Comprehensive Solid Waste Management Plan

Marshall County, Minnesota

SEH No. ROSCO 126303

August 31, 2015

Executive Summary

The plan reviews the past and present solid waste management system, solid waste abatement programs and policies, and anticipated solid waste management activities for Marshall County. The plan considers various alternatives which can result in the most feasible and prudent reduction of the need for the practice of land disposal of mixed municipal solid waste (MSW) for the County. The projected ten-year budget is attached as **Appendix B**.

Recycling rates for Marshall County from 2008 to 2012 and projected recycling rates from 2016-2022 are shown below.

Marshall County Recycling Data (2008-2012)					
Year	2008	2009	2010	2011	2012
Tons Recycled	979	960	963	970	865
Tons MSW	4911	4506	4730	4819	5874
% Recycled	19.94	21.31	20.36	20.13	14.7

Marshall County Projected Recycling Data (2016-2024)					
Year	2016	2018	2020	2022	2024
Tons Recycled	1232	1488	1656	1919	2081
Tons MSW	5874	5874	5874	5874	5874
% Recycled	21.00	25.30	28.20	32.70	35.40

The County is projecting a 35.4% recycling rate by 2024. The projected increase of 20.7% in the recycling rate from 2012 to 2024 will be due to an increase in recycling efforts by the County as outlined in Section 7.3.

This update proposes continuation of the County's current solid waste programs in support of Regional programs including, but not limited to, the land disposal of Marshall waste at the Mar-Kit Landfill, east of Hallock, MN, and the Grand Forks Landfill, near Grand Forks, ND, household hazardous waste collection at the Clearwater County Household Hazardous Waste facility in Bagley, MN, major appliances and demolition debris disposal at the Marshall County Demolition Landfill near Warren, MN and local recycling programs. The County's existing management system is an integrated solid waste management system that includes:

- the Mar-Kit Sanitary Landfill and Grand Forks Landfill,
- the Clearwater County Household Hazardous Waste facility,
- the Marshall County Demolition Landfill,
- regional household hazardous waste disposal,
- voluntary drop-off recycling program at the Mar-Kit Landfill,
- annual completion of the SCORE survey, and
- waste reduction and waste education programs.

The plan proposes continuation of all programs and waste management facilities that the County currently participates in, with an increased focus and relaunch of its recycling program. The County will examine all aspects of proposed programs to ensure they are in the best interests of the residents and adhere to existing solid waste management planning rules and program outlines.

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Comprehensive Solid Waste Management Plan

Marshall County, Minnesota

Prepared for Marshall County, Minnesota

1.0 Background Information

This 2014 Marshall County Comprehensive Solid Waste Management Plan (Plan) has been developed and completed by Josh Johnston, Marshall County Solid Waste Administrator, and Short Elliott Hendrickson Inc. (SEH) with the assistance of the Minnesota Pollution Control Agency (MPCA). This Plan updates the 2003 Plan in accordance with the revised Minnesota Rules governing the development, adoption, and implementation of solid waste management plans in Minnesota. The MPCA adopted the revised rules (Chapters 9215.0500 - 9215.0880) in 2009 to:

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

This Plan describes the existing integrated waste management system for Marshall County and presents policies and strategies to guide the County's solid waste planning programs over the next ten years. It also includes Marshall County's description of the solid waste abatement programs commonly referred to as SCORE (Select Committee on Recycling and the Environment) programs.

The following sections cover regional background information, solid waste generation and collection, and the history of solid waste management planning in Marshall County.

1.1 Demographic, Geographic and Regional Information

Marshall County, located in northern Minnesota, is approximately 350 miles northwest of the City of St. Paul. The County is bounded on the north by Kittson and Roseau Counties, on the west by North Dakota, on the south by Pennington and Polk Counties, and on the east by Beltrami County. The County covers an area of 1,775.07 square miles. Marshall County is comprised of 11 incorporated cities and 48 townships. There are a number of unincorporated areas in the County as well.

The following sections describe the county population, land use patterns, and employment and economic data.

1.1.1 Current and Projected Population Data

The 2010 U.S. Census projection estimated the 2012 population of Marshall County at 9,449. The average persons per household during this time was 2.29, and the average household

income was $51,000. The population is expected to remain fairly constant based on projections by the Minnesota State Demographic Center. See **Table 1** below.

The majority of Marshall County is sparsely populated. The 2010 population density is estimated to be 5.3 persons per square mile. The city of Warren is the largest city in Marshall County, with nearly 17 percent of the County's population. The County has some urban areas, but is mostly rural as shown on the Land Use Map attached as Appendix A.

Table 1 Marshall County Population Projections (2015-2045)

County	2015	2020	2025	2030	2035	2040	2045
Marshall County	9,592	9,718	9,838	9,920	9,937	9,893	9,866

(Minnesota State Demographic Center, March, 2014)

1.1.2 Current and Projected Land Use Pattern

Current land use/cover in Marshall County is primarily cultivated land and forested areas. Other large land uses include marshes, grasslands, and brushlands. The majority of the land is used for agriculture, with some federally owned natural areas and state owned natural areas, as well as various urban lands. Marshall County anticipates some development, but the land use will not significantly change during the period covered by this update.

1.1.3 Current and Projected Employment Indicators

Employment data for Marshall County from 2003 to 2013 was obtained from the Minnesota Department of Employment and Economic Development (DEED) and is presented in **Table 2**. The County unemployment rate increased greatly after the 2008 recession, but has slowly been decreasing since then.

Table 2 Unemployment Data (2003-2013)

Year	Data Source	Labor Force	Number Employed	Number Unemployed	Unemployment Rate	Minnesota Rate
2003	Annual Average	5,269	4,835	435	8.2	4.8
2004	Annual Average	5,409	4,997	412	7.6	5.6
2005	Annual Average	5,293	4,909	384	7.2	6.5
2006	Annual Average	5,307	4,939	368	6.9	7.4
2007	Annual Average	5,182	4,762	420	8.1	8.0
2008	Annual Average	5,177	4,772	405	7.8	5.4
2009	Annual Average	5,372	4,827	544	10.1	4.7
2010	Annual Average	5,691	5,182	509	9.0	4.1
2011	Annual Average	5,699	5,238	461	8.1	4.2
2012	Annual Average	5,684	5,264	420	7.4	4.6
2013	Annual Average	5,671	5,257	414	7.3	4.9

(www.deed.state.mn.us, January 2014)

Total employment for the state of Minnesota is projected to increase 30 percent from 2010-2020. This trend will likely carry over to Marshall County, as unemployment rates have slowly been decreasing since 2009 as shown in **Table 2**.

1.1.4 Local Economic Conditions

According to the Minnesota Department of Employee and Economic Development (DEED), there were 313 business establishments in Marshall County as of 2013. This is a decrease from 2011, at which time there were 323 business establishments, the highest since 2000.

The U. S. Census Bureau indicates that the median household income for Marshall County from 2008 to 2012 was $51,000. This is an increase of 68 percent in comparison to the median household income of $34,804 reported in 2000, despite the difficult economic conditions in the late 2000s.

Along with the increase in median household income, the poverty rate from 2008-2012 was 7.9 percent, which is 3.3 percent lower than the Minnesota rate of 11.2 percent.

1.1.5 Regional Constraints

Demographic, geographical, and regional constraints exist in the County that have either impacted or may impact the existing or proposed integrated solid waste management.

Historically, waste generation has been directly related to population and industry. The greatest influences on management of waste have been recycling and disposal options. With the population of Marshall County projected to decrease, it is likely that the tonnage of MSW generated in the County will increase over the period of this plan.

1.2 Solid Waste Collection and Generation

1.2.1 Solid Waste Collection

Residential collection in the County is performed by seven haulers as summarized in **Table 3**. All haulers in Marshall County use a volume-based collection fee (per Minn. Stat. 115a. 93), which provides a financial incentive for residents to reduce the amount of waste they are generating.

Table 3 Haulers, Collection Fees, and Service Areas

Hauler	Collection Fee	Service Area
City of Argyle	$11 (per container per month)	City of Argyle
City of Alvarado	n/a	City of Alvarado
City of Warren	$23 (per container per month)	City of Warren
Northern Sanitation	$45 (1.5 CY) $55 (3.0 CY) $65 (6.0 CY) (pick-up on call)	Western Marshall County
Regional Sanitation	$61.67 (3.0 CY) (pick-up on call)	Southwest Marshall County
Spruce Valley Enterprises	$17.50 (per container per month)	Eastern Marshall County
Les' Sanitation, Inc.	$27.40 (65 gal) $32.68 (96 gal) $22.05 (65 gal – senior rate) (pick-up on call)	Southeast Marshall County

1.2.2 Solid Waste Generation

Marshall County sent an annual average of 4,841 tons annually of MSW to the Mar-Kit and Grand Forks Landfills between 2003 and 2012, as shown in **Table 4** below. Based on a population of 9,449 people, MSW generation in Marshall County occurs at an average rate of 0.50 tons/year/resident. This is 0.29 tons/year/resident less than the national average of 0.79 tons/year/resident. It is estimated that approximately 8 percent of the Marshall County population uses on-site disposal, resulting in approximately 350 tons of MSW being disposed of on-site.

Waste composition studies have not been performed for Marshall County. However, the Pollution Control Agency performed a state wide solid waste composition study at six sites around the state. Results from the 2013 study showed that the top three components of Minnesota waste are as follows: Paper at 25%, plastic at 18%, and organics at 31%. The remaining 26% of the waste stream is categorized as "other". It is likely that this trend carries over into Marshall County.

Table 4 Annual MSW Tonnage to Mar-Kit and Grand Forks (2003-2012)

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
MSW to Grand Forks (Tons)	4550	5024	5112	4572	3352	3331	1680	2246	2300	2553
MSW to Mar-Kit (Tons)	210	200	50	50	1580	1580	2826	2484	2519	2186
Total Tons	4760	5224	5162	4622	4932	4911	4506	4730	4819	4739

(MSW Disposal data provided by the Minnesota Pollution Control Agency)

SCORE data from 2008-2012 is summarized in **Table 5** below, and outlines the materials that comprise the recyclable waste stream.

Table 5 Marshall County SCORE Data Tonnages (2008-2012)

Material	2008	2009	2010	2011	2012
Antifreeze	1	1	1	**1**	**1**
Fluorescent & HID Lamps	1	1	1	1	1
HHW	3	1	1	1.2	1.8
Latex Paint	2	1	1	1.9	1.1
Major Appliances	60	60	57	50	50
Used Oil	8	8	8	8	8
Used Oil Filters	5	5	5	5	5
Vehicle Batteries	61	61	61	61	60
Waste Tires	40	40	40	40	40
Electronic Appliances	4	4	6	6	6
Glass	117	119	121	71.4	0
Aluminum	6	15	6	19	12
Co-Mingled Aluminum/Steel/Tin	158	153	155	159.9	144.4
Steel/Tin Cans	0	0	0	0	0
Ferrous & Non-Ferrous	241	243	255	270	270
Source Separated Organics	0	0	0	0	0
Magazine/Catalog	3	3	4	16.3	48.5
Mixed Paper	24	21	24	25.1	20.7
Newsprint	132	117	117	130.6	100.2
Office Paper	7	6	6	6.4	4.6
Phone Book	1	1	2	1.5	1.5
Corrugated Cardboard	68	70	65	64.6	62.7
HDPE	3	3	0	0	0

Plastic	26	21	26	30.3	26.3
PET	8	6	1	0	0
Total	979	960	963	970	865

(SCORE data provided by the Minnesota Pollution Control Agency)

The percent recycled rates are low for Marshall County, though there are recycling centers throughout the County, according to the 2012 SCORE report. Percent recycled rates from 2008 to 2012 are shown in **Table 6**.

Table 6 Marshall County Recycling Data

Year	2008	2009	2010	2011	2012
Tons Recycled	979	960	963	970	865
Tons MSW	4911	4506	4730	4819	5874
% Recycled	19.94	21.31	20.36	20.13	14.70

(Information provided by Marshall County SCORE data)

1.3 Construction and Demolition Debris

Marshall County owns and operates its own demolition landfill, the Marshall County Demolition Landfill. The demolition landfill is a Class I facility in accordance with the MPCA's Demolition Landfill Guidance. The facility is located 5 miles north of Warren, MN, off of Highway 75. Mar-Kit Landfill also accepts the County's demolition debris.

The design capacity of the Marshall County Demolition Landfill is 145,300 cubic yards of demolition debris and cover material.

Construction and demolition debris is material resulting from the alteration, construction, destruction, rehabilitation, or repair of physical structures such as houses, buildings, industrial or commercial facilities, and roadways. The County notes that demolition debris consists of the following: asphalt, concrete, bricks, waste materials as part of a demolished structure such as built in cabinetry, ceramic fixtures, conduit, glass, insulation, metal, plastic, roofing, shingles, tile, wiring, and wood.

Table 7 below summarizes the annual total cubic yards of demolition debris generated between 2003 and 2013.

Table 7 Annual Demolition Debris Generation (2003-2013)

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cubic Yards	4,866	1,498	1,919	2,770	3,141	3,179	2,697	2,363	3,257	2,167	3,150

(Information provided by Marshall County Department of Public Works)

1.4 Major Solid Waste Generators

There are no major manufacturers or industrial processes present in Marshall County. Therefore, the significant solid waste generators include the County's four schools and one hospital. An estimated 409 tons of MSW were generated by commercial and industrial solid waste generators in 2012.

1.5 Solid Waste Planning History

Marshall County adopted its first solid waste management plan in 1979. Regional planning began as early as 1987 and will continue throughout the period covered by this update. During the late 1980's, Marshall, Roseau, and Kittson counties met to discuss and develop intergovernmental solid waste programs for waste management and abatement. As a result, these Counties operated a recycling program through the formation of the KaMaR Board Joint Powers Agreement. Additionally, Marshall, Clearwater, Beltrami, Kittson, Lake of the Woods, Polk, Roseau, Pennington, Red Lake and Cass counties entered into a Household Hazardous Waste Joint Powers Agreement in May, 1992. The purpose of this agreement was to "…create a mechanism whereby the Counties may cooperatively manage, handle and transport HHW, provide public education and further provide for the disposal of non-recyclable HHW materials." This agreement led to the design and construction of the Northwestern Minnesota Household Hazardous Waste Management Regional Facility, located in Bagley, Minnesota.

KaMaR was bought out by Mar-Kit in 2011. The County has continued to haul its waste to Mar-Kit Landfill, as well as the Grand Forks Landfill.

The Marshall County Demolition Landfill was opened in 1992. Previous to the Marshall County Demolition Landfill's existence, demolition debris was hauled to either the Alvarado Demolition Landfill or the Hjelle Demolition Facility.

1.6 Current Local and Regional Planning Activities

Since 1992, Marshall County has been participating in a regional household hazardous waste (HHW) management program – the Household Hazardous Waste Joint Powers Agreement. The County also participates in planning efforts with surrounding counties that also haul to the Mar-Kit landfill. Solid waste officers from all participating counties in the HHW program meet quarterly. Mar-Kit also holds an annual meeting for solid waste officers whose counties participate in the regional hauling to the Mar-Kit Landfill. Additionally, Marshall County and Kittson County operate the Mar-Kit Landfill in Kittson County.

1.7 Future Regional Planning Activities

Marshall County will continue to participate in the regional HHW management program and attend quarterly meetings. The County also intends to continue hauling waste to the Mar-Kit landfill for the time period covered by this update. Therefore, the Solid Waste Director will continue to attend annual Joint-Powers agreement meetings.

1.8 Impediments or Barriers to Regional Efforts

Regional efforts at solid waste management have been successful, in that multiple counties haul waste to the Mar-Kit Landfill, and the regional HHW management program has allowed for coordination. Strong regional relationships with other counties has helped, and will continue to help, solid waste management planning locally and regionally. However, additional coordination efforts, such as regional composting, could be difficult due to the expense of hauling such materials long distances. Budget and time constraints are the largest barriers to further regional coordination. The remote nature of Marshall County results in a low population density and a small overall population. This limits the amount of tax dollars the County can collect, and as a result there is less funding available to expand solid waste programming.

1.9 Resolution of Planning Challenges

Marshall County does not experience any problems with conflicting, duplicative, or overlapping waste management efforts locally or regionally. Marshall County is open to ongoing discussions with neighboring counties in regard to the resolution of planning challenges. Future planning efforts may include the adjustment of the waste tire disposal system, which would increase coordination between regional counties.

2.0 Existing Integrated Solid Waste Management System

2.1 Policy and Goals

The goal of Marshall County's Solid Waste Management System is to provide a comprehensive and accessible solid waste program that protects the environment and has economic sustainability.

The primary objective of Marshall County's Integrated Solid Waste Management System is to establish accessible, environmentally sound, and economically feasible programs that encourage use of the best solid waste management practices. The County intends to maintain its existing solid waste management system for the period covered by this update.

2.2 Waste Collection

The most common collection method in areas of reasonably high population density is collection by packer trucks (compacters mounted on a truck chassis) at the street curb or in the alley adjacent to the source through a commercial hauler who contracts directly with the generator. The packer truck completes its collection route and then hauls to a transfer station, processing plant, or directly to a sanitary landfill. Four of the haulers in Marshall County – the Cities of Argyle, Alvarado, and Warren and Spruce Valley Enterprises – operate using hauler trucks.

Individual hauling by the residential, commercial, or industrial generators is sometimes practiced, particularly in rural areas with low population density. Some residents of Marshall County haul directly to the Marshall County Demolition Landfill. This is necessitated by two factors:

(1) Many rural areas have such a low population density that packer truck collection is too costly, i.e. to make a profit the waste hauler has to charge more than the waste generator is willing to pay; and
(2) Some rural residents are either unwilling to burn or bury wastes on their property which is illegal in most cases (see Minn. Stat. 88.171 and 17.135).

A container system is a method to provide collection service to rural areas at a lower cost than packer truck collection, while reducing the distance individual waste generators must haul their waste. A container system uses four cubic yard to ten cubic yard dumpsters (steel containers with hinged lids) as drop-off points for individual haulers. A packer truck, or other type of vehicle, is used to collect the waste from the dumpsters and haul the waste to a processing plant, transfer station, or sanitary landfill. Marshall County has three haulers – Northern Sanitation, Regional Sanitation, and Les' Sanitation, Inc. – that operate using container systems, which are picked up on call.

Marshall County has 30 township run MSW drop off locations. These drop off sites each have a dumpster for township residents to drop off waste. These sites do not have recycling

containers, as all recycling efforts are contracted out through the Mar-Kit Landfill and not the Township.

Haulers, rates, and the areas they service in Marshall County are outlined in Section 1.0.

2.3 Transfer Stations

When transporting waste a long distance to a processing plant or sanitary landfill, the transportation cost becomes a major share of total collection and disposal costs. In these situations a transfer station can be used. A transfer station is simply a facility where packer trucks and individual haulers can discharge their solid waste, which is then loaded into large transport trailers and hauled to the disposal point.

Marshall County does not currently own or operate a transfer station.

2.4 Description of Land Disposal Facilities in Use

2.4.1 Existing System

Marshall County's existing waste management system includes:

- two sanitary landfills – Mar-Kit Sanitary Landfill and the Grand Forks Landfill,
- one demolition landfill – the Marshall County Demolition Landfill,
- one hazardous waste facility – the Northwest Minnesota Regional Household Hazardous Waste Management Regional Facility,
- and various recycling drop-off locations and yard waste programs

Municipal solid waste (MSW) is collected by one of the seven haulers – described in Section 1.0 – and taken to either the Mar-Kit Landfill, located near Hallock, MN or the Grand Forks Landfill, located near Grand Forks, ND.

Marshall County is a member of the Northwest Minnesota Regional Household Hazardous Waste Group, and therefore, has its household hazardous materials taken to the Northwest Minnesota Regional Household Hazardous Waste Management Regional Facility, which located in Bagely, MN. These materials are either hauled directly to the facility by residents or can be dropped-off during an annual collection scheduled in most cities in the County. More about the Marshall County HHW disposal can be found in Section 15.

Demolition materials are accepted at the Marshall County Demolition Landfill, located near Warren, MN. Televisions, computer monitors, major appliances, and cathode ray tubes are also accepted at the County's Demolition Landfill, where they are held in roll-off containers. Once the containers are full, they are hauled to Mar-Kit for proper disposal. A detailed description of the disposal of these items can be found in Sections 16, 12, and 13 respectively.

Marshall County has an existing recycling program that includes various drop off sites, collection bins, and a recycling education program. More about recycling in Marshall County can be found in Section 7.0.

Seven communities in Marshall County provide yard waste compost sites for public use. The county also has a mature yard waste educational program that is discussed more in Section 8.0.

The County does not manage used oil, filters, waste tires, or motor vehicle batteries, but is active in promoting proper management through local retailers.

2.4.2 General

Sanitary landfilling is a controlled burial operation which is intended to protect the public health, minimize environmental impacts, and prevent nuisance conditions. The basic requirements of a sanitary landfill which achieve these objectives and thus distinguish it from an open dump are as follows: (1) confinement of waste to a small working area; (2) compaction of waste in shallow layers; (3) application of daily soil cover, and control surface waste run-in, and (4) operation in compliance with all state and federal regulations.

Sanitary landfilling is currently the primary method for solid waste disposal in Marshall County, via the Mar-Kit landfill and the Grand Forks Landfill. In the past, many landfills have been improperly sited, constructed, and operated when evaluated against current regulations and state-of-the-art ground water and surface water protection measures for landfills. Properly selecting, designing, constructing, and operating a sanitary landfill minimizes the environmental impact associated with this solid waste management option.

There are 13 dump sites that were closed between the mid 1970's and the early 1980's in Marshall County. There were also 2 landfills closed in Marshall County. Each of these sites is now a State Assessment site under the Minnesota Pollution Control Agency (MPCA). **Table 8** below summarizes MPCA dump site and landfill closures in Marshall County.

Table 8 MPCA Closures in Marshall County

Name	Location	Closure Date (if known)
Alvarado Dump	Vega Township	August 24, 1981
Alvarado Demolition Landfill	Vega Township	-
Argyle Dump	Middle River Township	August 20, 1979
Grygla Dump	Grygla, MN	-
Holt Dump	Excel Township	-
Hjulle Demolition Facility	Marsh Grove Township	-
Middle River Dump	New Maine Township	June 26, 1979
Newfolden Dump	New Folden Township	-
Old Mill Park Dump	Foldahl Township	June 21, 1979
Oslo Dump	Oak Park Township	March 12, 1981
Stephen Dump	Sinnott Township	September 1, 2977
Strandquist Dump	Lincoln Township	-
Thief River Falls Dump	New Solum Township	March 15, 1978
Viking Dump	Viking Township	-
Warren Dump	McCrea Township	-

Currently, MSW generated in Marshall County is transferred to the Mar-Kit landfill in Kittson County and the Grand Forks landfill in Grand Forks County. The Mar-Kit Landfill, Permit Number SW-92, has been in operation since 1972 and is owned by the Mar-Kit Joint Powers Board. Marshall County maintains partial ownership of the Mar-Kit Landfill and therefore is not required

to maintain a contract with this Landfill. Other counties that do maintain a contract with the Mar-Kit Landfill include Koochiching, Lake of the Woods, Roseau, Red Lake, Pennington, as well as the Red Lake Indian Reservation. Mar-Kit Landfill also accepts waste from two counties in North Dakota: Walsh County and Pemona County.

The Mar-Kit Landfill includes both active and inactive disposal areas for MSW, with an anticipated life of at least 30 more years. The landfill anticipates adding another 13 cells to the east of the existing facilities during this time. Current facilities include a main office, truck scale, bale-fill facility, multiple equipment storage buildings, a materials recycling facility, and service roads.

The Grand Forks Landfill, Permit Number SW-069, also includes both active and inactive disposal areas for MSW, with an anticipated life of at least 90 more years. The landfill does not have any planned expansion at this time.

Incoming waste is dumped on the tipping floor from the truck and put on a conveyor belt to be sent to the baler as needed to maximize disposal and ease of construction of each cell in the disposal area.

Baling is a solid waste volume reduction process that consists of compacting solid waste into high density, rectangular-shaped bales. Baling achieves 50 to 100 percent higher in-place density in a sanitary landfill than conventional compaction methods can accomplish. A potential disadvantage of baling is that the high density may hinder biological decomposition, thus extending the period over which leachate is a concern at a particular landfill.

The advantages of baling include lower transportation costs; reduced risk of landfill fires; reduced vector problems; minimizing many of the environmental impacts of landfills; and extending landfill life because of the reduced volume of wastes.

Both the Mar-Kit and Grand Forks landfills currently puts baled waste in woven polypropylene-resin bags that are water and gas permeable. However, the cost of the bags has increased such that the Mar-Kit landfill will return to using a wire baling method. Baled waste is hauled to the working face of the landfill by front-end loaders and stacked. Using the method of baling can significantly reduce the amount of wind-blown litter on-site as well as results in an efficient use of air-space.

2.4.3 Waste Handling

Solid waste at the Mar-Kit Landfill is managed in accordance with the approved facility Operations Plan. An Operations Plan is also in place at the Grand Forks landfill. Solid waste accepted for disposal at both landfills includes mixed municipal solid wastes and approved industrial waste. Management of approved industrial waste is in accordance with the landfill's Industrial Solid Waste Management Plan.

At the Mar-Kit landfill, MSW is screened at the landfill facility by a certified landfill operator to ensure that prohibited wastes do not enter the landfill. Certified landfill operators undergo training to detect prohibited materials that could enter the facility. If prohibited wastes are detected, the landfill operator rejects the waste and provides information on alternate disposal facilities. If an unacceptable load is dumped in the landfill, this area is quarantined-off and the MPCA is contacted for assistance with proper disposal.

Approved industrial wastes at the Mar-Kit landfill and the Grand Forks landfill are managed in accordance with the facility Industrial Waste Management Plan. All wastes from industrial generators must seek prior approval for disposal of their wastes at the Mar-Kit landfill.

Evaluation of the wastes includes review of inventories' physical test results. If insufficient data is available from the evaluation form prepared by the generator, additional testing will be requested, which could include Toxicity Characteristics Leaching Procedure (TCLP), Paint Filter Liquids test, and Chemical Composition Analysis. Upon acceptance, a waste approval letter will be sent to both the generator and the hauler. In this letter, disposal conditions will be specified including quantity, frequency of disposal, and packaging of wastes. Waste is then tracked from the generator to the hauler and finally at the disposal facility by waste tracking forms.

2.4.4 Landfill Monitoring

According to the Findings of Fact by the Minnesota Pollution Control Agency, dated June 22, 2010, the Mar-Kit landfill has not shown to be a significant source of groundwater contamination or pollutant migration. Residents near the landfill use rural water distribution systems rather than wells due to low groundwater flow rates. Therefore, drinking water contamination is not of concern at this time.

The Grand Forks Landfill sends groundwater reports to the State of North Dakota Department of Health bi-monthly, and the Grand Forks landfill has also not been shown to be a significant source of groundwater contamination or pollutant migration.

A leachate spray irrigation system is used to treat landfill leachate at the Mar-Kit landfill. It is applied to a 20-acre area on-site. Stormwater on-site is routed to sedimentation ponds, and any runoff that comes into contact with waste is treated as leachate and sent to the pretreatment ponds. The landfill will continue to route stormwater to sedimentation ponds as the site continues to expand in size.

At the Grand Forks landfill, there is also a leachate system in place. The leachate from the Grand Forks landfill is collected in pipes and pumped directly to their wastewater treatment plant.

2.4.5 Inspections

The Mar-Kit landfill is inspected monthly in accordance with MPCA requirements. Activities inspected include:

- uncontrolled vegetation growth
- soil erosion
- vandalism on the monitoring systems
- rodents and burrowing animals
- malfunctions in the leachate, gas detection and collection systems; and
- settlement in closed areas

Inspection activities are recorded on field inspection log forms maintained on-site. Deficiencies are documented on the log. Repairs or corrections are implemented immediately and noted on the site inspection log.

The MPCA makes periodic visits to the site and records problems and violations. Any problems are rectified and a follow-up letter is sent to the MPCA reporting the date and type of correction.

The Mar-Kit Landfill has not had any recent problems or violations.

The Grand Forks landfill performs internal inspections on a monthly basis and the state of North Dakota performs inspections at the landfill bi-monthly. The Grand Forks landfill has not had any recent problems or violations.

2.4.6 Recycling and Special Wastes

The Mar-Kit Landfill accepts all pre-sorted recyclable materials from Marshall County residents and businesses for processing and recycling.

3.0 Proposed Integrated Solid Waste Management System

It is the goal of Marshall County to continue operating the existing integrated solid waste management system. There is no new proposed system for the period covered by this update, however, section 7.3 provides details on improvements that will be implemented over this planning cycle

4.0 Solid Waste System Evaluation and Ten Year Implementation Plan

Waste reduction is a key component in reducing the amount of MSW that is sent to a sanitary landfill. The County does not have a formal waste reduction program in place, but it is the goal of the County to participate in some waste reduction practices as described in this section.

5.0 Waste Reduction

5.1 Existing Solid Waste Reduction Practices

Marshall County regards waste reduction as a primary constituent of the integrated waste management system. It is apparent through the service and hauler fees for commercial and industrial generators that waste reduction is cost effective. The County has a 3 percent total waste reduction goal throughout the 10-year planning period.

Marshall County is using the “Source Reduction Now” manual supplied by the Minnesota Pollution Control Agency (MPCA) as a template for the County’s reduction program.

The County currently provides the following assistance to residents, businesses and institutions:

- Hosts events for Pollution Prevention Week
- Distributes source reduction brochures, flyers, and posters to County residents
- Integrates source reduction into County employee training and education programs by educating employees on going paperless, and by using double sided printing whenever possible
- Annually promotes OEA What-A-Waste curriculum in schools, (i.e., County-wide Envirothon)
- Source Reduction resources are available on the County website
- Distributes home composting educational materials to County residents
- Cooperates with other Counties to promote source reduction
- Actively promotes and provides technical assistance to businesses
- Conducts materials exchange through the County’s HHW program

5.2 Specific Programs to be Developed

Marshall County's waste reduction program is relatively mature. The County plans to develop and implement the following programs during the 10-year planning period:

- Continued distribution of brochures, flyers, and posters to County businesses and residents, that will outline information on source reduction, reuse, and recycling.
- Implementation of additional educational opportunities for businesses by meeting with them individually to look at their operations and provide input for increased recycling and waste reduction.
- Continue to support existing waste reduction programs by ensuring that distributed information is current and applicable.

5.3 Office Paper Reduction

Various techniques can be used to reduce the amount of office paper that is discarded, thereby reducing the waste stream. Easily implemented waste reduction techniques that are promoted by Marshall County include printing double sided copies, increased use of microfiche and magnetic tapes, increased use of electronic documents, electronic receipts, and electronic filing systems, using throw away paper for scratch paper and office note pads, and reducing the size of business forms.

5.4 Bans

In accordance with state law, yard waste is banned from burial in the landfill. Tires, vehicle batteries, major appliances, fluorescent lamps, and used motor oil and motor oil filters are also banned from disposal and must be recycled. The Marshall County Demolition landfill accepts some of the banned materials.

5.5 Volume-Based Garbage Collection Fees

A volume-based garbage collection rate is a program where the generator is charged on a per-can, per-bag, or by-weight basis. Experience shows that volume-based fees encourage the general public to reduce waste. Marshall County has ensured that all cities and townships in the County meet the volume-based license requirements found in Minn. Stat. 115a. 93.

5.6 Program Budget

The County budget is attached as **Appendix B**.

6.0 Waste Education

6.1 General Policy and Goals

The primary key to implementing any program to reduce and properly manage the volume of solid waste disposed is a public education program. Public service announcements on radio or TV, brochures, a series of newspaper articles on waste disposal problems, and speeches at schools or civic meetings can stimulate the necessary public awareness of waste generation practices to initiate changes in disposal habits. It is the goal of Marshall County to provide solid waste education programs to County Residents. It is the objective of Marshall County to develop new programs to increase community awareness.

6.2 Existing Solid Waste Education Practices

Marshall County is committed to educating the general public about reusing, reducing, recycling, and the proper disposal of waste in a manner consistent with state rules. The County has placed an emphasis on educating residents about topics such as demolition disposal, hazardous waste management, solid waste disposal, recycling, and waste reduction. Education is the key to a successful source reduction and recycling program.

The County has used the following to provide waste education to residents and businesses:

1. Promote materials exchange through mailings, presentations, and other media
2. Host events for Pollution Prevention Week
3. Regularly distributed materials about waste reduction to residents of the County
4. Integrate source reduction into County employee training and education programs
5. Promotes involvement in NW Minnesota Envirothon
6. The County incorporates source reduction information into County website
7. Distributing home composting educational materials to County residents
8. Actively assist in exchange of materials between organizations

6.3 Specific Programs to be Developed

The County proposes to continue supporting existing programs throughout the period covered by this update. The County also intends to start an education piece in local schools. This education would consist of yearly visits to schools to educate students on recycling and waste reduction practices. More information is outlined in Section 7.3.

6.4 Schedule of Implementation

The County's waste education program is in place and functioning successfully. Proposed programs will be implemented after coordination is completed with school systems and an agreement has been established. The County does not anticipate new budgetary constraints to affect the implementation of this program.

6.5 Program Budget

The County budget is attached as **Appendix B**.

7.0 Recycling

7.1 General Policy and Goals

It is the goal of Marshall County to provide recycling to residents in accordance with Minn. Stat. §115A.555, which states that one recycling center, accepting four or more materials, must be open 12 or more hours per week, 12 months per year. As such, Lake of the Woods County meets this requirement to provide residents with an “opportunity to recycle” per Minn. Stat. §115A.552.

7.2 Existing Recycling Practices

Marshall County has an established recycling program through Mar-Kit in cooperation with a three-county joint powers agreement with Roseau and Kittson Counties. The Mar-Kit program in the County includes nine drop-off sites for newspaper, tin, aluminum, magazines, and plastic. There is one community and five business drop-off sites for cardboard, as well as a collection service that is provided to the Courthouse and the schools for choice paper and cardboard. In addition, there are forty individual collection bins for either plastic or aluminum that have been placed in public and business facilities to encourage street traffic recycling. These recycling drop-off sites are co-located with garbage collection containers to reduce contamination in the recycling material.

One of the County’s communities, Argyle, contracts with a private company to provide recyclable materials collection for residents.

7.3 Programs to be Implemented

Marshall County will implement a relaunch campaign of their recycling program during the period covered by this update. This will include an extensive advertisement and educational campaign, an update of the website, and coordination with local businesses. Programs will be implemented with a phased approach so that the County can ensure funds and resources and evaluated for effectiveness as a part of the Plan’s annual review process as noted in section 21.1.

One Year Implementation

- Update the Marshall County solid waste website. The County will add detailed solid waste information to their website. The site will include a link to the approved Comprehensive Solid Waste Management Plan, explicit information on where and how to recycle in the County, operating hours, rates, and contact information for the Marshall County Demolition Landfill, HHW collection and disposal information, and contact information for solid waste programs.

- Recycling Collection at the Marshall County fair. The Marshall County Fair is the largest public gathering in the County. Throughout the five day duration the attendance for the fair is over 30,000 people. The focus of the recycling collection would be on beverage containers. Individual recycling bins would be purchased by Marshall County to locate next to trash bins throughout the fairgrounds, and Mar-Kit would supply one large receptacle for hauling away.

- Produce handouts that are specific to each city and county solid waste program. These handouts will be designed to send out in a city newsletter. The handout will also be distributed to new residents when they move into a County home. The focus

of these handouts will be on the how, when, and where to dispose of all types of wastes and recyclables in their community. Marshall County Solid Waste Staff will be responsible for this operation. Electronic copies of the fact sheets that can be updated over time with new program information, will be made available on the county website.

Two Year Implementation

- Begin waste tire collection at the Marshall County Demolition Landfill. Tires will be collected while the facility is open. Marshall County will contract with a tire recycler to collect and haul away tires as needed. Marshall County will collect a fee comparable to the price of disposal.

- Begin scrap metal collection at the Marshall County Demolition Landfill. Scrap metal will be collected while the facility is open. A scrap metal bin will be located at the facility. Marshall County will collect the scrap metal and have it hauled to market. This service will be provided at no cost to all customers.

Three Year Implementation

- Begin a recycling collection program for corrugated cardboard and office paper for Marshall County offices. Mar-Kit will provide a receptacle bin. County employees will be required to recycle all corrugated cardboard and office paper, along with the five materials that are already collected: plastic, magazines, aluminum, tin, and newsprint.

- Start an environmental school program. Marshall County will start a program that is presented to all of the 5th grade classes in the County. The focus will be on reduction, reuse, and recycling. The program will be presented annually by Marshall County Solid Waste Staff.

- The County will have regular meetings with local industry and businesses to ensure that they are following proper recycling protocol, and collect recycling tonnage values from them. Recycling data will be collected by distributing a form to all large quantity generators for their completion. This form will be turned into the County quarterly, which will offer more accurate numbers for the County to report annually as part of the SCORE program.

7.4 Program Budget

The County budget is attached as **Appendix B**.

8.0 Yard Waste Management

8.1 General Policy and Goals

Composting is a biological process used to partially decompose the organic materials in solid waste. The decomposition may take place either aerobically (in the presence of oxygen) or anaerobically, but is normally carried out aerobically to avoid odors. The bacterial activity produces a dark, humus-like material characterized by a low nutrient value and high moisture retention. The nutrient value of solid waste compost can be increased significantly by co-composting the waste with dewatered sludge from a municipal wastewater treatment facility.

Minimal processing composting systems are primarily used for composting yard wastes. Although the same process could be used to compost a complete solid waste, because of the length of time involved, volume of waste and potential environmental problems, this process is generally limited to yard waste. Due to its higher moisture content, lower contaminant content, and homogenous quality, yard waste compost produced from leaves and grass clippings has been marketed more successfully than compost from municipal solid waste. Yard wastes comprise a small percentage of the solid waste stream, and therefore do not oversupply the limited market for compost. Development of yard waste composting is a simple, environmentally preferable method to reduce solid waste volumes, and should be considered by any community.

Yard wastes constitute approximately 3% percent of the waste stream. Ideally this percentage of the waste stream could be eliminated by educating and encouraging the public to compost.

Because the majority of the service area is comprised of rural areas and small cities, residents could be encouraged to dispose of yard wastes only in wooded or undeveloped areas. Residents in urban areas can be encouraged to cut lawns frequently enough so that clippings can be left on the lawn, and allowed to mulch (decay) naturally. Public education would be required to successfully implement these methods. Marshall County plans to implement a public education campaign over the life of this plan to reduce Yard Waste generation.

In accordance with state law, yard waste is banned from burial in the landfill. Marshall County currently does educate the public on how to perform backyard composting, though only one city offers curbside yard waste collection. Offering a curbside collection in more areas is one method the County could employ to reduce the amount of material that must be landfilled. Marshall County will review these and other yard waste best practices as part of its annual review process and implement best practices based on that review.

8.2 Existing Programs

There are seven communities in the County that provide yard waste compost sites for public use: Warren, Stephen, Argyle, Alvarado, Oslo, Newfolden, and Middle River. The community of Warren also provides curbside collection of yard waste for composting. The composted material is available to residents at no cost.

Each community hosting a yard waste compost program has been informed of the potential environmental risks that include odor and leachate generation. It is the responsibility of these communities to operate their respective programs in a manner consistent with Minnesota Rules and best management practices for yard waste composting to ensure that environmental risk is minimized if not eliminated.

The County does not have an estimate of backyard composting tonnages. It can be assumed, because of the high number of rural residents, and because nearly 16 percent of the County's population is served by the yard waste curbside collection program in Warren, that backyard composting has and will continue to be an essential part of most households' waste disposal.

In addition, the County educates residents of the fact that yard wastes can no longer be put out with MSW going to the landfill. The County encourages all rural residents to compost yard waste and offers educational material to assist compost efforts. Additionally, the County provides technical expertise concerning on-site operation and maintenance for on-site composting efforts. In addition, information is available on the County website.

It is the goal of Marshall County to provide yard waste compost sites for residents, offer periodic curbside collection of yard waste, and ensure that County residents are aware of the prohibition to dispose of yard waste in sanitary landfills.

8.3 Specific Programs to be Developed

The County considers this program to be mature and does not plan to make any changes for the duration of this update.

8.4 Environmental Impacts of Yard Waste Management

By composting yard waste or re-using it in the form of mulch or woodchips, the amount of waste that is sent to the landfill is significantly reduced. Burning yard waste creates the opportunity for soot and other particulates to enter the atmosphere and contribute to air pollution. Composting and mulching allow for the responsible disposal and re-use of yard waste.

9.0 Source-Separated Organic Materials Composting

Marshall County does not have any MSW composting facilities. All MSW is transferred to either the Mar-Kit landfill facility or the Grand Forks landfill for disposal.

Solid waste incineration and energy recovery is not employed in Marshall County. Several waste-to-energy technologies are currently available as solid waste disposal alternatives. These technologies must be compatible with the quality and composition of the solid waste stream, as well as the area's energy markets. Marshall County does not meet the requirements for waste-to-energy technologies to be successfully employed. Due to Marshall County's low and declining population, the County does not plan to employ these methods.

10.0 Solid Waste Incineration and Energy Recovery

Two main technologies, field erected mass-burn incineration and modular incineration, are the most common waste-to-energy incineration systems presently in use today. The differences between the two types of systems, their applicability to the study area, and their advantages and disadvantages are discussed below.

Another method of recovering energy from waste is to produce fuel, or refuse derived fuel (RDF), from solid waste that can be burned directly in a conventional boiler. The starting material, raw municipal solid waste, is typically composed of 80 percent combustibles (including organic food waste, paper, plastic, wood, rubber, leather, and textiles), 10 percent glass, 9 percent metals, and 1 percent miscellaneous materials, such as white goods and dirt.

10.1.1 Environmental Concerns

There are two areas of environmental concern with the incineration of municipal solid waste: air pollution control and the disposal of incinerator ash. Air pollution control may require expensive additional equipment including dry scrubbers and bag houses. The concern over ash disposal revolves around the possibility of the incinerator ash being classified as a hazardous waste that would require additional safe guards. Due to the high costs and implementation barriers surrounding the energy recovery alternatives, this option has been eliminated from further analysis in this management plan update.

10.1.2 County Plan

Solid waste incineration and energy recovery is not currently available in Marshall County. Several waste-to-energy technologies are currently available as solid waste disposal

alternatives. These technologies must be compatible with the quality and composition of the solid waste stream, as well as the area's energy markets. The cost of implementation for the option of waste-to-energy alternatives would not be feasible unless additional coordination with neighboring counties were to allow implementation to occur at a reasonable cost. Marshall County does not meet the requirements for waste-to-energy technologies to be successfully employed. The County does not plan to employ these methods.

11.0 Land Disposal of Mixed Municipal Solid Waste

11.1 General Policy and Goals

Sanitary landfilling is currently the primary method for solid waste disposal in Marshall County. Sanitary landfilling is a controlled burial operation which is intended to protect the public health, minimize environmental impacts, and prevent nuisance conditions. The basic requirements of a sanitary landfill which achieve these objectives and thus distinguish it from an open dump are as follows: (1) confinement of waste to a small working area; (2) compaction of waste in shallow layers; (3) application of daily soil cover and controlling surface waste run-in, and (4) operation in compliance with all state and federal regulations.

Siting of new sanitary landfills must now follow stringent state and federal regulations which are intended to protect public health and the environment. New state rules were adopted on October 12, 1992, which included the USEPA 40 CFR, Subtitle "D" requirements. Siting criteria for landfills are outlined in the MPCA Solid Waste Management Rules Chapter 7035, which limit development in areas considered unsuitable.

In the past, many landfills have been improperly sited, constructed, and operated when evaluated against current regulations and state-of-the-art ground water and surface water protection measures for landfills. Properly selecting, designing, constructing, and operating a sanitary landfill will minimize the environmental impact associated with this solid waste management option.

It is the goal of Marshall County to continue using sanitary landfilling as the primary method for solid waste disposal in the County.

11.2 Existing Program

11.2.1 Landfill Facilities

The existing land disposal program, the operation of the Mar-Kit landfill, and the operation of the Grand Forks landfill are described in detail in Section 2.0.

11.2.2 The Mar-Kit Landfill Facility

The Mar-Kit Landfill has a permitted 1,747,780 Cubic Yard capacity. The current permit expires June 23, 2015. The Landfill also has a Certificate of Need. Additionally, the Landfill has a financial assurance trust fun with a balance of $2,091,571 as of January 1, 2014. The Landfill contributes approximately $3300 per month into the fund. The existing land disposal program and the operation of the Mar-Kit landfill are described in detail in Section 2.0.

11.2.3 Solid Waste Volume Reduction Programs

The Mar-Kit Landfill and the Grand Forks Landfill use volume reduction methods described below and outlined in Section 2.0.

11.2.4 Baling

Baling is a solid waste volume reduction process that consists of compacting solid waste into high-density, rectangular-shaped bales. Baling achieves 50 to 100 percent higher in-place density in a sanitary landfill than utilizing conventional compaction methods. A potential disadvantage of baling is that the high density may hinder biological decomposition, thus extending the period over which leachate is a concern at a particular landfill.

The advantages of baling include lower transportation costs; reduced risk of landfill fires; reduced vector problems; minimizing many of the environmental impacts of landfills; and extending landfill life because of the greater density of wastes.

Based on estimates provided by a local manufacturer, a baling system capable of processing 50 tpd of solid waste would cost approximately $15 per ton to construct, operate and maintain. Even if the baler could reduce landfill space requirements by 50 percent, and eliminate the need for daily cover, it will not reduce the need for leachate collection and treatment systems, ground water monitoring, closure, and other substantial landfill costs. As with shredding, baling is not a permanent solution to the landfill problem. Baling can help extend landfill life but not alleviate the need for a landfill.

11.3 Environmental and Public Health Impacts

A considerable amount of information has been discussed regarding the potential environmental risks associated with a sanitary landfill. Primary concerns relate to ground and surface water contamination and gas generation at the site.

The Mar-Kit and Grand Forks Landfills recognize the potential risks inherent in landfilling and these facilities work to control and minimize the risks through proper design, construction, and operation practices. Hydrogeologic studies at the sites are necessary to assess local ground and surface water conditions. A study of the existing landfills indicates no measurable impacts on the groundwater have occurred thus far. The permitted site areas have been designed and operated to minimize the formation of leachate from the waste. A liner and leachate collection system is used to control leachate. The Grand Forks Landfill pipes the leachate directly into their wastewater treatment center. Leachate head levels on the liner are limited to a one-foot depth through the use of collection pipes, holding tank, and pumps. In addition, regular inspections of the Mar-Kit site by MPCA staff by County officials ensure an environmentally safe operation in the. The State of North Dakota performs regular inspections of the Grand Forks Landfill that ensure safe landfill operations. Funding has been established for long-term care and monitoring at the sites. These and other efforts can help reduce the risks associated with the landfilling of solid waste.

12.0 Waste Tire Disposal and Recovery

12.1 Policy and Goals

The Waste Management Action (1988 amendments) require that counties include collection and processing of waste tires in their solid waste management plans (Minnesota Statute §115A.914, subd. 3). Under this statute, counties shall adopt ordinances for the management of waste tires that meet or exceed the MPCA Rules (MS 115A. 914, subd. 3., and MR 9220.0200 to 9220.0680).

Waste tires were banned from land disposal in Minnesota after July 1, 1985 (MS 115A.904). Although banned from disposal in landfills, waste tires may be stored above ground at

landfills permitted by the MPCA. A permitted landfill may store no more than 10,000 waste passenger car tires or the equivalent weight of other tires or tire-derived products at any time without obtaining additional permits. Any person that collects, stores, or processes 500 or more waste tires must have a waste tire facility permit. State statute does exempt individual and businesses from the need to obtain a waste tire facility permit if certain criteria are met.

It is the goal of Marshall County to ensure that no waste tires enter land disposal facilities.

12.2 Existing Waste Tire Practices

Marshall County does not manage waste tire disposal, but is active in promoting proper management through local tire retailers as outlined in this section. Waste tires are picked up from local tire retailers by licensed tire contractors and transported for recycling. There are no known tire dumps within the County at this time. The Solid Waste Director is responsible for the promotion of proper waste tire management.

Local Tire Retailers

- John's Service – Alvarado
- Argyle Cenex – Argyle
- Farmer's Union Oil Company – Grygla
- Beito Repair – Middle River
- Newfolden Co-op Oil Co. – Newfolden
- Dahlstrom Motors – Oslo
- Bumper to Bumper – Oslo
- Vern's Body Shop & Automotive – Stephen
- Warren Auto – Warren
- Under the Car Shop - Warren

12.3 Specific Programs to be Developed

Marshall County intends to begin a waste tire disposal program as outlined in Section 7.3.

12.4 Estimated Program Budget

The County budget is attached as **Appendix B**.

12.5 Implementation Schedule

It is the intention of Marshall County to continue disposal of waste tires through local tire retailers, and offer future collection at the Demolition Landfill. The County will continue to monitor the possibility of creating a regional waste tire disposal program, as referenced in this Section.

13.0 Electronic Products

13.1 General Policy and Goals

It is the policy and goal of Marshall County to comply with Minnesota Statute §115A.9565 which prohibits Cathode Ray Tubes (CRTs) from disposal in a landfill.

13.2 Existing Electronic Products Management Practices

Marshall County accepts drop-off CRTs and other electronic equipment, such as televisions and computer monitors, for recycling at the Marshall County Demolition Landfill. They are stored at the County Demolition Landfill in roll-off containers until filled, at which time haulers from Mar-Kit landfill pick up electronics and transport them to the Mar-Kit landfill for proper disposal. The annual tonnage of electronic products recycled in 2012 was 6 tons. The Solid Waste Director is responsible for the execution of electronic products management programs.

13.3 Specific Programs to be Developed

The County will continue to properly dispose of electronic products through Mar-Kit and the Marshall County Demolition Landfill.

13.4 Program Budget

Financing for the management of electronic products in Marshall County is done by funds received through the SCORE grant and by a collection fee of $5.00 per electronic product at the landfill. The County budget is attached as **Appendix B**.

14.0 Major Appliance and Scrap Metal Management

14.1 General Policy and Goals

A person may not place major appliances in mixed municipal solid waste or dispose of them in a solid waste processing or disposal facility after July 1, 1990 (MS 115A.9561). Major appliances are clothes washers and dryers, dishwashers, hot water heaters, garbage disposal, trash compactors, conventional ovens, ranges and stoves, air conditioners, microwave ovens, refrigerators, and freezers. It is the goal of Marshall County to continue to comply with Minnesota Statute §115A.552 which ensures that residents will have an opportunity to recycle these major appliances

14.2 Existing Appliance and Scrap Metal Management Practices

Appliances are accepted at the Marshall County Demolition Landfill at a fee of $5.00 per unit. In addition, the County conducts a yearly County-wide appliance collection. Appliances are stored at the County Demolition Landfill in roll-off containers until filled, at which time haulers from Mar-Kit landfill pick up the containers and transport them to the Mar-Kit landfill for proper disposal. Scrap metal, besides aluminum, is not managed through Marshall County. Various local retailers manage some scrap metals and these materials are also accepted at Mar-Kit Landfill. The annual tonnage of appliances recycled in 2012 was 50 tons. The Solid Waste Director is responsible for the management of appliance and scrap metal programs.

14.3 Specific Programs to be Developed

The County will continue to properly dispose of appliances through Mar-Kit and the Marshall County Demolition Landfill. The County will continue to evaluate and monitor the program for possible enhancements to better serve the public. Marshall County has considered a scrap metal management program to better serve the public.

14.4 Program Budget

Financing for the management of major appliances in Marshall County is done by funds received through the SCORE grant and by a collection fee of $5.00 per appliance at the landfill. The County budget is attached as **Appendix B**.

14.5 Implementation Schedule

It is the intention of Marshall County to continue the existing program, adding proposed scrap metal program after coordination with Mar-Kit.

15.0 Automotive Mercury Switches, Motor Vehicle Fluids and Filters, and Lead-Acid and Dry Cell Batteries Management

15.1 General Policy And Goals

Minnesota Statute §115A.916 states a person may not place used oil in mixed municipal solid waste or place used oil in or on land, unless approved by the agency.

Used oil includes: spent automotive lubricating oils (including car and truck engine oil), transmission fluid, brake fluid, turbine, bearing oils, hydraulic oils, metal working oils, gear oils, electrical oils, refrigerator oils, fluids related to rail operations, and spent industrial process oils.

Minn. Stat. §325E.11 requires that any person selling at retail or offering motor oil for retail sale in Minnesota must provide a notice indicating the nearest location, or a location within ten miles of the point of sale, where used motor oil may be returned for recycling or reuse, and provide a collection of used motor oil and post notice of the availability of the tank.

A person may not place a lead acid battery in mixed municipal solid waste or dispose of a lead acid battery. A person who violates this section is guilty of a misdemeanor (Minn. Stat. 115A.915).

A person selling lead acid batteries at retail or offering lead acid batteries for retail in this state shall accept, at the point of transfer, lead acid batteries from the customers (Minnesota Stat. §325E.115). Retailers are also required to accept your used lead acid batteries, even if you do not purchase a battery.

It is the goal of Marshall County to comply with Minnesota law and prevent used oil from entering mixed municipal solid waste.

15.2 Marshall County's Current or Proposed Action

Mercury switches and other hazardous components are collected and disposed of in the same manner as household hazardous waste, as described in Section 15.0. The County does not manage motor vehicle fluids and filters or used oil and filters, but is active in promoting proper management through local retailers, as listed in Section 12.2. The Solid Waste Director is responsible for the management of these programs.

15.3 Specific Programs to be Developed

The County will continue to manage automotive mercury switches, motor vehicle fluids and filters, and lead-acid and dry-cell batteries through local retailers throughout the period covered by this update.

15.4 Program Budget

The County budget is attached as **Appendix B**.

16.0 Household Hazardous Waste and Very Small Quantity Generator (VSQG) Hazardous Waste Management

16.1 General Policy and Goals

Minn. Stat. 115A.96, subd.1 (b) defines household hazardous waste as waste generated from household activity that exhibits the characteristics listed as hazardous waste under MPCA rules. A waste is defined as hazardous waste if it is:

- ignitable,
- toxic,
- corrosive, or
- reactive.

Household hazardous waste (HHW) may include: pesticides, solvents, preservatives, cleaners, paints, and other common household products. These wastes may affect the environment by impairing air quality or by contaminating soil, surface water, or ground water. If improperly managed, household hazardous waste may be ingested, inhaled, or absorbed through the skin.

It is the goal of Marshall County to offer accessible and responsible opportunities for residents to recycle HHW and continue to send all HHW material to the processing center in Bagley, MN.

16.2 Existing Programs and Practices

Marshall County is a member of the Northwestern Minnesota Household Hazardous Waste Management Group (NWMNHHW). Other members of this joint powers group include Roseau, Beltrami, Cass, Clearwater, Kittson, Lake of the Woods, Pennington, Polk and Red Lake Counties. The regional facility is located in Bagley and is available for drop-off on the first and third Tuesdays of each month and by appointment for other times. Historically, Marshall County has offered collections annually at different locations within the County. HHW is collected every Wednesday, 6 months per year at the demolition landfill. Additionally, there are 10 one-day collections in various cities throughout the County per year.

The Marshall County Solid Waste Director and a representative from the regional HHW facility also use these annual collections as an opportunity to pick up major appliances in addition to the HHW.

16.3 Specific Programs to be Developed

This program is mature and is only updated as changes in specific HHW management are stipulated by statute or if alternate management options become available as driven by industry.

16.4 Program Budget

The County budget is attached as **Appendix B**.

17.0 Construction and Demolition Debris

17.1 General Policy and Goals

Construction and demolition debris must be collected separately from traditional garbage. This debris is landfilled in demolition landfills that operate under separate rules from MSW landfills. Marshall County will continue to operate the existing demolition debris disposal facility at the Marshall County Demolition Landfill to provide a disposal option to County residents and businesses. The Mar-Kit landfill will also continue to accept County residents' demolition debris.

17.2 Existing Construction and Demolition Debris Practices Program

Prior to 1992, the County accepted demolition-debris at the Alvarado Demolition Landfill and the Hjelle Demolition Facility. Upon closure of these landfills, the County operated the Marshall County Demolition Landfill, which is located near Warren, MN. The site has been converted to a MPCA permitted facility when the county received their 5-year demo permit on June 30, 1998. The County has re-permitted as necessary to present and hold a current demo permit. The materials accepted are restricted to those defined in the MPCA demolition debris rules, which eliminates the need for monitoring wells and financial assurance at the site. The county charges $6.60 per cubic yard disposal fee (including taxes).

Marshall County residents also have access to the Mar-Kit Landfill for demolition disposal. More information about demolition debris management in Marshall County can be found in Section 1.0.

17.3 Specific Programs to be Developed

Marshall County will continue to maintain its existing demolition debris program and operate the Marshall County Demolition Landfill for the period covered by this update.

17.4 Program Budget

The County budget is attached as **Appendix B**.

17.5 Responsible Person

The Solid Waste Director is responsible for the operation and execution of Construction and Demolition Debris program.

18.0 Solid Waste Ordinance

A Solid Waste Ordinance is used to establish powers and duties in connection with regulating solid waste management and recycling operations, establish requirements for certain facilities on a disposal site, and to provide for enforcement of said requirements.

18.1 Ordinance Status

Marshall County does not currently have a Solid Waste Ordinance and does not anticipate enacting one for the period covered by this update. Any regulatory issues are dealt with by the Marshall County Solid Waste Administrator and the County Sheriff.

18.2 Implementation and Enforcement Issues

The County relies on State law and rule for enforcement of Solid Waste regulations. The County does not find it necessary to implement a Solid Waste Ordinance. Planned Amendments

The County does not anticipate creating or publishing a solid waste ordinance unless a need arises.

18.3 Program Budget

There is no established budget for the Marshall County Solid Waste Ordinance.

19.0 Solid Waste Staff

19.1 Existing Staff

Solid waste staff in Marshall County are responsible for the management of solid waste programs and systems, operating the County's demolition landfill, supervising the County's recycling program, handling SCORE grant budgets, coordinating public education, and monitoring collections. Table 9 summarizes the existing solid waste administration in Marshall County.

Table 9 Existing Solid Waste Administration

Responsibilities	Full Time Equivalent
Solid Waste Administrator	2
Demolition Landfill Operator	0.1
Environmental Technician	0.3
Administrative Support	0.5
Total	**1.1**

19.2 Staffing Needs

The County will continue to refine its staffing needs over the next ten years with the goals of keeping costs low, providing necessary levels of service to customers, enabling a strong private sector presence in the County waste system, and providing a reasonable working environment for county employees.

20.0 Solid Waste Program Funding

Funding amounts and sources are presented in the County's 10-year budget located in **Appendix B**. The budget is based upon past revenue and expenditure totals and the experience of County solid waste staff. The County intends to support its integrated waste management system through the recycling service fee, recycling materials revenue, HHW funding, and SCORE grant funding. It is the goal and policy of the County to maintain programs in the most cost efficient manner possible.

20.1 Existing Solid Waste Funding

The County has no plans at this time to change funding sources currently utilized for solid waste management. The recycling service fee, revenue from recycling material, HHW

funding, and SCORE grant funding has so far met the needs of the County. See Appendix B for the County's proposed budget.

21.0 Plan Review and Ten-Year Plan

21.1 Plan Development Time Line

This Plan will be reviewed over the ten-year period covered by this update. Any modifications or amendments to this Plan will be submitted in writing to the MPCA for review and approval. A new plan is required every ten years. The County will continue to evaluate the solid waste management programs on an annual basis, which will coincide with the annual budget review. Annual reviews will be made by the County to determine if recycling goals are being achieved. All major programs will be assessed for effectiveness and changes will be made to programs per Section 7.3 Six months before the new plan is due, writing of a new draft will begin. The Solid Waste Administrator will consult this plan update during the development of annual work plans and budget development to ensure implementation as approved by the appropriate agency. The public will be informed when the plan is available. Residents can request a copy from the Minnesota Pollution Control Agency (MPCA), pick one up at the Environmental Services Department, or download from the County website.

21.2 Responsible Person

The Solid Waste Director will be responsible for any decisions in relation to updating this Plan and will perform coordination with the appropriate agencies requiring approval.

22.0 Goal-Volume Table

The Goal-Volume Table is included as **Appendix C**.

23.0 Itemized Solid Waste Budget

The County budget is attached as **Appendix B**.

24.0 Public Participation

The public will be informed when the plan is available. Residents can request a copy from the Minnesota Pollution Control Agency (MPCA), pick one up at the County Public Works Department, or download from the County website. The plan will be available at the three largest county municipalities, all county libraries, as well as at township clerks. It will also be posted to the County website for viewing. The plan will be placed on public notice in the official county newspaper by the MPCA for 30 days and the county will accept comments during that time. Residents will also have the opportunity to comment on the plan at County Board Meetings.

25.0 Alternatives To Proposed System

Landfilling is the primary method of disposal for Marshall County's solid waste. As an alternative to landfilling at the Mar-Kit Landfill and the Grand Forks Landfill, waste could be hauled to the Polk County Sanitary Landfill, which is located in Gentilly Township near Crookston, MN. Currently waste is collected and hauled to either Mar-Kit or Grand Forks. A similar system would need to be maintained and employed to haul waste to the Gentilly Township landfill. Disposal at the Polk County Sanitary Landfill would likely increase hauling and fuel costs.

25.1 Short-Term Alternatives

The Mar-Kit Landfill and Grand Forks Landfill meet the needs for final disposal of all of the MSW generated in the County. If one of these landfills cannot accept waste, the County's waste would be delivered to the other landfill (i.e. if Grand Forks Landfill cannot accept waste for a period of time, the waste would instead be delivered to the Mar-Kit Landfill).

If neither of these landfills can accept the County's waste, the waste would be delivered to landfills outside the service area during the short term. The short term option chosen would be based on convenience, cost of tipping fees and transportation, and potential long term liability.

25.2 Long-Term Alternatives

Similar to short term alternatives, if either the Grand Forks Landfill or Mar-Kit Landfill cannot accept waste, the County's waste would be delivered to the other landfill (i.e. if Grand Forks Landfill cannot accept waste, the waste would instead be delivered to the Mar-Kit Landfill).

Also similar to the short term alternative, if both the Mar-Kit Landfill and Grand Forks Landfill closed for an extended period of time, waste would be delivered to another landfill that would be selected based on convenience, cost of tipping fees and transportation, and life expectancy of the landfill in question.

26.0 On-Site and Illegal Disposal (Environmental & Public Health Impacts)

26.1 On-Site Disposal

The County strives to mitigate impacts to land, air, surface and ground waters and to avoid nuisance conditions from the on-site disposal of mixed municipal solid wastes. To this end, Marshall County provides solid waste disposal services for all areas of the County. It is the goal of Marshall County to eliminate the illegal disposal of waste materials by residents through a solid waste system that provides convenient, accessible, affordable, and environmentally-safe disposal options. Recycling collection bins and drop-off locations are present at multiple sites throughout the County to encourage recycling.

26.2 Illegal Disposal

Although it is the goal of Marshall County to eliminate illegal disposal of waste materials, some of these illegal disposal sites still exist. When illegal disposal complaints are received by the Department, staff is dispatched to the site to investigate. If illegal disposal is verified, a Marshall County Sheriff's Deputy assigned to environmental enforcement visits the property owner, documents the conditions at the site which constitute the illegal disposal, and directs the property owner to remediate those conditions through proper disposal practices. In most past cases the property owner has complied with the Department's directions and no further action has been necessary. However, when further enforcement actions have been necessary, the Deputy is able to issue a citation for the violation. MPCA enforcement staff are also available to coordinate with county staff when alleged violations occur.

It is the intent of the County to discourage illegal disposal of waste materials through community education programs and by providing convenient, accessible, affordable disposal services to its citizens with enforcement actions being taken only when necessary.

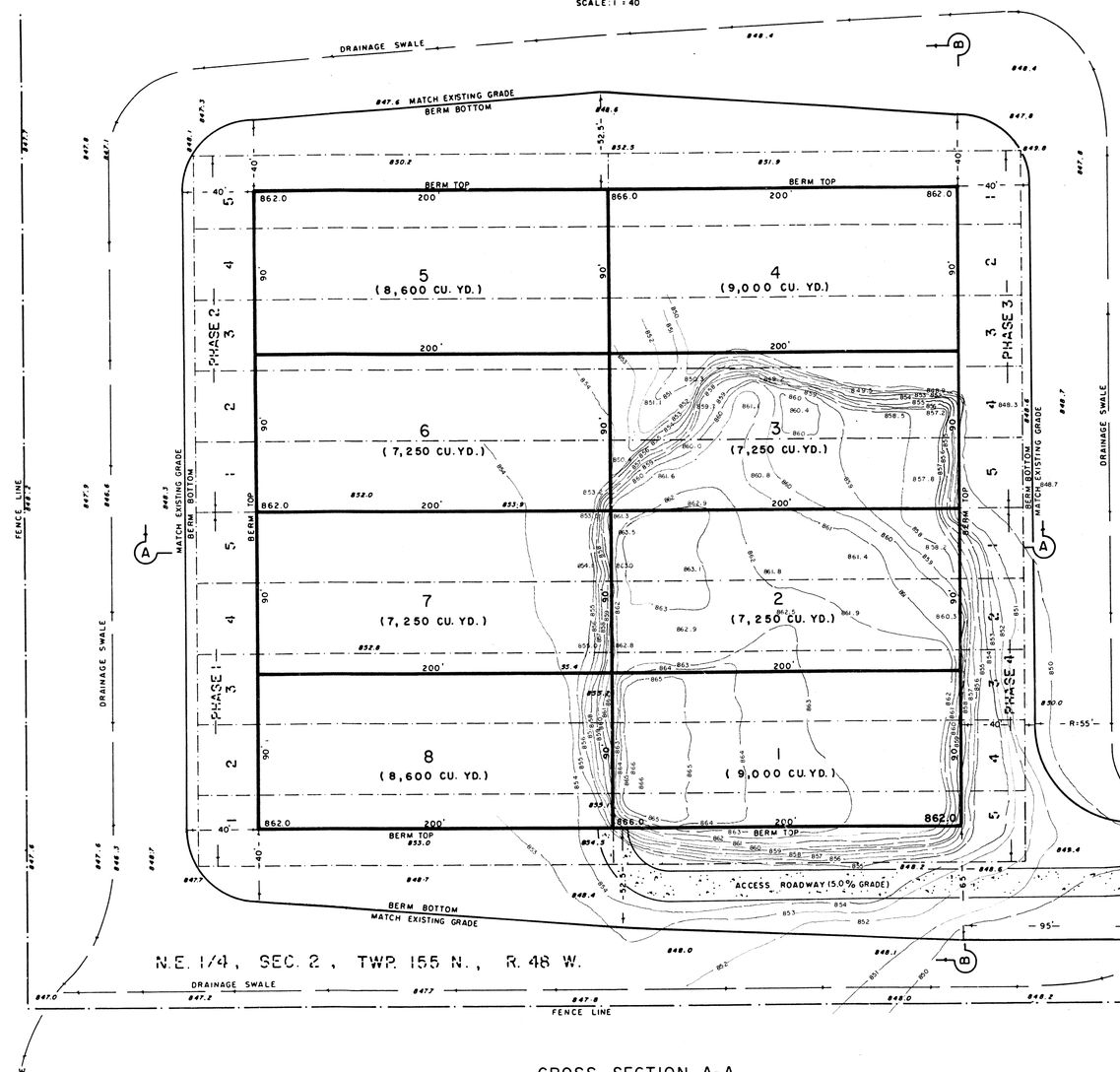
26.3 Responsible Person

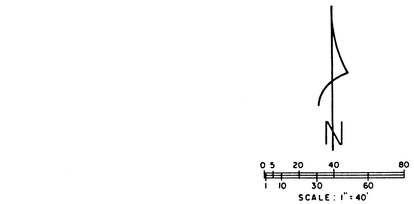
The Solid Waste Director is the person responsible for Risk Mitigation and Enforcement Programs in Marshall County. Voluntary compliance is desired first and foremost, but if ample time has been allowed for compliance activities and the violation has not been corrected, a citation may be issued. The County Attorney's office assists in prosecution on an as-needed basis.

Figures


Marshall County Demolition Landfill
N
W
E
S
0 85 170 340 510 680
Feet
Created by Josh Johnston
Marshall County
7/21/2014
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

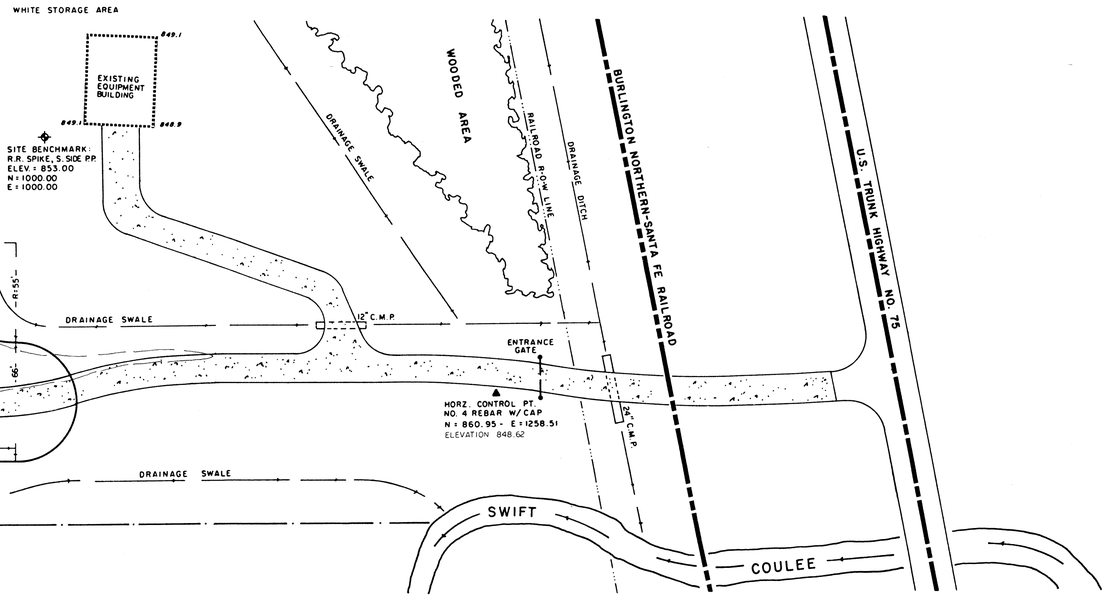
PLAN
SCALE: 1" = 40'

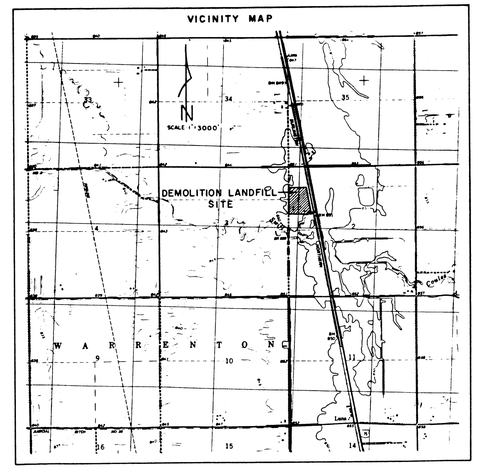




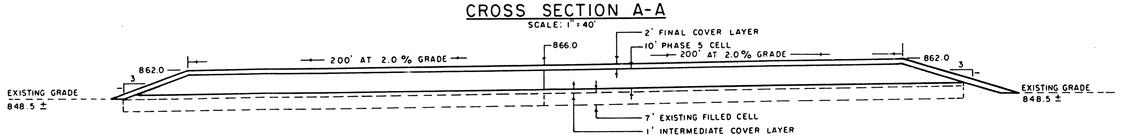
LEGEND

- CELL LINE (PHASE 5)
- BOTTOM BERM LINE
- EXISTING CELL LINE
- FENCE LINE
- BUILDING LINE
- R-O-W LINE
- DRAINAGE SWALE
- ℄ RAILROAD MAINLINE
- ℄ TRUNK HIGHWAY
- HORZ. CONTROL PT. ▲
- VERT. ELEV. BENCHMARK ⊕
- ACCESS ROADWAY
- EXISTING SPOT ELEV. 850.6
- PROPOSED FINISHED GRADE ELEVATION 870.0
- EXISTING CONTOUR LINE 850

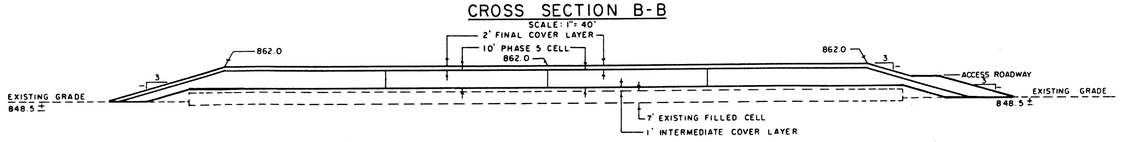




CROSS SECTION A-A
SCALE: 1" = 40'



CROSS SECTION B-B
SCALE: 1" = 40'

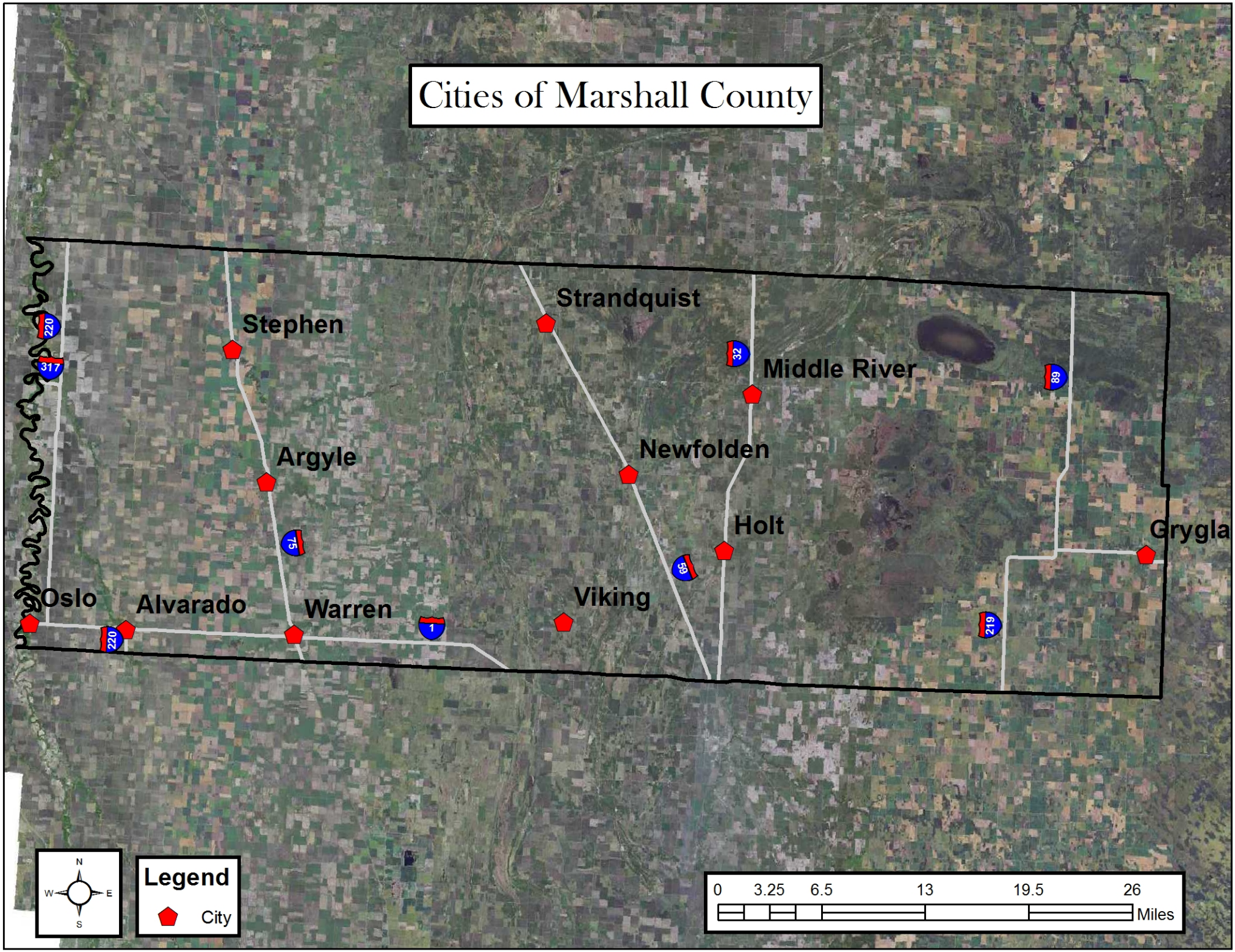


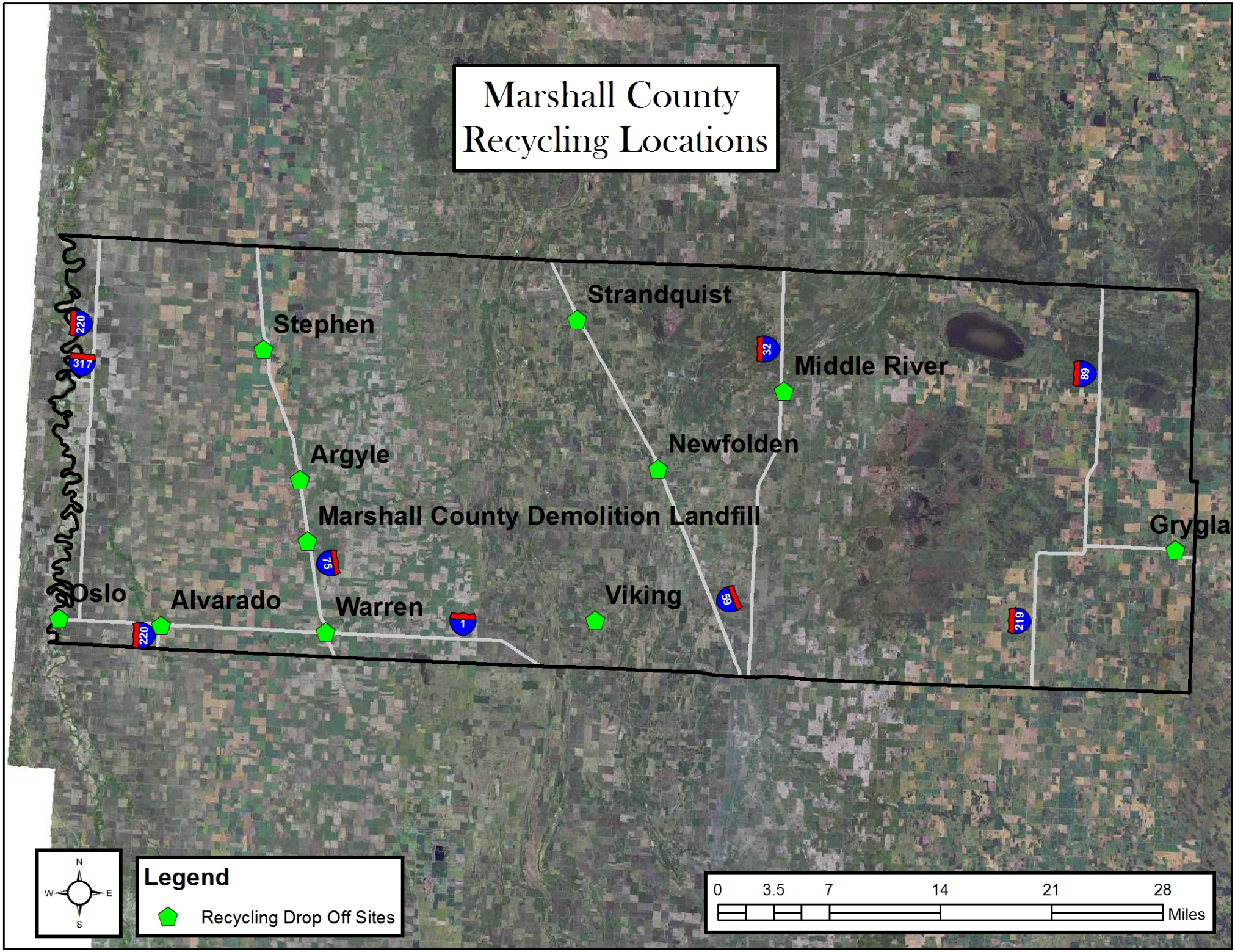
SURVEYOR'S CERTIFICATE

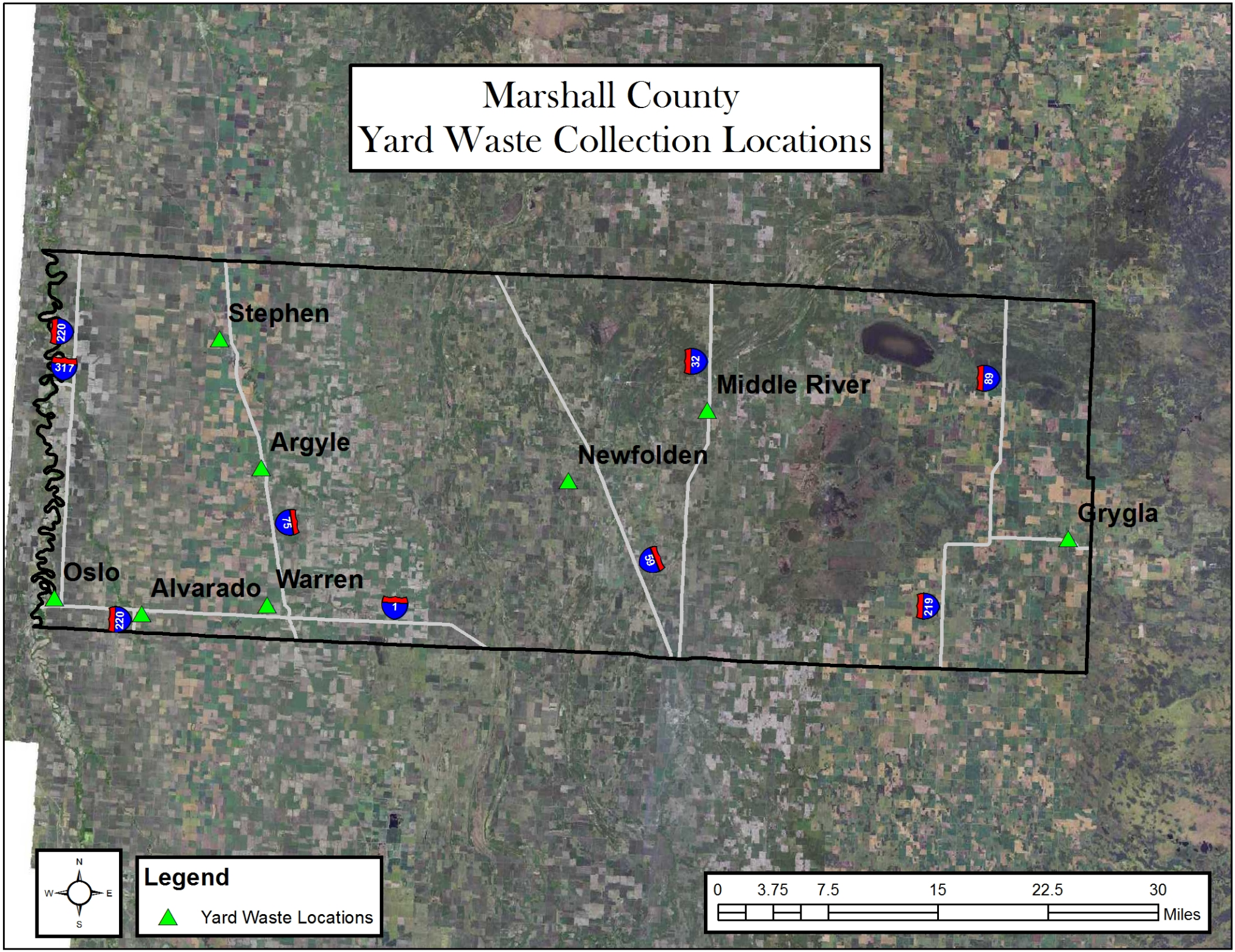
I, JERRY PRIBULA, REGISTERED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA DO HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

JERRY PRIBULA MN. REG. NO. 13468
DATE: 12-6-2013

MARSHALL COUNTY, MINNESOTA	REVISED	DATE 12-6-2013
MARSHALL COUNTY DEMOLITION LANDFILL		DRAWN BY JP
PHASE 5 - 2013 ANNUAL TOPOGRAPHIC SURVEY		SCALE 1" = 40'
PRIBULA ENGINEERING 600 DEMERS AVE. GRAND FORKS, ND 58201 701-772-7058		DRAWING NO.


Cities of Marshall County
Stephen
Strandquist
Middle River
Argyle
Newfolden
Holt
Grygla
Oslo
Alvarado
Warren
Viking
220
317
75
1
32
89
59
219
N
W
E
S
Legend
City
0
3.25
6.5
13
19.5
26
Miles


Marshall County
Recycling Locations
Strandquist
Stephen
Middle River
Argyle
Newfolden
Marshall County Demolition Landfill
Grygla
Oslo
Alvarado
Warren
Viking
220
317
32
89
75
59
1
219
N
W
E
S
Legend
Recycling Drop Off Sites
0
3.5
7
14
21
28
Miles

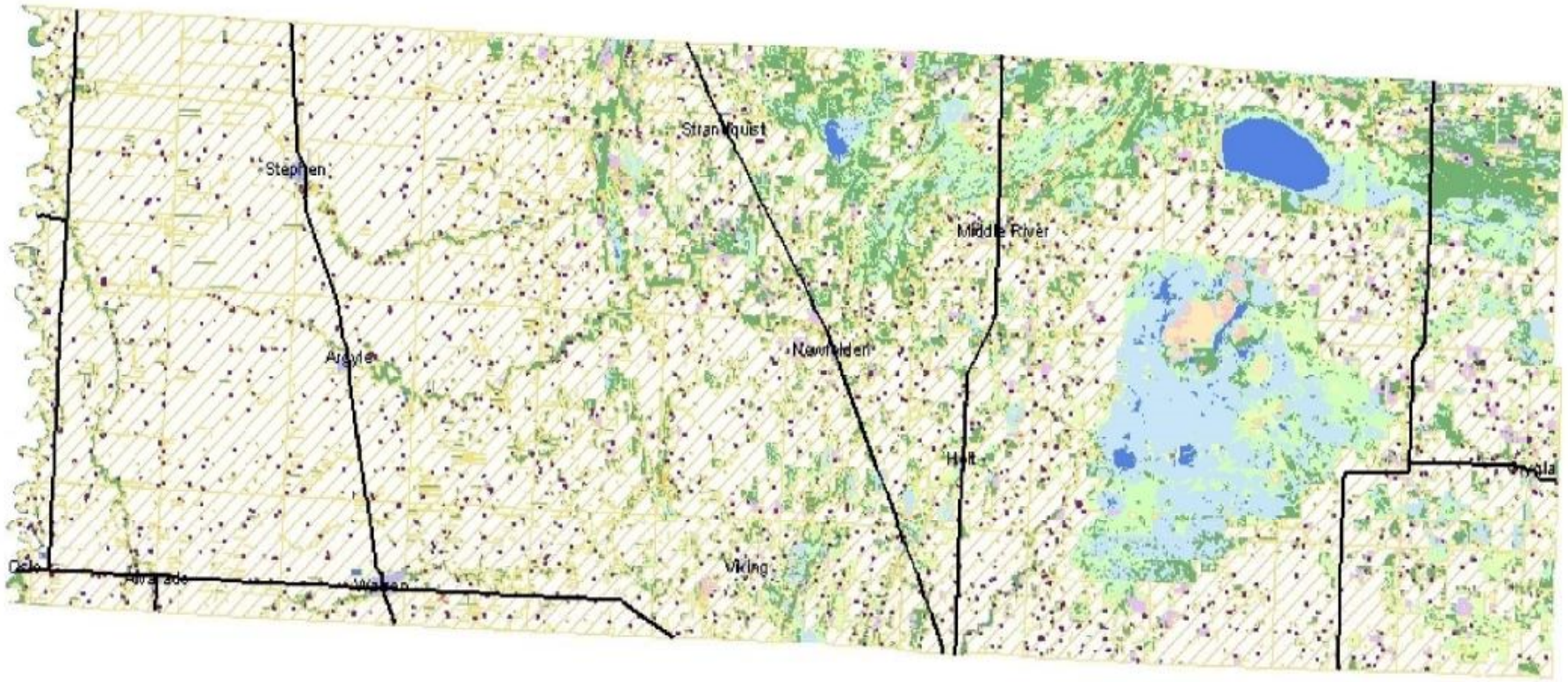

Marshall County
Yard Waste Collection Locations
Stephen
Argyle
Oslo
Alvarado
Warren
Newfolden
Middle River
Grygla
220
317
75
1
220
32
59
89
219
N
W
E
S
Legend
Yard Waste Locations
0
3.75
7.5
15
22.5
30
Miles

Appendix A

Land Use Maps

A-1 – Land Use

A-2 – Current Land Use and Ownership



Legend

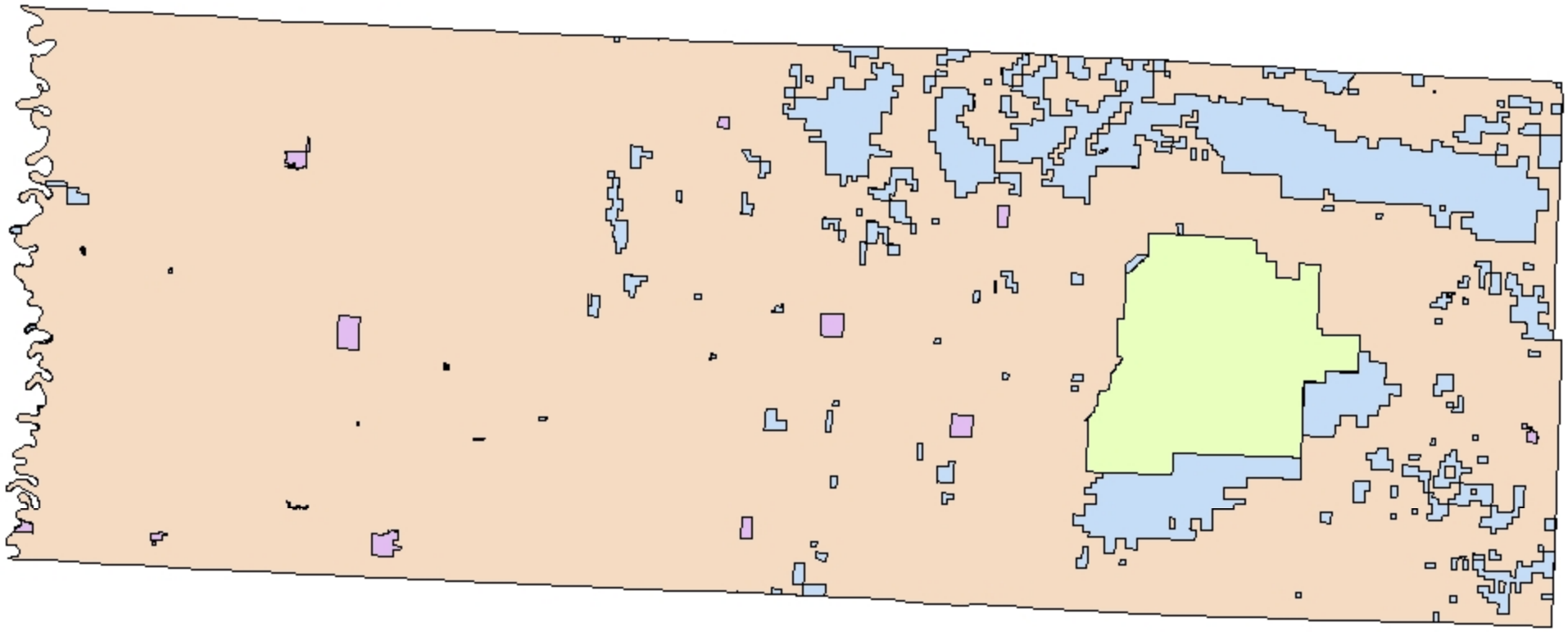
Urban & Industrial	Transitional Agriculture	Coniferous Forest
Farmstead & Rural Residence	Grassland	Water
Rural Residential Dev. Complex	Grassland/Tree/Shrub (Dec)	Wetlands
Other Rural Development	Grassland/Tree/Shrub (Con)	Gravel/Mine
Cultivated Land	Deciduous Forest	

Data provided by LMIC & Mn/DOT
Map created by the NWRDC 2/21/06
Contact: Troy Schroeder 218-745-6733

0 4.5 9 18
Miles

Arcview 9.1

Marshall County Land Use Map



Land Use

- Urban Areas
- State Owned Natural Areas
- Agricultural Areas
- Federal Owned Natural Areas

0 3 6 12 18 24 Miles

N W E S

Created by: Josh Johnston
Marshall County
7/21/2014

Appendix B

Projected Annual Budget

MARSHALL COUNTY ESTIMATED SOLID WASTE BUDGET 2015-2024

	Number of households=		4,104											
	Inflation Rate=		0%				5 Year Total						5 Year Total	10 Year Total
Total MSW Tonnage Projections:	4,850						-						-	-
(from Goal-Volume Table)	*Base Year*													
Expenditures	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**5 Year Total**	**2020**	**2021**	**2022**	**2023**	**2024**	**5 Year Total**	**10 Year Total**
SW Admin/Demo O&M/Admin (1)	$30,712	$30,984	$38,280	$38,882	$39,112	$39,266	$186,524	$39,474	$39,682	$39,890	$40,098	$40,306	$199,450	**$385,974**
Recycling:														
Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Operations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Contracts	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$125,000	$25,000	$25,000	$25,000	$25,000	$25,000	$125,000	**$250,000**
Other Operating Expenses	0	0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Recycling Total	*$25,000*	*$25,000*	*$25,000*	*$25,000*	*$25,000*	*$25,000*	*$125,000*	*$25,000*	*$25,000*	*$25,000*	*$25,000*	*$25,000*	*$125,000*	***$250,000***
Capital Expenses	$2,000	$2,182	$2,182	$2,182	$2,182	$2,182	$10,910	$2,182	$2,182	$2,182	$2,182	$2,182	$10,910	**$21,820**
Household Hazardous Waste	$8,500	$8,500	$8,500	$8,500	$8,500	$8,500	$42,500	$8,500	$8,500	$8,500	$8,500	$8,500	$42,500	**$85,000**
Mar-Kit Tip Fees	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Special Wastes:														
Waste Tires	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Appliances	$500	$500	$500	$500	$500	$500	$2,500	$500	$500	$500	$500	$500	$2,500	**$5,000**
Used Oil/Filters/Batteries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Electronics	$500	$500	$500	$500	$500	$500	$2,500	$500	$500	$500	$500	$500	$2,500	**$5,000**
Flourescent Lamps	$500	$500	$500	$500	$500	$500	$2,500	$500	$500	$500	$500	$500	$2,500	**$5,000**
Special Wastes Total	*$1,500*	*$1,500*	*$1,500*	*$1,500*	*$1,500*	*$1,500*	*$7,500*	*$1,500*	*$1,500*	*$1,500*	*$1,500*	*$1,500*	*$7,500*	***$15,000***
SCORE Related (2)	$45,487	$62,641	$60,447	$61,800	$62,031	$62,416	$309,335	$63,144	$63,872	$64,600	$65,328	$66,056	$323,000	**$632,335**
Administration:														
Office Equipment	$300	$300	$300	$300	$300	$300	$1,500	$300	$300	$300	$300	$300	$1,500	**$3,000**
Misc. Office Expences	$600	$600	$600	$600	$600	$600	$3,000	$600	$600	$600	$600	$600	$3,000	**$6,000**
Training	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$5,000	$1,000	$1,000	$1,000	$1,000	$1,000	$5,000	**$10,000**
Administration Total	*$1,900*	*$1,900*	*$1,900*	*$1,900*	*$1,900*	*$1,900*	*$9,500*	*$1,900*	*$1,900*	*$1,900*	*$1,900*	*$1,900*	*$9,500*	***$19,000***
Taxes/Surcharges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
HHW and problem materials management	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Total Program Cost:	**$115,099**	**$132,707**	**$137,809**	**$139,764**	**$140,225**	**$140,764**	**$691,269**	**$141,700**	**$142,636**	**$143,572**	**$144,508**	**$145,444**	**$717,860**	**$1,409,129**
Gross cost per HH per year:	$28.05	$32.34	$33.58	$34.06	$34.17	$34.30	$168.44	$34.53	$34.76	$34.98	$35.21	$35.44	$174.92	**$343.36**
Gross cost per ton MSW generated	$23.73	$27.36	$28.41	$28.82	$28.91	$29.02	$142.53	$29.02	$29.02	$29.02	$29.02	$29.02	$145.12	**$287.65**
Revenues														
SCORE Grant	$55,950	$71,655	$71,655	$71,655	$71,655	$71,655	$358,275	$71,655	$71,655	$71,655	$71,655	$71,655	$358,275	**$716,550**
HHW Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Tip Fees	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
15% fee on Non-Household MSW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Service Fees	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$65,000	$13,000	$13,000	$13,000	$13,000	$13,000	$65,000	**$130,000**
Grants (Ecel Energy, Disaster Grant)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Material Sales	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Special Wastes	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$7,500	$1,500	$1,500	$1,500	$1,500	$1,500	$7,500	**$15,000**
Miscellaneous	$28,000	$28,000	$28,000	$28,000	$28,000	$28,000	$140,000	$28,000	$28,000	$28,000	$28,000	$28,000	$12,440	**$152,440**
Total Program Revenues	**$98,450**	**$114,155**	**$114,155**	**$114,155**	**$114,155**	**$114,155**	**$563,275**	**$114,155**	**$114,155**	**$114,155**	**$114,155**	**$114,155**	**$570,775**	**$1,134,050**
Net Budget	*($16,649)*	*($18,552)*	*($23,654)*	*($25,609)*	*($26,070)*	*($26,609)*	*($127,994)*	*($27,545)*	*($28,481)*	*($29,417)*	*($30,353)*	*($31,289)*	*($147,085)*	***($275,079)***

(1) - 391 SW Administration & 393 Demo Landfill: Includes demo-related expenditures - wages/benefits, office expenses, insurance, contractual expenses, fuel, shop supplies,etc.
(2) - 394 Dept: Includes Recyling Administration SCORE-related expenditures - wages/benefits, printing & publishing, contracted services, service agreements, gas

Appendix C

Goal Volume Table

Waste Stream Data Input Page

Marshall County 07/22/2015 ← Spreadsheet Date & Name for reference

S:\FTW\Rasco\126303\4-prelim-dsgn-rprts\Marshall\Submittal 3\[Marshall_GVT_07222015.xlsx]Data Input Page

Name of County: Marshall County

Base Year: 2012

Note: Fill in all the values in column "B" completely before entering data for the follow-on years

	BASE YR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Generic			Plan Yr #1	Plan Yr #2	Plan Yr #3	Plan Yr #4	Plan Yr #5	Plan Yr #6	Plan Yr #7	Plan Yr #8	Plan Yr #9	Plan Yr #10
	2012												
Population / MSW Change / yr -- co's or St. Demographer data	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Population for Year 2012	9,449	9,449	9,449	9,449	9,449	9,449	9,449	9,449	9,449	9,449	9,449	9,449	9,449
Persons per Household (St.Demographer data)	2.29												
Commercial /Industrial /Institutional waste % of MSW	0.2%												
Lbs / Capita / day MSW gen.**for On-Site-Disposal** (PCA #)	2.3 lbs / person / day												
Population using **On-Site Disposal** of MSW	750	750	750	750	750	750	750	750	750	750	750	750	750
Population % using On-Site Disposal	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%
Calculated Total MSW Generated	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*	*5,874*
ON-SITE-DISPOSAL - *tons*	315	315	315	315	315	315	315	315	315	315	315	315	315

Organics Recycling - includes source separated residential + commercial SS + food-to-people & livestock but excludes yard waste composting

Problem Materials - ***Banned + other*** = sum of actual tons counted only (ie. excluding generic per capita computed values)= ACTUAL Reported Antifreeze + Appliances + Electronic Appliances + Fluorescent & HID Lamps + Household Hazardous Waste + Latex Paint + Oil Filters + Tires + Used Oil + Motor Vehicle Batteries + Textiles / Carpet + Mattresses + Pallets + Unspecified/Other Recycling

RECYCLING - *tons & Percent Objectives*

Residential	238	*264*	*294*	*382*	*455*	*529*	*587*	*617*	*646*	*705*	*764*	*822*	*881*
Commercial/Industrial/Institutional (documented)	409	*458*	*499*	*540*	*587*	*634*	*676*	*734*	*764*	*793*	*822*	*881*	*910*
Organics Recycling (source separated+food-to-people &livestock)	-	-	-	-	-	-	-	-	-	-	-	-	-
Mechanical/Hand Sorted @ Resource Recovery Facility	45												
Problem Materials - *Banned + Other Recycled*	173	154	154	154	189	225	225	225	247	268	333	284	289 >>>>>>>
RECYCLING TOTAL -- tons	865	876	947	1,076	1,232	1,388	1,488	1,576	1,656	1,766	1,919	1,987	2,081

(Fill in the Problem Materials estimation cells & lines presented in the adjacent columns for those materials the county collects data on -- Make estimates of increases of specific problem materials if program improvements are planned for those materials)

		yr 1	yr 2	yr 3	yr 5	yr 10						
% Residential Recycling - Objectives	4.1%	4.5%	5.0%	6.5%	7.8%	9.0%	10.0%	10.5%	11.0%	12.0%	13.0%	14.0%	15.0%
% Commercial / Industrial / Institutional - Objectives	7.0%	7.8%	8.5%	9.2%	10.0%	10.8%	11.5%	12.5%	13.0%	13.5%	14.0%	15.0%	15.5%
% Organics Recycling source separated - Objectives	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
% Mechanical/Hand Sorted @ Res. Rec. Fac.	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% Problem Materials - *Banned + Other*	2.9%	2.6%	2.6%	2.6%	3.2%	3.8%	3.8%	3.8%	4.2%	4.6%	5.7%	4.8%	4.9%
Total Recycling Percentages (Actual)	**14.7%**	**14.9%**	**16.1%**	**18.3%**	**21.0%**	**23.6%**	**25.3%**	**26.8%**	**28.2%**	**30.1%**	**32.7%**	**33.8%**	**35.4%**

Calculated MSW AVAILABLE FOR Resource Rec. + LF	*4,739*	*4,722*	*4,730*	*4,707*	*4,663*	*4,613*	*4,603*	*4,594*	*4,564*	*4,535*	*4,462*	*4,498*	*4,473*

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Destination LF's for Co's MSW; Facility Type, & Location													

RESOURCE RECOVERY FACILITY from the County

Hawaii Co WTE Facility - tons tipped	-	-	-	-	-	-	-	-	-	-	-	-	-
% Mechanical or Hand Materials Recycling at RR	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mechanical or Hand Materials Recycling to RR - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Processable MSW & Bypass MSW %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Processable MSW & Bypass MSW - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
--	-	-	-	-	-	-	-	-	-	-	-	-	-
% Mechanical or Hand Materials Recycling to RR	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mechanical or Hand Materials Recycling to RR - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Processable MSW & Bypass MSW %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Processable MSW & Bypass MSW - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Tipped MSW at RR Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Mechanical or Hand Materials Recycling at RR	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-Processable MSW & Bypass MSW - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Co MSW to RES REC Fac Combustor - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
% of Total MSW to WTE Combustor	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

MSW Imported to Resource Recovery Facility located within Generic Co. from Other Counties

	-	-	-	-	-	-	-	-	-	-	-	-	-
--													
--													
--													
--													
	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Imported MSW Tipped at Co RR Fac - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
Mechanical or Hand Materials Recycling at RR	-	-	-	-	-	-	-	-	-	-	-	-	-
Imported MSW Non-Processable MSW & Bypass MSW - %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Processable MSW & Bypass MSW - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Imported MSW to WTE Combustor - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
Total MSW Tipped at Co RR Fac - All Co's - tons	-	-	-	-	-	-	-	-	-	-	-	-	-
Total ALL MSW into WTE Combustor - tons	-	-	-	-	-	-	-	-	-	-	-	-	-

Recycling of Problem Materials/HHW:

(enter only the documented recycled tons the county is aware of below in the yellow cells. The annual total value will show in the adjacent PM's RECYCLING line listing)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
MSW Change & Population Change / yr		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

List the Problem Materials tonnage values the county has documented values for and show anticipated increases due to improved recycling efforts.

Electronics	6.0	6.0	6.0	6.0	9.0	12.0	12.0	12.0	13.6	15.2	20.0
Fluorescent & HID Lamps	1.0	1.0	1.0	1.0	2.0	3.0	3.0	3.0	3.4	3.8	5.0
Household Hazardous Waste	1.8	1.8	1.8	1.8	2.9	4.0	4.0	4.0	4.8	5.6	8.0
Latex Paint	1.1	1.1	1.1	1.1	2.1	3.0	3.0	3.0	3.4	3.8	5.0
Mattresses	-	-	-	-	-	-	-	-	-	-	-
Pallets	-	-	-	-	-	-	-	-	-	-	-
Textiles / Carpet	-	-	-	-	-	-	-	-	-	-	-
Unspecified/Other	-	-	-	-	-	-	-	-	-	-	-
PM's Legislatively banned from landfill disposal											
Appliances	50.0	50.0	50.0	50.0	55.0	60.0	60.0	60.0	64.0	68.0	80.0
Antifreeze	-	1.0	1.0	1.0	2.0	3.0	3.0	3.0	3.4	3.8	5.0
Oil Filters	5.0	5.0	5.0	5.0	7.5	10.0	10.0	10.0	11.0	12.0	15.0
Tires (excludes tire shred combustion)	40.0	40.0	40.0	40.0	45.0	50.0	50.0	50.0	60.0	70.0	100.0
Used Oil	8.0	8.0	8.0	8.0	9.0	10.0	10.0	10.0	11.0	12.0	15.0
Vehicle Batteries	60.0	39.8	39.8	39.8	54.9	70.0	70.0	70.0	72.0	74.0	80.0
Problem Material Recycling Totals	173	154	154	154	189	225	225	225	247	268	333

FOR YOUR INFORMATION for comparison on the PCA's hypothetical Problem Material Generation Values for the County

Background Information: ***PROBLEM MATERIALS GENERATION RECYCLED values used for MPCA SCORE generic baseline values***

			SCORE Generic Calculated Tonnage
	Population	9,449	
Appliances	lliances / capita /yr =	0.10	
	# / appl / yr=	945	
	Lbs/appliance	150	
	Recycling Rate & TONS=	**80%**	**56.7**
Batteries	no. / cap /yr & Total # =	0.33	
	# / batteries / yr =	3,118	
	pounds / battery =	40	
	Recycling Rate & TONS=	**93%**	**58.0**
Fluorescent Tubes	no. / cap /yr & Total # =	2.4	
	IF Actual # Collected=	6,000	**0.0**
Tires	no. / cap /yr & Total # =	1	
	# per tire =	20	(rate excludes incineration)
	Recycling Rate & TONS=	**20%**	**18.9**
Oil filters	# / cap /yr & total # =	1.78	16,819
	Oil filters/lbs =	1	
	Recycling Rate & TONS=	**36%**	**3.0**
Used Oil	gal / cap /yr & Total gal=	4.0	37,796
	Used oil Lbs/ga 8		
	Recycling Rate & TONS=	**5.0%**	**7.6**
			144.2

LANDFILL Destinations for County MSW

LANDFILL COMPACTED IN-PLACE ASSUMPTIONS for landfills located within Generic County

Cover Material % use - *Intermediate & final*	10%	
MSW In-Place Density Assumption =	1,300	*lbs/cubic yard*
Industrial In-Place Waste Density Assumption=	1,200	*lbs/cubic yard in-place*

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Ten Yr Total
County MSW tons Available for Landfill Disposal	*4,739*	*4,722*	*4,730*	*4,707*	*4,663*	*4,613*	*4,603*	*4,594*	*4,564*	*4,535*	*4,462*	*4,498*	*4,473*	
Minnesota Landfills														
	0	0	0	0	0	0	-	-	-	-	0			-
(Enter a LF name & tons in this line only if LF is located in Generic County)	*(includes RR fac. non-processable & bypass MSW)*													
Mar-Kit Landfill	2,553	4,722	4,730	4,707	4,663	4,613	4,613	4,613	4,583	4,553	4,462	4,498	4,473	46,259
Another #3 LF	0	0	0	0	0	0	-	-	-	-	0	0	0	-
Another #2 LF	0	0	0	0	0	0	-	-	-	-	0	0	0	-
Out-of-State Landfills														
Grand Forks	2,186		0	0	0	0	-	-	-	-	0	0	0	-
--	0	0	0	0	0	0	-	-	-	-	0	0	0	-
--	0	0	0	0	0	0	-	-	-	-	0	0	0	-
"CHECK TONS to LF"-this # must match LF tons AVAILABLE	*4,739*	*4,722*	*4,730*	*4,707*	*4,663*	*4,613*	*4,613*	*4,613*	*4,583*	*4,553*	*4,462*	*4,498*	*4,473*	**46,259**
Abbreviation for primary landfill in county =														

note:the totals in columns H to K will vary slightly from the MSW tons Available values above

MSW Imported to a Landfill located within Generic Co. from Other Counties

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Ten Yr Total
--	-	-	-	-	-	-	-	-	-	-	-	-	-	-
--							-	-	-	-		-	-	-
--							-	-	-	-		-	-	-
--	-	-	-	-	-	-	-	-	-	-	-	-	-	-
--	-	-	-	-	-	-	-	-	-	-	-	-	-	-
--	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total MN MSW Imported to the Co. Landfill	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-State MSW Imported to LF in the County														-
Other State MSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALL MSW Imported to the LF in the Co.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Remaining MPCA Permitted Capacity - cy	-	cubic yards												-

WTE Residue & Ash Disposal in Ash Cells at P/D Ash Landfill - tons

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Ten Yr Total
Percent WET WTE Ash to Disposal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	
WTE Ash Disposal Tons to Ash Cells in County	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resource Recovery Facility Reject Residue (non-MSW)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total WTE ASH & WTE Processing residue -tons	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total All Solid Waste to Landfills	4,739	4,722	4,730	4,707	4,663	4,613	4,603	4,594	4,564	4,535	4,462	4,498	4,473	46,193

Construction / Demolition Waste Landfills within the Co.

Demolition Landfills

Note: typically C&D received at the gate will weigh approximately 460 pounds per cubic yard

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Ten Yr Total
Marshall County Demolition Landfill	2,167	**3,150**	**2,500**	**2,825**	**2,663**	**2,744**	**2,703**	**2,723**	**2,713**	**2,718**	**2,716**	**2,717**	**2,716**	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
total cy to C&D disposal sites	2,167	3,150	2,500	2,825	2,663	2,744	2,703	2,723	2,713	2,718	2,716	2,717	2,716	27,455

Yard Waste - received at YW sites in County

Note: Yard Waste cubic yard / tonnages are not included as part of the county MSW generation tonnage total

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Ten Yr Total
Yard Waste - received at YW sites in Co. - Cubic Yards														

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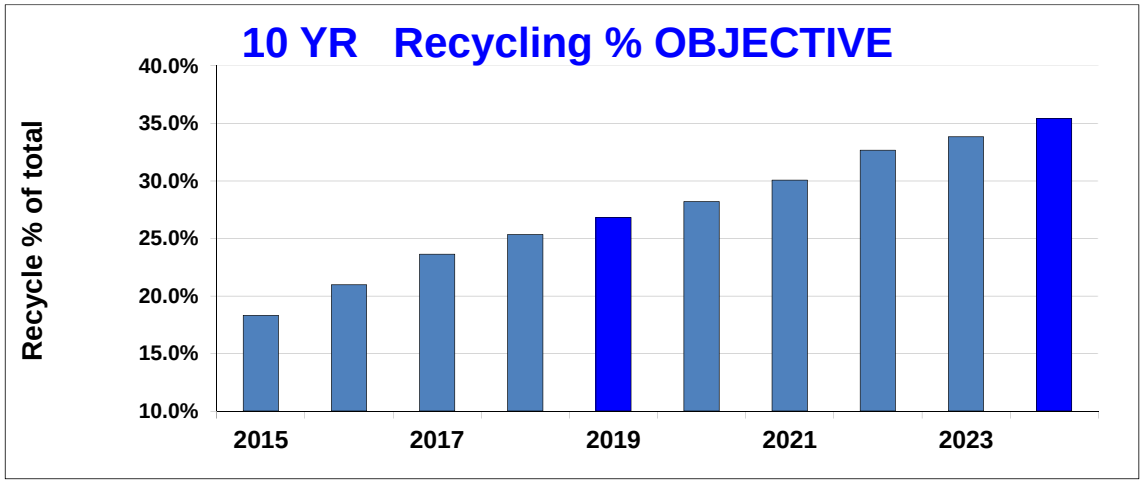
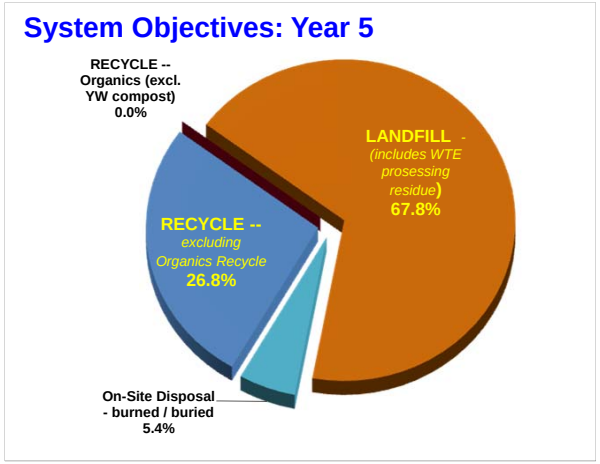
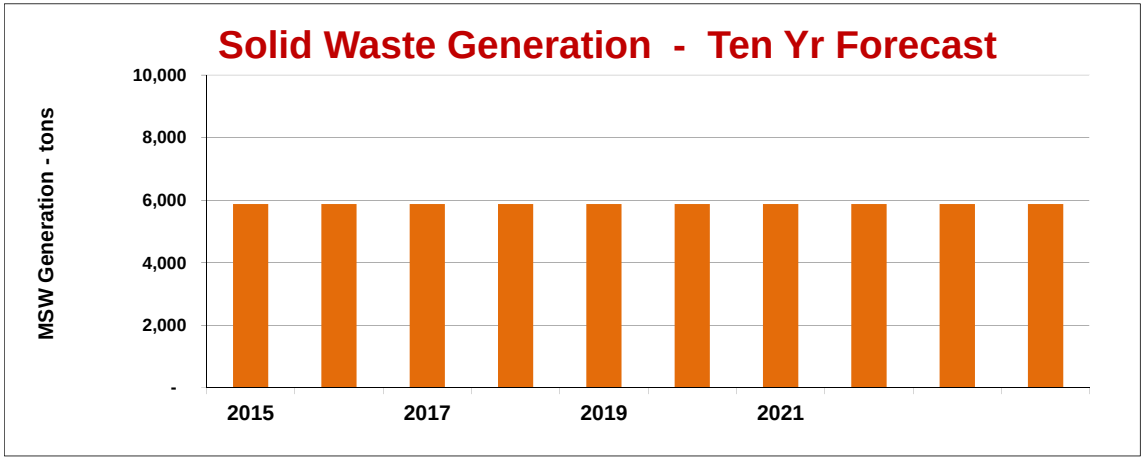
SUMMARY Waste Management System OBJECTIVES

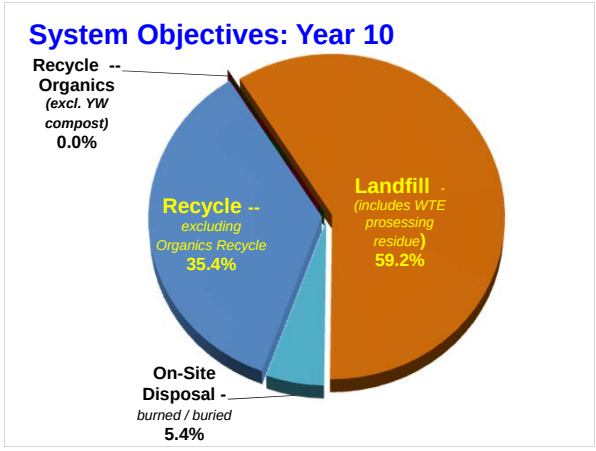
for the Marshall County Solid Waste Management Plan

Planning Year #	2012	2015 Planning Yr 1	2016 Planning Yr 2	2017 Planning Yr 3	2019 Planning Yr 5	2024 Planning Yr 10
MANAGEMENT METHOD OBJECTIVES for the County MSW Solid Waste Management System						
Source Reduction						
RECYCLE -- *excluding Organics Recycle*	14.0%	**18.3%**	**21.0%**	**23.6%**	**26.8%**	**35.4%**
RECYCLE -- Organics *(excl. YW compost)*	0.00%	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
WASTE-to-ENERGY Combustion	0.0%	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
LANDFILL *-(includes WTE prosessing residue)*	80.7%	76.3%	73.7%	71.0%	67.8%	59.2%
On-Site Disposal - *burned / buried*	5.4%	**5.4%**	**5.4%**	**5.4%**	**5.4%**	**5.4%**









SUMMARY DATA - Waste Management SYSTEM OBJECTIVES for the Marshall County Solid Waste Management Plan

	2012	2015	2016	2017	2019	2024	10Yr Totals	
Planning Year #		*Planning Yr 1*	*Planning Yr 2*	*Planning Yr 3*	*Planning Yr 5*	*Planning Yr 10*		
SYSTEM OBJECTIVES								
Recycle -- *excluding yard waste*	14.7%	**18.3%**	**21.0%**	**23.6%**	**26.8%**	**35.4%**		
Resource Recovery	0.0%	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**		
Landfill	80.7%	**76.3%**	**73.7%**	**71.0%**	**67.8%**	**59.2%**		
On-Site Disposal - burned / buried	5.4%	**5.4%**	**5.4%**	**5.4%**	**5.4%**	**5.4%**		
Recycling % Detail								
Residential recycling %	4.1%	6.5%	7.8%	9.0%	10.5%	15.0%		
Commercial recycling %	7.0%	9.2%	10.0%	10.8%	12.5%	15.5%		
Organics Recycling (source separated food to people &livestock)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Mechanical /Hand Sorted @ Res Rec Fac.	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%		
Banned Problem Materials + Other recycle	2.9%	2.6%	3.2%	3.8%	3.8%	4.9%		
Percent of Total MSW	14.7%	**18.3%**	**21.0%**	**23.6%**	**26.8%**	**35.4%**		
Total MSW Generated	***6,000***	***6,000***	***6,000***	***6,000***	***6,000***	***6,000***	**10Yr Totals** ***59,000***	
On-Site Disposal - bury, burn barrel, open burn -- tons	300	**300**	**300**	**300**	**300**	**300**	**3,148**	
Recycling - tons								
Residential	200	300	300	300	300	400	2,900	tons
Commercial/ Industrial/ Institutional - *documented*	410	400	400	400	400	400	4,300	tons
Organics Recycle *(s. separated commercial & residential)*	-	-	-	-	-	-	-	tons
Mechanical / Hand Sorted @ Res Rec Fac.	-	-	-	-	-	-	-	tons
Problem Materials - *Banned + Other recycle*	170	200	200	200	200	300	2,200	tons
RECYCLING total tons	800	**900**	**900**	**900**	**1,000**	**1,100**	**9,400**	tons
Resource Recovery -tons tipped								
	-	-	-	-	-	-	-	tons
--	-	-	-	-	-	-	-	tons
Total RR Facilities MSW Tipped	-	-	-	-	-	-	-	tons
MSW from other Co's sent to a County Res. Rec. Facility								
	-	-	-	-	-	-	-	tons
	-	-	-	-	-	-	-	tons
	-	-	-	-	-	-	-	tons
	-	-	-	-	-	-	-	tons
	-	-	-	-	-	-	-	tons
	-	-	-	-	-	-	-	tons
	-	-	-	-	-	-	-	
TOTAL RECEIVED AT RR FACILITY in Co. -- tons	-	-	-	-	-	-	-	
Landfill - MSW from within the County to LF - tons	4,700	**4,700**	**4,700**	**4,600**	**4,600**	**4,500**	**46,300**	tons
LANDFILL DISPOSAL DISTINATIONS for Lake of the Woods Co's MSW								
	-	-	-	-	-	-	-	tons
Mar-Kit Landfill	2,600	4,700	4,700	4,600	4,600	4,500	46,000	tons
Another #3 LF	-	-	-	-	-	-	-	tons
Another #2 LF	-	-	-	-	-	-	-	tons
Out-of-State Landfills								
Grand Forks	2,200	-	-	-	-	-	-	tons
--	-	-	-	-	-	-	-	tons
--	-	-	-	-	-	-	-	tons
Total All Co's MSW to ALL LF's - tons	4,700	4,700	4,700	4,600	4,600	4,500	**46,300**	tons
LF Capacity USED + Cover - for ALL Co MSW -cy	7,300	7,200	7,200	7,100	7,100	**6,900**	**71,200**	*cu yds*
LANDFILL DISPOSAL of Solid Waste at landfills located WITHIN the COUNTY								
MSW GENERATION to LF	-	-	-	-	-	-	-	tons
All MSW Imported to LF in the Co. - *tons*	-	-	-	-	-	-	-	tons
TOTAL MSW to - tons	-	-	-	-	-	-	-	tons
Industrial & non-MSW Waste to MSW LF's in the Co. - *tons*	-	-	-	-	-	-	-	tons
Total Solid Waste to LF within Co. - tons	-	-	-	-	-	-	-	tons
LF Capacity USED + cover for ALL Wastes -cu yds	-	-	-	-	-	-	-	**cu yds**
Demolition Debris - received at C&D sites in Co - cy								
C&D Waste - received at C&D sites in Co. - Cu Yds	2170	2830	2660	2740	2720	2720	**27,460**	cu yds
Yard Waste - received at YW sites in County								
Yard Waste - received at YW sites in Co. - Cu Yds	0	0	0	0	0	0	-	cu yds