CLAY COUNTY
SOLID WASTE MANAGEMENT PLAN

CLAY COUNTY
OFFICE OF SOLID WASTE MANAGEMENT

CLAY COUNTY COURTHOUSE
807 NORTH 11TH STREET
MOORHEAD, MN 56560

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TABLE OF CONTENTS

LIST OF MAPS

LIST OF TABLES

APPENDICES

I. EXECUTIVE SUMMARY

A. INTRODUCTION

1. Background

Clay County, located in west central Minnesota, continues to develop and upgrade its solid waste management system. Updating this Solid Waste Management Plan has given the county an opportunity not only to reflect upon and assess waste management practices implemented to date, but to build upon recognized successes in designing the county's future management system.

This update contains the data analyses, management policies, objectives and activities necessary to help develop feasible and prudent solid waste programs for Clay County. It incorporates the planning requirements mandated by the State (Minnesota Statutes, Section 115 A and revised rules of 2009, Chapters 9215.0500 – 9215.0880), the rules commonly known as SCORE, and more recent statutes, revisions, and directives.

2. Plan Overview

The updated Plan is consistent with the County's overall goals of conservation of energy and resources and preservation of the natural environment. The Plan involves integrating landfilling in an environmentally-conscious manner (saving space, reducing waste volume, capturing methane gas, producing renewable energy, banning toxic materials, eliminating contamination and avoiding pollution) with programs that both educate the public and minimize dependence on land disposal, such as waste reduction and processing, recycling, reuse, and organics and materials recovery.

The updated Plan reviews the past and present solid waste management system in the county study area, including waste abatement policies, programs, and activities. In addition, collection, transportation and disposal systems, recycling and composting, materials recovery and exchange, and other waste management options are examined for alteration, expansion or new development opportunities. The Plan also evaluates waste processing options and regional opportunities for waste management and other cooperative efforts.

Finally, the Plan recommends feasible and prudent alternatives which will expand present waste management programs while retaining the system that is best suited for Clay County. These include the continuation of current programs, with an emphasis on increasing: waste reduction and education activities; recycling participation, materials recovery, reuse and exchange opportunities; and efforts to manage problem materials. It also recommends continuing to utilize the county's landfill as one waste disposal method, with energy recovery and leachate recirculation, while working out details of regional participation in waste processing and waste to energy (i.e., waste exchanges, hauling arrangements, collection and marketing, etc.). Clay County will review options and regional opportunities on an on-going basis.

Existing System

Minnesota Statutes, Section 115A.02, states that "the waste management goal of the state is 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." Clay County's existing management system, an integrated solid waste management system that incorporates the preferred practices of waste reduction, reuse, recycling, composting, and explores resource recovery, includes:

- Public education programs which include multi-media campaigns, web site information, personal contacts, public presentations, classroom instruction, collaborative efforts with local entities and regional partners, and other activities to inform the public on solid waste issues, problems, and solutions. Activities to emphasize waste reduction remain on-going.

- Community-based recycling programs, serving all cities and their surrounding rural areas; county facility recycling and county distribution of recycling bins for public and private events, such as fairs, rodeos, weddings.

- Community-based yard waste composting programs, serving all cities and their surrounding rural areas.

- A County Household Hazardous Waste Program, including permanent facility operations. A "product exchange" is also part of the overall program, in addition to an extensive public education campaign.

- Problem materials management programs, under public and private sector partnerships, available to all cities and surrounding rural areas. Products recycled through these programs include used appliances, fluorescent lamps, tires, batteries, waste oil and filters, electronics and empty pesticide containers.

- Abandoned Auto Program, coordinating with residents and auto salvage operation for collection and recovery of old vehicles and machinery.

- A County Materials Recovery and Exchange Program, including Wood Recovery Project, recovering recyclable/reusable materials from Clay demolition and municipal solid waste landfills and construction sites, and distributing the material to county residents for reuse.

- The West Central Minnesota Materials Exchange Program, serving surrounding areas, and a Business Assistance Program.

- A privately-owned and operated, state-permitted Demolition Debris Landfill. The site accommodates waste generated from both the county and the surrounding area. Its capacity reaches beyond the Plan period.

- County-owned and operated, state-permitted Municipal Solid Waste (MSW) Landfill. The facility currently accepts only county-generated waste. About 98 percent of the residents utilize this site, while one (1) percent landfill in North Dakota, with the remaining one (1) percent using on-site disposal at their farm residence. The landfill has a remaining capacity of about fifty (50) years. Studies of regional options with processing have been on-going.

- County solid waste ordinance, rules, policies, and licensing which help direct and regulate waste management for Clay County.

Proposed System

As mentioned above, the updated Plan proposes to continue the county's waste management system, expanding waste reduction programs to increase participation, volumes diverted, and types of materials collected. Clay County currently recycles or diverts 40% of its waste. It is anticipated that by 2020, the county will recycle 44%. The Plan also recognizes the importance of continuing to participate in region-wide programs to the extent practicable, and to explore the feasibility of other regional options. The results will be further reduction of the waste stream—including toxic wastes and the need for landfilling. To accomplish this, the county proposes to:

- Expand public education to provide detailed information on programs and collection events. The methods of achieving this include: providing more information on web site, waging multi-media campaigns, making more personal contacts and public presentations, collaborating with regional partners, and using other effective means to continue informing the public on solid waste management, with on-going emphasis on waste reduction.

- Coordinate with local markets, processors, and other partners to expand county recycling programs by purchasing more recycled content products and by increasing types of recyclables collected and county participation rates. Tie in with state and regional recycling projects for such materials as Christmas lights, shrink wrap, shingles, mattresses, etc. (See further discussion in Chapter IV p. 89.) Evaluate and expand event recycling.

- Examine the feasibility of expanding yard waste programs by adding certain organic wastes for composting and implementing pilot projects for collecting and composting food wastes. Recommendations on whether and how to proceed will depend on investigation results.

- Enhance the County Household Hazardous Waste Program through increased public education efforts.

- Study the feasibility of adding products to the problem materials management

programs, such as more kinds and varieties of materials. Recommendations whether to proceed will depend on study results as well as state mandates.

- Evaluate opportunities to further the collection, reuse, and/or processing of recyclable debris from area construction, demolition, and remodeling projects. Recommendations on direction to proceed will depend on materials and private sector resources available to further enhance programs.

- Enhance and expand the West Central Minnesota Materials Exchange Program, Abandoned Auto Program, and the Business Assistance Program through increased public education efforts.

- Utilize the Clay County MSW Landfill for final disposal while pursuing the potential for sending waste to the Perham Resource Recovery Facility and accepting fines and by-pass materials in exchange.

B. GOALS FOR SOLID WASTE ABATEMENT PROGRAMS

Clay County has established solid waste abatement goals for the 10-year Plan period. The county's goals are contained in the Goal-Volume Table (GVT) found in Appendix A. Budgets necessary to achieve these goals are provided in Appendix B. Highlights of activities involved in implementing programs in the County's solid waste management system are also found in Section IV, entitled: PROPOSED INTEGRATED SOLID WASTE MANAGEMENT SYSTEM.

C. SOLID WASTE MANAGEMENT PROGRAMS AND POLICIES

Clay County generated approximately 88,165 cubic yards of waste in 2010. Of that amount, only one (1) percent, or 882 cubic yards, was disposed of on farmstead property. The majority of the remaining waste, a little more than 98 percent, or 86,436 cubic yards, was disposed of in the approximately 78,139 cubic yards of land disposal capacity actually used in 2010 (see GVT for needs calculations).

The county intends to continue its existing waste disposal option, while also evaluating the ways in which to participate in a regional waste-to-energy facility and implementing the results of that analysis. Section IV of the Plan contains the technical and financial analysis of this alternative.

The county will be managing the remainder of its solid waste through a variety of waste abatement programs. Section IV of the Plan provides more information on the activities to be implemented during the Plan period.

The long-term environmental and economic costs and benefits of the county's proposed system make it the most prudent and feasible waste management system available at this time. The following includes policy statements and highlights of the program areas Clay County proposes to implement during the Plan period.

Waste Reduction

Clay County regards source reduction as its first priority in solid waste management. The county intends to continue being a positive example to local municipalities, businesses and residents by reducing waste generated from County sources. The County believes that education is the most effective method of reducing consumer waste generation, and will provide incentives to enhance waste reduction efforts. More information on the Waste Reduction Program can be found in Section III.

Waste Education

The county considers public education a fundamental component of its waste abatement programs. Ongoing public education will continue to have a prominent role in all elements of the programs that can benefit from an informed public, including: waste reduction and reuse, recycling, yard waste composting, household hazardous waste, materials recovery and exchange, business assistance, problem materials management, and land disposal programs. Detailed information on the County Waste Education Program can be found in Section III.

Recycling

The county has adopted and incorporated state recycling goals and policies, and has implemented its county-wide program in an effort to meet and maintain those goals. The county intends to continue program activities begun in 1991 and those more recently initiated, including emphasizing the purchase of recycled-content products. In 2010, the county recycled forty percent of its MSW, exceeding the state goal by five percent, and through expanding the scope of these programs expects to reach a forty-four percent recycling goal by 2020. More information on the Recycling Program can be found in Section III.

Yard Waste Composting

The county prohibits yard waste from the municipal solid waste stream, and provides both a curbside and drop-off collection program, begun in 1990, for all residents. In addition, a composting facility for all county residents, operated by the city of Moorhead, accepts and processes all yard waste collected in the county. The county will continue these efforts, as well as promoting do-it-yourself back yard composting and expanding the program to include organics.

Household Hazardous Waste Management

The county will continue to participate in the regional Household Hazardous Waste Program in conjunction with Becker County, and to operate a permanent facility in Moorhead for county residents. The county will also continue its education efforts regarding HHW management to increase the Program's success. More information on the County Program can be found in Section III.

Problem Materials Management

The county will continue its program to manage problem materials (e.g., used oil and oil filters, antifreeze, used fluorescent products, appliances, batteries, mercury items, motor vehicle fluids, electronics, and waste tires). The county also plans to expand the volumes collected under the present program and assess whether other products can be collected feasibly. Clay County anticipates approximately a twenty percent increase (e.g. 302 tons) to be collected during the planning period. Additional information on the program can be found in Section III and the GVT in Appendix A.

Construction & Demolition Materials Reuse/Recycling Program

The county will continue its program to recover wood, manufactured products and other recyclable/reusable materials from the Clay demolition and municipal solid waste landfills, market the material, and/or distribute the material to county residents for reuse. The county will also continue to collect and quantify reusable construction lumber waste at designated sites throughout the county and maintain the distribution site at the landfill. The county plans to evaluate space needs in the building currently housing the recovered materials and to further plans for a reuse center. More information on the program can be found in Section III.

Materials Exchange Program

The county will continue to operate and promote the West Central Minnesota Materials Exchange (MATCH) Program, and to assist businesses with waste reduction efforts. The county's public education campaign to urge the public to offer unwanted material for reuse will include maintaining a web site with an updated list of materials available locally and materials wanted and to tie into the state's exchange. Additional information on the program can be found in Section III.

Final Disposal Program

The county will continue to operate the MSW Landfill while developing further opportunities for participation in the regional waste-to-energy facility at Perham. The county anticipates a reduction in MSW being disposed of because of the above programs and policies being implemented and expanded in the next ten years.

Solid Waste Ordinance

In 1971 the Minnesota Legislature enacted Chapter 400 of the Minnesota State Statutes, expanding the solid waste management responsibilities of counties outside the seven-county Minneapolis/St. Paul metropolitan area. This legislation required counties to make provisions to provide citizens with disposal facilities and to adopt solid waste management ordinances that set local regulatory standards, based on local management plan and state and federal regulations.

The *County Solid Waste Ordinance* was adopted in 1972, last amended in 1997, and updated in 2003. The Ordinance contains language that, by reference, incorporates all current and

future federal, state, and local statutes, rules, and ordinances. The amended Ordinance specifically addresses volume-based pricing and management of waste tires, appliances, batteries, household hazardous waste and other such materials.

The original copy of the Ordinance, as amended, is on file in the County Auditor's Office and on the County web site. The document is discussed in Section III and found in Appendix C.

D. CONTINGENCY SYSTEM

In the event of a short-term emergency or a disposal system failure that would require by-passing the county landfill, the county plans to contact other facilities within a reasonable distance, including but not limited to the cities of Fargo and the regional Perham facility, to determine whether these facilities would present the best disposal option for the county, based on available capacity, transportation, and other cost factors. (The county is engaged in on-going discussions about partnerships in waste disposal with the entities involved with the Perham facility.) The contingency system would be utilized until the landfill was back in operation or an alternative system could be implemented.

E. LOCAL AND REGIONAL MANAGEMENT AND PLANNING

Clay County recognizes the need to evaluate and consider solid waste management alternatives, including on-going assessment of regional solutions for landfill abatement in its planning process. It sees the need for long-term management solutions and achieving the state waste abatement goals. The county is engaged in regional planning for waste processing/disposal and for landfill/waste abatement practices. The county is also concerned about the rising cost of waste management and related environmental impacts, and weighs these factors in the planning process.

The county will continue informally to review the Plan at least annually, assessing whether updating is necessary. With the next ten-year plan Clay County will address any major changes and additions to the county's overall waste management system, including regional efforts, accomplishments, and solutions.

F. WASTE STREAM FLOW AND MANAGEMENT BUDGETS

The Goal Volume Table, found in Appendix A, provides a 10-year estimate of Clay County's waste stream flow through its management system. Solid Waste System Projected Budgets found in Appendix B show current and estimated revenues and expenses needed to operate the whole system during the next 10-year period. As an example, 2011 expense estimates for the system total $ 3,506,693; revenues total $ 2,336,018. For the full 10-year budget period from 2011-2020, estimated expenses for the system total $27,628,296; revenues total $23,039,089. To prevent a budget shortfall and to maintain a healthy fund balance throughout the projected period, the county will implement fee increases, beginning with a $4 tipping fee increase in 2013 and a $2 solid waste service charge in 2014, with incremental increases in both every three years thereafter. (See projected revenues and expenses with above fee

increases in the Summary Cash Flow Balance Sheets in Appendix B.) The above fee increases result in increased revenues of $1,739,865 during the ten-year projected period.

A self-supporting Revenue Fund made up of County landfill disposal "tip fees" and Solid Waste Service Charges provides the revenue for the system. Revenue increases are scheduled on an incremental basis, according to anticipated long-term costs to operate the system. SCORE funds, which have been consistently available, are included as a revenue source.

II. DESCRIPTION OF CLAY COUNTY, MINNESOTA

A. LOCATION AND SIZE

Clay County is located in the central portion of Minnesota at the western extreme of the state. It is bordered by Norman County on the north, Becker and Otter Tail Counties on the east, and Wilkin and Otter Tail Counties on the south. The Red River serves as the western boundary, as well as the state line between Minnesota and North Dakota. The city of Moorhead, located on the banks of the River, is the county seat of government. The total area of the county is approximately 1052 square miles or 673,280 acres, with a population (2010) of 58,999. Map 1, page 10, illustrates its size and location.

B. CLIMATE, GEOLOGY AND SOILS

Clay County has a continental climate which is dominated by extreme temperature changes from summer to winter. The average winter temperature is 9º F with an average daily minimum temperature of -1º F. The average summer temperature is 68º F with the average daily maximum temperature of 81º F.

Total annual precipitation is 22 inches with the largest amount received in the period between April and September, which also coincides with the growing season of most crops produced in the county. Average seasonal snowfall is 34 inches with a least 1 inch of snow on the ground an average of 85 days a year.

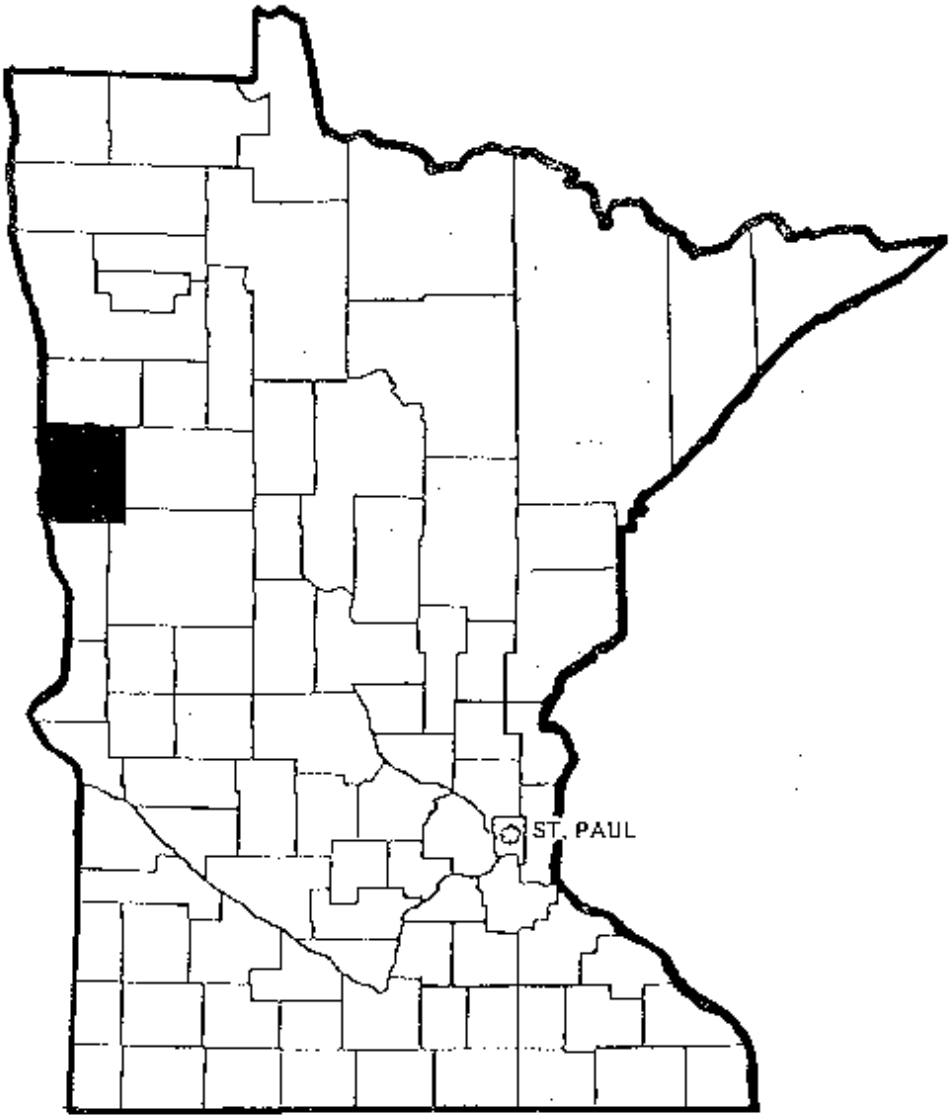
Three topographic regions define the land of Clay County and are the result of glacial action under which the area was once covered. The Red River Valley and the bordering beach ridges make up the western two-thirds of the county. The Valley is a flat area that once was the lake bed of ancient Lake Agassiz. Slopes are less than three (3) feet per mile with soils of clay and silty loams of up to 200 feet thick in some areas of the basin.

The beach ridges of ancient Lake Agassiz run north to south in the county, with the lowest of the major beach areas located approximately 15 miles east from the Red River. Beach ridge elevations increase from 110 feet to 200 feet above the valley. Slopes in this region vary from nearly flat to 10 feet per mile and soils are clays and silts mixed with sand and gravel.

The eastern one-third of the county is an upland area of glacial moraine deposits consisting of short uneven slopes, and many depressions and natural draws. Slopes in this area range from nearly level to very steep and soils are primarily loam glacial till.

The Red River of the North is a major drainage system of the county, with all other systems draining into it. The primary tributary systems are the South Branch of the Wild Rice River and the Buffalo River. Both of these systems flow west and north into the Red River. The county also has an extensive ditch system to aid in draining excess water from the area farmlands.

MAP 1: LOCATION OF CLAY COUNTY IN MINNESOTA



C. TRANSPORTATION

The ground transportation system of Clay County is comprised of main and branch line railroad services and a network of township, county, state and federal highways. Two Burlington Northern main line track routes serve the county. Both routes connect the county with North Dakota communities to the west. The northern main line bisects the county on an east-west basis and extends to the Minneapolis-St. Paul (Twin Cities) area. The southern main line crosses the southeastern quarter of the county enroute to the Twin Cities and beyond.

The highway system of Clay County is served by 26 miles of state-maintained interstate highway and 30 miles of state-maintained four-lane federal highway, which generally follow the two main-line railroad routes through the county. In addition to the four-lane highways, the county has 36 miles of state-maintained two-lane federal highway which crosses the county north to south near the Red River. The state highway system includes approximately 80 miles of hard surfaced roads which cross the county both north to south and east to west. County and township roads total approximately 1600 miles of roadway with less than fifty percent of the roadway paved.

D. LAND USE

Land use in Clay County is primarily agricultural in character. Of the 673,000 acres in the county, approximately 590,000 acres are assessed as agricultural land, which includes tillable pasture and timber lands. In Moorhead and other communities of the county, a common mix of family residences, commercial and industrial establishments, and public/semi-public land uses is found. In the smaller communities, land use is primarily residential with strip commercial development around the main street area, while industrial land use occurs primarily in the largest city of Moorhead. The most urbanized area of the county is made up of the contiguous cities of Moorhead, Dilworth, and Oakport and Moorhead Townships (located north and south of Moorhead, respectively). Both to the north and south of this area, development changes to land use of a rural nature. During the past twenty years, the county has experienced a decline in the number of farm residences, while the acreage of farms has increased. At the same time, there has been a gradual increase in the number of rural, non-farm residences.

Highway and railroad right-of-ways account for the next largest land use category in the county, totaling approximately 31,000 acres. Surface waters, which include lakes and wetlands, account for nearly 25,000 acres. Wetlands, both privately and publicly held, account for over 20,000 acres of this total.

Less than two percent, or about 12,000 acres of total land in Clay County lies within the corporate limits of cities. Of these cities, Moorhead is the largest single incorporated area, encompassing 6,320 acres or more than half of that total land area.

Recreation and open space also account for nearly 12,000 acres in Clay County. Major recreation areas include Buffalo River State Park, two county parks and land managed by the State of Minnesota, Nature Conservancy and the U.S. Department of Interior.

Manufacturing and industrial uses account for a small percentage of land use in the county. Gravel operations and the American Crystal Sugar processing plant would account for the largest uses in this category. Map 2, page 13, further describes Clay County and its jurisdictions, lakes, rivers and highway systems.

E. SOCIO-ECONOMIC CONDITIONS

1. Population

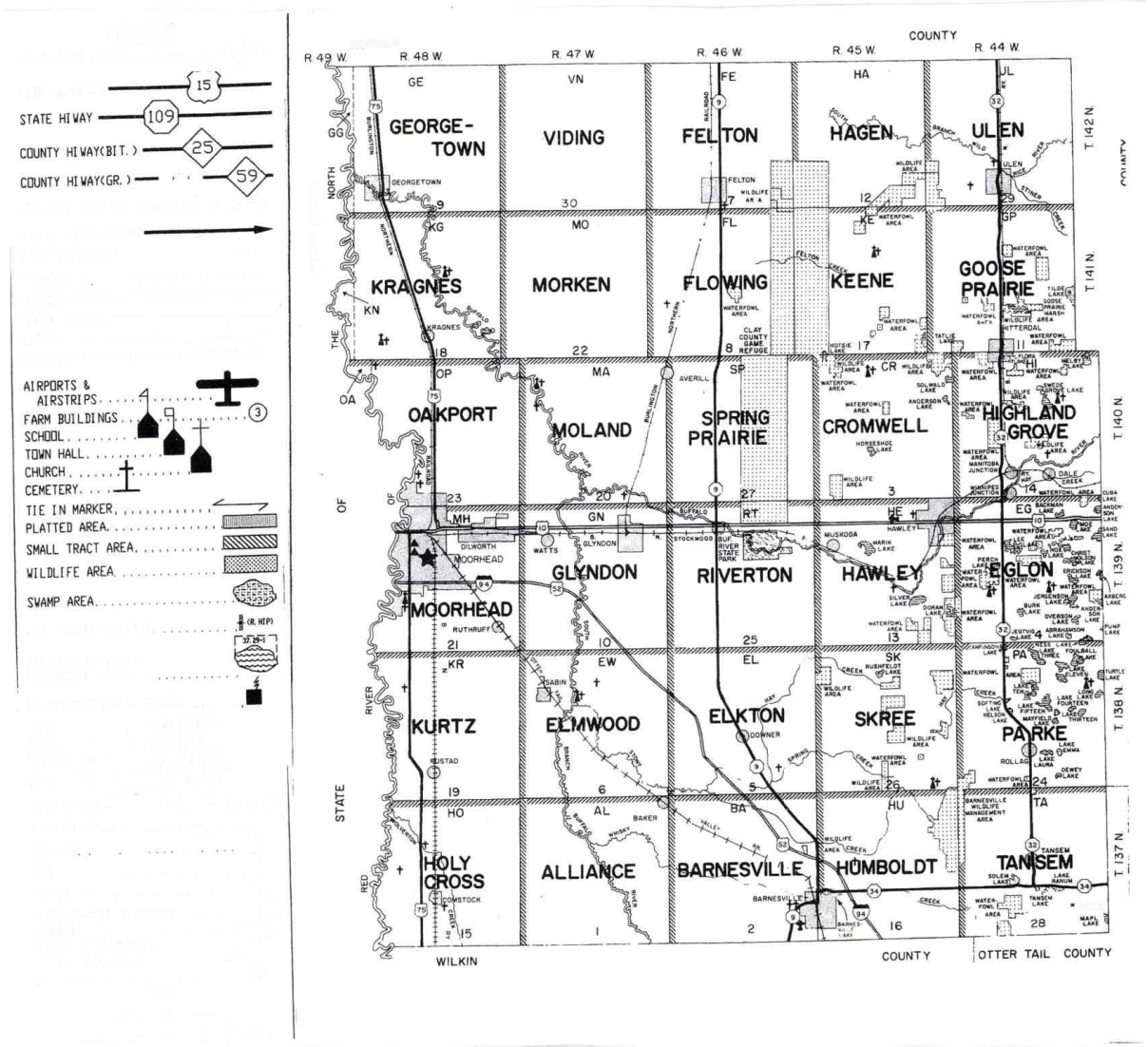
Clay County is considered, for census purposes, part of the Fargo (ND)-Moorhead (MN) Metropolitan Statistical Area (MSA). This designation is used for cities of over 50,000 population and a county or counties urban in character. Clay County and Cass County, North Dakota, received this classification in 1960, and had a combined total population of 208,777 in 2010.

Table 1, page 14, reveals population change for the county from 2000 to 2010. In 2010, the population of the city of Moorhead was 38,065 or 64.6 percent of Clay County's population. The next largest population group, 19.9 percent, reside in the remaining 10 incorporated communities in the county. The balance of the county population, 15.5 percent, is in the rural or unincorporated area of the county. The sizes of these communities range from 4024 at Dilworth to 93 at Comstock.

The growth increase of fifteen and two-tenths (15.2) percent in Clay County between 2000 and 2010 is significantly higher than that of the previous decade, 1990 to 2000, which had a growth increase of one and six-tenths (1.6) percent. In addition, the county's incorporated areas saw more of the population gain, increasing by 19%, while the rural population decreased by 1.2 percent. The western metro area (including the cities of Dilworth and Sabin) and the city of Barnesville in the south central (and surrounding rural areas) grew the most. While the rural population decreased slightly overall, the townships in the northwestern and north central parts of the county experienced the most significant decline in population. Townships near cities and those in the eastern and southeastern lakes region of the county grew the most in population.

Table 2, page 15, provides population figures from 1990 to 2010 and projections from 2015 to 2030. Eight incorporated communities in the county had population increases from 2000 to 2010, ranging from Ulen at a 2.8 % increase and Georgetown at 3.2% to higher rates for Hawley (9.8%), Barnesville (17.9%), Moorhead (18.3%), Sabin (24%), Glyndon (32.9%), and Dilworth (34.1%). Hitterdal showed no increase in population, but maintained its 2000 census count of 201 residents. The population of Dilworth has continued to grow (17.14% from 1990 to 2000 and 34.1% from 2000 to 2010) since the Census of 1980 saw Dilworth top

MAP 2: PHYSICAL FEATURES OF CLAY COUNTY



Source: Atlas of Clay County, 1989, Midland Atlas Company, Inc., Milbank, SD

TABLE 1: POPULATION OF CLAY COUNTY CITIES AND TOWNSHIPS 2000-2010

CITY	2000	2010	% Change
Alliance Township	246	235	- 4.5
Barnesville City	2173	2563	+17.9
Barnesville Township	149	147	- 1.3
Comstock City	123	93	- 24.4
Cromwell Township	323	345	+ 6.8
Dilworth City	3001	4024	+34.1
Eglon Township	440	508	+15.5
Elkton Township	283	308	+ 8.8
Elmwood Township	371	415	+11.9
Felton City	216	177	- 18.1
Felton Township	108	86	- 20.4
Flowing Township	97	77	- 20.6
Georgetown City	125	129	+ 3.2
Georgetown Township	188	156	- 17
Glyndon City	1049	1394	+32.9
Glyndon Township	281	278	- 1.1
Goose Prairie Township	199	175	- 12.1
Hagen Township	153	154	+ .7
Hawley City	1882	2067	+ 9.8
Hawley Township	459	474	+ 3.3
Highland Grove Township	304	288	- 5.3
Hitterdal City	201	201	0.0
Holy Cross Township	129	140	+ 8.5
Humboldt Township	239	275	+15.1
Keene Township	128	155	+21.1
Kragnes Township	319	293	- 8.2
Kurtz Township	288	293	+ 1.7
Moland	340	299	- 12.1
Moorhead City	32177	38065	+18.3
Moorhead Township	442	169	- 61.8
Morken Township	203	156	- 23.2
Oakport Township	1689	1797	+ 6.4
Parke Township	450	485	+ 7.8
Riverton Township	462	446	- 3.5
Sabin City	421	522	+ 24
Skree Township	166	159	- 4.2
Spring Prairie Township	364	368	+ 1.1
Tansem Township	222	259	+16.7
Ulen City	532	547	+ 2.8
Ulen Township	163	174	+ 6.7
Viding Township	124	103	- 16.
COUNTY TOTAL	**51229**	**58999**	**+ 15.2**

Source: U.S. Census Bureau, 2000; USA Today analysis, 2010

TABLE 2: POPULATION PROJECTIONS FOR CLAY COUNTY
2010 – 2030

CITY	1990 (Census Population)	2000	2010	2015 (Population Projection)	2020	2025	2030
Barnesville	2,066	2,173	2,563	2,794	3,043	3,466	3,723
Comstock	123	123	93	110	109	108	106
Dilworth	2,562	3,001	4,024	4,613	5,392	6,209	6,746
Felton	211	216	177	199	198	198	196
Georgetown	107	125	129	138	146	154	159
Glyndon	862	1,049	1,394	1,743	2,099	2,492	2,754
Hawley	1,655	1,882	2,067	2,253	2,461	2,609	2,758
Hitterdal	242	201	201	168	162	155	145
Moorhead	32,295	32,177	38,065	41,397	44,917	48,846	51,880
Sabin	495	421	522	632	743	788	832
Ulen	547	532	547	562	570	575	564
Total City	41,165	41,900	49,782	54,609	59,839	65,600	69,863
Total Rural	9,277	9,329	9,217	9,263	9,309	9,356	9,450
COUNTY TOTAL	50,442	51,229	58,999	63,872	69,148	74,956	79,313

Sources: U.S. Census, 1990, 2000, 2010; Clay Co. Solid Waste Mgmt., 2011.

The number of farm residences in the county has declined in the years since 1960, while the rural population has fluctuated, after an initial increase in the decade after the 60s. After a decrease of 10% between 1980 and 1990, rural population increased slightly (about .6%) from 1990 to 2000, and, then decreased by 1.2% from 2000 to 2010. It is projected to increase by 1% from 2010 to 2020. The townships with the highest growth rates from 2000 to 2010 range from Keene with 21.1 percent growth to Tansem, Eglon, and Humboldt with growth rates of 16.7%, 15.5%, and 15.1%, respectively. The townships of Elmwood (11.9%), Elkton (8.8%), Holy Cross (8.5%), Parke (7.8%), Cromwell ((6.8%), Oakport (6.4%), and Ulen (6.7%) experienced more modest growth rates. This rural non-farm growth may reflect the desire to enjoy a rural atmosphere and a quiet, country-type lifestyle, while maintaining close proximity to the growing cities.

the 2,500 population mark, which changed it to the urban classification as defined by the Bureau of Census. Two incorporated communities in the county experienced a decline in population from 2000 to 2010—Comstock decreased in population by 24.4% and Felton decreased by 18.1%.

As shown in Table 2, the office of the State Demographer projects a population of 63,872 for the county by the year 2015, compared to the 2010 census population figure of 58,999. These projections show a growth rate of about 17.2 percent for the 10 year period between 2010 and 2020, compared to a growth rate of 15.2% from 2000 to 2010. These gains for the county compare with a growth rate of 7.8 percent for Minnesota as a whole during the period 2000 to 2010, and a projected growth rate of 9.2 percent for the period 2010 to 2020. The county's most recent growth spurt of 15.2% (as shown in 2010 census figures) exceeded projections and was higher than the growth rate of Minnesota overall.

2. Employment

Table 3: Non-Farm Clay County Employment Data, 1988-2009, page 17, and Table 4: Clay County Labor Force Characteristics, 2009, page 17, provide employment data by industry and labor force characteristics for Clay County, as reflected by the latest census data. The figures show that the highest concentrations of employment are in three areas: trade which would include retail and wholesale; government; and services. The percent of the labor force employed in construction has remained fairly consistent over the past 20 years and would tend to be on a seasonal basis. And, although agriculture remains a major industry in the county, it does not account for major employment numbers. In fact, the percentages employed exclusively by farming operations have decreased from 6.9 percent in 1990 and 4.8 percent in 2001 to just 3.6 percent of the population in 2009.

The number of people unemployed and the rate of unemployment have shown steady increases from a low of 3.6 percent in 2002, 2003, and 2004. The current 2011 unemployment rate of 5.2 percent compares with similar highs of 5.3 percent in 2009 and 4.8 percent in 2010. Table 5, page 18, provides employment figures for the county labor force from 2002 through 2011.

TABLE 3: NON-FARM CLAY COUNTY EMPLOYMENT DATA
1988 – 2009

INDUSTRY	1988 (%)	2001 (%)	2009 (%)
Ag, Forestry, Fish, Utilities	1.6	13.5	4.8
Construction	5.12	5.6	6.2
Manufacturing	5.84	4.7	3.7
Finance, Insur., & Real Estate	6.61	6.3	7.5
Services	31.47	31.7	45.0
Government	19.93	19.8	16.8
Retail Sales	21.36	14.9	12.6
Wholesale	18.24	3.8	3.7

Source: Bureau of Economic Analysis Annual Reports, 1988 – 2009.

TABLE 4: CLAY COUNTY LABOR FORCE CHARACTERISTICS
2009

INDUSTRY	PERCENT (%)
Farm	3.6
Ag., Forestry, Fish, Utilities	4.6
Construction, Mining	5.9
Manufacturing	3.6
Government	16.2
Wholesale	3.6
Retail	12.0
Financ., Insur., & Real Estate	7.2
Service	43.0

Source: Bureau of Economic Analysis Annual Reports, 2009.

TABLE 5: EMPLOYMENT FIGURES FOR CLAY COUNTY LABOR FORCE 2002 – 2011

YEAR	LABOR FORCE	NUMBER EMPLOYED	NUMBER UNEMPLOYED	PERCENT (%) UNEMPLOYED
2002	29,050	28,015	1,035	3.6
2003	29,643	28,571	1,072	3.6
2004	30,268	29,166	1,102	3.6
2005	30,977	29,740	1,237	4.0
2006	31,388	30,125	1,263	4.0
2007	31,279	29,946	1,333	4.3
2008	32,224	30,875	1,349	4.2
2009	32,625	30,910	1,715	5.3
2010	33,317	31,707	1,610	4.8
2011	33,583	31,833	1,750	5.2

Source: U.S. Bureau of Labor Statistics, 2002-2004.
Minnesota Department of Employment and Economic Develop., 2011.

3. Household Income

Personal income for Clay County increased 22 percent from 1989 to 1999, from $14,434 to $17,557. From 1999 to 2009 the increase was 27 percent, from $17,557 to $22,367. This most recent increase is consistent with that of the state-wide percentage of 27 for the same time period. The median household income in the county increased from $37,889 in 1999 to $46,989 in 2009, or 24 percent. This compares to an 18 percent median household income growth in Minnesota as a whole (from $47,111 in 1999 to $55,621 in 2009).

Table 6 shows the household income of the county in 2009.

TABLE 6: CLAY COUNTY HOUSEHOLD INCOME – 2009

INCOME RANGE	# HOUSEHOLDS	PERCENT (%)
Less than $ 10,000	1,473	6.8
$ 10,000 - $ 14,999	1,364	6.3
$ 15,000 - $ 24,999	2,751	12.7
$ 25,000 - $ 34,999	2,404	11.1
$ 35,000 - $ 49,999	3,075	14.2
$ 50,000 - $ 74,999	4,440	20.5
$ 75,000 - $ 99,999	3,162	14.6
$100,000 - $149,999	2,079	9.6
$150,000 - $199,999	628	2.9
$200,000 or more	281	1.3
TOTAL HOUSEHOLDS	21,658	

Source: U.S. Census Bureau, 2007-2009 American Community Survey

F. SUMMARY OF DEMOGRAPHIC, GEOGRAPHIC AND REGIONAL CONSTRAINTS AND OPPORTUNITIES THAT IMPACT THE EXISTING AND PROPOSED SYSTEM

The county's geography, climate, changing demographics, and regional situation pose both challenges and opportunities to the existing and proposed integrated waste management system. A growing population centered within and near urban areas, along with the propensity for area rivers to flood, threaten to add volumes to the waste stream and serve as constraints to reducing the volume of waste that is landfilled. As cities grow and their jurisdiction expands into formerly rural areas, organized waste collection of these municipalities also increases. Residents leaving the farms for the cities cease burning and burying their waste and take part in the organized collection, which features the landfill as the disposal site. Residents moving from the cities into surrounding rural areas tend to maintain their waste collection habits by availing themselves of the services of county-licensed waste haulers (who deliver waste to the landfill).

The challenge will be to divert larger volumes of materials from the waste stream and to work with the cities in expanding education and recycling opportunities for increasing numbers of city dwellers, particularly residents of apartments, condominiums, and retirement homes, etc. The large metropolitan area on the western edge of the county and the regional waste-to-energy facility to the east are advantages for county residents that have the potential to

provide opportunities for diverting waste from the landfill. The existence of the metropolitan area, comprised of the largest cities in both Clay County (Moorhead) and the state of North Dakota (Fargo), contributes to the relatively stable employment rate and offers partnering opportunities on recycling processing, materials reuse and exchange, public education, and waste reduction efforts. Clay County has the opportunity to participate in a local processing facility (with MRF and baler) for the four broad categories of recyclables collected from its centers. However, the distance from processors of other materials (i.e., carpet, mattresses, etc.) poses challenges for the collection of those materials. While the county collects problem materials, such as electronics, the distance to processors/recyclers drives costs up. The increased volumes of waste posing disposal challenges will be a factor in driving further cooperation with the regional waste-to-energy facility at Perham.

III. THE EXISTING SOLID WASTE MANAGEMENT SYSTEM

A. FACILITIES

1. Municipal Solid Waste Landfill

Clay County owns and operates the only existing permitted municipal solid waste landfill in the county. (There are no known permitted closed landfills within the County.) It is located on Highway 23, about four (4) miles west and two and one-half (2.5) miles south of Hawley (and 20 miles east of Moorhead, the county's biggest solid waste generator) off U.S. Highway 10. The landfill (Permit #34), operating since 1972, encompasses 182 acres of the south half of Section 19 in Hawley Township (T 139N; R 45W). About two-thirds of the landfill acreage is being utilized for landfilling activities, due to swampy areas found in western portions of the site area.

In addition, a corral, dumpster, tote, and designated area are located on the site to collect used appliances, demolition debris, oil filters, and tires respectively, from county residents. These wastes are then taken to state-permitted facilities by licensed haulers for eventual recycling and/or disposal. Recycling containers are also on-site for scrap metal, electronics, glass, plastic, aluminum/steel cans, cardboard, newspapers, magazines and paper. The county anticipates continuing these services during the Plan period.

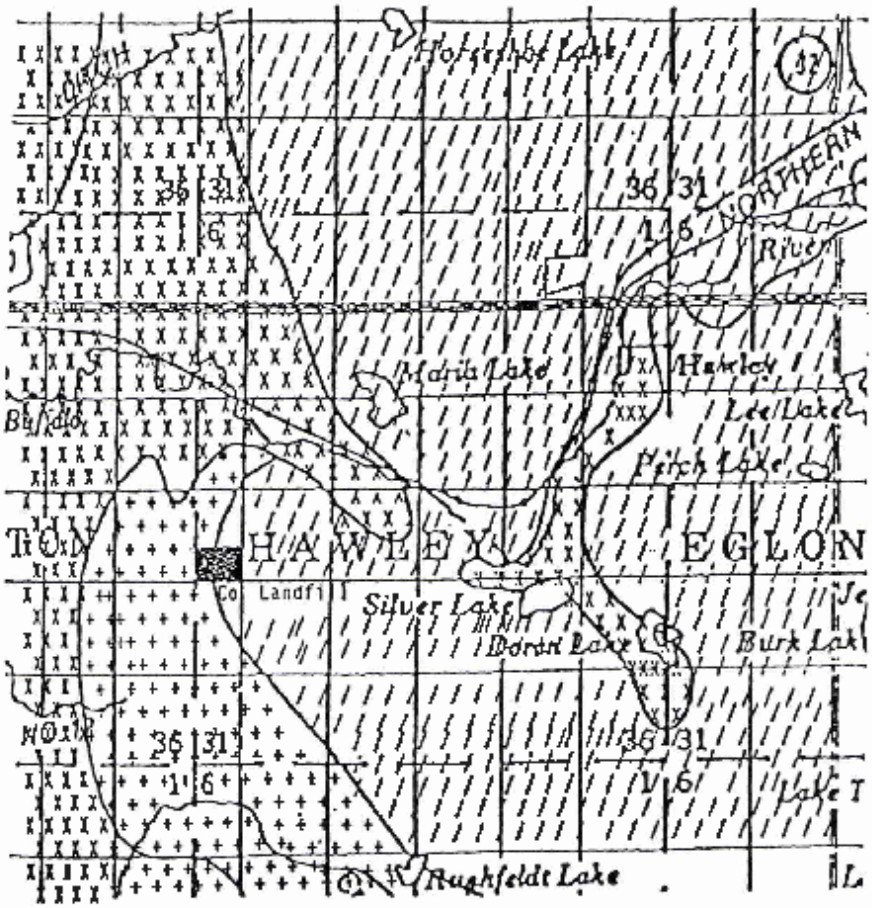
The site, zoned for a sanitary landfill, lies within a predominantly agricultural region. Since most of the farmlands have been cleared of all shrubs and trees, the perimeter areas are screened to provide a visual buffer between the landfill and the occasional surrounding farmstead. No part of the site lies within shore land limits or wildlife protection areas (See Map 2, page 13).

The site of the landfill is located on a glacial moraine referred to as the Hummocky Moraine, part of the Buffalo River Watershed. The moraine consists of great depths of glacial till, a heterogeneous mixture of silt, clay, sand and gravel; however, mostly clay is evidenced in the permitted working area of the site.

Nearby and to the west of the site are the beach ridge aquifers. These are ridges of fine-to-medium sand ranging from 10 to 30 feet in width and tens of miles long. Evidence of the nearness of these ridges to the landfill site is shown by the amount of sand found in the soil samples taken at the site. Borings made to a depth of 50 feet show little change in soil composition between the surface soils and the subsurface soil. The low permeability of this soil composition permits very little ground water to flow horizontally. Map 3, page 22, shows the general soil composition of the county, including the landfill in Hawley Township.

The landfill operating permit (Permit #34) was renewed by the MPCA on October 19, 2009, and the following plans submitted as required: Corrective Action Plan; Phytoremediation Plan; Contingency Action Plan; Operations and Maintenance Plan, Leachate Recirculation Plan; and Litter and Odor Control Plans. The previous permit issuance of April 2004 saw the

MAP 3: GENERAL SOIL MAP OF CLAY COUNTY, MINNESOTA



SOIL LEGEND

Ulen-Wheatville-Fluvaquents association: Nearly level to gently sloping, moderately well drained to poorly drained soils which formed in loamy to sandy lacustrine sediments or in alluvium and in lake basins

Lamoure-Barnes association: Nearly level to very steep, moderately well drained to excessively drained soils which formed in loamy to sandy outwash material on lake beaches and outwash plains

Bearden-Argegrid association: Nearly level to hilly, well drained soils which formed in loamy glacial till on uplands

Source: U.S. Department of Agriculture, Soil Conservation Service, Minnesota Agricultural Experiment Station, 1984.

development of Area IV by property acquisition and waste excavation and relocation (to provide for additional lined waste disposal area). Area IV, Phases 1 and 2 were constructed in 2004 to contain waste relocated from former closed and unlined Area I to the west. A portion of Phases 1 and 2 was closed in 2005, and in 2006 Phase 3 of Area IV (Area IV phases 3 — 6 will be redeveloped from old Area I) was constructed and is currently used for MSW placement at the landfill.

Under its current permit, Clay County will expand vertically over Areas III and IV, install leachate recirculation, and expand the existing active gas collection system. The 50-foot vertical expansion will bring the ultimate design capacity of the landfill to 6,284,963 cubic yards, extending its service life to approximately 50 years. The expansion triggered the need for an Environmental Assessment Worksheet (EAW), which was prepared and submitted prior to permit issuance. The current fill rate is approximately 100 tons per day, with a tipping fee of $12.00 per compacted cubic yard (see Table 10, page 34), remaining competitive with surrounding area tip fees. Via the county's projected 10-year budget, those charges will increase incrementally to meet future construction, operational, and liability-related expenses.

Construction of the first vertical expansion cell, Area III Phase 5 will be completed early in 2012. The county constructed Phase I of leachate recirculation in Area IV, Phases 1 & 2, in 2010. The first phase of the active gas collection system, which involved upgrading 32 passive gas vents to an active system and installing new gas vents, was constructed in 2008, and is being extended upon further development and expansion of Area IV. Once the County determines the gas quality and quantity, it will evaluate beneficial reuses in future alternative renewable energy projects.

With its acquisition of the property to the north for the purpose of determining the magnitude of the groundwater contamination in that area, the county implemented a Corrective Action Plan. Corrective action to address the contaminant plume has included: an investigation (conducting soil borings, soil sampling, installing temporary wells) of Area I, the waste from which was relocated to expansion Area IV; the installation of 10 gas vents/remediation wells; expansion of the groundwater monitoring system; and phytoremediation, or the use of trees to contain contaminants in the groundwater.

The county will continue to evaluate periodically the feasibility of installing baling operations. The county most recently reviewed that option in 2010 and concluded that, due to the high cost of installing and operating a baling facility (compared to the relatively low volume of in-county waste), the county would wait until a regional waste solution resurrects that discussion.

The operation of the landfill is compliant with current State rules and regulations. The operators are state certified and follow standard operating procedures, including but not limited to load inspection and rejection of certain problem wastes and other prohibited materials. Leachate is transported to Fargo for treatment as a temporary measure. Long-range management methods are being evaluated, including on-site treatment that will provide a more feasible treatment solution.

Periodic inspections by State and landfill staff are routinely conducted to ensure that the operations meet current regulations and conditions of the permit. One of the operational problems that landfill personnel occasionally face is soil erosion occurring around the work face. This, however, is corrected in a timely manner.

2. Demolition Landfill

The Clay Demolition Landfill is the only county-permitted landfill for demolition debris. The facility is privately owned and operated. It is located in Section 3 of Riverton Township (T139N; R 46W), six miles west of Hawley and ¼ mile north off U.S. Highway 10. The permitted landfill area covers 26 acres, with a 450,000 cubic yard capacity and an estimated life of 50-plus years. It receives approximately 6,000 tons of debris annually. Additional acreage near the site is available for expanding the capacity of the landfill beyond the 10-year planning period.

The demolition landfill's conditional use permit allows the disposal of inert building and other structural waste materials and rubble. The MPCA-approved permit was first issued in 1984. A permit modification was accomplished after ownership changed during 1994; and the permit has been reviewed and re-issued periodically by MPCA. With the 2002 permit reissuance, a ground water monitoring system (consisting of four wells) was required to be installed. The operation of the demolition landfill meets or exceeds State statutes and rules. Because of its location in the County, the Permit-by-Rule method of disposal is not used frequently, and only with the participation of the MPCA.

In addition to demolition debris disposal, the facility operator cooperates with the county program to recycle dimensional lumber and materials, including manufactured items, from incoming waste loads.

3. Scrap/Salvage Yards

The county has three salvage yard businesses operating in the rural area. The first one is between the cities of Kragnes and Georgetown on Highway 75. The second site is along U.S. Highway 10 directly east of Aggregate Industries' sand and gravel business near Glyndon; and the third is southeast of the City of Hawley. Salvage yards currently are not permitted uses, but are allowed as conditional uses in two zoning districts, the Agricultural General and the Highway Commercial.

Moorhead previously had one permitted salvage yard business, located in the city's Industrial Park. The privately-owned operation accepted scrap metals, automobiles, appliances and various other recyclable products from the urban and surrounding area. In 1989, use on the site expanded to include a waste tire storage/processing facility (1989-90) and a recycling processing facility (1989). This facility closed its doors a number of years ago; and a mutually-agreed-upon (the facility, MPCA, city of Moorhead, and the county) clean-up ensued, with the last of the tire shreds being utilized in construction of the landfill's leachate recirculation system last year.

B. COLLECTION SERVICES

1. Services

There are primarily three types of services for solid waste collection in Clay County: municipal, commercial and individual hauler services. Municipal services are performed either by city workers using city equipment, or by equipment and crews under contract to a city, with billings made through that municipality. Commercial collection services are provided by direct agreement between the generator of solid waste and the county-licensed hauler. Individual haulers are generally persons who do not live in a serviced area or who do not wish to be served. Methods of collection in the county include curb or alley pickup in the cities and at the end of residential driveways in the rural areas.

In Clay County, the majority of the population resides in the City of Moorhead, which also produces the largest volume of solid waste (approximately 70 percent or 19,000 tons per year) generated in the county. Moorhead provides municipal solid waste collection to its residents using city workers and equipment. City sanitation workers haul waste from the curbside program to a compaction transfer station located on U.S. Highway 10 on the eastern edge of Moorhead, before hauling it to the county landfill. Concordia College, Minnesota State University Moorhead, and American Crystal Sugar Company also provide some additional collection services for their respective local institutions.

Outside the city limits of Moorhead, solid waste is collected primarily by several small commercial firms which contract with either the municipalities or with individual generators. Map 4, pages 27 through 30, shows hauler service areas and service area boundaries. Table 7, page 31, provides additional hauler information. The suburban areas surrounding Moorhead are serviced mainly by three firms: Waste Management, Metro Disposal, and Fuchs Sanitation. County waste collected by these haulers is taken to the Clay County Landfill.

The remainder of the county, which is essentially rural, is served mainly by these same three collection firms. Fuchs Sanitation collects from the majority of larger farming communities in the county. These cities include Georgetown, Ulen, Hawley, Glyndon, Downer, Rollag, Sabin, Comstock, Barnesville, Dilworth and Hitterdal. Waste is hauled directly to the county landfill. Waste Management services areas along the borders of the county. Because of the proximity to Becker County and the city of Fargo, some of that collected solid waste is disposed of at the transfer station in Detroit Lakes, some at the Fargo Landfill, and some in its own landfills. The third hauler, Metro Disposal, serves areas around the city of Felton and along both the eastern and the western borders of the county. Most of the collected waste is hauled to the county landfill, with some loads from the western border (mixed with waste from the city of Fargo, North Dakota) going to the Fargo Landfill.

Waste collection is not mandatory in Clay County. However, reports from county-licensed haulers indicate that all county residents, in both the communities and the outlying areas, have solid waste collection services available. Of the rural residents, roughly less than 1% haul to the landfill themselves. A dwindling few might deposit on their own individual rural farm properties. The county solid waste ordinance includes provisions for unauthorized and illegal

disposal. Although rural on-site disposal is relatively low, estimated at 1% of the population, in the county, this will be monitored for future ordinance revision, if needed, to mandate participation in collection services by all its residents. As yet, Clay County has not formally banned garbage burning through a county board resolution stating that garbage service is available to all residents (thus, making onsite disposal illegal). However, county staff does cite to residents the state's prohibitions on open burning found in Minnesota Statute 88.171, which lists materials than cannot be burned, including industrial waste, garbage, and hazardous wastes. The county's public education includes cautions about the burning of garbage and the resulting health hazards, toxic fumes and air pollution.

2. Costs

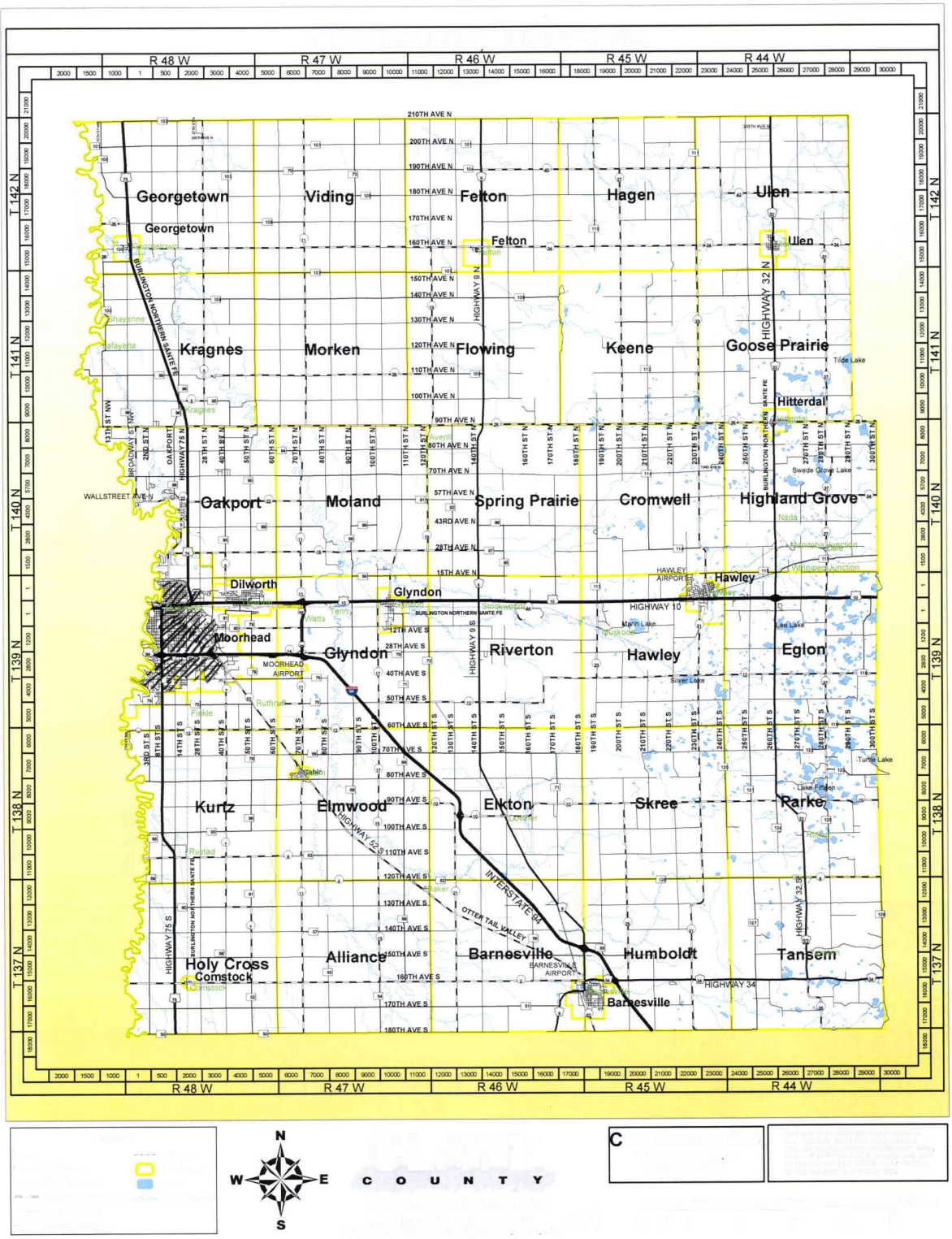
Costs to county residents for solid waste collection vary depending on such factors as hauling distance, population density (urban and rural), and disposal costs. Rates for residential collection services range from $9.46 to $19.75 per month. Rates are volume-based, using an average 30-35 gallon container as the base volume to determine customer charges. (Additional charges to residents are assessed above the base rate, depending on waste volumes generated. Commercial rates are determined by the size of the container and the frequency of pickup.) The cost to rural residents for a 2-cubic yard container serviced monthly ranges from $30.50 to $35. Table 8, page 32, shows rates charged by county haulers for solid waste collection services.

3. Problems in Existing Collection Systems

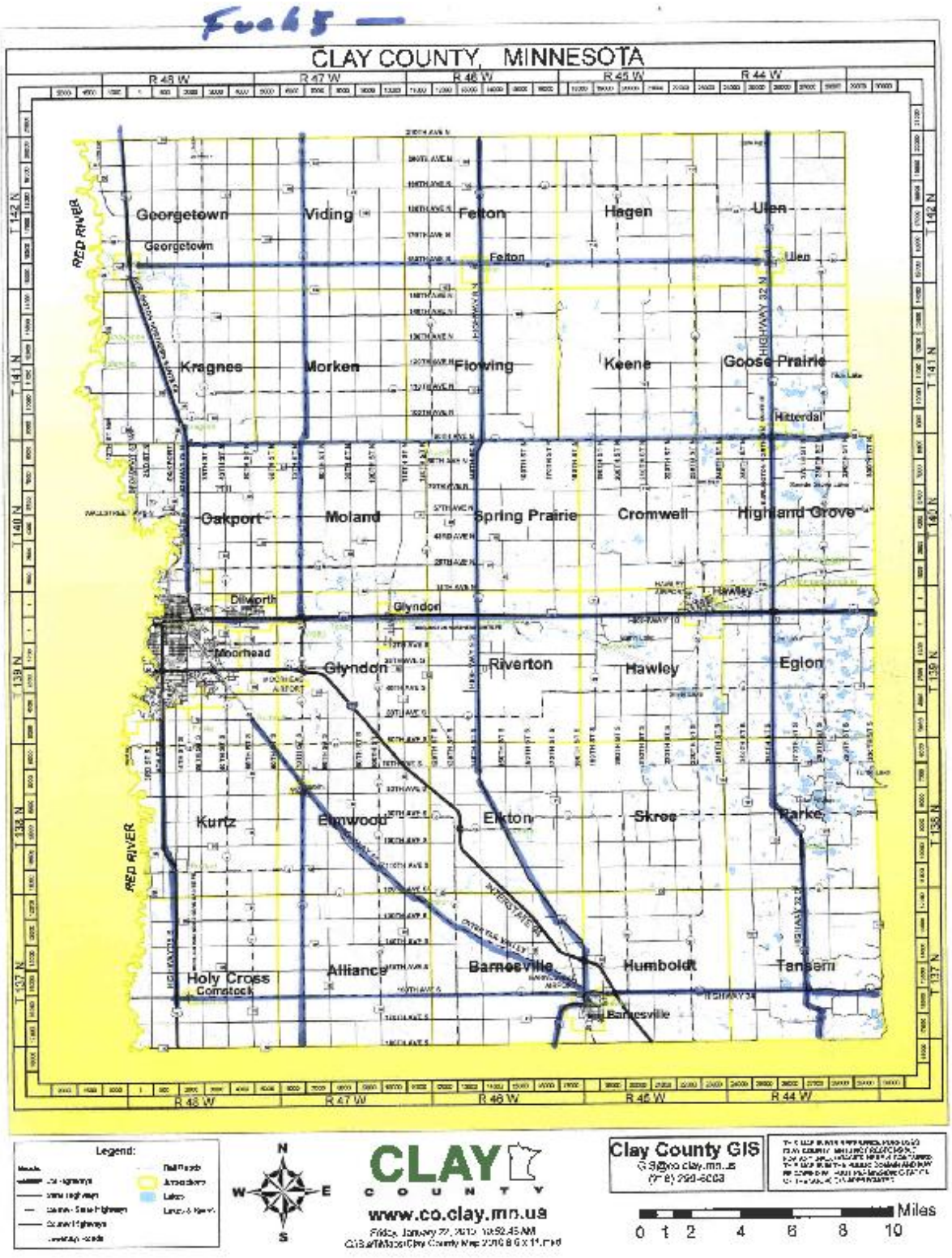
No significant problems exist in the rural portions of Clay County regarding roadside dumping. Since a small number of rural residents have no collection service and the distance to a disposal site can be quite long, the potential open dumping by some individuals will be watched and dealt with through ordinances, as needed.

Additionally, there is some tendency for overlapping collection routes within the outlying areas of the county. The small amount that does occur, however, does not present a significant problem.

MAP 4: CLAY COUNTY HAULER SERVICE ROUTES
Moorhead Dept. of Sanitation



MAP 4: CLAY COUNTY HAULER SERVICE ROUTES (Continued)
Fuchs Sanitation Service



MAP 4: CLAY COUNTY HAULER SERVICE ROUTES (Continued)
Metro Disposal

MAP 4: CLAY COUNTY HAULER SERVICE ROUTES (Continued)
Waste Management

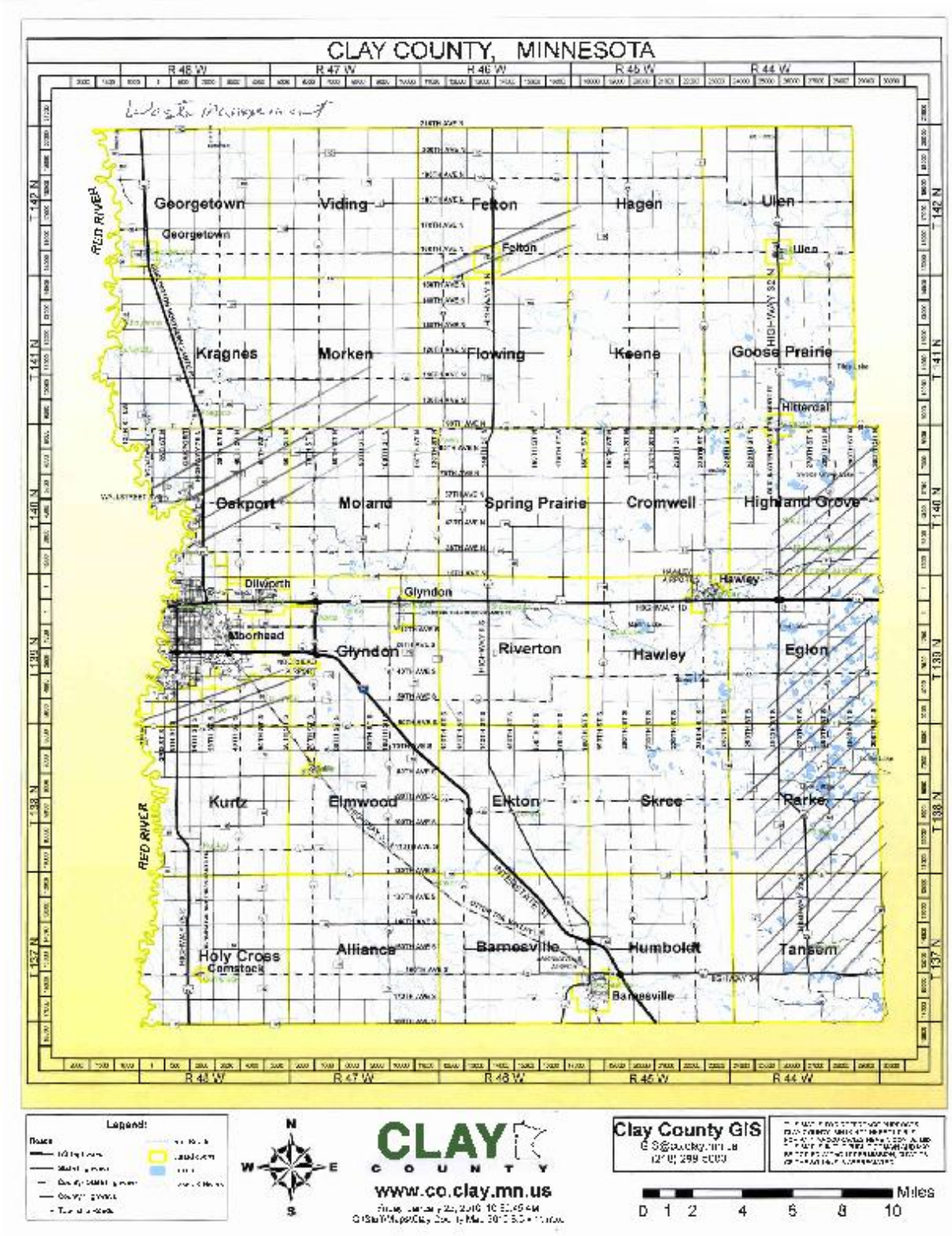


TABLE 7: CLAY COUNTY SOLID WASTE COLLECTION SERVICES – 2011

HAULER	SERVICE AREA	CAPACITY
Fuchs Sanitation Service	Georgetown, Ulen, Hawley, Glyndon, Downer, Rollag, Sabin, Barnesville, Comstock, Dilworth, Hitterdal	7-25 cu. yd. compactor trucks 3 roll-off trucks
Metro Disposal	Moorhead suburban area, part of eastern county border area, & Felton	2-20 cu. yd. trucks
Moorhead City	Moorhead	1-65 cu. yd, trailer 2-75 cu. yd. trailers 7-20 yard compactors
Waste Management, West Fargo, ND	Eastern county border area Moorhead suburban area	1-20 cu. yd. truck 1-18 cu. yd. truck 1 roll-off truck

Source: Clay County Department of Solid Waste, July 2011

TABLE 8: CLAY COUNTY HAULER RATES FOR SOLID WASTE COLLECTION SERVICES, 2002-2011

	AVERAGE RATES 2002		AVERAGE RATES 2011		
	(Res.) (per month)	(Comm.)	(Res.) (per month)	(Comm.)	(Res. 2-cu. yd)
Fuchs Sanitation	$7.65 – 15.75	N/A	$9.75 – 19.75	N/A	$30.50 - $35.00
Moorhead City	$7.78	N/A	$9.46	N/A	N/A
Metro Disposal	$ 11.00 – 15.00	N/A	$13.00 - $17.00	N/A	$31.28 - $35.00
Waste Management	$ 11-14.00	N/A			

Source: Clay County Solid Waste Management Office, 2011

C. STORAGE AND FINAL DISPOSAL SYSTEMS

1. Storage

Currently, the city of Moorhead owns and operates the only storage and transfer facility for solid waste in Clay County. The facility is located on U.S. Highway 10 in east Moorhead and has a 75 to 85 yard holding capacity. The compaction transfer station accepts solid waste from the city's collection service as well as from individual and commercial haulers who collect in the city. The waste is stored and then delivered daily to the Clay County Landfill in semi-trailer trucks. Two trucks, which carry load capacities of 65 and 75 yards, respectively, normally are used for transporting waste to the landfill. An additional 75-yard capacity back-up trailer is available for services, as needed.

Moorhead charges and retains fees for solid waste deposited at the Transfer Station by non-city service haulers. These haulers are assessed a disposal fee based on the size of vehicle, size of load or type of waste. Generally, pickup load "tipping" fees for residents are $10.00 per load. Fees charged to commercial haulers are $12.00 per cubic yard.

In addition, special fees are charged for storing and hauling bulky items, white goods and industrial wastes. Revenue to operate the transfer station is supplied through tipping fees. Table 9, page 33 provides a breakdown for past and current rates charged at the Transfer Station. An estimated ten (10) years of useful life remain for the facility.

City of Moorhead personnel have placed containers for recyclable materials at a south Moorhead site to compliment the MinnKota Recycling site in north Moorhead. Yellow newspaper, blue cardboard, and white magazine dumpsters are strategically located throughout Moorhead for residents and businesses to deposit these recyclables for later pickup. The city crews then deliver the materials to an area recycler. City of Moorhead personnel deliver the occasional residential fluorescent lamp to the county's HHW facility for transport to a permitted processing facility.

TABLE 9: CITY OF MOORHEAD TRANSFER STATION DISPOSAL RATES 2002 – 2011

TYPE OF LOAD	2002	2011
All cars	$ 5.00	$ 5.00
Station wagons	7.50	7.50
Vans, pickups & medium trailers	10.00	10.00
Pickups with sideboards	15.00	15.00
1 Ton Trucks w/Large Trailers (4 cu.yds.)	20.00	20.00
2 Ton Trucks (8 cubic yards)	30.00	30.00
2 Ton Trucks with sideboards (10 cu. yds.)	45.00	45.00
Tandem (20 cubic yards)	90.00	90.00
Packer-type garbage box (per yard)	12.82	16.00
10 yards	128.20	190.00
12 yards	153.84	225.00
16 yards	205.12	300.00
18 yards	230.77	340.00
20 yards	256.41	375.00
25 yards	320.51	470.00
Semi trailers (send to landfill)		
Appliances	$10/$15	$10/$15
Tires – Car	3.00	(not accepted)
-- Truck	10.00	(not accepted)
-- Trailer	(not accepted)	(not accepted)
Demolition debris (vans, pickups, & medium trailers)	25.00	$ 10 (per yd.)

NOTE: (1) Rates double for: non-residents
(2) No concrete, trees, stumps, or hazardous waste material accepted.

Source: City of Moorhead Sanitation Department, 2002 and 2011.

2. Final Disposal

Solid Waste collected in the county is eventually transported to the Clay County Landfill by area commercial collection services, individual haulers, or by the City of Moorhead from its Transfer Station operations. Waste arrives at the landfill either in loose or compacted form. The tipping fees are determined by the size of vehicle or volume of the load to be deposited. Commercial haulers are charged $12.00 per cubic yard (compacted); residential haulers are charged by the garbage container, car, or by the pickup-sized load. Table 10, below, describes the rate structure Clay County utilizes to charge haulers who dump at the landfill.

Bulky waste, including household furniture and other large items, is generally treated as other solid waste products at the landfill. These bulky items that include mattresses and box springs are not charged individually or separately, but are charged the $6 per cubic yard minimum rate for waste disposal. For example, a small pickup load of this material would be charged $6.00, while a full pickup load (which would constitute approximately 2 cubic yards) would be charged $12.00. Bulldozing and covering the waste is done on a daily basis. Certain materials, such as asbestos and other industrial wastes, are specially handled and covered separately immediately upon arrival at the landfill.

TABLE 10: CLAY COUNTY LANDFILL DISPOSAL RATE STRUCTURE
2002 – 2011

HAULING UNIT	RATE/C.Y. 2002	RATE/C.Y. 2011
Cars	$ 5.00	$ 6.00
Pickups/two-wheel trailers (2-yd.)	5.00	6.00
Single axle trucks (6-yd.)	5.00	6.00
Tandem Axle Trucks (10-yd.)	5.00	6.00
Commercial Roll-offs (20-yd.)	6.60	8.00
Commercial Compactor Units	11.00	12.00
Asbestos (per bag)	5.00	5.00
Demolition material	9.60	9.60
Appliances (each)	15.00	10.00
Tires (each)		
Passenger, Light Truck	1.50, 2.00	2.00
Larger Trucks	---	6.00 — 8.00
Oversize/Agricultural	13.00 — 16.00	25.00 — 40.00

Source: Clay County Solid Waste Management Office, July 2011

Currently, appliance recycling activities are ongoing at the landfill. Items brought in are stored until a truck-load size (40-45 appliances) is picked up by a contracted hauler. In addition, other recyclables (metals, plastics, glass, paper, oil filters, tires, fluorescents, etc.) are collected at the facility.

Access and road conditions to the present landfill are good. The main access, County Road 23, is blacktopped the entire distance between the intersection with Highway 10 and the landfill. Regular and seasonal load weight restrictions placed on the major transportation routes generally do not hamper normal operations to or from the landfill, so activities are inappreciably disrupted.

Few problems exist in the transportation system. Except for the 20-mile distance between Moorhead (the county's major generator) and the landfill, road conditions and accessibility to the landfill are good. However, because of state road restrictions on truck load weights (i.e., limiting Moorhead transfer station trucks to an 80,000-pound permitted load—instead of the previous 90,000), the city of Moorhead had to increase its number of hauls to the landfill by at least one round trip per day. These limits have had an adverse effect on costs for Moorhead's solid waste transportation operations.

D. SOLID WASTE GENERATION RATE

About 98 percent of the municipal solid waste collected in the county is disposed of at the Clay County Landfill. The remainder of the waste collected is disposed of at the Fargo (ND) Landfill. In an effort to quantify current generation rates for municipal solid waste, the county landfill operators and all commercial haulers in the county service area were surveyed. Compaction densities for the various trucks have been assumed based on information obtained from the haulers and equipment manufacturers. The estimated 1985 average daily collected volume from municipal, commercial and individual haulers in Clay County, based on a seven day week, was 303 cubic yards per day or 94 tons per day; in 1990, 255 cubic yards (80 tons) were collected; in 1994, 221 cubic yards (70 tons) were collected; in 1997, 205 cubic yards (64 tons) were collected; in 2000, 201 cubic yards (63 tons) were collected and in 2010, 240 cubic yards (75 tons) were collected. Gradual decreases in collection rates can be attributed in part to: increased use of the Demolition Landfill, summer drought conditions, waste reduction efforts, and county recycling programs. (2009 increases were due to higher waste volumes from flooding.)

Although waste is not collected on a seven day schedule, an energy recovery system may have to be operated on that basis, thus these seven-day volumes are useful for comparison. Table 11, page 36, provides information on the quantities of solid waste which major haulers in the county collect on an average weekly basis.

In addition to the hauler surveys, weighing studies were conducted at the landfill during 1985-86 to obtain further waste generation information. Vehicles hauling waste to the landfill were weighed for one-week intervals during each quarter of a 12-month period to establish waste generation rates. The months of May, July, October, and February were chosen for the

studies as representative of that quarter's waste composition and rate. Final weight calculations showed a common average of 620 pounds per cubic yard or, otherwise stated, 3.2 cubic yards per ton.

The first study was completed the week of May 6 to May 11, 1985. All loads from Fuchs Sanitation and the City of Moorhead (the two major haulers utilizing the county's landfill) were weighed prior to dumping. The results showed that an average of 111 tons of solid waste per day were disposed of at the landfill over a one-week collection period. Seventy-eight (78) percent of the waste, or 87 tons, was deposited at the landfill from Moorhead's Transfer station on an average daily basis. The remainder of the weighing program served to validate this as well as the other reported generation rate studies conducted. Table 12,

TABLE 11: SOLID WASTE COLLECTED WEEKLY IN CLAY COUNTY, 2010

HAULER	DISPOSAL POINT	CUBIC YARDS PER WEEK	TONS PER WEEK
City of Moorhead Sanitation	Clay County Landfill	1,273	397.9
Fuchs Sanitation	Clay County Landfill	454	142
Waste Management	Clay County Landfill	0	0
Metro Disposal	Clay County Landfill Fargo Landfill	4.25	1.33
Individual Haulers	Clay County Landfill	28	8.75

Source: Clay County Solid Waste Management Office, August 2011

page 37, shows solid waste volumes deposited at the county landfill over the past five-year period to compare generation trends. Increasing generation trends the past few years reflect the higher number of waste loads (tons of empty sandbags and flood-impacted materials that would not normally have been landfilled) resulting from unprecedented flooding. 2009 saw particularly heavy volumes of flood-related debris deposited at the landfill.

Another study to help determine county solid waste generation rates involved a year-long study of trash from counties in Greater Minnesota. The four-season waste composition study was conducted by the MPCA beginning in July 1990. Through the study, acting as a representative sampling, it was concluded that each Minnesotan throws away an average of 4.5 pounds of garbage a day. In a more recent statewide MSW composition study, field sorting of waste was conducted at eight facilities around Minnesota between September 27 and November 20, 1999. Data was compiled from 390 samples (nearly 95,000 pounds of MSW).

Findings of an older study, which seems still relevant to Clay County, is the 1979 Minnesota Resource Recovery Plan (MRRP). It estimates that solid waste generation rates in rural areas average 2.0 pounds per capita per day. This quantity includes wastes generated at small commercial establishments throughout the area. Larger and more developed areas would be expected to generate greater quantities of solid waste on a per capita basis. **MRRP** estimates that for a community the size of Moorhead, 3.5 pounds per capita would be generated per day. This figure was concluded, however, prior to SCORE legislation, which resulted in communities becoming actively involved in waste reduction and recycling activities.

TABLE 12: MUNICIPAL SOLID WASTE RECEIVED ANNUALLY AT CLAY COUNTY LANDFILL 1998 – 2010

YEAR	CUBIC YARDS	TONS*
1998	76,190	23,809
1999	71,590	22,372
2000	76,008	23,753
2001	73,049	22,828
2002	74,508	23,284
2003	80,460	25,144
2004	82397	25,749
2005	80,698	25,218
2006	82,624	25,820
2007	84,213	26,317
2008	82,574	25,804
2009	94,140	29,419
2010	86,436	27,011

NOTES: Average monthly tonnage (2006-2010) 2,240 tons per month or 75 tons per day.

* Based on an average 620 pounds per cubic yard, or 3.2 cubic yards per ton.

Source: Clay County Solid Waste Management Office, August 2011

The county does not have a heavy industrial base nor do current predictions indicate growth in that area for the next ten years. The largest current commercial generators include: American

Crystal Sugar processing plant; Moorhead State University; Moorhead Public School District; Moorhead City and Clay County governments; Concordia College; and Anheuser Busch Agricultural Resources. These six (6) entities generate 300 or more tons per month, including recyclable materials such as paper and organic waste. They continue to work with the county and city to adopt waste reduction and recycling practices.

The 2010 populations for Clay County and Moorhead are 58,999 and 38,065 respectively. Based on an estimated 75 tons per day of municipal solid waste currently being landfilled in the county, the average generation rate per person is approximately 2.8 pounds for the City of Moorhead (based on waste collected from the city), and 2.0 pounds per person for the out-county areas served. Thus, the solid waste generation rate per capita for the county would average 2.5 pounds per day.

These average generation rates are significantly lower than those estimated by the MPCA. However, MPCA's composition studies were conducted before waste reduction and recycling activities, as well as volume-based pricing for garbage collection, were fully underway. Table 13, page 39, provides further information on per capita generation rates for Clay County areas. The county estimates that roughly 40% of the MSW in the county is generated by the commercial sector, with approximately 60% being residential.

TABLE 13: CLAY COUNTY SOLID WASTE GENERATION – 2010

CITY OR VILLAGE	DISTANCE TO LANDFILL (MILES)*	DISTANCE TO MOORHEAD (MILES)	2010 POPULATION	DAILY LBS WASTE	TONS WASTE PER WEEK
Barnesville	23	20	2,563	6,407.5	22.4
Comstock	35	14	93	232.5	.8
Dilworth	17	4	4,024	10,060.	35.2
Felton	22	27	177	442.5	1.55
Georgetown	36	16	129	322.5	1.13
Glyndon	11	9	1,394	3,485.	12.20
Hawley	7	22	2,067	5,167.5	18.09
Hitterdal	17	32	201	502.5	1.76
Moorhead	20	0	38,065	95,162.5	333.01
Sabin	22	6	522	1,305.	4.57
Ulen	24	39	547	1,367.5	4.79
Incorporated population			49,782	124,455.	435.5
Unincorporated population			9,217	23,042.5	80.65
		TOTALS	**58,999**	**147,497.5**	**516.2**

*Based on haul to south ½ Section 19, Hawley Township
Based on 2.5 lbs of municipal solid waste per person, excluding demolition landfill volumes.

As discussed, solid waste quantities are proportional to population. To determine future facility needs based on solid waste generation rates, population projections were calculated for the next 20 years—the design period for the county's Solid Waste Management Plan. Table 14, below, illustrates per diem generation rates, utilizing the projected county population figures for the design period and beyond. Calculations assume that the adjusted current generation rate for the entire county population of 2.5 pounds per person per day will remain the same.

TABLE 14: SOLID WASTE GENERATION PER DAY PROJECTED FOR CLAY COUNTY 2010 – 2030

Year	Population	Cu. yds	Tons/day*
2010	58,999	238	74
2015	63,872	257	80
2020	69,148	279	86
2025	74,956	302	94
2030	79,313	320	99

* Based on 620 pounds per cubic yard average.

Source: Clay County Solid Waste Management Office, July 2011.

E. SOLID WASTE CHARACTERISTICS

Numerous studies have been performed across the United States in an attempt to quantify solid waste characteristics. Findings show that what is average or "normal" for one region or city can be totally different from a similar area in a different part of the country or state, or even from the same location at different times of the year. Solid waste quantities and characteristics vary on a daily, weekly and seasonal basis, depending on various outside influences. While it is possible to characterize an area's waste by sampling and classification, to be most effective, these tests must be performed daily for an extended period of time. The U.S. Environmental Protection Agency (EPA) and other agencies have performed detailed samplings for a number of U.S. communities and have compiled some average values for a number of constituents of solid waste management. In addition, Clay County in 1985 and more recently the MPCA (in 1990 and 1999) have, as mentioned earlier, conducted detailed studies of the composition of waste. The two MPCA studies of representative wastes collected from both the Metropolitan and Greater Minnesota areas have helped determine county solid waste generation rates and described the characteristics of the solid waste stream. Table 15, page 41, presents values for solid waste characteristics, as determined by the studies.

TABLE 15: COMPOSITION OF MIXED SOLID WASTE GENERATION 1990 AND 1999

COMPOSITION	PERCENT OF VOLUME (Greater MN, 1990)	PERCENT OF VOLUME (Greater MN, 1999)
Paper	38.	34.2
Yard Waste	4	1.8
Food	14	14.5
Other Organics	9	3.6
Glass	4	3
Metals	6	6
Textile	---	3.4
Wood/Demo (MPCA)	8	6.3
Plastic	9	11.7
Rubber	---	.7
Problem Materials	5	2
Other (MPCA)	2	11.8
Household Hazardous Waste	1	1
TOTALS	**100%**	**100%**

Sources: MPCA, 1991, 2000.

Composition of mixed solid waste is highly affected by the relative amounts of residential, commercial and industrial wastes. Commercial and industrial wastes typically have a high content of paper and plastics, with correspondingly lower moisture content and higher heating value. Conversely, residential waste contains more food and yard waste with correspondingly higher moisture content and lower heating value. Furthermore, yard waste generation is seasonal and typically contributes to higher moisture content and higher quantities of solid waste in spring and summer. Overall, municipal solid waste generally is 75 to 80 percent combustible and 20 to 25 percent non-combustible. Determining the general distribution of yard waste is important when considering energy recovery alternatives, because it directly affects heating values and, thus, estimated energy revenues. Sanitary landfill alternatives are affected primarily by solid waste volume and weight.

F. PLANNING COMPLETED WITHIN LAST FIVE YEARS

Solid Waste planning in the county is accomplished by Solid Waste Management Department staff, with input and recommendations from an 11-member Solid Waste Advisory Committee (SWAC) and the contracted services of technical, financial, and planning consultants, which have been utilized since 1985 to assist with various elements of Plan development. The permanent Solid Waste Advisory Committee was formed in 1990 from a previously existing (1984) Moorhead/Clay County Solid Waste Task Force, charged with conducting feasibility

studies and making recommendations regarding economically and environmentally viable alternatives to minimize dependence on landfill disposal. The original Task Force had overseen the development and completion of the first five-year Solid Waste Management Plan for Clay County, an overall financial plan to cover solid waste activities, and the formation of a county Department of Solid Waste Management in 1987 to carry out the responsibilities of the Plan. Current staffing of the solid waste office is 3 FTE.

The county's SWAC is made up of representatives from the County Board, the Moorhead City Council, the small cities, the townships, Hawley Township (site of the landfill), and citizens-at-large. Public input is a critical element in the county planning process; and the various perspectives and experiences brought by its residents help to make planning relevant to the county's needs. The mission of SWAC is to offer input that reflects a "cross-section" of ideas from different segments of the county's population to help continue responsible solid waste management planning and implementation.

To publicize and encourage the general public's participation, every Advisory Committee meeting notice is published in all of the area newspapers and posted in the Courthouse, public library, and city offices. In addition, Public Service Announcements (PSA's) are sent to all other area media. At meetings, solid waste management staff and technical consultants provide updates on landfill activities, projected financial picture, and Household Hazardous Waste, Recycling, and Public Education programs. As information is gathered and prior to completion of its solid waste management plans, the county holds public meetings in various locations to provide the public an opportunity to give direction in development of a management system best suited for its residents.

G. REGIONAL CHALLENGES AND OPPORTUNITIES

To manage an up-to-date, relevant solid waste system, reliable data must continue to be collected which will help to select and maintain appropriate alternative technologies that decrease the county's need for a landfill. A potential barrier to reaching and attaining a successful system is a continued concern as to the county's control over the flow of waste generated within its borders. To select the most "prudent and feasible" alternative(s) to landfilling and, thus, to the successful attainment of our goals and objectives, the county's ability to direct certain activities must be relatively assured. These activities would include the reasonable control over the collection and disposal of solid waste generated within the county's borders. While the state of Minnesota has upheld the counties' regulatory authority to direct the flow of waste (i.e., the state upheld Morrison County's Plan and Ordinance against a challenge by two state agencies to the direction of waste to the Morrison County landfill), Clay County's dilemma stems from the difficulty of directing private haulers, who also are licensed in neighboring states, to refrain from hauling some loads to cheaper, out of state disposal facilities.

A barrier to keeping waste within its borders is that the western edge of Clay County and the eastern edge of Cass County, North Dakota, are separated only by the Red River of the North. Sited just five (5) miles from Moorhead, the Fargo (ND) landfill tip fees are lower than the tipping fees charged by the Clay County Landfill. Concern about waste leaving the county

has lessened as the tipping fee differential between the two entities has decreased—the City of Fargo currently charges $35 per ton and Clay County $40 per ton. However, Clay County's twenty-year financial projection indicates the need for a $4-$5 fee increase in 2014. As the county's landfill tipping fee increases, there seems to be a decline in the tonnage of waste deposited in the county. The apparent effect this fee differential has is detrimental in that it introduces an unreliable variable into the planning equation for any solid waste abatement and resource/energy recovery program the county institutes. To successfully plan our solid waste management future, the county must continue to be cognizant of the importance of effectively controlling the flow of waste generated within its borders.

While the county requires as a condition of licensure that haulers dispose of waste generated within Clay County at its landfill, enforcement is difficult. Also, the county's Solid Waste Ordinance requires that all "solid waste must be disposed of at an operation having a permit from the Agency (MPCA) and a license from the county." The Clay County Landfill and the Demolition Landfill are the only operations in the region that fit the above criteria, since other area landfills are located in North Dakota and not licensed by the MPCA. Haulers, who take loads containing Clay County waste to North Dakota landfills, are in violation of the county ordinance and their county-issued license. These haulers, who are also licensed in North Dakota insist that they distribute loads containing waste from both sides of the border fairly and equally among area landfills. While the county is aware of these violations, it has not undertaken legal proceedings against haulers nor has it revoked licenses.

Related to the waste flow barrier is concern about the liability that may accompany Clay County waste to an out-of-state landfill. Are solid waste haulers licensed by the county also agents of the county, who render the county responsible for any pollution problems that said haulers may create outside of the county? With the reduced ability of counties to purchase liability insurance, such questions must be addressed if those counties developing solid waste management plans are to be assured that they are undertaking the lowest liability possible. The resolution of these issues will help to ensure that our solid waste management system will be developed, implemented and maintained properly and successfully.

Clay County has had and will continue dialogue with surrounding counties to identify common regional solutions and alternatives to solid waste management. Beginning in 1995, studies have been periodically conducted to determine the feasibility of selecting a regional waste disposal system to compliment waste abatement activities already employed by the county. Objectives of the 1995 study were to determine if a regional partnership could be developed which would result in:

- Reduction in landfill dependence, thus an extension in the current landfill life (>20 years);
- Reduction in liability to residents of counties included in the study; and
- Stabilization of costs which were similar to or less than those experienced with the individual county projects.

Options explored included waste processing, incineration, and land disposal. Following is the summary of the findings of the study:

- Based on the primary objectives of the exercises and the importance of

obtaining capital grants, the recommendation was to postpone development of a regional solid waste disposal system until such time that State grant funds become available or such other changes that may mandate the development of a regional processing facility.

In 2006, Clay County convened a panel of representatives from Minnesota and North Dakota counties and cities to assess regionally alternative solid waste disposal options. Representatives from the counties of Clay, Becker, Otter Tail, and Wadena in Minnesota, Cass County, North Dakota, and the cities of Moorhead, Fargo, West Fargo, and Grand Forks met over a number of months to technically assess and economically review new and emerging technologies for alternative waste disposal, including plasma gasification, volcano, digestion, hydrolysis, composting, landfill with baler or bioreactor, and MSW combustor. A consulting firm gathered data and projections regarding the waste streams and financial resources from all entities and assessed the technical, environmental, and economic analyses that would facilitate planning decisions facing the panel. The panel evaluated potential facility sites and conventional and innovative technologies before choosing to explore further the feasibility of an MSW combustor and a regional landfill. The second part of the study focused on assessing the feasibility of an MSW combustor and regional landfill for three scenarios; a 200-, 500-, and 1,000-ton per day (tpd) waste-to-energy facility and a regional landfill. The subsequent withdrawal of the North Dakota entities left regional waste volumes at a level that could not sustain the waste-to-energy option.

Since then, Clay County representatives have continued discussions on regional waste disposal options with representatives from fellow Minnesota counties. Clay County is involved in on-going discussions with those counties delivering waste to the Perham Resource Recovery Facility, Otter Tail, Becker, Wadena, and Todd, regarding participation in regional efforts such as waste exchanges and the use of the Clay County Landfill as a regional disposal facility. Discussions have focused on Clay County sending loads to Perham and receiving bypass materials from the Perham facility and fines from the proposed MRF. Clay County is committed to working out arrangements that will make regional participation a reality. Clay County will continue to monitor this as well as other waste management programs for possible inclusion in regional efforts in the future. In addition, the County would continue utilizing State agencies, the coalition of county solid waste offices, the county's Advisory Committee, industry providers, and citizen participation to ensure ongoing involvement of and consultation with authorities in the field of solid waste management.

H. EXISTING AND POTENTIAL ENVIRONMENTAL AFFECTS

1. Landfill

As with any of the present landfill alternatives, pollution generated at the site is a potential problem. The county Solid Waste Office currently employs a pollution monitoring program as a means for early detection of detrimental environmental effects produced by the county landfill. Chemical tests of the monitoring wells on-site are run at least quarterly. In addition, testing of neighboring residential wells is done periodically to monitor potential extended leachate problems. Tests in 1984, for example, did show detectable levels of volatile organics

(e.g., silex, ethelbenzene, toluene, trichloroethylene), resulting in the MPCA applying a "Hazardous Ranking Score" high enough (17) to place the landfill on the Permanent List of Priorities (PLP), the State's Superfund list. (It was removed from the list in 1997.) This score is based on a range of 1 to 100 (of the remaining 156 State sites on the PLP, scores range from 10 to 52).

Under Minnesota Statutes, Chapter 115B, the MPCA has the authority to require clean-up of PLP sites—usually by order of ranking, with "responsible parties" (owners, operators, waste haulers, or businesses using a landfill) bearing remediation costs, which could cover engineering, hydrology, legal, construction, and various monitoring/on-site inspection expenses. Clay County, as a result of these and a following series of tests conducted between 1988 – 1990, was required to complete an Investigation Study and Remediation Plan to help resolve the groundwater problem. The Plan, approved by MPCA in 1994, recommended the installation of additional monitoring wells and recapping of the closed area of the landfill where the contamination was detected. The wells will continue to be monitored to determine whether remediation measures have been successful. In a further response to ground water contamination at the site, the county has planted approximately 4,500 poplar trees on the site and continues to track the degree to which contamination has been reduced by this phytoremediation. The county submits to the MPCA annual evaluation reports, which provide information about the effectiveness of the phytoremediation program in addressing the contaminant plume.

Additional corrective action performed by the county included closing the final phase of Area III in 2004 and relocating the waste from the original, unlined Area I to a new lined cell in 2005. After removing the waste, the county initiated an investigation of Area I, which included conducting soil borings, soil sampling, installing three temporary wells and investigating landfill gas encountered during these operations. The county submitted the report to the MPCA in 2006 and installed ten gas vents/remediation wells within the area of gas detection. In 2008, the county performed a remedial investigation on property immediately north and west of the landfill as a permit renewal requirement. The resulting investigation showed that only limited impacts to the groundwater from a contamination plume (which originated in the old, unlined Area I) have occurred to the north, and even then not very far. In addition, installations of four new, permanent monitoring wells have expanded the groundwater monitoring system to the north and west. The county has also added two new, permanent monitoring wells along the western boundary, to allay MPCA concerns about inadequate spacing of monitoring wells there.

The current overall groundwater monitoring system consists of 32 monitoring wells, of which 11 are used to monitor water levels and 21 are used to monitor water quality. The county also samples private wells in close proximity to the landfill, at the request of neighboring residents. The corrective action measures, along with natural attenuation, have resulted in a continuing downward trend in total volatile organic chemical (VOC) concentrations at the site. Total VOC concentrations have decreased since remediation efforts have been implemented; and the downward trend in contaminant levels is anticipated to continue in the future. Surface water quality at the landfill, potentially affected by either runoff or leachate, has not experienced a significant impact from present landfill practices. With proper

management, the effects should remain minimal. Construction of vertical expansion cells is occurring in areas of the landfill that have waste cells with a liner system (and leachate collection and leak detection systems), which will protect groundwater from potential contamination.

Limited air quality problems potentially exist at any landfill, as with most disposal alternatives. Odors and particulates (e.g., dust) are the most significant problems. However, the county landfill is located away from densely populated areas and the use of daily cover limits the odor produced as a result of its operations. An active gas collection system is in place to help control odor levels. The county will be monitoring the amount of gas generated and collected to determine the next steps for working with alternative energy users. In the meantime, gas collected will be flared for odor reduction. Particulates in the air are unavoidable problems when an activity, such as vehicular movement, occurs in and around the landfill site. However, seeding the finished areas as work progresses is one way to help limit this problem. Landfill personnel utilize a truck equipped with a water tank for dust control on gravel access roads and work areas within the landfill.

In response to odor concerns prior to installation of leachate recirculation and the associated waste relocation, the county completed air monitoring sampling at four locations this past year to determine whether leachate recirculation would impact air quality at the landfill. The sampling measures concentrations of parameters that are known to impair air quality or to have odors associated with them. Results of air sampling showed that concentrations of Total Volatile Organic Compounds were less than a fraction of the allowable air quality criteria for the interior of new buildings.

Noise pollution at the landfill, generated by vehicles arriving to dump their loads and by operational equipment managing landfill activities, has a minimal impact due to its rural site location and its daytime, week-day operating hours. Problems could arise, however, if rural development increased along the landfill access route in the near future. This is not anticipated at the present time.

Aesthetically, the landfill inherently has a significant impact because of its size, activities and influences on surrounding land uses. As the vertical expansion progresses over the years, the landfill will increase in height, change shape, and be more visible from a distance. The outer slopes of the landfill are stabilized and vegetated as soon as practicable and will ultimately appear as a grassy man-made hill. The county has planted fast-growing poplar and spruce trees to serve as buffer zones and to provide aesthetically-pleasing visual screening.

Proper disposal of solid waste is assuredly a benefit to the health of the public. Through the landfilling efforts of the county, protecting public health is being realized. Although there are no known significant environmental problems at the site, monitoring activities at the present as well as future landfill sites will be maintained. Also, future collection systems will be designed to decrease the amount of roadside dumping in unserviced areas of the county. A strict control program should also continue to limit the development of breeding grounds for rats and flies. The county landfill has limitations as to its future uses. The area's soil would be unsuitable for construction and, thus, would be restricted to generally nonstructural

purposes for many years. Also, landfills are perceived to decrease land values. Whether or not this is the case has not been proven, but the presence of the landfill will probably affect future development at or near that site.

2. Transfer Station

As with the landfill, the Moorhead Transfer Station can experience air quality problems. Odors relating to storage of the solid waste are limited, however, by the proper operation of the facility.

Noise pollution, too, exists at the facility, but normal traffic volumes adjacent to the station are also higher, due to its location along U.S. Highway 10 and the surrounding commercial areas. Noise from the packer trucks and other vehicles operating in and around the premises occurs only during regular business hours, thus limiting its adverse effects.

Aesthetically, the Transfer Station area is somewhat impacted due to heavier truck traffic and limited litter problems. On-site operations, however, provide for excellent grounds-keeping efforts. The method utilized by the Transfer Station for storing and eventual transporting of collected solid waste to the county landfill limits the impact on public health. Proper system management discourages health nuisances such as vector development, littering of refuse and extended storage time.

The location and/or operations of the Transfer Station have had little impact on land use of the surrounding properties. The facility is located in a commercially-zoned area, where noise levels, traffic volumes and, perhaps, limited air pollution problems are already in effect. Thus, for the foreseeable future, the facility and its location impose no problem on area land use and valuation.

Future plans for the Transfer Station, should there be a diminished need for its present use, include possibly closing the facility or redesigning its use to continue its compatibility with the *County Solid Waste Management Plan*. These considerations will be included in the Plan's analysis of alternatives to landfilling municipal solid wastes.

The solid waste management system, as described, will continue to be monitored and reviewed for consideration in any future implementation phase of the county Plan.

I. ESTIMATED LAND DISPOSAL NEEDS FOR THE FUTURE

As mentioned in Part D of this section, 98 percent of the solid waste collected in the county is deposited at the Clay County Landfill. The currently permitted vertical expansion area is anticipated to supply the county with adequate landfill capacity for another fifty years if continued to be utilized as a county landfill or twenty-five years if designated for use as a regional landfill. Along with the 2009 permit renewal the MPCA approved a Certificate of Need in the amount of 298,000 cubic yards for the current five-year permit period (for development through Area III, Phase 5A).

Certificates of Need are required before any new landfill capacity is permitted. The county must continue to demonstrate that the maximum feasible waste abatement measures will be implemented and that new landfill considerations will reflect the results of these measures in order to meet the certification requirements. Re-issued permits require that landfills meet stringent federal and state design and operating standards, including liners, leachate control systems, monitoring, closure and long-term care requirements. New generation landfills are much more costly to construct and maintain than land disposal facilities in the past. High capital and operating costs may create fewer and larger regional landfills to produce increased revenues that larger waste volumes may generate in order to offset these higher costs.

The Permit renewal issued to the county in October 2009 allows for a partial vertical expansion over lined Area IV, Phases 1, 2 and 3, and Area III, Phases 5 and 5A to elevation 1209 for a total permitted capacity of 3,569,150 cubic yards. The Permit includes a design and construction plan, operating and management plan (O & M), leachate management plan, litter management plan, financial assurance, contingency action and closure and post closure plans, and storm water management plan. The vertical expansion triggered the completion of a mandatory Environmental Assessment Worksheet (EAW), which was granted a negative declaration for completion of an Environmental Impact Statement (EIS) on July 28, 2009 by the MPCA Citizens' Board. Increased landfill capacity will allow the county to move upward in Minnesota's Waste Management Hierarchy (M.S. 115A.02b) by expanding a valuable active gas collection system that retrieves methane gas, thereby eliminating greenhouse gas emissions and subsequently producing energy.

J. FUTURE LANDFILL DISPOSAL COSTS

Costs for landfill disposal, as previously mentioned, are much higher than in the past. Landfills require: additional design features to prevent pollution to surrounding land and nearby surface and ground waters; additional monitoring to verify that contamination is not occurring; and additional closure procedures. Requirements also include long-term care and a contingency fund to help ensure that no contamination occurs and that adequate remedial measures will be employed if it does. Including costs for these measures reflects a truer picture of what future land disposal expenses are estimated to be for Clay County.

Chapter IV further describes estimated capital and operational costs for various sanitary landfill options considered for Clay County. Budget items include costs for liners, leachate detection and collection systems, monitoring activities and a long-term care program. These summaries also include an estimate of charges for a landfill contingency fund based on the MPCA recommendations for such "financial assurance."

It is in the county's best interest to design and implement programs and activities that will not only enhance landfilling practices environmentally, but will substantially reduce solid waste generation and disposal in general. The value of waste reduction and of improving waste handling, including problem wastes, should be seen in the containment of future landfill construction costs and contingency action. Clay County will continue to evaluate its landfill management practices as new technologies and opportunities present themselves.

K. EXISTING SOLID WASTE MANAGEMENT PROGRAMS

The Solid Waste Advisory Committee, formed in 1990 to provide direction and advice to the county regarding solid waste management, aggressively carries out the County Board's commitment toward: household hazardous waste management, public education, waste reduction, source reduction and separation, recycling, materials exchange, yard waste composting, special waste programs, and other landfill abatement activities. The county's programs were planned based on community meetings, citizen surveys and survey results, waste audits, local markets, availability of collection by the private/public sectors, and the costs and convenience of implementing the programs. The programs also target residential, commercial and industrial wastes. In addition, the programs are periodically assessed as to their performance and success in meeting the county and State goals, and are updated with the help of these evaluations.

The county continues to assess potential waste management activities as to their feasibility. It annually evaluates its electronics recycling program and consistently partners with the private sector in the collection and proper management of household and other batteries. The county also recovers construction/demolition materials and manufactured items and explores further possibilities for collection and reuse. It also explores possibilities for food waste composting.

A pilot program with SWIS-PennCo (SWISCORP) waste processing facility at Thief River Falls in Pennington County was implemented in 1995 to determine whether it might become a long-term waste disposal option. (In addition, other resource recovery options are discussed in Chapter V.) Clay County and Moorhead contracted with SWISCORP on a load-for-load basis to exchange unprocessed waste from the City with residual waste from the SWISCORP facility, and then to landfill the residual in the county landfill. The project results were evaluated at the end of the contract term as to its feasibility as a long-term option. After a successful pilot project, Moorhead signed a five-year project extension agreement with SWISCORP in December of 1996. It was noted that four to five loads of waste would be hauled to the facility per week to be processed. The waste abatement and environmental benefits to the county were recognized. However, the project was discontinued when SWISCORP's plant issues/problems resulted in closure of the facility.

New or improved programs, staff time to be devoted to them, and their schedule of implementation are discussed in Part IV. Existing solid waste management programs in Clay County are further described below:

1. Waste Reduction

The county places waste reduction as a priority in the hierarchy of solid waste management. It has adopted procurement practices that include purchasing recyclable, recycled, and reusable supplies and products, and encourages these practices within every public agency and private entity within the county. For example, between 1987 and 1989 the county hired college interns to begin developing public education policies and programs aimed at reducing waste generated in the county. In 1989, a Planning Technician (later designated as Public Education Coordinator) was contracted to develop and disseminate informational and

educational materials (handouts, A-V presentations, media development, etc.) that would focus on waste reduction. In addition, she researched, gathered, and disseminated other relevant materials developed by other programs and agencies. Also, on an on-going basis since 1987, department staff continues to develop educational materials for and distribute information on various programs, events or other situations, as needed. Our Environmental Technician/Educator presents waste/source reduction and recycling programs to classrooms and other groups and staffs informational displays at fairs, home shows, and other events. A local and regional Materials Exchange, initiated in 1999, promotes waste reduction and reuse of materials and is linked to the Minnesota Materials Exchange. In addition, through a Materials Recovery program, staff reduces waste at the landfills by recovering reusable lumber and other construction/demolition/manufactured items.

Following are examples of efforts Clay County has employed to achieve its waste reduction goal of three (3) percent of the total waste generated in the county:

- A resolution passed by the County Board on source reduction policies and purchasing guidelines to be followed at all county facilities;
- Conducting waste audits at county facilities to target waste reduction opportunities;
- Providing ongoing distribution of materials exchange information to businesses and institutions;
- Providing ongoing on-site and telephone assistance to businesses and institutions;
- Distributing brochures, flyers, posters, and other handouts on source reduction to businesses and residents;
- Conducting business surveys regarding source reduction practices;
- Publishing, on an on-going basis, ads, waste reduction "tips" and reduction-related Public Service Announcements (PSA's);
- Developing, financing, and advertising "reuse" programs;
- Developing source reduction programs to reduce household hazardous waste;
- Surveying residents on waste reduction habits and attitudes;
- Promoting source reduction and the use of MPCA's What-A-Waste curricula through school and community presentations;
- Maintaining and updating county web site with program information;
- Staffing informational displays and booths at fairs, field days, and other events;
- Participating in formal partnerships with other counties to promote source reduction;

- Working with cities within the county to develop city source reduction programs and involve them as partners in county activities;

- Promoting the Minnesota Waste Wise and MPCA's SMART shopping programs;

- Having cities, through county funding, provide recycling dumpsters to businesses free of charge to encourage waste reduction; and

- Utilizing volume-based pricing for waste collection services to encourage waste reduction practices; informing generators how collection costs could be lowered by employing various waste reduction methods.

The county policy is to continue to be an example regarding utilization of source reduction methods. It has and will continue to achieve a minimum three (3) percent waste reduction goal through the promotion of waste reduction methods internally, within businesses and institutions, within the residential sector, and in participation with other counties and entities.

2. Waste Education Programs

It is the policy of Clay County to educate its citizens, businesses and institutions about all aspects of the Clay County Solid Waste Management System. It is the goal of the county to achieve a high level of education within all sectors of its communities about all of the county's programs and activities. Waste reduction efforts were discussed earlier. Those efforts are part of the overall County Public Education Program, as waste reduction schemes are accomplished through educating the public on ways to reduce/generate less waste. Thus, in addition to the described waste reduction and program activities, staff has developed and/or utilized the following, on an on-going basis:

- Varieties of audio/visual presentations, multi-media PSA's and advertisements to provide messages and promote relevant programs and activities;

- County website with departmental program information;

- Relevant and timely news articles and ads;

- Public displays at various public and private sector locations;

- Numerous information flyers, door hangers, bumper stickers, fact and instructional sheets/brochures, various promotional items, and county program booklets;

- Periodic public speaking engagements (e.g., schools, civic and church organizations, youth groups, public officials/employees);

- Business "waste audit" programs to provide recycling and other waste management recommendations;

- News articles and media (including public radio) auditions to reach the public;

- Informational booths at county fairs, health fairs, science camps and field day events to share waste management or other relevant information; and

- Telephone contact with the public on a daily basis to provide them information and answers to general inquiries.

Public education efforts continue to be an important prelude to any waste management activity the county undertakes – if the activity is to have successful participation and commitment. Since 1987, Clay County has been designing and producing various materials and programs to meet that end. Efforts to continue educating the public will be expanded and enhanced as necessary to reach and maintain waste management goals the county has established for this next Plan period.

3. Recycling Programs

It is the policy of Clay County to continue to act as an example regarding the implementation of recycling programs. The county plans to achieve and exceed the state recycling goals for waste generated in the county. The Recycling Program will continue to target internal, business and institutional, and residential sectors to achieve increased participation and higher volumes of recyclables collected.

Clay County has met the "opportunity to recycle" and organized collection requirements stated in SCORE statutes. However, barriers to maintaining state standards include lack of regional markets and the inability to influence restrictions or conditions that the local recycling markets impose in the county. For example, the county was unable to force the collection of #'s 4, 5, and 7 plastics because the local recycler/processor had no place to market them reasonably (until an operation in St. Cloud opened up). Another example is the county's inability to force the collection of boxboard, because without end points it was unreasonably expensive to market. It is now collected because new markets have opened. Other materials, such as carpet and mattresses, are not collected for recycling in Clay County because no recycler/processor exists within a reasonable hauling distance.

Through the County Solid Waste Ordinance, recycling activities are monitored and regulated. Permits are required for recycling facilities, operations, collection, and other related activities. Since city recycling programs began in 1990, increased numbers of recycling collectors and companies are conducting business in the county. In addition, some of the area waste haulers have diversified their services to include recyclable materials collection.

Since July 1, 1990, the county has provided financial and other support to cities and waste haulers in carrying out various recycling and composting programs. For example, beginning in 1990 the county offered funding incentives for cities to design and implement programs that would best suit their community needs. It was required, however, that the cities follow some minimum program design standards. Rebates were made available to the cities for the recyclable materials and yard waste they collected.

Beginning January 1, 1991, recycling support was expanded and funding for capital/start-up costs for city programs (which also serve adjacent rural areas) became available. Monies collected through the County Solid Waste Management Service Charge and pass-through funds from the SCORE sales tax on solid waste collection/disposal were budgeted to provide this funding (refer to Appendix B for more budget information). All eleven incorporated cities in the county have had their programs operating since mid-1991. Curbside services were developed for Moorhead, and a combination of curbside collection and drop-off centers were developed for the remaining communities.

After the cities operated their programs for one year, the county evaluated the Recycling Program's success and the extent of opportunities for its citizens to recycle. In 1992, the county further expanded the types of program activities it would fund, including costs for operational expenses. (Current and projected county recycling budgets can be found in Appendix B.)

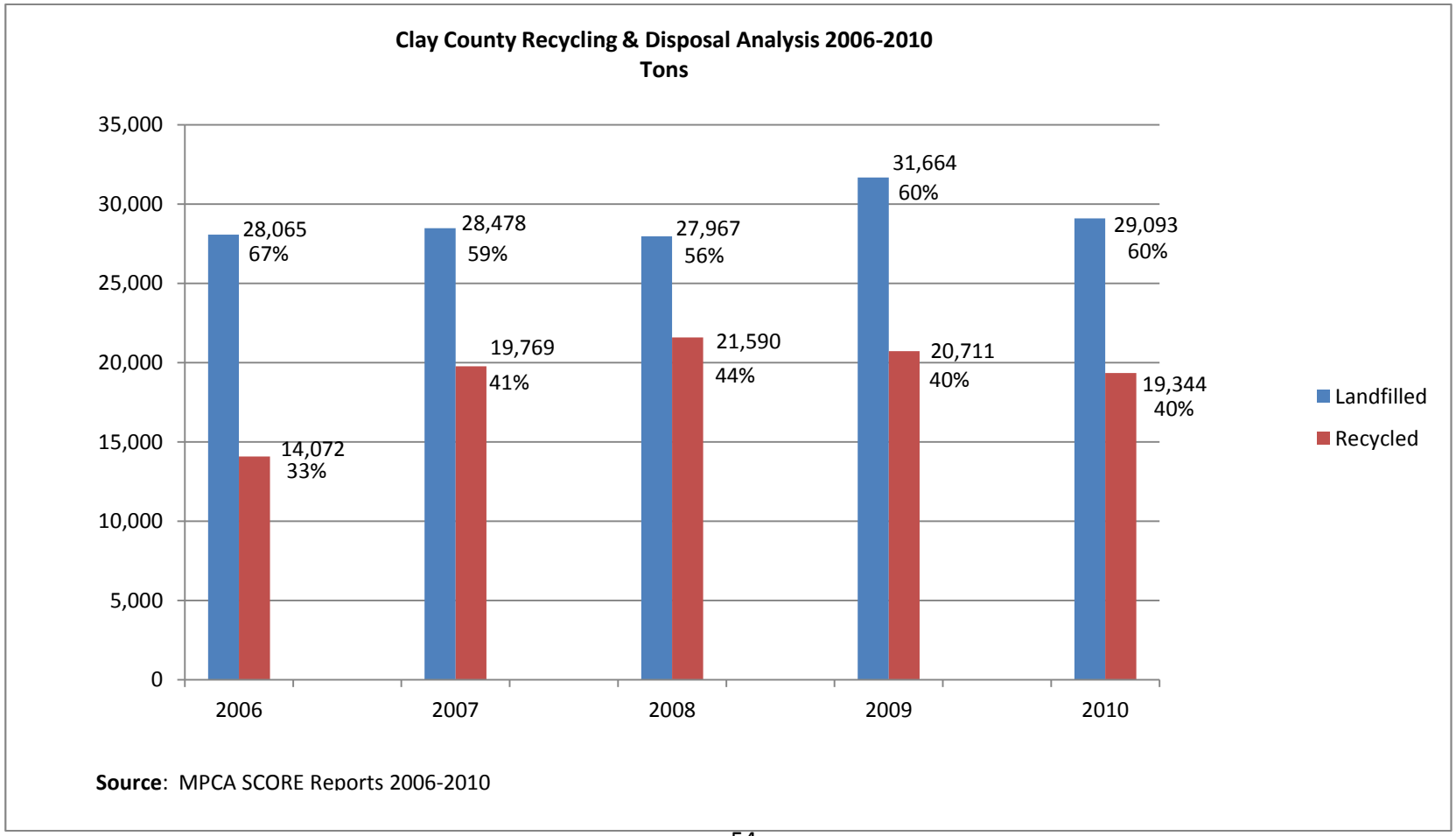
Numerous private recycling programs are in operation in the county, most of which are based in the Fargo-Moorhead area. Overall, about 40 per cent of the county's solid waste stream is currently being recycled.

The following charts and graphs analyze Clay County's waste generation, disposal and recycling from 2006 through 2010 and recycling tonnages collected, showing the percentage of each recyclable material represented in the totals. For example, in 2006 Clay County recycled 14,072 tons (33%) of the 42,137 tons of waste generated. The 4,964 tons of paper collected was 35% of the total tons collected; organics made up 46% of the total, metals constituted only 2%, glass 3% and problem materials 11%. In 2010, the county recycled 19,344 tons (40%) of the 48,437 tons of waste generated. Paper made up 23%, metals 34%, organics 30%, glass 3%, and problem materials 8%. These figures were documented on annual SCORE Reports to the State of Minnesota chronicling the recycling efforts of counties. The major difference between 2006 and subsequent years was in the metals count. Prior to 2007 Clay County counted only residential aluminum and steel cans reported by area processors. After 2007, when the county included the commercial sector and scrap metal processors, numbers went up.

In Clay County's recycling composition analysis, Table 16, organics constitute a significant percentage of the total recycling tonnages—46% in 2006, 31% in 2007, 28% in 2008, 29% in 2009, and 30% in 2010. The reported organics tonnages consist primarily of food waste diverted to food-to-livestock programs. This organics recycling includes: beet tailings left over from the processing of sugar beets to become food for livestock and fertilizer; food and vegetable waste from such enterprises as Salad Makers, going to area farmers; and food-to-people programs carried out by businesses/super markets and residents.

Clay County Waste Generation & Recycling Analysis 2006-2010

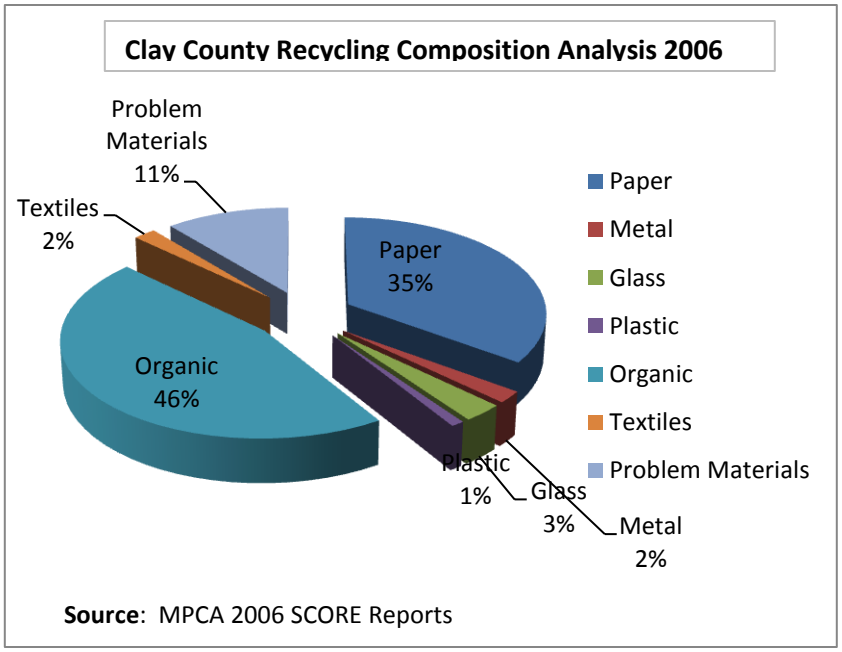
Waste	2006		2007		2008		2009		2010		Totals	
Landfilled	28,065	0.67	28,478	0.59	27,967	0.56	31,664	0.60	29,093	0.60	145,300	0.60
Recycled	14,072	.33	19,769	0.41	21,590	0.44	20,711	0.40	19,344	0.40	95,474	0.40
Generated	42,137		48,247		49,557		52,375		48,437		240,769	1.00



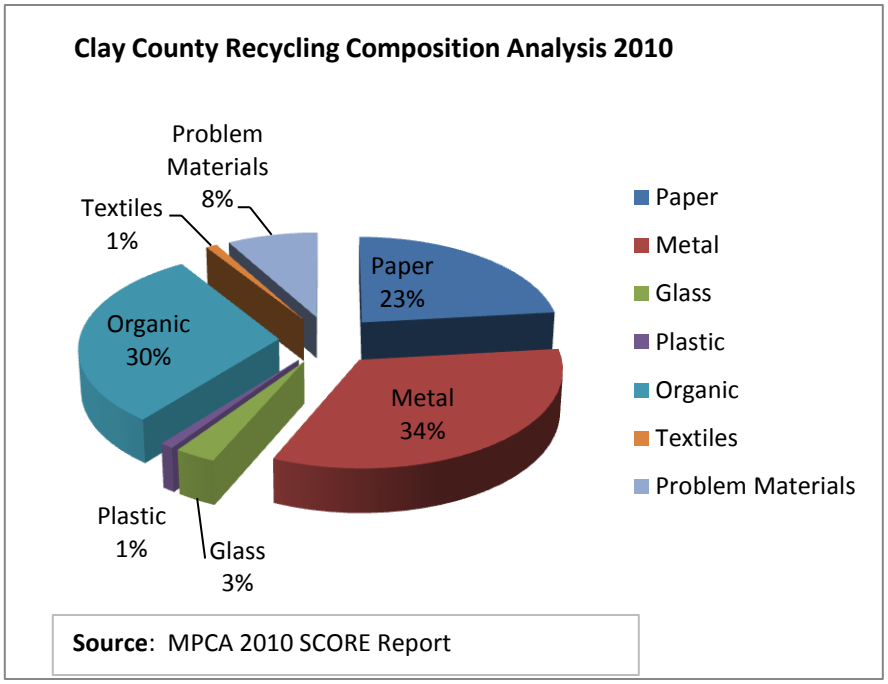
Source: MPCA SCORE Reports 2006-2010

Table 16: Clay County Recycling Composition Analysis 2006 - 2010

Material	2006	%	2007	%	2008	%	2009	%	2010	%	5Yr. Total
Paper	4,964	0.35	4,535	0.23	4,704	0.22	5,004	0.24	4,476	0.23	23,683
Metal	256	0.02	6,458	0.33	8,053	0.37	6,776	0.33	6,407	0.33	27,950
Glass	466	0.03	473	0.02	523	0.02	541	0.03	535	0.03	2538
Plastic	133	0.01	144	0.01	171	0.01	210	0.01	199	0.01	857
Organic	6,478	0.46	6,127	0.31	6,073	0.28	6,056	0.29	5,872	0.30	30,606
Textiles	234	0.02	229	0.01	477	0.02	474	0.02	288	0.01	1,702
Problem Materials	1,541	0.11	1,803	0.09	1,589	0.07	1,650	0.08	1,567	0.08	8,150
Totals:	14,072	1.00	19,769	1.00	21,590	1.00	20,711	1.00	19,344	1.00	95,486



Paper	0.35
Metal	0.02
Glass	0.03
Plastic	0.01
Organic	0.46
Textiles	0.02
Problem Materials	0.11



Paper	0.23
Metal	0.33
Glass	0.03
Plastic	0.01
Organic	0.30
Textiles	0.01
Problem Materials	0.08

Clay County's licensed, private haulers/recyclers haul, process, and market the recyclables they collect in Clay County. Ken's Recycling and MinnKota Recycling collect and haul mainly within the City of Moorhead, with MinnKota contracting with the City of Moorhead for processing of the recyclables from the curbside pickup program. Clay County maintains recycling centers in all of the cities outside of Moorhead. Licensed private haulers, which hold the cities' waste hauling contracts (through a competitive bidding process) also offer recyclable hauling services to the cities. They haul the recyclables mainly to the closest recycler/processer in the community, MinnKota Recycling. A county-licensed hauler also collects and hauls recyclables from the two recycling stations within the county that are not located in incorporated cities—the landfill site and Rollag (an agricultural service center). This same private hauler collects and delivers oil filters from approved county sites to an area certified processor.

Clay County Licensed Recyclers

Table 17

Recycler	Location	Phone	Materials Accepted
Ken's Recycling	2010 28 Ave. S. Moorhead	218-236-7940	Metals, cardboard, mixed paper, office paper.
MinnKota Recycling	1321 1 Ave. N. Moorhead	701-293-8428	Metals, glass, newsprint, paper, junk mail, cardboard/boxboard, magazines, plastics #'s 1-7 (with exceptions).
City Recycling Centers	All Clay County cities	Call your City Hall	All material accepted by MinnKota, as well as fluorescent bulbs and telephone books
Clay County Sites: Clay County Landfill Rollag	3301 190th St. S., Hawley	218-937-5649 218-299-7332	Metals, glass, plastics, newsprint, paper cardboard/boxboard

Special containers for the collection of newspapers and magazines are placed throughout the City of Moorhead for the convenience of residents. In Clay County outside of Moorhead, the City Recycling Centers serve as the drop-off locations for these materials.

Newspaper & Magazine Drop-off Locations

Table 18

Business	Address	City
K-Mart	3000 Hwy 10 E	Moorhead
Eventide	801 2nd Ave. N.	Moorhead
Across from Tastee Freeze	1900 Main Ave.	Moorhead
Cash Wise Foods	3300 Hwy 10 E.	Moorhead
CVS Pharmacy	822 30th Ave. S.	Moorhead

Other continuing recycling efforts Clay County has committed to and/or assisted with since recycling programs began in 1990, include:

- Office paper collection programs implemented at county facilities, local and area public schools and colleges, local state agency buildings, and financial institutions (all county and local government facilities are recycling more than three recyclable materials);

- Facilitating increased commercial recycling collection activities, including partnering with specific businesses to collect recyclable materials (i.e., glass at a local bar);

- Used appliance collection programs, utilizing state-permitted end-markets;

- Waste oil and oil filter collection programs;

- Collection and education on other motor vehicle fluids, mercury switches (and other mercury-containing items, and batteries;

- Fluorescent lamp collection programs for residents and businesses;

- Electronics collections programs for residents;

- The Household Hazardous Waste Program and Product Exchange, including construction of a facility;

- Empty Pesticide Container Collection;

- Event collections at Clay County Fair, steam-threshers' reunion, and various county and city functions; and offering bins for use at private affairs, such as weddings, etc.

- Regional Materials Exchange Program, linked to Minnesota Materials Exchange; and

- Materials Recovery & Reuse and Construction and Demolition recycling programs.

These programs and others are discussed in greater detail with respect to their success over the past five (5) years and where the public may actively participate in them.

4. Yard Waste Management

It is the policy of Clay County to meet all state standards and regulations regarding management of yard waste. Yard waste is banned from land disposal and resource recovery facilities. Clay County abates approximately 3,000 tons of yard waste per year. This figure does not include the one to two percent of the residents who compost yard waste on-site. The county provides extensive education to promote on-site yard waste composting. It is the goal of Clay County to continue to exceed state composting estimates.

County yard waste efforts came to fruition in 1990. The City of Moorhead, with financial support from the county ($160,000) and the State Office of Waste Management ($173,000), opened its yard waste composting facility June 18, with the commitment to accept yard waste from any resident or waste hauler in the county. 1,228 tons were delivered to the compost site by the end of the season. Six cities (and an undetermined number of individuals) participated in composting collection activities in 1990; the other five cities initiated their composting beginning in 1991-92. (The previous discussion on county recycling programs describes the funding support provided to the cities for their yard waste management activities. Current and future budgets can be found in Appendix B.) While City of Moorhead staff operates the facility, the city and county share expenditures for equipment and improvements at the site.

Methods of yard waste collection include regular curbside pick-up in Moorhead and Dilworth, and seasonal curbside pick-up in two other cities. In addition, all cities in the county have drop-off sites, from which yard waste is collected and brought to the Moorhead composting Facility for processing. Finished compost is available free of charge to all county residents. All haulers participating in curbside collections are fully licensed by the county for waste collection and transportation services. The county has not experienced any environmental (odor, leachate generation, etc.) or public health problems from either yard waste collection or composting programs. Table 19 provides a listing of yard waste drop-off locations in the county.

Yard Waste Drop-off Locations

Table 19

Barnesville	205 Front St. N.
Comstock	At the end of 18th Street
Dilworth	600 Center Ave. W (Street Dept.)
Georgetown	Maison Street
Glyndon	Corner of 4th St. SE & Eglon Ave.
Hawley	716 Front St (North Side)
Moorhead	Hwy 75 and 15th Ave. N.
Oakport	809 58th Ave. N., Moorhead

The county encourages backyard composting and offers composters for sale to residents at a reduced cost. The county offers composting information and "how-tos" to residents. The City of Moorhead and Clay County have worked with a local business, Salad Makers, to collect and haul vegetable scraps to the Compost Site.

5. Tire Management Program

Waste Tires

Table 20

Fee is charged:	
Tire Service Centers	
Clay County Landfill	3301 190th St. S., Hawley
Liberty Tire Recycling Services	Savage, MN

Table 20 indicates the designated locations for the collection of waste tires in Clay County. The county collects car, truck, agricultural, and implement tires at the Clay County Landfill from residents for a fee. Liberty Tire Recycling Services out of Savage, Minnesota, picks up and hauls the tires to its processing facility.

The county's current policy and practice is to follow state statutes regarding proper waste tire management. The Clay County Solid Waste Ordinance references the state rules and regulations on waste tires. The chart and graph on pages 62-63 feature an analysis of Clay County Problem Materials recovered in the county from 2006 through 2010 and their composition. As you can see, Clay County collected 363 tons of waste tires in 2006, 380 tons in 2007, 368 tons in 2008, 363 tons in 2009 and 328 tons in 2010. According to the graph, tires represent 21% of all problem materials collected by Clay County in 2010.

The county is not aware of any known unpermitted waste tire dumps within its borders; however, such activities will continue to be monitored. One of the reasons that illegal disposal may be minimal is that in 1989 and 1990, Trash Depot, Inc. (TDI) opened a combined waste tire storage and processing facility in Moorhead to handle tire disposal for residents and businesses. The facility served not only Clay County, but also the surrounding tri-state area. The county partnered with the facility, the state, and residents on the clean-up of some private tire-storage sites.

Up until approximately May of 2002, when TDI stopped accepting tires, Tire Depot, Inc. (as the business became known as) processed waste tires to various sizes for a number of end-uses: small mesh sizes for rubber-asphalt road construction and/or repair; one-to-two-inch sizes for fuel; and other sizes for the manufacturing of various consumer products. Waste tires were transported by individuals and businesses to the facility, which charged a variable tip fee, depending on tire size and numbers. Having had no real prototype facility or equipment from which to start, the company had to design much of their own machinery and buildings to handle the system. In addition, economical markets did not exist, so the company's efforts to find markets that were successfully emerging were extremely time-consuming and costly. The facility did not make its markets known to the county due to protection of its privileges while it investigated its market options.

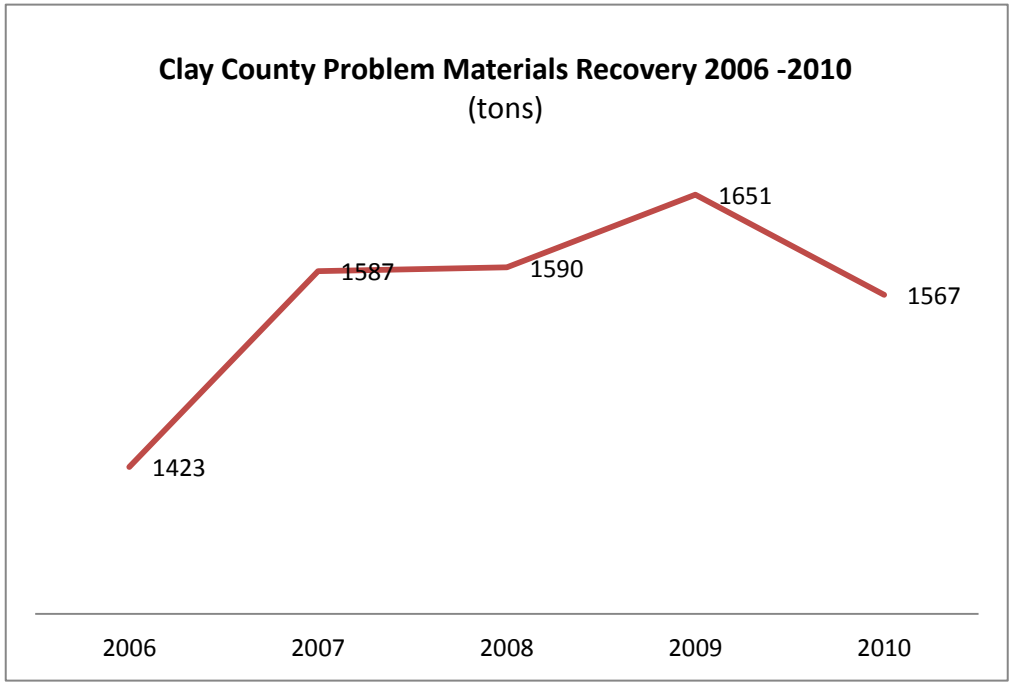
With the closing of Tire Depot's doors, a closure procedure was accomplished through partnership with the City of Moorhead, MPCA, and Clay County. With MPCA approval, the county was able to utilize the remaining tire shreds, which had been stockpiled at the Tire Depot site, for fill around the piping in construction of the leachate recirculation system at the landfill, as well as for intermediate cover. After Tire Depot's closure, the county revisited options for waste tire management. The county landfill began accepting discarded tires from county residents (no commercial) for a fee, to be collected for processing by Greenman Technologies of Savage, Minnesota, a state-permitted facility (now owned by Liberty Tire Services of Ohio). Commercial entities and cities have been instructed to continue contracting with state-permitted transporters and processors. During the next Plan period, the county will continue to ensure that collection and processing is available to its residents and will monitor and enhance, if needed, activities to manage its waste tire volumes properly.

Clay County Problem Materials Recovery Analysis 2006 - 2010 (Tons)

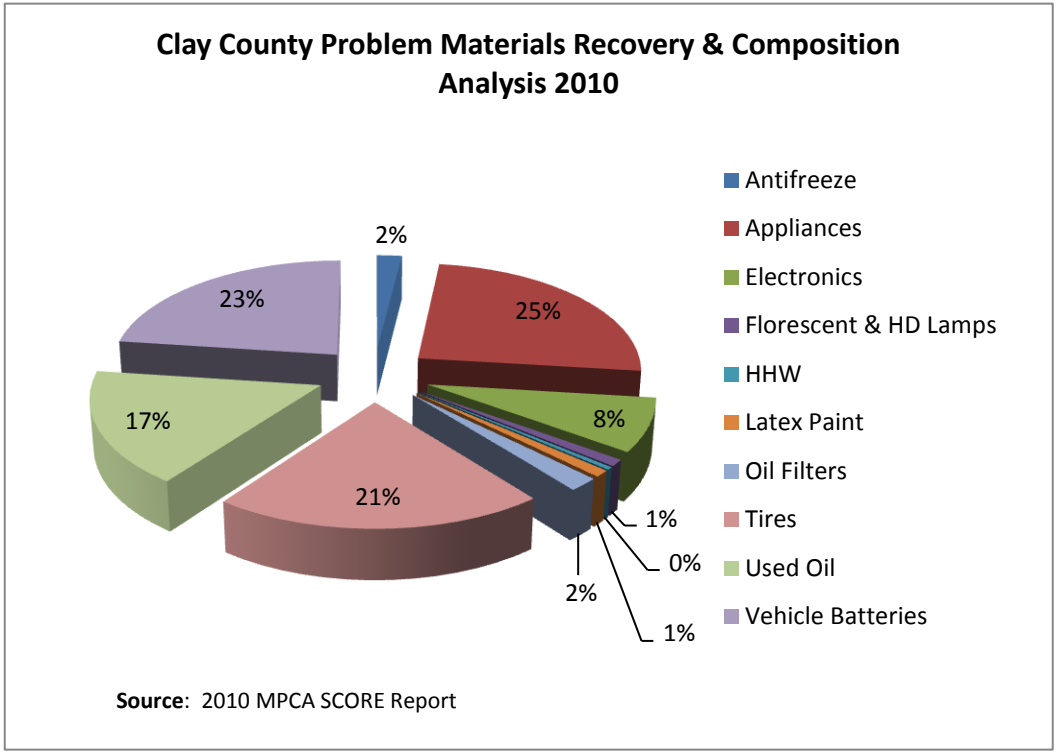
Material	2006	%	2007	%	2008	%	2009	%	2010	%
Antifreeze	18	1	19	1	24	2	24	1	24	2
Appliances	329	23	471	30	462	29	461	28	386	25
Electronics	73	5	70	4	80	5	125	8	131	8
Florescent & HD Lamps	7	0.5	11	1	11	1	12	1	16	1
HHW	20	1	10	1	7	0.4	7	0.4	7	0.4
Latex Paint	18	1	20	1	15	1	18	1	16	1
Oil Filters	26	2	26	2	26	2	27	2	33	2
Tires	363	26	380	24	368	23	363	22	328	21
Used Oil	232	16	240	15	254	16	266	16	264	17
Vehicle Batteries	337	24	340	21	343	22	348	21	362	23
Total:	1423	100	1587	100	1590	100	1651	100	1567	100

Source: MPCA Score Reports

Year	Tons
2006	1423
2007	1587
2008	1590
2009	1651
2010	1567



Materials	%
Antifreeze	2
Appliances	25
Electronics	8
Florescent & HD Lamps	1
HHW	0.4
Latex Paint	1
Oil Filters	2
Tires	21
Used Oil	17
Vehicle Batteries	23



6. Used Appliance Management

It is the policy of Clay County to ensure that the opportunity to properly dispose of used appliances is available within the county. It is the goal of the county to continue its current programs and meet or exceed state estimates for appliance recycling. Table 21 lists those area recyclers who accept Clay County's used appliances for recycling and/or processing.

Used Appliances

Table 21

Recycler	Address	City
Hazers Auto & Truck Salvage	811 9th St. NE	West Fargo, ND
Kel's Auto Parts		Twin Valley, MN
Seventh Ave. Auto Salvage	402 42nd St. NW	Fargo, ND
Clay County Landfill	3301 190th St. S.	Hawley, MN
Moorhead Transfer Station	2727 Hwy 10 E.	Moorhead, MN

Beginning July 1, 1990, appliances could no longer be accepted for landfill disposal. In January, 1990, to prepare for special handling that would soon be necessary, Moorhead designated a roll-off trailer, located at the city's Transfer Station, for drop-off and temporary storage of discarded appliances. Residents, as well as local waste haulers, can utilize the roll-off. City personnel deliver full roll-offs to a state-licensed scrap metal dealer who either repairs or disposes of the appliances.

For residents outside of Moorhead, the county has a similar roll-off in use at the county landfill, and contracts with an area licensed hauler to transport the used appliances to a regional state-permitted end-market. According to the chart and graph on pages 62 and 63, the county collected 386 tons of appliances in 2010, which represents 25% of all problem materials.

7. Motor Vehicle and Dry-Cell Battery Management

It is the policy of Clay County to promote the proper management of motor vehicle batteries. One of the county's goals is to have a public well-educated in proper disposal options; thus, battery management and recycling/disposal is one feature of the county's extensive on-going public education thrust.

Retailers in Moorhead which sell motor vehicle batteries and Interstate Batteries in Fargo accept used vehicle batteries for recycling. The City of Moorhead Transfer Station accepts batteries from residents (and hauls them to Interstate Batteries). Also, various service stations

and other retailers, accept used batteries from their customers. For collection of rechargeable household batteries, county staff publicizes a list of local retailers. See Table 22. Jewelry stores and other retailers accept button batteries for recycling.

Used Batteries (Vehicle & Household)
Table 22

Recycler	Address	City	Vehicle	Household
Interstate Batteries	4430 17th Ave S.	Fargo, ND	Yes	No
Moorhead Transfer Station	2727 Hwy 10 E.	Moorhead, MN	Yes	No
Ace Hardware	20 6th St. S.	Moorhead, MN	No	Yes
Radio Shack	3316 Hwy 10 E.	Moorhead, MN	No	Yes
Batteries Plus	2119 13th Ave. S.	Fargo, ND	No	Yes
Interstate All Battery Ctr.	2627 University Dr. S.	Fargo, ND	No	Yes

In 2010, the county collected 362 tons of vehicle batteries, which constituted 23% of all problem materials collected. (See chart and graph on pages 62 and 63.)

Clay County plans to continue to maintain its current programs with no substantial changes anticipated within the Plan period. Activities will be monitored and amended, if needed, to achieve the county goal.

8. Used Oil, other Motor Vehicle Fluids, Filter and Mercury Switches Management

Clay County promotes the proper management of used motor oil, motor vehicle fluids, oil filters, and mercury switches. The county's goal is to ensure that all of its residents are informed about proper management and disposal of these materials.

During 1989 and 1990, Clay County developed plans for expanding the opportunities for its residents to recycle waste oil. Only one drop-off facility, Waste Oil Service in Moorhead, existed at that time. To help in its efforts, the county submitted a funding request to the Office of Waste Management through its Waste Oil Grant Program. In 1991, a $2,300 grant was consequently approved to assist with the county's capital costs (e.g., tank purchase, site preparation, fencing) to develop a drop-off site at the County Household Hazardous Waste Facility in Moorhead. Currently, OSI Environmental, Inc. out of Bemidji picks up (and offers a rebate) the waste oil collected from county residents at the HHW Facility. Two other local companies also offer waste oil collection and pickup services to county residents and businesses.

In 1995, the county implemented a Waste Oil Filter Management Program. Drop-off sites were established throughout the county to accept filters from residents free of charge.

Currently, businesses in Dilworth, Glyndon, Hawley, Ulen, and Dilworth, as well as the county landfill and HHW facility, accept oil filters from county residents free of charge. Some of the sites also accept filters from area businesses for a small handling fee. The filters are then hauled to a location in Fargo-Moorhead to be processed and marketed. Table 23 lists residential drop-off sites for used motor oil and filters and waste oil collectors/recyclers offering services to both residents and businesses.

Table 23

Used Motor Oil

Clay County HHW Facility -- Residents only	
Service stations, such as Jiffy Lube and Quick Lube & Tune, Moorhead	
Glyndon Recycling Center	22 2nd St. S.E., Glyndon

For large amounts and businesses:

OSI Environmental Inc.	Bemidji, MN 800/585-8838
Randt Oil Co.	Ulen 320/693-6392
Hubert Oye & Sons Waste Oil Pickup	Fargo, 701/232-2782

Used oil Filters – Residential

Clay County Landfill	3301 190th Street S, Hawley
HHW Facility	2729 Hwy 10 E, Moorhead
Bob's Repair	Hwy 10 E, Dilworth
Glyndon Recycling Center	22 2nd St. SE, Glyndon
Burn's Motor	Hwy 10 W, Hawley
Dilworth Recycling Center	202 2nd Ave. SE, Dilworth
West Central Ag Services	Hwy 32, Ulen

These efforts have resulted in 264 tons of used motor oil and 33 tons of oil filters being collected in 2010. (See chart, page 62.) Clay County's Household Hazardous Waste Facility accepts motor vehicle fluids from residents. The Facility also accepts mercury switches and other mercury-containing devices, such as thermometers, etc. The Program's extensive public education campaign cautions both residents and business owners about managing these items properly.

Clay County intends to continue maintaining these programs with no substantial changes anticipated within the Plan period. As with other county waste abatement programs, these activities will be monitored and updated if needed.

9. Household Hazardous Waste Management

It is the policy of Clay County to meet or exceed state statutes and regulations regarding proper management of household hazardous waste. It is the goal of the county to remove as much of these materials from the waste stream as feasible. To accomplish this policy and goal, the county spent 1989 and 1990 planning and designing a regional Household Hazardous Waste (HHW) Program, in conjunction with Norman and Becker counties. In late 1990 progress was temporarily put on hold while the MPCA, sponsor and funding source for HHW programs, modified requirements that participating counties had to meet to be eligible for Agency funding.

During 1992, the county constructed a permanent collection facility, finalized HHW Program contracts with Becker County (the sponsoring county) and MPCA, and in October began operating its facility. Currently, it is open seasonally from April through October and by appointment during the winter months. In addition, a "Product Exchange" corner of the building offers reusable household products brought in by residents. Services of the facility are available to all county residents free of charge.

Annually, the county prepares and transports an average of two (2) to three (3) large truckloads of collected household hazardous waste, via a state-licensed contractor, for disposal at various permitted facilities throughout the country. The county combines loads for transporting with Becker County when possible, in order to reduce contractor costs. In 2010, seven (7) tons of HHW was collected and processed from Clay County. (See Chart, page 62.)

As an integral part of the Program, the county conducts an active education campaign to inform the public as to household hazardous waste reduction techniques, safe substitutions, source separation, proper handling and disposal, and other information regarding the facility and Program. Table 24 provides a listing of all materials accepted at the county's HHW Facility.

Household Hazardous Waste
Table 24

Clay County Household Hazardous Waste Facility and Product Exchange 2729 Highway 10 E., Moorhead, MN Tele: 218-299-5077	(Latex and oil-based paint, stains and varnishes, epoxies and adhesives, paint thinners and strippers, cleaning supplies, fuels, pesticides and herbicides, fluorescent bulbs, mercury, aerosols, used oil and filters, motor vehicle fluids, etc.)

Clay County intends to enhance its Program through continued public awareness efforts, but does not anticipate other substantial changes during the Plan period.

10. Demolition Debris Management

It is the policy of Clay County to promote the proper management of demolition and construction wastes. It is the goal of the county to ensure that all residents are informed about

proper management and disposal of these materials. As described earlier in the Plan, Clay County has one privately owned, permitted demolition landfill. County personnel inspect demolition projects and sites prior to, and during, demolition and direct waste to the demolition landfill. In addition, roll-off dumpsters are located at the Clay County Landfill and the Moorhead Transfer Station as a convenience for residents who bring in small loads of demolition debris. Licensed haulers deliver the roll-offs to the privately-owned Demolition Landfill for disposal. Clay County intends to investigate effective ways to direct more demo material to the Demolition Landfill and away from the MSW landfill. The county accomplishes this to some degree within the rate structure—charging a higher rate than the Demolition Landfill.

Because the demolition landfill is privately owned, the county does not attempt to direct the flow of waste to that facility. Thus, unknown quantities of demolition material are hauled to demolition landfills located directly across the river in North Dakota. The chart below illustrates the tonnages of demolition material landfilled over the past five years in the privately-owned Demolition Landfill, according to state reporting. These figures include demolition material hauled from both the Clay County Landfill and the Moorhead Transfer Station.

Table 25

Clay County Construction & Demolition Disposal/Recycling Analysis 2006 – 2010

(tons)

	Landfilled				
Facility	**2006**	**2007**	**2008**	**2009**	**2010**
SW 277 Clay Demo LF	7,198	5,793	4,232	4,824	5,013
Sub-total:	7198	5793	4232	4824	5,013

	Recycled				
Facility	**2006**	**2007**	**2008**	**2009**	**2010**
SW 277 Clay Demo LF	0	0	5	4	7
Sub-total:	0	0	5	4	7

	Generated				
	2006	**2007**	**2008**	**2009**	**2010**
Grand Total:	7198	5793	4237	4828	5020

Source: MPCA Annual Facility Disposal Reports

The demolition landfill owner and staff have partnered with Clay County in the recovery of materials, such as wood, manufactured and other items from the Demolition Landfill to be distributed for reuse. Tonnages recorded as recycled are relatively low (i.e., 7 tons in 2010) due to both the difficulty of quantifying certain materials and to the fact that recovery is limited to the amount that one (with sporadic help from a second) employee can pull out as

his/her schedule permits. The county has not been keeping track of these recovered volumes for the past few years. County solid waste staff routinely offers recovered items to residents, through display on the Materials Exchange web pages and placement in the county's reuse garage at the landfill.

Clay County intends to maintain its current demolition debris management program. Staff will continue to monitor these activities, as well as evaluate the feasibility of implementing or assisting with other options. The county will continue to pursue partnerships (with contractors) in the separation of materials at construction and demolition sites for recovery and reuse. The county will continue to enhance and expand its C/D material recovery programs.

11. Electronics and Fluorescent Bulb Collection and Recycling

Clay County offers residents on-going opportunities to recycle electronics and fluorescent bulbs, holds special collections for businesses twice a year, and publicizes proper management through a variety of educational tools, including media blitzes, county website, and dissemination of recycling guides, fact sheets, etc. Table 26 lists collection sites for residential electronics and fluorescent bulbs and collectors/processors of business bulbs.

The county has placed recycling containers for residential computers (and peripherals) and television monitors at the City of Moorhead Transfer Station and the Clay County Landfill for residents to place items free of charge. The county contracts with a state-licensed and certified recycler/processor for the collection and hauling of these materials. Since 2006, the collection of electronics has risen 80%, from 73 tons in 2006 to 131 tons in 2010, and is expected to remain steady. The county does not collect cell phones, but refers residents to the Rape and Abuse Crisis Center, which refurbishes the phones for clients. Easter Seals of Fargo-Moorhead also collects cell phones.

The county also offers on-going residential collection (free of charge) of fluorescent bulbs at its Household Hazardous Waste Facility and in partnership with a local hardware store. The county offers businesses an opportunity to recycle electronics and fluorescents at a reduced rate at biannual (Spring and Fall) collections sponsored by the county and Retrofit Recycling of Owatonna, a state-licensed hauler/collector. The volume of fluorescent bulbs the county has collected has also experienced a steady rise since 2006—from 7 tons in 2006 to 16 tons in 2010.

Electronics & Fluorescent Bulbs (Residential)

Table 26

Recycler	Address	City	Electronics	Fluorescent Bulbs
Clay County Landfill	3301 190th St. S.	Hawley, MN	Yes	No
City Recycling Centers		Located in all cities	No	Yes
Clay County HHW Facility	2729 Hwy 10 E.	Moorhead, MN	No	Yes
Ace Hardware	20 6th Street S.	Moorhead, MN	No	Yes
Moorhead Transfer Station	2727 Hwy 10 E.	Moorhead, MN	Yes	No

Electronics & Fluorescent Bulbs (Businesses)

Recycler	City	Phone	Electronics	Fluorescent Bulbs
Green Lights Recycling	Blaine, MN	800-208-8340	Yes	Yes
Retrofit Recycling	Owatonna, MN	800-795-1230	Yes	Yes
Asset Recovery Corp.	St. Paul, MN	800-472-2081	Yes	Yes

12. Empty Pesticide Container Collection

Since the county banned empty pesticide containers from landfill disposal in 1990, it holds an annual container collection at the Clay County Landfill for area agricultural chemical dealers, elevators and other businesses, farmers, and applicators. County staff collects and bags the containers for pickup by the Agricultural Container Recycling Council's (ACRC's) contractor Containers Services Network (CSN). The County Solid Waste Management department publicizes the collection event through mailings, ads, personal contact, and the dissemination of flyers throughout the county. The program has remained relatively stable over the past ten years, with collections averaging about 2,500 containers per event.

13. Solid Waste Ordinance and Licensing

The *Clay County Solid Waste Ordinance* was adopted on December 12, 1972, and amended in 1995 and 2002. The ordinance establishes standards and regulations for solid waste collection and disposal within the county. It mandates requirements and standards based on regulations of the MPCA regarding facilities and planning for transfer, disposal and incineration sites. It also provides for enforcement of proper solid waste operations in the county through inspections, bonds and penalties (See Appendix C for a copy of the Ordinance.)

The present text of the Ordinance is concise and understandable. Responsibilities and duties of Clay County, its agents and licensees are stated in an orderly manner for planning, operation, enforcement and inspection of solid waste removal and disposal for the county. As the county's solid waste management system continues to evolve, this Ordinance will be reviewed and revised, as needed, to provide the regulatory vehicle by which the system can be managed most successfully. As changes are made in state law, resulting rules and regulations may affect changes in the ordinance, as well. Included in Ordinance updating has been terminology review. Some terms more commonly associated with solid waste today, as opposed to the past, are being addressed, including: composting in the context of site regulations; and recycling in regard to solid waste that will not be allowed to be landfilled. Energy recovery will be appropriately dealt with regarding operational standards and regulations as new alternative technologies and methods of managing the county's municipal solid waste stream will continue to be considered.

Implementation and enforcement of the Ordinance has generally been problem-free. The County does not anticipate any substantial changes to the Ordinance at this time; however, specific language regarding various problem materials will continue to be added. The Director of Solid Waste Management is responsible for periodically assessing the county's need to revise the Ordinance, or to incorporate changes in federal or state statutes and regulations.

IV. PROPOSED INTEGRATED SOLID WASTE MANAGEMENT SYSTEM

A. INTRODUCTION

Clay County's proposed integrated system consists of managing aggressive waste abatement programs, descriptions and future plans for which are discussed below, and operating the disposal system described later in this chapter. Specifically stated, the general goal during this next ten-year Plan period is to: Achieve the maximum feasible reduction of the need for and the practice of land disposal of mixed municipal solid waste at minimal cost and environmental impact for Clay County. Ten-year projections, as detailed on the Goal Volume Table (Appendix A), indicate the county's plan to decrease the volume of MSW delivered to facilities by approximately .42% per year (and increasing the recycling rate by approximately the same). The county's expectation is to send an increasing volume of the MSW to a waste-to-energy facility beginning in approximately 2014 or 2015.

The county recognizes challenges that loom and opportunities that beckon as it moves forward. Solid waste management challenges that continue to face Clay County include:

- integrating programs that reduce the need for land disposal with maintaining adequate capacity at the Clay County Landfill for disposal needs;
- selecting and maintaining feasible and prudent management functions and activities;
- financing the costs of a continued viable solid waste management system;
- and resolving waste flow and liability issues and market restrictions.

Clay County's waste reduction and aggressive abatement programs, continued effective ordinances and regulations, and sound program financing and administration have been the keys for the long-range solution to a successful, environmentally acceptable and cost-effective solid waste management system. These county-backed endeavors provide an excellent basis for aggressive planning and provide opportunities

- to build upon successful programs established in the past; and
- to advance to the next step on the waste management hierarchy, which is to explore regional waste disposal options and to participate in a waste-to-energy facility.

The purpose of the *Clay County Solid Waste Management Plan* is to improve municipal solid waste management through measures such as: waste reduction and education; resource recovery; increased discriminate waste disposal; and waste facility development in the most financially feasible, environmentally sound and institutionally-acceptable manner, with least cost to the citizens of Clay County.

Clay County Solid Waste Management Office staff is responsible for implementing and overseeing the county's current and planned waste management programs and activities. As discussed earlier in the Plan, the Office employs six permanent full-time equivalent staff (FTE's) at the present time. Two and three-quarter of those positions are employed at the landfill. It is anticipated that no more than .5 FTE will be hired during the Plan period.

B. WASTE ABATEMENT PROGRAMS

1. Waste Reduction

Goal: Continue attempts to reduce the volume of waste generated in the county.

Programs: To accomplish the stated goals, the county will undertake the following activities:

1. Continue to develop and encourage the use of waste reduction programs in order to educate the citizens of Clay County on the positive benefits of reducing waste at the source, recycling, purchasing/using recycled/recyclable retail products. (On-going)

    a. Increase and expand the waste abatement programs, which are integral to a system founded on the principle of reducing the need for and practice of land disposal: waste reduction, waste education, recycling and reuse, and management/recycling programs for yard waste, tires, appliances, batteries, used oil and filters, motor vehicle fluids, and household hazardous waste, including mercury, fluorescents, and electronics. (On-going)

    b. Add other materials and collection/exchange opportunities and sites, as demand increases, and expand materials recovery efforts.

    c. Research and develop abatement activities involving other special wastes, such as carpeting, mattresses, food and other organic wastes, and other potential problem wastes. (On-going)

    d. Maintain West Central Materials Exchange (MATCH) Program and expand organized recycling of construction/demolition wastes.

2. Continue to utilize the Solid Waste Advisory Committee to serve the Office of Solid Waste Management and the Clay County Board of Commissioners to provide guidance and advocacy for solid waste management in Clay County. (On-going)

    a. Continue to make policy recommendations to the county for solid waste management. (On-going, with periodic staff/county review)

b. Continue to act as a liaison for citizen interests concerning solid waste decisions for Clay County. (On-going)

c. Continue to promote active citizen participation in solid waste management programs and activities. (On-going, periodically)

d. Continue to assess public response to solid waste management programs and activities. (On-going, with periodic review)

3. Continue to develop and implement public education and information programs for Clay County. (On-going)

a. Continue to provide Clay County citizens with education and information on the nature and scope of solid waste issues in the county and state. (On-going)

b. Increase the awareness of the important role the citizen has in the accomplishment of the goals of an integrated solid waste plan for the entire county. (On-going)

c. Present the *Clay County Solid Waste Management Plan* and address implementation and financial issues of direct impact to the citizens. (Periodic review)

d. Continue to provide the citizens of Clay County with education and information on specific programs as prescribed in the *Clay County Solid Waste Management Plan.* (On-going)

Goal: Reduce the Volume of Solid Waste Entering the Clay County Landfill.

Programs:

1. Continue to develop and coordinate enhanced yard waste composting efforts for Clay County. (On-going and periodic review)

2. Continue to develop and coordinate enhanced recycling programs for Clay County. Expand existing programs, including event recycling (On-going and periodic review)

a. Define and contract for some or all of recycling program services to be provided to Clay County from the vendor selected through the RFP process, if found feasible. (Periodic, as needed)

b. Continue to have Solid Waste Management staff monitor and evaluate recycling projects and activities, and determine whether additional recyclable materials should be collected or programs be added. (Periodic review)

3. Work with Prairie Lakes Municipal Solid Waste Authority (PLMSWA) on regional waste processing alternatives, which include sending waste from Clay County to the Perham waste-to-energy facility and receiving fines and bypass materials in return. (On-going with waste exchanges beginning in 2014-2015.)

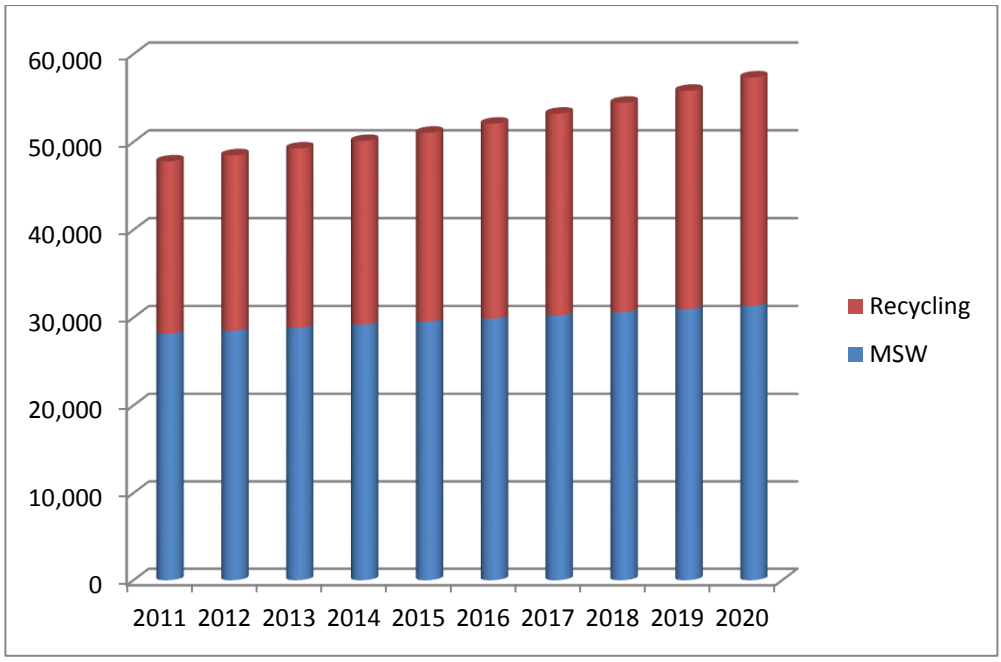
   a. Continue to evaluate technical, financial, and environmental assessments of regional alternative and ways to expand partnerships. (Periodic review)

   b. Continue to develop monitoring and periodic review procedures for evaluating resource recovery projects for Clay County. (Annual review)

   c. Educate public about Waste Reduction Programs (On-going)

      1. Planning and implementation of Multi-Media Campaign
      2. Public Presentations
      3. Development and dissemination of educational and informational materials
      4. Responses to public inquiry
      5. Community and state networking
      6. Assessment of, and development to meet, future education needs
      7. Monitoring, record-keeping, and reporting

The following chart, based on figures from the Goal-Volume Table in Appendix A, indicates projected tonnages of materials recycled versus tonnages sent for disposal/waste processing.



Implementation Schedule is indicated in parentheses after each program.

Staffing (FTE): .5 FTE

Estimated Program Budget: $ 135,000. (Included in Recycling budget.)

2. Waste Education

Goals:

1. To make the public aware of the opportunities available to them (e.g. waste reduction, recycling, materials exchange, composting, special waste management programs, environmentally-sound landfill practices), why these alternatives are necessary to employ, and the costs associated with successful implementation. This approach includes finding public support for selected programs, based on satisfaction that people feel from behaving in an environmentally responsible way, or from the belief that these programs are worthwhile and have a purpose.

2. To continue to provide Clay County citizens with educational and informational materials on the nature and scope of solid waste issues in the county and the state.

3. To increase citizen knowledge and awareness of the important role the citizen can perform in an integrated solid waste plan for the entire county.

Programs:

1. Continue to implement a public information program to increase citizen awareness of solid waste problems and solution alternatives.

    a. Video and Power Point presentations with appropriate narrative

        1. 15-30 minute duration
        2. citizen comments and questions
        3. available to civic organizations, schools, and other community groups

    b. Solid waste lobby display

        1. printed materials for dissemination
        2. automated slide or video presentation
        3. pictorial, graphic and illustrative displays

4. placement at public and private facilities (financial institutions, libraries, shopping centers, events, etc.)

c. Solid Waste Office newsletter/e-news, WEB articles/info

1. solid waste program and policy reports
2. include solid waste information with annual tax statement mailings
3. update and expand county WEB site

d. Billboard displays to promote specific programs, promotions, and events

e. Public Service Announcements (PSA's) to local media to increase citizen awareness and to promote specific programs, promotions and events

f. Continue to utilize recognizable and unifying links (such as logo and program themes) to identify all Solid Waste Office programs, promotions, and events

2. Continue to implement a public information program to encourage citizen participation in county yard waste composting projects

a. Continue to develop slide/video/Power Point presentations explaining composting, from collection to processing to final use

b. Continue to use and staff Solid Waste Office lobby/booth display, emphasizing the benefits and how-tos of composting

c. Continue to use billboard/WEB/multi-media displays promoting composting projects

d. Continue to utilize Public Service Announcements promoting composting activities

e. Continue to sell composters to residents with instructions

3. Continue to implement a public information program to encourage citizen participation in county recycling projects

a. Continue to utilize video/Power Point presentations, explaining a recycling project from collection to market to procurement

b. Continue to use and staff Solid Waste Office lobby display explaining the opportunities and benefits of recycling

c. Continue to use billboard/Web/multi-media displays and Public Service Announcements promoting recycling projects

d. Continue to develop and distribute flyers, fact sheets, brochures and other informational materials and promotional items on county programs and related environmental topics;

e. Plan, participate in, and publish ads for Clean-up Week, Earth Week, American Recycles Day and all recycling collection events

4. Continue to implement a public information program to inform the citizens of the option selected for the final step in the processing of Clay County municipal solid waste

Implementation Schedule: On-going

Staffing (FTE) : .5 FTE

Estimated Program Budget: $450,000. ($120,833 is under Public Education in the Solid Waste System Projected Budget; $329,167 is included in the Recycling budget.)

3. **Recycling (General)** (including city recycling centers, county recycling and sites, Moorhead curbside, and reuse and materials exchange, staff.)

Goals: 1. To enhance and expand recycling efforts and programs; to continue to explore ways to increase recycling opportunities and participation and to add more materials to the program. 2. To research ways to reuse materials and to offer more materials for reuse on the exchange. 3. To increase the county's overall recycling rate.

Programs:

1. Continue to fund operations of the city recycling centers, evaluating signage and public education needs of city and township residents; and consider adding materials to those already collected;

2. Continue to cover expenditures for county sites and programs and for Moorhead's curbside collection, assisting in expanding to multi-family dwellings; investigate opening up additional recycling center/drop-off sites;

3. Encourage and assist in expansion of commercial, industrial, and institutional recycling;

4. Expand event recycling; and step-up recycling education efforts;

5. Research ways to reuse materials and recover more materials to offer for reuse;

6. Explore grant funding and tie into state education campaigns on waste reduction, recycling, buying recycled, burn barrels, product stewardship, etc.;

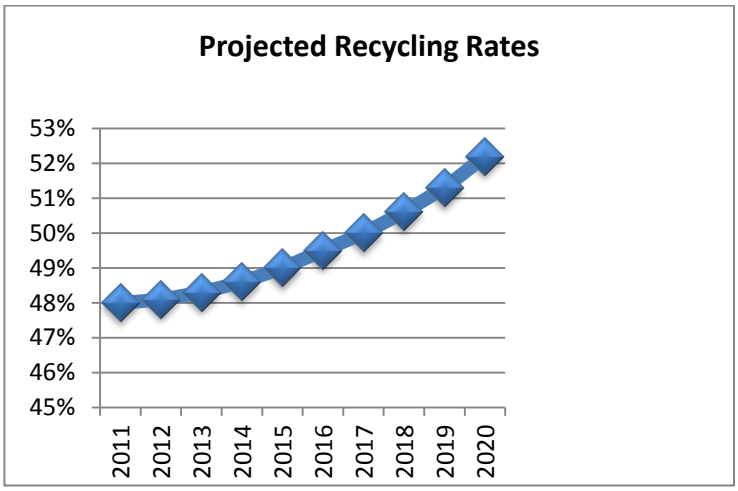
7. Stress direct purchasing of recycled content and environmentally-friendly products and practice it at the personal and county levels.

8. Assess present and future county-wide program needs and develop new programs and activities to continue to meet or exceed state-imposed recycling goals as needed. Meet recycling goal of 50+%.

9. Monitor, keep records, and report recycling results to determine whether some future change to any recycling program or policy will be needed;

10. Continue to evaluate progress toward reaching recycling goals and county expectations and determine whether methods such as: mandatory recycling, source separation requirements (via ordinance amendments), or other flow control measures are necessary to enhance recycling collection rates.

The following chart indicates projected recycling rates for the ten-year period, from the 48% in 2011 to 52.2% in 2020.



Implementation Schedule: On-going

Staffing (FTE): .5

Estimated Program Budget: $5,564,766. (Included are expenditures for the recycling of problem materials.)

4. <u>Yard Waste Management</u>

Goals: 1. To continue educating residents on proper yard waste management, including lawn health and use of Compost Site; 2. To continue to cover the composting efforts of county residents, including the marketing of compost (which is picked up by county residents free of charge, on a first come, first-served basis); and 3. To expand composting in the county.

Programs:

1. Assess future county-wide program needs and continue to periodically evaluate whether the one current site is adequate for the entire county's use or whether a second composting site should be developed at the county landfill, where the location is central to all residents.

2. Oversee and administer funds for composting activities in the county, partnering with the City of Moorhead on satisfying maintenance and equipment needs at the Compost Site and working with the cities to utilize available compost program funds for local efforts of city residents.

3. Continue public education on yard waste management, backyard composting, and continue to sell composters to residents at a reduced cost.

4. Evaluate possible pilot projects (such as the one with the City of Moorhead and Salad Makers to collect and haul vegetable scraps to the Compost Site) to introduce other organics into the compost.

5. Continue to monitor program activities during the Plan period to determine how to expand efforts and whether future change is needed.

Implementation Schedule: On-going

Staffing: .08 FTE

Estimated Program Budget: $600,000 ($457,191 plus potential equipment needs at Compost Site.)

5. Tire Management

Goal: To continue to manage waste tires properly and to ensure that collection and processing of tires is available to all residents.

Programs: No changes are expected at this time, except in the volumes that should continue to increase with population.

1. To continue to collect waste tires at the county landfill from residents for a fee, to be picked up and hauled for processing by Liberty Tire Services of Ohio, or other state-permitted facility. The county will continue to instruct commercial entities and cities to contract with state-permitted transporters and processors.

2. To continue to follow state statutes regarding proper waste tire management, monitoring and enhancing, if needed, activities to manage waste tire volumes properly.

3. To continue to include tire recycling management in public education materials.

Implementation Schedule: On-going

Staffing (FTE): .05

Estimated Program Budget: **$**19,000. (Included in Recycling budget; half of the cost is offset by revenues from a charge placed on tires.)

6. Used Appliances

Goal: To continue current programs to ensure that residents have the opportunity to properly dispose of used appliances; and to meet or exceed state estimates for appliance recycling.

Programs: No changes are expected at this time, except in volumes as population increases.

1. Continue to accept appliances in a roll-off at the Clay County Landfill and contract with a licensed hauler/processor to transport the used appliances to a state-permitted end-market.

2. To continue to support and publicize the city of Moorhead's collection program, which consists of a designated roll-off trailer, located at the city's Transfer Station, for drop-off and temporary storage, to be delivered to a state-licensed scrap metal dealer who either repairs or disposes of the appliances.

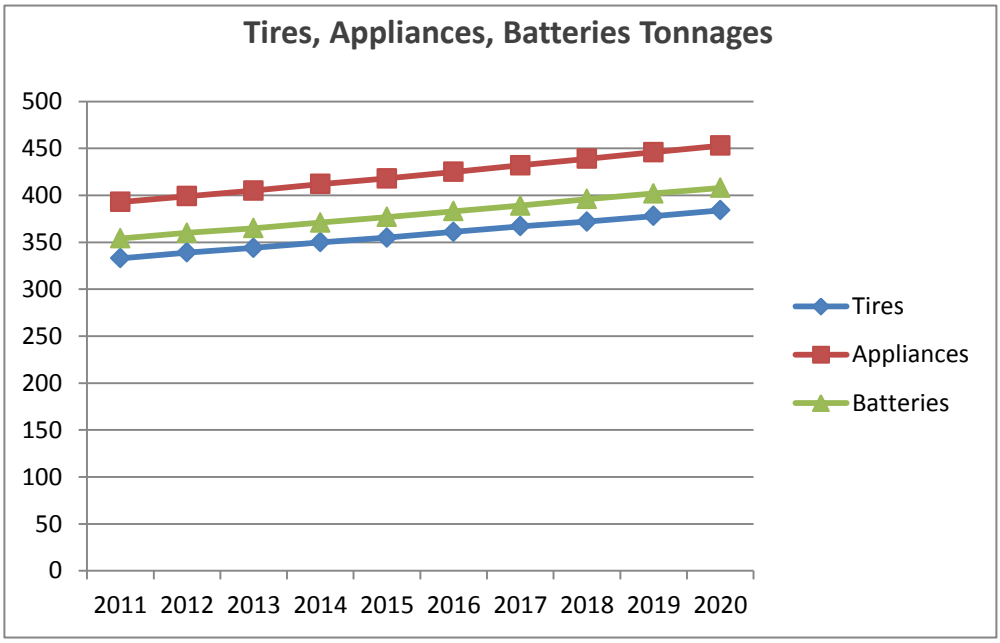
3. To continue to publicize used appliance management in public education.

Implementation Schedule: On-going

Staffing (FTE): .05

Estimated Program Budget: $ 10,000. The County charges a fee for appliances in the expectation of defraying some of the costs for appliance management.

Program growth for tire, appliance, and motor vehicle battery management is indicated on the chart below and is expected to coincide with projected population growth.



7. Motor Vehicle & Dry Cell Battery Management

Goal: To endorse the county policy of promoting the proper management of motor vehicle batteries, the county will produce a public well-educated in proper disposal options for motor vehicle batteries.

Programs: The County plans to maintain current programs with no substantial changes anticipated within the Plan period.

1. Continue to include battery management and recycling/disposal in the county's on-going public education plan.

2. Continue to publicize a list of local retailers (including service stations, Interstate Batteries, and stores which sell motor vehicle batteries), which accept used vehicle batteries for recycling.

3. To continue to monitor and change programs/activities, if needed.

Implementation Schedule: On-going

Staffing (FTE): .01

Estimated Program Budget: $10,000. (Included in Recycling and Public Education budgets.)

8. Used Oil, Filters, and other Fluids

Goal: 1. To continue to promote the proper management of used motor oil, motor vehicle fluids, and oil filters; and 2. To continue to ensure that all residents are informed about proper management, disposal, and drop-off sites.

Programs: The County intends to continue maintaining programs with no substantial changes anticipated within the Plan period, and to monitor effectiveness.

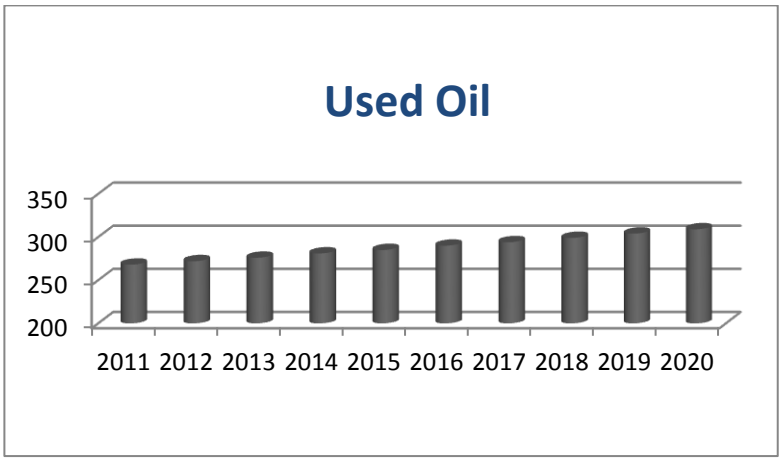
1. The county will continue its public education campaign on the proper management of these materials and to publicize a list of collection sites.

2. The county will continue to support existing drop-off sites throughout the county and pay a local hauler for the collection and hauling of oil (from another drop-off tank/site) and oil filters to an area processor. It will also continue to partner with the private sector to encourage and promote the participation of service stations in the program and public education campaigns.

3. The County will continue to accept waste oil and filters from residents free of charge at the HHW facility and to work with local waste oil companies on collection, hauling, and processing, accepting rebates as the market allows. The HHW facility will continue to accept other motor vehicle fluids.

4. The county will continue to monitor the program, record volumes, and to gauge whether population growth or other factors are impacting the waste oil program sufficiently to warrant implementing additional collection sites.

The growth in the waste oil program is anticipated to coincide with population growth.



Implementation Schedule: On-going.

Staffing (FTE): .05

Estimated Program Budget: $ 71,000. (Included in Recycling budget.)

9. <u>HHW</u>

Goal: To continue to operate HHW facility and Product Exchange, meeting or exceeding state statutes (Minn. Stat. 115A.96, subd.6) regarding proper management of household hazardous waste and removing as much of these materials from the waste stream as possible. A long-term goal has consistently been to reduce this program and the need for it by educating the public about using less hazardous products, buying only the amount of paint and other products that they need for a project, and pushing for manufacturer responsibility in creating/utilizing less toxic ingredients.

Programs: Other than enhancing the HHW program to draw in more participants through public awareness and education, the county does not anticipate other substantial changes during the Plan period.

1. To continue public education campaign to inform residents about waste reduction techniques, safer alternatives, less toxic products, proper handling, storage and disposal and other information; give tours and presentations to groups. Continue to work with regional counties on education, planning, collective solutions, etc.

2. To continue annual personnel training in Haz Cat, health and safety and attend relevant workshops, training seminars, and state-wide meetings;

and continue to assess compliance with laws, state directives, and MNDOT requirements;

3. To continue to evaluate programs, procedures, disposal, special and problem waste collection/management, building maintenance and upkeep, security, signage, spill containment measures, safety equipment, and emergency plans;

4. To continue to monitor program, keep records, and report volumes, participant numbers and budgets; and assess, and develop to meet, future county-wide program needs.

Other than a slight growth in tonnage (2-3 tons), due to population and participation increases as more residents become aware of the program and facility, the county does not foresee significant growth in the program. Hopefully, the increase in product due to population will be offset by public education efforts that teach people to buy only what they need, use up leftovers, and use less hazardous products.

Implementation Schedule: On-going

Staffing (FTE): 1.1 FTE

Estimated Program Budget: $1,645,124.

10. <u>Construction & Demolition Debris</u>

Goal: 1. To manage demolition debris in accordance with Minnesota Rules (i.e., 9215.0690); 2. To continue to direct demolition and construction debris to the permitted C & D landfill and work with the private facility on recovery of material; 3. Maintain the current C & D recovery program and research, and possibly implement, expanded recovery programs; and 4. To develop a method to track materials and record volumes recovered and volumes taken by residents for reuse.

Programs:

1. The county plans to continue partnering with the privately-owned demolition landfill to recover waste lumber and other materials, including manufactured items, to offer for reuse to residents.

2. Landfill staff will continue to recover materials at the MSW landfill as time allows.

3. The county will continue to operate the reuse garage and encourage residents to utilize the opportunities it offers. It will publicize available

materials on the county's Website and include reuse/recovery/materials exchange programs in public education campaigns.

4. If deemed feasible and as available staff time allows, the county will expand the volume of materials it recovers and research possibilities for recovering materials from construction/demolition sites.

5. Staff will revisit methods of recording volumes collected and volumes given out that were utilized a number of years ago when the program began. As other programs and efforts grew, available staff time to recover materials and record C & D recycling volumes diminished. As a result, the county has no reliable count of C & D tonnages recovered and recycled/reused for the past few years.

Implementation Schedule: On-going

Staffing (FTE): .08

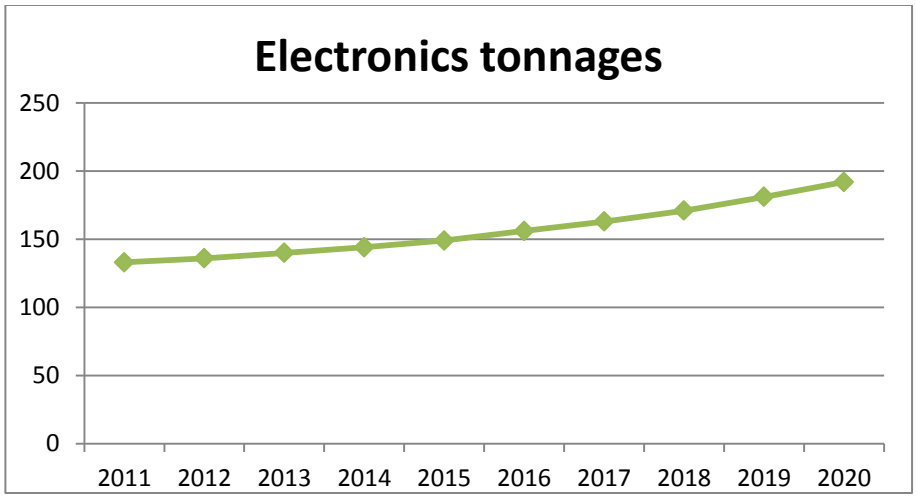
Estimated Program Budget: $ 57,200. (Included in Recycling budget.)

11. Electronics & Fluorescent Bulbs

Goal: The county will honor its commitment to offering residents opportunities to recycle electronics and fluorescent bulbs and to keep citizens educated on the hazards associated with the materials and updated on program specifics.

Programs: Other than to continually monitor and evaluate the programs and weigh options, the county anticipates no significant changes to the programs. Volumes will undoubtedly increase with: the population, the rate at which new product styles hit the market, and the modern tendency for obsolescence, etc.

The number of fluorescent bulbs the county collects each spring and fall from businesses, which has consistently averaged about 6,500 to 7,000 bulbs, is not expected to change significantly. However, growth in volumes of electronics collected is anticipated to occur for the reasons listed in the above paragraph. The county collected 131 tons of electronics in 2010 and 133 tons in 2011. The following chart indicates the projected growth in the electronics program.



1. The county will continue to collect residential bulbs free of charge at the HHW facility and partner with an area hardware store for the collection of residential bulbs. The county will continue to hold collections for businesses twice a year at a reduced rate in partnership with a state-licensed and certified recycler/processor.

2. The county will continue to offer collection sites for electronics containing cathode ray tubes, specifically televisions, computer monitors (and peripherals), video display devices, etc., and to contract with a state-licensed and certified recycler/processor for collection and hauling. Currently, collection sites include the Clay County landfill (during regular hours) and a county building located in the City of Moorhead, with collection hours on the first Tuesday of the month, 11:00 a.m. to 3:00 p.m. The county plans to continue the free of charge collection of residential electronics, unless the hauling and processing costs render this option prohibitive.

3. The county will continue: to include the programs in public education campaigns and promotional materials, to distribute fact sheets and brochures; and to advertise programs and collection events through newspaper ads, business mailings, presentations, informational booths, and the Website.

4. Solid Waste staff will periodically evaluate electronics contract, seek quotes from potential collectors/processors, and continue to weigh options on electronics recycling.

Implementation Schedule: On-going.

Staffing (FTE): .15

Estimated Program Budget: $400,000. (Included in Recycling budget.)

12. <u>Empty Pesticide Containers</u>

Goal: To continue to retain the county ban and keep empty pesticide containers out of the waste stream and provide residents/farmers/elevators/small businesses with a recycling opportunity.

Program: The county plans no changes to this program other than what may occur with potential changes in farming operations or pesticide application procedures.

1. To continue to collect empty pesticide containers annually at the Clay County Landfill and partner with the MN Dept of Agriculture and the Agricultural Container Recycling Council's (ACRC's) contractor to collect and process containers emptied during the course of farming operations. The expectation is that numbers of containers collected annually will remain fairly constant at 2,500.

2. To continue to publicize the collection event through mailings, ads, personal contact and the distribution of flyers throughout the county.

Implementation Schedule: On-going

Staffing: .02

Estimated Program Budget: $15,600. (Included in Recycling budget.)

13. <u>Organics</u> (food to livestock and food to people)

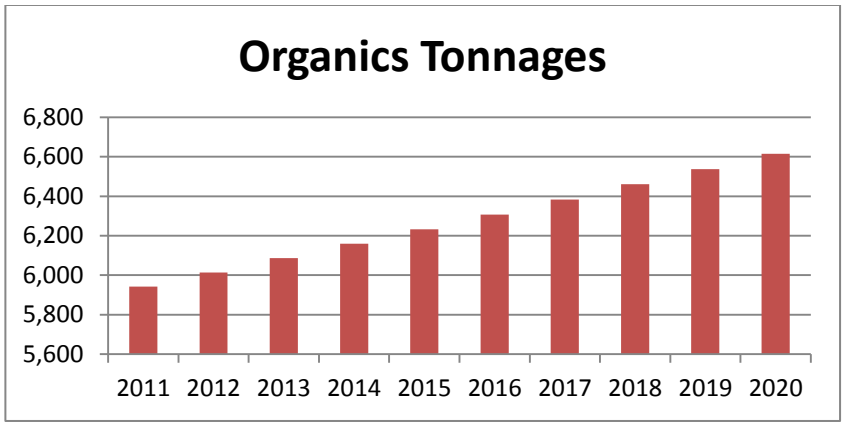
Goal: To support, promote, and increase these mostly private-sector efforts.

Program:

1. To partner with area growers, producers, and other businesses, the Department of Agriculture, Extension Services, and charitable groups to continue and expand efforts, which include beet tailings and other by-products of sugar beet processing going to livestock, vegetable scraps from Salad Makers and restaurants going to feed hogs and other farm animals, and food from stores and restaurants going to feed people, etc. Promote the concept through public education and encourage community participation.

2. Investigate possibility of a pilot project to collect source-separated organics from stores/restaurants to be transported to Compost Site.

The county recycled 5,872 tons of organics in 2010 and 5,942 tons in 2011 and expects that organics will continue to make up a large percentage of the county's overall recycling tonnages. Tonnages are expected to reach 6,615 by 2020.



Implementation Schedule: On-going.

Staffing: .01

Estimated Program Budget: $ 5,000. (Included in Composting budget.)

14. <u>Other—Christmas tree lights; shrink wrap; shingles, mattresses</u>

Goal: To investigate and implement recycling solutions for these "other" materials.

Program:

1. To again partner regionally and tie in with the state program for the collection of Christmas tree lights; to evaluate previous year's collection, sites, and participation and continue program, including it public education campaigns;

2. To partner with area processor and businesses to expand shrink wrap recycling; inform and encourage businesses to place a container for area processor to collect for recycling; and publicize opportunities in mailings to businesses;

3. Research and evaluate possibilities for the collection and recycling of shingles and mattresses; investigate tying in with regional efforts and seek collectors/processors.

Implementation Schedule: Early fall of 2012 and on-going after that.

Staffing: .01

Estimated Program Budget: $ 10,000 (Included in Recycling budget.)

C. MSW & C&D DISPOSAL SYSTEM AND REGIONAL OPTIONS

Summary. The County's proposed integrated Solid Waste Management System includes a land disposal system that involves operating the existing Clay County Landfill while investigating and implementing a regional approach, the steps for which are delineated below. After an extensive study of disposal options and regional solutions, the county concluded that the construction of a new resource recovery facility, both by Clay County alone and with regional partners, was neither feasible nor prudent. Clay County is involved in discussions with regional partners to participate in the Perham Resource Recovery Facility (PRRF). Discussions have focused on Clay County's participation as contributor of waste, as a regional landfill, as a repository for fines from the proposed Materials Recovery Facility (MRF) and for bypass materials, and as a disposal site for incinerator down-times.

1. Landfill Disposal System

Goals: Regardless of the solid waste management alternatives selected, a landfill by necessity will be required in order to provide for disposal of that Clay County solid waste and possibly regional waste (MRF fines, bypass material from waste-to-energy) that cannot be processed/burned in waste-to-energy facility. 1.) Clay County will continue ongoing operations at the existing Clay County Landfill, which is currently the main component of the county solid waste management system. 2.) The county will continue to establish updated land disposal policies and procedures. 3.) Additionally, Clay County will continue to explore ways to participate in the Prairie Lakes Municipal Solid Waste Authority (PLMSWA), beginning with accepting fines from the Perham Resource Recovery Facility (PRRF) in exchange for sending waste loads to the waste to energy facility. 4.) Clay County will continue to consider an alternative related to the above participation--developing the Clay County Landfill into a regional facility.

Programs/Activities:

1. Continue to manage daily operations of facility and site (groundwater well, gas system, and leachate recirculation monitoring, stormwater inspections and recording, tree-tending for phytoremediation project, etc.) and establish procedures to operate the current and future Clay County landfill, using the best available technology, in a manner that minimizes potential pollution and reduces the volume and toxicity of waste deposited at the landfill, and, thus the environmental impact. (On-going)

2. Continue to oversee engineering and permitting activities and establish procedures to site, design, and construct landfill expansions using the best available technology, in accordance with state, county, and local statutes, rules and ordinances.

3. Maintain and update closure/post closure plan and contingency action for the Clay County landfill in accordance with state, county, and local statutes, rules, and ordinances, and oversee compliance with state mandates regarding problem materials management. (Annually)

4. Continue to establish appropriate standards of collection and disposal for Clay County residents and municipal/commercial haulers and keep reports and records. (On-going)

5. Continue adopting disposal monitoring procedures that minimize unacceptable waste from entering the Clay County landfill and continue to maintain an expanded ground water monitoring system with applicable treatment/remediation solutions and techniques. (On-going)

6. Continue to operate and expand the active gas collection system to meet greenhouse gas reduction goals and to harness the methane for a renewable energy use.

7. Assess future county/regional landfill and regulatory needs.

8. Continue to work out details of waste exchanges with the Perham waste-to-energy facility and to partner with counties on regional options for waste disposal/public education/recycling opportunities.

9. Administer and revise Clay County Solid Waste Ordinance, as appropriate, in accordance with state and county statutes, and other relevant laws, rules and regulations. (On-going)

Facilities:

1. City of Moorhead Transfer Station and Clay County Landfill.

The **City of Moorhead Transfer Station**, as the interim site between the city's curbside program and the Clay County Landfill, handles the approximately two thirds of the county's waste that comes from Moorhead residences. Transfer Station staff receives the waste from Moorhead garbage trucks and deposits it in compactor trucks headed on the 18-mile trip to the Clay County Landfill. This City of Moorhead site is permitted by the State of Minnesota. The county Solid Waste Manager receives copies of the facility's MPCA permit and periodic inspection reports and takes an active interest in the compliance of the site with all state laws and county/local ordinances.

The County's **goals** with respect to this City of Moorhead facility are:

1. To maintain the city's crucial role in solid waste planning and to cooperate on solid waste disposal solutions, especially as they are impacted by the growing population of the county's largest city. One method the county utilizes in promoting on-going cooperation and communication is to include two city of Moorhead council members, as well as a representative of Moorhead citizens, on the county's Solid Waste Advisory Committee.

2. To continue to partner on waste disposal and waste abatement projects, with the City of Moorhead continuing its crucial role in discussions and policy-making. City of Moorhead staff and officials have been included in the county's regional planning and in discussions with PLMSWA, working out technical details for the exchange of fines (to be deposited at the Clay County Landfill) with waste loads from the City of Moorhead Transfer Station. Technical discussions, which have included the City of Moorhead Public Works Director, have focused on logistics of the sites, equipment such as walking floor trailers versus roll-offs, staffing needs and time constraints, etc.

3. To continue to partner on the collection of problem materials and the continued use of the Transfer Station site for the county's HHW facility and operations; and to review the site's suitability as one of the county's two collection sites for electronics.

4. With no significant changes on the horizon, the county will continue to work with the city on compliance with state rules, waste issues related to flooding, Compost Site equipment needs, electronics collection issues, and impacts of increased population on facility size and operations.

Implementation Schedule: On-going, with a key role coming in the waste exchanges with the Perham facility, beginning approximately two to three years hence.

Staffing: .05 FTE. The County contributes no employees directly to this facility, but does allow for county staff time in conferring with city staff on procedures for waste disposal, compliance issues, the composting site, recycling programs, HHW, education and promotional events, etc.

Estimated Budget: No County dollars are budgeted for this City of Moorhead-owned facility, but staff time could total $20,000 over the ten-year period.

The **Clay County Landfill** is a mixed municipal solid waste (MSW) landfill which has been in operation since 1973 under Minnesota Pollution Control Agency (MPCA) Solid Waste Permit SW-34. The landfill consists of four areas (Former Area I and Areas II, III and IV). The landfill operating permit (Permit #34) was renewed by the MPCA on October 19, 2009.

The current fill rate is approximately 100 tons per day, with a tipping fee of $12.00 per compacted cubic yard (see Table 10, page 39), remaining competitive with surrounding area tip fees. Via the county's projected 20-year budget, those charges will increase incrementally to meet future construction, operational, and liability-related expenses. Appendix B provides a detailed budget summary of current landfill operations. The county has sufficient funds with rate increases to operate and maintain the landfill during operation and post closure.

(Chapter III of this Plan provides more discussion and detail on the existing Clay County Landfill.)

a. Vertical Expansion of the Landfill and Design Capacity

Under its current permit, Clay County will expand vertically over Areas III and IV, install leachate recirculation, and expand the existing active gas collection system. The 50-foot vertical expansion will bring the ultimate design capacity of the landfill to 6,284,963 cubic yards, extending its service life to approximately 50 years. Progress is being made on the vertical expansion. In 2010 re-grading of some of the side slopes took place at the landfill, which also included the installation of five additional gas wells and the initial leachate recirculation bed. The landfill is currently collecting and flaring off gas as needed until there is sufficient gas volume to implement an economically feasible gas utilization project.

Vertical expansion of the landfill will begin in 2012 with Area III, Phase 5 and the remaining landfill will be developed in eight (8) phases. Once the landfill, based on current design, has reached its capacity, a possible future option would be a lateral expansion into the property to the north. Through proper permitting, a lateral expansion would allow for additional capacity at the Clay County Landfill without requiring a move to an alternate location.

The timing of a lateral expansion would be dependent on MSW volumes, which will be influenced by whether or not the Clay County Landfill becomes a regional facility. Establishment as a regional facility would increase waste volumes and cause the current landfill, as designed, to reach its capacity sooner. Table 27, Page 95 provides a summary of the design capacity and schedule for the currently planned eight phases at the facility. Items the County will need to complete along with an anticipated schedule for developing the remaining eight phases and permitting a lateral landfill expansion is presented in Table 28, Page 96.

b. Calculating Net Land Disposal Capacity

In order to calculate the Certificate of Need to be issued to the county for a permitted land disposal waste management option, the "net land disposal capacity" figure must be obtained. This figure is computed by subtracting the amount of waste managed by the proposed waste management system from the

estimated land disposal capacity needed, based on current and projected waste generation practices. The result of this computation is the net land disposal capacity needed for the next ten-year period. Table 20, the Goal Volume Table, is provided in Appendix A to show solid waste abatement, tonnage and volume data, and serve as a guide in considering solid waste planning activities. With updated abatement measures and timetables in effect, the net land disposal capacity needed for the new Plan period appears to be 577,189 cubic yards.

Implementation Schedule: The programs and activities discussed above are on-going.

Staffing (FTE): 2.75. The county is considering increasing its staffing level to 3.25 FTE.

Estimated Budget: $17,204,646.

2. <u>Regional partnerships</u>

Goals: Clay County will continue dialogue with surrounding counties to identify common regional solutions and alternatives to solid waste management. The county will continue to build on efforts that began in 1995 with an examination of regional waste disposal options to compliment waste abatement activities already employed by the county.

a. Regional panel. The current regional effort began in 2006 when Clay County convened a panel of representatives from Minnesota and North Dakota counties and cities to assess regionally alternative solid waste disposal options. Representatives from the counties of Clay, Becker, Otter Tail, and Wadena in Minnesota, Cass County, North Dakota, and the cities of Moorhead, Fargo, West Fargo, and Grand Forks formed the Red River Valley and Lakes Region Solid Waste Panel. Further detail on regional issues is provided in Chapter IV.

The panel reviewed the existing conditions of solid waste in the region, including remaining life expectancy of the region's landfills, current quantities of MSW, and handling of MSW. The Panel contracted with a consultant to complete a technical assessment of alternative waste disposal options for the region. In March 2007, a technical assessment was completed. This study reviewed a variety of options for handling MSW in the region, including different commercially demonstrated technologies and locations within the region that were feasible for implementation. Some of the options included MSW combustion, landfill with baler, plasma gasification, composting, and hydrolysis. From the study, the panel narrowed the most feasible alternatives down to a MSW combustor and landfill.

Table 27

Design Capacity and Schedule

Phase[5]	Total Volume[1] (cy)	Base Granular[2] (cy)	Final Cover[3] (cy)	Operational Volume (cy)	Operational Volume Utilized as of Oct. '10 (cy)	Remaining Operational Volume as of Oct. '10 (cy)	Operating Life[4] (yrs)	Open Date	Temporary Closure Date	Re-Open D
Area IV, Phases 1 & 2	981,700	0	49650	932,050	599,096	332,954	4.3	2004	2012	2020
Area IV, Phase 3	306,100	0	14000	292,100	226,596	65,504	0.8	2006	2012	2024
Area III, Phase 5	162,000	4,200	22175	135,625	0	135,625	2.1	2012	NA	NA
Area III, Phase 5A	162,000	0	22175	139,825	0	139,825	2.1	2014	NA	NA
Area III, Phase 4	346,400	2,400	48900	295,100	0	295,100	4.5	2016	NA	NA
Area IV, Phase 4	945,400	11,000	44800	889,600	0	889,600	13.6	2024	NA	NA
Area IV, Phase 5	751,100	16,800	50400	683,900	0	683,900	10.5	2038	NA	NA
Area IV, Phase 6	758,500	8,400	63900	686,200	0	686,200	8.8	2047	NA	NA
Total[6]	**4,413,200**	**42,800**	**316,000**	**4,054,400**	**825,692**	**3,228,708**	**46.8**	-	-	-

[1]Based on a 4h:1v working slope from top of clay liner permitted grades.

[2]Based on a 1-foot sand drainage layer (approximately 1,600 cy/acre). It is important to note that Area IV,Phases 1, 2, and 3 are constructed.

[3]Based on a 3-foot final cover system with buffer layer (approximately 4,840cy/acre). (Portions of area IV, Phases 1 & 2 are final covered).

[4]Based on annual waste and daily cover capacity utilized of 78,100 cy/year; 2010 Annual Report.

[5]In Place Volume as of October 2010 is 2,697,455 cy; 2010 Annual Report

[6](4,413,200-825,692) + 2,697,455 = 6,284,963 cy (Total Landfill Design Volume)

Table 28
Landfill Development and Expansion Schedule

Event	Anticipated Start Date	Comments
Temporary Closure of Area IV	2012	Area IV to be temporary closed to allow for vertical expansion over Area III
Vertical Expansion in Area III, Phase 5	2012	Reopen Area III to begin vertical expansion
Construct Final Phase Expansion in Area III with Phase 4	2016	
Close Area III	2020	2020 is calculated end date for vertical expansion over Area III.
Reopen Area IV	2020	
Preliminary Permit Application for Lateral Landfill Expansion to the North	2047	Complete environmental review. Include intitiating hydrogeologic investigation and filing for certificate of need.
Permit Application for Lateral Landfill Expansion	2050	
Begin Lateral Landfill Expansion	2054	
Final Clousure of Area IV	2055	2055 is the calculated end date for when the proposed ultimate design for vertical expansion would reach capacity

b. Prairie Lakes Municipal Solid Waste Authority Partnership

Clay County is involved in ongoing discussions with the Prairie Lakes Municipal Solid Waste Authority (PLMSWA) regarding participation in regional efforts such as waste exchanges and the use of the Clay County Landfill as a regional disposal facility. Through a joint powers agreement between Becker, Otter Tail, Todd, and Wadena Counties, the PLMSWA owns and operates a Waste-to-Energy (WTE) facility located in Perham, Minnesota (Otter Tail County), which receives and processes MSW from the four counties. The purpose of the Perham Resource Recovery Facility (PRRF) is the combustion of MSW in order to produce steam, which is used by two local industries as a source of energy. The PRRF allows MSW to be handled on a more coordinated regional basis, which is consistent with the findings of the Waste Study 2007.

PLMSWA is proposing to expand the PRRF, which is currently going through environmental review, including a voluntary environmental impact statement (EIS). The proposed project consists of increasing the municipal waste combustion (MWC) processing capacity and adding a materials recovery facility (MRF) to the existing PRRF. The MRF would allow for presorting and recycling of materials before they enter the MWC units for combustion. The MRF, therefore, would produce fines, recyclables, and bypass materials.

Discussions between Clay County and PLMSWA have focused on having the Clay County Landfill receive bypass materials and fines from the proposed MRF at the Perham facility. Additionally, Clay County may potentially exchange waste with the PRRF. For example, MSW that is non-processable (i.e., metals and over-sized, bulky items, such as couches and other items not acceptable for combustion) at the PRRF would be brought to the Clay County Landfill. In exchange, loads of processable MSW from Clay County may be brought to the PRRF for processing in the WTE facility. Additionally, during periods of downtime/maintenance at PRRF, excess MSW may also be sent to Clay County. Since talks are preliminary at this point and the facility expansion (with proposed MRF) has not been constructed, the volume of waste to be exchanged between Clay County and the facility has not been determined. The volume of recyclables that will be removed by the proposed MRF and credited to Clay County will depend on the volume of waste the county delivers to the Perham facility. Those potential volumes remain a component of continued discussions between the two entities.

Currently a formal agreement is being negotiated between Clay County and the PLMSWA to accept fines from the proposed MRF at the Clay County Landfill. However, discussions between Clay County and PLMSWA will continue regarding other opportunities for Clay County and PLMSWA to partner on solid waste management activities, such as MSW exchange and the PRRF sending non-processable waste to the Clay County Landfill.

Implementation Schedule: Approximately 2014, when the construction/expansion of the PRRF has been completed, the Materials Recovery

Facility added, and the facility is accepting waste from partner counties and is generating fines for disposal.

Staffing: .1 FTE. (Included in this figure are potential percentages of landfill and office/administrative staff time.)

Estimated Budget: For staff time, approximately $60,000. No financial analysis has been completed on this option and no expenditure for waste processing has been added to the county's Solid Waste System Projected Budget (found in Appendix B). In initial cooperation on the fines and waste exchange, PLMSWA and Clay County anticipate no monetary exchange.

3. Demolition Landfill

Goals:

1. Clay County's goals are to continue to promote the proper management and disposal of demolition and construction wastes; publicize the privately-owned facility and direct appropriate wastes there and away from the Clay County Landfill.

2. The County Sanitarian shall maintain certification as a Type III Landfill Inspector and will continue to issue demolition permits, inspect loads prior to disposal, and conduct monthly inspection of the facility to ensure compliance with its state permit and the county's ordinance. The County Board shall continue to review any proposed rate increases.

3. Although no significant changes are anticipated over the Plan period, the County will continue to evaluate the program and its use and devise methods, in addition to rate differential, to direct C & D material there (instead of to the sanitary landfill).

4. The county also hopes to continue the partnership in the recovery of construction and demolition materials, increasing materials recovered and keeping records of volumes.

Facilities:

Clay Demolition Landfill is an MPCA-permitted demolition landfill, owned and operated by Disposal Services of Wahpeton, ND. As mandated by Minnesota Statutes, 400.16, the county periodically inspects solid waste facilities within its borders and certifies inspectors. Since the county is responsible for the processing and disposal of its solid waste and is mandated to cooperate with the MPCA in maintaining compliance with rules, it is in the county's best interest to carefully monitor the solid waste operations within its borders and enforce the relevant laws and county ordinances.

While Clay County promotes the privately-owned demolition landfill as the

appropriate site for demolition and construction materials and directs debris to that site, it does not attempt to control the waste flow in the same way that it does for the county-owned MSW landfill. Some of this C & D waste stream leaves the county for other demolition landfills across the river in North Dakota. And, undoubtedly, some out-of-state and out-of-county C & D materials come to this landfill. Information available to county staff seems to indicate that a fairly consistent volume of material enters this facility annually.

Implementation Schedule: On-going.

Staffing: .05 FTE. While no county staff is employed at this privately-owned landfill, the county's environmental health officer devotes a small portion of his time to the inspection of demolition loads, the issuance of demolition permits, and the monthly/annual inspection of the facility. As required under its state permit and reinforced under the Clay County Solid Waste Ordinance, a demolition debris landfill operator shall be present at the site to collect dumping fees, verify permits, record permit numbers and vehicle license number, and log the location where debris is deposited.

Estimated Budget: No county taxpayer dollars are directly budgeted for this facility, except for the small portion of the Sanitarian's time that is devoted to the tasks previously mentioned, as well as periodic training and recertification. Over a ten-year period this could total $58,000.

D. SYSTEM ALTERNATIVES FOR CLAY COUNTY

Clay County has an integrated solid waste management system which includes many program elements such as waste reduction and education, recycling, composting, household hazardous waste, and land disposal. The likelihood of major operational difficulties occurring in the system will vary depending on the facility or program.

One assumption the county is making in this Plan is that the County Landfill will continue to be operated according to state statutes, regulations and permit conditions, and will likely be in operation (as is, or as a regional facility) for the duration of the Plan period.

In the event that short or long-term operations difficulties arise, Clay County will look at utilizing a disposal or waste-to-energy facility in the State of Minnesota, within a manageable distance, until operations can resume at the County Landfill. Also, the city of Fargo, ND, has indicated a willingness to accept waste from Clay County on a short-term basis.

E. ALTERNATIVES/OPTIONS TO CURRENT DISPOSAL SYSTEM

In 2009, the MPCA followed up M.S. 115.46, which outlines plan requirements, content areas, and steps for approval, with revised rules, Chapters 9215.0500 – 9215.0880. These rules established requirements for the preparation and implementation of solid waste management plans and amendments by counties, solid waste management districts, and

multicounty areas outside of the seven-county metropolitan area. With the revised rules, the Agency aimed to encourage regional planning and to enable the demographic, geographic, regional, and solid waste system differences that exist among counties to be reflected in the plans.

Clay County has evaluated facilities as alternatives to landfilling, such as a regional waste to energy (WTE) facility and a landfill with a materials recovery facility (MRF) and baling operation. Discussion on these topics follows, including information on the PLMSWA.

Based on past and current information and future planning, Clay County has considered a number of solid waste management options to build on successful, current solid waste management operations. Clay County will continue to explore different ways to handle waste as opportunities and technologies arise.

1. Clay County Landfill as a Regional Facility

Upon completion of the Waste Study 2007, Clay County and the remaining Minnesota members of the Red River Valley and Lakes Region Solid Waste panel continued to meet and explore the possibility of converting the Clay County Landfill from a county landfill into a regional landfill. Although not a member of the Red River Valley and Lakes Region Solid Waste panel, Hubbard County has recently begun discussions with Clay County to potentially begin delivering waste to the Clay County Landfill. Receiving waste from Hubbard County would further move Clay County toward becoming a regional disposal facility. However, no formal agreement has been made between the two counties.

Besides the potential partnerships with PLMSWA and Hubbard County, other potential participants are unknown at this time, and therefore MSW waste quantities in the immediate future are likely to remain similar to what is currently disposed of at the Clay County Landfill. If Clay County forms a partnership with PLMSWA, waste flows may not change at all with the addition of fines as additional waste may be sent away. Due to uncertainty of MSW volumes and regional partnerships, costs associated with becoming a regional facility are uncertain and would likely be similar to what is reflected in the current budget figures through 2030 for the existing Clay County Landfill (see Appendix B).

A disadvantage of possibly becoming a regional facility is that the remaining capacity of the landfill would be filled sooner. It is estimated that the operation life of the landfill would be reduced from 47 years to 23 years, if waste flows were to double due to the regional nature of the landfill. As previously discussed, Clay County has additional land available adjacent to the northern boundary of the landfill, which could be used for a possible lateral expansion once the existing landfill, as designed, has reached its full capacity.

Clay County will continue to monitor potential regional waste partnerships, such as PLMSWA and Hubbard County, as well as other waste management programs for possible inclusion in regional efforts in the future. Clay County believes that pursuing establishment as a regional landfill is a feasible option and will continue to move

toward implementation of this alternative in addition to their current operating system. In the meantime, the landfill is collecting and flaring off gas as needed until there is enough gas collected to develop onsite electrical generation as a feasible option. Establishment as a regional landfill would allow for more MSW to be collected more quickly, which would allow for more landfill gas generation, and potentially develop onsite electrical generation as a feasible option.

2. Regional Waste to Energy Facility

The Waste Study 2007 identified a regional WTE facility/MSW combustor as an option for regional solid waste management. Alternatives of a WTE facility were evaluated by the Red River Valley and Lakes Region Solid Waste panel that included a WTE for all entities (i.e., North Dakota and Minnesota) to deliver their waste; a WTE for the Fargo/Moorhead area; and a WTE for only Minnesota entities. The most cost effective and feasible option was for all entities to deliver waste to a regional WTE facility. However, there was not enough interest from all entities to continue to pursue this option.

Once the North Dakota entities decided not to participate in a regional effort with the Minnesota entities, a new WTE facility in the region was no longer a feasible option due to reduced quantities of available MSW, and lack of cost effectiveness. It was, therefore, not cost effective or feasible for Clay County to pursue construction and operation of a WTE facility on its own.

As an alternative, Clay County has begun exploring other options through a partnership with the PLMSWA, as previously discussed. The county is currently exploring the option of accepting fines from the PRRF at the Clay County Landfill and potential options for waste exchange are being explored by the two entities. Additionally, Clay County accepting bypass, non-processibles, bulky items, and excess MSW from the PRRF is also being considered.

3. Preprocessing of MSW and Baling

Another alternative for solid waste management evaluated by Clay County included the addition of a materials recovery facility (MRF) and baling operation to the existing Clay County Landfill. This would be similar to the MRF design at the MarKit Landfill. It was determined that the addition of a MRF was not an economically feasible option for Clay County, which is dependent on the volume of MSW received by the landfill. Additionally, Clay County has a successful household recycling program, which results in the delivery of clean, separated recyclables to the door of a local processor. Clay County offers curbside recycling to residents in the City of Moorhead, while the remaining communities are offered a combination of curbside collection and drop-off centers as options for recycling.

Through the County Solid Waste Ordinance, recycling activities are monitored and regulated. Permits are required for recycling facilities, operations, collection, and other related activities. The recycling rate in Clay County is 48, including credits.

The county will continue to evaluate periodically the feasibility of installing baling

operations and a MRF. The county most recently reviewed that option in 2010 and concluded that, due to the high cost of installing and operating a baling facility (compared to the relatively low volume of in-county waste), the county would wait until a regional waste solution, such as Clay County becoming a regional landfill, requires more discussion.

4. Conclusion

For the evaluation of the Clay County Landfill and its potential to become a regional facility, the Minnesota Solid Waste Management Act 115A was reviewed, which includes the *Minnesota Waste Management Hierarchy* (M.S. 115A.02b). Although current operations and feasible alternatives do not move Clay County higher on the *Minnesota Waste Management Hierarchy* list, establishing partnerships with PLMSWA and with other regional participants moves Clay County in a positive direction. These partnerships allow Clay County to support a resource recovery facility and exchange loads of MSW for the disposal of fines and bulky wastes at the Clay County Landfill. Establishing partnerships also fits with recommendations made in the 2009 Solid Waste Policy Report by providing continued local leadership and creating strong intergovernmental partnerships and regional governments that can effectively manage solid waste. Additionally, establishing a regional facility may offer more opportunities in the future that would allow Clay County to move higher on the Hierarchy List.

F. SYSTEM FUNDING & BUDGETS

The State of Minnesota provides vehicles for the financing of solid waste systems, such as grants and loans to counties and statutes that allow counties to levy taxes and set service charges for solid waste collection and disposal and to issue bonds for solid waste facilities. Chapter 400 of Minnesota State Statutes delineates the solid waste management responsibilities of counties, requiring them to adopt ordinances that set local regulatory standards, based on local management plans and state and federal regulations. Under this chapter, counties can use ordinances to set service charges for solid waste collection and disposal services provided by the county or its contractors. Counties can also levy taxes for solid waste management purposes upon all taxable property in the county, with revenues to be collected in a special fund and invested in authorized securities until needed. Presently, the MPCA administers various grant and loan programs to help finance capital expenditures for the initial costs of a waste abatement program.

Clay County's funding amounts and revenue sources are presented in the county's ten-year Solid Waste Management System budget located in Appendix B. Funding sources include the county's Landfill Tip Fee, Solid Waste Management Service Charge (the revenue amount listed under SW Committee), and MPCA HHW and SCORE funding. Financial assumptions used include an inflation factor of five (5) percent. Expenditures on the balance sheet include operating costs (including staff time, land, buildings, equipment, and other associated costs) for the landfill (covered by tip fee revenues) and expenditures (including staff time) associated with waste abatement programs, which include composting, recycling,

public education, and HHW. The average annual expense per household for the system is $41.74. The average annual cost per ton to manage the waste generated is $50.14.

Goals: The goals of Clay County are to financially support existing and proposed solid waste programs in this Plan and to maintain programs in the most feasible and cost-efficient manner possible. This includes implementing the proposed tipping fee and solid waste service charge increases, as indicated in the ten-year budget plan.

Programs (Administration/Management):

1. Develop department's budgets and fees
   a. Administer Accounts Payable and Receivable activities
   b. Work with and provide information to Auditor, Administrator, Solid Waste Advisory Committee and County Board

2. Administer Solid Waste Management Service Charge, which is assessed to taxpayers to cover all waste abatement programs;
   a. Software program inputting/monitoring
   b. Fee monitoring, evaluation, revision

3. Administer state, county, other fees/charges
   a. County tip fees, permit and other charges; state GMLC and Generator Fees, solid waste management Tax, Financial Assurance fund
   b. Administer SCORE funds and meet requirements, including financial reporting, etc.

4. Assess, and develop to meet, future financial responsibilities of the department, working with financial consultant on long-range planning and 20-year revenue/expense projections; implementing tip fee and service charge increases when needed; and monitoring, record keeping and reporting

5. Assess grant funding needs; research grant sources; develop and apply for relevant grants; and monitor, record-keep, and report.

G. GOAL VOLUME TABLE

The Goal Volume Table, developed to assist in the waste management planning process for Clay County, has been completed in a format approved by the MPCA. The Table is located in Appendix A.

H. ON-SITE AND UNAUTHORIZED DISPOSAL

Clay County discourages and prevents illegal disposal of municipal solid waste (MSW) through promoting proper management methods, and enforcement of the County Solid Waste Ordinance, State statutes and rules. Two primary activities the county employs to mitigate environmental risk are the HHW Program and the diversion of illegally disposed waste to the County Landfill by collection services.

Throughout the Plan period, the county intends to expand educational efforts concerning the hazards of on-site and illegal disposal for rural residents, and will attempt to bring more of these residents into the waste management system. With the educational efforts, and, hopefully, increased availability of rural collection service, the county intends to reduce the amount of waste disposed on-site.

The Goal Volume Table (Appendix A) shows that increased education and rural collection will lead to decreased on-site and illegal waste disposal. This will mitigate impacts to air, surface and ground water, and public health and will help avoid nuisance conditions.

I. PUBLIC PARTICIPATION ACTIVITIES

Goals: Goals of the county are to develop and maintain good relations with: the public; partners and colleagues in the waste industry; local business leaders; state, county, and local officials; legislators; agency personnel; and others; and to create an informed citizenry, able and willing to participate in county waste abatement programs, to provide input, and to make informed decisions that protect the environment.

1. Public Relations Programs/Activities

Activities to promote public relations include: a. overseeing the functions of the Solid Waste Department; b. making general day-to-day contact with the public; c. planning and coordinating Solid Waste Advisory Committee activities and holding public meetings; d. receiving on-going training/education necessary to carry out functions of the department; e. representing the county and/or office at state agency and professional meetings, on county or state committees, or other relevant assignments; f. participating in special projects relevant to the county, Solid Waste, or other management functions; g. formulating and tracking legislation in partnership with other counties and contacting legislators; and h. miscellaneous record-keeping and reporting.

2. Develop and implement Solid Waste Management Plan

Solid waste management authority and responsibilities for counties are founded in various state legislation and rules, such as Chapters 115A and 400 of the Minnesota Statutes. Of particular importance are the revised rules in Chapter 9215, which establishes the content (9215.0540 – 9215.0790) and review process (9215.0820 – 9215.0880) of county solid waste plans (with statutory authority based on M.S. 115A.46). Counties under these statutes and rules are authorized to prepare a solid waste management plan describing solid waste management programs for a ten-year period and reflecting demographic, geographic, regional,

and solid waste system differences that exist among counties. MPCA approval of these plans is required and their contents must follow State rule requirements.

This Plan was developed with input from the Clay County Board of Commissioners, the Solid Waste Advisory Committee, and various citizen groups and consultants. It has been presented in its final form to the Clay County Board for review. The public and interested parties have had the opportunity to comment on the update and its described solid waste management programs at the County Board, Advisory Committee, and other citizen planning meetings. Comments are documented within the County Board and Advisory Committee meeting minutes.

Careful administration of the Plan remains critical in order for its successful management. The Clay County Solid Waste Office will be the responsible office to administer the Plan, as well as enforcement of activities related to the Certificate of Need. To assist in that effort will be the Clay County Solid Waste Advisory Committee—a citizens' advisory group established to help oversee the management system. In addition, staff coordination with state and federal agencies, local governments, waste service industries, neighboring counties, regional organizations, and other interested parties will remain ongoing, as discussed previously, to help ensure a successful system. These efforts will also continue to involve the public participation process (public meetings, Advisory Committee activities, public education, etc.) throughout the Plan period.

The Plan and accompanying documentation will be on file in the MPCA regional office located in Detroit Lakes (MN), the Clay County Courthouse, and the Moorhead Public Library. The Plan will be placed on public notice and all interested parties will be notified. The Plan will be available in the County Solid Waste Management Office during normal business hours for public review and comment.

The County Board, Advisory Committee, and citizen planning groups will continue to provide input regarding county solid waste issues on a periodic basis during the Plan period, and to review the Plan and its progress. Although Clay County solid waste management activities are not expected to change drastically over the next ten years, this input will be crucial in the ability to react to immediate needs to manage the county's solid waste efficiently, and enact changes as needed.

V. SUMMARY

A Solid Waste Management Plan, to be successful, needs to be used as intended—as a background document for solid waste decisions. The plan must contain feasible options for addressing existing and potential problems in the areas of solid waste management. It must also provide for a management mechanism that will consider the various local, county, industry, state and federal interests and roles.

In addition, the result of the planning process must provide a waste management system that will best fit the needs of the county, and will address specific recommendations so that implementation may be more easily accomplished. The *Clay County Solid Waste Management Plan* satisfies these elements.

Needless to say, changes in solid waste management remain constant. The Plan, once on paper, is only a "slice of life" for that period of time. The Plan does provide for a system which identifies alternative options for consideration by the county. In addition, as part of the on-going Plan review process, the emergence of new solid waste issues, shifts in abatement goals or directions, and/or new information about management technologies may warrant an updating of the Plan.

This Plan is prepared in compliance with the existing state solid waste legislation, rules, and regulations. It considers future economic and environmental costs associated with existing landfill disposal practices, and evaluates potential alternative solutions through waste abatement—including material and energy recovery. The Plan also assesses current programs and methodologies for their viability and cost effectiveness. In summary, it evaluates current practices and explores new opportunities for Clay County in managing its municipal solid waste for now and into the near future.

APPENDIX A

CLAY COUNTY GOAL-VOLUME TABLE

APPENDIX B

CLAY COUNTY SOLID WASTE SYSTEM CURRENT AND PROJECTED BUDGET

TABLE 2

SUMMARY CASH FLOW

Balance Sheet

Clay County, Minnesota

Solid Waste System Projected Budget — Scenario: Every 3rd yr: $4 Tip Fee Inc beg 2013 | $2 SF Inc beg 2014 — Current Landfill Operations

		2011 Current Budget	2012	2013	2014	2015	2016	2017	2018	2019	2020
REVENUE:	FYEnding 31-Dec	1	2	3	4	5	6	7	8	9	10
SW COMMITTEE (390)		$ 1,134,306	$ 1,133,805	$ 1,133,805	$ 1,192,215	$ 1,192,215	$ 1,192,215	$ 1,250,625	$ 1,250,625	$ 1,250,625	$ 1,309,035
EXISTING LANDFILL (392)		$ 988,053	$ 1,075,994	$ 1,075,994	$ 1,075,994	$ 1,173,389	$ 1,173,389	$ 1,173,389	$ 1,270,744	$ 1,270,744	$ 1,270,744
FUTURE LANDFILL EXPANSIONS (393)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COMPOSTING (394)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
RECYCLING (395)		$ 140,680	$ 139,050	$ 139,050	$ 139,050	$ 139,050	$ 139,050	$ 139,050	$ 139,050	$ 139,050	$ 139,050
PUBLIC EDUCATION (396)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
HHH Waste (397)		$ 22,980	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000
ENVIRONMENTAL PROGRAM GRANT (398)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
RESIDUAL WASTE REVENUE		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
WASTE REDUCTION & PROCESSING FACILITY		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
NEW FACILITY GRANT		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
INVESTMENT INCOME	1.25%	$ 50,000	$ 57,964	$ 54,777	$ 52,107	$ 51,095	$ 45,335	$ 50,588	$ 55,586	$ 57,977	$ 59,848
FINANCIAL ASSURANCE WITHDRAWALS		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
BOND PROCEEDS		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL REVENUES		$ 2,336,018	$ 2,417,843	$ 2,414,625	$ 2,470,366	$ 2,566,729	$ 2,560,988	$ 2,624,612	$ 2,727,015	$ 2,729,396	$ 2,789,677
EXPENSES:											
SW COMMITTEE (390)		$ 135,576	$ 140,822	$ 146,272	$ 151,934	$ 157,815	$ 163,925	$ 170,272	$ 176,865	$ 183,715	$ 190,831
EXISTING LANDFILL (392)		$ 2,567,577	$ 1,880,550	$ 1,780,535	$ 1,671,966	$ 2,098,989	$ 1,201,920	$ 1,240,646	$ 1,505,673	$ 1,503,108	$ 1,773,682
FUTURE LANDFILL EXPANSIONS (393)		$ 165,311	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COMPOSTING (394)		$ 41,364	$ 42,273	$ 43,203	$ 44,155	$ 45,129	$ 46,126	$ 47,145	$ 48,189	$ 49,257	$ 50,350
RECYCLING (395)		$ 448,011	$ 469,172	$ 491,345	$ 514,581	$ 538,928	$ 564,443	$ 591,181	$ 619,201	$ 648,565	$ 679,339
PUBLIC EDUCATION (396)		$ 10,300	$ 10,661	$ 11,034	$ 11,420	$ 11,819	$ 12,233	$ 12,661	$ 13,104	$ 13,563	$ 14,038
HHH Waste (397)		$ 138,554	$ 143,762	$ 149,166	$ 154,775	$ 160,595	$ 166,635	$ 172,903	$ 179,409	$ 186,159	$ 193,166
ENVIRONMENTAL PROGRAM GRANT (398)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
WASTE REDUCTION & PROCESSING FACILITY		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
OTHER DISPOSAL SITES ("ODS")		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DEBT SERVICE		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL EXPENSES		$ 3,506,693	$ 2,687,240	$ 2,621,556	$ 2,548,830	$ 3,013,276	$ 2,155,282	$ 2,234,809	$ 2,542,441	$ 2,584,368	$ 2,901,485
TOTAL EXPENSE PER CAPITA		$ 58.50	$ 43.80	$ 42.37	$ 40.53	$ 47.18	$ 33.21	$ 33.90	$ 37.95	$ 37.97	$ 41.96
TOTAL EXPENSE PER HOUSEHOLD		$ 145.08	$ 108.61	$ 105.07	$ 100.55	$ 117.00	$ 82.37	$ 84.06	$ 94.13	$ 94.17	$ 104
NET ANNUAL EXCESS/(SHORTFALL):		$ (1,170,676)	$ (269,398)	$ (206,931)	$ (78,464)	$ (446,547)	$ 405,687	$ 389,803	$ 184,574	$ 145,028	$ (111,728)
OPERATING FUND BALANCE:											
BEGINNING BALANCE FY		$ 5,666,319	$ 4,495,644	$ 4,246,246	$ 4,039,316	$ 3,960,852	$ 3,514,304	$ 3,919,991	$ 4,309,794	$ 4,494,368	$ 4,639,396
ENDING BALANCE FY		$ 4,495,644	$ 4,246,246	$ 4,039,316	$ 3,960,852	$ 3,514,304	$ 3,919,991	$ 4,309,794	$ 4,494,368	$ 4,639,396	$ 4,527,668
FINANCIAL ASSURANCE DESIGNATED FUND BALANCE:	Beginning Balance	$ 2,743,588	$ 2,825,482	$ 2,900,931	$ 2,954,183	$ 3,003,516	$ 3,049,200	$ 3,088,535	$ 3,128,377	$ 3,168,733	$ 3,209,610
	County Contributions	$ 46,284	$ 38,758	$ 15,729	$ 11,152	$ 6,894	$ -	$ -	$ -	$ -	$ -
	Investment Income	$ 35,610	$ 36,691	$ 37,523	$ 38,181	$ 38,790	$ 39,335	$ 39,842	$ 40,356	$ 40,877	$ 41,404
	Fund Withdrawals	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Ending Balance	$ 2,825,482	$ 2,900,931	$ 2,954,183	$ 3,003,516	$ 3,049,200	$ 3,088,535	$ 3,128,377	$ 3,168,733	$ 3,209,610	$ 3,251,014
	Fund Balance Req	$ 3,206,351	$ 3,272,987	$ 3,098,220	$ 3,065,184	$ 3,072,458	$ 2,987,651	$ 2,994,489	$ 3,001,369	$ 3,008,291	$ 3,015,257
Tip Fee or Service Fee Increase Indicated by "x"			X		X	X		X	X		X
		$ 3,506,693	$ 2,540,229	$ 2,377,828	$ 2,201,775	$ 2,479,030	$ 1,888,720	$ 1,867,649	$ 1,809,868	$ 1,748,202	$ 1,670,272
NPV Per Ton Landfill Operations 5.00%	20 $78.09	-	1	2	3	4	5	6	7	8	9

APPENDIX C

CLAY COUNTY SOLID WASTE ORDINANCE

CHAPTER 2
SOLID WASTE [6]

5-2-1: DEFINITIONS:

Unless specifically altered, terms and abbreviations used in this Chapter shall be interpreted in a manner consistent with Minnesota Statutes Annotated chapters 115A, 116, and 400 and regulations of the Agency, which have been or hereafter may be adopted under those provisions. Terms and abbreviations used herein which are not specifically defined by law shall be construed in accordance with the context and professional usage.

AGENCY: The Minnesota Pollution Control Agency.

AIR CONTAMINANT: The presence in the outdoor atmosphere of any dust, fumes, mist, smoke, vapor, gas or other gaseous, fluid or particulate substance differing in composition from or exceeding in concentration the natural components of the atmosphere.

AIR POLLUTION: The presence in the outdoor atmosphere of any air contaminant or combination thereof in such quantity, of such nature and duration, and under such conditions as would be injurious to human health or welfare, to animal or plant life, or to property, or to interfere unreasonably with the enjoyment of life or property.

COMMERCIAL HAULER: Any individual, firm or corporation who is involved in hauling demolition and/or new building construction debris, as defined in this Chapter, from another's property (occupied, leased, or owned) in another's behalf, for the purpose of depositing such debris in a County or other permitted County demolition debris disposal landfill.

COUNTY: Any department or representative of the County who is authorized by this Chapter or otherwise by the County Board to represent the County in the enforcement or administration of this Chapter.

COVER MATERIAL: Granular material, generally soil, which is used to cover compacted solid waste in a sanitary landfill, is generally free of large objects that would hinder compaction, and is free of organic content that would be conducive to vector harborage, feeding or breeding.

DEMOLITION DEBRIS: Solid waste resulting from, but not limited to, the demolition, or construction of, buildings, roads, and other manmade structures including concrete, stone, brick concrete blocks, bituminous concrete or asphalt, shingles, untreated wood, masonry, plaster, metals, glass, trees, rock, earth, plastic building parts and other inert materials as permitted. Demolition debris does not include asbestos wastes, wastes from the operations of households, commercial establishments, institutions, industrial processes, agricultural facilities, and municipalities, such as garbage, dead animals, paper, food and beverage containers, leaves, yard trimmings, ashes, tires, liquids, septic tank pumpings, sludges, vehicles, machinery, appliances, explosives, and hazardous wastes.

DEMOLITION DEBRIS LAND DISPOSAL FACILITY: A site used to dispose of demolition debris.

DEMOLITION DEBRIS RECYCLING: The collection, processing, and/or repairing of demolition or construction materials for reuse in their original form or for use in manufacturing processes.

GARBAGE: Material resulting from the handling, processing, storage, preparation, serving and consumption of food.

INCINERATION: The process by which solid wastes are burned for the purpose of volume and weight reduction in facilities designed for such use.

INTERMEDIATE DISPOSAL FACILITY: A facility for the storage, reduction, recycling, or processing of solid waste prior to final disposal.

LAND POLLUTION: The presence in or on the land of any solid waste in such quantity, of such nature or duration, and under such conditions as would affect injuriously any waters of the State, create air contaminants or cause air pollution.

LICENSEE: A person who has been issued a license by the County Board for solid waste management purposes pursuant to this Chapter.

OPERATION: Any site, facility, or activity relating to solid waste management.

PERSON: Any human being, any municipality or any other governmental or political subdivision or public agency, any public or private corporation, any partnership, firm, association, or other organization, any receiver, trustee, assignee, agent, or other legal representative of any of the foregoing, or any other legal entity.

PRIVATE HAULER: Any property owner, occupant, or lessee who is involved in hauling demolition and/or new building construction debris, as defined in this Chapter, from his/her own property (occupied, leased, or owned) on his/her own behalf, for the purpose of depositing such debris in a County or other County permitted demolition debris disposal landfill.

PUTRESCIBLE MATERIAL: Solid waste which is capable of becoming rotten or which may reach a foul state of decay or decomposition.

REFUSE: Putrescible and nonputrescible solid wastes, including, but not limited to, garbage, rubbish, ashes, incinerator ash, incinerator residue, street cleaning, market and industrial solid wastes, and sewage treatment wastes which are in a dry form.

SANITARY LANDFILL: An area of land which is or could be used for the disposal of solid waste without creating pollution of land, water or air, hazards to the public health or safety, or public nuisance, by utilizing the principles of engineering to confine the solid waste to the

smallest practical volume, and to cover it with at least six inches (6") of cover material at the conclusion of each day's operation, or at more frequent intervals as may be necessary.

SHORELAND: Land located within the following distances from the ordinary high water elevation of public waters:

A. Land within one thousand feet (1,000') from the normal high water mark of a lake, pond, or flowage; and

B. Land within three hundred feet (300') of a river or stream or the landward side of flood plain delineated by ordinance on such a river or stream, whichever is greater.

SOLID WASTE: Garbage, refuse, and other discarded solid materials, except animal waste used as fertilizer, including solid waste materials resulting from industrial, commercial, agricultural operations, and community activities, but does not include earthen fill, boulders, rock and other materials normally handled in construction operations, solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or wastewater effluent, dissolved materials, suspended solids in irrigation return flows, or other common water pollutants.

SOLID WASTE MANAGEMENT: The storage, collection and removal of solid waste from public and private property, its transportation to intermediate or final disposal facilities and its disposal by approved methods.

TOXIC OR HAZARDOUS WASTES: Substances, whether in liquid, gaseous or solid form, which when collected, stored, transported or disposed of, may be acutely toxic to humans or other animals, or plant life, or be directly damaging to property, including, but not limited to, pesticides, acids, caustics, pathological wastes, radioactive materials, flammable or explosive materials, and similar noxious substances.

TRANSFER STATION: An intermediate solid waste disposal facility, whether fixed or mobile, in which solid waste collected from any source is temporarily deposited to await transportation to the final disposal site or facility.

WATER POLLUTION: The contamination of any waters of the State so as to create a nuisance or render such waters unclean, obnoxious or impure, so as to be actually or potentially harmful or detrimental or injurious to public health, safety or welfare, to domestic, commercial or industrial use, or to animals, birds, fish or other aquatic life.

WATERS OF THE STATE: All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through or border upon the State or any portion thereof. (Ord. 5, 12-12-1972; amd. Ord., 2-14-1989; Ord., 5-9-1995, eff. 5-9-1995)

5-2-2: SOLID WASTE OFFICER, POWERS AND DUTIES:

The duties and responsibilities of the Solid Waste Officer under this Chapter are hereby delegated to the County Highway Engineer. The Solid Waste Officer shall have all necessary authority to implement and carry out the provisions of this Chapter, including, but not limited to, the following:

A. Review License Applications: To review and consider all license applications and supporting materials which are referred to him/her for operations within the County, and after consideration, to recommend in writing with documentation to the County Board that a license may be granted or denied.

B. Inspection; Investigation: To inspect operations to determine compliance with this Chapter and to investigate complaints about violations of this Chapter.

C. Compel Compliance: To recommend to the County Attorney that legal proceedings be initiated against a person to compel compliance with the provisions of this Chapter or to abate or control an operation not in compliance with this Chapter.

D. Studies; Investigations; Research: To encourage and conduct studies, investigations and research relating to aspects of solid waste management, including, but not limited to, methodology, chemical and physical considerations, and engineering.

E. Advise; Consult; Cooperate: To advise, consult, and cooperate with the public and other governmental agencies in furtherance of the purpose of this Chapter. (Ord. 5, 12-12-1972)

5-2-3: LICENSE REQUIRED:

A. License Required; Exception:

1. Required: No person shall cause, permit, or allow his/her land or property under his/her control to be used for solid waste management purposes, except at an operation for which a license has been granted by the County Board, unless otherwise provided by this Chapter.

2. Exception: A license shall not be required under this Chapter for any site used for the disposal of solid waste from only a single family or household, a member of which is the owner, occupant or lessee of the property, but such site shall be operated and maintained in a nuisance-free and aesthetic manner consistent with the intent of this Chapter.

3. Additional Methods: Any operation to be used for any method of solid waste management not otherwise provided for in this Chapter must be licensed by the County Board before operation may commence.

B. Application; Zoning Permit:

1. Required Information: The license application shall include sets of complete plans, specifications, design date, ultimate land use plan, if applicable, and proposed operating procedures prepared by a registered professional engineer of Minnesota.

2. Zoning Permit: Where applicable, the applicant shall procure and accompany the application with a proper zoning permit if required by the Title 8 of this Code.

C. Review By Solid Waste Officer:

1. Recommendation Of Solid Waste Officer: After receiving an application for an operation, the County Board shall refer such application to the County Solid Waste Officer who shall give his/her recommendation to the County Board concerning whether it should issue or deny the license.

2. Denial Of Application: If an applicant is denied a license, he/she shall be notified in writing of the reasons therefor by the County Board. A denial shall be without prejudice to the applicant's right to an appearance before the County Board or to his/her right to file a further application after revisions are made to satisfy objections specified as reasons for the dismissal.

D. Compliance Required: The County Board shall refuse to issue a license for any operation which does not comply with this Chapter, Agency regulations and the County's Solid Waste Management Plan.

E. Bond:

1. Required; Amount: Unless otherwise provided by the County Board, issuance of any license pursuant to the provisions of this Chapter shall be contingent upon the applicant furnishing to the County a bond in an amount to be set by the County Board and naming the County as obligee with sufficient sureties duly licensed and authorized to transact business in the State as sureties.

2. Condition Of Bond: The condition of such bond shall be that, if the principal fails to comply with any of the requirements, or fails to perform any of the acts required of an operation, or ceases to operate or abandons the operation, and the County is required to expend any monies or expend any labor or material to restore the operation to a condition in compliance with this Chapter, the obligor and the sureties on its bond shall reimburse the County for any and all expenses incurred to remedy failure to the principal to comply with the terms of this Chapter, and the

obligor and its sureties will indemnify and save the County harmless from all losses, costs and charges that may occur to the County because of any default of the obligor under the terms of his/her license to operate in compliance to the terms of the ordinances of the County. (Ord. 5, 12-12-1972)

F. Insurance: In addition to the bond to be furnished, the licensee shall furnish to the County certificates of insurance issued by insurers duly licensed within the State covering public liability insurance, including general liability, automobile liability, loading and unloading, complete operations liability, bodily injury liability in an amount of at least three hundred thousand dollars ($300,000.00) for any one occurrence and at least seven hundred fifty thousand dollars ($750,000.00) for all injuries arising from one occurrence for claims arising after January 1, 1998, and before January 1, 2000, and at least two million dollars ($2,000,000.00) for any number of claims arising on or after January 1, 2000. This applies to both personal injury and property damage. Also, twice the limits are allowed when claim arises out of threatened release or release of hazardous substances [7] . (Ord. 5, 12-12-1972; amd. 2000 Code)

G. Inspection; Evaluation:

1. Routine Inspection, Evaluation: Routine inspection and evaluation of an operation shall be made by the Solid Waste Officer at such frequency as to ensure consistent compliance by the operation with the provisions of this Chapter.

2. Inspection Report: The licensee shall be provided with a written inspection report containing a precise description of any deficiencies, recommendations for the correction and the date when the corrections shall be accomplished.

3. Access To Premises: The licensee shall be required to allow free access to authorized representatives of the County, the County Board, the Agency, or to the authorized representatives of any other governmental agency at any time for the purpose of making such inspections as may be necessary to determine compliance with the requirements of this Chapter, or any other applicable statute, ordinance, or regulation.

H. Suspension; Revocation:

1. Suspension:

a. Power To Suspend: Any license granted by the County Board under the provisions of this Chapter may be suspended at any time for noncompliance with the provisions of this Chapter or applicable State laws and regulations, or upon written notification by the Solid Waste Officer or by an authorized representative of the Agency, that the continued use of the operation may endanger the health, welfare or safety of the public or may cause pollution or impairment of the environment.

b. Notice Of Suspension: The notice of suspension may be served upon the licensee personally or by leaving the same at the licensed premises with the person in charge thereof. A copy thereof shall be provided to the County Board.

2. Revocation:

a. Public Hearing: A license may be revoked only after the County Board has held a public hearing at which the licensee and other persons wishing to be heard concerning use of the operation shall have the right to be heard.

b. Date Of Hearing; Notice: The date of the hearing for license revocation shall be set by the County Board and shall not be held earlier than ten (10) calendar days after notice of said hearing was mailed to the licensee.

c. Evidence: Evidence may be adduced in a manner consistent with the rules of evidence applied in civil cases.

d. Transcript Of Proceedings: A transcript thereof shall be made by tape recording or other suitable technique.

3. Board Action: If, pursuant to said hearing, the County Board shall determine that the operation has been conducted in violation of this Chapter, the Board may revoke the license or continue such suspension in effect until the operator has demonstrated that full compliance with this Chapter has been attained and that such compliance will be continued in the foreseeable future.

I. Greater Restrictions: Where the conditions imposed by any provision of this Chapter are either more restrictive or less restrictive than comparable conditions imposed by any other provision of this Chapter, or any other applicable law, ordinance, rule or regulation, the provision which establishes the higher standards for the promotion of the public health, safety and general welfare shall prevail. (Ord. 5, 12-12-1972)

5-2-4: LICENSE FEES:

A. Payment Required: Approval of an application to the County Board for a license for a solid waste management facility shall be contingent upon the payment to the County of a license fee in the amount specified below. Such license fees are hereby found to be equal to the cost to the County of processing the license applications and administering and enforcing this Chapter with respect to said licenses.

B. Fee Required For Each Facility: The fees prescribed shall be paid by a license applicant with respect to each facility maintained by him/her.

C. Annual Fee: Solid waste collector's fees shall be paid annually as a condition for license renewal.

D. Nonpayment: Nonpayment of the annual solid waste collector's fee shall be grounds for denial of license renewal.

E. Payment: Fees shall be paid to the County Treasurer prior to issuance of licenses.

F. Schedule Of Fees: The schedule of license fees shall be as follows:

Type Of License	License Fee
Solid waste collection and transportation (annual)	$ 15.00 per unit
Intermediate solid waste disposal facility	100.00
Sanitary landfill	100.00
Incinerator	100.00
Other solid waste management facility	Not to exceed $100.00

(Ord. 5, 12-12-1972)

5-2-5: SOLID WASTE STORAGE:

A. Adequate Facilities Required: The owner, lessee and occupant of any premises, business establishment or industry shall be responsible for the satisfactory storage of all solid waste accumulated at that premises, business establishment or industry. No building, structure, area, or premises shall be constructed or maintained for human occupancy, use or assembly without adequate facilities for sanitary and safe storage, collection, transportation, and disposal of all solid wastes.

B. Containers:

1. Putrescible Waste: Putrescible waste, including, but not limited to, garbage shall be stored in:

a. Containers: Durable, rust-resistant, nonabsorbent, watertight, rodentproof, and easily cleanable containers, with close-fitting, flytight covers having adequate handles to facilitate handling; or

b. Acceptable Containers: Other types of containers acceptable to the solid waste collection service, comply with Agency regulations, and approved by the Solid Waste Officer.

c. Container Size And Weight: The size and allowable weight of the containers may be determined by the solid waste collection service as approved by the Solid Waste Officer.

2. Solid Waste: Solid waste shall be stored in durable containers or as otherwise provided in this Chapter.

3. Combined Waste: Where putrescible wastes are stored in combination with non-putrescible wastes, containers for the storage of the mixture shall meet the requirements for putrescible waste containers.

4. Toxic, Hazardous Waste: Toxic or hazardous wastes shall be stored in durable, leakproof containers which are labeled with a description of the chemical composition of the substance stored therein. Such wastes shall be stored in a safe location and in compliance with the requirements of Agency regulations and this Chapter.

5. Maintenance: All containers for the storage of solid waste shall be maintained in such a manner as to prevent the creation of a nuisance or unsanitary condition.

6. Large Objects: Solid waste objects or materials too large or otherwise unsuitable for storage containers shall be stored in a manner which is pollution-free, nuisance-free and satisfactory to the Solid Waste Officer.

C. Maximum Length Of Storage: Solid wastes shall not be stored on public or private property for more than two (2) weeks without the written approval of the Solid Waste Officer. (Ord. 5, 12-12-1972)

5-2-6: COLLECTION AND TRANSPORTATION:

A. Responsibility For Collection And Removal: Unless otherwise provided in these regulations, the owner, lessee and occupant of any premises, business establishment or industry and the solid waste collection service which is responsible for the collection and transportation of solid waste from the premises, establishment or industry, shall collect and remove all solid waste accumulated at the premises, business establishment or industry and transport it to an operation for which a permit has been issued by the Agency and the County.

B. Garbage; Putrescible Waste; Solid Waste:

1. Vehicles; Containers: Vehicles or containers used for the collection and transportation of garbage and other putrescible wastes, or solid waste containing such materials, shall be covered, leakproof, durable and of easily cleanable construction. These shall be cleaned to prevent nuisances, pollution or insect breeding, and shall be maintained in good repair.

2. Loading; Moving: Vehicles or containers used for the collection and transportation of any solid waste shall be loaded and moved in such a manner that the content will not fall, leak or spill therefrom, and shall be covered to prevent blowing of material. Where spillage does occur, the material shall be picked up immediately by the solid waste collector or transporter and returned to the vehicle or container and the area properly cleaned.

C. Toxic, Hazardous Waste: Vehicles and containers used for the collection and transportation of toxic or hazardous wastes shall be durable, enclosed and leakproof and shall be constructed, loaded, transported and unloaded in a safe, sanitary and nuisance-free manner.

D. Collection And Transportation License: The County Board shall issue licenses for the collecting and hauling of solid waste for hire, upon compliance with the following requirements:

1. Disposal At Permitted Facility: Solid waste must be disposed of at an operation having a permit from the Agency and a license from the County.

2. Application For License: Filing of an application for a solid waste collection and transportation license upon a form provided by the County Board.

3. Performance Bond: Filing of a performance bond with sufficient sureties, in the penal sum of five thousand dollars ($5,000.00), which bond shall be conditioned upon the applicant's full compliance with this Chapter, said bond to be subject to the approval of the County Board and the County Attorney.

4. Vehicle Specifications: Submission of specifications of all vehicles to be used for solid waste collection and transportation. Such vehicles shall have leakproof bodies of easily cleanable construction, completely covered with metal, and shall be subject to approval and periodic inspection by the Solid Waste Officer.

5. Route: Submission of a description of the route to be followed by all solid waste collection and transportation vehicles between the area of collection and the solid waste operation, which route shall be subject to approval by the Solid Waste Officer. (Ord. 5, 12-12-1972)

5-2-7: DISPOSAL BY SANITARY LANDFILL:

A sanitary landfill shall comply with the following provisions:

A. Sanitary Landfill Permit And License:

1. Agency Permit Required: No person shall establish, operate or maintain a sanitary landfill without first obtaining a permit from the Agency and a license from the County Board.

2. County License; Plans: Where the location of the proposed operation is consistent with the County Solid Waste Management Plan, the County Board shall issue a license for the operation of a sanitary landfill upon its approval of the construction plans and specifications describing the sanitary landfill proposed to be constructed. A minimum of three (3) sets of said plans and specifications shall be prepared by a registered professional engineer of Minnesota and said plans shall be folded to eight and one-half inch by eleven inch (8 1/2" x 11") size.

3. Application; Required Information: The application shall include the following information:

a. Current Map; Aerial Photograph: A current map or aerial photograph of the area showing land use and zoning within one-fourth (1/4) mile of the operation. The map or aerial photograph shall be of sufficient scale to show all homes, buildings, lakes, ponds, watercourses, wetlands, dry runs, rock outcroppings, roads, and other applicable details and shall indicate the general topography with contours and drainage patterns. Wells shall be identified on the maps or aerial photograph, USGS data shall be indicated, and a north arrow drawn. A location insert map shall be included.

b. Plot Plan: A plot plan including legal description of the site and immediate adjacent area showing dimensions, location of soil borings and present and planned pertinent features, including, but not limited to, roads, fencing, and cover stockpiles. The plan of development, including any excavation, trenching and fill areas shall be shown progressively with time. Cross sections shall be included on the plot plan or on separate sheets showing progressively with time the original and proposed elevation of excavation, trenching and fill areas. The scale of the plot plan shall not be greater than three hundred feet per inch (1" = 300').

c. Ultimate Land Use Plan: An ultimate land use plan, including intermediate stages, describing all proposed future uses of the land upon which the operation is located. The scale of the ultimate land use plan shall not be greater than two hundred feet per inch (1" = 200').

d. Report: A report indicating:

(1) Service Area: Population and areas expected to be served by the proposed operation.

(2) Material To Be Disposed: Anticipated type, quantity and source of material to be disposed of at the operation.

(3) Geological Formation; Ground Water Elevations: Geological formations and ground water elevations to a depth of at least ten feet (10') below proposed excavation and lowest elevation of the operation, including the high

water table. Such data shall be obtained by soil borings or other means approved by the Solid Waste Officer.

(4) Cover Material: Source and characteristics of cover material and method of protecting cover material for winter operation.

(5) Equipment: The type and amount of equipment to be provided at the operation for excavating, earth moving, spreading, compacting and other needs.

(6) Area: Area of operation in acres.

(7) Owner: Owner of operation.

(8) Operation And Maintenance: Persons responsible for actual operation and maintenance of operation and intended operating procedures.

(9) Training: Provision for training and periodic retraining of operation and maintenance personnel.

(10) Agency Regulation SW6: Information relating to items in sections 1, 2, and 4 of Agency Regulation SW6.

(11) Termination: Provisions for termination of operation.

e. Toxic, Hazardous Waste Disposal: Evidence that disposal of toxic and hazardous wastes will be conducted in a manner which will prevent the creation of land or water pollution and will safeguard the public health, including complete construction plans and specifications, design data and proposed operating procedures for the area in which disposal of the toxic and hazardous wastes shall take place.

f. Notice To Local Government: Written proof that the applicable local government has been given at least thirty (30) days' written notification of the pendency of the application for a license.

g. Zoning Certificate: A certificate from the County Zoning Administrator that the use proposed is in accordance with Title 8 of this Code.

B. Prohibited Locations: The fill and trench areas of sanitary landfill operations are prohibited within the following areas:

1. Shoreland: Within shoreland.

2. Within Required Setbacks; Screening: Within one thousand feet (1,000'), at the time of commencement of the operation, of the nearest edge of the right of way of

any State, Federal or interstate highway or the boundary of a public park or of an occupied dwelling. Notwithstanding said distance requirements, an operation shall be considered to comply with this provision if it is screened by natural objects, plantings, fences or other appropriate means so that it is not readily visible from such a highway or park.

3. Location Near Municipal Water Sources: Within one mile of a municipal well or one mile of a municipal water intake.

C. Requirements: A sanitary landfill operation shall be constructed, operated and maintained in accordance with the following requirements:

1. Sanitary Facilities: Sanitary facilities adequate for employees shall be available at the site.

2. Shelter Facilities: Shelter facilities adequate for employees and maintenance and storage for equipment shall be available at the site.

3. Litter Control: Litter control devices shall be provided at the site.

4. Electrical Service: Electrical service adequate for operations and repairs shall be provided at the site.

5. Firefighting Facilities: Firefighting facilities adequate to ensure the safety of employees and adjacent property owners shall be provided.

6. Emergency First Aid Equipment: Emergency first aid equipment adequate to provide treatment for persons injured in accidents while at the site shall by provided at the site.

7. Water Supply: A potable water supply adequate for employees shall be provided at the site.

8. Communication Facilities: Communication facilities adequate for emergency purposes shall be provided at the site.

9. Fence; Gate: The operation shall be fenced and a gate shall be provided at its entrance which is kept locked when an attendant is not on duty.

10. All-Weather Haul Road: An all-weather haul road to the unloading area shall be provided at the site.

11. Equipment: Equipment sufficient for spreading, compacting and covering operations, including sufficient reserve equipment or arrangements to immediately provide cover during periods of breakdown, shall be provided at the site.

12. Sign: A sign shall be provided at each entrance of the operation, stating the name of the licensee, the schedule of days and hours upon which the operation is open to the public, the procedures for use of the operation, the Agency permit number, and the penalty for violation of this Chapter.

13. Ground Water, Surface Water Monitoring System: A ground water and surface water monitoring system acceptable to the Solid Waste Officer and the Agency shall be provided at the expense of the licensee and a report submitted to the Solid Waste office and the Agency on a form prescribed by the Agency on a quarterly basis or such more frequent basis as the Agency may prescribe.

14. Visual Screening: Visual screening of the sanitary landfill operation, as approved by the Solid Waste Officer, shall be provided by use of natural objects, trees, plants, seeded soil berms, fences, or other suitable means.

15. Individual Disposal Area: A suitable disposal area shall be provided for individuals who wish to transport and dispose of their own solid waste.

16. Open Burning Prohibited: No person shall cause, suffer, allow or permit the open burning of solid waste.

17. Water Pollution Prevention Of Ground Or Surface Waters: Solid waste shall be deposited in such a manner as to prevent the pollution of ground or surface waters.

18. Wind-Blown Materials: Dumpings of solid waste shall be confined to as small an area as practicable and surrounded with appropriate facilities to confine possible wind-blown material within the area. At the conclusion of each day of operation, all wind-blown material resulting from the operation shall be collected and returned to the area by the owner or operator.

19. Compaction; Covering: Solid waste shall be compacted as densely as practicable and covered after each day of operation, or as specified by the Agency, with a compacted layer of at least six inches (6") of suitable cover.

20. Surface Water Drainage: Surface water drainage shall be diverted around the landfill operating area.

21. Adjacent Property: The disposal operation and the adjacent property line shall be separated by a distance of at least twenty feet (20').

22. Control Of Insects, Rodents: Flies, rodents, and other insects or vermin shall be effectively controlled.

23. Salvaging Prohibited: Salvaging is prohibited on the operating area of a sanitary landfill site. Where salvaging is conducted on a sanitary landfill site, it shall be conducted in a manner acceptable to the Solid Waste Officer.

24. Attendant: An attendant shall be on duty at all times while the sanitary landfill is open for public use.

D. Termination Of Operation:

1. Covering; Grading: Within one month after final termination of a sanitary landfill operation, or a major part thereof, the area upon which disposal was so terminated shall be covered with at least two feet (2') of compacted earth material and adequately graded to allow surface runoff.

2. Finished Surface: The finished surface of the filled area shall be covered with adequate top soil and seeded with native grasses or other suitable vegetation immediately upon completion, or immediately in the spring on areas terminated during winter conditions. If necessary, seeded slopes shall be covered with straw or similar material to prevent erosion.

3. Agency And County Investigation: Prior to completion of a sanitary landfill operation, the Agency and the Solid Waste Officer shall be notified in order that an investigation of the operation may be conducted by each before earth moving equipment is removed from the property.

E. Toxic, Hazardous Waste; Procedure For Disposal: Toxic and hazardous wastes shall be disposed of in a sanitary landfill site in accordance with the following procedures or as otherwise designated by the Agency:

1. Separate Area; Sign: A separate area shall be designated for the disposal of these materials. A permanent sign shall be posted in the area, indicating its designated use and precautions which shall be taken during disposal.

2. Location: Disposal shall take place at least ten feet (10') above the ground water level and at least ten feet (10') above bedrock formations. The toxic and hazardous waste disposal areas to be used shall be sealed in a manner acceptable to the Solid Waste Officer prior to disposal.

3. Identification Of Waste: No toxic and hazardous waste materials shall be accepted for disposal or disposed of in a sanitary landfill having a license under this Chapter unless the material is identified to the satisfaction of the Solid Waste Officer.

4. Neutralization: Where considered possible by the Solid Waste Officer, toxic and hazardous waste materials shall be neutralized or otherwise made harmless prior to disposal.

5. Containers; Materials Washed From Vehicles: Upon disposal of toxic and hazardous wastes, containers and any materials washed from the vehicles transporting the materials shall be immediately covered with at least eighteen inches (18") of earth.

6. Additional Conditions: Where necessary to prevent land pollution, water pollution, a public nuisance or threat to public health, welfare or safety, the Solid Waste Officer may impose conditions for the disposal of toxic and hazardous wastes within a disposal facility in addition to those specifically established in this Chapter.

F. Brick, Sand, Stone: Nonputrescible materials such as brick, stone, sand and similar materials may be disposed of as a base in surface waters at sanitary landfill sites if such disposition can be accomplished without creating a potential for water pollution or land pollution or a threat to the public health, welfare or safety. Any such proposed disposition must be detailed in the permit application and approved by the Solid Waste Officer and the Agency.

G. Monthly Reports: Reports describing the types and quantities of waste, including, but not limited to, toxic or hazardous wastes, which are disposed of at this site shall be submitted to the Agency and to the Solid Waste Officer each month, together with other information on the operation of the sanitary landfill. (Ord. 5, 12-12-1972)

H. Termination Of Sanitary Landfill: A sanitary landfill shall be terminated so as to prevent the creation of air, water or land pollution, a public nuisance, or a threat to the public health, safety, or welfare. A sanitary landfill shall be construed to be inadequately terminated until a description of the general type and specific location of solid waste materials disposed of on the site, the number, type and depth of lifts, the original and final surface elevation profiles and other pertinent information have been approved by the Solid Waste Officer and registered with the County Recorder's office, and until the manner of termination of the site has been approved by the Solid Waste Officer. The notice so filed shall also include a description of the type and location of toxic and hazardous waste materials disposed of on the site, the number of gallons of each kind of such material so disposed, original and final surface elevations and profiles, construction details concerning the disposal pit, pit lining and pit walls, and other pertinent information, as approved by the Solid Waste Officer. (Ord. 5, 12-12-1972; amd. 2000 Code)

5-2-8: INCINERATION:

All new and existing incinerators having a capacity greater than six thousand (6,000) pounds per hour and all incinerators used for the incineration of toxic and hazardous wastes shall be designed, operated, and maintained in accordance with this Chapter and Agency regulations.

A. License Required: It is unlawful for any person to construct, establish, maintain or operate an incinerator without first obtaining a license from the County Board for each incinerator so constructed, maintained or operated. The following information shall be submitted as a part of the application:

1. Plans And Specifications: A minimum of three (3) sets of construction plans and specifications, folded to eight and one-half inch by eleven inch (8 1/2" x 11") size, prepared by a registered engineer of Minnesota to serve as a basis for construction of facilities adequate to comply with this Chapter and Agency regulations. The construction plans and specifications shall include a plot plan showing land use, zoning, and the location, type and height of all buildings within five hundred feet (500') of the proposed installation.

2. Engineering Report: An engineering report including furnace design criteria and expected performance data, the present and future population and area to be served by the incinerator, and the characteristics, quantities and sources of solid waste to be incinerated.

3. Plans For Disposal Of Residue: Plans for the disposal of incinerator residue, and emergency disposal of solid waste in the event of major incinerator plant breakdown.

4. Owner: Owner of the incinerator.

5. Operation And Maintenance: Persons responsible for actual operation and maintenance of the plant, intended operating procedures, and provision proposed to be made for periodic training and retraining of operating and maintenance personnel.

6. Additional Information: Such additional information as may be requested by the Solid Waste Officer.

7. Notice To Local Government: Written proof that the applicable local government has been given at least thirty (30) days' notification of the pendency of the application for a license.

B. Construction, Operation And Maintenance Requirements: Incinerators shall be constructed, operated and maintained in accordance with recognized engineering principles and the following requirements:

1. Interference With Other Activities In Area; Traffic: The incinerator plant shall be so situated, equipped, operated and maintained as to minimize interference with other activities in the area. All incoming and outgoing traffic shall be controlled by the licensee in such a manner as to provide orderly and safe ingress and egress.

2. Shelter, Sanitary Facilities: Shelter and sanitary facilities adequate for plant personnel shall be provided at the site.

3. Sign: A permanent sign shall be posted at the entrance of the operation identifying the operation, and showing its Agency permit number, and indicating the hours and days when the operation is open for public use. Public access to the operation shall be limited to those times when authorized personnel are on duty.

4. Incoming Solid Waste: All incoming solid waste to be incinerated at the operation shall be confined to the unloading area. Adequate holding bin capacity shall be provided to accommodate all incoming solid waste.

5. Dust Control: Facilities shall be designed to provide for dust control in the unloading and charging areas, and dust control measures shall be employed throughout the operation to prevent avoidable amounts of particulate from becoming airborne.

6. Weighing Facilities; Records: The incinerator operation shall have weighing facilities available. Permanent records shall be maintained indicating the total weight of the material incinerated, the total quantity or resulting residue, the total hours of incinerator operation, and the means employed for disposal of residue. These records shall be submitted monthly to the Solid Waste Officer and the Agency in a form prescribed by the Agency.

7. Firefighting Equipment: Firefighting equipment, meeting the standards of Underwriters Laboratory, Inc., or such other nationally recognized safety standards as the Solid Waste Officer shall approve, shall be available in the storage and charging areas and elsewhere as needed.

8. Local Fire Protection Agency: Arrangements shall be made with the local fire protection agency to provide firefighting forces in an emergency.

9. Communication Facilities: Communication facilities adequate for emergency purposes shall be provided.

10. Cleaning Equipment: Equipment shall be provided in the storage and charging areas and elsewhere as necessary to allow cleaning after each day of operation and to maintain the operation in a sanitary condition.

11. Safety Equipment: All equipment throughout the operation, including, but not limited to, charging openings shall be provided with safety equipment.

12. Pyrometer: A continuously recording pyrometer shall be provided in order to maintain continuous records of temperature in the combustion chambers. Such

records shall be submitted to the Solid Waste Officer on a monthly basis in a form prescribed by the Agency.

13. Residue: All residue removed from the incinerator operation shall be promptly disposed of in a sanitary landfill. Residue containing toxic or hazardous wastes shall be analyzed to determine its chemical composition, identified to the satisfaction of the Solid Waste Officer and disposed of in a toxic pit within the sanitary landfill or as otherwise designated by the Agency.

14. Performance Tests: Performance tests of the plant may be required by the Solid Waste Officer. A report covering the results of the performance tests in such cases shall be prepared by the design engineer of the project and submitted to the Solid Waste Officer with a copy of all supporting data.

15. Inspection: Upon completion of the plant and prior to initial operation, the Solid Waste Officer and the Agency shall be notified to allow their personnel to inspect the plant both prior to and during the performance tests. (Ord. 5, 12-12-1972)

5-2-9: INTERMEDIATE SOLID WASTE DISPOSAL FACILITIES:

A. License Required: No intermediate solid waste disposal operation shall be constructed, established, maintained or operated unless a license therefor shall have been first obtained from the County Board. Where the location of the proposed operation is consistent with the County Solid Waste Management Plan, the County Board shall issue a license for the operation upon its approval of the construction plans and specifications describing the operation proposed to be constructed.

B. Plans And Specifications: A minimum of three (3) sets of plans and specifications shall be prepared and submitted to the Solid Waste Officer and Agency by a registered professional engineer of Minnesota and shall include design data, ultimate land use plan, and proposed operating procedures.

C. Application; Required Information: In addition to the plans and specifications, the application for a license shall contain the following information:

1. Location, size and ownership of land upon which the operation will be situated.

2. General description of property use in the immediate vicinity of the operation.

3. Complete construction plans and specifications and proposed operating procedures for the operation.

D. Construction, Operation And Maintenance Requirements: An intermediate solid waste disposal facility shall be constructed, operated and maintained in compliance with the following requirements:

1. Sign: A sign shall be posted on the premises indicating the name of the operation, the days and hours during which it is open to the public, and user charges, if any. The sign shall be approved by the Solid Waste Officer.

2. Roads: Roads on the premises shall be of a material acceptable to the Solid Waste Officer.

3. Construction; Landscaping: The premises shall be constructed and landscaped in such a manner as to be aesthetically pleasing in appearance.

4. Sanitary, Shelter Facilities: Sanitary facilities and shelter adequate for employees shall be provided on the premises.

5. Records: Records in a form acceptable to the Solid Waste Officer shall be maintained indicating the type and quantity of solid waste processed by the operation.

6. Interference With Other Activities In Area: The operation shall be so situated, equipped, operated and maintained as to minimize interference with other activities in the area.

7. Removal Of Waste; Disinfection: All solid waste shall be removed from the operation at the end of each day's activities and the equipment and floor of the operation disinfected.

8. Maintenance Of Premises: The premises, entrances and exits shall be maintained in a clean, neat and orderly manner at all times.

9. Traffic: All incoming and outgoing traffic shall be controlled by the licensee in such a manner as to provide orderly and safe ingress and egress.

10. Unloading: All unloading of solid waste from contributing vehicles shall be conducted in such a manner as to eliminate odor and litter outside the facility. (Ord. 5, 12-12-1972)

5-2-10: DEMOLITION MATERIALS:

"Demolition materials" as defined by this Chapter may be disposed of in areas other than a licensed sanitary landfill site.

A. Permit Required: Any person must have a written permit from the Solid Waste Officer for the disposal of demolition material at a site other than a licensed sanitary landfill site.

B. Site Approval: The approval of the site in question for use as a demolition debris landfill by the County Board of Commissioners is to be made contingent upon compliance with the following conditions established by the Minnesota Pollution Control Agency (MPCA). Those MPCA requirements, among other things include: appropriate signing of the site; a description of materials allowed; intermediate and final cover requirements; final contouring and grading; establishment of suitable vegetation; and regular monitoring by the County and State.

C. Cells: The cells shall be opened and closed one at a time, unless an unusually large demolition debris project must be accommodated.

D. Construction Of Berms: The permittee shall utilize spoil piles or waste material on the site to construct berms around the site, not only to screen the operation from view, but also to further restrict access by unauthorized vehicles.

E. Haul Road: The haul road on the east boundary of the property in question shall be used as the point of access and egress for the demolition debris landfill. The permittee shall improve the road in order that it meets the specifications of the County Engineer and shall maintain the road for the life of the demolition debris landfill. Furthermore, the permittee shall provide verification that an agreement has been made with adjacent property owners to ensure their perpetual access to property under their ownership which can only be reached via the use of that road. Perpetual easement rights shall stay with the property and not with the property ownership.

F. Open Seasonally: The demolition debris landfill will open seasonally on a regular basis. During the regular post-construction season, the site will only open upon request (need) pending the inspection of the material, the payment of appropriate inspection fees, and the issuance of the appropriate permits from a County Sanitarian or designee.

G. Use Of Site Required: The demolition debris landfill herein referred to shall be the only such site for demolition debris within the County. Any use of any other site within the County is strictly forbidden and will constitute a violation of this Chapter. Furthermore, the County shall grant no other temporary or long-term permits for the disposal of demolition debris at any other site [8] .

H. Type III Landfill Inspector: A County Sanitarian and/or designee shall obtain certification as a Type III Landfill Inspector and be responsible for the following duties:

1. Inspect Sites To Be Demolished: The inspector of the sites to be demolished before disposal at the appropriate landfill.

2. Applications: Processing the application forms, issuing the appropriate permits, and recording those permits.

3. Verification Of Records: Verifying the records of the permittee/operator with regard to disposal records and fees collected.

4. Monitoring Of Site: Monitoring of the demolition landfill debris site at least once a month.

5. Enforcement:

a. Chapter: Enforcing this Chapter as it relates to the illegal or unauthorized disposal of demolition debris;

b. MPCA Regulations: Enforcement of any other regulations as provided for by the MPCA with regard to demolition debris;

c. Other Conditions: The enforcement of all other applicable conditions contained herein; and

d. Issuance Of Orders: The issuance of orders to the permittee's personnel to open the landfill for use after appropriate permits have been issued.

I. Application For Permit: A County Sanitarian or designee shall process the demolition debris permit application form and issue the demolition debris permit. The application form shall be submitted to the County Sanitarian or designee no later than forty eight (48) hours before the debris is expected to be deposited in the demolition debris landfill. At a minimum, the application form and permit shall contain the following information:

1. A detailed legal description of the site to be demolished;

2. The current owner of the site (name, address and phone number);

3. A description of the past users of the property;

4. The demolition contractor (name, address and phone number);

5. The debris hauler (name, address and phone number) if different than the contractor;

6. The specific nature of the material to be hauled to the demolition debris landfill;

7. The estimated amount of material (tons and loads);

8. The anticipated haul vehicle size;

9. The expected dates when the debris is to be hauled to the site;

10. The certification that the County Inspector has examined the site to be demolished;

11. The appropriate permit fee; and

12. A copy of a completed EPA approved asbestos disposal notification form when applicable.

J. Permit Fees; Disposal Fees: The fees for demolition debris permits and disposal fees at the facility shall be as follows:

1. Commercial Haulers:

a. Required: "Commercial haulers" as defined by this Chapter, shall be required to obtain a County demolition debris permit. Permit fees shall be collected by a County Sanitarian or his/her designee upon receipt of a completed permit application form and issuance of the necessary permit.

b. Fee Established: The permit fee shall be established by County policy, with annual review, and shall be set no later than January 31 of each year. The permit fee shall be charged for each individual demolition debris disposal project permit sought.

c. Small Jobs: Commercial haulers who have a small job resulting in debris consisting of one-half (1/2) ton pickup or single-axle trailer load or less, shall not be required to obtain a County demolition debris permit.

2. Private Haulers:

a. No Fee Required: "Private haulers", as defined by this Chapter, shall not be required to obtain a County demolition debris permit if generation of debris is the result of cleaning and improving his/her own real property (occupied, leased, or owned), if the size of his/her haul does not exceed one-half (1/2) ton or is no larger than the normal capacity load of a one-half (1/2) ton pickup or two (2) wheel single-axle trailer.

b. Exception: Any dwelling or building to be demolished by the owner, occupant, or lessee of that property shall automatically be required to obtain a County demolition debris permit as described herein.

3. Monthly Inspection Fee: In addition, the operator will pay an additional monthly fee to cover the cost of each monthly inspection performed by the County.

K. Debris Disposal Fee:

1. Collection: The operator of the demolition debris landfill shall be responsible for receiving payment.

2. Basis Of Fee: The debris disposal fee will be charged on a per load or per ton basis.

3. Rates Established: The rates shall be established by County policy, with annual review, and shall be set no later than January 31 of each year.

4. Debris From Outside County: Debris generated in the area outside the County will be accepted for deposit at the demolition debris landfill only after proper permits are obtained and inspection has been made by the County Sanitarian and/or designee.

5. Operator, Permits And Fees: The operator or their agents will be required to obtain the same permits and pay the same disposal fee as any other hauler using the facility.

L. Annual Review Of Fees: It is important that the County Board of Commissioners reexamine the permit fees and debris disposal fees on an annual basis to ensure that those rates reasonably cover the expenses incurred by the County and the operator of the facility.

M. Demolition Debris Landfill Operator: The demolition debris landfill operator shall be present whenever any debris is brought to landfill and is responsible for the following duties:

1. Collecting, recording and providing receipts for dumping fees paid per load;

2. Verifying the appropriate permits have been issued to the hauler;

3. Recording the size and license number of each vehicle;

4. Logging the location in each cell where the debris is deposited; and

5. Recording the number of each permit submitted.

N. Exception:

1. Small, Noncommercial Loads:

a. Roll-Offs: Small, noncommercial loads generated within the city of Moorhead and in the County (e.g., 1/2-ton pickup trucks and 2-wheel single-axle trailers) may be hauled to the roll-offs located at the Moorhead Transfer Station or at the County landfill, or may be taken to the demolition landfill without obtaining a demolition debris permit from the County.

b. Responsibility To Monitor: It will be the responsibility of the transfer station personnel and the demolition landfill operator to monitor the items being deposited and to verify the noncommercial status of the hauler.

c. City Of Moorhead: The city of Moorhead will be responsible for payment of debris disposal roll-off fees at the time the debris is to be deposited at the demolition landfill.

d. Establishment Of Fees: The city of Moorhead and the County will be responsible for establishing their respective fees for the use of the roll-offs, and will provide an additional inspection of the debris prior to the time of disposal at the demolition landfill.

2. Temporary Storage Of Recyclable Material:

a. Storage: Demolition materials that can be recycled (e.g., concrete, asphalt and brick) may be stored at a site other than the demolition landfill for a period of up to two (2) years, with annual review, once the site has been approved by the Minnesota Pollution Control Agency, the local township board and the County Planning Commission.

b. Temporary Use Permit: The County Planning Commission must also grant a temporary use permit for the use of the site. This approval and permit must be obtained prior to the depositing of any material at the proposed site.

c. Expiration Of Permit: Any demolition material remaining at such a permitted site after the stipulated permit period has expired shall have to be removed and deposited in either the County demolition landfill or at a site approved by the County.

d. Responsibility For Removal: The responsibility for this removal shall rest with the party that originally was granted the permit for said temporary site.

e. Bond: The permittee shall provide to the County a bond, in an amount and form acceptable to the County, conditioned upon satisfactory removal and disposal of said material in the event of permittee's unwillingness or inability to remove and dispose of same.

O. Liability Insurance; Bond: The County Attorney shall certify that the operator has established adequate levels of liability coverage and has established an

appropriate performance bond or other form of financial assurance to ensure proper closure and postclosure activities.

P. Failure To Obtain Proper Permits, Use Proper Landfill: Failure to obtain the appropriate permits or dispose of demolition material in any location other than the demolition debris landfill referred to herein shall constitute a violation of this Chapter and shall be dealt with accordingly. (Ord. 5, 12-12-1972; amd. Ord., 5-9-1995, eff. 5-9-1995)

Q. Violation: Any person who shall violate or fails, neglects or refuses to comply with the provisions of this Chapter shall be guilty of a misdemeanor and, upon conviction thereof, shall be subject to penalty as provided in Section 1-4-1 of this Code. A separate offense shall be deemed committed upon each separate day during or on which a violation occurs or continues. (Ord. 5, 12-12-1972; amd. Ord., 5-9-1995, eff. 5-9-1995; 2000 Code)

5-2-11: RATES AND CHARGES:

A. Service Charges:

1. Establishment Of Rates And Charges: The County may establish and collect just and reasonable rates and charges for solid waste management services provided by the County or by others under contract with the County. Rates and charges shall be adopted by resolution of the County Board, and may be revised, including revision of rates, classes and categories, when deemed advisable.

2. Considerations: Rates and charges may take into account the character, kind and quality of the service and of the solid waste, the method of disposition, the number of people served at each place of collection, and all other factors that enter into the cost of service, including, but not limited to, depreciation and payment of principal and interest on money borrowed by the County for the acquisition or betterment of solid waste facilities, the operating costs associated with solid waste facilities, and administrative costs relating to providing or making available solid waste management services to County residents. This provision may obligate the owners, lessees, or occupants of property, or any or all of them, to pay charges for solid waste management services to their properties.

3. Rate Schedule On File: A copy of the current County rate schedule for solid waste management services shall be kept on file in the office of the County Auditor.

B. Users Of Facilities:

1. Establishment Of Charges: In addition to the charges as set forth in subsection A of this Section, the Clay County Board of Commissioners may establish and collect reasonable rates and charges from the user of any solid waste

management facility for the use of the facility not otherwise under contract with the County. All such rates shall be uniform in their application to use and service of the same character and quantity. The actual rates and charges to be imposed shall be determined by resolution of the County Board.

2. Rate Schedule On File: A copy of the current County rate schedule for facility users shall be kept on file in the office of the County Auditor.

C. Collection Of Charges:

1. Service Charges Included On Property Tax Statement:

a. Instructions To Auditor: The County Board, unless it determines by resolution to bill or collect any or all service charges in subsection A of this Section in a different manner, shall annually instruct the County Auditor to include the service charges on the real estate tax statements for taxes payable in the year to which the charges apply.

b. Collection By Treasurer: The service charges shall be collected by the County Treasurer in the same manner and at the same time as real estate taxes and special assessments. The County Treasurer shall collect the total amount of taxes, special assessments, and service charges included in each tax statement.

c. Inadequate Amount Tendered: Any payment tendered for less than the total amount or installment which is due as of the collection date shall be deemed a refusal to pay all of said taxes, special assessments, and service charges.

d. Unpaid Outstanding Charges: In each year, on or before the date said payments become delinquent, the County Board may certify to the County Auditor all unpaid outstanding charges. It shall be the duty of the County Auditor, upon order of the County Board, to extend the assessments, with interest, to be carried into the real estate tax becoming due and payable in January of the following year. Said delinquent charges shall be collected and enforced in the manner provided for the collection and enforcement of real property taxes under the provisions of the laws of the State.

e. Appeal Of Imposed Charges: Any owner of real property or any owner of a business utility, or institution who believes that the service charge imposed upon his/her property, business, utility, or institution by the County for the purposes stated herein is not equitable, may appeal that charge. To do so, the owner must obtain a service charge appeal form from the Solid Waste Management Department at 807 North 11th Street, Moorhead, Minnesota, complete the form in full, and return it to the Solid Waste Management Department within forty five (45) days of the date of mailing of notice of the service charge. Upon receipt of the completed appeal form, the Solid Waste

Management Director, or designee, shall have fifteen (15) days to review the appeal and notify the appealing owner in writing of the decision to either adjust the service charge in response to the appeal or to deny the appeal. A denial shall be without prejudice to the owner's right to an appearance before the County Board or any other legal or equitable remedies available to the appellant under the law.

2. User Charges: The rates and charges in subsection B of this Section may be billed and collected in such manner as the County Board shall determine.

D. Solid Waste Management Fund:

1. Created: A special account on the official books of the County is hereby created which shall be known as the Solid Waste Management Fund.

2. Receipts: All receipts from the rates and charges collected pursuant to this Chapter and all receipts from the sale of real or personal property pertaining to solid waste management systems and the proceeds of all gifts, grants, loans, and issuance of bonds for the purpose of the system shall be credited to the Solid Waste Management Fund.

3. Disbursements: All costs of acquisition, construction, enlargement, improvement, repair, supervision, control, maintenance, and operation of the solid waste management system and facilities which are owned and operated by the County, but not those owned and operated by its contractor, shall be charged to the Solid Waste Management Fund. (Ord. 5, 12-12-1972; amd. Ord., 11-14-1989, eff. 11-14-1989; 2000 Code)

5-2-12: ADDITIONAL REQUIREMENTS:

For the purpose of protecting the public health, safety, and welfare, the County Board may impose additional requirements consistent with the intent of this Chapter for the operation of solid waste management sites or facilities. (Ord. 5, 12-12-1972)

5-2-13: NONCONFORMING SITES AND FACILITIES:

Solid waste management facilities in existence on the effective date hereof and operation of such facilities shall conform to the provision of this Chapter no later than sixty (60) days after the adoption hereof, or terminate operations no later than that date, unless granted a variance. (Ord. 5, 12-12-1972)

5-2-14: VARIANCES:

A. Power To Grant: Upon written application by the applicant or operator, the County Board may grant variances from the provisions of this Chapter in order to promote

the effective and reasonable application and enforcement of the provisions of this Chapter.

B. Application: An application for a variance shall be accompanied by a plan and time schedule for achieving compliance with this Chapter.

C. Notice Of Hearing: Prior to any public hearing held by the Board under this provision, persons who may be adversely affected by the granting of the proposed variance shall be given at least thirty (30) days' notice to said public hearing.

D. Considerations: A variance may be granted by the Board after a public hearing where the Board determines that enforcement of this Chapter would cause the applicant undue hardship, or that this Chapter cannot be complied with due to technological impossibility or economic unreasonableness.

E. Term; Renewal: Such a variance shall not be granted for a period in excess of two (2) years, but may be renewed upon application of the applicant and after public hearing.

F. Revocation: A variance may be revoked by the Board at the public hearing prior to expiration of the variance. (Ord. 5, 12-12-1972)

5-2-15: NO CONSENT:

Nothing contained in this Chapter shall be deemed to be a consent, license, or permit to locate, construct, operate or maintain any site, facility or operation, or to carry on any activity. (Ord. 5, 12-12-1972)

5-2-16: PROVISIONS ARE ACCUMULATIVE:

The provisions of this Chapter are accumulative and additional limitations upon all other laws and ordinances heretofore passed or which may be passed hereafter, covering any subject matter in this Chapter. (Ord. 5, 12-12-1972)

5-2-17: OTHER ORDINANCES AND REGULATIONS:

Nothing in this Chapter shall preclude any local unit of government from adopting more stricter regulations than this Chapter. (Ord. 5, 12-12-1972)

5-2-18: SEVERABILITY:

It is hereby declared to be the intention of the County Board that the several provisions of this Chapter be severable in accordance with the following:

A. If any court of competent jurisdiction shall adjudge any provision of this Chapter to be invalid, such judgment shall not affect any other provision of this Chapter not specifically included in said judgment.

B. If any court of competent jurisdiction shall adjudge invalid the application of any provision of this Chapter to a particular structure, site, facility or operation, such judgment shall not affect the application of said provision to any other structure, site, facility or operation not specifically included in said judgement. (Ord. 5, 12-12-1972)

5-2-19: VIOLATION:

A. Penalty: Any person who shall violate or fail, neglect or refuse to comply with the provisions of this Chapter shall be guilty of a misdemeanor and upon conviction thereof shall be punished therefor as provided by Minnesota law.

B. Separate Offense: A separate offense shall be deemed committed upon each separate day during or on which a violation occurs or continues.

C. Enforcement: The County is responsible for the enforcement of this Chapter.

D. Additional Remedies: This Chapter, in addition to other remedies, may be enforced by injunction, action to compel performance or other appropriate action in District Court to prevent, restrain, correct or abate violations. (Ord. 5, 12-12-1972)