. This was at the same time that the Carlton County landfills were closed and when the County Board entered into a contract with the WLSSD for MSW disposal. Initially, MSW from Carlton County was transported to a refuse derived fuel (RDF) facility in Duluth operated by the WLSSD.

In 1999, the WLSSD stopped accepting MSW at their RDF facility and Carlton County MSW was transferred to a new WLSSD transfer station. Carlton County and WLSSD MSW was subsequently transported to the Lakes Area Landfill in Saron, Wisconsin operated by BFI, and demolition/industrial waste was hauled to the Rice Lake Landfill (operated by the WLSSD) near Duluth.

Since 2004, the WLSSD has contracted with the City of Superior, Wisconsin to dispose of both MSW and demolition/industrial materials in a municipally owned landfill located on Moccasin Mike Road. Currently, Carlton County and the WLSSD operate under the Joint Powers Agreement for the transport of MSW, with fees tied to the Consumer Price Index. The Wisconsin Department of Natural Resources requires that the County have a recycling program (see Resolution 95-021 in Appendix C).

Table 14 depicts the amount of solid waste transported from Carlton County to the Saron and Superior, Wisconsin landfills since 2000.

Table 14
Carlton County MSW and Industrial/Demolition Waste Disposal (Tons)

<u>Year</u>	<u>Location</u>	<u>MSW</u>	<u>Demo/Ind.</u>	<u>Total</u>
2000	Saron, Wisc. Landfill (BFI)	12,004	3,017 ¹	15,021
2001	Saron, Wisc. Landfill (BFI)	12,278	3,982 ¹	16,260
2002	Saron, Wisc. Landfill (BFI)	11,427	943 ² 2,276 ³	14,646
2003	Saron, Wisc. Landfill (BFI)	11,867	3,988 ³	15,855
2004	Superior, Wisc. Landfill	12,693	4,575	17,268
2005	Superior, Wisc. Landfill	13,060	4,441	17,501
2006	Superior, Wisc. Landfill	13,137	4,477	17,614
2007	Superior, Wisc. Landfill	13,278	4,247	17,525
2008	Superior, Wisc. Landfill	12,602	4,038	16,640
2009	Superior, Wisc. Landfill	12,471	3703	16,175

¹WLSSD Rice Lake Landfill, ²Voyager Landfill, ³BFI Saron Landfill
Source: Carlton County Planning and Zoning Office

D. On-site and Illegal Disposal

A goal of the Carlton County waste management program is to discourage on-site MSW disposal and illegal dumping through community education programs and by providing convenient, accessible and affordable disposal services to residents and businesses with enforcement actions being taken only when necessary. The on-going education program is multi-faceted and informs the public of environmental and public health impacts associated with on-site waste disposal, as well as the benefits of proper disposal methods and waste reduction techniques.

On-site disposal of solid waste is not allowed in most of the County. However, because waste collection service is not available within Automba and Split Rock Townships (see Resolution No. 95-019 in Appendix C), on-site disposal and outside burning is allowed, as permitted by State law, on agricultural lands within these townships. The estimate of on-site land disposal of solid waste was approximately 685 tons in 2009.

E. Waste Management Facilities in Carlton County

1. Public Waste Management Facilities

a. North Carlton County Transfer Station

Located west of I-35 on Highway 210 in Twin Lakes Township, the transfer station is the main public waste facility in the County. Figure 5 depicts the location of the transfer station and County recycling sheds. The transfer station accepts MSW, industrial and construction/demolition waste, electronics, automobile batteries, tires, oil and oil filters, yard waste, brush, white goods (appliances) and mattresses.

Additionally, the transfer station is the household hazardous waste (HHW) site for residents of the County and includes facilities for the drop-off of hazardous wastes such as paint, CFL's, pesticides, solvents, rechargeable batteries, and flammable aerosols. The staff at the transfer station maintains a list of private businesses that accept certain HHW materials for reuse, recycling or proper disposal.

The transfer station site also serves as a recycling drop-off center for residents in eastern Carlton County. It also contains the County Products Exchange area within the HHW building. The Products Exchange area is open on a seasonal basis from May through October.

b. Recycling Drop-Off

The County operates 12 recycling drop-off sheds (see Figure 5) for County residents to use and there are two private recycling centers within the County.

c. Fond du Lac Transfer Station, Recycling Center and Household Hazardous Waste Station

Located on University Road, west of Cloquet, the facility was constructed in 2002 and serves as a collection point for waste drop-off for the Fond du Lac Reservation. Additionally, there are several recycling sheds within the Reservation.

2. Private Waste Management Facilities

Nordstrom's Sanitation Transfer Station located in Moose Lake, accepts MSW from self-haulers, white goods, demolition waste, tires, mattresses, and used oil. The site also accepts recyclables including newspaper, office paper, corrugated cardboard, food cans, magazines, phone books, oil, and aluminum cans. Riverside Recycling in Cloquet, accepts newspaper, glass, corrugated cardboard, office paper, tin cans, aluminum cans, magazines, phone books, text books, plastic #1 and #2, copper, brass, scrap aluminum, aluminum foil, and catalytic converters.

Two businesses accept specialized waste and are not open to the public. Ulland Brothers, Inc. located in Twin Lakes Township on Highway 210, only accepts demolition/industrial waste from its

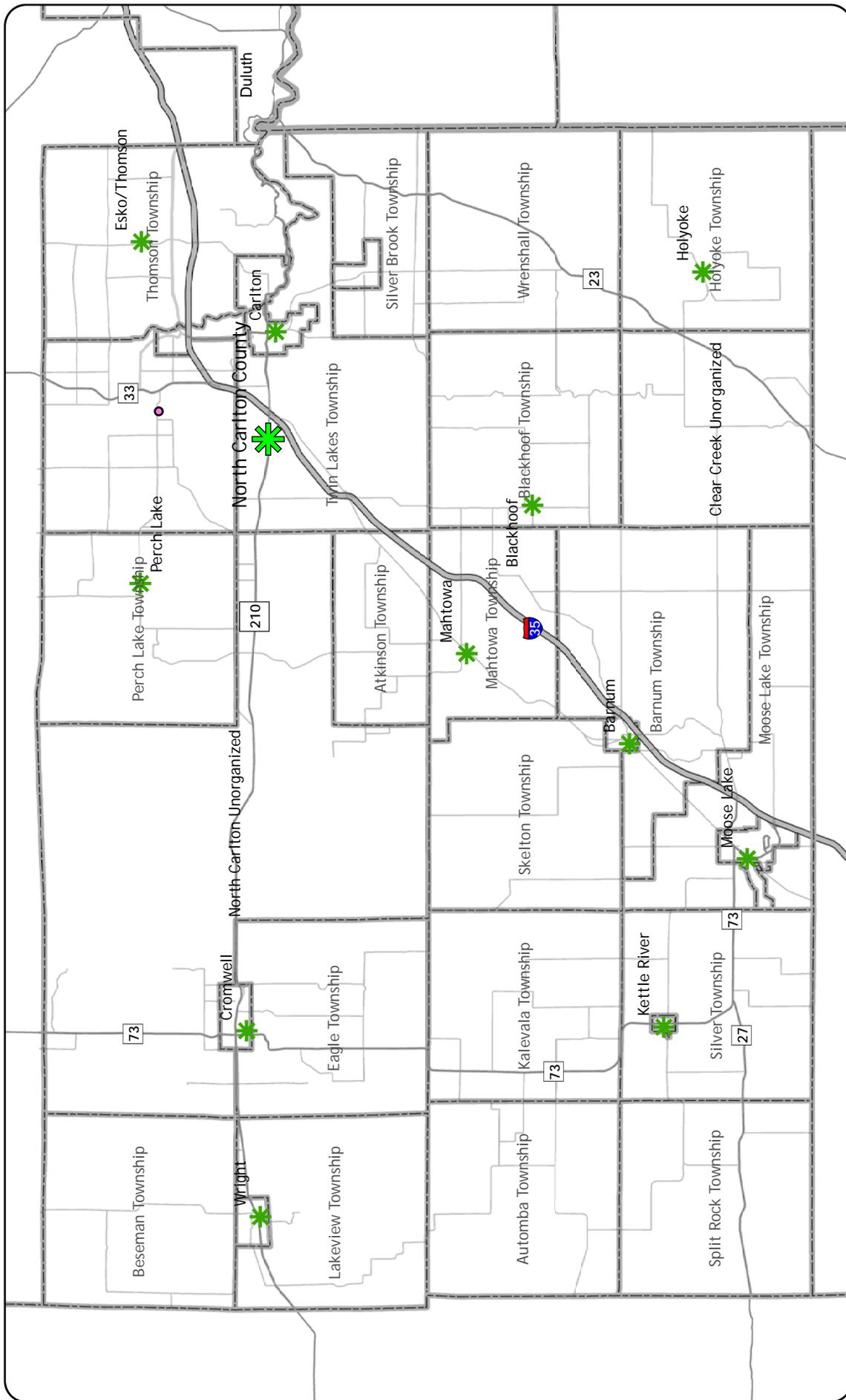


Figure 5
Carlton County
Waste and Recycling Facilities

-  North-Carlton Transfer Station and Recycling Shed
-  Recycling Shed

own business operations. Similarly, the Sappi Cloquet Industrial Landfill operates its own landfill for the disposal of byproducts of the pulp and papermaking activities.

F. Waste Reduction, Reuse and Education

The following section describes the existing solid waste programs of Carlton County. The programs have been developed and implemented with the overall goal of reducing the amount of solid waste that requires transfer to a landfill, in accordance with State goals.

The County has operated the North Carlton County Transfer Station as the major facility to transfer solid waste to the Superior, Wisconsin landfill via agreements with the WLSSD. Additionally, the transfer station (supported by the County recycling drop-off sheds) serves as the central collection point where recyclable and hazardous materials are collected for reuse and deposition.

The waste reduction, recycling and reuse efforts of the County are supported and promoted by an extensive education program that is designed to provide County residents and businesses information about practices and opportunities that support State and County existing waste management goals. Much of the educational material is aimed at informing the public about the potential environmental consequences of improper solid waste disposal activities as well as County requirements and enforcement measures for the proper disposal of solid waste.

The following policies guide the existing solid waste management programs for waste reduction, reuse and education:

- The County will continue to enforce Ordinance 17 that governs solid waste management operation and enforcement.
- The County will utilize the existing WLSSD agreement for the deposition of solid waste materials that cannot be recycled or reused, and other programs.
- The County will continue to consider the economic and environmental affects of solid waste disposal when making long term decisions and commitments.
- The County will continue to implement programs for solid waste reduction, recycling, yard waste management, household hazardous waste and other wastes that meet State goals and requirements.

1. Waste Reduction

Waste reduction has become a primary initiative of the County waste management program. The solid waste reduction program consists primarily of promoting facilities and programs to reduce the amount of waste and reuse of certain products. The County has annually received a three percent credit from the MPCA for waste source reduction and a two percent reduction credit for a yard waste program. The existing County policy is to continue practices that result in annually achieving the MPCA reduction credit.

Private and public initiatives are utilized to promote waste reduction in the County. The County program includes public education and training (see section on education), promotion of the Minnesota Waste Wise Program, and environmentally responsible purchasing. Over the past several years, Carlton County has initiated efforts to demonstrate waste reduction in its own business operations. These efforts include:

- ✓ Utilizing *The Environmentally Preferable Purchasing Guide* (EPP), the comprehensive catalogue of readily available items that meet the EPP criteria and contribute to achieving the goals of waste reduction and procuring recycled content products, for certain procurement activities, such as purchasing recycled content products, waste reduction, product stewardship, energy-efficiency, and using least toxic products.

- ✓ The establishment of the County Buildings Recycling Committee to develop and maintain a Recycling Policy for the County buildings and employees. When implemented in 2007, the recycling rate at the County Courthouse increased from eight percent to 26 percent.
- ✓ Vendor acceptance of certain County equipment at the end of its useful life.
- ✓ Recognition program for County employees for waste reduction and recycling efforts.
- ✓ On-going employee education and training of existing programs and new initiatives.
- ✓ Demonstration efforts such as a bottled water versus tap water taste test to educate residents on the negative side effects of the bottled water industry on the environment and the overall quality of public water sources in Carlton County.

2. Reuse

The existing County policy supports the reuse of solid waste materials as a strategy to reduce the amount of solid waste materials deposited in the Superior landfill. The existing County program for reuse is to provide educational materials about effective reuse techniques and opportunities, support product stewardship activities conducted by the private sector and provide a facility for product exchange.

The Product Exchange area is located in the HHW facility at the North Carlton County Transfer Station site. The Product Exchange area was established by the County to encourage residents to drop-off usable paint and other household materials, for reuse by others. All drop-off and reuse of materials are free to County residents.

3. Solid Waste Education

The existing County policy is to support and fund an education program to residents and businesses about solid waste reduction programs and opportunities. Since 2007, the County has published a waste reduction/recycling newsletter that is available on the County web site and is emailed to county employees and others that have provided an email address to the County.

The newsletter provides:

- Reminders regarding the County's Solid Waste Ordinance and state/regional requirements pertaining to solid waste disposal and recycling.
- Location and services available at County recycling and solid waste facilities including the Product Exchange building at the North Carlton County Transfer Station, and recycling/reuse events at various locations in the County.
- Educational material about how to reduce or reuse certain products, alternatives to using hazardous products, household hazardous waste disposal, yard waste reduction techniques, composting, etc.
- Residential and business waste reduction and recycling success rates.
- Promotion of County recycling, and waste and energy reduction events and services.

Additionally, the County distributes materials to County business and residents regarding waste reduction and recycling information and opportunities. The County staff is often invited to discuss waste reuse, reduction, and recycling options at various County businesses, schools and organizations. The County staff is involved in education efforts at various schools within the County's seven school districts. These activities have included developing action items with the Solid Waste Recycling Committee for school recycling; assisted the Barnum, Moose Lake and Cloquet School Districts Discussed with recycling policy updates and implementation; and distributing recycling educational materials to schools.

The County also continues to provide educational efforts for a Burn Barrel Program in the remote

rural areas of Carlton County. In 2007, the County participated with the Northeast Waste Advisory Council (NEWAC) Burn Barrel grant program. NEWAC members include Aitkin, Carlton, Cook, Itasca, Lake, Koochiching and St. Louis Counties, and the WLSSD. The grant allowed for the development of burn barrel educational materials, costs for display on billboards and production of brochures.

G. Recycling

The County policy is to continue to support recycling as a primary means to reduce the amount of MSW transported to the Superior landfill and achieve the State recycling goal. The existing recycling program is designed to comply with MPCA SCORE reporting requirements and implement Ordinance 17 recycling provisions.

Carlton County does not permit the placement of recyclables in the waste stream and the County has a strong and successful recycling program. The cities and townships within the WLSSD (see Figure 1) are provided with curbside recycling service by private haulers. Within Carlton County, waste hauling services that offer recycling are available in the cities and townships, except in Automba and Split Rock Townships.

It is estimated that 17,000 County residents (primarily in northeast Carlton County) were served by curbside recycling services in 2008. The cities of Carlton, Cloquet and Moose Lake have ordinances requiring that residents and businesses recycle.

1. Recycling Facilities

There are 14 (12 public and two private) recycling facilities in Carlton County. The County operates twelve recycling sheds located throughout the County (see Figure 2) for residents that do not have curbside pickup or prefer to self-haul. Five of the sheds are staffed and open during regularly scheduled hours as noted on the Carlton County Waste Management Facilities Information Sheet found in Appendix D. Six recycling sheds are unstaffed and the recycling shed at the transfer station does not have assigned staff. Businesses may not dispose of recyclables at the public County recycling sheds.

The staffed sheds accept:

- newspaper
- boxboard (added in 2008)
- magazines (added in 2007)
- office paper (added in 2007)
- glass jars and bottles
- plastics #1 thru #7 (#3 thru #7 added in 2007)
- aluminum cans
- tin and metal cans

The North Carlton County Transfer Station accepts the above items and mattresses, corrugated cardboard, used oil and oil filters, car batteries and certain recyclable electronic items.

Six of the sheds are unstaffed and accept recyclables at any time, including:

- newspaper
- glass jars and bottles
- plastics #1 thru #7
- aluminum cans
- tin and metal cans

Table 15 depicts the tonnage of commercial/industrial/institutional and residential items (problem and non-problem materials) collected for recycling from Carlton County, from 2000 to 2009. Additionally, Table 15 shows the percentage collected for recyclables as a percentage of total MSW generation with and without the MPCA credit for yard waste and source reduction programs. The County began meeting the state recycling goal of 35 percent (with credits)

beginning in 2002, although from 2004-2006 the recycling rate was just under the state goal.

Table 15
Carlton County Recycling (Tons)

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
County Total	4,976	3,817	5,695	5,985	5,249	5,212	4,906	5,697	6,191	6,552
Recycling Rate (%)	24.9%	20.0%	30.1%	30.4%	26.7%	26.3%	25.0%	27.8%	30.4%	32.4%
Recycling Rate (%) with MPCA credits	32.9%	27.0%	38.1%	38.4%	34.7%	34.3%	33.0%	35.8%	38.4%	40.4%
Annual Increase		-23.3%	49.2%	5.1%	-12.3%	-0.7%	-5.9%	16.1%	8.7%	5.8%
Increase Since 2000										31.7%

Source: 2000 - 2009 Carlton County SCORE reports, MPCA

The amount of recyclables collected by the County has increased from nearly 5,000 tons of materials in 2000 to over 6,500 tons in 2009, an increase of over 31 percent.

2. Composition of Recycled Materials

Table 16 depicts the composition of the recycled waste collected in Carlton County from 2000 to 2009. Since 2000, the largest increase in recycled materials include plastics and paper, and those that are banned from MSW disposal by the State (also termed "problem materials") such as major appliances, tires, used motor oil and other substances.

Table 16
Carlton County Composition of Recycled Waste (Tons)

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>Increase</u>
Banned	499	519	520	517	560	558	544	570	595	967	93.9%
Glass	681	288	705	786	652	625	604	630	675	663	-2.7%
Metal	343	291	359	366	317	291	377	291	331	338	-1.5%
Mattresses & box springs	NA	NA	NA	NA	NA	NA	15	42	43	32	NA
Paper	3,297	2,657	3,975	4,147	3,568	3,589	3,208	3,853	4,167	3,857	17.0%
Plastic	156	62	136	169	152	149	158	311	380	462	195.9%
Organics	NA	233	NA								
Total	4,976	3,817	5,695	5,985	5,249	5,212	4,906	5,697	6,191	6,552	31.7%

Source: 2000 - 2009 Carlton County SCORE reports, MPCA

3. Specialized Recycling Programs

The County has conducted two specialized programs for non-banned materials, beginning in the mid 2000's. These programs are described below.

a. Mattress Recycling

Mattresses create a heavy burden on landfills because each mattress takes up about 23 cubic feet of space, they do not degrade well, and can create dangerous "soft spots" in landfills. The Northeast Minnesota Mattress Recycling Program began as a pilot project and involved a partnership between public, private, and nonprofit organizations. Carlton County, six other northeastern Minnesota counties, the MPCA, Goodwill Industries, several mattress retailers,

hospitality industries, waste-hauling industries, and other institutions participated in a program to recycle mattresses.

Mattresses and box springs are collected at the North Carlton County Transfer Station and transported to Goodwill Industries in Duluth for deconstruction and recycling. The used foam is delivered to Madison, Wisconsin to become carpet underlay, the wooden frames become fuel in a local paper mill, and cotton is used for diesel locomotive oil filters.

From June 2004 to May 2009, the program has recycled 58,252 mattresses and box springs. The program has saved 6,898 cubic yards of landfill space or 5,518 tons, which is valued at \$215,218. In Carlton County alone, the annual tonnage of mattresses collected at the transfer station site has averaged between 30 and 40 tons per year. The program has remained viable, and continues to grow in Minnesota and serve as a national model.

b. Organics

Organic materials comprised approximately 23 percent of the waste stream in greater Minnesota according to the Statewide MSW Composition Study commissioned by the MPCA in 2000. Organics include a variety of materials such as food and yard waste, wood, diapers and other fibrous materials. In 2000, over 14 percent of organic waste materials were comprised of food products in greater Minnesota, according to the aforementioned study.

Organic waste management includes two methods - 1) source separated composting and 2) other processing/reuse of organic material (e.g. food-to-people, food-to-animals, anaerobic digestion, etc.). Since 2001, the WLSSD has been involved in a variety of methods to recover organics from residents and businesses in northeastern Carlton County. WLSSD activities available to Carlton County residents and businesses include composting operations, food waste drop sites for residents and small business use, and adoption of an ordinance requiring mandatory diversion of pre-consumer organic waste.

The ordinance requires that edible food waste be distributed to programs for human consumption, that organic waste be diverted to a licensed animal feeding operation or a permitted composting facility (WLSSD). Businesses affected by the ordinance include:

- ✓ generators of pre-consumer organic waste such as grocery stores (greater than 7,500 sq. feet) and certain restaurants,
- ✓ Minnesota Department of Health (MDH) medium and large license holders in Carlton County,
- ✓ post-secondary institutions with 1,000 or more full-time students that prepare meals on-site,
- ✓ hospitals and nursing homes having 100 or more beds, and that prepare and serve meals to employees, patients, guests, or residents, and
- ✓ food manufacturers/processors of 5,000 sq. feet or larger

In Carlton County, businesses/institutions within the WLSSD contract for organics hauling service to comply with ordinance requirements. Haulers are responsible for collection schedules and provide labeled external containers. In 2009, the first year of the program for the WLSSD portion of the County, 233 tons of organics were collected from businesses at the organic compost facility.

Carlton County staff has also been working with several institutions in the non-WLSSD portions to develop and implement individualized organic waste management programs. It is anticipated that additional programs will be established at several institutions in the coming years.

Other organic waste programs in the County include "back yard composting" educational

programs published in the County's recycling newsletter, availability of compost bins at a reduced rate, and other techniques and information available through the University of Minnesota Extension Service.

H. Household Hazardous Waste (HHW) Management

The County policy is to continue to operate the household hazardous waste (HHW) program to meet State and County requirements. State law and Carlton County Ordinance 17 bans the placement of HHW in MSW and that HHW material be disposed in a proper manner.

Banned or problem materials are defined by the State, and include materials that are toxic or are pollutants to the environment and public health. Carlton County operates a household hazardous waste site and participates in a regional program with the WLSSD, and St. Louis, Lake, Cook, Koochiching, Itasca, and Aitkin Counties. The Carlton County HHW facility is located at the North Carlton County Transfer Station and it is open seasonally from mid-May to mid-October. Many of the materials that are brought to the HHW facility are recycled including rechargeable and button batteries, fluorescent bulbs, latex paint and antifreeze. The HHW program is designed only for County residents, while businesses or other organizations are encouraged to coordinate disposal of hazardous items at the WLSSD Clean Shop. However, the County does accept a limited amount of florescent light bulbs from small businesses at the transfer station HHW facility.

A regional HHW facility is operated by the WLSSD and serves as MPCA's regional household hazardous waste program for northeastern Minnesota. The regional facility is located at 2626 Courtland Street in Duluth and is open year-round. The WLSSD also operates a product exchange, the Clean Shop, at the HHW regional facility to encourage reuse of products that are in good or usable condition.

In 2009, hazardous materials from 919 households were delivered directly to the HHW facility in Carlton County, an increase from the 896 households in 2005. Table 17 depicts the use of the County HHW facilities since 2005.

Table 17
Use of Carlton County HHW Facility

Year	Number of Households
2009	919
2008	1,017
2007	1,133
2006	888
2005	896

Source: Carlton County Planning and Zoning Office

Beginning in 2009, the County initiated reporting the actual amount of banned materials collected for recycling for all materials except for vehicle batteries. Prior to 2009, the reported amount of banned materials collected for recycling was based on the MPCA state averages, as allowed by the MPCA SCORE reporting guidelines. Table 18 lists the types of banned materials that have been collected or reported by the County for recycling purposes from 2000 to 2009.

Table 18
Carlton County Recycled Banned (Problem) Materials (Tons)

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Antifreeze	1	0	0	0	6	7	1	13	5	4
Electronics			12		11	13	16	25	55	50
Fluorescent & HID lamps		1	1	1	1	2	1	2	2	2
HHW	6	5	5	2	0	1	0	1	1	3
Latex paint	5	6	7	4	5	1	0	1	7	12
Major appliances	190	190	193	199	202	205	205	205	205	223
Used oil	25	25	26	27	27	27	27	27	27	255
Used oil filters	15	15	15	15	20	25	16	16	16	36
Vehicle batteries	194	194	197	203	207	209	210	210	209	209
Waste tires	<u>63</u>	<u>83</u>	<u>64</u>	<u>66</u>	<u>81</u>	<u>68</u>	<u>68</u>	<u>70</u>	<u>68</u>	<u>174</u>
subtotal	499	519	520	517	560	558	544	570	595	967

Source: 2000 - 2009 Carlton County SCORE reports, MPCA

Note: 2000 - 2008 reported tonnage based on state average, 2009 reported tonnage based on actual collection, except for vehicle batteries (state average)

1. Electronic Products

Electronics, consisting of outdated TVs, computers, and cell phones is now one of the fastest growing components of the waste stream. Many electronic products contain toxic materials and chemicals that present threats to public health and the environment, particularly the soil and ground water, unless disposed of in a responsible manner. Additionally, certain obsolete electronics can pose legal liabilities, if they are disposed of improperly.

Computer circuit boards contain lead and cadmium, computer monitors contain lead oxide and barium, TV cathode ray tubes contain lead and other toxic materials, mercury in switches and fire retardants are used in printed circuit boards and plastic casings. TVs and monitors can contain from two to eight pounds of lead as well as mercury, cadmium, and PCBs, and are considered the largest single source of lead in the Minnesota's waste stream. Discarded TVs and computer monitors, and other electronics contain component parts, including lead, steel, plastic and glass, that can be reused or recycled.

In 2006, the State began to prohibit the disposal of cathode ray tubes used in TV's and computer monitors from the solid waste disposal system. In 2007, the State enacted legislation known as "the Minnesota Electronics Recycling Law" establishing a program for the collection and recycling of video display devices (VDD). The law requires manufacturers to collect 60 percent of the weight of their sales during 2008, and 80 percent thereafter. Additionally, manufacturers must annually register and pay a fee to the State, and work with recyclers to collect and recycle VDD from households/consumers in the state.

In September 2010, a Wisconsin law specifically banning the disposal of cell phones in landfills and incinerators took effect. Cell phones are not allowed in MSW transported from the North Carlton County Transfer Station because MSW is ultimately transported to a landfill in Superior, Wisconsin.

Carlton County promotes reuse and recycling of discarded electronic products, including cell phones, through a variety of options, including donation and recycling. Additionally, the County has sponsored or promoted events and other means for County residents and businesses to

encourage proper disposal and recycling of electronic products.

The North Carlton County Transfer Station is the primary collection point for electronics in the County. In 2008, a separate storage shed was constructed for electronics recycling on the site. Electronics, including cell phones, may also be dropped at the WLSSD Materials Recovery Center (MRC) in Duluth. Additionally, Cloquet Riverside Recycling and several retail establishments in Duluth accept discarded electronics such as computers, monitors and televisions. As indicated on Table 18, the tons of electronic recycling collected in Carlton County has increased dramatically, especially since passage of the Minnesota Electronics Recycling Law in 2007.

The VDD recycling program has proven to be very successful and many manufacturers have exceeded their recycling targets. As a result, the manufacturers have discontinued participating in the cost to recycle VDD's, thereby placing additional costs on the County. The County raised their rates in 2009 to cover the costs of recycling VDD's. The rate increases for selected items are depicted in Table 19.

Table 19
Carlton County Electronic Recycling Fees

Item	2008	2009
19" TV	\$3.00	\$11.00
32" TV	\$6.00	\$19.20
17" Computer Monitor	\$3.00	\$8.80

Source: Carlton County Planning and Zoning Office

The WLSSD bans the disposal of electronics containing hazardous materials in the MSW and encourages the recovery of electronics that are recyclable or may be reused. A part of the design of the MRC incorporated an area for recycling electronics, including cell phones, and the district works with a local vendor to properly manage all electronics collected at this location. All materials collected through the MRC are sent to a private recycler (Asset Recovery Corporation) for processing, recovery and disposal.

Additionally, Carlton County does not permit County residents to place discarded computer components and electronics that are hazardous or recyclable in the MSW. Most private garbage haulers provide pick-up and disposal services for electronic products.

2. Major Appliance Management

Major appliances typically include components that present potential environmental and public health risks. These components include such items as lead, chlorofluorocarbons (CFC's), PCB ballasts and capacitors, cadmium in plastics, and a number of organic and metallic compounds found in printed circuit boards and other appliance components.

Minnesota has banned the disposal of major appliances in the MSW stream since 1990, and the type of appliances that falls within the statutory definition of "major appliance" has expanded over the last twenty years. Today, the definition of major appliance includes clothes washers and dryers, dishwashers, garbage disposals, trash compactors, conventional and microwave ovens, ranges and stoves, air conditioners, refrigerators and freezers, residential and commercial furnaces, water heaters, and dehumidifiers.

State law requires that major appliances be recycled or reused, and counties are required to provide opportunities for residents to recycle major appliances. However, before appliances are reused or recycled, capacitors and ballasts that may contain PCBs, chlorofluorocarbon (CFC) refrigerant gas, mercury, and other toxic or hazardous materials must be removed.

All appliances generally require some form of "end-of-life" management including disposal,

recycling or sale of scrap parts. Carlton County residents and businesses can deliver appliances to the North Carlton County Transfer Station for recycling or the WLSSD Materials Recovery Center in Duluth. The County contracts with an appliance contractor for the safe removal of hazardous and toxic materials from appliances, and to remove the appliances. Residents and businesses may also contact appliance recyclers who will pick up appliances from homes and offices for a fee.

Between 2000 and 2009, the amount of tons of recycled appliances collected at the transfer station grew by nearly 18 percent. In 2007, the County began a free appliance coupon program operated in conjunction with the WLSSD. The program is open to all County residents and each household is issued one coupon per year to drop-off one appliance free of charge.

Additionally, the Fond du Lac Reservation operates an appliance drop-off program and assists in the pick-up of appliances for tribal members who are unable to deliver them.

3. Automobile Related Problem Materials

Automobiles contain a variety of toxic and hazardous materials that the State legislature has banned from placement in landfills and State law requires that they be properly recycled. In 1988, the State legislature banned lead acid batteries from the solid waste stream because of their high lead content. Beginning in 1992, the State passed a series of laws to ban liquid mercury and mercury-filled products such as thermostats, mercury switches, thermometers, etc. from the waste stream. For example, mercury switches must be removed from vehicles before a vehicle is crushed and recycled.

Additionally, certain motor vehicle fluids and filters contain toxic materials including benzene, lead, zinc, and cadmium. The State legislature banned motor oil and filters from MSW in 1988 and added a ban on other vehicle fluids in 1994. In 1988 and 1990, the State banned lead-acid batteries and certain other batteries from MSW because they contain heavy metals such as mercuric oxide, silver oxide, nickel cadmium, and other toxic materials. Certain dry cell and rechargeable batteries were banned from the MSW stream in 1990-91.

Table 18 lists the amount of certain automotive related banned materials collected by the County at the North Carlton County Transfer Station from 2000 through 2009. It is unrecorded what quantity of other problem materials were deposited at other locations by Carlton County residents or businesses. The amount of recycled automobile related recycled materials increased by over 100 percent over the last nine years, especially in the used oil and used oil filters category. These categories increased dramatically in 2009 because the County reported actual tonnage in the SCORE report, except for used oil filters. State averages were used for 2000 to 2008, and for used oil filters in 2009.

a. Automotive Mercury Switches

Mercury light switches in the hood and trunk, sensors are common in American-made passenger cars and pickups. The End of Life Vehicle Solutions Corporation (ELVS) currently manages a national program (that includes Minnesota) to provide an efficient means to recycle automotive mercury convenience light switches and it is modeled after the Minnesota Mercury Recovery Program.

ELVS provides vehicle recyclers with collection buckets and pays the cost of transportation, reporting/recycling or disposal of elemental mercury from the automotive switches. Additionally, ELVS provides educational materials to promote vehicle recycling and proper management of mercury switches. Businesses in Carlton County that have joined the mercury vehicle switch program include Andy's Auto Recycling in Carlton, Barnum Automotive in Barnum, and Hi-Way 210 Auto Parts in Cloquet.

Carlton County residents may dispose of mercury switches (and other mercury bearing wastes) at the HHW facility or the WLSSD HHW facility. Small businesses that are qualified Very Small Quantity Generators (VSQG's) may dispose up to 660 pounds of specified hazardous business

waste, including mercury, at the WLSSD Clean Shop.

b. Motor Vehicle Fluids and Filters

The County provides public waste oil and oil filter collection at the North Carlton County Transfer Station for residents. Additionally, used oil and oil filters may be deposited at the WLSSD HHW sites, the Nordstrom's transfer station and various private businesses. Each business that sells oil is required to collect used oil and deposit the oil at an approved collection site, or post sites at a visible location where oil collection is available.

Businesses and commercial vehicle users are not allowed to deposit motor vehicle fluids and filters at the County transfer station. However, small VSOQ businesses may bring certain fluids and filters to the WLSSD Clean Shop.

c. Batteries

The County has a well publicized and free lead-acid battery collection system that is operated from the North Carlton County Transfer Station for County residents on a year round basis. Residents may also use the year-round WLSSD HHW facility. Although the County has collected 2,042 tons of lead acid batteries from 2000 to 2009, most lead acid batteries used in automobiles are managed by the private sector. Lead acid batteries are managed by retail battery outlets, scrap metal dealers and service stations where batteries are sold.

Household dry cell batteries may be disposed at the North Carlton County Transfer Station or WLSSD HHW sites. Additionally, many retail establishments in the County provide a battery recycling program as required by law. The County allows alkaline or zinc carbon batteries to be discarded with MSW.

d. Waste Tire Disposal and Recovery

The State has banned the placement of waste tires in MSW and landfills since 1985. The improper disposal of tires presents a potential fire hazard and pollution to air, soil and water resources. In addition, tire fires tend to burn very hot and have proven to be difficult to extinguish, thereby posing safety hazard for fire personnel and others in the area. Unused tires also serve as an excellent breeding ground for disease-carrying mosquitoes, which have been known to transmit encephalitis.

Carlton County Ordinance No. 17 prohibits the illegal dumping of tires and requires that tires be disposed in accordance with MPCA rules. The ordinance was amended in 1997 and 2009 to allow the use of shredded tires as lightweight fill, provided the type and use of the shredded tires meet MPCA requirements.

The County accepts the disposal of waste tires at the North Carlton County Transfer Station and the collected tires are transported by licensed haulers to MPCA licensed tire processors. Table 18 shows the tonnage of waste tires accepted at the transfer station, and indicates an increase of 111 tons of tires from 2000 to 2009.

4. Pharmaceutical Collection Program

Recent studies have indicated that there are potential dangers to water resources and public health caused by the disposal of pharmaceuticals into public and individual sanitary sewer systems, and MSW. Currently, the Carlton County solid waste/recycling staff and the sheriff's department are jointly studying the potential for a pharmaceutical drop-off repository program.

5. Construction and Demolition Debris

The County policy is to continue to encourage reuse and recycling programs to reduce the amount of construction and demolition debris from the Superior landfill. State law and the Carlton County Solid Waste Ordinance mandates that construction and demolition waste be separated from MSW. Construction and demolition wastes include waste building materials, packaging and rubble

resulting from construction, remodeling, and repair of buildings and roads.

According to the MPCA Minnesota Construction, Demolition and Industrial Waste Study prepared in September 2007, the most prevalent construction and demolition debris materials are wood, roofing, wallboard, and concrete and brick. The study found that construction and demolition materials consisting of asphalt shingles, wallboard, and clean and mixed wood waste possessed the greatest recovery potential provided that adequate markets and collection/processing infrastructure were developed.

However, there are several barriers to increase recovery of materials, as noted in the study, including:

- Economics - Disposal is cheaper than recovery for several reasons such as labor costs for sorting, capital costs for processing equipment, relatively low cost of disposal, low market values for recovered products, and transportation costs (especially in Greater MN)
- Lack of Markets - With the exception of wallboard and asphalt shingles, markets for chipped clean wood waste exist in the form of biomass at the Minnesota Power Hibbard Plant in Duluth and by a private entrepreneur as a means for producing colored landscaping mulch in Superior, Wisconsin.
- Low Volumes - Particularly in Greater MN, the total volumes delivered to a facility are relatively low with low amounts of any one marketable material.
- Lack of Attention or Focus by State and Counties - Most of previous public policy has focused on MSW rather than C&D and industrial wastes. The focus on recycling and recovery of C&D wastes has been increasing significantly in many locations across the nation.
- Priorities - Part of the lack of focus on C&D wastes is that C&D and industrial wastes are not as "personal" as MSW and have not drawn as much attention. Decisions have been made based on cost. C&D wastes are more inert (less offensive) than MSW.
- Awareness - The lower attention and lower priorities results in a lack of awareness of the opportunities that exist. Recycling efforts are not as well documented and there are perceptions of limited markets.

The existing construction and demolition debris recycling program is designed to recover and reuse timber and building materials, while at the same time reducing the amount of material deposition in landfills. The number of outlets has been growing in northeast Minnesota for recycled and sorted construction and demolition products.

The North Carlton County Transfer Station accepts residential construction and demolition debris for a fee for transport to the Superior, Wisconsin Landfill. Previously, non-recovered or recycled residential construction and industrial debris was hauled to the Rice Lake Industrial Solid Waste Disposal Facility in Duluth until its closing on December 31, 2001.

The amount of residential demolition and industrial materials hauled to the Superior, Wisconsin Landfill has decreased since 2004, as shown on Table 14 presumably because of the awareness and availability of reuse and recycling opportunities for such materials.

There are other locations open to Carlton County residents for disposition of construction and demolition debris. These locations include the:

- The WLSSD Materials Recovery Center (MRC) opened in January 2002 and is designed to recover resources for reuse. The MRC accepts construction and demolition debris from residents and small commercial uses. The materials accepted for no cost include green wood, scrap metal and clean concrete. Materials accepted for a fee include mixed construction and demolition loads (concrete, brick, wood, plastic, shingles, etc.). Generally, the construction and demolition items that are collected at the MRC for re-use include dimensional clean

lumber, clean sheetrock, and scrap metal. Non-recoverable waste that is recycled or managed along with MSW include other wood products such as pallets and boards, and other construction and demolition debris.

- Nordstrom's Solid Waste Transfer Station (private) located north of Moose Lake in Barnum Township. Non-hazardous building materials that may be re-used or recycled by individuals are collected by Nordstrom's. Recently, the primary item collected for re-use or recycling have consisted of clean wood.

Additionally, Carlton residents and businesses may utilize the private Voyageur demolition landfill site near Canyon, the Veit Demolition Landfill located south of Duluth in St. Louis County, and the Demolicious facility in Duluth for disposal of construction and demolition waste. The Veit Demolition landfill does accept some construction and demolition waste for recycling. The Demolicious facility also recycles construction and demolition waste.

The County participates in the MPCA sponsored Northeast Minnesota Building Deconstruction Work Group. This group began meeting in 2008 to identify barriers to the reuse and recycling of construction and demolition waste, and identify potential educational and resource programs for individuals and businesses. The County continues to meet with this group and area businesses to encourage and publicize sources for reusable materials and markets for recyclables.

The Minnesota Materials Exchange (MME) Alliance program connects businesses that have reusable goods to those who can use them. The WLSSD operates the Northeast Alliance site of the MME at the Materials Recovery Center located at 2626 Courtland Street in Duluth. The Materials Recovery Center accepts recoverable and waste construction and demolition material (as listed above). The pricing for the recoverable material is half the cost of waste disposal materials.

Additionally, the Minnesota Recycling Markets Directory developed by the MPCA includes a listing of brokers, processors and end users of construction and demolition wastes. The MPCA is currently updating this directory through the implementation of a statewide survey of private, public and not for profit organizations to obtain information on the reuse, recycling and recovery services provided for construction and demolition materials. Table 20 shows the companies in northern Minnesota that accept recyclable construction and demolition debris.

Table 20
Northern Minnesota Construction/Demolition Recycling Markets

Company Name	Location	Materials Accepted
Azcon Corp	Duluth	Aluminum siding, steel, ferrous metals, lead, non-ferrous metals
Bay Side Recycling Corp	Duluth	Aluminum siding, steel
Bowman Construction Co Inc	International Falls	Asphalt, brick and concrete
Crow Wing Recycling	Brainerd	Aluminum siding, steel
Demolicious	Duluth	Concrete, metal, steel, wood, siding
Hartman Hide & Fur Co Inc	Detroit Lakes	Aluminum siding, steel
Kar Basher Inc	Twin Valley	Aluminum siding, steel
Kel's Used Auto Parts	Twin Valley	Aluminum siding, steel
Lakes Area Habitat for Humanity ReStore	Brainerd	Salvaged doors, fixtures, flooring, furniture, widows
Magnuson Trucking & Leasing	Bemidji	Aluminum siding, asphalt, steel, wood
Nordstrom's Solid Waste Transfer Station	Barnum	Metal, clean wood and other miscellaneous building materials

Company Name	Location	Materials Accepted
Perham Auto Wrecking	Perham	Aluminum siding, steel
Veit Demolition Landfill	Duluth	Concrete, metal and wood
Wadena Hide & Fur Co Inc	Wadena	Aluminum siding, steel
WLSSD Materials Recovery Center	Duluth	Wood, sheetrock, metal, concrete

Source: MPCA

I. Yard Waste Program

Since 1992, the State has regulated yard waste, and in 2001 banned yard waste from placement in landfills and mixture with MSW in Minnesota. This ban was enacted because lawn and garden wastes comprised a significant volume in landfills. The County policy is to comply with State requirements by banning yard waste from the MSW stream and encouraging residents to reduce the amount of yard waste by maintaining yards and property through environmental management programs.

Proper yard waste disposal includes home composting, hauling to a local yard waste drop-off site, or hauling to the County composting site. There are four public yard waste drop-off sites in the County as shown on Figure 6 including the North Carlton County Transfer Station site, the Moose Lake compost site, the City of Carlton compost site and the City of Cloquet compost site. The North Carlton County Transfer Station accepts yard waste (grass and leaves) free on an annual basis, and collects brush and tree debris for a fee (approximately \$17 for a level pickup truck). The City of Cloquet operates a yard waste facility, for city residents only, located at 410 Armory Road and accepts leaves and grass at anytime for no cost, brush two times a year in the spring and in the fall.

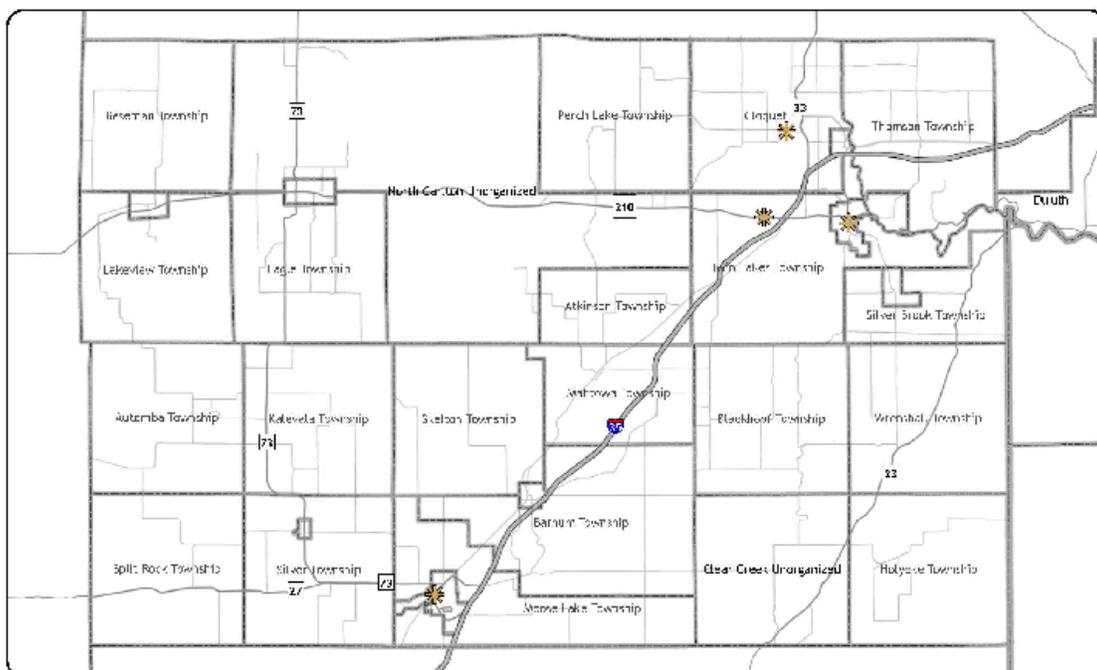


Figure 6
Carlton County
Yard Waste Facilities

Yard Waste Facilities

Additionally, the WLSSD accepts brush (any material over 1/4 inch diameter) at two sites for \$8 per yard. Leaves, grass clippings, house and garden plants are accepted free and are used at the WLSSD composting facility. Several private waste haulers also provide disposal services for yard waste for Carlton County customers. A Christmas tree recycling program, started over a decade ago, is offered at Moose Lake and at Sappi Paper in Cloquet.

Although allowed in greater Minnesota, the State banned the use of non-compostable bags for yard waste use beginning in 2010 for the Twin Cities Metropolitan Area. It is anticipated that the ban on the use of non-compostable bags will be extended to outstate Minnesota in the coming years.

J. Fond du Lac Reservation Waste Management Program

The County policy is to support waste management programs conducted by other jurisdictions (including the WLSSD as discussed throughout this Plan) within the County. The Fond du Lac Reservation recently updated its waste management program and adopted an updated solid waste and recycling ordinance to address solid and hazardous waste, illegal dumping, open burning and recycling. The program objectives are directed towards pollution prevention, waste reduction, enforcement and the provision of community education.

The Reservation's existing management system includes the following:

- One transfer station/waste collection site
- Waste reduction and education programs
- Curbside recycling and garbage collection offered to residential and commercial sectors by private waste haulers
- Year-round household hazardous waste facility
- Participation in the Carlton County Solid Waste and Recycling Advisory Committee (SWARA)
- Household composting and school vermi-composting program

The Fond du Lac Reservation also provides a household hazardous waste program on the reservation. The program includes hazardous waste "clean sweeps", disposal of electronics, a new recycling/hazardous waste building, the disposal of waste tires, the installation of a waste oil tank, and the disposal of hazardous waste. Household hazardous waste education outreach within community and schools is also a high priority of the Fond du Lac Reservation. The amount of abandoned waste is noticeably lower because of the effort put forward by the Fond du Lac Reservation Business Committee and the Environmental Program.

IV. Existing Program Management and Administration

Carlton County contains diverse physical features and land use patterns. The western side of the County is rural in nature with many open or farmed areas, forests, and wetlands while the eastern side includes several significant features including the Nemadji River basin and two State parks. The County falls within four watersheds and the majority of the County relies on groundwater as its primary drinking water supply.

The State forecasts for Carlton County indicate a steady increase in population and households over the next 25 years. Therefore, it is important that the County evaluate its current and future needs to responsibly manage its solid waste program to assure continued environmental and public health protection.

Carlton County's solid waste management program is funded primarily through processing facility tipping fees, a solid waste management fee established on tax statements, SCORE funds, grants and license fees. State funds to the County are decreasing while the costs for public programs are expanding to address additional environmental protection and energy needs. Carlton County recognizes the need for government involvement in subsidies, incentives, and other mechanisms that promote or support solid waste management and environmental protection activities.

A. Solid Waste Ordinance

Carlton County has developed an ordinance to provide for solid and hazardous waste regulation as required by State law. The Carlton County Solid Waste Ordinance was originally adopted in 1972 and was amended several times to incorporate new State mandates and other County requirements. The County Board adopted a new solid waste ordinance (Ordinance No. 17) in 1991 and it has been amended to incorporate requirements for the storage and disposal of recyclable materials.

Ordinance No. 17 governs the collection and disposal of solid waste materials, and establishes the recycling program according to the policies established in the County Solid Waste Management Plan. The ordinance requires that residents and businesses prepare, store and dispose of solid waste and recyclables in conformance with the ordinance and State law.

Specifically, the ordinance includes the following provisions:

- Includes standards for MSW preparation, storage and disposal
- Requires residents and businesses to recycle materials
- Bans the disposal of recyclable materials and electronic waste from the County disposal system including transportation to the landfill in Superior, Wisconsin
- Requires that the County license solid waste haulers and that reasonable fees be collected to reimburse the County for solid waste and recycling expenses

Additionally, the ordinance includes administrative sections on license requirements for collectors of solid waste and recyclable materials (application, financial assurance, inspection, and enforcement), solid waste charges and tipping fees, land disposal facilities, waste tire management, incineration and energy recovery, recycling facilities, and administration and enforcement. A copy of Ordinance No. 17 and amendments are included in Appendix E.

Ordinance No. 17 includes provisions to halt solid waste operations or activities that may endanger the health, welfare or safety of the public or cause pollution or impairment of the environment, and illegal dumping activities. The ordinance prohibits the on-site disposal of MSW in the County,

however, on-site disposal is permitted by State law in Automba and Split Rock Townships due to the unavailability of waste collection service.

The major provisions of the ordinance pertaining to MSW include:

- Solid waste must be kept in containers of sufficient size for the premises that are in good condition, watertight, rodent-proof, and are equipped with handles and a secure cover.
- Solid waste shall not be stored on public or private property for more than two weeks unless approved by the County.
- Wastes suitable for recycling shall not be stored on public or private property in a manner that creates a nuisance, blight, or health hazard.
- Household hazardous waste must be separated from MSW and transported to a HHW facility.

B. Solid Waste Funding and Expenditures

The Carlton County solid waste program is funded primarily through a solid waste management fee, licensing fees, tipping fees and State funding. In general, incoming funds have been adjusted, as needed, to accommodate increasing program expenses. The increase in expenses is due, in part, to funding new or expanded programs designed to meet statewide initiatives to protect environmental resources and reduce greenhouse gases.

Funding amounts and expenses for the solid waste program are presented in the County's Annual Budget and divided between the transfer station and recycling categories of the budget. Table 21 presents a summary of the County's Solid Waste budget. Actual expenditures and revenues are shown for 2008 and 2009, and budgeted items are shown for 2010. Detailed revenue and expenditure information are available at the Carlton County offices.

Table 21
Carlton County Solid Waste Revenues and Expenditures 2008 - 2010

Transfer Station - Revenues	2008 Actual	2009 Actual	2010 Budget
Solid waste fee	\$455,090	\$470,248	\$480,000
Licenses	\$2,110	\$1,895	\$2,200
Gate/Tipping Fees	\$743,667	\$756,188	\$800,000
Misc.	\$7,440	\$7,416	\$8,000
Refunds/Reimbursements	\$25,218	\$6,566	\$0
Transfers to Other Funds	<u>-\$100,000</u>	<u>-\$85,000</u>	<u>-\$99,000</u>
Total	\$1,133,525	\$1,157,313	\$1,191,200

Transfer Station - Expenditures	2008 Actual	2009 Actual	2010 Budget
Regular Salaries (full and part-time)	\$48,058	\$52,505	\$50,567
PERA, FICA, Medicare	\$6,776	\$7,527	\$7,408
Office Operations (post., phone, dues, printing, etc.)	\$4,660	\$12,757	\$15,200
Fees/Misc.	\$169,002	\$182,752	\$180,000
HHW Disposal Costs	\$15,815	\$5,873	\$16,000
WLSSD SWM Fees	\$21,519	\$21,219	\$22,000
Refuse Trucking	\$187,538	\$207,141	\$200,000
Transfer Station Processing Fees	\$461,658	\$505,601	\$495,500

Transfer Station - Expenditures	2008 Actual	2009 Actual	2010 Budget
Operations & Maintenance (elec., gas, repairs, fuel, const., other)	\$28,827	\$7,338	\$31,200
Sales tax	\$7,448	\$7,314	\$8,000
Other (consulting fees)	<u>\$0</u>	<u>\$0</u>	<u>\$15,000</u>
Total	\$951,301	\$1,010,027	\$1,040,875
Revenues-expenditures net	\$182,224	\$147,286	\$150,325
Recycling Revenues	2008 Actual	2009 Actual	2010 Budget
SCORE Grant	\$83,687	\$83,750	\$74,864 ¹
Intergovernmental Revenue	\$13,347	\$13,358	\$11,938
Refunds/Reimbursements	\$6,469	\$6,761	\$6,175
Transfer from Other Funds	<u>\$100,000</u>	<u>\$85,000</u>	<u>\$99,000</u>
Total	\$203,503	\$188,869	\$191,977
Recycling Expenditures	2008 Actual	2009 Budget	2010 Budget
Regular Salaries (full and part-time & per diem)	\$51,377	\$53,564	\$54,465
Insurance, PERA, FICA, Medicare	\$13,216	\$22,488	\$26,720
Office Operations (postage, phone, dues, printing, etc.)	\$2,342	\$2,752	\$3,450
Contracted Services	\$78,180	\$87,140	\$99,360
Operations & Maintenance (repairs, furniture, construct., other)	\$2,382	\$1,064	\$5,000
Other Expenses	<u>\$15,000</u>	<u>\$15,000</u>	<u>\$15,000</u>
Total	\$162,497	\$182,008	\$203,995
Revenues-expenditures net	\$41,006	\$6,861	-\$12,018

¹Actual received from SCORE in 2010 was \$84,412

Source: Carlton County

1. Revenues

The Carlton County solid waste management program currently receives funding from the following sources:

a. Solid Waste Management Fee

The County charges a Solid Waste Management fee collected on tax statements to residents and businesses for the operation and maintenance of the solid waste program. The County Board considers the fees on an annual basis and fees are adjusted, infrequently, based upon inflation and program needs. The fees are used to staff and operate the North Carlton County Transfer Station and associated waste management programs conducted at the facility such as the HHW program. Table 22 lists the current solid waste management fees for Carlton County.

Table 22
Carlton County Solid Waste Management Fee

<u>Property Type</u>	<u>Annual Fee</u>
Residential Properties	
Residential units (single family, mobile homes, and 1-3 unit apartments)	\$18
Seasonal recreational properties (including mobile homes)	\$12

<u>Property Type</u>	<u>Annual Fee</u>
Non-residential Properties	
Valuation from \$0 to \$49,999	\$80
Valuation from \$50,000 to \$99,999	\$155
Valuation from \$100,000 to \$199,999	\$255
Valuation from \$200,000 to \$499,999	\$510
Valuation from \$500,000 to \$999,999	\$1,020
Valuation great than \$1,000,000	\$2,040

Source: Carlton County Planning and Zoning Office

b. North Carlton County Transfer Station Tipping Fees

Tipping fees and fees for certain problem materials are paid by waste haulers and citizens for the use of the transfer station for the delivery of MSW and problem waste materials such as appliances and tires. Appendix F includes the North Carlton County Transfer Station gate fees. Additionally, fees are charged for appliances and electronics as reported earlier in this Plan.

c. Licensing Fees

Carlton County Ordinance No. 17 requires waste haulers operating in the County to remit a fee based on the number of vehicles used in the collection activities. Private recycling facilities and one demolition landfill operator are also required to remit a licensing fee.

d. Miscellaneous Funds

The County also collects miscellaneous fees, refunds and reimbursements for operation of the waste management program and facilities.

The revenues for the Carlton County recycling program are as follows:

a. SCORE

The State established the SCORE program in 1989 to assist counties with State grant funding to support local source reduction and recycling programs.

b. Intergovernmental Revenue

The County receives certain revenues from other governmental units for certain programs.

c. Transfer Station Revenues

Revenue is transferred from the transfer station account to provide the local match for SCORE funding.

2. Expenditures

The primary expenses for the Carlton County solid waste management program are the costs to operate the North Carlton County Transfer Station (including the HHW and other facilities located at the site) and the recycling program consisting of the costs to operate the recycling sheds and providing on-going education to County residents and businesses.

a. MSW Program

The major expenditures for the Solid Waste Program are for the operation of the transfer station, hauling waste to the Superior, Wisconsin landfill, and processing fees for the disposal of MSW. The County also incurs expenses in the enforcement of the solid waste ordinance, mostly for staff salaries.

b. Household Hazardous Waste and Problem Materials Programs

The programs include operating the North Carlton County Transfer Station HHW and problem

materials drop-off facility, specialized programs (such as the free product exchange center and appliance coupons) and education for these materials. Additionally, costs include pick-up and disposal of MSW and problem materials found on state and county facilities including highways, parks and recycling sheds.

c. Waste Reduction and Recycling Programs

Waste reduction and recycling expenditures are for county programs and activities aimed at reducing and recycling as much of the waste stream as possible. Staff salaries include county personnel that participate in these activities. Expenses for recycling sheds and program operations include seasonal facility capital costs, and public education expenses relate to information and promotion of techniques to encourage County residents and businesses to reduce, reuse and recycle waste. The County provides an annual grant to the townships and small cities for operation of the recycling sheds.

3. SCORE Revenues and Expenditures

Table 23 shows the actual revenues and expenditures from 2005 to 2009 as submitted to the MPCA in the annual SCORE reports.

Table 23
SCORE Revenues and Expenditures 2005 - 2009

Revenues	2005	2006	2007	2008	2009
Balance Carryover from Previous Year	\$0	\$0	\$-59,142	\$-68,148	\$-43,155
2009 Revenues					
General Revenue	\$0	\$0	\$0	\$0	\$0
Service Fee	\$0	\$0	\$0	\$0	\$0
Tipping Fee	\$33,726	\$58,860	\$44,074	\$58,995	\$76,639
SCORE Funds	\$75,048	\$75,545	\$79,864	\$83,687	\$83,750
WLSSD Pass through	\$11,970	\$12,048	\$12,738	\$13,347	\$13,358
HHW Funding	\$6,321	\$6,547	\$8,723	\$6,469	\$6,761
Material Sales	\$0	\$0	\$0	\$0	\$1,260
Other	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$241</u>
Subtotal	\$127,065	\$153,000	\$145,399	\$162,498	\$182,008
Expenditures	2005	2006	2007	2008	2009
SCORE Administration	\$44,226	\$56,301	\$56,895	\$61,415	\$76,255
Recycling	\$86,550	\$93,902	\$82,420	\$79,470	\$87,561
Yard Waste	\$1,900	\$3,030	\$2,020	\$1,880	\$1,447
HHW/Problem Materials Management	\$51,033	\$62,328	\$54,399	\$42,037	\$47,053
Education	\$2,010	\$1,982	\$2,901	\$5,851	\$6,812
Grants to Cities/Townships	<u>\$14,396</u>	<u>\$14,956</u>	<u>\$14,912</u>	<u>\$15,000</u>	<u>\$15,000</u>
Subtotal	\$200,115	\$232,499	\$213,547	\$205,653	\$234,128
Total Revenues	\$127,065	\$153,000	\$145,399	\$162,498	\$182,008
Total Expenditures	<u>\$200,115</u>	<u>\$232,499</u>	<u>\$213,547</u>	<u>\$205,653</u>	<u>\$234,128</u>
Net	-\$73,050	-\$79,499	-\$68,148	-\$43,155	-\$52,120

Source: SCORE Reports

C. Solid Waste Administration

The administration and staffing of the Carlton County solid waste program is one of the major responsibilities of the Department of Planning and Zoning. This department is also responsible for the administration of:

- Environmental programs that includes surface and groundwater water protection, and shoreland and wetland management
- Planning and zoning activities
- Individual sewage treatment system permits

The staff assigned to solid waste management includes a solid waste administrator, resource/recycling coordinator, and two persons assigned to activities at the North Carlton County Transfer Station. Additionally, City or township staff performs duties at several of the recycling sheds. The resource/recycling coordinator is responsible for all solid waste (MSW and HHW disposal, recycling, waste reduction) education and outreach programs in the County, and administration of the recycling program.

The outreach programs include:

- ✓ hazardous waste education (mercury and other persistent bioaccumulative toxics) at schools, community and regional events, community group meetings, businesses
- ✓ thermometer exchanges
- ✓ appliance and tire coupon program (funded by the WLSSD) administration

The duties of the solid waste administrator include overall program management and coordination with other regional groups involved with solid waste activities. These groups include:

- Carlton County cities and townships
- WLSSD (solid waste, recycling, food waste task force)
- Northeast Minnesota Waste Advisory Committee (NEWAC), education meetings, burn barrel program
- Northeast Minnesota Mattress Recycling Work Group
- Cities and Counties Involved in Source Reduction and Recycling (CCISRR)

The County Board established a countywide advisory group in the late 1980s to assist the Board and staff in developing programs and policies pertaining to waste management. Named the County Solid Waste and Recycling Advisory Committee (SWARA), the committee was reorganized in 2004 to include one member from each of the five County Board districts, a County Board member, an at-large member, a Fond du Lac member, a business member, and a student member.

D. Plan Review and Public Participation

Carlton County has sought and utilized a variety of public participation and input techniques throughout the development of the solid waste and recycling program. The 2010 Carlton County Solid Waste Management Plan was developed utilizing input and information from County staff, and the Duluth Centroid subgroup (includes representatives from Cook, Lake and St. Louis Counties, the WLSSD, and MPCA). The Carlton County staff has updated the SWARA committee about the components of the 2010 Solid Waste Management Plan.

The County Board will review and approve this plan (along with any desired changes) before it is submitted to the MPCA. The MPCA staff has provided guidance throughout the preparation of the 2010 plan to assure compliance with the newly adopted Chapter 9215 rules pertaining to the

preparation of County Solid Waste Plans.

All documentation of public input is maintained by the Carlton County Planning and Zoning Office located at the Carlton County Courthouse in Carlton, Minnesota. The County has and will continue to invite public participation in the review of existing solid waste and recycling programs, and County efforts to provide education to reduce waste.

An annual review of the County's integrated waste management program is conducted during the first quarter of each year and a report of the previous year's waste management and recycling performance is presented to the County Board. As a result of the annual review or changes to the State, regional (WLSSD) or County program may require an amendment to this plan. Any modifications or amendments to this plan will be submitted to the MPCA for review and approval.

The 2010 Carlton County Solid Waste Management Plan and accompanying information related to waste management and recycling in Carlton County is available for review at the Carlton County Courthouse and the Duluth MPCA office.

V. Proposed Integrated Solid Waste Management Plan

This chapter contains the goals and objectives (consisting of policies and programs) to guide the implementation of the proposed integrated solid waste management plan to Carlton County residents, business and organizations. It includes a section discussing opportunities and constraints, based upon anticipated conditions in the County and current economic conditions, that will affect the future solid waste management program in Carlton County, and a listing of the changes from the 2000 Solid Waste Management Plan.

The Proposed Integrated Solid Waste Management Plan builds on the applicable components of the 2000 Plan. Additionally, the Plan adds new initiatives, establishes County waste management goals and policies, presents new volume goals for waste generation and recycling consistent with State rules, and includes a ten year budget for the Carlton County Solid waste Management Program.

A. Waste Management Constraints & Opportunities

The Plan and policies have been developed in recognition of the following key waste management constraints and opportunities specific to Carlton County:

- ✓ The County will continue to experience population, household and job growth, and will need to accommodate solid waste management services for the growing population and business community.
- ✓ It is expected that the reduction in state and local revenue sources will impact the expanded delivery of a fully integrated solid waste management program.
- ✓ The current recession and rate of unemployment creates a mounting problem in state and local efforts to sustain existing levels of property tax revenues necessary to operate a fully integrated solid waste management program.
- ✓ The County will continue to have a dispersed rural growth pattern of households, outside of the major communities. Therefore, it will be difficult to support countywide household traditional curbside collection or organics (primarily food waste) recycling programs on a cost effective basis where low densities or volumes exist.
- ✓ State trends and solid waste management data collected by the MPCA may suggest the recycling rates, waste reduction efforts and reuse opportunities have reached their peak.
- ✓ The County expects to continue to participate with the WLSSD in a Joint Powers Agreement to negotiate the disposal of solid waste materials on a countywide basis, and coordinate solid waste responsibilities in the geographic area that overlaps the County and the WLSSD.
- ✓ Opportunities exist for successful public and private institutional source separated organics programs. These institutions include the Moose Lake correctional facilities, the seven public school districts within the County and the Fond du Lac Community College.

B. Changes from 2000 Solid Waste Management Plan

This proposed plan incorporates several changes compared to the Solid Waste Management Plan adopted by Carlton County in 2000. The changes stem from several factors including the following:

1. New Statewide Policies and Statutes

- The emphasis on resource efficiency by the adoption of strategies to reduce, recycle and

recover certain materials and goals to eliminate the landfilling of unprocessed MSW.

- State law banning cathode ray tubes in MSW disposal.
- New policies aimed at the management of organic wastes.
- Revised rules governing the preparation of County solid waste management plans.
- Reduced or static funding levels from the State.

2. Regional and WLSSD Waste Management Changes

- Transfer of MSW from the WLSSD facilities to the Superior, Wisconsin Landfill.
- New demonstration or collaborative programs with the Northeast Waste Advisory Committee (NEWAC) to address certain recyclables and problem materials.
- Amendments to the WLSSD Joint Powers Agreement.

3. New County Programs and Services

- Additional educational programs to encourage the reduction, reuse and recycling of MSW and other waste materials.
- Programs to respond to State law and policy changes regarding problem materials and organics.

It is recognized that waste reduction and reuse are the primary stewardship techniques needed in Minnesota to reduce greenhouse gases and reduce the use of non-renewable sources of energy. However, current waste management practices and responsibilities need significant adjustment to achieve the stewardship goals that are currently being discussed by various stakeholder groups in Minnesota, including the Integrated Solid Waste Management (ISWM) Stakeholder Work Group and the MPCA. Nevertheless, Carlton County believes the role of the County is to support and promote waste reduction, recycling and reuse initiatives that do not place additional financial burdens on residents and businesses.

C. Regional (Duluth Centroid) Goals

The Duluth Centroid participated in a process hosted by the MPCA, termed "The Integrated Solid Waste Management Stakeholder Process" to establish long term goals for waste reduction activities in 2008-09 to achieve greenhouse gas emission reduction targets. The long term goals were established for three scenarios that reflect different degrees of new legislation, state/local funding, regional/local strategies and private sector activities. The scenarios are all dependent upon additional legislation, expanded funding to cities and counties, State support for recycling and energy markets, and other possible initiatives.

The range of goals based upon the scenarios for the Duluth Centroid is presented in Table 24. The full Duluth Centroid Implementation Plan is attached in Appendix G.

Table 24
Duluth Centroid Waste Management Goals

Waste Management Method	2005	2025
Source Reduction*	0%*	.77% - 5.77%*
Recycling	47%	51.9% - 59.9%
Organics	.1%	5.4%
Waste to Energy	0%	0% - 34.7%
Landfill	53%	42.7% - 1.5%

*Source reduction percentage represents cumulative percentage of the waste stream reduced from 2005 to 2025, not a 2025 target amount Source: MPCA

The descriptions of the strategies needed to achieve the goals that are applicable to Carlton County are as follows:

<u>Scenario 1</u>	<u>Scenario 2</u>	<u>Scenario 3</u>
* Extend life of workplace/personal computers	* All scenario 1 strategies	* All Scenario 1 and 2 strategies
* Reduce junk mail	* Expand volume-based pricing	* Expanded education efforts
* Support State development of recyclable and energy markets	* Regional processing of waste	
* Support container deposit legislation	* Landfill gas to energy	
* Expand organics composting programs	* Perpetual care at all landfills	
* Increase recycling rates to 50%	* Increase recycling rates to 55%	
* Gas flaring at landfills		
* Evaluate regional waste processing feasibility		

Source: MPCA

D. Carlton County General Solid Waste Goals and Policies

Carlton County endorses the State goals to protect the state's natural resources and public health by improving waste management as established in Minnesota Statutes Chapter 115A to serve the following purposes:

- reduce the amount and toxicity of waste generated;
- separate and recover materials and energy from waste;
- reduce indiscriminate dependence on disposal of waste;
- coordinate of solid waste management among political subdivisions; and
- the orderly and deliberate development and financial security of waste facilities including disposal facilities.

Further, the County supports the State's goal to promote an integrated waste management system with the following waste management practices, listed in order of preference:

- ✓ waste reduction and reuse;
- ✓ waste recycling;
- ✓ composting of yard waste and food waste;
- ✓ resource recovery through mixed municipal solid waste composting or incineration;
- ✓ land disposal which produces no measurable methane gas or which involves the retrieval of methane gas as a fuel for the production of energy to be used on-site or for sale; and
- ✓ land disposal that produces measurable methane and which does not involve the retrieval of methane gas as a fuel for the production of energy to be used on-site or for sale.

The Board of Commissioners endorses the following overall goals for integrated solid waste management:

- Goal 1.) Maintain and expand existing cost-effective solid waste management programs in the County.

- Goal 2.) Maximize waste reduction and reuse activities in the public and private sectors.
- Goal 3.) Maximize solid waste education efforts for County residents and businesses.
- Goal 4.) Maximize recycling opportunities throughout the County.
- Goal 5.) Create opportunities for cost-effective organics composting.
- Goal 6.) Reduce hazardous components in the solid waste stream.
- Goal 7.) Minimize the amount of MSW that must be landfilled.

The following overall policies are established to guide Carlton County solid waste management programs:

- Policy 1.) The County supports and will participate in State and regional efforts to reduce reliance on the use of solid waste landfills by emphasizing waste education and the reduction, reuse, recycling and processing of waste.
- Policy 2.) The County supports State and regional laws, rules and programs to encourage source reduction through volume or weight-based pricing for the collection and disposal of solid waste.
- Policy 3.) The County will provide effective solid waste management programs and educational opportunities to Carlton County residents, businesses, and public/non-profit organizations, to the extent reasonably and financially possible.
- Policy 4.) The County will practice waste reduction, recycling and reuse in County activities, and supports other public and private initiatives and participation to reuse and reduce waste.
- Policy 5.) The County supports local programs and initiatives to reduce or eliminate illegal dumping activities and hazardous materials in the waste disposal stream, to the extent reasonable and practical.
- Policy 6.) The County will expand educational efforts and program opportunities for organics and pharmaceutical disposal.

E. Carlton County Solid Waste Management Programs and Policies

Carlton County has established the following programs consisting of objectives and implementation steps to guide waste management activities over the next ten years. Generally, the objectives are designed to continue existing solid waste reduction and recycling programs conducted by the County to achieve County, Duluth Centroid and State goals and policies. Additionally, the programs are designed to discourage illegal disposal of waste materials, as regulated by the provisions of Ordinance 17. The County anticipates greater participation by the private sector and other institutional entities over the next ten years to contribute to the success of waste reduction, recycling and reuse programs.

The Carlton County Proposed Solid Waste Management Plan programs are funded according to a budget (see discussion in section F. of this Chapter) that anticipates various revenue sources and designates expenditures for the administration, operation and maintenance of the North Carlton County Transfer Station and related solid waste disposal programs, and the recycling program. The components are interrelated in that a portion of the transfer station budget funds the recycling program. The description of the existing program revenues and expenditures is found in Chapter IV - Program Management and Administration of this Plan.

Funding for future solid waste management programs will be obtained from the variety of fees collected from Carlton County residents, businesses, and users of the transfer station; and

recycling grants and other revenues from the State and other government entities. The revenue from the solid waste fee is projected to decrease a modest amount beginning in 2011, to reflect the shift to user fee revenues. This Plan assumes that the County will continue to adjust the waste hauler/recycler licensing fees and tipping fees to a level sufficient and reasonable to continue to fund the solid waste management programs for the next ten years.

This Plan assumes that no additional recycling revenue will be available from the State or other governmental entities State agency over the next ten years. The County does not anticipate any increases in the existing staffing levels over the next ten years, unless additional funding from the State becomes available. However, the County will continue to evaluate staffing levels on an annual basis to ensure that the County is able to maximize waste management programs.

1. Solid Waste Reduction

The State continues to pursue programs to reduce the amount and toxicity of the MSW stream. Carlton County is committed to support solid waste reduction, reuse and recycling programs that meet State solid waste reduction goals and compliance with Waste Management Act rules. Further, the County will continue existing programs and implement additional cost effective waste reduction strategies that will contribute to achieving the regional goals for the Duluth Centroid.

a. Policies

- Policy 1.) The County will participate in regional and State efforts that result in cost effective waste abatement and pollution prevention, and the fair allocation of costs and liabilities to provide efficient services that meet the diverse needs within the region.
- Policy 2.) The County supports public and private pricing policies that provide incentives for generators to manage solid waste in the following descending and appropriate preferences, as most practical: reuse, recycle, compost, resource recovery and land disposal.
- Policy 3.) The solid waste management system will account for all costs of managing waste, including risk management, long-term care, and environmental costs.
- Policy 4.) The County will maximize waste reduction, reuse, and recycling through contract management.
- Policy 5.) The County will facilitate and support community service projects that promote waste reduction through reuse and recycling.
- Policy 6.) The County will continue to participate and collaborate with regional partners including the WLSSD and the Northeast Waste Advisory Committee (NEWAC), County municipalities, the Fond du Lac Reservation, and other northeastern Minnesota counties to develop and promote innovative and cooperative reuse, recycling and waste reduction efforts. These efforts include special waste collection events, shared programs (such as disposal of pharmaceuticals and product stewardship) and additional educational opportunities for residents and businesses.
- Policy 7.) The County will seek public input regarding significant changes to the operation of the County solid waste management program.
- Policy 8.) The County will utilize reporting measures to assess the actual amounts and types of non-MSW generated, reused, recycled, processed, and disposed.

b. Implementation Programs

Currently, the County is receiving the three percent source reduction credit and the five percent yard waste credit from the MPCA. The County plans to continue the existing solid

waste reduction programs and activities to qualify for the three percent source reduction and five percent yard waste credits on an annual basis throughout the period covered by this plan. Generally, the existing and future solid waste reduction activities are based on strategies that motivate residents and businesses to manage waste in a manner that reduces overall waste generation.

The existing activities and programs currently supported by the County are described in Chapter III - Existing Solid Waste Management System of this plan. The County plans to continue existing source reduction activities as summarized below:

- ✓ Continued enforcement of Ordinance No. 17, and amendments, that governs the collection and disposal of all solid waste materials, requires recycling by residents and businesses, bans illegal dumping activities and the disposal of recyclable materials (including electronics) in the Superior, Wisconsin landfill.
- ✓ Source reduction and recycling efforts for County owned facilities and County business operations that include the utilization of *The Environmentally Preferable Purchasing Guide*, and the support for policies identified by County Buildings Recycling Committee.
- ✓ Support and continued funding for the Product Exchange area for use by businesses and residents at the North Carlton County Transfer Station.
- ✓ Support and continued funding for solid waste education to residents and businesses via the quarterly Resource and Recycling newsletter, the distribution of specialized waste reduction/recycling materials pertaining to techniques and programs, and on-site visits to certain facilities including schools and public institutions. Additionally, the County continues to provide education and support for activities sponsored by the Burn Barrel Program.
- ✓ Promote the Minnesota Waste Wise Program and other waste reduction activities such as backyard composting, consumer education regarding purchasing practices, and specialized waste and energy reduction events and services.
- ✓ Promote a product stewardship initiative for manufacturers and retailers aimed at specific wastes including consumer electronics, paint and mercury switches. The State encourages county efforts to promote manufacturer and retailer responsibility to reducing the volume of the waste stream.

The County projects growth in the annual amount of solid waste generated in the County due to forecasts of modest increased population and business growth to 2019 as depicted in Table 25. However, the per capita amount of waste generation is projected to remain level at approximately .59 tons per person annually due to source reduction education and private stewardship activities. Based upon implementation programs noted above, the County projects that the amount of MSW sent to the Superior, Wisconsin landfill will be reduced over the next ten years. Table 25 depicts the estimated reduction in MSW in 2014 and 2019, compared to 2009.

Table 25
Waste Generation and MSW Disposal 2009 - 2019

	2009 ²	2014	2019
Projected population ¹	34,266	34,957	35,662
Waste generated (tons)	20,2452	20,650	21,050
Per capita waste generated (tons)	0.59	0.59	0.59
MSW to Superior, WI landfill (tons)	12,4712	12,107	11,941

¹Source: State Demographer

²Actual tonnage

2. Solid Waste Education

As noted above, much of the County's efforts to reduce the amount of solid waste include educational efforts and programs. The County believes that continued public education about waste reduction is a primary priority that contributes to achieving waste reduction goals and program activities. Therefore, the County is committed to providing ongoing public education in all elements of the integrated solid waste management program.

The County Board is assisted in directing solid waste programs and education by an advisory committee. The SWARA brainstorms new programs and solid waste education that can be provided to County residents at a low cost or free, for example the Christmas tree and holiday lights disposal programs. The SWARA meets on a quarterly basis and receives a per diem for meeting attendance and expenses.

a. Policies

- Policy 1.) The County will provide education to residents, businesses and organizations about reducing waste through reuse, reduction and recycling, including the proper disposal of hazardous and other problem materials to protect public health and the environment.
- Policy 2.) The County will provide waste education information to the public to discourage improper disposal and illegal dumping of waste materials through local media, locally produced pamphlets, newsletters, etc., and community education programs.
- Policy 3.) The County will inform residents and businesses of the provisions and enforcement measures of Ordinance 17 and other State laws and regulations pertaining to waste disposal.

b. Implementation Programs

The existing educational activities and programs currently conducted by the County are described in Chapter III - Existing Solid Waste Management System of this plan. The County plans to continue the current waste education activities over the next ten years, including the following:

- ✓ Support and continued funding for solid waste education to residents and businesses via the quarterly Resource and Recycling newsletter.
- ✓ Staffing and supporting materials for on-site visits to certain public facilities including schools and institutions, businesses and other organizations. For example, the staff has assisted the Barnum, Moose Lake and Cloquet School Districts with recycling policy updates and implementation and distributed recycling educational materials.
- ✓ Distribution of materials to County business and residents regarding alternatives to illegal dumping, and waste reduction and recycling information and opportunities.
- ✓ Support and funding for periodic newspaper education campaign with continued articles and advertisements in local news media.
- ✓ Support and distribution of informational brochures at sites around the County such as the courthouse, Human Services building, public schools, and libraries.
- ✓ Support and funding for hazardous waste education at schools, community and regional events, community group meetings, businesses.
- ✓ Support and funding for the operation of SWARA.

3. Recycling

The existing recycling program developed by the County has been very successful in maximizing

the effectiveness of recycling collection in a predominately rural area. The County has met and exceeded state mandated recycling goal of 35 percent over the past years.

The County administers the grant/transfer station funded recycling program to operate and maintain the recycling sheds for residents that do not have curbside recycling or prefer to self-haul and the County waste education efforts. Although the County plans for continued efforts to increase the amount of recycling over the next ten years, the staffing levels for the program will not change unless additional revenue sources become available to the County.

The County anticipates that the greatest opportunities for increasing the amount of recycling lie with the private sector and institutional organizations that are located within the County. The County is committed to supporting increased efforts by the private sector and institutions to recycle.

a. Policies

Policy 1.) The County will encourage residents and businesses to utilize private and public facilities for the proper recycling or reuse of various materials.

Policy 2.) The County will continue to fund and operate the recycling program including education to properly dispose of recyclable materials.

b. Implementation Programs

A detailed description of the existing program and recycling facilities are described in Chapter III - Existing Solid Waste Management System of this plan. The County plans to continue current recycling activities over the next ten years, support new cost-effective initiatives, and endorse private sector initiatives, as summarized below:

- ✓ Enforcement of Ordinance No. 17, and amendments, that requires recycling by residents and businesses and bans the disposal of recyclable materials (including electronics) in the Superior, Wisconsin landfill. Additionally, the ordinance requires all waste haulers and recyclers to be licensed, submit monthly tonnage reports to the County, and use volume based pricing to encourage recycling.

Funding and operation of the 12 public recycling facilities in Carlton County for residents that do not have curbside pickup or prefer to self-haul.

- ✓ Funding and support for specialized recycling projects, composting programs, and community event program and education campaigns (Christmas tree, cell phone, rechargeable battery).
- ✓ Funding and support for recycling information in the quarterly Resource and Recycling newsletter.
- ✓ Funding and support for cost-effective recycling programs for certain designated items such as mattresses and box springs, and other items.
- ✓ Support and education for private and institutional sector initiatives such as specialized recycling collections and events, including source separated organics.
- ✓ Reporting of the actual tonnage collected for specific recyclable items in the SCORE program

The County expects that waste generation will increase due primarily to household and business growth. At the same time, the County anticipates that the amount of recycling will increase due to continued and more aggressive State and local policies and programs. Table 26 depicts the estimated annual increase in the collection of recyclables in 2014 and 2019, compared to 2009, and the percentage of recyclables of total MSW generated with and without the MPCA credits for yard waste and source reduction programs.

Table 26
Projected Recycling 2014 and 2019

	2009 ¹	2014	2019
Projected population ²	34,266	34,957	35,662
Waste generated - tons	20,245	20,650	21,050
Total recycled materials - tons	6,553	7,281	7,803
% Recycled materials (without MPCA credit)	32.4%	35.3%	37.1%
% Recycled materials (with MPCA credit)	37.4%	40.3%	42.1%

¹2009 SCORE Report

²Source: State Demographer

The County projects that the percentage of recyclable materials collected to reach over 37 percent excluding MPCA credits in 2019 and over 42 percent with MPCA credits in 2019. If the projections in Table 26 continue into the future, the County should near the Duluth Centroid recycling goal of 51.9 percent in 2025.

Table 27 shows the projected increase in tonnage of certain recyclables by category in Carlton County recyclables in 2014 and 2019, compared to 2009. The table includes figures derived from the MPCA Goal Volume Tables in Appendix H that contain detailed solid waste projections and calculations.

Table 27
Projected Recycling of Certain Materials (tons)
2014 and 2019

	2009 ¹	2014	2019
Total residential	3,879	4,037	4,198
Mattresses/box springs (inc. in residential total)	32	33	34
Commercial/industrial/institutional	1,473	1,652	1,789
Source separated organics	233	620	842
Electronic appliances	50	51	52
Latex paint	12	12	12
HHW	3	3	3
Recycling subtotal	5,650	6,375	6,897
% of MSW materials recycled (excluding problem materials)	27.9%	30.9%	32.8%

¹Source: 2009 SCORE report

The increases in the tonnage collected for residential recyclables to 2019 is projected to occur due to household growth and the continued awareness and implementation of recycling and reuse programs. The continued emphasis on specialized programs and events in the collection of the commercial/industrial/institutional category of recyclables, increased collection of electronic products (initiated by the private sector) and the new source-separated organics program contribute to the projected increase in recycling volume.

One of the new programs that the County implemented in 2004 and began reporting in the 2006 SCORE reports is mattress recycling. As described earlier, the County will continue to participate with other northeastern Minnesota counties to collect mattresses and box springs at the North Carlton County Transfer Station for deconstruction and recycling by other partners.

4. Yard Waste

Carlton County receives a five percent yard waste credit from the MPCA. Over the next ten years,

the County will continue to operate the yard waste and compost site located at the North Carlton County Transfer Station and to provide education to residents that include yard waste reduction techniques such as composting and source reduction.

a. Policies

- Policy 1.) The County will work with haulers to encourage collection of yard waste through current waste collection programs.
- Policy 2.) The County will promote and provide educational materials and host or attend events to encourage yard waste reduction, backyard composting and other methods to reduce yard waste and encourage composting.

b. Implementation Programs

The County plans to continue the existing program for at least the next ten years as described in Chapter III - Existing Solid Waste Management System of this plan. Specifically, the County plans to continue the following:

- ✓ Support and continued funding for yard waste education to residents and businesses via the quarterly Resource and Recycling newsletter and other sources.
- ✓ Support and continued funding for specialized yard waste projects such as the composting, holiday tree, etc.)
- ✓ Funding and operation of the County yard waste disposal site and support for other yard waste disposal sites.
- ✓ Support for programs that encourage "backyard" composting and other methods to dispose of yard waste and compostable materials.

5. Source-separated Organics

The existing organic waste management program includes education to residents about composting and to businesses about the processing/reuse of organic material (e.g. food-to-people, food-to-animals, anaerobic digestion, etc.). For several years the County has provided education to residents about back yard composting through the County's recycling newsletter and advertised the availability of compost bins at a reduced rate, and other techniques and information available through the University of Minnesota Extension Service.

Recently, a greater emphasis has been placed on opportunities for County businesses and institutions to participate in source-separated organics programs. In 2009, the WLSSD adopted an ordinance to divert pre-consumer organic waste and implemented an organics collection program which involves Carlton County businesses within the WLSSD.

Businesses and institutional uses in Carlton County contract for organics hauling service to adhere to ordinance requirements. The WLSSD is currently working with the Black Bear Casino in the Carlton area and other large commercial and industrial businesses in the WLSSD portion of the County to develop and implement an organics waste separation and disposal program.

a. Policies

- Policy 1.) The County will work with haulers to encourage collection of organics through current waste collection programs.
- Policy 2.) The County will work with State, institutional and educational facilities and other entities to promote programs for source-separated organic waste.
- Policy 3.) The County will provide educational materials to encourage and promote backyard organics composting by residents.

b. Implementation Programs

In addition to supporting and collaborating with the WLSSD efforts into the future, Carlton County plans to continue to work with large public institutions to develop and implement individualized organic waste management programs.

The County staff has suggested that the Moose Lake Correctional facility review its current recycling policy and determine the feasibility of developing a source separated organics program at the facility. The County plans to continue source separated organic activities and programs as described in Chapter III - Existing Solid Waste Management System of this plan over the next ten years, as summarized below:

- ✓ Reporting of source separated organic materials on an annual basis in the SCORE report.
- ✓ Support source separated organics programs outside of its jurisdiction including those conducted in the WLSSD of the County and the Fond du Lac tribal lands and facilities.
- ✓ Work with large institutions in the County to adopt source-separated organics policies and programs.
- ✓ Encourage backyard residential organics composting.

Based upon the above activities, the County projects that the amount of source separated organics to increase over the next ten years. Table 27 includes the estimated annual increase in the collection of source separated organics from 2009 to 2019. The efforts to increase source-separated organics results in a growth percentage from just over one percent of the waste stream in 2009 to four percent in 2019 (see Appendix H).

6. Problem Materials

The County plans to continue existing programs for certain problem materials including waste tires, electronic products, appliances, automotive mercury switches and motor vehicle fluids. The County projects that the amount of materials collected for recycling of problem materials will increase over the next ten years, especially in the electronics category.

In 2009, the County initiated reporting the actual amount of problem materials collected for recycling for all materials except for vehicle batteries. As noted in the Recycling Program described earlier in this chapter, the County plans to continue reporting actual tonnage of problem materials collected at the North Carlton County Transfer Station.

a. Policies

- Policy 1.) The County will fund and operate the problem materials program to properly dispose of hazardous/problem materials, including automotive (waste oil, filters, tires, switches, etc.) materials, batteries and other toxic materials.
- Policy 2.) The County will evaluate and provide adequate facilities at the North Carlton County Transfer Station site for problem materials to be disposed or recycled.
- Policy 3.) The County will provide educational resources (including environmental consequences and protection) and programs about the reuse and disposal of problem materials to businesses, community groups and organizations.
- Policy 4.) The County will provide residents and businesses with safe and convenient recycling and disposal opportunities for electronics.
- Policy 5.) The County will participate in regional and other state programs to analyze and reduce toxic materials in the waste stream and continue to evaluate the county's collection and disposal methods for problem materials.

Policy 6.) The County will support and promote initiatives by manufacturers and retailers to practice mandatory and voluntary product stewardship, including reuse and recycling.

b. Implementation Programs

Table 28 depicts the amount of certain problem materials, in five year increments, that the County anticipates collecting at the North Carlton County Transfer Station over the next ten years.

Table 28
Recycling of Problem Materials (Tons) 2014 and 2019

Type of Material Recycled	2009 ¹	2014	2019	5 Year Increase	5 Year Increase
				2009-2014	2015-2019
Antifreeze	4.0	4.0	4.0	0.0	0.0
Electronic Products	50.0	51.0	52.0	0.8	1.0
Major Appliances	223.0	223.9	223.9	0.9	0.0
Vehicle Batteries	209.0	209.8	209.8	0.8	0.0
Tires	174.0	174.7	174.7	0.7	0.0
Used Oil	255.0	256.0	256.0	1.0	0.0
Oil Filters	36.0	36.1	36.1	0.1	0.0
Latex paint	12.0	12.0	12.0	0.0	0.0
HHW	3.0	3.0	3.0	0.0	0.0

¹SCORE Report

Below is a brief description of the programs that will continue to be funded and administered by the County over the next ten years. A detailed description of the existing programs by type of material is described in Chapter III - Existing Solid Waste Management System of this plan.

- ✓ Automotive Mercury Switches: Carlton County accepts mercury switches (and other mercury bearing wastes) at the North Carlton County Transfer Station or the WLSSD HHW facility. Additionally, several businesses in the County participate in a mercury vehicle switch program and certain small businesses may dispose of specific amounts of mercury wastes at the WLSSD Clean Shop.
- ✓ Batteries: The County operates a free lead-acid battery collection program at the County transfer station and free collection of rechargeable batteries at the HHW. Residents may also dispose of all batteries at the WLSSD HHW facility. Most lead acid batteries used in automobiles are managed by retail battery outlets, scrap metal dealers and service stations where batteries are sold. Additionally, many retail establishments in the County provide a battery recycling program as required by law. Table 28 depicts the amount of vehicle batteries the County anticipates collecting at the transfer station over the next ten years.
- ✓ Electronic Products: Carlton County does not permit residents to place discarded electronics, cell phones or computer components that are hazardous or recyclable in the MSW. Most private garbage haulers provide pick-up and disposal services for electronic products. The County transfer station is the primary collection point for discarded electronics in the County.

The County also promotes reuse and recycling of discarded electronic products, including cell phones, through a variety of means and encourages businesses to proper disposal and recycling of electronic products. The amount of electronic recycling collected in the County has increased dramatically, especially since passage of the Minnesota Electronics

Recycling Law in 2007. Table 28 depicts the amount of electronic products the County anticipates collecting at the transfer station over the next ten years.

- ✓ Major Appliance Management: The County accepts major appliances for a fee at the County transfer station and contracts with an appliance recycler to remove the appliances. The County plans to continue the free appliance coupon program (began in 2007) operated in conjunction with the WLSSD during this planning period. The program is open to all County residents and each household is issued one coupon per year for the drop-off one appliance free of charge. Table 28 depicts the amount of major appliances the County anticipates collecting at the transfer station over the next ten years.
- ✓ Motor Vehicle Fluids and Filters: Waste oil and oil filters are collected at the County transfer station and also may be deposited at the WLSSD HHW sites and various private businesses. Businesses and commercial vehicle users may not deposit motor vehicle fluids and filters at the County transfer station. Each private business that sells oil is required to collect used oil and deposit the oil at an approved collection site, or post sites at a visible location where oil collection is available. Table 28 depicts the amount of waste oil and oil filters the County anticipates collecting at the transfer station over the next ten years.
- ✓ Waste Tire Disposal and Recovery: The County accepts waste tires at the County transfer station in compliance with State requirements for a fee. Tires are transported by licensed haulers to MPCA licensed disposal/recycling facilities in the state. Ordinance No. 17 (and amendments) prohibit the illegal disposal of tires and allows the use of shredded tires as lightweight fill. Table 28 depicts the amount of waste tires the County anticipates collecting at the transfer station over the next ten years.

7. Household Hazardous Waste (HHW) Management

The Carlton County HHW management program includes educational efforts to reduce and properly dispose of HHW, and the operation of the HHW site that houses facilities to recycle certain HHW materials properly and dispose of discarded materials. Carlton County plans to continue to operate the HHW site and participate in the regional MPCA HHW program operated at the WLSSD regional facility with the WLSSD, and St. Louis, Lake, Cook, Koochiching, Itasca, and Aitkin Counties over the next ten years.

a. Policies

- Policy 1.) The County will operate a HHW program including education to reduce and properly dispose of HHW materials.
- Policy 2.) The County will continue to evaluate and provide adequate facilities at the North Carlton County Transfer Station site or other sites for HHW to be disposed or recycled.
- Policy 3.) The County will provide educational resources and programs about the reuse and disposal of HHW that supports environmental protection to residents, businesses, community groups and organizations.
- Policy 4.) The County will encourage the private sector to utilize stewardship activities that promote environmental responsibility for hazardous and toxic materials.

b. Implementation Programs

The County HHW facility is located at the North Carlton County Transfer Station and many of the materials are recycled including rechargeable and button batteries, fluorescent bulbs, latex paint and antifreeze. The County plans to continue operation of the HHW site at the transfer station including the product exchange area, and to continue the public education program and activities for the proper disposal of HHW at the transfer station or the WLSSD regional HHW facility over the next ten years.

These efforts should result in the projected volumes for HHW illustrated in Table 28. A detailed description of the existing HHW program is described in Chapter III - Existing Solid Waste Management System of this plan.

Additionally, the County is currently working on adding a new program to safely dispose of household pharmaceutical wastes (over the counter and prescription drugs). The Carlton County solid waste/recycling staff and the sheriffs department are jointly studying the potential for a pharmaceutical drop-off repository program. The program will be directed towards all controlled and non-controlled pharmaceuticals that residents may deposit in a non-retrievable container. The purpose of the program is to prevent disposal in the sanitary sewer and solid waste stream as well as illicit drug prevention.

- ✓ Support and continued funding for the HHW program including the enforcement of Ordinance 17 and facilities for the collection and disposal of hazardous materials.
- ✓ Support and continued funding for education about environmental consequences and health risks associated with the illegal or improper disposal of HHW and problem materials to residents and businesses via the quarterly Resource and Recycling newsletter and other sources.
- ✓ Support and continued funding for specialized HHW projects such as the disposal of household pharmaceutical wastes.

Utilization of procurement policies that foster product stewardship of HHW and promote awareness of stewardship opportunities to other public entities, organizations, residents and businesses.

8. Construction and Demolition Debris

In 2009, construction and demolition debris comprised approximately 23 percent of the total waste disposed from Carlton County at the Superior, Wisconsin Landfill. The quantity of construction and demolition debris disposed at private facilities or recycled and reused is unknown. The County anticipates that the amount of construction and demolition debris generated will remain stable for the next several years, but that the amount of demolition waste generated and landfilled will decrease due to increased educational efforts to recycle certain materials and programs that promote the reuse of marketable materials.

a. Policies

- Policy 1.) The County will require that mixed construction and demolition debris be separated, and managed separately from MSW, recyclables, HHW and other problem waste materials in accordance with State law.
- Policy 2.) The County will provide and support educational programs for the recovery, reuse and recycling of construction and demolition materials.
- Policy 3.) The County supports the reuse of construction and demolition debris, if possible, and if not, recycling or safe disposal of these materials in a manner that protects the environment.
- Policy 4.) The County will use sustainability standards in County demolition and construction projects.
- Policy 5.) The County will participate with the Northeast Minnesota Building Deconstruction Work Group to identify new markets and techniques for the education and marketing of construction and demolition debris.

b. Implementation Programs

Carlton County plans to continue the existing construction and demolition debris program that includes education regarding the reuse and recycling of recoverable materials to reduce the

amount of material deposition in landfills. Additionally, the County will continue to accept residential construction and demolition debris for a fee at the North Carlton County Transfer Station for transport to the Superior, Wisconsin Landfill. A detailed description of the existing construction and demolition debris program is presented in Chapter III - Existing Solid Waste Management System of this plan, as summarized below:

- ✓ Support and continued funding for education about the recycling and reuse of construction and demolition materials via the quarterly Resource and Recycling newsletter and other sources.
- ✓ Promotion of the Minnesota Materials Exchange (MME) Alliance program, the WLSSD Materials Recovery Center, and the Minnesota Recycling Markets Directory for the reuse and recycling of construction and demolition materials.
- ✓ Continued participation in the MPCA sponsored Northeast Minnesota Building Deconstruction Work Group that encourage and publicize sources for reusable materials and markets for recyclables.

Projections of numerical goals for the amount of residential construction and demolition debris generated or recovered are not established in this Plan because of the difficulty in collecting data from a wide variety of disposal and recovery methods, and reporting that is specific for Carlton County. The County will monitor the success of the construction and demolition debris program by review of the annual amounts collected at the transfer station.

F. Solid Management Costs and Financing

In 1980, when the State adopted the Waste Management Act, a preference was expressed by the legislature for the private provision of waste services and that the costs of the waste management system to be transparent to the public. Since 1980, the Legislature has passed a variety of laws to finance the statewide waste management system including SCORE funding, landfill surcharges, recycling subsidies, service charges and bonding authority to counties. The laws allowed for the use of financial tools to pay the costs of meeting the public goals of protecting public health, a cleaner environment, and resource conservation.

In the past, Carlton County has benefitted from certain State subsidies, such as SCORE funding, the authority granted by the State to levy service charges as well as participate with the WLSSD in funding programs and facilities. It is expected that the financing methods for the solid waste management system historically utilized by the County will continue in the same manner over the next decade. However, the County recognizes that solid waste management program costs will continue to increase and the provision of State subsidies may not be as significant as in the past.

Therefore, the County recognizes the need to rely primarily on user fees (gate and tipping fees) for the projected funding of the solid waste management programs identified earlier in this Chapter. Additionally, the County will continue to analyze the existing funding mechanisms necessary to achieve the goals of the proposed integrated solid waste management program over the next decade.

1. Funding Principles

The following principles are directed towards the focus of limited public resources on achieving solid waste management program objectives and to reduce reliance on local property taxes and public subsidies in concert with State and regional directions.

The following specific principles will guide County Board funding decisions regarding the solid waste management programs over the next ten years as described above in section E. of this Chapter:

- Carlton County will evaluate environmental and economic factors associated with waste

management facilities and services, including the various government roles, on an annual basis.

- Carlton County will evaluate the need for additional waste management facilities and collection sites located in the County, in concert with County cities and townships, and the WLSSD, as requested.
- Carlton County will investigate opportunities for additional revenue sources to fund solid waste management programs and services, as necessary.

2. Projected Budget

Appendix I shows the projected budget for the Carlton County proposes integrated solid waste management program to 2020. The purpose of this table is to depict potential future revenues and expenditures for consideration during the annual County decision making process concerning the solid waste management program budget. The projected funding is based upon the anticipated volumes of solid waste and recyclables shown on Table 29, and the average annual increase of revenues and expenditures over the past two years (2008-2010), with certain exceptions.

There is no projected change to the staffing levels for the solid waste management program over the next ten years. The projected transfer station budget assumes no revenue from refunds/reimbursements and continues to fund a major portion of the recycling budget. Additionally, the recycling budget assumes no increase in SCORE funding from the 2010 amount and a static level of intergovernmental revenue. Historically, the major portion of SCORE funding has supported the administration of SCORE related activities, recycling and HHW/problem material management. The projected budget assumes continued funding of these activities over the next ten year period.

The operation of new and existing targeted programs, including the disposal of household hazardous waste, electronics disposal/recycling, mattress and major appliance disposal, and the disposal of construction and demolition debris will continue to be funded over the next ten years by gate/tipping fees collected at the transfer station. The County plans to fund the educational and outreach components of the new pharmaceutical and source-separated organics program, as well as the recycling, yard waste, HHW, problem materials management via SCORE revenues into the future. However, as programming needs change, the County anticipates that other County departments may provide assistance in the management or operation of certain "crossover" recycling programs. For example, the County Sheriff's Department will provide assistance with the operation of the prescription drug disposal program, allowing current staffing levels for solid waste management to remain at the current level.

G. Carlton County Goal/Volume Table

Table 29 is a summary of the MPCA Goal/Volume table that estimates the amount of waste generated, the amount of recycling, problem materials generation and other solid waste characteristics between 2009 and 2019. The expanded Goal/Volume table is included in Appendix H. The table shows that while waste generation will increase due primarily to household and business growth, the County expects the amount or recycling will increase due to continued and more aggressive State and local policies and programs.

Figure 7 shows the Waste Stream Breakdown for Carlton County in 2019. The County should meet the current State recycling goal of 35 percent without credits by 2014 based upon the planning efforts included in this Plan. Importantly, the amount of landfilled MSW should decrease from over 61 percent in 2009 to 57 percent in 2019. As the County continues its solid waste management program and reporting activities, the recycling assumptions should be reviewed and adjusted on an annual basis.

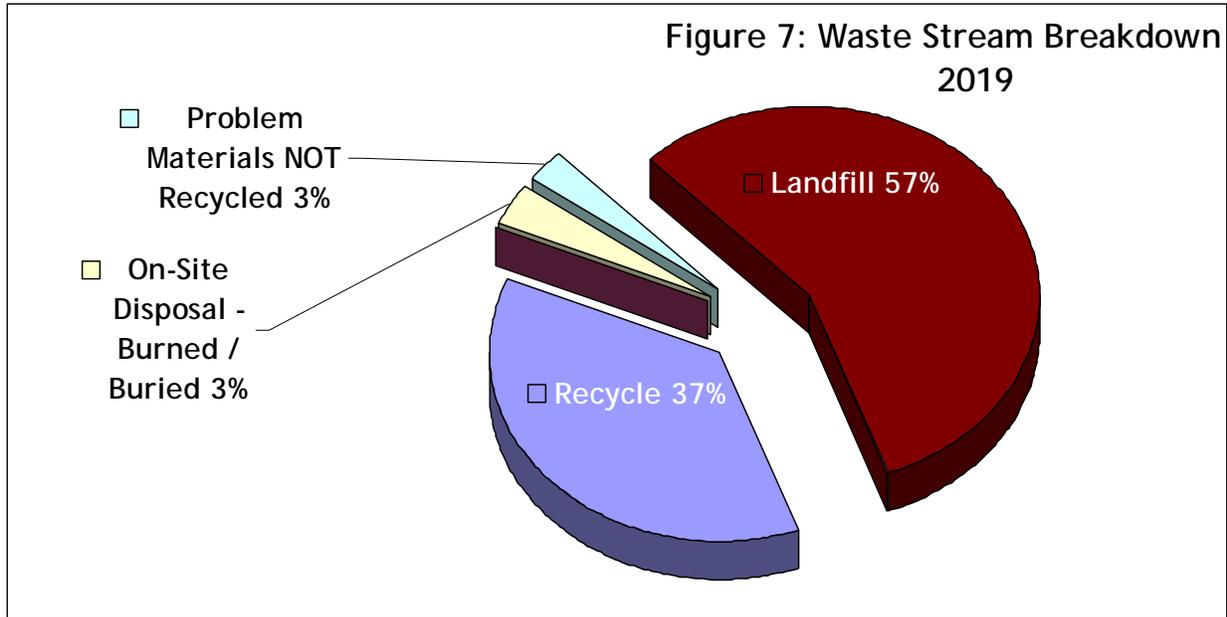


Table 29
Goal-Volume Table Summary

	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2009 to</u> <u>2019</u>
Projected Population ¹	34,266	34,403	34,541	34,679	34,818	34,957	35,097	35,237	35,378	35,519	35,662	1,396
Waste Generated (tons)	20,245	20,330	20,410	20,490	20,570	20,65	20,730	20,810	20,890	20,970	21,050	206,900
Recycling (tons)												
Residential	3,879	3,910	3,942	3,974	4,005	4,037	4,069	4,101	4,133	4,165	4,198	40,535
Mattresses and box springs - subtotal (inc. in residential total)	32	32.6	32.7	32.9	33.0	33.1	33.3	33.4	33.5	33.7	33.8	
Commercial/Ind./Inst.	1,473	1,626	1,633	1,639	1,646	1,652	1,762	1,769	1,776	1,782	1,789	17,074
Source Separated Organics (non-residential)	233	407	510	512	514	620	622	624	731	734	842	6,116
Electronic Appliances	50.0	50.2	50.4	50.6	50.8	51.0	51.2	51.4	51.6	51.8	52.0	511
Latex Paint	12.0	12.0	12.1	12.1	12.2	12.2	12.3	12.3	12.4	12.4	12.5	123
Household Hazardous Waste	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	31
Recycling Subtotal	5,650	6,010	6,151	6,191	6,231	6,375	6,519	6,561	6,707	6,749	6,897	64,390
Problem Materials Recycled												
Appliances	223	224	224	224	224	224	224	224	224	224	224	2,239
Vehicle Batteries	209	210	210	210	210	210	210	210	210	210	210	2,098
Tires	174	175	175	175	175	175	175	175	175	175	175	1,747
Used Oil	255	256	256	256	256	256	256	256	256	256	256	2,560
Oil Filters	36	36	36	36	36	36	36	36	36	36	36	361
Fluorescent & HID Lamps	2	2	2	2	2	2	2	2	2	2	2	20
Antifreeze	4	4	4	4	4	4	4	4	4	4	4	40
Prob. Mat. Recycled Subtotal:	903	907	9,066									
Recycled Material Total	6,553	6,916	7,058	7,098	7,138	7,281	7,426	7,467	7,613	7,656	7,803	73,500
Problem Materials NOT Recycled	537	539	545	550	556	562	567	567	579	585	590	5,645
Problem Materials Generated	1,440	1,446	1,451	1,457	1,462	1,468	1,474	1,480	1,485	1,491	1,497	14,711
Estimated On-Site Disposal	685	688	691	694	697	700	703	706	709	712	715	7,014

Recycling Rates	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
With no credits	32.4%	34.0%	34.6%	34.6%	34.7%	35.3%	35.8%	35.9%	36.4%	36.5%	37.1%
With yard waste & source reduction activity credits	40.4%	42.0%	42.6%	42.6%	42.7%	43.3%	43.8%	43.9%	44.4%	44.5%	45.1%
Average Projected 10 Year Recycling Rate:	43.5%										
35% State Recycling Goal Achieved?	Yes										

¹Based on 2009 State Demographer Estimate

<u>MSW Landfill Disposal(cubic yds)</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>10 Year Total</u>
Superior Wisconsin LF	12,471	12,187	12,117	12,149	12,180	12,107	12,034	12,064	11,989	12,018	11,941	120,800
Landfill Capacity: MSW & Cover	22,900	22,300	22,200	22,300	22,300	22,200	22,100	22,100	22,000	22,000	21,900	221,400
Per Capita Calculations²												
Total waste generated	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.23	3.23	
Residential MSW only	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	
Recycled materials	0.90	0.96	0.98	0.98	0.98	1.00	1.02	1.02	1.04	1.04	1.06	
Percentage Breakdown of Solid Waste Stream:												
Recycle	32.4%	34.0%	34.6%	34.6%	34.7%	35.3%	35.8%	35.9%	36.4%	36.5%	37.1%	
Resource Recovery	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
On-Site Disposal - Burned/Buried	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	
Problem Materials NOT Recycled	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.8%	2.8%	2.8%	2.8%	
Landfill	61.6%	59.9%	59.4%	59.3%	59.2%	58.6%	58.1%	58.0%	57.4%	57.3%	56.7%	

²(lbs/person/day)