

LINCOLN COUNTY SOLID WASTE PLAN

April 15, 2003



submitted by

Lincoln County Board of Commissioners

prepared by

**Southwest Regional Development Commission
Slayton, Minnesota**

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CHAPTER 1. EXECUTIVE SUMMARY

1.1 Overview of the County's Current Solid Waste System

The current solid waste management system operating in Lincoln County is a mix of public and private sector activities. There are two waste haulers which operate in the County, Ritters Sanitation and the City of Tyler. Ritters is contracted to collect residential MSW by all Lincoln County municipalities except the City of Tyler. As the only private, licensed waste hauler Ritters also collects all commercial and institutional waste generated in these Cities.

Waste generators in the County produce approximately 3800 tons of solid waste per year. In 2002, 2205 tons of MSW was disposed of at the Lyon County Sanitary Landfill. Lincoln County has utilized the Lyon County Landfill as the primary facility for MSW disposal since 1984. It is the intention of Lincoln County to continue to see that MSW generated in Lincoln County is disposed of at the Lyon County Landfill for the current planning period. This facility is owned and operated by Lyon County, and serves seven counties in southwest Minnesota. Lincoln County is a member of the Southwest Regional Solid Waste Commission, a twelve county joint powers board. This board assessed the alternatives to landfilling on a collective basis for its members. The Southwest Regional Solid Waste Commission found that landfilling remains the most prudent and feasible option for the management of MSW at this time. Lincoln County concurs with this finding as landfilling is the most cost effective option, there is adequate disposal capacity for the current planning period, it does not appear that MSW delivery to a resource recovery facility could be assured, and a resource recovery facility does not present significant environmental benefits relative to the landfill utilized by Lincoln County. Lincoln County does recognize and support the feasibility study being conducted in Redwood County for a waste to energy facility. New data may support this waste alternative, but it is not anticipated a facility could be implemented within the planning period.

Because of the large rural population, on-site disposal of MSW is a common practice in Lincoln County. However, the County owns and operates a transfer station just south of the City of Ivanhoe to provide an opportunity for rural residents to manage waste in a cost effective and environmentally sound manner. This facility utilizes 30 yard transfer boxes. Approximately 129 tons per year is managed at this site annually.

Lincoln County operates a number of waste abatement programs to ensure that resources are conserved and that natural environment is protected. The County has consistently provided recycling opportunities above and beyond those required by the Minnesota Waste Management Act. Curbside residential recycling is available to all residents of incorporated municipalities. Collection occurs every other week, and includes glass, newsprint, steel/tin cans, and mixed plastics. Recycling sheds, which meet the State's definition of recycling centers, are located in every municipality. Two additional sheds are located at key rural sites. The County provides these services through a private contractor.

Business recycling is conducted principally by the private sector. Collection of recyclables from individual businesses is negotiated between the waste hauler and the business. The County relies heavily on market mechanisms to ensure that commercial establishments are recycling. Volume based pricing and State statute requiring that haulers not price discriminate against recycling provides a financial incentive to reduce waste disposal through recycling.

The County has consistently struggled to meet quantified SCORE Goals. This is attributable, in part, to the lack of commerce and industry in Lincoln County. The County intends to complete outreach to schools, retail establishments, and survey businesses to identify and keep a more accurate count of recycling over the planning period in an effort to reach the State 35% SCORE goal by 2007.

Problem wastes including appliances, tires, used vehicle fluids, batteries, and fluorescent lamps are managed through a mix of private and public activities. Tire dealers, auto battery dealers provide adequate outlets for these materials as provided for in Minnesota Statute. Service stations provide waste oil disposal options at no cost, and a handful of service stations provide disposal option for used oil filters at a nominal charge. Due to the lack of private sector disposal options, the County operates programs for recycling, used appliances and fluorescent lamps. For a fee, appliances can be disposed of at the Lincoln County Transfer Station. The County also holds an annual collection event for used fluorescent lamps. A key element of the County waste abatement program is participation in regional household hazardous waste programs. Two HHW collection events are held by the County annually and a new under 90 day facility has been constructed. In addition the county provides significant support and assistance with annual waste pesticide container collection and periodic waste pesticide collections.

Yard waste is managed by either individual residents, or through municipal composting facilities. The County supports these efforts through education, promotion and a ban on yard waste disposal in MSW.

Lincoln County conducts an on-going waste education program. This program provides individuals and businesses with information on how and why to properly manage solid waste. These efforts include publication of notices in area newspapers, and staff outreach at community events such as the County Fair. County staff are available to provide technical assistance to business and institutions. Commercial out-reach will be stepped up with participation in the Lyon County Industrial Waste Outreach project. The County will also target rural residents for waste abatement education to reduce on-site disposal. The County will also continue to coordinate with the Minnesota Extension Service and the Prairie Ecology Bus on outreach to school children.

Demolition has been monitored in Lincoln County through use of the roll-off. Municipal needs for demolition disposal are increasing, and the County will research the feasibility of opening a demolition site within the County. Currently, demolition is transferred to Lyon County and trucked to the Rock County facility.

Lincoln County adopted a Solid Waste Ordinance in 1993. The Ordinance provides for licensing of waste haulers, it also bans a number of materials from disposal in MSW including: tires, lead acid batteries, yard waste, and used oil. There have been no significant difficulties in the enforcement of the ordinance.

1.2 Proposed Changes to the County Solid Waste Management System

The fundamental nature and scope of the Lincoln County Waste management system is not anticipated to change during the current planning period. Major changes are expected to be refinement of the existing programs and more targeted implementation of programs. These efforts are intended to achieve a 35% recycling rate in Lincoln County by 2007. The first change to likely take place is documenting the current recycling occurring with businesses in the County. This will work with encouraging businesses to recycle and implement methods to reduce waste generated. These change should generate greater participation rates.

Additional efforts will be made in the area of education and promotion. Targeted efforts will be made to educate rural residents about the benefits and opportunities to recycle, reduce waste generation, and compost waste. These efforts will be part of a strategy to reduce reliance on on-site waste disposal. Targeted waste abatement activities will be implemented in the commercial/institutional sector as well. Priority areas will be schools, retail businesses, and restaurants. These efforts will be augmented through participation in a grant funded program operated by Lyon County to conduct business outreach and promotion of waste abatement activities.

The County will continue to monitor progress towards the accomplishment of its goals. If satisfactory progress is not achieved, the county will examine additional actions or strategies to implement.

1.3 Projected Waste Tonnage

Table 1-1 Estimated Waste Generation Tonnage From Goal Volume Table

	2002	2003	2004	2005	2006	2007	2008
Total MSW GENERATED	3881	3934	3990	4047	4106	4167	4230
MSW Managed via LF, Res. Rec., & Recycling	2,814	2,877	2,944	3,012	3,081	3,153	3,226
Percent of Total Waste Generated	73%	73%	74%	74%	75%	76%	76%
Problem Materials (PM) Generated	307	304	301	298	295	292	289
Percent of Total Waste Generated	7.9%	7.7%	7.5%	7.4%	7.2%	7.0%	6.8%
Recycled Materials	618	627	638	648	659	670	682
Recycling % of Total MSW Generated	15.9%	15.9%	16.0%	16.0%	16.0%	16.1%	16.1%
Yd Waste Composting & Waste Red. Credit %	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
SCORE Goal Percentage	23.9%	23.9%	24.0%	24.0%	24.0%	24.1%	24.1%
Lyon County LDF	2196	2250	2306	2364	2422	2483	2544
Percent to Landfill Disposal	57%	57%	58%	58%	59%	60%	60%
Additional Tonnage identified in Table 4-1	433	434	435	436	437	438	439
Goal-volume tonnage + additional tonnage	1051	1061	1073	1084	1096	1108	1121
Adjusted Recycling % of Total MSW generated	27%	27%	27%	27%	27%	27%	27%
Adjusted SCORE Goal	35%	35%	35%	35%	35%	35%	35%

Volumes of waste to be generated in Lincoln County for the next ten years have been estimated utilizing the “Goal Volume Table” spreadsheet developed by the Office of Environmental Assistance. The expected tonnage to be generated through 2008 are summarized in Table 1-1. The adjusted recycling tonnages are identified in Chapter 4 and are increased 1 ton each year.

1.4 Five Year Budget

Recent Lincoln County solid waste program budgets have totaled approximately \$90,000 per year. This includes both the operation of the County Transfer Station and all waste abatement programs. Transfer station operating costs total approximately \$13,500 per year, the remaining program costs are attributable to waste abatement activities. Program costs are expected to escalate by approximately 3% per year for the planning period. However, State support of local waste abatement programs is not expected to escalate during the planning period. This generates a growing imbalance between program revenues and program costs. The imbalance may, over the next several years, be mitigated by increasing service fees and implementing a household assessment tax. Otherwise, the County will either need to scale programs back or increase funding from the County general levy. Estimated solid waste program budget through 2002 is included in Table 1-2.

Table 1-2. Five-Year Solid Waste Program Budget

Expenditures	2001	2002	2003	2004	2005	2006	5 Year Total
Waste Reduction	\$0	INCLUDED IN WASTE EDUCATION					
Waste Education	\$2,492	\$2,567	\$2,644	\$2,723	\$2,805	\$2,889	\$13,627
Recycling Total	\$40,954	\$42,183	\$43,448	\$44,752	\$46,094	\$47,477	\$223,954
Yardwaste Management		INCLUDED IN WASTE EDUCATION					\$0
Household Hazardous Waste	\$2,043	\$2,104	\$2,168	\$2,233	\$2,300	\$2,369	\$11,172
Demolition Waste	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Special Wastes Total	\$400	\$412	\$424	\$437	\$450	\$464	\$2,187
Staff & Administration/Benefits	\$20,480	\$21,094	\$21,727	\$22,379	\$23,050	\$23,742	\$111,992
MSW Transfer Station	\$20,310	\$21,269	\$21,907	\$22,564	\$23,241	\$23,938	\$112,920
Total Program Cost: Lincoln	\$86,679	\$89,629	\$92,318	\$95,087	\$97,940	\$100,878	\$475,853
Revenues							
SCORE Grant	\$55,000	\$49,500	\$40,000	\$40,000	\$40,000	\$30,000	\$199,500
HHW Grant	\$750	\$750	\$750	\$750	\$750	\$750	\$3,750
General Revenue	\$13,750	\$12,500	\$12,500	\$9,900	\$9,900	\$9,900	\$54,700
Service Fees/HH Assessment	\$0	\$0	\$1,500	\$1,545	\$1,591	\$1,639	\$6,275
Transfer Station Fees	\$8,531	\$9,500	\$9,785	\$10,079	\$10,381	\$10,692	\$50,437
Reimbursements from Lyon County	\$7,370	\$9,900	\$9,900	\$9,900	\$9,900	\$9,900	\$49,500
Other Revenue	\$500	\$7,500	\$19,000	\$23,000	\$27,000	\$35,000	\$111,500
Other Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Program Revenues	\$85,901	\$89,650	\$93,435	\$95,174	\$99,522	\$97,881	\$475,662
Net Budget	(\$778)	\$21	\$1,117	\$86	\$1,582	(\$2,997)	(\$191)

CHAPTER 2. BACKGROUND INFORMATION:

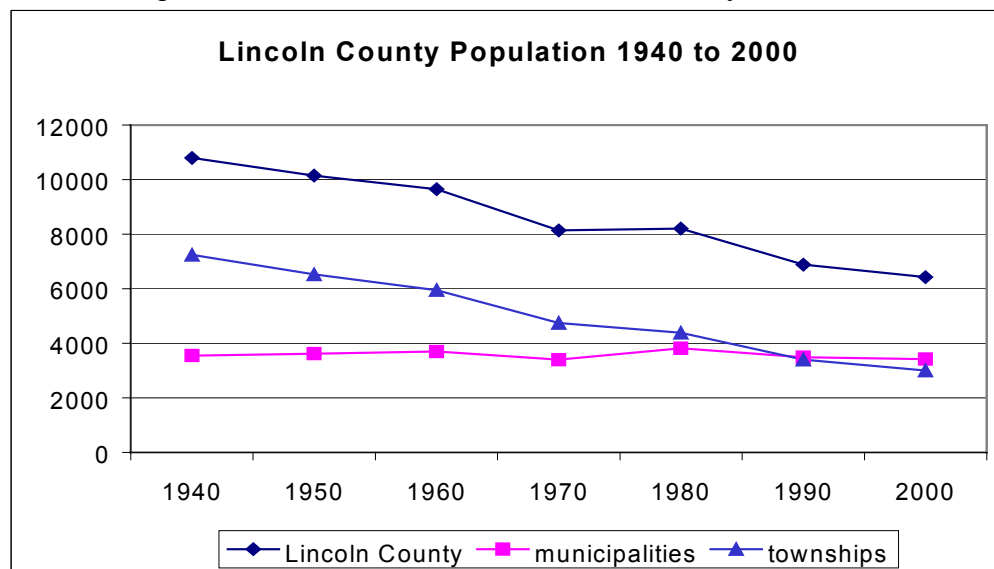
2.1 Demographic information:

Lincoln County is a highly rural county located in southwest Minnesota. As such, its demographic patterns are consistent with rural counties, if not more extreme, than throughout the state. It has been characterized by a declining and aging population for most of the last one-half century. During the 1980s the county realized a dramatic loss of population.

2.1.1 Current Population Distribution. The 2000 Census identified a 53% and 47% municipal / township population distribution of the 6,429 residents of Lincoln County. Traditionally the rural population has primarily consisted of farm families and a few acreages--which are often former farmsteads. There are also two unincorporated communities in the rural portion of the County. However, Lincoln County possesses a number of lakes, which are beginning to support more intensive residential development outside of incorporated municipalities.

The County population in 1990 was nearly evenly distributed between incorporated municipalities and unincorporated areas, the 2000 Census identifies a greater number of the County's population residing in the communities than in the townships. This distribution represents a significant shift from mid-century when persons living outside of incorporated municipalities dominated the population. (Figure 2-1)

Figure 2-1. Population Distribution Trends: Lincoln County 1940-2000



Source: US Department of Commerce, Census data 1940, 1950, 1960, 1970, 1980, 1990, 2000.

There are five incorporated municipalities in the County. Of these Tyler is the largest, with a population of 1,218 persons. The remaining Cities have population of 100 to 725 persons. There are 15 townships ranging from 120 to 300 persons in population.

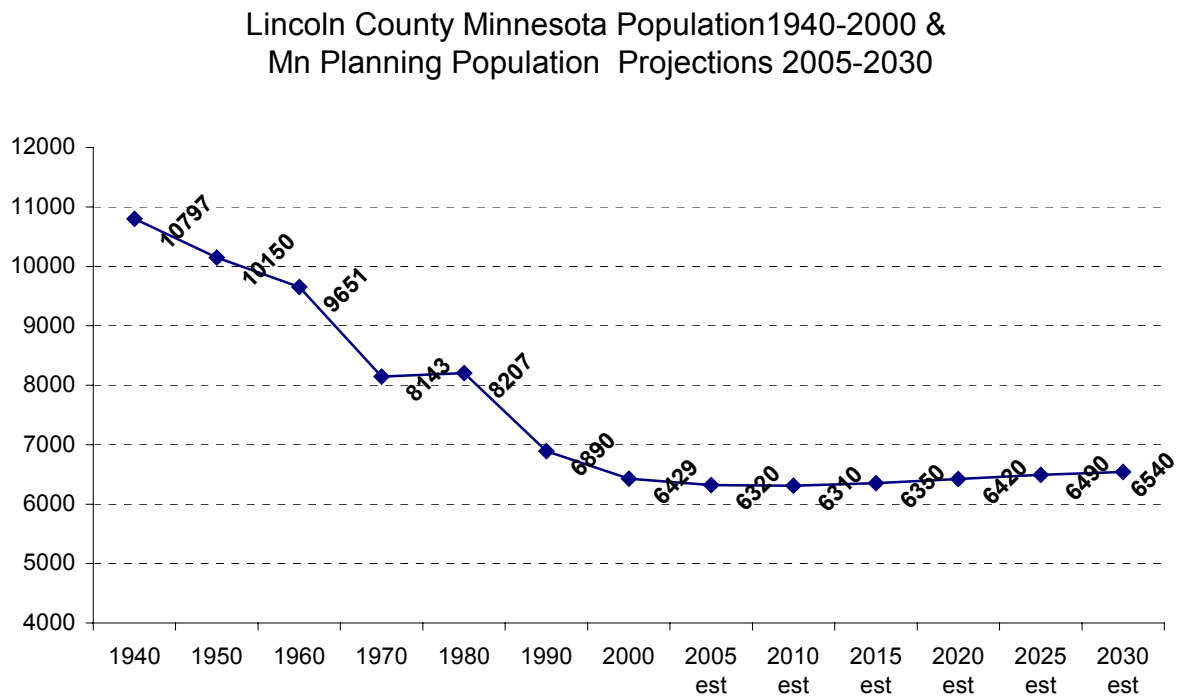
Table 2-1 Population Distribution in Lincoln County, 2000

City	Population	Households
Arco	100	44
Hendricks	725	308
Ivanhoe	679	310
Lake Benton	703	334
Tyler	1218	532
Total Municipal	3425	1528
Township Population	3004	1125
Total County	6429	2653

Source: US Department of Commerce US Census 2000

2.1.2 Population Projections

Figure 2-2. Population Trends and Projections: Lincoln County 1940-2030.



Source: Minnesota Population Projections 2000-2030, Minnesota Planning Oct 2002, Department of Commerce US Census data 1940-2000

Population in Lincoln County has been declining for approximately the last one-half century. The Minnesota Office of Demographer has projected that Lincoln County will continue to lose population through the year 2010, and then will be relatively stable with a slight increase. By the year 2013, the population is projected to be 6330. It is reasonable to assume that the trend of population decline will slowly stabilize and hold relatively constant over the next decade. Lincoln County's total population is expected to decline from 6,429 persons in 2000 to 6,350 persons by 2015. Figure 2-2 outlines the

population trends as predicted by Minnesota Planning Office of the Demographer in their report issued October 2002. The population projection used in this plan was determined by using the population projections provided by the Minnesota Office of the Demographer. It must be noted that in small populations unforeseen events (such as a plant opening or closing) can invalidate the best projections.

2.1.3 Land Use

Lincoln County is roughly 537 square miles in area. Table 2-2 breaks out the County's land use. Cultivated farmland is the predominant land use in the county accounting for about 80% of the county, by the most recent land use survey. Since that time (1989) additional acres of land have been shifted from crop production to grasslands through the federal Conservation Reserve Program (CRP). Minnesota Agricultural Statistics indicate that about 200,000 acres were cropped in 1995 and the 1997 Census of Agriculture identified 269,646 acres of land in farms. In 2002, 3700 acres were enrolled in CRP, and CREP, a new program has 2,238 acres enrolled. In addition, there are still significant amounts of pastureland in Lincoln County, as the prominent glacial moraines in the County are unsuitable for tillage. It appears as if several thousand acres are still being utilized for pasturing beef cattle. Much open land in the county also is utilized for conservation purposes. The Minnesota Department of Natural Resources and the Nature Conservancy own approximately 8,000 acres of land in the county for the benefit of wildlife and biological resource conservation. While CRP enrollments are likely to be reduced, conservation agencies--particularly the US Fish and Wildlife Service--are pursuing greater protection of the native prairie resources in Lincoln County.

The remaining land use categories account for a very small portion of the total county land area. Waters and wetlands amount to approximately three percent of the county's area. Urban land use, and associated land uses account for approximately one percent of the county's land area.

There are some anticipated land use changes in Lincoln County. The County is host to the largest concentration of windpower development in North America outside of California. Upwards of 15,000 acres of land has been designated for inclusion in wind farms; currently there are 287 wind turbines in Lincoln County with the capacity to generate approximately 250 MW of power. While less land is in CRP areas, the difference is made up in land enrolled in the CREP program. The anticipated changes of land use in Lincoln County will likely increase economic activity within the County to some extent. However, these land use changes will not likely contribute to significant waste streams.

Table 2-2 Land Use in Lincoln County, 1989

Land Use Type	Area(Acres)	Percent
Urban and Industrial	1,379	0.39%
Farmstead and Rural residents	4,276	1.21%
Rural Residential Development Complexes	76	0.02%
Other Rural Developments	513	0.15%
Cultivated Land	279,532	79.59%
Transitional or Idle Cultivated Land	619	0.18%
Open Shrub Grassland	45,643	12.00%
Closed Shrub Grassland (deciduous)	244	0.07%
Deciduous Forest	7,662	2.18%
Water	8,754	2.50%
Wetlands	2,370	0.67%
Gravel or Sand Pits and Open Mines	156	0.04%
Exposed Soil, Sandbars, and Sand Dunes	8	0.002%
Total	351,232	100%

Source: Board of Soil and Water Resources, 1989

2.1.4 Employment

Agriculture is the most important base industry in Lincoln County. The 1997 Census of Agriculture identified 806 farm operators in the County, 482 with farming as their principal occupation and an additional 324 who also work off the farm. Two data sources were used to provide a clearer picture of the employment in Lincoln County. Table 2-3 identifies “Covered Employment” from the Minnesota Department of Economic Security, but does not include self-employment; and Table 2-4 is 1999 Employment and Industry Output Data provided by the Economic Data Center at St. Cloud State University.

Table 2-3 Covered Employment in Lincoln County

	1990	1991	1992	1993	1994	1995	2000
Agriculture, Forestry & Fishing	34	36	32	31	25	24	64
Mining	0	0	0	0	0	0	0
Construction	38	34	41	38	44	45	57
Manufacturing	33	35	32	33	34	41	32
Transportation & Public Utilities	46	52	55	56	69	89	144
Trade	406	411	384	402	409	389	414
Finance/Insurance/Real Estate	52	48	56	56	60	57	56
Services	483	505	514	543	577	580	618
Government	390	390	384	384	371	363	385
Total	1482	1511	1498	1543	1589	1588	1771

Source: Minnesota Department of Economic Security: Average Covered Employment and Wages

In 1999, 900 Lincoln County residents were employed in farming; the 2000 “covered employment” data identified 64 residents. By combining the 2000 data with the 1997

Census of Agriculture data of active operators employment in farming is 870. According to the 1999 data, farming accounted for 25.5% of employment, and was the largest employment sector in the County. Comparatively, Farm employment for Region 8 was 13.1% and the state 3.1%. The next largest categories of employment in the County were Health Services at 15.7% and Retail Trade 12.4%, and construction 7.5%. A regional comparison shows 7.0% in Health Services, 15.1% in Retail Trade, and 6.0% in Construction.

Another unique SIC category for Lincoln County is utilities. Employment figures for the County indicate that 1.5% (53 jobs) employment in this sector; the regionwide the employed in this sector is 0.3% (213 jobs). A quarter of the employment for this sector in the region is in Lincoln County and is a direct result of the development of wind power on the Buffalo Ridge. The four highest Regional employment sectors are: Retail Trade at 15.1%, Food Processing at 7.9% (Lincoln County has 0.0%), Farming at 13.% and Health Services at 7%.

Principal sources of employment in Lincoln County, outside of agriculture, are the services and trade industries. These two categories account for approximately fifty-eight percent of the wage paying jobs in Lincoln County in 2000, government employment is also a major source of jobs in Lincoln County. These types of employment are usually considered “residential” as they do not determine the size of the local economy, but instead are determined by the number of “base industry” jobs. The Transportation and Utilities category indicated an increase of 213% from 1990 to 2000, which is supported by the 1999 employment data.

In 1990, net out commuting from the County was about 340 persons. In 2000, the Census data identified commute time to work, using the assumption that if you travel 30 minutes or more to get to work, there were 420 workers commuting to another county (or out of state) to work.

The average annual unemployment from 1990 through 1994 was at a lower rate than for Minnesota (Table 2-5). From 1995 through 2000, the unemployment rate was higher than the state average, and in 2001, it was the same at 3.7%. The monthly unemployment rates begin high in January and then decline through the year, until December when it normally rises again. This is likely attributable to seasonal cycles in agricultural and related industries.

Table 2-4. 1999 Lincoln County Employment and Industrial Output

LINCOLN COUNTY INDUSTRY	* Ind Output	Emp	% emp	% Ind Output	LINCOLN COUNTY INDUSTRY	* Ind Output	Emp	% emp	% Ind Output
Farms	72.631	900	25.5%	32.3%	Pipe Lines- Except Natural Gas	0.000	0	0.0%	0.0%
Forestry Products	0.103	2	0.1%	0.0%	Transportation Services	0.284	4	0.1%	0.1%
Commercial Fishing	0.000	0	0.0%	0.0%	Communications	0.776	5	0.1%	0.3%
Ag Services	2.116	68	1.9%	0.9%	Utilities	15.235	53	1.5%	6.8%
Metal mining	0.000	0	0.0%	0.0%	Wholesale Trade	8.364	127	3.6%	3.7%
Coal Mining	0.000	0	0.0%	0.0%	Retail Trade	10.405	437	12.4%	4.6%
Oil mining	0.000	0	0.0%	0.0%	Banking	6.285	41	1.2%	2.8%
Non-metal mining	0.000	0	0.0%	0.0%	Credit Agencies	0.103	3	0.1%	0.0%
Construction	25.200	266	7.5%	11.2%	Security and Commodity Brokers	0.199	2	0.1%	0.1%
Food processing	0.000	0	0.0%	0.0%	Insurance Carriers	0.439	10	0.3%	0.2%
Tobacco mfg	0.000	0	0.0%	0.0%	Insurance Agents and Brokers	0.173	7	0.2%	0.1%
Textiles	0.000	0	0.0%	0.0%	Real estate	9.108	65	1.8%	4.1%
Apparel	0.000	0	0.0%	0.0%	Hotels and Lodging Places	0.021	1	0.0%	0.0%
Wood products	0.000	0	0.0%	0.0%	Personal services	0.171	7	0.2%	0.1%
Furniture	0.000	0	0.0%	0.0%	Business services	1.699	25	0.7%	0.8%
Pulp and paper	0.000	0	0.0%	0.0%	Automotive services	0.302	4	0.1%	0.1%
Printing and publishing	0.958	19	0.5%	0.4%	Repair services	1.092	23	0.6%	0.5%
Chemicals and allied	0.000	0	0.0%	0.0%	Motion Pictures	0.000	0	0.0%	0.0%
Petroleum products	0.000	0	0.0%	0.0%	Recreation services	0.393	18	0.5%	0.2%
Rubber products	0.000	0	0.0%	0.0%	Health services	26.019	554	15.7%	11.6%
Leather products	0.000	0	0.0%	0.0%	Legal Services	0.392	8	0.2%	0.2%
Stone, glass and clay	1.808	15	0.4%	0.8%	Education services	0.000	0	0.0%	0.0%
Primary metals	0.000	0	0.0%	0.0%	Social services	2.734	88	2.5%	1.2%
Fabricated metal	0.000	0	0.0%	0.0%	Non-profit organizations	8.853	84	2.4%	3.9%
Industrial machinery	0.815	7	0.2%	0.4%	Professional services	3.360	190	5.4%	1.5%
Electrical equipment	1.668	12	0.3%	0.7%	State & local non-ed government	7.473	180	5.1%	3.3%
Transportation equipment	0.000	0	0.0%	0.0%	Federal non-military	1.832	30	0.9%	0.8%
Scientific instruments	0.000	0	0.0%	0.0%	Special sectors	(0.083)	0	0.0%	0.0%
Miscellaneous mfg	0.000	0	0.0%	0.0%	Federal Government - Military	0.711	26	0.7%	0.3%
Railroads & Related Services	0.000	0	0.0%	0.0%	State & Local Government - Education	5.370	152	4.3%	2.4%
Local- Interurban Passenger Transit	0.649	21	0.6%	0.3%	Domestic Services	0.013	1	0.0%	0.0%
Motor Freight Transport & Warehousing	6.920	70	2.0%	3.1%	Totals	224.592	3,524		
Water Transportation	0.000	0	0.0%	0.0%					
Air Transportation	0.000	0	0.0%	0.0%					

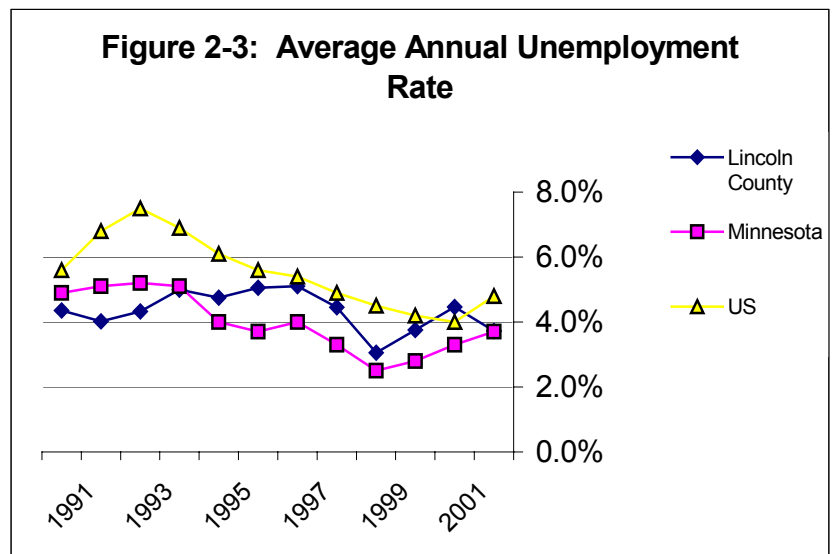
- Industry Output in Millions of Dollars

Source: MN Economic Development Center, St Cloud State University 1999 data

Table 2-5. Annual Average Unemployment Rate, Lincoln County and Minnesota

	County	Minnesota
2001	3.7%	3.7%
2000	4.5%	3.3%
1999	3.8%	2.8%
1998	3.1%	2.5%
1997	4.4%	3.3%
1996	5.1%	4.0%
1995	5.1%	3.7%
1994	4.8%	4.0%
1993	5.0%	5.1%
1992	4.3%	5.2%
1991	4.0%	5.1%
1990	4.4%	4.9%

Source: Minnesota Work Force Council



2.1.5 Local Economic Conditions

Lincoln County's economic base is agriculture. This industry has been stable for most of the 1990s. Though there have been some significant disasters in the county reducing production in specific years. These include the floods of 1993, a major hailstorm in 1997, and windstorms in 2001 and 2002. While insurance payments or disaster assistance may offset the impact on the farmers, reduced consumption of inputs creates hardship for suppliers to the industry. Agriculture did face very difficult challenges during the "farm crisis" of the 1980s. During that time farm consolidation accelerated. In addition, the 1985 federal Farm Bill created the Conservation Reserve Program and in 1998, the Minnesota Conservation Reserve Enhancement Program (CREP) became available. These programs are intended to set aside highly erodible and sensitive lands from agricultural production. Nearly 60,000 acres of land in Lincoln County were enrolled in the programs. In many cases, CRP was a convenient means of gaining economic return for absentee landowners. This contributed to a significant reduction of total economic activity in Lincoln County.

Lincoln County's small size and its location between Marshall, Pipestone and Brookings, South Dakota, make the county's economic situation precarious. Many residents seek goods and services outside the county to access lower costs and wider selection in larger nearby communities. As trade and services provide a majority of the wage jobs in the county, increased consumer purchasing of goods and services in larger trade centers imperil the county's employment base.

Table 2-4 also identifies all industry outputs to the County in 1999. Table 2-6 details the top 4 industry outputs for both Lincoln County and Region 8 in 1999. Farming provides

32% of the County's inputs, whereas the farming inputs Region 8 is significantly lower at almost 17%. The largest industry input in Region 8 is food processing at 24.6% - Lincoln County is zero percent.

Table 2-6. Top Five Industry Outputs by Percent of Output for Lincoln County & Region 8.

SIC Sector*	Lincoln County	Ranked #	Region 8	Ranked #
Farms	32.2%	1	16.7%	2
Health Services	11.6%	2	3.5%	8
Construction	11.2%	3	7.1%	3
Utilities	6.8%	4	1.0%	17
Retail	4.6%	5	5.2%	5
Food Processing	0.0%	38**	24.6%	1
Industrial Machinery	0.4%	22	5.4%	4
% of Industry Output for top 5	66.4%	1 thru 5	59.0%	1 thru 5

* There are 65 SIC Sector Categories

** In Lincoln County, there were 32 SIC Sectors that tied for #38 at zero employment

Positive economic factors in Lincoln County include major investment in windpower development. This development has created skilled positions in the County. More significantly, the development will return property tax revenue to local units of government. These revenues will improve the economic competitiveness of businesses located in the County through improved governmental services and substantially reduced property taxes. Further there are some areas of high environmental amenities in Lincoln County. These areas may attract workers employed in nearby employment centers such as Pipestone, Marshall, or Brookings, South Dakota. They will in turn spend earnings within Lincoln County supporting local government, trade and services industries.

The 2002 Farm Bill will have significant long term impacts on the County's economy. However, it is not clear yet whether these impacts will be positive or negative. Agricultural production should become more dynamic and market oriented. Entrepreneurial farmers will have greater opportunity to thrive. Agriculture as a whole has some protection in the new farm program, which provides some protection from market volatility. It can be anticipated, based on past trends that farm consolidation will continue, thus reducing the demand for local goods and services. Cropped land will provide a greater return to local communities than CRP enrollment because of the increased purchase of inputs for farming. Also hog production is on the rise in Lincoln County. The increasing number of hog confinements may generate new sources of revenue and expenditures in the local economy.

2.1.6 Median Household Income

Lincoln County is characterized by the relatively low income of its residents. This is demonstrated by the median income in the county. Median income in Lincoln County ranked 70th out of 87 counties in Minnesota in 1989, and 82nd in 1999. Median income in Lincoln County was lower than in any other county in southwest Minnesota as well.

Table 2-7 1990 and 2000 Median Household Income:

Area	1990	2000
Lincoln County	\$19,211	31,607
Region 8	\$22,486	NA
Minnesota	\$30,909	47,111

Source: 1990 and 2000 U.S. Census

2.2 Solid Waste Collection And Generation Information

2.2.1 Estimate of the Amount of Solid Waste Generated Annually

It is documented that 2,143 tons per year of municipal solid waste is delivered to the Lyon County Landfill from Lincoln County in 2001, and 2205 tons were delivered in 2002. This includes both the waste that is collected by Ritter's Sanitation, the City of Tyler and the waste collected at the County Transfer Station. Approximately 129 tons per year is collected at the transfer station. On-site disposal is estimated through Office of Environmental Assistance formulas to be 923 tons per year, approximately twenty-four percent of the County's total waste generation.

An estimate of waste generated in the County has been completed through the use of the OEA spreadsheet: Goal Volume (Goal-Volume Table), included as Appendix A.

Table 2-8: Waste Generated in Lincoln County, 2001

Material Managed	Tons
Tons MSW to landfill	2143
Tons Recycled (Residential/Commercial and Problem Materials)	608
Problem materials not recycled	156
On-Site Disposal	923
Total Waste Generated	3,830

2.2.2 Estimate of percentage of city and rural residents with solid waste collection service.

It is estimated that 100 percent of households within incorporated municipalities have solid waste collection. The 2001 estimates from Minnesota Planning are 1,531 households, with a population of 3,413. These 2001 population estimates were used by OEA to generate a revised Goal Volume Table for Lincoln County.

The private hauler servicing Lincoln County has estimated that there are approximately 60 households in rural Lincoln County with regular collection service, also there are approximately an additional 20 households with rural dumpsters which are emptied as they are filled (approximately four times per year). Of the estimated 1,137 rural households (based on 2001 estimates) it appears as if about 7% have waste collection services.

Many residents also haul waste to a disposal site on their own. Most haul to the Lincoln County Transfer station located near Ivanhoe. Detailed records are not available for the transfer station, but it is assumed that 75% of the waste delivered to the transfer station is generated by residents without collection service. The site typically empties a compacted 30 cubic yard roll-off box 30 times per year. This is a total of 129 tons per year delivered to the Lyon County Facility.

2.2.3 Estimate of On-Site Disposal

Because of the rural nature of Lincoln County a relatively large portion of the waste generated within the county is disposed of on-site. Minnesota Statute 17.135 provides that farms and farm operators can dispose of waste on site. This is accomplished through burning combustible wastes, and then burying the ash and non-combustibles on the property or simply burying the waste on site. Some residents may burn a portion of the waste to recover energy in wood stoves or fireplaces.

On-site disposal is estimated by assuming that residents generate 2.3 pounds MSW per person per day (after recycling). The population without collection is estimated to be 93% of the county's population living outside of incorporated areas. Thus, calculated waste generation by households without collection is 1,065 tons per year. However, as noted above approximately 129 tons were self-hauled to the Lincoln County transfer station rather than being disposed of on-site. Estimated on site disposal is 936 tons in 2001. Approximately 24% of Lincoln County's waste stream is disposed of on-site by rural residents.

2.2.4 Solid Waste Collection and Disposal Rates

Waste collection services are provided by Ritter's Sanitation, throughout the county, except in the City of Tyler. The City of Tyler collects waste from residential households and commercial establishments. No significant change is foreseen in the waste collection system in Lincoln County. Ritter's Sanitation provides collection services to residential customers in the remaining four cities under contract with the Cities.

Table 2-9 Residential Rates:

City	Base Rate	Pick-up
Arco	\$12.00+\$1.17 tax = \$13.17 per month*	Once per week 60 gallon

Ivanhoe	\$12.37+\$1.21 tax = \$13.58 per month*	Once per week 60 gallon
Hendricks	\$10.75+\$1.05 tax = \$11.80 per month*	Once per week 60 gallon; \$1.25 for extra bag
Lake Benton	\$11.30 + \$1.05 tax = \$12.35 per month*	Once per week 60 gallon
Tyler	Tier I \$10.00 per month Tier II \$13.00 per month Tier III \$15.00 per month	Once per week, 32 gallon container not more than 50 pounds; extra garbage strip is \$1.50 per container.

Commercial rates vary depending upon a number of factors. Commercial waste collection services in the City of Tyler are included in Appendix B. The cost of private commercial waste collection service in Lincoln County is not generally available. Representatives of the firm have indicated that the rates are generally volume based. In addition, additional consideration is given in bidding services based on the characteristics of the individual business's waste stream.

2.2.5 Financial Incentives for Solid Waste Abatement

Waste disposal fees are charged on a volume basis in Lincoln County. This provides the principal financial incentive for waste abatement. If Lincoln County residents utilize a minimum level of service, they must pay on an incremental basis for waste disposal services. Commercial waste generators and self-haulers pay for waste collection services on a marginal cost basis as well.

In contrast, residents are not faced with a marginal cost for recycling. The County through the funding assistance of the SCORE funds pays for residential recycling. As there is no marginal cost for recycling, as there is with disposal, there are inherent economic incentives for residents of Lincoln County to recycle to the extent possible rather than indiscriminately relying on disposal. Other County abatement programs are also offered to residents at no marginal cost. Household hazardous waste collections, yard waste composting facilities, and fluorescent tube recycling collections are offered at no fee. Appliance disposal is offered at the County's disposal cost. There is no fee for County expenses such as site and handling. Thus, economic incentives for properly managing problem materials in an environmentally sound manner are also in place.

As with other rural counties, Lincoln must be sure that price signals are not structured to encourage illegal dumping or indiscriminate on site disposal.

2.2.6 Waste Composition

Lincoln County has not conducted a waste characterization study to determine precisely the type and quantity of wastes generated. However, in 1999 a waste composition study was conducted by R.W. Beck & Associates at the Prairieland Composting Facility in

Truman, MN using Martin and Faribault County waste. A waste sort was completed on materials received on the tipping floor at the facility and subsequently SCORE data was added to the figures by OEA staff to reflect the total waste generated within those counties during the study period. The Table 2-10 is the result of this combination of SCORE and the waste characterization data:

TABLE 2-10 1999 Waste Composition Study Results

Material	Average %
Newsprint (1)	4.82%
Office paper (2, computer paper)	4.22%
Magazines/Catalogs (3)	2.20%
Corrugated/Kraft Paper (4)	15.32%
Other (phone books, mixed paper other paper, 5, 6, 7, 8, 9)	14.52%
Aluminum Food/Beverage (21)	0.72%
Steel/tin cans (23)	3.09%
Other Aluminum (Commingled aluminum/steel/tin, 22)	3.69%
Other Scrap: ferrous & non-ferrous (other Ferrous, 24, 25)	5.72%
Food & beverage container (26, 27,28)	3.45%
Other Glass (29)	0.18%
PET (SPI code 1) (10, 11, 12)	0.60%
HDPE (SPI Code 2) (13, 14)	0.30%
Other Plastics (mixed plastics, other, 15, 19, 20)	2.98%
Polystyrene (SPI Code 6) (16)	0.72%
Film Plastics (17, 18)	2.69%
Small Yard Waste (30)	0.42%
Large Yard Waste (31)	0.12%
Food Waste (32, food waste)	12.25%
Wood Waste (33, 34, 35, 57)	2.52%
Diapers (36)	2.04%
Other Organic Waste (37)	1.26%
Tires (55, waste tires)	1.79%
Textiles (52, 53, carpet)	2.17%
Major Appliances (43, florescent lights)	1.24%
Small Electric Appliances (38, 39, 40, 41, 42, electronic appliances)	2.67%
Hazardous Waste/Oil Filters/used oil '(44, 45,46, 47, 48,49, 50, 51, 58, antifreeze, HHW)	1.88%
Other Inorganic Waste (59, unspecified/other)	13.94%
Demolition/ Construction Debris (56)	2.22%
Total:	100%

Source: RW Beck Solid Waste Composition Study and 1999 SCORE data.

Table 2-10 is taken from the R.W. Beck Solid Waste Composition Study and OEA SCORE figures for Martin and Faribault Counties for 1999 and is assumed to be representative of Lincoln County and other non-metropolitan Minnesota counties. The table shows the average percentage breakdown of each material category (by weight) and details the types of materials included in each category.

Table 2-11 shows the breakdown, by type, of Lincoln County's overall waste stream characteristics for the year 2001. The breakdown is based on the year 2001 tonnages and GVT estimates.

Table 2-11 2001 Waste Stream breakdown based on the 2001 Goal Volume Table

2001 GVT	percent of waste	tons
Residential and Commercial Recycle	12%	453
Problem Material recycled	4%	155
Problem Material not recycled	4%	156
On site disposal	24%	923
To Lyon Co	56%	2143
		3830

2.2.7 Estimate Percentage of Solid Waste from Residential Commercial/Industrial and Generators

There are no industrial sources of waste generation in Lincoln County. Public records are not maintained regarding the portion of the MSW disposed which is residential or commercial. Based on the insight of waste haulers operating in the county, it would appear that approximately thirty to thirty-five percent of solid waste is generated by commercial establishments.

2.2.8 Estimate the Quantity of Demolition Debris Generated

The County does have a separate roll-off box for demolition debris only, which is hauled to the Lyon County Landfill and then transferred to the Rock County Demolition Landfill. The volume of demolition debris hauled from the Lincoln County Transfer facility is 80 tons. There have been 2 permit by rule demolition fills in Lincoln County during 2001. There is limited documentation on the volume of demolition debris generated in Lincoln County. It is estimated that 1,000 tons per year of demolition waste from Lincoln County is delivered to the Lyon County facility. Lyon County tracks about 80% of the demolition debris coming from Lincoln County (800 to 900 ton); it is estimated 100 to 200 tons are untracked.

2.2.9 Major Solid Waste Generators

Information provided by waste haulers indicate that the waste streams of these generators is primarily mixed municipal solid waste. There does not appear to be significant deviation from the general waste composition within the County.

Table 2-12 Major Waste Generators

Name	Type of Waste	Estimated Volume
Lincoln County Courthouse	MSW	250 cubic yards per year
Lincoln County Parks	MSW	200 cubic yards per year
Tyler School	MSW	540 cubic yards per year

Ivanhoe School	MSW	312 cubic yards per year
Hendricks School	MSW	312 cubic yards per year
Lake Benton School	MSW	312 cubic yards per year

2.3 Planning History

2.3.1 Current Local and Regional Planning Activities

The Lincoln County Solid Waste Plan was last updated in 1997 with the completion of the Regional Review of Alternatives and the initiation of the development of the County Comprehensive Plan process. The County approved this update on December 19, 1997, and by the State on February 4, 1998. The County Comprehensive Land Use Plan was adopted on June 6, 2000. Related ordinances were developed for Countywide Zoning and adopted in 2001.

In 1990, the Lincoln County Solid Waste Plan was updated in 1990 through the completion of the SCORE Amendment. The Amendment was approved by the State on February 25, 1991. In May of 1995, the Office of Environmental Assistance notified Lincoln County that a Strategy to achieve a 30% recycling rate (without yard waste included) was due by July 14, 1995. Further, the Lincoln County Solid Waste Plan Update was due by February 25, 1996. The planning process was intended to be completed in conjunction with a countywide integrated planning process which focused on sustainability. Delays in project funding required the solid waste plan to be initiated prior to the other County Planning activities. The last County Solid Waste Management Plan was incorporated into the County Comprehensive Plan, which coordinated County planning processes, including economic development, housing, land use, and mandatory water planning.

The Lincoln County Sustainable Development Planning process was intended to enhance the standard of living and quality of life of Lincoln County residents. The goals of the sustainable development program were to promote economic development, ensure protection of the environment, and provide for the overall needs of the County's communities. Solid waste management planning had a significant role in ensuring sustainable development in Lincoln County. Improved solid waste management clearly leads to the conservation of natural resources, and protection of the region's ground water resources. Solid waste planning will help ensure that the solid waste management system is also efficient and effective.

The significant regional planning activity that has been completed in Southwest Minnesota has been the Regional Review of Solid Waste Management Alternatives and its subsequent update. The initial planning process was completed under the auspices of the Southwest Regional Solid Waste Commission; Lyon County Environmental Office completed the update with some assistance from the Southwest Regional Development Commission. Lincoln County is an active member of the Solid Waste Commission and as such was involved in the development of the regional assessment of waste-to-energy, MSW composting and co-composting, as well as landfilling. Based on the information

and analysis compiled in the Regional Review of Solid Waste Management Alternatives, the Southwest Regional Solid Waste Commission determined that the most prudent and feasible waste disposal practice remains landfilling, but will continue to remain open to alternatives such as the potential Lamberton Waste To Energy Facility. Lincoln County has concurred with the conclusions of the Solid Waste Commission and incorporated the Regional Review of Solid Waste Management Alternatives into this plan as Chapter 3. The regional analysis will supplant the individual alternatives review required of Lincoln County.

Lincoln County continues to be a member of the Southwest Regional Solid Waste Commission. This joint powers board is the vehicle for coordinating solid waste management, conducting regional planning activities, and developing public policies for waste management.

Lincoln County is represented on the Lyon County Regional Landfill Advisory Board. This body provides policy guidance on the operation of the Lyon County Landfill and related solid waste management programs. However, final authority does remain with Lyon County in the management of the facility. Further, Lincoln County is represented by one County Commissioner and the Solid Waste Administrator on the Lyon County Solid Waste Advisory Committee. This representation stems from Lincoln County's early relationship with Lyon County in solid waste management. Since it closed its own landfill in 1984, Lincoln County has been utilizing the Lyon County Landfill. This relationship pre-dates the establishment of the Lyon County Landfill as a regional facility.

The Lincoln County Solid Waste Committee has been dissolved since the development of the first County Solid Waste Plan in 1990.

2.3.2 Past Impediments to Development of Regional Projects

Counties in Southwest Minnesota actively cooperate and coordinate in waste management. Regional project implementation has been successful where appropriate. Lincoln County participates in the regional landfill operated by Lyon County. It also participates in a 10 county household hazardous waste management program that incorporates a permanent collection center in Marshall with satellite 90-day household hazardous waste collection facilities located in the other counties. Lincoln County has constructed one of the 90-day HHW collection site. The County also continues to hold eight collection events on an annual basis. The Southwest Regional Solid Waste Commission is a 12 county joint powers board and is the institutional vehicle for collaboration and developing regional projects. Chapter Three of this Document, the review of alternatives, was completed under the auspices of the Southwest Regional Solid Waste Commission.

Regional resource recovery projects are not being pursued, as they are neither feasible nor prudent at this time. Primary barriers to implement such projects are numerous but include:

- Adequate existing landfill capacity to potentially serve the region for 20 years
- The high capital and operating costs of developing new facilities
- The limited ability to ensure that waste is delivered to waste management facilities
- The limited environmental improvement, which would be realized by developing a new resource recovery facility.

In 1990, one specific regional resource recovery facility has been proposed and rejected (Lyon County proposed a regional Waste-to-Energy facility). This project did not proceed beyond the proposal stage. The primary obstacle to developing the facility was strong public objections, based on perceived environmental threats.

In 2002, Redwood County initiated interest in the feasibility of a regional waste to energy facility. A feasibility study is currently being conducted. Lincoln County has passed a resolution that they support the concept. The Southwest Regional Solid Waste Commission has also supported the concept. In addition, Lincoln County, the Southwest Regional Solid Waste Commission and the Rural Minnesota Energy Task Force, and neighboring counties have passed Resolutions to change Minnesota State Statute Section 216B.2422 to include the following: an energy recovery facility used to capture the heat value of solid waste or RDF. Recently adopted Federal air emission standards represent the strongest and most effective actions ever taken to control emissions from waste combustion, signifying waste combustion as a very clean source of renewable energy, and by designating a waste-to-energy facility as a renewable energy source, lower costs for implementing solid waste management may be realized by local units of government.

2.2.3 Resolution of Conflicting, Duplicative, or Overlapping Local Solid Waste Management Efforts

Regional Coordination minimizes conflict and duplication. The Southwest Regional Solid Waste Commission and its ancillary Region 8 Solid Waste Administrators Association provide vehicles for cooperation where needed. They also provide on-going forums for conflict resolution and inter-county dialogue. The formation of the eleven county Rural Minnesota Energy Task for may also have a future role in relation to Solid Waste and Energy issues.

CHAPTER 3. ASSESSMENT OF ALTERNATIVES TO A LANDFILL-BASED SYSTEM

Lincoln County is a member of the Southwest Regional Solid Waste Commission. The SRSWC completed this section of the County Solid Waste Plan on a regional basis for its twelve member counties. The Regional Review of Solid Waste Management Alternatives document was approved by the Southwest Regional Solid Waste Commission and is Chapter 3 of the Lincoln County Solid Waste Management Plan.

CHAPTER 4. SOLID WASTE SYSTEM EVALUATION AND FIVE YEAR IMPLEMENTATION PLAN

Introduction

Since approval of the County's current Solid Waste Management Plan in 1997, the County has worked hard to implement its source reduction, recycling and yard waste programs. In 1996, the County had achieved a 21 percent recycling rate and by 2001, the recycling rate has increased to 24 percent. The State's goal is 35 percent by December 31, 1996. Despite its efforts the county has been unable to achieve the 35 percent goal.

The "Regional Waste Management Capacity" report, published by the OEA in 1993, identified a number of factors that impact the ability of counties to achieve the 35 percent recycling goal. Those factors were: 1) manufacturing activity, 2) waste generation per capita, 3) curbside collection, and 4) clustering of population. Lincoln County believes that because there is no significant manufacturing in the county it will be difficult for the county to achieve the 35 percent recycling rate. However, it is the intention of the County to continue its efforts in achieving the 35 percent goal. The following is a description of the existing programs and the new programs and initiatives that the County intends to implement over the next 5 to 10 year planning periods.

The County has in the past emphasized three areas: 1) source reduction, 2) recycling, and 3) yard waste composting. While these areas will continue to be emphasized, the County will work toward identification and documentation of recycling, reuse, and waste reduction activities in the County. The goal of the programs described below are to receive the 3 percent waste reduction credit, the 5 percent yard waste credit, and to increase the number of tons of recyclables to a level that will achieve the 35 percent recycling goal by the year 2007.

4.1 Source Reduction

4.1.1 General Goals and Policies. It is the County's goal to reduce solid waste generated within the county on a per capita basis.

To achieve this goal the county adopts the following policies:

1. To educate local residents and business managers on the means and benefits of source reduction of solid waste.
2. To set an example for local residents and businesses through implementing waste reduction activities at County facilities.
3. To maintain economic incentives to avoid the generation of waste.

4.1.2 Existing Solid Waste Reduction Programs. Lincoln County has developed and implemented a number of source reduction activities. These activities are primarily focused on 1) public education and 2) internal source reduction activities.

Educational Activities

1. Lincoln County Environmental Office staff provides technical assistance to businesses and institutions upon request.

2. Lincoln County Environmental Office staff conducts outreach to county business through the personal contact, and distribution of printed material.
3. Lincoln County staff promotes environmentally responsible consumer shopping, including purchasing in bulk, minimized packaging, and purchasing of environmentally sound products. Promotion is completed through periodic press articles, public service announcements, advertisements, and a staff presence at public events such as the Lincoln County Fair. Presentations are also made to schools and community organizations periodically.
4. Household hazardous waste has been specifically targeted for source reduction education. Similar education/outreach vehicles are used as for general source reduction education.
5. Junk Mail Reduction. The County has placed OEA Junk Mail Reduction Postcards in each of the Post Offices, monitors the sites and adds more as needed. A paper-recycling bin has also been placed in each of the Post Offices in the County and is collected as part of the recycling program.

In-House Waste Reduction Activities

Lincoln County Department Heads comprise a source reduction team for the county. Department heads review and discuss source reduction opportunities on an annual basis. In addition, the County Environmental Officer has provided informational materials to county employees regarding the benefits of and means to achieve source reduction within county facilities.

4.1.3 Annual Amount of Solid Waste to Be Reduced. It is Lincoln County's goal to achieve waste reduction and achieve maximum recycling. The estimated waste reduction goal is three percent on an annual basis or 114 tons per year.

4.1.4 Specific Programs the County Proposes to Maintain or Implement During the Next Ten Years. Lincoln County intends to maintain two primary focuses to its waste reduction activities 1) public education (including technical assistance) and 2) in-house waste reduction. It will also continue to promote the financial incentives for waste reduction through volume based disposal costs.

- 1) Lincoln County will seek to utilize appropriate ideas and products contained in the OEA's Waste Reduction Tool Kit.
- 2) Business education materials and outreach will promote the Minnesota Technical Assistance Program Materials Exchange. This program is coordinated regionally by Lyon County. Lincoln County businesses will be referred to either Lyon County or to MnTAP staff. In addition, Lincoln County will promote and refer business to the Minnesota Waste Wise program operated by the Minnesota Chamber of Commerce.
- 3) Lincoln County will participate in the Lyon County Industrial Waste Outreach program. This program is available to all counties within the Southwest Regional Solid Waste Commission. The program will include on-site outreach and technical assistance for businesses. Part of the program information will include waste reduction information and assistance.

- 4) The County will explore the potential for promotion through recognition programs, and publishing of success stories.
- 5) Public schools will be targeted for source reduction activities, as they are large waste generators in the County. Lincoln County contracts with the Prairie Ecology Bus to go to County schools two times per year. Ecology Bus staff work with 3rd, 4th, and 5th grades and teach reduce, reuse and recycle to improve the environment.
- 6) Lincoln County staff also makes presentations on recycling to the County 4-H clubs, Kiwanis and other community groups..

Education

The County will maintain existing programs throughout the planning term. In addition the County will seek to add the following programs.

- 1) Lincoln County has constructed and operates a 90-day HHW facility, located at the Lincoln County Transfer station site. Lincoln County staff operates the facility, and the materials are lab-packed and transferred to the Lyon County Regional Facility.
- 2) The County will continue to hold one-day HHW collections and permit the exchange of usable paint and materials during the exchanges. In addition, the HHW materials exchange facility located at the Lincoln County Transfer site will be promoted and operated by Lincoln County staff.

In-House Source Reduction

The County will continue to conduct and expand the existing source reduction activities occurring at County facilities. An in-depth waste audit will be conducted at each County facility during the early years of the planning period. The audits will include analysis to determine where waste can be abated, including waste reduction, recycling, reduction of toxic or hazardous waste, and proper management of hazardous or problem wastes. Waste audits will include assessment of operational procedures as well as procurement procedures. Operational procedures include practices such as: double sided copying, placement of recycling and MSW receptacles, education/information dissemination programs, and food management in the County jail. Procurement procedures will examine such issues as use of durable products in place of disposable products, bulk purchasing, recycled content purchasing, and centralized versus departmental procurement. In addition, Lincoln County will network with other rural counties, in the region and outside of the region to identify successful programs and procedures.

4.1.5 Responsible Person and Required Staff Time. The County Environmental Officer will be responsible for completing these work elements. Staff time allocated will be .05 FTE (100 hours per year). Trained Environmental Staff will be responsible for completing or these work elements, including the activities at the HHW facility and at the transfer facility.

4.1.6 Estimated 10 Year Budget. See attached consolidated budget form included as Appendix E.

4.1.7 Source of Financing. Source Reduction activities will primarily be financed through the SCORE pass through grant, and also through county general fund revenues.

If SCORE funds are eliminated, the County will assess how programs could be funded, and act in a fiscally responsible manor.

4.1.8 Implementation Schedule

Year	Action Steps
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2003	Business Outreach through Lyon County Industrial Waste Outreach Project. Evaluate and implement materials/paint exchange at County HHW collection events and at the 90 day HHW facility. (On-going there after) Promote and refer of businesses to MnTAP exchange and Minnesota Chamber of Commerce Waste Wise programs. Product Exchange On going activities
2004	Waste Audit County Court House Waste Audit Minnesota Extension Offices Review and revise business outreach materials Meet with schools as waste generators for source reduction promotion/recognition On going activities
2005	Waste Audit County Highway Shop, Ivanhoe. Waste Audit County Parks Systems Target retail establishments for source reduction promotion/recognition. On going activities
2006	Target restaurants for source reduction promotion/recognition On going activities
2007	On going activities
2008-2012	On going activities

A number of activities will be ongoing through the planning period. These include:

- General information dissemination through, presentations, newspaper, radio, and community events
- Technical assistance to business
- County department head meetings regarding source reduction
- County staff training regarding waste reduction
- Product exchanges
- Assurance of volume based fees to provide economic incentive for waste reduction, the County will monitor City residential billing systems, and private commercial billing systems. Should the billing systems vary from a volume based approach, the County will examine the possibility for ordinance revision to ensure such billing practices are employed.

4.2 Solid Waste Education

4.1.1 General Goals and Policies. It is Lincoln County's goal to assure environmentally sound, and cost-effective waste management through an informed and aware populace.

To achieve this goal Lincoln County adopts the following Policies:

1. To provide sound information pertaining to the reasons and methods of managing separate fractions of the waste stream,
2. To conduct County educational programs on a continuous basis,
3. To target and educate specific populations including: residents, schools, government offices, and commercial establishments.
4. Coordinate and cooperate with regional waste education efforts

4.2.2 Existing Waste Education Practices. Lincoln County has established a number of waste education practices over the last several years. While the County has primary responsibility for waste education, the County does coordinate with the Minnesota Extension Service on some waste education issues. Specific educational practices are outlined below:

1. Solid waste management information is regularly disseminated through local media, principally newspaper such information includes "how to," notice of events and so forth.
2. More detailed information is presented in newspapers through periodical articles.
3. Basic information on recycling, reduce and reuse and a feature story is included in the quarterly newsletter coordinated with Extension, FSA and the County. This material is mailed to all County households twice per year and to rural households 4 times per year.
4. County staff conducts outreach at community events and organizations. A booth is maintained at the county fair, and occasional community festivals and events.
5. Presentations are periodically made to community organizations such as Kiwanis Clubs
6. The Prairie Ecology Bus is a program provided to schoolchildren to learn about HHW. There are two presentations each year by staff of the Prairie Ecology Bus, these are cycled through county schools every 2 years to assure that each child is exposed one to two times in their educational career.
7. Waste reduction is an important element of Lincoln County waste education activities. Education and outreach programs specifically related to waste reduction are outlined in section 4.1.2.
8. Minnesota Extension Service and Lincoln County coordinate as it regards waste education through focusing presentations to target audiences. Lincoln County staff also provides direct technical assistance to businesses.
9. Both the County Environmental Officer and the MES staff are available to answer questions and distribute a variety of waste education materials on a request basis.
10. Lyon County Industrial Waste staff work with the Lincoln County hospitals as commercial waste generators to reduce their waste

4.2.3 Specific Programs to be Maintained and Implemented in the Next Ten Years. It is anticipated that current waste education activities will be retained during the planning period. However, additional specific programs will be implemented are discussed below.

1. The County will increase its emphasis on waste reduction opportunities in its waste education program.
2. The County will monitor new waste curriculums for incorporation in public schools. The material will be reviewed by the County Environmental Officer for applicability to Lincoln County, it will also be reviewed by Minnesota Extension staff for applicability and grade level appropriateness. At that point, Lincoln County will introduce and review the material with School District curriculum directors for applicability to existing curriculum, grade appropriateness and state graduation standards. It is anticipated the Prairie Ecology Bus will continue to play a major role in the waste curriculum in their public schools.
3. The County will contact Agricultural chemical dealers to encourage bulk use of pesticides for private pesticide licensed and commercial pesticide licensed users.
4. The County will contact Seed Dealers to encourage bulk seed sales (soybeans) to reduce the volume of individual seed sacks generated each year.

4.2.4 Publish Information Required Every Three Months. The County's educational programs are consistent with MS 115A.552 which stipulates that counties shall provide notice at least every three months regarding how, when and where to recycle. In addition notices promote recycling by residential, commercial and institutional waste generators.

4.2.5 Responsible Person and Required Staff Time. The County Environmental Officer will primarily be responsible for implementing waste education activities. Estimated time allocation is .19 FTE (400 hours per year). It is anticipated that Minnesota Extension and the Prairie Ecology Bus staff will continue to be involved in waste education activities. In addition Lyon County staff will conduct the Industrial Outreach Program.

4.2.6 Estimate 10 Year Budget. See attached consolidated budget form included as Appendix E.

4.2.7 Source of Financing. These programs will primarily be financed through SCORE pass through grants and through County match, generated from county general revenue.

4.2.8 Implementation Schedule

Year Action Step:

- | | |
|------|---|
| 2003 | Contact initiated with Agricultural chemical dealers and seed dealers regarding bulk use of agricultural products.
On-going programs |
| 2004 | Target schools as waste generators for source reduction promotion/recognition (and other appropriate out-reach) |

- On-going programs
- 2005 Target retail establishments for source reduction promotion/recognition (and other appropriate out-reach)
- On-going programs
- 2006 Target restaurants for source reduction promotion/recognition (and other appropriate out-reach)
- On-going programs
- 2007 On-going programs
- 2008-2012 On-going programs

4.3 Recycling Programs

4.3.1 General Goals and Policies. It is the Goal of Lincoln County to implement programs, which achieve a rate of recycling consistent with the Minnesota Waste Management Act (currently 35%) by 2007.

In order to achieve this goal, Lincoln County adopts the following policies:

1. The county will provide adequate opportunities to the residents of Lincoln County to recycle.
2. The County will provide curbside recycling within the incorporated municipalities.
3. The County will seek to minimize the generation of non-recyclable wastes.
4. The County will promote and encourage the proper management of yard waste.
5. The County will assure that there exists a financial incentive to recycle.
6. The County will promote aggressive recycling within government facilities and commercial establishments.
7. The County will promote business recycling.

4.3.2 Existing Public and Private Sector Recycling Programs. Residential recycling is conducted in Lincoln County by Ritters Sanitation under contract with the County Appendix C. The public recycling system includes curbside collection in each incorporated municipality. Material is collected source separated, and includes newspaper, glass, tin (steel) and aluminum cans, and plastic bottles. Collection occurs on a twice monthly basis. Material is hauled by Ritter's Sanitation to its own facilities for processing and marketing. That facility is located in Marshall, Minnesota. The services procured from Ritters by the County based on a flat fee contract paid by the County, see Appendix C. The current monthly fee is \$3,648. There is no solid waste or recycling assessment charged by the county to tax payers, nor do residents pay any fees directly to the hauler for recycling services. However, the county is considering adopting a solid waste fee on property tax statements to help fund solid waste programs. The program is financed through the county SCORE grant and County match from the general levy.

In addition, there is a pair of recycling sheds located in each incorporated municipality except Arco, where there is only one shed. Where recycling sheds are paired, one shed is designated for paper and one shed is designated for all other recyclables. There are also three rural locations where sheds are located. One is located in each of the unincorporated communities of Verdi and Wilno, and one is located at the Marble Store, a rural grocery store located in Marble Township and Lake Shakotan (north side at boat

landing). These sheds are defined by OEA rules as recycling centers; they accept paper, glass, metal and plastic materials. They are accessible 24 hours per day, seven days per week. However, there is no staff person operating the facilities. Ritters Sanitation also collects the recyclables deposited in these sheds under the county recycling contract. They are collected during the regularly scheduled recycling collections. Ritter's Sanitation or the County removes MSW that is left at the facilities. In some cases, municipal staff will inspect the recyclables and remove MSW that may have been deposited in the sheds.

Commercial and institutional recycling programs are conducted on a contract basis with their waste hauler. County programs do not pay for commercial or institutional recycling. Specific commercial recycling activities vary from establishment to establishment. The most significant commercial recyclable collected is corrugated cardboard. However, other materials are collected as well. The largest waste generators in the county are the schools, and the County itself. All of these institutions have recycling programs in place. All schools recycle at least three broad classes of materials. Some schools are not recycling glass, because of the low volume generated, as institutional food service products largely are marketed in plastic or metal containers.

SCORE Reports by the OEA previous to 2002 do not identify other documented and estimated recycling activities in the county.. The additional activities identified in Table 4-1 for 2002 positively affect recycling volumes and therefore overall recycling rates achieved and reported to the state SCORE program.

Table 4-1 Previously uncounted Recycling Activities in Lincoln County.

2002 Business or Activity	Material	Quantity / Tonnage
Lyon-Lincoln Electric in Tyler	Scrap Aluminum	14,290 lbs or 7.145 ton
	Scrap Iron	13,500 lbs or 6.75 ton
	Cardboard	2600 lbs or 1.3 ton
	Total,	15.2 ton
	Mercury Vapor	83 bulbs
	Fluorescent Utility Poles	61 bulbs
		450 @ ? tons reused
Farm Operators	Scrap iron	393 ton
Green Light Recycling	Computer & Electronic Components	0.5
County sort from MSW @ Transfer Station	Metals	5 tons
Business survey	Used oil	5000 gallons is used to heat shops, previously disposed of on the ground @ 8 lbs/gallon ¹ = 20 tons
Total		433.7 tons

Farm operations generate a substantial amount of scrap iron each year. Equipment requires maintenance and upkeep. Examples of this include knives, shovels, sweeps, as well as broken equipment parts. Lincoln County has an estimated 806 farm operators

¹ <http://www.atving.com/editor/techtips/bob.htm> provided information on the conversion weight of oil per quart.

residing in the County, as identified in the 1997 Census of Agriculture. Future yearly estimates should come from the County FSA Office. For estimation purposes, 25% is subtracted from the number of operators to account for operators who do not recycle and an additional 10% to account for shared equipment operations to generate a base number to estimate the volume of scrap iron generated and recycled each year. An estimate on the volume of iron generated is reported from farm operators who were asked to give conservative estimates. These estimates ranged from 1,000 to 2,000 pounds per year. Based on these farm practices, a conservative estimate of 1,000 pounds is generated / recycled per year of scrap metal. Sixty-five percent of 806 is 524 @ 1,500 pounds per year, which generates 393 tons of recycled metals per year. Most of the scrap is taken to Becker Iron in Marshall, Minnesota who pays for loads of 500 pounds or greater. The Environmental Office is working toward more accurately identifying this number, which is believed to be higher. While in the past the predominant method of disposal was leaving the scrap in groves, recent activities have shown that farmers are now taking the scrap metals they generate and hauling it to a scrap dealer for recycling.

4.3.3 Itemized Annual Recycling Tonnage Collected, processed, and Marketed by Sector or program for 2000, 2001, and estimate for 2002.

Table 4-2: Recyclables Collected in 2000, 2001, 2002 Tonnage estimates

Material	Year 2000	Year 2001	Year 2002 Preliminary est
Corrugated Containers	244	229	106
Mixed Paper	138	91	93
Aluminum	5	10.5	11.5
Steel/Tin cans	24	25	25
Glass	54.55	54	57
Mixed Plastics	37	33	36
Other	112	167	88
Total			

4.3.4 Local Market Conditions for Recyclable Materials. National recycling markets have demonstrated significant volatility in the last few years. Such volatility can be expected in the markets for basic industrial materials. These price swings have impacted the market for recyclables in Lincoln County in terms of price received by the recycling contractor. The County recycling contractor has been able to find markets for all materials collected. Ritters Sanitation reports that through processing to specification, the markets have remained stable and accessible. Conditions should remain steady for the foreseeable future. A change is currently happening for some of the markets for recyclables in the Region. As of February 1, 2003 mixed recyclables delivered to the Nobles County recycling facility will be co-mingled and shipped out of state (Rockford, Illinois) where they will be sorted by automation and marketed.

For Corrugated cardboard, Ritter's has been using a broker in Sioux Falls (Millennium Recycling). Until February 2003, mixed paper was shredded and used by local farms.

The cardboard has been going to Republic Paper in Lawton, Oklahoma or to Warehouse Plan in Cedar Rapids, Iowa. Ritters indicated that some cardboard will still go to these sources. As of February 1, 2003, recyclables (corrugated, mixed paper, glass, metals, mixed plastics) will be co-mingled and hauled to Worthington, MN and then shipped out of state to Illinois.

4.3.5 Specific Programs the County Proposes to Maintain or Implement in the Next 10 Years

4.3.5.a Lincoln County will continue to exceed State requirements for access to a recycling center. There are 13 such facilities open and operating in the county at this time. These facilities will be maintained throughout the planning period. They will each accept at least four classes of recyclable material, and will be open for more than 12 hours per week. It is expected that the useful life of the current county recycling sheds will be exhausted during the current planning period. As the end of this life is approached, a detailed examination of the facilities will be conducted. Appropriate modifications will be identified, and a detailed budget will be prepared. Maintenance and repair are done on the sheds on an as needed basis; life expectancy of the sheds is approximately 20 years. A phased in replacement of the sheds is anticipated to begin in the year 2010.

4.3.5.b There are no communities in Lincoln County with a population greater than 5,000 people; the total combined populations of all County municipalities is 3,425. However, the County remains committed to maintaining curbside recycling available in each community during the planning period. In addition, collection will be at least twice monthly. During the last planning period, the County increased the recycling collection frequency from twice per month to every other week. This resulted in two additional collections annually, reduced confusion and eliminated extended periods between collections.

There has been increased permanent housing developed around some of the county's lakes in recent years. Curbside programs have not previously been appropriate due to low population densities in these areas and the availability of rural recycling collection sheds. However, if development trends continue, Lincoln County will examine the viability and cost effectiveness of curbside waste collection in these areas.

4.3.5.c There are no communities in Lincoln County with a population greater than 20,000 persons. This section is not applicable.

4.3.5.d Recycling occurs at all local government facilities in Lincoln County. The County Courthouse and the Minnesota Extension offices source separate plastic, paper, glass and metal cans. However, office paper is the dominant recyclable material collected. The County Highway Shop recycles scrap metal as well. As outlined in section 4.1, the County will conduct waste audits to determine potential areas where recycling can be increased and improved over time. Schools and Municipal governments also participate in recycling.

During the past planning period, recycling opportunities were expanded at County parks. Lincoln County will continue to examine the potential for recycling activities in the county park system through expanding the number and convenience of recycling receptacles at parks. It is likely that the only materials suitable for collection generated in the parks will be aluminum beverage cans, plastic beverage containers and glass containers. The County will consult with other parks departments and the County's recycling contractor to determine future recycling potential.

The greatest opportunity to increase recyclables collection in local government is from mixed paper wastes generated in the school systems. While all of the schools have recycling programs in place, the level of waste paper generated in the classrooms may be fairly low. Lincoln County will conduct outreach to the school systems; work with the school systems to identify how and where this material can be captured for recycling. Because of the volatility of mixed paper markets and the relatively low value of such material, careful analysis is needed to ensure that programs are sustainable over the long term. Outreach will include coordination with the county recycling contractor to ensure that sound and sustainable expansion of school recycling programs can be implemented. Sustainable programs may, for example, limit the collection to clean white office paper.

4.3.5.e Lincoln County actively encourages recycling in all sectors through public education efforts (see section 4.2 for details). Lincoln County also relies on price mechanisms to ensure there is an economic incentive for recycling. Residential wastes generators are billed on a volume based price schedule, and do not pay any fees for recycling services. Therefore residents can avoid additional expenses by participating in recycling programs. Commercial and institutional waste generators also have an incentive for recycling. The waste hauler servicing Lincoln County does utilize a billing system which, though not specifically disclosed, is based on dumpster size and frequency of collection. In addition, as with residential collection, there is no charge placed on commercial and institutional waste generators for recycling services. The County will monitor City residential billing systems, and private commercial billing systems. Should the billing systems vary from a volume based approach, the County will examine the possibility for ordinance revision to ensure volume based billing practices are employed.

Commercial recycling activities vary considerably from establishment to establishment. During this planning period, Lincoln County will focus on pursuing increased recycling in commercial establishments. This will occur through the Lyon County Industrial Waste Outreach program. Further, the County Solid Waste Office will continue and expand outreach through site visits, and presentation at community groups such as Kiwanis, and Chambers of Commerce.

The County will contact businesses in the county to document what they recycle and the volume being recycled. When businesses are identified that do not recycle, the county will promote the benefits of recycling. In subsequent years the Solid Waste Officer will coordinate with the waste hauler and recycling contractor operating in the County to

identify specific retail and restaurant establishments to target for enhanced recycling opportunities.

Lyon-Lincoln Electric of Tyler has recently been identified as a significant commercial recycler who hauls their recycling directly to Lyon County. Lincoln County staff recently contacted this commercial business and identified 15.2 tons of materials recycled, plus poles.

The 1999 employment data in chapter 2 identified a large employment sector – Agriculture. Farming and its related businesses have potentially the largest undocumented source of recycling occurring in the county. Repair and maintenance of equipment of a farming operation generates scrap iron such as knives, shovels, and broken machinery parts. A lowball estimate of scrap iron generated by a farming operation per year is 1000-2000 pounds. These scrap items are normally placed in a scrap pile for disposal at a scrap dealer. With larger farm operations, many operators are using bulk chemicals, which have reduced the volume of gallon and 2.5-gallon pesticide containers. Bulk seed is now available, reducing the number of seed bags. The Solid Waste Office will coordinate with the County Extension Office to identify the best methods to document or estimate farm recycling, reduction, and reuse activities.

The construction sector is the 4th largest in industry output. There may be an opportunity to reduce and recycle, however, this will depend on what construction is occurring.

4.3.6 Voluntary versus Mandatory. Recycling participation is not mandatory in Lincoln County, except for State agencies, local units of government, and school districts. These entities must recycle three of the four broad materials categories: glass, paper, metal, and plastic. All local units of government in Lincoln County comply with this requirement. Lincoln County does not specifically prohibit the disposal of recyclable material in the County's MSW stream. Lincoln County will consider amending its ordinance to include mandatory recycling through specific bans on the disposal of recyclables with MSW.

4.3.7 Responsible Person and Staff Time required. The County Environmental Officer is the responsible staff person for overseeing county recycling programs. Time allocation by trained Environmental Staff to recycling activities is equal to .29 FTE (600 hours per year). Recycling related the Minnesota Extension Service also conducts educational activities - see Section 4.2.

4.3.8 Estimated 10 Year Budget. See attached consolidated budget form included as Appendix E.

4.3.9 Source of Financing. The County recycling programs will be financed through SCORE Block grants and through County general revenue.

4.3.10 Implementation Schedule

Year Action Step

2003	Review recycling collection frequency. Educational programming to ensure smooth transition to new collection practices. Lyon County Industrial Waste Outreach program. Consideration of ordinance amendment to ban recyclables from disposal. On-going activities
2004	Waste Audit County Court House Waste Audit Minnesota Extension Offices Target schools as waste generators for recycling promotion and outreach On-going activities
2005	Waste Audit County Highway Shop, Ivanhoe. Waste Audit County Parks Target retail establishments for recycling promotion and outreach On-going activities
2006	Target restaurants for recycling promotion and outreach. Review potential for curbside collection of MSW and recyclables in lakeside residential areas. On-going activities
2007	Conduct County Solid Waste Plan Up-date. On-going activities
2008	On-going activities
2009	Review physical condition of recycling sheds, revised system design as needed, develop detailed plans and specifications for replacement.
2010	Replace County recycling sheds. On-going activities
2011	On-going activities
2012	On-going activities

A number of activities will be ongoing through the planning period. These include:

- General information dissemination through, presentations, newspaper, radio, and community events
- Technical assistance to business
- County department head meetings regarding recycling potentials
- County staff training regarding recycling
- Assurance of volume based fees to provide economic incentive for waste reduction.

4.4 Yard Waste Management Programs

4.4.1 General Goals and Policies. It is Lincoln County's goals to ensure that all yard waste generated in the County is diverted from the MSW stream.

It is Lincoln County's Goal to ensure that nutrient and organic resources contained in yard waste is recovered through mulching or composting.

In order to achieve these goals the county adopts the following policies:

1. To support municipal yard waste composting and management programs through public education.
2. To maintain a ban on the disposal of yard waste with MSW and in landfills.
3. To provide information to county residents about how and why to properly manage yard waste including: mulching or "grass- recycling", on-site composting, and the use of city composting facilities.

4.4.2 Description of Methods for Identifying the Portions of the Solid Waste Stream for Use in Agricultural Practices. Principally, yard waste compost produced in municipal compost sites is delivered to agricultural fields for use as a soil amendment. This material is land applied and incorporated into the soil. There is no formalized reporting mechanism. Yard waste composting sites are operated by the County's municipalities. Reports are submitted to the county semi-annually on the number of truck loads and the estimated weight of the truckloads. Reporting provides detail by city.

4.4.3 Recognition of the Prohibition of on Disposal of Yard Solid Waste In Landfills and Resource Recovery Facilities. Lincoln County recognizes that the State of Minnesota has banned yard waste from landfills and resource recovery facilities as of January 1992. This is reflected in the county yard waste management Goals and Policies. It is also reflected in County Solid Waste Ordinance which prohibits disposal of such material in the MSW stream.

4.4.4 Existing Yard Waste Management Programs and Practices

4.4.4.a Estimated level of backyard composting. No survey or measurement of backyard composting has been completed in Lincoln County. Composting is assumed to be relatively common. The area, with its rural heritage, maintains a strong level of gardening. This likely encourages a significant level of composting for managing garden wastes and for garden soil quality. It would be reasonable to expect that nearly all rural residents manage yard waste on-site through mulching or composting. It is also reasonable to estimate that upwards of thirty percent of households located in municipalities engage in backyard composting or mulching of grass clippings and leaves. It can also be expected that city residents haul much yard waste directly to agricultural fields from.

Brush and tree waste is generally managed on site in rural areas by burning. Permits are required and can be acquired through the County.

The County actively promotes back yard composting and mulching. Detailed information on composting is available through the Minnesota Extension Service. County solid waste education programs promote backyard composting, and direct residents to Extension for detailed information.

4.4.4.b Yard Solid Waste Collection System. There is no curbside collection of yard wastes within Lincoln County. County residents who do not manage such waste on-site are responsible for hauling their own waste to the appropriate location.

4.4.5.c Number of County, District, and Municipal Composting Sites. Municipally operated yard waste composting sites are located in the following Lincoln County cities: Hendricks, Ivanhoe, Lake Benton, and Tyler. The City of Arco does not compost yard waste *per se*. Instead the City directly land applies grass clippings and leaves to nearby agricultural fields.

These sites also manage woody wastes. Woody yards wastes are stock piled until a set amount of fuel is accumulated. At that point the brush piles are burned as weather conditions permit.

4.4.5.d Tonnage Collected. No records are maintained of yard wastes collected or composted.

4.4.5.e County Financial and Staff Commitment. Lincoln County does not provide direct county financial support for municipal yard waste composting activity. To date, such support has not been necessary for successful operation of these facilities. Lincoln County is committed to providing information and education to the county's residents on the importance of proper yard waste management. The county also promotes backyard composting through its waste education programs. To date the county has not been involved in the purchase of compost bins or other significant capital expenditures to promote backyard composting.

4.4.5.f Local Market Conditions of Yard Waste Compost

There is no cash market for yard waste compost. Local gardeners retrieve some material. The bulk of the material is land applied on agricultural lands at no cost to the landowners.

4.4.6 Specific Programs that the County Intends to Implement or Maintain in the Next Ten Years. The County will maintain following programs on an on-going basis.

1. Lincoln County will maintain a ban on the disposal of yard waste within MSW.
2. Lincoln County will continue to support municipal operation of yard waste composting sites through promotion and education.
3. Lincoln County will continue to provide its residents with education regarding how and why to compost, either on-site or at municipal yard waste composting sites.
4. Yard waste management at County facilities will be assessed through county facility waste audits.

The County will not seek to establish curbside collection of yard wastes. It appears that current systems capture the vast majority of yard waste. The high costs of curbside collection could not be justified in Lincoln County.

4.4.7 Responsible Persons and Required Staff Time. The Lincoln County Environmental Officer will be responsible for County yard waste management programs. These programs will principally be educational, as such the time allocation is included in the Waste Education time allocation, see section 4.2.

4.4.8 Source of Financing. As the yard waste programs will principally be educational, expenses will be provided for through the waste education budget, see section 4.2.

4.4.9 Estimated 10 Year Budget. Lincoln County does not provide direct operating support for yard waste management sites. County expenditures are included in the waste education line item. See attached consolidated budget form included as Appendix E.

4.4.10 Implementation Schedule

Year Action Step

2003 On-going activities
2004 On-going activities
2005 On-going activities
2006 On-going activities
2007 On-going activities
2008-2012 On-going activities

4.4.11 Environmental Risks of Yard Waste Management. Environmental risk of yard waste management is low. There are, however, some issues that improperly operated facilities may create. The issue of greatest concern is likely to be odor. For a yard waste composting operation to remain free of significant odor nuisance, the operation must remain aerobic. If sufficient oxygen is not available, anaerobic microorganisms will dominate the decomposition process. These organisms do not fully oxidize the organic material, and generate malodorous gasses. Anaerobic conditions can occur if there is too much moisture in the compost pile. They can also occur if the compost pile is too large or compacted. In these instances, air spaces in the pile will be eliminated. This in turn eliminates the available oxygen to keep the process aerobic.

In addition, there needs to be a balance of carbon and nitrogen in the compost feedstock. If there is relatively too much carbon, the composting process will be slow (however, it will not generate much odor). If there is relatively too much nitrogen, the process may result in ammonia emissions, which can be offensive. There is no known significant odor problem at Lincoln County yard waste composting facilities.

Yard waste composting in Lincoln County occurs out-of-doors. As such there is a risk of excess moisture washing through the compost piles and then entering into the

environment. As these compost piles, do not accept MSW or sewage sludge the risk from pile leachate is principally from excessive nutrient loading on waterways. Proper site design, which eliminates ponding, minimizes this risk. Operating experience indicates that there are limited amounts of leachate generated through precipitation, due the absorbency of compost and compost feedstock.

Yard waste composting facilities are permitted by the MPCA through a permit by rule process. This MPCA oversight helps to ensure that facilities are operated in an environmentally benign manner.

4.5 MSW Land Disposal Facilities

4.5.1 Goals and Policies. It is Lincoln County's Goal to ensure environmentally sound and cost-effective management of its municipal solid waste through land disposal in a facility complying with all state and federal regulations.

It is Lincoln County's Goal to minimize long-term liability for solid waste through utilization of a single disposal facility.

Lincoln County adopts the following policies to ensure achievement of its goals.

1. Lincoln County will utilize the Lyon County Regional Landfill (MPCA Permit # SW -23) as the facility to receive MSW generated within the County.
2. Lincoln County intends that all Lincoln County municipalities which have organized MSW collection will deliver or cause to deliver all MSW generated within the County to the Lyon County Regional Landfill or other county approved and designated processing or disposal facilities.
3. Lincoln County intends that all State Agencies and local units of government located within Lincoln will deliver or cause to deliver their waste to the Lyon County Regional Landfill or other County approved and designated processing or disposal facilities.
4. Lincoln County will maintain an MSW transfer station to ensure that a convenient location is available for MSW disposal for County residents without collection service, or for residents with bulky wastes.

4.5.2 Description of Existing Facilities

4.5.2a Identify and Discuss Status of Closed Landfills. The Lincoln County Landfill has been closed and turned over to the MPCA Closed Landfill program as of 1994. The MPCA, in order to reduce long term maintenance costs, excavated all the MSW from the facility in 1995. They then relocated the excavated material to the site of the closed Pipestone County Landfill. Lincoln County will not need to implement any programs to mitigate the environmental effects of past disposal practices. Monitoring wells on the site have not indicated any ground water contamination and MPCA has indicated that it will cease monitoring ground water at the site in approximately one year. The site is located off of U.S. Highway 75, just south of the City of Ivanhoe (Section 4, Township 111N, Range 45W).

4.5.2.b Describe Facilities Where the County's MSW is Managed.

Lyon County Regional Landfill -

Lincoln County's MSW is hauled to the Lyon County Landfill (permit number SW-23). The Lyon County Landfill is located in Section 9, of Lyons Township in Lyon County, Minnesota, approximately 10 miles SW of Marshall. In 1997 and 1998 the County purchased additional land for future construction/operations. The Lyon County Landfill is a regional facility accepting waste from seven counties. Total annual waste receipt is approximately 44,400 tons per year. The facility is approximately 98 acres in area extent. The facility's original permitted capacity totaled 1.8 million cubic yards in place waste, and daily, intermediate and final cover. A new permit was issued in late 2002, and the facility has approximately 456,000 cubic yards remaining capacity. This added capacity will last about 5 years at current fill rates. An estimated additional expansion area of approximately 1,000,000 cubic yards is available on-site. The Lyon County Landfill meets all State and federal regulations.

Lincoln County Transfer Station

In addition, Lincoln County owns and operates a MSW transfer station to facilitate proper management of MSW generated by residents without collection service or with bulk waste not suitable for normal route collection. This transfer station is located on US Highway 75 just south of the City of Ivanhoe. This facility is located at the former site of the Lincoln County Sanitary Landfill. While the overall parcel is 35 acres, the transfer area comprises approximately two acres. The facility is open two days per week for four hours per day. The facility includes one roll off box that is available for MSW and a second roll-off for demolition waste. The waste is compacted, which has reduced the number of trips to the Lyon County facility from 50-60 loads to 25 to 30 loads per year. Implementation of waste compaction before shipping has reduced both waste costs and environmental costs.

The facility has capacity to accept no more than 60 cubic yards of waste, and has low potential for adverse effects on human health and the environment. Based on these considerations, the facility is operated under permit by rule status. The permit is attached as Appendix D. Estimated annual MSW accepted at the Lincoln County transfer station is approximately 120 to 130 tons per year.²

4.5.2.c Amount of Waste Received and Disposed, 2000 and 2001

Table 4-3 MSW Managed at Lyon County Landfill, Including MSW Generated in Lincoln County

² The facility disposes of approximately 25 roll-offs at 60 cubic yards each. This equates to 1500 cubic yards / year @ 311 pounds / yard, or 233 tons. There is approximately 9.3 tons of storage on-site at the transfer station.

	Waste Received/Disposed	
	Lyon County Landfill,	From Lincoln County
2000	40,421 ton	2361 tons
2001	44,390 ton	2142.5 tons

4.5.2.d Operational History, Removal of Problem Wastes, and Facility Management. The current Lyon County Regional Landfill initially permitted in December 1970 and opened in 1971 as the Lyons Sanitary Landfill. It was owned and operated by Lyons Sanitary Landfill, Inc., until Lyon County purchased the facility in November 1986. The County contracted with the former owner for operations until October 1992 when the Lyon County assumed operation of the landfill. In 1992, Lyon County purchased a 200 foot strip of land on the north and west sides of the landfill to be used for the environmental monitoring (EMS) compliance boundary. The landfill was originally permitted for 1.8 million cubic yards of capacity, of which 973,115 cubic yards have been filled. It is estimated that 826,885 cubic yards of permitted capacity remain as of November 1995. Two lined cells (four acres and three acres) were constructed in 1994, under a 1993 MPCA five-year operating permit. An additional lined cell was constructed in 1996. The Lyon County Sanitary Landfill currently accepts waste from the Counties of Lac qui Parle, Lincoln, Lyon, Pipestone, Redwood, Rock, and Yellow Medicine. In 1997 and 1998 the County purchased additional land for future construction/operations

Lincoln County staffs the transfer station and ensures the separation of MSW from the demolition debris. The facility is open from 12 pm to 4 pm Wednesdays and 8 am to 12 pm on Saturdays.

Problem wastes are removed through a variety of programs. The key program is the regional HHW program operated by Lyon County under contract with the MPCA. Six of the seven counties utilizing the facility are included in this program. The remaining county participates in a similar program operated by Kandiyohi County. Participating Counties also enforce state bans on problems materials and operate programs to ensure that such material is managed properly. Additional activities such as waste pesticide, waste pesticide container, and fluorescent bulb collections also occur in counties utilizing the Lyon County Landfill.

Lincoln County Transfer Station. The Lincoln County Transfer station Site was originally established as a sanitary landfill in 1972. It operated under the original ownership until 1978, at which time Ritters purchased it, a waste hauling firm. The purchasing firm however, did not utilize the facility for disposal for very long. Waste disposal at the site ceased sometime in the early 1980s.

Lincoln County purchased the landfill site and established transfer station operations in 1985. This operation has been based on simple technology. In 2000, the County reinstated the use of both an MSW roll-off transfer box and a demolition roll-off transfer box. Careful management by the transfer facility staff has eliminated the former issues of contamination of the demolition with MSW. In 2001, the County also purchased equipment to compact the demolition and MSW waste, thus reducing the number of trips

to the Lyon County Landfill from 50 to 30. These actions have reduced frequency of trips to the Lyon County facility, decreased environmental impacts of transfer trucks with fewer trips, increased both the physical and fiscal management of the waste transferred to the Lyon County facility. Transfer station staff also removes metals when prudent. This accounted for 5 tons of metals recycled in 2002 and saved the County \$47 / ton plus hauling costs.

Removal of problem wastes is accomplished through the programs outlined above and in other sections of this plan. In addition, the transfer facility is staffed at all times it is open to the public. The operating staff have an opportunity to make contact with the public utilizing the facility to inform them on the proper management of problem wastes. In addition, the operator can view waste placed into the transfer box for disposal, thereby providing greater assurance that problem wastes are not improperly discarded at the facility.

4.5.3 Evaluate Known and Potential Environmental and Public Health Impacts. Based on the data collected during the field investigation conducted in 1990 and 1991, and included in the January 1993 Hydrogeologic Evaluation report, it appears unlikely that the Lyon County Landfill facility presents any danger of undetected leachate migration or that contaminants will reach any sensitive receptors. Although the development of a groundwater mound within the current fill area is possible, groundwater migration out of the fill is greatly restricted due to the inherently low hydraulic conductivity of the clay till which has been further reduced by compacting during excavation and filling operations. Velocities within the clay till which comprises the continuous medium within the area are very slow and the shallower sands are demonstrably discontinuous. In addition, the volume of water moving through the shallow flow system is quite small because of the highly restricted area of infiltration, which feeds it.

The old monitoring system had shown some activity, but inadequate design and construction methods used for installation limit reliability of data. New monitoring wells were installed in 1992, and along with piezometers installed previously form the new Environmental Monitoring System. (EMS).

Based on monitoring data from the new EMS, the landfill shows no impact to the groundwater at this time. Lyon County understands the potential risk to air, surface water and ground water in operating the sanitary landfill, and continues to take actions to minimize the potential for environmental problems in the Lyon County Sanitary Landfill.

Lincoln County Transfer Station. While there is always some amount of risk in the handling of MSW, there are no known specific environmental or public health threats associated with the operation of the Lincoln County Transfer Station. The solid waste disposed of in the landfill cells at the site has been removed by the State of Minnesota. The small amounts of waste handled at the site are contained in the roll off transfer boxes. When the boxes are filled they are removed by Ritter's Sanitation. Roll off removal is billed to Lincoln County along with other county disposal services (i.e. courthouse). Disposal services are provided on an on-going basis. There is no written

contract. Roll offs are removed approximately once every two weeks--more frequently if waste volumes warrant. Monitoring wells from the old sanitary landfill have never indicated contamination, outside of the fill areas.

4.5.4 Specific Programs to be developed. Lincoln County will continue to utilize the Lyon County Landfill through the current planning period. The County will consider methods to ensure that waste is managed in compliance with the County's goals and policies. However, all landfill development and permitting programs will be the responsibility of Lyon County and not involve Lincoln County.

Lincoln County has passed a resolution of support for the Lamberton Waste-to-Energy facility; and support further investigation of alternative waste management methods.

4.5.4.a Permitting Schedule:

Year Action Step

2003	Lyon County will address Certificate of Need in the County Solid Waste Plan
2003	Results from the Lamberton Waste to Energy Feasibility Study
2004	Examine the feasibility of the potential Lamberton facility
2007	Lyon County will likely require Certificate of Need from Lincoln County

Lincoln County will continue to operate its transfer station under permit by rule status.

4.5.4.b Schedule of Phase Development. Landfill phase development will be the responsibility of Lyon County. Not applicable to the Lincoln County Transfer Site

4.5.4.c Status of Financial Assurance. The Lyon County Regional Landfill has achieved a fully funded Financial Assurance. Lyon County has provided rebates to the participating counties from moneys collected as part of the GMLCF. This started in 1997 at \$50,000/year and has since expanded to \$200,000/year and is based on tons received at the landfill. Financial Assurance is not required for the Lincoln County Transfer Station.

4.5.4.d Status of Leachate Treatment. The Lyon County Landfill began collecting leachate in October 1993, with the opening of the four acre lined cell. Lyon County currently hauls leachate to the Pig's Eye wastewater treatment facility in St. Paul, Minnesota, or to the City of Marshall wastewater treatment facility based on specific contaminant parameters in the leachate. The Lincoln County Transfer Station does not generate leachate.

4.5.5 Estimated 10 year Budget. The transfer station budget is included in the uniform budget form included as Appendix E.

4.5.6 Responsible Person and Required Staff Time. The County Environmental Officer will be responsible for all programming relating to the landfilling of MSW generated in Lincoln County, should such programs be required. Operation of the Lincoln County

Transfer Station will continue to be the responsibility of the County Environmental Officer. Staffing requirements for the transfer station are 19% FTE.

4.5.7 Source of Financing. The Lincoln County Transfer station is financed through county general levies and through fees paid by facility users. Transfer station users are charged \$2.00 per bag of MSW delivered to the facility. Disposal fees cover approximately fifty percent of total transfer station operating costs.

4.5.7 Implementation Schedule. Lincoln County anticipates implementing no landfill related programs during the planning period. Operation of the transfer station will continue on an on-going basis. Essentially the only capital equipment owned by the County are the transfer boxes and a small shed. The roll off boxes are expected to remain serviceable through the current planning period. On-going activities will include site maintenance, and site staffing, and necessary operator training.

Year Action Step

2003	On going activities.
2004	On going activities
2005	On going activities
2006	On going activities
2007	On going activities
2008-2012	On going activities

4.6 Solid Waste Tire Management

4.6.1 Goals and Policies. It is the goal of Lincoln County to ensure the proper management of used tires.

Lincoln County Adopts the following policies to ensure achievement of its goals.

1. To prevent excessive stock piling and dumping of tires,
2. To ensure that a convenient and accessible location(s) is (are) available for the disposal of waste tires.
3. To maintain a ban on the disposal of waste tires in landfills.
4. To adopt and enforce applicable Minnesota Rules.

4.6.2 Status of Public Sector and Private sector waste Tire Management. Tires are primarily managed through the private sector tire in Lincoln County. There are several businesses, which sell tires; two of the major dealers are Tyler Tire Center, in Tyler and the Lyon County Cooperative in Ivanhoe. These firms will accept waste tires, generally for two dollars each. They will take tires from the general public, not just new tire customers. There are no tire processors located in Lincoln County.

4.6.3 Number of Tires Included In Goal-Volume Table. The Goal Volume Table estimate of waste tire generation in Lincoln County totals 13 tons per year. At an estimated twenty pounds per tire this constitutes 1,300 tires per year.

4.6.4 Specific Programs the County Will Maintain or Implement During the Next Ten Years. The County will continue to enforce the tire related elements of its solid waste ordinance. The County will also continue to provide referrals to county residents seeking to dispose of tires. Lincoln County will also continue to address tire management in educational outreach materials. This includes dissemination of printed material regarding tire management.

The County will consider accepting tires at the Transfer Station for temporary storage and transfer to a recycling facility.

4.6.5 Program to Ensure that Collection and Processing of Waste Tires is Available. Lincoln County will continue to monitor the availability of tire disposal option in Lincoln County. Should tire retailers close or cease accepting tires from the general public, Lincoln County will assess the need to implement a public tire collection program.

4.6.6 Adopt Waste Tire Ordinance that Meets or Exceeds MPCA Rules. Section VII, subdivision 701 of the Lincoln County Solid Waste Management Ordinance meets the standards established in MS 115A.914 and Minnesota Rules Chapter 9220.0200 to 9220.0680. The ordinance incorporates Minnesota Rules Chapter 7001 and 9220 by reference. In addition the ordinance explicitly establishes the following standards:

- Waste tires within 1,000 feet of residences shall be stored and utilized in a manner that prevents water from being retained in the tires.
- Waste Tires shall not be placed or permitted to remain in a lake, stream, sinkhole, gully, waterway, flood plain, or shoreland.
- Limits residential lot storage to no more than 10 waste tires
- Limits non-residential lot storage to no more than 100 waste tires.

The Lincoln County Solid Waste Ordinance is attached as Appendix F.

4.6.7 Location of Known Unpermitted Tire Dumps. There are no known permitted or unpermitted tire dumps.

4.6.8 Transportation and Disposal System Used by Local Collectors. Local tire dealers and service stations do not regularly report to the County regarding tire disposal. However, larger tire dealers reported that they use a variety of firms to transport and manage used tires. These include Monitor Tires, of Monticello, Minnesota. A portion of the tires disposed of in Lincoln County are also reused by area farmers for weighting tarps on silage piles.

4.6.9 Current End Uses of Solid Waste Tires. Tire dealers do not report to Lincoln County as to the location or end market of tires, which are disposed. It is assumed that approximately 80% are incinerated for energy recovery, and that 20% are recycled for reuse in rubber products or in civil engineering projects. This assumption is based on statewide data disseminated by the Office of Environmental Assistance staff.

4.6.10 Enforcement of Illegal Storage or Disposal. The Lincoln County Solid Waste Management Ordinance authorizes the County Environmental Officer to conduct inspections and investigations to determine compliance with the ordinance, and to make recommendations to the County Attorney that legal proceedings be initiated against a person to compel compliance with the ordinance.

The County also reserves the right to refer cases to the Minnesota Pollution Control Agency for enforcement where deemed appropriate.

4.6.11 Responsible Persons and Required Staff Time. The Lincoln County Environmental Officer is responsible for enforcement of the county solid waste ordinance. Enforcement activities have been historically very limited; no specific time allocation has been established. If the County establishes a waste tire collection facility at the transfer facility, minimal staff time would be required and the duties would be combined with the transfer station duties and time.

4.6.12 Estimated 10 Year Budget. See attached consolidated budget form included as Appendix E.

4.6.13 Source of Financing. Should tire enforcement actions be required Lincoln County will allocate a portion of the Environmental Officer's time to the matter. Financing will be derived from general levy revenues.

4.6.14 Implementation Schedule

Year	Action Step
2003	Explore the need for establishment of a waste tire collection and temporary storage facility at the Transfer Facility.
2003-2012	On-going activities as described above will continue through the planning period.

4.7 Major Appliance Management

4.7.1 Goals and Policies. It is the Goal of Lincoln County to ensure that major appliances are managed in a manner which is consistent with Minnesota Statutes 115A.552 and 115A.9561.

Lincoln County Adopts the following policies to achieve this goal:

1. Lincoln County will accept appliances at its transfer station to ensure that there is an opportunity to recycle appliances in Lincoln County.
2. Lincoln County will charge a fee to all county residents who deliver used appliances to the Lincoln County Transfer Station, the fee will be set so as to capture as great a portion of the cost of accepting, storing, and managing the appliances as is practical.
3. Lincoln County will managed appliances collected at the transfer station only through appliance processors with the necessary State certificates (for CFC recovery and hazardous waste handling).

4.7.2 Existing Public Sector and Private Sector Management Efforts. Appliance recycling in Lincoln County is principally a public sector endeavor. Lincoln County accepts appliances, for a fee, at its transfer station site. These appliances are stockpiled until such time as there is sufficient numbers to warrant collection by an appliance-recycling firm (approximately ten appliances). Appliance recyclers contracted by Lincoln County are and must have necessary state certificates to handle CFCs and PCBs. The county charges residents the same fee as is charged by the appliance recycler--currently \$10 per appliance. The cost of accepting and storing the appliances is minimal as they are almost entirely included in the fixed costs of operating the site.

There are few appliance dealers remaining in Lincoln County at this time. Some of these retailers may take appliances with the sale of a new appliance. They will not, however, accept used appliances for disposal from the general public. It is likely that a significant number of appliances are disposed of through larger appliance dealers located in regional shopping centers, such as Marshall, Minnesota or Brookings, South Dakota. This occurs as Lincoln County residents shop in larger trade areas to access a wider selection of goods and services and lower prices.

4.7.3 Number of Appliances Generated (Goal Volume Table). The Lincoln County Solid Waste Management System Goals & Waste Volume and Tonnage Table estimate that waste appliance generation in Lincoln County totals 94 tons per year. At 150 pounds per appliance, this constitutes 1253 appliances per year. In 2002, 300 appliances were collected and recycled through the county program.

4.7.4 Convenient Place for Public to Bring Used Appliances for Recycling. Lincoln County accepts used appliances for recycling at the Lincoln County Transfer Station. This facility is located on US Highway 75 one mile south of the City of Ivanhoe. The facility is open two days per week for four hours per day. Because of the limited private sector outlet for used appliances, Lincoln County will continue to accept appliances for recycling at the County transfer station. This facility is located within a few miles of the County seat and is a central location for the County.

4.7.5 Process to Determine Compliance with Applicable State, Federal, and Local Regulation for Disposal of Used Appliances. Lincoln County will only dispose of appliances through an appliance recycler possessing proper State certification as described above. The County can enforce the County solid waste ordinance, as it applies to major appliance, should the need arise. Finally by ensuring that a convenient location is available for appliance disposal, Lincoln County limits the potential for unlawful or improper disposal of used appliances.

4.7.6 Specific programs the County will Maintain or Implement During the Next Ten Years. Lincoln County will continue to accept used appliances for recycling at its transfer station throughout the ten year planning period.

4.7.7 Responsible Person and Required Staff Time. The Lincoln County Environmental Officer will be the responsible person for implementing County used

appliance-recycling programs. There is not a staff time allocation for used appliance recycling. HHW and problem material management, including appliances, is anticipated to require .15 FTE (or 300 hours). Additional time allocation for the management of appliances is made.

4.7.8 Estimated Annual Program Budget. See attached consolidated budget form included as Appendix E.

4.7.9 Source of Financing. The primary source of revenue for managing used appliances is through fees, and SCORE grant. The financing for the operation of the transfer station is provided through other fees and county general tax levy.

4.7.10 Implementation Schedule

Year	Action Step
2003-2012	Current management programs will be implemented on an on-going basis.

4.8 Used Oil and Lead Acid and Dry Cell Battery Management

4.8.1 Goals and Policies

1. It is the goal of Lincoln County to ensure that no lead acid batteries are placed in MSW for disposal.
2. It is the goal of Lincoln County to ensure that no dry cell batteries containing mercuric oxide electrodes, silver oxide electrodes, nickel-cadmium, or sealed lead acid that was purchased for use or used by a government agency or an industrial, communications, or medical facility is placed in MSW.
3. It is the goal of Lincoln County to ensure no motor oil, brake fluid, power steering fluid, transmission fluid, motor oil filters or antifreeze is placed in MSW for disposal, on or on the land unless approved by the MPCA, in or on the waters of the state, or in a stormwater or wastewater collection or treatment system--except as permitted by Minnesota Statute and MPCA regulations.

In order to achieve its goals Lincoln County adopts the following policies:

1. Lincoln County, by ordinance, prohibits the placement of used oil in MSW and on or in the land unless approved by the MPCA.
2. Lincoln County, by ordinance, prohibits the placement of lead acid batteries in MSW.
3. Lincoln County, by ordinance, requires transporters of lead acid batteries to deliver the batteries to a lead acid battery recycling facility.
4. Lincoln County, by ordinance, bans the following materials from disposal at MSW disposal facilities designated by Lincoln County: dry cell batteries containing mercuric oxide electrodes, silver oxide electrodes, nickel-cadmium, or sealed lead acid that were purchased for use or used by a government agency or an industrial, communications, or medical facility; lead acid batteries, all used oil and commercially generated oil filters.

5. Lincoln County will seek to ensure that there are facilities accessible to county businesses and residents, which accept for proper management: vehicle fluids, oil filters, lead acid batteries, and other batteries banned from disposal.
6. Collect dry batteries in HHW.
7. Lincoln County will provide information and outreach to the general public on the proper management of these materials.
8. Lincoln County will maintain staff at the Lincoln County transfer station who will watch for all banned material in incoming wastes.

4.8.2 Description of Public and Private Sectors Programs and their Funding. Virtually all of the automobile service stations operating in Lincoln County will accept used oil from the general public. Fewer locations will accept used oil filters. Those accepting filters include the Lyon County Oil Cooperative, Ivanhoe, which is a service station and an auto parts retailer. Minnesota Statute 325E.115 obligates all retailers who sell more than 1,000 oil filters per year for off-site installation to accept up to ten gallons and ten oil filters from individuals at no charge, however given the small population in the county it does not appear that many outlets retail 1,000 filters per year. A charge of \$1 per filter is set for used oil filters.

Collection of nickel cadmium batteries is possible at HHW collections, Lincoln County residents can also drop off such materials at the Lyon County HHW facility located in the City of Marshall. The Lyon County HHW collection facility can also accept such materials from Very Small Quantity Generators for a fee.

Lead acid automobile batteries can be disposed of through all battery dealers in the county. Battery retailers are obligated under Minnesota Statute 325E.115 to accept used batteries at no charge from the public. Further to ensure that old lead acid batteries are recycled through battery dealers, a \$5 surcharge is placed on all new batteries sold without a returned battery. The retailer must then recycle all batteries received. Failure to do so is a misdemeanor.

4.8.3 Specific Programs the County Proposes to Implement. The County will examine its ordinance for compliance with Minnesota statute regarding the disposal of used motor oil filters and other vehicle fluids.

The County will continue to provide information through general dissemination and response to specific inquiries regarding the proper management of these materials on an on-going basis. The County will also provide notice to retailers of lead acid batteries, oil and oil filters regarding the applicable content of Minnesota Statute 325E.115.

4.8.4 Responsible Staff person and Staff Time Required. The Lincoln County Environmental Officer will be the responsible person for implementing County used vehicle fluid and battery management programs. There is not a delineated staff allocation for managing these specific materials. HHW and problem material management, including vehicle fluids and batteries, is anticipated to require 14% FTE (or 300 hours).

4.8.5 Estimated Ten Year Budget. See attached consolidated budget form included as Appendix E.

4.8.6 Source of Financing. The programs will be financed through SCORE grants and County general revenues.

4.8.7 Implementation

Year Action Step

2003	Ordinance review
	On-going activities
2004	On-going activities
2005	On-going activities
2006	On-going activities
2007	On-going activities
2008-2012	On-going activities

4.9 Household Hazardous Waste

4.9.1 Goals and Policies. It is Lincoln County's Goal to divert household hazardous waste from the County's mixed municipal waste stream.

It is Lincoln County's Goal to ensure proper management of hazardous wastes generated by farms and Very Small Quantity Waste Generators

In order to achieve its goal, Lincoln County adopts the following policies:

1. To continue participation in the Lyon County Regional Household Hazardous Waste Program
2. To continue to sponsor eight collection events per year and collection by appointment at the facility.
3. To participate in Minnesota Department of Agriculture Waste Pesticide Collections, and Waste Pesticide Container Collections.
4. To educate its residents as to the reasons and means to minimize HHW generation and to properly dispose of the HHW that is generated.
5. To educate and promote business and farm operators on the proper management of hazardous wastes.
6. To conduct fluorescent bulb collections at the eight HHW collections or by appointment
7. Continue to operate the 90-day HHW facility..

4.9.2 Existing Programs, Staffing and Financing. In 2002, Lincoln County constructed and began operation of a 90-day HHW facility. The facility was funded through a \$20,000 grant from the Lyon County Regional Landfill. The 90-day facility is staffed by Lincoln County.

Lincoln County also participates in a regional HHW management program. The Lyon County HHW Collection Center continues to be available to Lincoln County residents, who may drop HHW off at no cost. The facility is open two days per month. The facility is staffed by Lyon County. Materials collected at this site are processed for transportation (lab packing or bulking) and then shipped with a licensed hazardous waste transport firm to approved and permitted hazardous waste disposal facilities. In addition, the facility operates a materials exchange. Materials that are suitable for reuse are displayed, and any resident of the area may take such products as are useful at no charge.

While, many persons in Lincoln County do frequent the City of Marshall for shopping, entertainment, and other goods or services, the drop off center has not attracted many users from Lincoln County. To more effectively capture HHW and florescent lamps, Lincoln County sponsors eight HHW collection events each year. They are held both in the spring and fall. Lyon County lab packs and transports the HHW from the 90-day facility. Through this program one or two one-day collection events are sponsored within Lincoln County annually. County residents have the opportunity to bring material to a nearby and convenient location for disposal through the one-day collections or by appointment. The locally owned equipment offers significant cost savings relative to hiring licensed private-sector hazardous waste transport firms for one-day events. Cost is further controlled through regional pooling of labor. The County Environmental Officer assists in collection events through out the region to ensure that there are adequate numbers of trained staff on-hand at collection events.

Once material is collected, either at the at Marshall drop off center or through one-day collection events, the material is stock piled at the Lyon County facility. Once sufficient volumes are stored, Lyon County arranges for disposal. Material is prepared for transport and disposal through bulking of materials or lab packing. Lyon County operates this program under contract with the Minnesota Pollution Control Agency. The remaining portion of the disposal fee for Lincoln County HHW is charged back to Lincoln County. Lincoln County also pays for the cost of the Mobile Collection Unit service. However, in the past, Lyon County has provided some financial assistance to Lincoln and other counties. This assistance has been distributed from landfill revenues and is intended to limit hazardous materials being disposed in the Lyon County Landfill.

Lincoln County also participates in a number of other programs, which separate and manage hazardous wastes from the MSW stream. Lincoln County conducts eight fluorescent lamp collections annually. These collections ensure that the mercury contained in fluorescent lamps is separated from the waste stream and recycled. Lincoln County also coordinates with the Minnesota Department of Agriculture in the implementation of waste pesticide collections, that are conducted in compliance with Minnesota Statute 18B.065. Further, Lincoln County organizes and conducts waste pesticide container collections, fulfilling obligations under Minnesota Statute 18B.135. The County conducts the waste pesticide container collection for area chemical dealers to increase efficiency and reduce the burden on local agricultural chemical dealers.

4.9.2.a HHW Education. Lincoln County provides an on-going education program relating to HHW. The program includes utilizing the Lyon County HHW Learning Station in Lincoln County schools and the Prairie Ecology Bus staff provides two presentations each year at the schools. This educational display and accompanying information is placed within each school every three years and the Ecology Bus staff presentations are cycled through the schools every 2 years. Thus every school child in Lincoln County is exposed to this information at least once, if not twice, in their school career. In addition, 4-H includes HHW as part of their activities.

Lincoln County also provides general outreach and information dissemination on HHW management. The County publishes period newspaper advertisements and notices. The Lincoln County Solid Waste Administer provides outreach at community events such as the Lincoln County fair, through setting up and staffing an informational booth. Brochures and other printed information is distributed. The County Environmental Officer is also able to answer direct and specific questions regarding HHW management either at community events or at the Solid Waste Office. The County Environmental Office staff conducts additional outreach, while staffing the Lincoln County transfer station. Direct contact is established with county residents, while they are engaged in managing waste.

4.9.2b HHW Collection Options. Lincoln County has three basic options for collecting, transporting and disposing of HHW.

1. Do nothing
2. Continue to participate in regional programs
3. Develop an independent program.

Option 1, the do nothing option is not consistent with the county goals and policies nor is it likely consistent with Minnesota Statute 115A.96, sub. 6.

Option 2, continue to participate in regional programs, is the best option for Lincoln County. The regional programs provide the most cost effective means of removing HHW from the MSW stream.

Option 3, develop an independent program, is not acceptable based on costs of establishing a program.

4.9.3 Specific programs the County will Maintain or Implement in the Next Ten Years

Educational Programs

Educational Elements

1. The County will continue to provide its residents with the information regarding how and why to properly manage HHW.

2. The County will continue to provide educational outreach to institutional waste generators and small businesses in order to promote proper waste management by VSQGs.
3. The County will continue to target youth through use of the Prairie Ecology Bus visiting the Lincoln County Schools and coordination with the Minnesota Extension Service
4. The County will continue to promote Minnesota Department of Agriculture waste pesticide collections.
5. The County will continue to conduct outreach at community events such as the Lincoln County fair with a booth staffed by the Solid Waste Officer

HHW Reduction Strategy

1. The first element of a HHW reduction strategy will be continued general education to Lincoln County residents. Educational efforts include alternatives to hazardous products, purchasing the smallest quantity needed, proper techniques for managing small amounts of paint (such as painting cardboard boxes, or allowing to dry.)
2. Lincoln County will continue to promote HHW material exchange at the Lincoln County Transfer Station.
3. Lincoln County will examine the potential for materials exchange at one-day collection events. Paint exchanges are a proven means of reducing the volume of HHW requiring disposal.

Strategy for Separation, Collection, and Disposal of HHW from MSW

1. Lincoln County will continue to participate in the Lyon County Regional HHW Facility . The newly constructed 90-day HHW facility in Lincoln County enables Lincoln County residents to access an HHW drop off facility year-round.
2. Lincoln County will continue to sponsor eight HHW collection events on an annual basis. The locations are determined annually by the County Environmental Officer based on where collections have occurred recently and the volume historically collected.
3. The County will continue to provide the necessary education and promotion of these events and facilities to ensure that county residents understand and know how to dispose of HHW.
4. The County will continue to coordinate waste pesticide container collection events. These events are completed in conjunction with agricultural chemical dealers and the Minnesota Department of Agriculture.
5. Lincoln County will continue to promote waste pesticide collection events sponsored by the Minnesota Department of Agriculture.
6. The County will continue to promote proper management of hazardous waste by very small quantity generators located in the county.

4.9.4 Responsible Person and Required Staff Time. The Lincoln County Solid Waste Officer will be responsible for implementing and coordinating Lincoln County HHW and related programs. Estimated time allocation is included with Section 4.8 time allocation of 14% FTE (300 hours per year).

4.9.5 Estimated Ten Year Budget. See attached consolidated budget form included as Appendix E.

4.9.6 Source of Financing. Lincoln County HHW programs are financed through SCORE grants, County general funds, and Lyon County HHW grants.

4.9.7 Implementation Schedule

Year Action Step

2003 On-going activities
2004 On-going activities
2005 On-going activities
2006 On-going activities
2007-2012 On-going activities

4.10 Demolition Waste

4.10.1 General Policy and Goals. It is the Goal of Lincoln County to ensure that demolition and construction debris is managed in a cost-effective and environmentally sound manner.

Lincoln County adopts the following policies in order to achieve its goal:

1. Lincoln County will encourage its residents and businesses to utilize permitted demolition waste landfills.
2. Lincoln County will accept small amounts of demolition waste at its transfer station site.
3. Lincoln County will analyze the feasibility of siting and constructing a <250,000 cubic yard new County Demolition facility to accommodate demolition primarily from municipalities with dilapidated structures, especially tax forfeiture properties.

4.10.2 Existing Practices and Programs. Demolition debris may be managed through permit-by-rule demolition landfills. Two permit by rule facilities were permitted in 2001, however, there were none in 2002. Demolition waste is currently transferred to Lyon County and transported to the Rock County Demolition Landfill. Demolition waste generators can also utilize permitted demolition waste facilities located in Murray County or Yellow Medicine County. It is possible that some demolition waste is delivered to the Brookings Landfill as well. The construction and demolition activities in the county have in the past limited the need for demolition disposal capacity. The issue of tax forfeiture properties in communities and disposal options has been explored in the last year, and the County is considering the siting and construction of a <250,000 cubic yard facility. It can also be expected that other demolition that occurs in Lincoln County such as farm buildings can be demolished and buried on site without county or state permits.

Some small amounts of demolition waste are currently disposed of with in a demolition roll-off at the County transfer station. This facility will accept reasonable volumes of demolition waste. The waste is then disposed of at the Lyon County Regional

Demolition Facility. The County did previously mix the demolition with MSW, however, the expense and operational difficulties outweighed the benefits of continued practice of mixing demolition with MSW. In addition, the Lyon County Landfill no longer has a demolition waste site. A demolition roll off at the Lyon County facility is used to for transfer to the Rock County facility. Thereby increasing operational complexity and cost.

During the last planning period, Lincoln County completed and adopted a Comprehensive Plan and Countywide Zoning Ordinance. As such, the county does restrict the development of permit-by-rule through land use regulation. A county permit is required for a permitted demolition landfill under the Lincoln County Solid Waste Ordinance, but permit-by-rule facilities are specifically exempted from county permit requirements. Permit-by-rule facilities are regulated by the Minnesota Pollution Control Agency. Permits can be obtained from the MPCA's Marshall office. The County is considering implementing a Conditional Use permit for sites that require a permit by rule permit.

4.10.3 Specific Programs to be Maintained or Implemented in the Next Ten Years. The county will continue to accept small amounts of demolition waste at its transfer station. The current practice at the transfer station allows County staff to remove recyclable materials from the demolition debris, such as metals. In addition, the county will explore the feasibility of siting and construction of an <250,000 cubic yard demolition facility, starting in 2003. As part of this process, it is anticipated that County wide zoning ordinance will be updated. During this process the county will review county controls on permit by rule demolition landfills. In addition the County will continue to address opportunities for demolition waste re-use and recycling.

4.10.4 Specific Persons and Required Staff Time. It can be assumed that the County Environmental Office will have primary responsibility for implementing controls and permits for demolition debris facilities, should such controls be established.

Management of demolition materials at the County transfer station will continue to be the responsibility of the County Environmental Officer. When the demolition site is constructed, it will be open on an appointment basis. Time allocation and budget line items will be based upon general transfer station operation and in the years 2003 through 2012 with the addition of a County Demolition facility.

4.10.5 Source of Financing. Planning and Zoning functions of Lincoln County will be financed through the County's general levy. Operation of the transfer station and future Demolition Debris facility is funded through county general levy funds and disposal fees.

4.10.6 Estimated Ten Year Budget. See attached consolidated budget form included as Appendix E.

4.10.7 Implementation Schedule

Year Action Step

2003	Research and development of a County Demolition Facility On-going activities
2004	Consider land use controls as they relate to demolition debris facilities On-going activities
2005	On-going activities
2006	On-going activities
2007	On-going activities
2008-2012	On-going activities

4.11 Ordinance and Licensing

4.11.1 Status of County Ordinance. Lincoln County adopted a solid waste ordinance in January 1993. The County ordinance is included as Appendix F. The ordinance does provide for Countywide licensing of waste haulers.

4.11.2 Description of Problems with Implementing or Enforcing the Ordinance. Lincoln County has not had significant problems in the implementation of enforcement of the County's Solid Waste Ordinance.

4.11.3 Plans to Develop or Amend Ordinance. Volume Based Fees: While, there are currently volume-based fees put in place by waste haulers operating in Lincoln County, the County ordinance does not expressly require volume-based fees. The County will examine the potential for amending the County solid waste ordinance to include a requirement that contracts with all waste haulers utilize a volume based fee structure as a condition of the contract.

Other Financial Incentives for Solid Waste Abatement: The county provides recycling opportunities to all residents in a manner that presents no marginal cost to the resident. As long as the current source and level of funding exists, there are no financial incentives that the county will seek to implement through ordinance other than volume based pricing. If funding assistance is lost, fees or a solid waste assessment will be acted on by resolution of the County Board.

Demolition Solid Waste Section: The Lincoln County Solid Waste Plan explicitly addresses the permitting of demolition debris landfills. The ordinance incorporates Minnesota Rules 7035 by reference. However, the ordinance does not regulate permit by rule demolition landfills. The County will consider establishing land use controls for such facilities. Regulation of On-Site Disposal: The County currently allows for on-site disposal in accordance with Minnesota Statute 17.135. However, there are some areas of concentrated rural development. The county will consider, in the current comprehensive planning process, the need for and viability of instituting mandatory collection or some other mechanism to eliminate on-site waste disposal for small lot, high-density lakeside developments or unincorporated communities. An addition to the Ordinance the County is considering adding a requirement for a permit to burn and bury demolition debris; and require a site visit to be conducted by Lincoln County Environmental staff prior to the

demolition. Sites covered under the Agricultural exemption would not be included for the site visits.

4.11.4 Responsible Persons and Required Staff Time. The County Environmental Officer will be responsible for development, updating and enforcing county ordinance and licensing. The Environmental Officer will likely expend more time in addressing the County's Solid Waste Ordinance as it is updated.

4.11.5 Implementation Schedule

Year Action Step

2003	Evaluate volume based pricing for inclusion in ordinance Evaluate need for land use controls relating to the development of permit-by-rule demolition landfills.
2004	On-going activities
2005	On-going activities
2006	On-going activities
2007	On-going activities
2008-12	On-going activities

4.12 Solid Waste Staffing

4.12.1 Existing Levels of Staffing for Solid Waste Programs. Currently, the County employs less than one full time equivalent to manage county solid waste programs. One staff person is responsible for a number of duties including Shoreland regulation enforcement, feedlot officer, solid waste administrator and other county environmental program responsibilities. Solid waste staffing constitutes a .86 full time equivalent position.

4.12.2 County Staffing Level Needed over Ten Year Planning Period. It is anticipated that there will be no changes in County solid waste staffing levels during the current planning period. Staffing levels will remain constant at .86 full time equivalent. If there are any changes it will likely be a reduction in Solid Waste Management Activities as increasing demands of other work program areas will reduce staff time available.

Table 4.4 Annual Solid Waste Staffing Needs, Full Time Equivalency

Chapter subpart #	Project Element	Staff Time Required	Staff hours
4.1	Source / Waste Reduction	.05 FTE	100
4.2	Waste Education	.19 FTE	400
4.3	Recycling	.29 FTE	600
4.4	Yard Waste	--	--
4.5	Transfer Station	.19 FTE	400
4.6 through 4.9	Problem Wastes/HHW	.14 FTE	300
4.10	Demolition Wastes	--	--
4.11	Ordinance (part of Administration)	--	--
4.12	TOTAL Administration / Staffing	.86 FTE	1,800

4.13 Solid Waste Program Funding

4.13.1 General Policy and Goals. It is the Goal of Lincoln County to provide adequate funding to operate County waste management programs and achieve county goals and policies.

It is the Goal of Lincoln County to ensure that solid waste management services are to the extent possible, financed by users, except where public subsidy will provide incentive for waste abatement or is necessary to meet other County goals and policies.

In order to achieve the County's Goals Lincoln County adopts the following policies:

1. Lincoln County will continue seek the most cost effective waste management strategies that benefit the health safety and welfare of its citizens.
2. The County will consider funding alternatives if current funding sources are reduced or do not meet the needs to operate the solid waste programs and effectively implement waste management strategies. These funding sources include: the Annual SCORE Grant from the State of Minnesota Office of Environmental Assistance.

3. The County will continue to impose disposal fees for MSW and demolition waste disposed at its transfer station and for used appliances collected at its transfer station.
4. The County will impose a disposal fee for future wastes collected at transfer station such as waste tires.
5. The County will continue to provide funding from the County general revenue adequate to meet funding match requirements as prudent.

4.13.2 Existing Funding Sources. In 2002, SCORE program funding was reduced by 10% from \$55,000 to \$49,500. In 2003, the governor's unallotment reduced funding further to \$39,500. Waste collection and receipts at the County transfer station generates approximately \$9,500.00 per year. An additional \$11,500.00 in County general revenue is used to support the transfer station. It is anticipated that Lincoln County will receive SCORE funds will amount to \$39,500.00 in 2004. Combined with County Tax dollars and fees, it is anticipated that the County Solid Waste Programs will have the minimum to continue operation.

Table 4-5 2002 Solid Waste Funding

Funding Source	Amount
2002 SCORE Program	\$49,500
Landfill fees	9,500
County General Levy	\$11,500
Lyon County HHW Funding	\$750
Lyon Co Refund Grant	\$9,900
Total	\$81,150

4.14 Plan Review and Five Year Update

It is anticipated that this plan will be approved in 2003, with a plan update required in 2008. The process will, assuming no change in Minnesota Statute, consist of the County Environmental Officer reviewing existing plan. County Goals and Policies will be reviewed by County Environmental Officer, and the County Board of Directors, and revised as needed. The existing programming will then be reviewed in relationship to the goals and policies. Adjustments in the programming will be made in order to more effectively and efficiently achieve county goals and policies. The entire plan update process will be coordinated with OEA staff.

Specific issues to be re-evaluated will include the need for implementing a rural waste collection system.

4.15. Goal volume Table. See Appendix A.

4.16 Development of the County Solid Waste Program Budget

The ten-year budget for Lincoln County solid waste programs is included as Appendix E. This budget is based on budgets from 2001 and 2002 for the waste abatement programs and for the operation of the Lincoln County Transfer Station. Program expenses are expected to escalate at three percent per year due to price inflation. Program revenues that are determined and controlled by the county are also expected to escalate with inflation. However, the program revenues provided through grants are not within the control of Lincoln County. Thus, it is assumed that State SCORE funding will be reduced from \$55,000 in 2001 to \$40,000 in 2003 thru 2005, and \$30,000 thereafter. This is reflected in the increased Service Fees / Household Assessments and Other Revenue sources that increase as the SCORE dollars decrease and inflation impacts the program costs.

Based on these considerations, it appears that increased local funding will be required to maintain programs at their current levels. It is uncertain whether the County will be able maintain the current level of Solid Waste Management Service without an increase in other revenue and service fees and / or assessments. The County will re-examine funding sources of their Solid Waste Management programs in order to determine the best environmentally sound and fiscally prudent ways to manage waste.

Additional funding sources will need to be identified and accessed to supplement Solid Waste Management practices identified in the plan.

4.17 Alternatives to the Proposed System

Lincoln County does not anticipate major operational difficulties at the Lyon County Sanitary Landfill during this planning period. However, should such a situation occur that prevents waste from being managed at the site, Lincoln County will take the following steps to resolve the lack of a disposal location.

1. Pursue landfill reciprocity agreement. The four operating landfills within the Southwest Regional Solid Waste Commission territory--including the Lyon County Landfill--have signed a reciprocity agreement. The nature of this agreement is to allow waste that would ordinarily be delivered to a specific facility to be delivered to any of the other facilities. The agreement also provides for financial terms. If the Lyon County Sanitary Landfill is not available for a short term period, Lincoln County will allow the reciprocity agreement to operate, and the waste to be delivered to any of the other three regional landfills. Lincoln County will continue to coordinate with the Lyon County Landfill Advisory Committee as well as the waste hauler servicing the County. In the past this agreement has worked well for short term situations.
2. Coordinate with Southwest Regional Solid Waste Commission. Should the Lyon County Sanitary Landfill be closed for an extended period or closed permanently, Lincoln County will coordinated with the Southwest Regional Solid Waste Commission in the selection of an other disposal facility. In the event of this facility closing, there

will be seven counties significantly impacted--making the location of alternate disposal capacity a regional issue. There will be significant concern about the availability of Certificate of Need and permitted capacity at each of the remaining landfills, as the Lyon County facility manages over 60% of the regional waste stream. The preferred option will be to maintain the waste within the State of Minnesota, and within the Region. However, Lincoln County will maintain its options to utilize out-of state landfills that meet all federal requirements--such as the Brookings Landfill.

Lincoln County and the Solid Waste Commission will consider the cost-effectiveness and feasibility of utilizing resource recovery facilities that may have the capacity to accept the region's waste stream. Redwood County is currently pursuing a feasibility study for a waste-to-energy facility to be located at Lamberton, Minnesota.

4.18 Mitigation of Environmental Risks

4.18.1 On site disposal. On site disposal is a significant practice in Lincoln County. Nearly one-half of the County's households are located outside of incorporated municipalities. Based on Goal Volume Table calculations, approximately one-fourth of the waste stream is managed by on-site disposal practices. This is estimated to be 923 tons per year, or 2.5 tons per day. Changing these practices presents a significant challenge. Waste hauling is not readily available at a cost-effective rate in rural areas. On-site disposal is a long-standing and traditionally accepted means of waste management. The sparse population of the County combined with the hilly terrain associated with the Buffalo Ridge and other glacial moraines would further make enforcement of on-site regulations very difficult.

However, the County recognizes that on-site waste management has the potentially to adversely impact the environment, including impacts on water resources and highly localized impacts on air quality. The County will take incremental steps in assessing the issues of on-site disposal.

1. Natural Attrition: The number of household managing waste on-site is declining over time. The Goal-Volume table estimates the decline at .5% per year. This will result in approximately a 10% reduction of the on-site disposal (from 923 tons, 2001 to 833 tons per year in 2011). The attrition comes primarily from the loss of family farms in Lincoln County. There is also growing recognition of the risks and nuisance associated with on-site disposal, which has lead to voluntary curtailment of on-site management.
2. Educational efforts: The County will include in its educational programs information regarding the laws pertaining to on-site disposal. The county will also develop educational materials pertaining to the risks and nuisances of on-site disposal.
3. Targeted promotion of waste abatement activities: The County will target rural residents for the promotion of waste abatement activities: including source reduction, recycling, and composting. The County will also review literature and consult with state agencies regarding the relative impacts of burning or burying wastes and sharing the information with rural residents.

4. Address Concentrated Rural Populations: The County will examine areas of concentrated rural settlement where on-site disposal is most inappropriate. These areas include lakeshore developments, and unincorporated communities of Wilno and Verdi. If there is significant on-site management in these locations the county will consider implementing public collection or some other means of precluding this activity.
5. The County will consider the impacts of these actions in the next solid waste plan update. If there is limited impact in reducing the degree on on-site waste management, the county will examine developing rural waste collection systems. Such systems might be rural dumpsters, paid for through a solid waste assessment on property owners.

4.18.2 Illegal Disposal. Lincoln County's solid waste ordinance specifically prohibits dumping of wastes, establishes dumping and littering as a misdemeanor offense. Enforcement of such actions is the responsibility of the Environmental Officer. Illegal dumping has been an issue of limited concern in Lincoln County. If egregious illegal dumps are located which potentially threaten the air, surface water or groundwater the county will compel the property owner to remove the waste in a timely manner. If the illegal dumping occurs on county property the county will remove the waste in a timely manner.

4.19 Public Participation Program

4.19.1 Methods for Documenting Public Participation. All documentation of public participation and public input on the Lincoln County Solid Waste Management Plan will be maintained on file in the Environmental Office. Separate files will be maintained for comments made by citizens, public advisory committees, regional authorities, adjacent counties or districts, local units of government and solid waste service companies conducting business within the County.

Records to be kept will include all correspondence sent, notes and records of related public meetings, notes and records of telephone calls, and paper copies of e-mail received.

4.19.2 Ongoing Process to Ensure the Involvement and Consultation with Interested Parties. Solid waste management is regularly discussed at the County Board. These meetings are public and open. They are also noticed in the local newspaper, including the agenda. Meeting minutes are also published in the local newspaper. The Environmental Officer maintains an open access to all county residents and interested parties. He is available in the Courthouse, at the county transfer station two days per week, and at community events such as the Lincoln County Fair.

Further, upon preliminary OEA staff approval this plan will be placed on public notice and be open to comments from the public.

Substantial public input through facilitated meetings will also be initiated over the next 24 months as the County conducts a sustainable development planning process. This process will be based on public involvement. Citizens and other interested parties will have an opportunity to provide input on how various county plans should be related as well as general directions that the county should take on a variety of issues.

4.20 Solid Waste Program Siting Program

The County does not anticipate developing a MSW management facility during the planning period.

APPENDIX A:

Solid Waste Management System Goals & Waste Volume and Tonnage Table

APPENDIX B:

City of Tyler Commercial Waste Collection Rates

APPENDIX C:

Lincoln County Recycling Contract with Ritters Sanitation

APPENDIX D:

- **Lincoln County Transfer Station Permit-by-Rule**
- **MPCA Approval letter for the Lincoln County HHW Program under 90 day on-site facility**

APPENDIX E:

Consolidated Solid Waste Budget

APPENDIX F:

Lincoln County Solid Waste Ordinance

Attached are the following sections of The Lincoln County Development Code:

- **Table of Contents**
- **Section I (General provisions)**
- **Section IX Windpower management, subdivision 900.0 Waste management**
- **Section X Solid Waste**
- **Section XI Nuisance**
- **Section XII General Regulations, Subdivision 200.0 Solid Waste**

APPENDIX G:

Lincoln County Location Maps