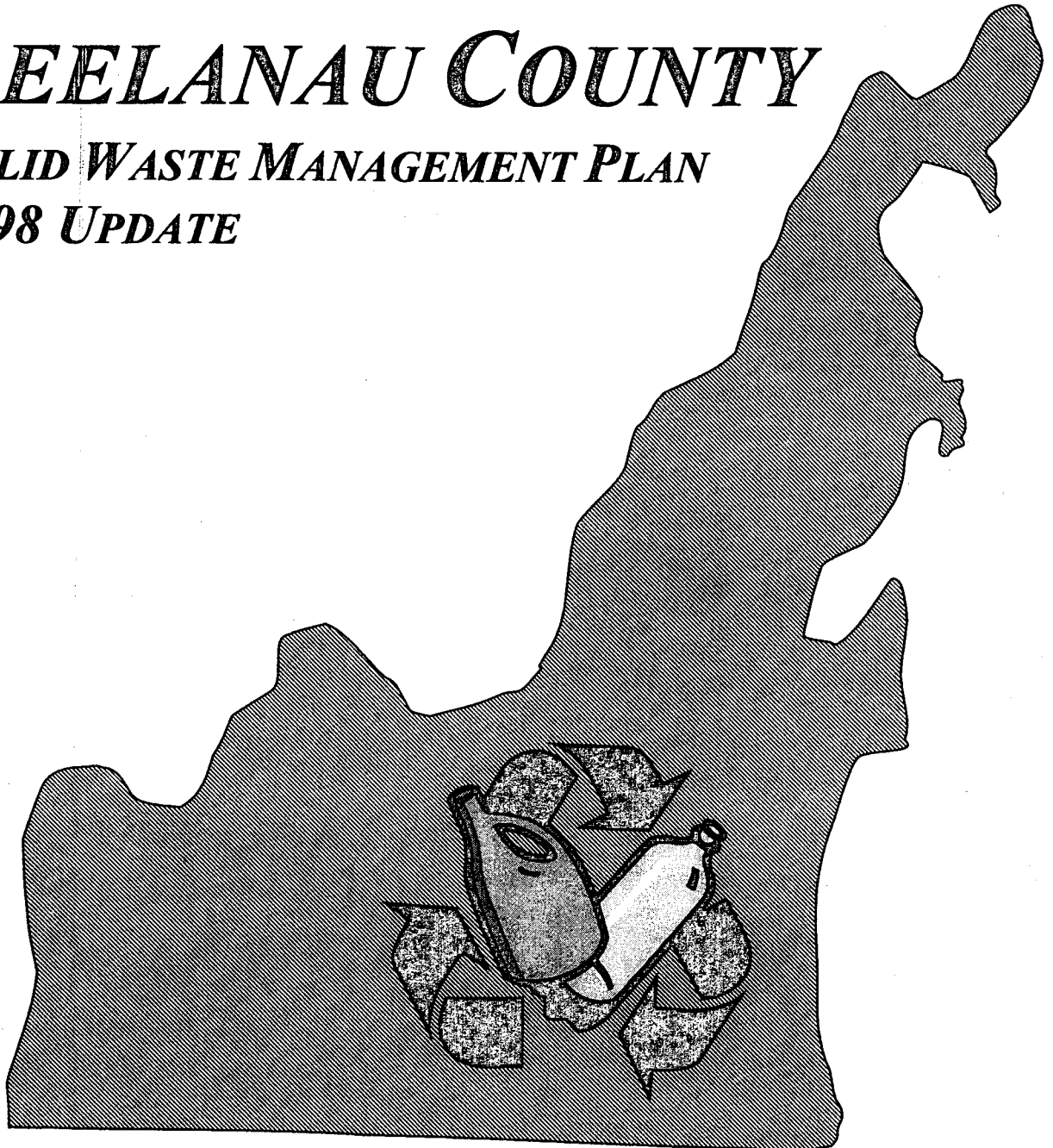


# *LEELANAU COUNTY*

*SOLID WASTE MANAGEMENT PLAN*

*1998 UPDATE*



*NOVEMBER 27, 1998*

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: [www.deq.state.mi.us](http://www.deq.state.mi.us)

RUSSELL J. HARDING, Director

December 3, 1999

Ms. Jean I. Watkoski, Chairperson  
Leelanau County Board of Commissioners  
County Building  
301 East Cedar Street  
Leland, Michigan 49654

Dear Ms. Watkoski:

The Department of Environmental Quality (DEQ) received the locally approved update to the Leelanau County Solid Waste Management Plan (Plan) on September 20, 1999.

As outlined in the August 13, 1999 letter to Ms. Trudy Galla from Mr. Seth Phillips and as confirmed by the Leelanau County Board of Commissioners resolution of September 21, 1999, the DEQ makes the following modifications to the Plan.

*Page III-32*  
On page III-32 of the Plan, items 1, 2, and 3, the language covering local ordinances and regulations affecting solid waste disposal was overly broad and undefined contrary to the limitations intended by Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Because the language of these items is so expansive and general in scope that the DEQ cannot evaluate the actual nature of the anticipated regulation, we are administratively deleting these sections from the Plan as part of our approval action.

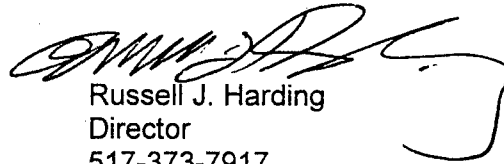
By this letter, this Plan with these modifications is now approved and Leelanau County now assumes responsibility for the implementation and enforcement of this Plan. Please make certain that a copy of this letter is included with copies of the approved Plan both archived and distributed by the County.

By approving the Plan with modifications, the DEQ has determined that it complies with the provisions of Part 115 and the Part 115 Rules concerning the required content of solid waste management plans. Specifically, the DEQ has determined that the Plan identifies the enforceable mechanisms that authorize the state, a county, a municipality, or a person to take legal action to guarantee compliance with the Plan, as required by Part 115. The Plan is enforceable, however, only to the extent the County properly implements these enforceable mechanisms under applicable enabling legislation. The Plan itself does not serve as such underlying enabling authority, and the DEQ's approval of the Plan neither restricts nor expands the County's authority to implement these enforceable mechanisms.

The Plan may also contain other provisions that are neither required nor expressly authorized for inclusion in a solid waste management plan. The DEQ's approval of the Plan does not extend to any such provisions. Under Part 115, the DEQ has no statutory authority to determine whether such provisions have any force or effect.

We applaud your efforts and commitment in addressing the solid waste management issues in Leelanau County. If you have any questions, you may contact Mr. Seth Phillips, Solid Waste Management Section, Waste Management Division, at 517-373-4750.

Sincerely,

  
Russell J. Harding  
Director  
517-373-7917

- cc: Senator George A. McManus Jr.  
Representative Jason Allen  
Mr. Arthur R. Nash Jr., Deputy Director, DEQ  
Ms Cathy Wilson, Legislative Liaison, DEQ  
Mr. Jim Sygo, DEQ  
Ms. Joan Peck, DEQ  
Mr. Phil Roycraft, DEQ - Cadillac  
Mr. Seth Phillips, DEQ  
✓ Leelanau County File

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with the PLAN FORMAT as provided by the DEQ.*

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## EXECUTIVE SUMMARY

The following summarizes the solid waste management system selected to manage solid waste within the County. In case of conflicting information between the executive summary and the remaining contents of the Plan update, the information in the main body of the Plan update found on the following pages will take precedence over the executive summary.

### OVERALL VIEW OF THE COUNTY

<i>Township of Municipality Name</i>	<i>1990 Population</i>	<i>% Land Use*</i>		<i>% of Economic Base**</i>				
		<i>Rural</i>	<i>Urban</i>	<i>Agr</i>	<i>For</i>	<i>Ind</i>	<i>Com</i>	<i>Oth</i>
Bingham Township	2,051	94	6	45	25	0	0	30
Centerville Township	836	96	4	32	26	0	0	42
Cleveland Township	783	95	5	10	58	0	0	32
Elmwood Township	3,466	84	16	24	33	0	1	42
Empire Township	858	96	4	10	54	0	0	36
Glen Arbor Township	644	92	8	4	34	0	0	62
Kasson Township	1,135	96	4	24	52	0	0	24
Leelanau Township	1,694	92	8	34	35	0	0	31
Leland Township	1,642	91	9	25	33	0	0	42
Solon Township	1,268	95	5	22	29	0	0	49
Suttons Bay Township	2,150	93	7	40	34	0	0	26
Empire Village	355							
Northport Village	605							
Suttons Bay Village	561							
Traverse City (pt)	39							
Total Population	16,527							

\* *Township totals include incorporated villages located within the township*

\*\* *Agr = Agriculture; For = Forestry; Ind = Industry; Com = Commercial; Oth = All Other Economic Bases*

## CONCLUSIONS

Major conclusions resulting from the planning work during the development of this plan are as follows:

- It is important that the existing high quality environmental conditions in Leelanau County be preserved.
- Solid Waste volumes are directly related to population and seasonal fluctuations.
- All solid waste collection and hauling is being done by private haulers.
- A portion of the solid waste being generated in Leelanau County is being recycled. The present residential recycling system consists of seven County funded drop-off sites in Leelanau County, two private drop-off locations in Leelanau County, a private processing plant in Leelanau County, and a private processing plant in Grand Traverse County. The commercial recycling system also includes on-site dumpsters at businesses and schools.
- All solid waste presently being collected in Leelanau County that is not recycled or otherwise removed from the waste stream is disposed of by landfilling. Leelanau County has one privately owned landfill.
- At the present time, landfilling is the most economical method of solid waste disposal.
- Recycling is the primary five and ten year alternative for reducing Leelanau County's solid waste disposal based on an evaluation and ranking of various alternatives and estimated future conditions.

## SELECTED ALTERNATIVES

All potentially feasible solid waste management systems were evaluated and ranked to determine the best systems for Leelanau County. The major components of the five and ten year recommended alternatives are as follows:

### *Recommended Five Year Alternatives*

- Solid waste collection by private haulers.
- Materials collected at the drop-off sites will be transported to a processing plant. Funding for these sites will be provided by the County, Townships, and private recyclers.
- Dispose of all wastes not removed from the waste stream by source reduction, recycling, composting, or other methods at a licensed landfill.
- Encourage development of transfer stations as needed.
- Enter into reciprocal agreements with counties in the region regarding solid waste disposal.
- Coordinate collection for household and agricultural hazardous wastes and dispose of them at a licensed out-of-county disposal site.
- Seek additional and alternative funding to promote the selected system and recycling efforts through education.
- The Leelanau County Planning Commission or another organization designated by the County Board of Commissioners will be responsible for implementing the Solid Waste Management Plan. Membership on any designated organization should reflect the makeup of the Solid Waste Management Planning Committee as designated by the DEQ.

### *Recommended Ten Year Alternatives*

- Solid Waste Collection by private haulers.
- Continue developing alternatives to landfilling.
- Follow-up recommendations of five-year plan as feasible.
- Update plan at five year intervals.

Implementation of the selected alternatives will take advantage of, where possible, opportunities for collaboration and coordination with neighboring communities and counties in the region. This effort will focus on opportunities for disposal capacity, recycling and composting processing capacity, residential and commercial solid waste, and recycling collection programs, household and agricultural hazardous waste programs, enforcement, education and outreach.



## GOALS AND OBJECTIVES

To comply with Part 115 and its requirements, each Plan must be directed toward goals and objectives based on the purposes stated in Part 115, Sections 11538.(1)(a), 11541.(4) and the State Solid Waste Policy adopted pursuant to this Section, and Administrative Rules 711(b)(i) and (ii). At a minimum, the goals must reflect two major purposes of Solid Waste Management Plans:

- (1) To utilize to the maximum extent possible the resources available in Michigan's solid waste stream through source reduction, source separation, and other means of resource recovery and;
- (2) to prevent adverse effects on the public health and the environment resulting from improper solid waste collection, transportation, processing, or disposal, so as to protect the quality of the air, the land, and ground and surface waters.

This Solid Waste Management Plan works toward the following goals through actions designed to meet the objectives described under the respective goals which they support:

**Goal 1:** Establish and maintain a high-quality environment by developing and implementing economically feasible integrated solid waste management which provides for the protection of public health and the environment.

**Objective 1a:** Annually fund a recycling and household hazardous waste drop-off system.

**Objective 1b:** Select a solid waste management system that safeguards the health and well being of Leelanau County citizens.

**Objective 1c:** Periodically evaluate the location of drop-off recycling sites and operational hours to encourage accessible recycling while being economically feasible.

**Goal 2:** Provide the means and encouragement for public involvement in solid waste management activities.

**Objective 2a:** Maintain a county office where the general public can direct questions about solid waste management, obtain educational materials, and sign up for household hazardous waste collection.

**Objective 2b:** Advertise the location and operating hours of drop-off recycling sites, household hazardous waste collection days, and agricultural hazardous waste collection sites.

**Objective 2c:** Educate year-around and seasonal residents about solid waste management issues.

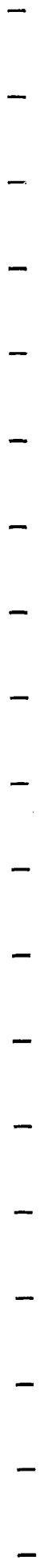
Objective 2d: Operate recycling drop-off sites that encourage recycling through geographic location.

**Goal 3:** Develop sustainable methods of solid waste handling such as recycling, composting, and others.

Objective 3a: Explore alternate methods of funding for operating and expanding both residential and commercial recycling programs.

Objective 3b: Clarify the responsibilities of the private sector and the county government or public authority for solid waste management.

Objective 3c: Evaluate new programs in relation to the State Solid Waste Policy.



## DATA BASE

The data represents actual landfill volumes (*in tons*) as reported by Glen's Sanitary Landfill, Cedar Ridge Disposal, and Ken's Pick Up Service. To be consistent with the 1989 plan, type II waste was proportioned as follows: 60 percent residential, 35 percent commercial, and 5 percent industrial. Numbers were verified with landfill operators and haulers when possible.

	<i>Current 1997 Annual Volume</i>	<i>Five Year Annual Volume</i>	<i>Ten Year Annual Volume</i>
<u>Residential Solid Waste</u>	8,700	8,500	8,200
<u>Commercial Solid Waste</u>	5,100	5,000	4,800
<u>Industrial Solid Waste</u>	700	700	700
<u>Construction and Demolition Waste</u>	4,700	4,100	3,300
<b>Total</b>	<b>19,200</b>	<b>18,300</b>	<b>17,000</b>

Overall, the county does not anticipate major problems associated with managing the solid waste generated within its borders since Glen's Sanitary Landfill, which is located in Kasson Township, has over twenty years of capacity. Although the annual volume of waste has increased, so has the county's population. According to the State Demographer at the Michigan Department of Management and Budget, Leelanau County's population grew 12 percent between 1990 and 1995. They anticipate that the population will grow a total of 17 percent by the year 2000. The Northwestern Michigan Council of Governments also estimates similar population increases over the first part of the decade.

Leelanau County's volume of materials being reused and recycled has increased drastically over the past ten years. The volume of each material collected at the county drop-off sites continues to increase every year except for paper products which peaked in 1995. The following numbers reflect collection volumes provided by Renewable Waste Inc, Construction Waste Recycling, Goodwill Industries, and Cedar Disposal Service. USA Waste Inc provided the volumes for the County's drop-off sites and Glen's Sanitary Landfill. The recycling volume for beverage containers is estimated using the average recovery rate provided in the 1989 Plan.

	<i>Current 1997 Annual Volume</i>	<i>Five Year Annual Volume</i>	<i>Ten Year Annual Volume</i>
<u>Aluminum and Tin</u>	50	50	30
<u>Beverage Containers</u>	1,150	960	890
<u>Glass</u>	140	110	80
<u>Paper Products</u>	480	500	320
<u>Plastics</u>	20	20	10
<u>Commercial Cardboard</u>	580	n/a	n/a
<u>Construction and Demolition</u>	1,040	n/a	n/a
<u>Metal</u>	190	n/a	n/a
<u>Textiles</u>	60	n/a	n/a
<b>Total</b>	<b>3,710</b>		

TOTAL QUANTITY OF SOLID WASTE GENERATED:	<b>22,910 Tons</b>
TOTAL QUANTITY OF SOLID WASTE NEEDING DISPOSAL:	<b>19,200 Tons</b>

## **DISPOSAL AREAS**

All three disposal facilities accepting waste from Leelanau County are privately owned and operated. The vast majority of the solid waste produced in Leelanau County is disposed at Glen's Sanitary Landfill located in Kasson Township. A small portion of waste is disposed at Cedar Ridge Disposal Facility. Type III waste is disposed outside of Leelanau County at Ken's Landfill. Renewable Waste Inc operates a privately owned transfer facility within Leelanau County.

FACILITY DESCRIPTION

Facility Type: Type II Solid Waste Landfill

Facility Name: Glen's Sanitary Landfill

County: Leelanau Location: Town: 28 N Range: 13 W Section(s): 35

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: N/A

Public  Private Owner: USA Waste Inc.

Operating Status

Waste Type Received

- Open
- Closed
- Licensed
- Unlicensed
- Construction Permit
- Open, but Closure
- Pending

- Residential
- Commercial
- Industrial
- Construction and Demolition
- Contaminated Soils
- Special Wastes\*
- Other: \_\_\_\_\_

\*Explanation of special wastes, including a specific list and / or conditions:

Asbestos, Type II Sludges

Site Size:

Total area of facility property: 460.0 acres  
 Total area sited for use: 133.0 acres  
 Total area permitted: 133.0 acres  
     Operating: 14.8 acres  
     Not excavated: 96.0 acres

Current capacity: 22,500,000 cubic yards  
 Estimated lifetime: 60 years  
 Estimated days open per year: 310 days  
 Estimated yearly disposal volume: 300,000 cubic yards

*(if applicable)*

Annual Energy Production

Landfill gas recovery projects: N/A megawatts  
 Waste-to-energy incinerators: N/A megawatts

FACILITY DESCRIPTION

Facility Type: Type II Solid Waste Landfill

Facility Name: Cedar Ridge Recycling and Disposal Facility

County: Charlevoix Location: Town: 33 N Range: 7 W Section(s): 19

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: N/A

Public  Private Owner: Waste Management of Michigan, Inc.

Operating Status	Waste Type Received
<input checked="" type="checkbox"/> Open	<input checked="" type="checkbox"/> Residential
<input type="checkbox"/> Closed	<input checked="" type="checkbox"/> Commercial
<input checked="" type="checkbox"/> Licensed	<input checked="" type="checkbox"/> Industrial
<input type="checkbox"/> Unlicensed	<input checked="" type="checkbox"/> Construction and Demolition
<input type="checkbox"/> Construction Permit	<input checked="" type="checkbox"/> Contaminated Soils
<input type="checkbox"/> Open, but Closure	<input checked="" type="checkbox"/> Special Wastes*
<input type="checkbox"/> Pending	<input type="checkbox"/> Other: _____

\*Explanation of special wastes, including a specific list and / or conditions:

Flyash, Foundry Sands

Site Size:

Total area of facility property:	120 acres
Total area sited for use:	40 acres
Total area permitted:	40 acres
Operating:	21 acres
Not excavated:	0 acres

Current capacity:	370,000 cubic yards
Estimated lifetime:	2.5 years
Estimated days open per year:	260 days
Estimated yearly disposal volume:	311,000 cubic yards

*(if applicable)*

Annual Energy Production

Landfill gas recovery projects:	<u>N/A</u> megawatts
Waste-to-energy incinerators:	<u>N/A</u> megawatts

FACILITY DESCRIPTION

Facility Type: Type III Solid Waste Landfill

Facility Name: Ken's Pick Up Service

County: Gr. Traverse Location: Town: 27 N Range: 11 W Section(s): 15

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: \_\_\_\_\_

Public  Private Owner: USA Waste Inc.

Operating Status

Waste Type Received

Open

Residential

Closed

Commercial

Licensed

Industrial

Unlicensed

Construction and Demolition

Construction Permit

Contaminated Soils

Open, but Closure

Special Wastes\*

Pending

Other: Type II Waste Transfer Station

\*Explanation of special wastes, including a specific list and / or conditions:  
\_\_\_\_\_  
\_\_\_\_\_

Site Size:

Total area of facility property: 17.5 acres

Total area sited for use: 11.5 acres

Total area permitted: 11.5 acres

Operating: 6.0 acres

Not excavated: 0 acres

Current capacity: 125,000 cubic yards

Estimated lifetime: 1.5 years

Estimated days open per year: 260 days

Estimated yearly disposal volume: 70,000 cubic yards

*(if applicable)*

Annual Energy Production

Landfill gas recovery projects: N/A megawatts

Waste-to-energy incinerators: N/A megawatts



FACILITY DESCRIPTION

Facility Type: Transfer Station

Facility Name: Renewable Waste Inc.

County: Leelanau Location: Town: 30 N Range: 11 W Section(s): 33

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: Glen's Sanitary Landfill

Public  Private Owner: Renewable Waste Inc.

Operating Status	Waste Type Received
<input checked="" type="checkbox"/> Open	<input checked="" type="checkbox"/> Residential
<input type="checkbox"/> Closed	<input checked="" type="checkbox"/> Commercial
<input checked="" type="checkbox"/> Licensed	<input type="checkbox"/> Industrial
<input type="checkbox"/> Unlicensed	<input checked="" type="checkbox"/> Construction and Demolition
<input type="checkbox"/> Construction Permit	<input type="checkbox"/> Contaminated Soils
<input type="checkbox"/> Open, but Closure	<input type="checkbox"/> Special Wastes*
<input type="checkbox"/> Pending	<input type="checkbox"/> Other: _____

\*Explanation of special wastes, including a specific list and / or conditions:  
 \_\_\_\_\_  
 \_\_\_\_\_

Site Size:

Total area of facility property:	23.0 acres
Total area sited for use:	3.5 acres
Total area permitted:	3.5 acres
Operating:	3.5 acres
Not excavated:	0 acres
Current capacity:	500 cubic yards per day
Estimated lifetime:	30 years
Estimated days open per year:	310 days
Estimated yearly disposal volume:	250,000 cubic yards

*(if applicable)*

Annual Energy Production	
Landfill gas recovery projects:	<u>N/A</u> megawatts
Waste-to-energy incinerators:	<u>N/A</u> megawatts

## **COLLECTION SERVICES AND TRANSPORTATION INFRASTRUCTURE**

Leelanau County is presently served by four private solid waste haulers (Cedar Disposal, Walt Kalchik's Disposal Service, Northern Disposal Inc, and USA Waste Inc) for residential and commercial collection. All four of these haulers are funded by charges paid by the customer. Customers pay either a monthly fee, per bag fee, or container fee. Cedar Disposal serves the western six townships (Empire, Glen Arbor, Kasson, Cleveland, Solon, and Centerville) and the unincorporated villages of Lake Leelanau and Leland. Walt Kalchik's Disposal Service operates in the northern two townships (Leelanau and Suttons Bay). Northern Disposal Inc utilizes a roll off system throughout Leelanau County. USA Waste Inc collects waste in the eastern five townships (Elmwood, Bingham, Suttons Bay, Leland, and Leelanau). There is overlap between the three haulers as the operational boundaries do not adhere to the political boundaries of the townships. There is one transfer facility operating in Leelanau County. Renewable Waste Inc is located just south of the Village of Suttons Bay. It is also privately owned and operated and is funded by customer fees.

## EVALUATION OF DEFICIENCIES AND PROBLEMS

The following is a description of problems and deficiencies in the existing solid waste system:

### Collection System

- It is a problem for haulers to collect source separated materials and keep them separated.
- There is a system for collecting household hazardous wastes. The cost of the program limits the frequency at which collections can be held and the number of people that can participate.

### Management

- The County government needs to insure that waste is collected and disposed of properly. The previously formed Solid Waste Management Board was disbanded with the management responsibilities being given to the County Planning Commission. Private enterprise needs to be more involved in management, especially with respect to recycling and hazardous waste collection.

### Interaction of Components of the Solid Waste System

- Solid waste generators and the general public need to be better educated as to how the solid waste management system works with respect to the following:

*Where the waste ends up*

*Economics*

*Importance of recycling*

*Production and use of reusable products*

*Elimination of unnecessary packaging material*

*Methods for practicing source reduction*

*Recognition and proper disposal of hazardous wastes*

## DEMOGRAPHICS

*The following presents the current and projected population densities and centers for five and ten year periods, identification of current and projected centers of solid waste generation including industrial solid waste for five and ten year periods as related to the Selected Solid Waste Management System for the next five and ten year periods. Solid Waste generation data is expressed in tons or cubic yards, and if it was extrapolated from yearly data, then it was calculated using 365 days per year, or another number of days as indicated.*

The latest census (1990) listed a permanent resident population for Leelanau County of 16,527. Both the Northwestern Michigan Council of Governments and the State demographer at the Michigan Department of Management and Budget have estimated that Leelanau County's population increased 12 percent in the first five to six years of the decade. The table on **Page II-10** shows each township's actual population for the 1980 and 1990 census years as well as projections for 1996 and projections for ten years in the future. The table also includes population densities and the township's percentage of the total county's population. It must be noted that Leelanau County has a very high seasonal population. The Data Research Center previously prepared seasonal population estimates but has not done so since 1984 when the accuracy of the estimates became questionable. The estimates were believed to be much lower than were actually occurring. The estimate provided in the 1989 Plan shows the seasonally adjusted population almost equal to twice the permanent population.

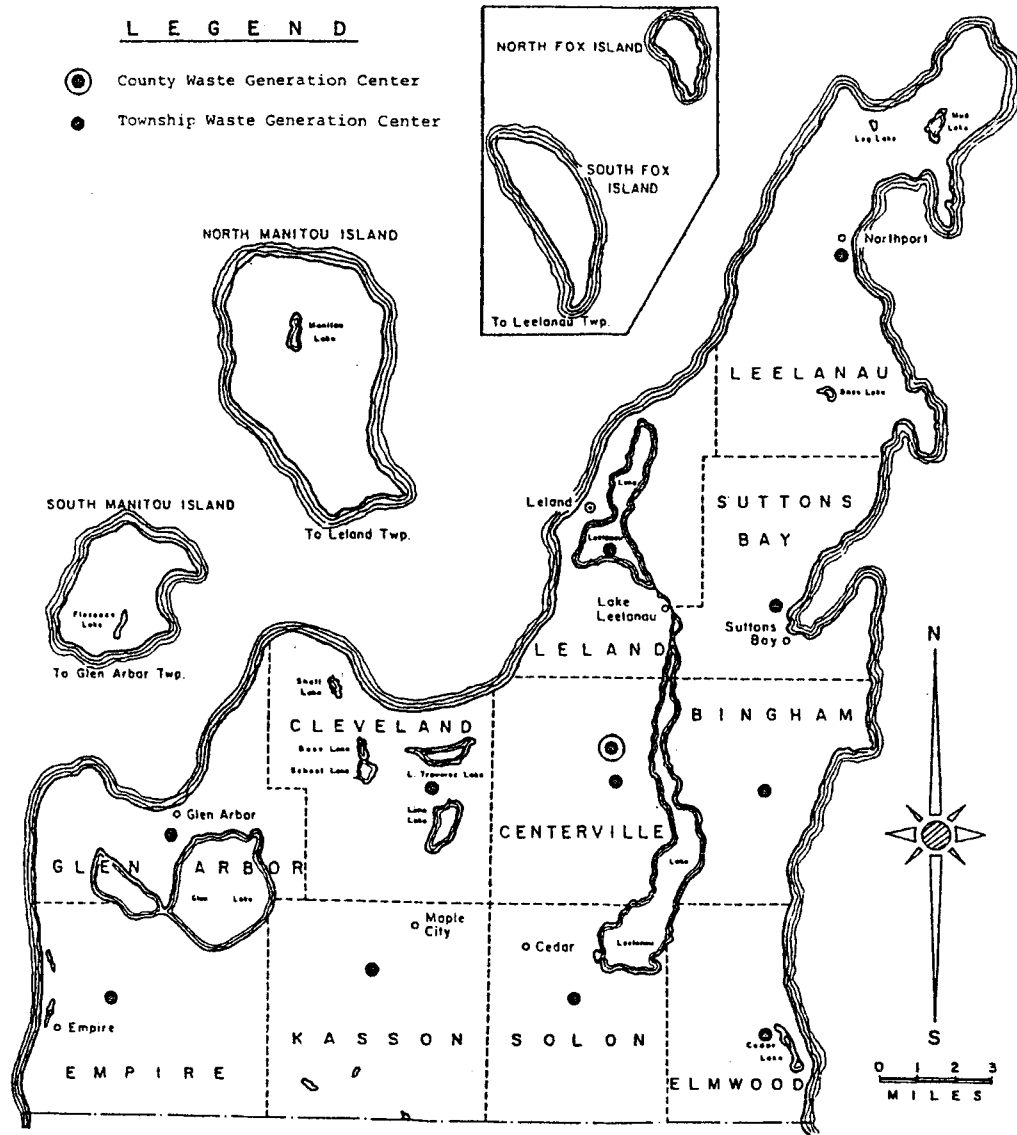
The map on **Page II-11** identifies the solid waste generation centers for each township and the county as a whole from the 1989 Plan. Since the population distribution and primary solid waste management system have remained relatively the same, the map should continue to be an accurate measure of today's solid waste generation and distribution centers.

Township	1980 Census		1990 Census		1992 Estimates <sup>1</sup>		Current Population <sup>2</sup>		2007 Projections <sup>3</sup>	
	Population	% Total	Population	% Total	Population	% Total	Population	% Total	Population	% Total
Bingham	1,546	11.0	2,051	12.4	2,173	12.5	2,382	12.9	2,500	12.3
Centerville	709	5.1	836	5.1	886	5.1	971	5.3	1,100	5.4
Cleveland	654	4.7	783	4.7	829	4.8	910	4.9	1,100	5.4
Elmwood	3,004	21.4	3,466	21.0	3,533	20.4	3,491	18.9	4,500	22.2
Empire	797	5.7	858	5.2	892	5.1	935	5.1	900	4.4
Glen Arbor	578	4.1	644	3.9	683	3.9	748	4.1	800	3.9
Kasson	952	6.8	1,135	6.9	1,211	7.0	1,276	6.9	1,300	6.4
Leelanau	1,560	11.1	1,694	10.2	1,773	10.2	1,872	10.2	2,100	10.3
Leland	1,446	10.3	1,642	9.9	1,738	10.0	1,901	10.3	1,900	9.4
Solon	987	7.0	1,268	7.7	1,344	7.8	1,472	8.0	1,400	6.9
Suttons Bay	1,774	12.7	2,150	13.0	2,275	13.1	2,472	13.4	2,700	13.3
Totals	14,007		16,527		17,337		18,430		20,300	

- 1 Estimates for July 1992 provided by the Northwestern Michigan Council of Governments.
- 2 Estimates for July 1990 provided by the Northwestern Michigan Council of Governments used for current population.
- 3 Estimates for 2007 column were taken from the 1989 Plan as provided by Gosling Czabak. Current estimates from the Office of the State Demographer which do not break down individual townships indicate a similar total population for the county. Individual township percentages may vary.

LEGEND

- ⊙ County Waste Generation Center
- Township Waste Generation Center



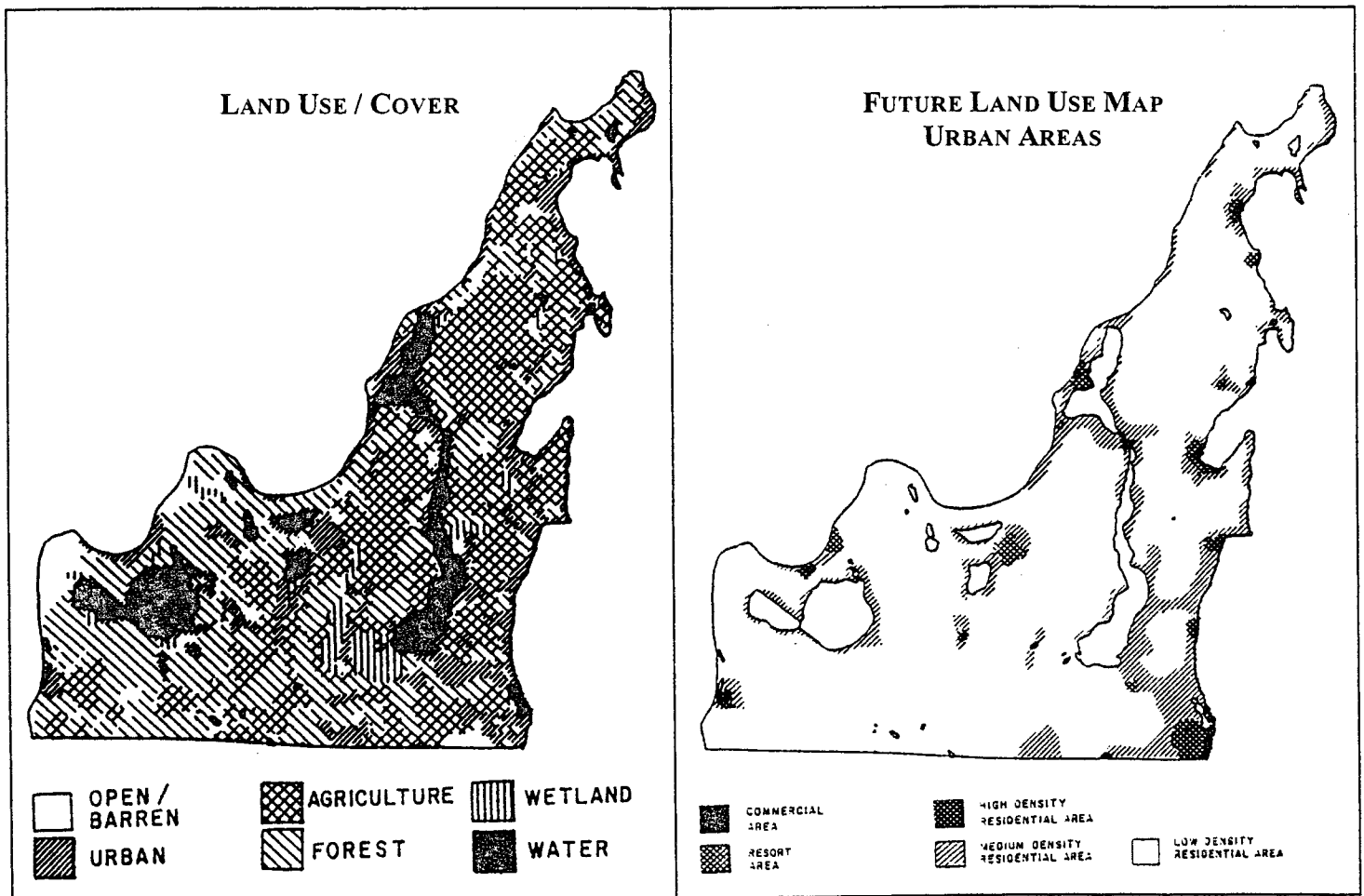
LEELANAU COUNTY  
SOLID WASTE GENERATION CENTERS

Gosling Czubak Associates

## LAND DEVELOPMENT

The following describes current and projected land development patterns, as related to the Selected Solid Waste Management System, for the next five and ten year periods.

The map on the left identifies land use / land cover in Leelanau County from 1990 and was compiled using data from the United States Bureau of the Census. The map on the right was developed during the planning process for the *Leelanau General Plan* in 1994. It identifies a generalized pattern of land uses in Leelanau County for the next five and ten year periods. Commercial and residential areas are the primary urban classes delineated on the map. Residential areas are classified as high, medium, and low density. It is recognized that local zoning will have the greatest influence over land use cover in Leelanau County.



## SOLID WASTE MANAGEMENT ALTERNATIVES

The following briefly describes the three solid waste management alternatives considered by Leelanau County and how each alternative will meet its needs. Each alternative will be evaluated with respect to public health, economic, environment, siting and energy impacts. Details regarding the selected alternative are included in Appendix A. Details regarding the non-selected alternatives are included in Appendix B.

### Alternative No. 1 - In-County Landfill with Waste Diversion

#### *Description:*

This alternative includes diverting as much waste as practical from the waste stream with the remainder being disposed of at an in-County landfill. It approximates the existing system. It includes the following:

- ◆ Waste collection by private haulers
- ◆ Drop off sites for recyclables with collected materials transported to a processing plant.
- ◆ Household hazardous waste collection program with disposal at a licensed out of County facility.
- ◆ Public education program encouraging source reduction, recycling, composting, and proper hazardous waste disposal.
- ◆ Disposal of wastes not removed by the diversion methods listed above at a licensed in-County landfill.

#### *Discussion:*

This alternative utilizes the existing facilities including the private hauling system, recycling drop-off sites, household hazardous waste program, public education, and the in-County landfill. With recycling sites, household hazardous waste collection, and the public education system, this alternative provides a system on which the County can expand its efforts to address the deficiencies and problems.

#### *Estimated Costs:*

	<i>Annual Cost</i>
Collection and Transportation (19,200 Tons @ \$100)	\$ 1,920,000
Recycling Drop-off Sites	\$ 112,000
Household Hazardous Waste Collection	\$ 8,000
Public Education	\$ 8,000
<u>Landfill Disposal</u>	<u>\$ 806,000</u>
<b>Total Estimated Cost</b>	<b>\$ 2,854,000</b>
<b>Estimated Cost per Ton (@ 19,200 TPY)</b>	<b>\$ 149</b>



## Alternative No. 2 - Transfer Station with Waste Diversion

### *Description:*

This alternative consists of a transfer station at a central location in Leelanau County. Recyclable wastes will be diverted in the same manner as described in Alternative No. 1. The remaining wastes that require disposal will be transported from the transfer station to a disposal facility that may be located in Leelanau or another county. It includes the following:

- ◆ Waste collection by private haulers who transport the wastes to the transfer station.
- ◆ Drop off sites for recyclables with collected materials transported to a processing plant.
- ◆ Composting program consisting of a drop-off site for yard wastes with hauling by a private contractor.
- ◆ Household hazardous waste collection program with disposal at a licensed out of County facility.
- ◆ Public education program encouraging source reduction, recycling, composting, and proper hazardous waste disposal.
- ◆ Transfer station where wastes are compacted into large containers to be hauled to a licensed disposal site. The disposal site could be the existing in-County landfill or a site located out of County.

### *Discussion:*

This alternative utilizes the existing facilities including the private hauling system, recycling drop-off sites, household hazardous waste program, and public education. It also provides for the utilization of an alternate disposal site in the event that the existing in-County landfill is not available at some future date. With recycling sites, household hazardous waste collection, and the public education system, this alternative provides a system on which the County can expand its efforts to address the deficiencies and problems.

### *Estimated Costs:*

	<u>Annual Cost</u>
Collection and Transportation (19,200 Tons @ \$90)	\$ 1,728,000
Recycling Drop-off Sites	\$ 112,000
Yard Waste Composting	\$ 29,000
Household Hazardous Waste Collection	\$ 8,000
Public Education	\$ 8,000
<u>Transfer Station (Including Disposal)</u>	<u>\$ 1,105,000</u>
<b>Total Estimated Cost</b>	<b>\$ 2,990,000</b>
<b>Estimated Cost per Ton (@ 19,200 TPY)</b>	<b>\$ 156</b>

### Alternative No. 3 - Compulsory Resource Recovery

#### *Description:*

- ◆ Mandatory separation of marketable wastes by waste generators. Selected wastes, typically paper, newsprint, cardboard, glass, aluminum, tin cans, and plastics would be separated by residential, commercial and industrial waste generators. Industries that generate significant volumes of certain recyclable wastes that could be diverted from the waste stream would be required to do so.
- ◆ Waste collection by private haulers.
- ◆ Curbside collection of source separated wastes by private haulers in the more densely populated portions of the County. These materials would be either collected with separate vehicles from the non-separated waste collection or with the same vehicles with dedicated compartments for separated wastes.
- ◆ Drop off sites for recyclables for waste generators not served by curbside collection.
- ◆ Transport collected materials to a processing plant.
- ◆ Composting program consisting of a drop-off site for yard wastes with hauling by a private contractor.
- ◆ Expanded household hazardous waste collection program with disposal at a licensed out of County facility.
- ◆ Expanded public education program encouraging source reduction, recycling, composting, and proper hazardous waste disposal.
- ◆ Disposal of wastes not removed by the diversion methods listed above at a licensed in-County landfill.

#### *Discussion:*

This alternative utilizes the existing facilities including the private hauling system, recycling drop-off sites, household hazardous waste program, public education, and the in-County landfill. It also provides for a significant expansion of some of the programs. By diverting a greater quantity of waste from the landfill, the useful life of the landfill can be extended.

The proposed curbside collection program will be available to approximately 25% of the County's population or about 2000 homes. It is estimated that the curbside collection system will program will increase the quantities of materials recycled as listed on page II-1 by 25%.

This alternative addresses some of the deficiencies and problems identified in Section II-8. The proposed curbside collection of recyclables, and expanded household hazardous waste collection and public education programs aim directly at some of the deficiencies.

With recycling sites, household hazardous waste collection, and the public education system, this alternative provides a system on which the County can expand its efforts to address the deficiencies and problems.

*Estimated Costs:*

	<i><b>Annual Cost</b></i>
Collection and Transportation (18,740 Tons @ \$100)	\$ 1,874,000
Recycling Drop-off Sites	\$ 90,000
Curbside Collection	\$ 72,000
Yard Waste Composting	\$ 29,000
Household Hazardous Waste Collection	\$ 15,000
Public Education	\$ 18,000
<u>Landfill Disposal</u>	<u>\$ 806,000</u>
<b>Total Estimated Cost</b>	<b>\$ 2,904,000</b>
<b>Estimated Cost per Ton (@ 19,200 TPY)</b>	<b>\$ 151</b>

## THE SELECTED SOLID WASTE

### MANAGEMENT SYSTEM

*The Selected Solid Waste Management System (Selected System) is a comprehensive approach to managing the County's solid waste and recoverable materials. The Selected System addresses the generation, transfer, and disposal of the County's solid waste. It aims to reduce the amount of solid waste sent for final disposal by volume reduction techniques and by various resource conservation and resource recovery programs. It also addresses collection processes and transportation needs that provide the most cost effective, efficient service. Proposed disposal area locations and capacity to accept solid waste are identified as well as program management, funding, and enforcement roles for local agencies. Detailed information on recycling programs, evaluation, and coordination of the Selected System is included in Appendix B. Following is an overall description of the Selected System:*

This alternative includes diverting as much waste as practical from the waste stream with the remainder being disposed of at an in-County landfill. It approximates the existing system. It includes the following:

- Waste collection by private haulers.
- Drop-off sites for recyclables with collected materials transported to a processing plant.
- Household hazardous waste collection program with disposal at a licensed out-of-County facility.
- Public education program encouraging source reduction, recycling, composting, and proper hazardous waste disposal.
- Disposal of wastes not removed by the diversion methods listed above at a licensed in-County landfill.

#### DEFINITIONS RELATING TO THE SELECTED SOLID WASTE MANAGEMENT SYSTEM

**Primary:**

An authorized principal facility identified to insure proper handling of a county's solid waste.

**Contingency:**

An authorized alternate facility that would be used if the county's primary solid waste management facilities, designated in this Plan, become unavailable. This is not intended to restrict the legitimate business of private haulers from using alternate licensed landfills.

## IMPORT AUTHORIZATION

If a licensed solid waste disposal area is currently operating within the County, disposal of solid waste generated by the EXPORTING COUNTY is authorized by the IMPORTING COUNTY up to the AUTHORIZED QUANTITY according to the CONDITIONS AUTHORIZED in Table 1-A.

Table 1-A

CURRENT IMPORT VOLUME AUTHORIZATION OF SOLID WASTE (in tons)						
IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME	AUTHORIZED DAILY QUANTITY	AUTHORIZED ANNUAL QUANTITY	AUTHORIZED CONDITIONS*	
Leelanau	Antrim	Glen's Sanitary Landfill	100%	100%	Contingency- <sup>Prim</sup>	
Leelanau	Benzie	Glen's Sanitary Landfill	100%	100%	Primary	
Leelanau	Charlevoix	Glen's Sanitary Landfill	100%	100%	Contingency	
Leelanau	Emmet	Glen's Sanitary Landfill	100%	100%	Contingency	
Leelanau	Grand Traverse	Glen's Sanitary Landfill	100%	100%	Primary	
Leelanau	Kalkaska	Glen's Sanitary Landfill	100%	100%	Primary	
Leelanau	Manistee	Glen's Sanitary Landfill	100%	100%	Contingency	
Leelanau	Missaukee	Glen's Sanitary Landfill	100%	100%	Contingency	
Leelanau	Osceola	Glen's Sanitary Landfill	100%	100%	Contingency	
Leelanau	Wexford	Glen's Sanitary Landfill	100%	100%	Contingency	

\* See Appendix D for copies of Solid Waste Reciprocal Agreements. Leelanau County will only import solid waste from counties with reciprocal agreements attached in Appendix D even if that county is listed in Table 1-A.

## IMPORT AUTHORIZATION

If a new solid waste disposal area is constructed and operating in the future in the County, then disposal of solid waste generated by the EXPORTING COUNTY is authorized by the IMPORTING COUNTY up to the AUTHORIZED QUANTITY according to the CONDITIONS AUTHORIZED in Table 1-B.

Table 1-B

### FUTURE IMPORT VOLUME AUTHORIZATION OF SOLID WASTE (in tons) CONTINGENT ON NEW FACILITIES BEING SITED

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME	AUTHORIZED DAILY QUANTITY	AUTHORIZED ANNUAL QUANTITY	AUTHORIZED CONDITIONS*
Leelanau	Antrim	N/A	100%	100%	Contingency
Leelanau	Benzie	N/A	100%	100%	Primary ✓
Leelanau	Charlevoix	N/A	100%	100%	Contingency
Leelanau	Emmet	N/A	100%	100%	Contingency
Leelanau	Grand Traverse	N/A	100%	100%	Primary ✓
Leelanau	Kalkaska	N/A	100%	100%	Primary ✓
Leelanau	Manistee	N/A	100%	100%	Contingency
Leelanau	Missaukee	N/A	100%	100%	Contingency
Leelanau	Osceola	N/A	100%	100%	Contingency
Leelanau	Wexford	N/A	100%	100%	Contingency

\* See Appendix D for copies of Solid Waste Reciprocal Agreements. Leelanau County will only import solid waste from counties with reciprocal agreements attached in Appendix D even if that county is listed in Table 1-B.

**EXPORT AUTHORIZATION**

If a licensed solid waste disposal area is currently operating within another County, disposal of solid waste generated by the EXPORTING COUNTY is authorized up to the AUTHORIZED QUANTITY according to the CONDITIONS AUTHORIZED in Table 2-A if authorized for import in the approved Solid Waste Management Plan of the receiving County.

**Table 2-A**

CURRENT EXPORT VOLUME AUTHORIZATION OF SOLID WASTE (in tons)						
EXPORTING COUNTY	IMPORTING COUNTY	FACILITY NAME	AUTHORIZED DAILY QUANTITY	AUTHORIZED ANNUAL QUANTITY	AUTHORIZED CONDITIONS	
Leelanau	Charlevoix	Cedar Ridge Recycling and Disposal Facility	100%	100%	Contingency	
Leelanau	Grand Traverse	Ken's Pick Up Service Type III Landfill	100%	100%	Contingency	
Leelanau	Manistee	Harland's Landfill	100%	100%	Contingency	
Leelanau	Wexford	Wexford County Landfill	100%	100%	Contingency	

**EXPORT AUTHORIZATION**

If a new solid waste disposal area is constructed and operates in the future in another County, then disposal of solid waste generated by the EXPORTING COUNTY is authorized up to the AUTHORIZED QUANTITY according to the CONDITIONS AUTHORIZED in Table 2-B if authorized for import in the approved Solid Waste Management Plan of the receiving County.

**Table 2-B**

**FUTURE EXPORT VOLUME AUTHORIZATION OF SOLID WASTE (in tons)  
CONTINGENT ON NEW FACILITIES BEING SITED**

EXPORTING COUNTY	IMPORTING COUNTY	FACILITY NAME	AUTHORIZED DAILY QUANTITY	AUTHORIZED ANNUAL QUANTITY	AUTHORIZED CONDITIONS
Leelanau	Antrim	N/A	100%	100%	Contingency
Leelanau	Benzie	N/A	100%	100%	Contingency
Leelanau	Charlevoix	N/A	100%	100%	Contingency
Leelanau	Emmet	N/A	100%	100%	Contingency
Leelanau	Grand Traverse	N/A	100%	100%	Contingency
Leelanau	Kalkaska	N/A	100%	100%	Contingency
Leelanau	Manistee	N/A	100%	100%	Contingency
Leelanau	Missaukee	N/A	100%	100%	Contingency
Leelanau	Osceola	N/A	100%	100%	Contingency
Leelanau	Wexford	N/A	100%	100%	Contingency



## SOLID WASTE DISPOSAL AREAS

The following identifies the names of the existing disposal areas which will be utilized to provide the required capacity and management needs for the solid waste generated within the County for the next five years and, if possible, the next ten years. Pages III-7 through III-11 contain descriptions of the solid waste disposal facilities which are located within the County and the disposal facilities located outside of the County which will be utilized by the County for the planning period. Additional facilities within the County with applicable permits and licenses may be utilized as they are sited by this Plan, or amended into this Plan, and become available for disposal. If this Plan update is amended to identify additional facilities in other counties outside of the County, those facilities may only be used if such import is authorized in the receiving County's Plan. Facilities outside of Michigan may also be used if legally available for such use.

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### **Type II Landfills:**

Glen's Sanitary Landfill (Page III-7)

Cedar Ridge Recycling and Disposal Facility, Contingency Only (Page III-8)

Harland's Manistee County Landfill, Contingency Only (Page III-10)

Wexford County Landfill, Contingency Only (Page III-11)

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### **Type III Landfill:**

Glen's Sanitary Landfill (Page III-7)

Ken's Pick Up service Type III Landfill (Page III-9)

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### **Incinerators:**

None

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### **Waste-to-Energy-Incinerators:**

None

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### **Transfer Facility:**

Renewable Waste Inc.

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### **Processing Plants:**

None

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### **Waste Piles:**

None

---

### **Other:**

None

FACILITY DESCRIPTION

Facility Type: Type II Solid Waste Landfill

Facility Name: Glen's Sanitary Landfill

County: Leelanau Location: Town: 28 N Range: 13 W Section(s): 35

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: N/A

Public  Private Owner: USA Waste Inc.

Operating Status

Waste Type Received

Open

Residential

Closed

Commercial

Licensed

Industrial

Unlicensed

Construction and Demolition

Construction Permit

Contaminated Soils

Open, but Closure

Special Wastes\*

Pending

Other: \_\_\_\_\_

\*Explanation of special wastes, including a specific list and / or conditions:

Asbestos, Type II Sludges

Site Size:

Total area of facility property: 460.0 acres

Total area sited for use: 133.0 acres

Total area permitted: 133.0 acres

Operating: 14.8 acres

Not excavated: 96.0 acres

Current capacity: 22,500,000 cubic yards

Estimated lifetime: 60 years

Estimated days open per year: 310 days

Estimated yearly disposal volume: 300,000 cubic yards

(if applicable)

Annual Energy Production

Landfill gas recovery projects: N/A megawatts

Waste-to-energy incinerators: N/A megawatts

FACILITY DESCRIPTION

Facility Type: Type II Solid Waste Landfill

Facility Name: Cedar Ridge Recycling and Disposal Facility

County: Charlevoix Location: Town: 33 N Range: 7 W Section(s): 19

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: N/A

Public  Private Owner: USA Waste Inc.

Operating Status	Waste Type Received
<input checked="" type="checkbox"/> Open	<input checked="" type="checkbox"/> Residential
<input type="checkbox"/> Closed	<input checked="" type="checkbox"/> Commercial
<input checked="" type="checkbox"/> Licensed	<input checked="" type="checkbox"/> Industrial
<input type="checkbox"/> Unlicensed	<input checked="" type="checkbox"/> Construction and Demolition
<input type="checkbox"/> Construction Permit	<input checked="" type="checkbox"/> Contaminated Soils
<input type="checkbox"/> Open, but Closure	<input checked="" type="checkbox"/> Special Wastes*
<input type="checkbox"/> Pending	<input type="checkbox"/> Other: _____

\*Explanation of special wastes, including a specific list and / or conditions:

Flyash, foundry sands

Site Size:

Total area of facility property:	120 acres
Total area sited for use:	40 acres
Total area permitted:	40 acres
Operating:	21 acres
Not excavated:	0 acres

Current capacity:	370,000 cubic yards
Estimated lifetime:	2.5 years
Estimated days open per year:	260 days
Estimated yearly disposal volume:	311,000 cubic yards

*(if applicable)*

Annual Energy Production	
Landfill gas recovery projects:	<u>N/A</u> megawatts
Waste-to-energy incinerators:	<u>N/A</u> megawatts

FACILITY DESCRIPTION

Facility Type: Type III Solid Waste Landfill

Facility Name: Ken's Pick Up Service

County: Gr. Traverse Location: Town: 27 N Range: 11 W Section(s): 7

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: \_\_\_\_\_

Public  Private Owner: USA Waste Inc.

Operating Status

Waste Type Received

Open

Residential

Closed

Commercial

Licensed

Industrial

Unlicensed

Construction and Demolition

Construction Permit

Contaminated Soils

Open, but Closure

Special Wastes\*

Pending

Other: \_\_\_\_\_

\*Explanation of special wastes, including a specific list and / or conditions:  
\_\_\_\_\_  
\_\_\_\_\_

Site Size:

Total area of facility property: 17.5 acres

Total area sited for use: 11.5 acres

Total area permitted: 11.5 acres

Operating: 6.0 acres

Not excavated: 0 acres

Current capacity: 125,000 cubic yards

Estimated lifetime: 1.5 years

Estimated days open per year: 260 days

Estimated yearly disposal volume: 70,000 cubic yards

*(if applicable)*

Annual Energy Production

Landfill gas recovery projects: N/A megawatts

Waste-to-energy incinerators: N/A megawatts

FACILITY DESCRIPTION

Facility Type: Type II Solid Waste Landfill

Facility Name: Harland's Manistee County Landfill

County: Manistee Location: Town: 21 N Range: 16 W Section(s): 32

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: N/A

Public  Private Owner: Allied Disposal

Operating Status

- Open
- Closed
- Licensed
- Unlicensed
- Construction Permit
- Open, but Closure
- Pending

Waste Type Received

- Residential
- Commercial
- Industrial
- Construction and Demolition
- Contaminated Soils
- Special Wastes\*
- Other: \_\_\_\_\_

\*Explanation of special wastes, including a specific list and / or conditions:

Asbestos, Flyash

Site Size:

Total area of facility property: 336.0 acres  
 Total area sited for use: 40.0 acres  
 Total area permitted: 40.0 acres  
   Operating: 40.0 acres  
   Not excavated: 13.0 acres

Current capacity: 1,700,000 cubic yards  
 Estimated lifetime: 14 years  
 Estimated days open per year: 250 days  
 Estimated yearly disposal volume: 200,000 cubic yards

*(if applicable)*

Annual Energy Production

Landfill gas recovery projects: N/A megawatts  
 Waste-to-energy incinerators: N/A megawatts

FACILITY DESCRIPTION

Facility Type: Type II Solid Waste Landfill

Facility Name: Wexford County Landfill

County: Wexford Location: Town: 23 N Range: 9 W Section(s): 33 & 34

Map identifying location included in the Attachment Section:  Yes  No

If the facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: N/A

Public  Private Owner: Department of Public Works

Operating Status

Waste Type Received

Open

Residential

Closed

Commercial

Licensed

Industrial

Unlicensed

Construction and Demolition

Construction Permit

Contaminated Soils

Open, but Closure

Special Wastes\*

Pending

Other: \_\_\_\_\_

\*Explanation of special wastes, including a specific list and / or conditions:

Site Size:

Total area of facility property: 146.0 acres

Total area sited for use: 51.0 acres

Total area permitted: 51.0 acres

Operating: 4.0 acres

Not excavated: 0 acres

Current capacity: 2,000,000 cubic yards

Estimated lifetime: 12 years

Estimated days open per year: 260 days

Estimated yearly disposal volume: 220,000 cubic yards

*(if applicable)*

Annual Energy Production

Landfill gas recovery projects: N/A megawatts

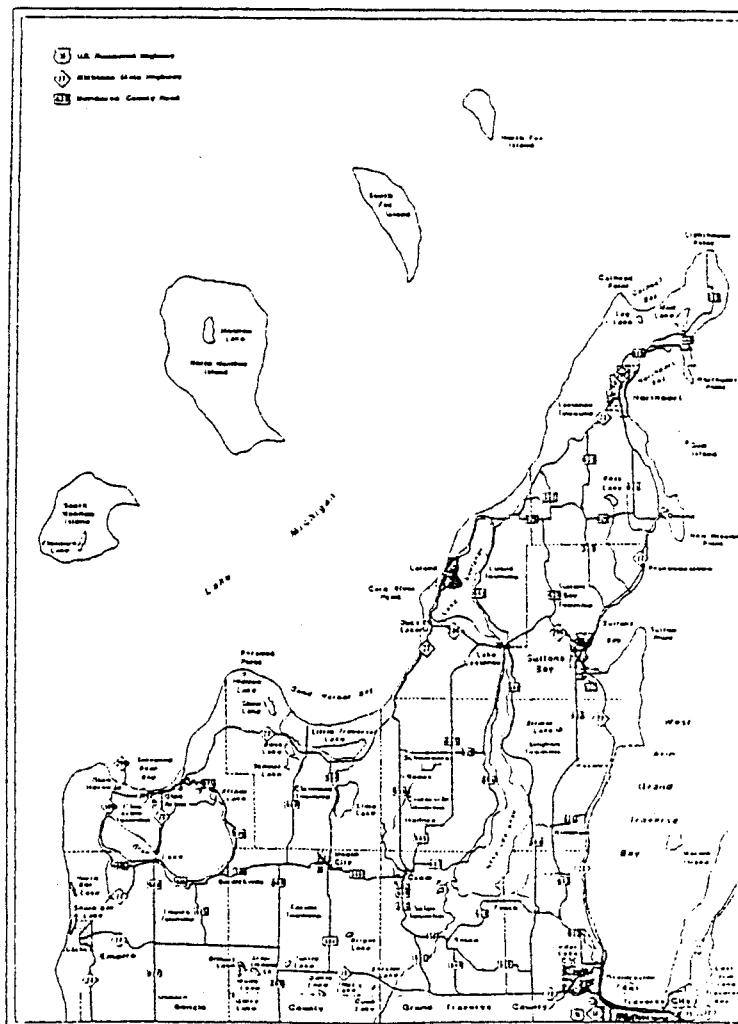
Waste-to-energy incinerators: N/A megawatts

## SOLID WASTE COLLECTION SERVICES AND TRANSPORTATION

*The following describes the solid waste collection services and transportation infrastructure which will be utilized within the County to collect and transport solid waste.*

In the past, Leelanau County has been served by as few as three and as many as eight private haulers for residential and commercial collection. Currently, the County is served by four private solid waste haulers (Cedar Disposal, Walt Kalchik's Disposal Service, Northern Disposal, Inc, and USA Waste Inc) and will continue to be served by an unspecified number of private waste haulers funded by charges paid by the customer. In addition, Leelanau County will continue to be served by one transfer station. Renewable Waste Inc currently operates in the County just south of the Village of Suttons Bay.

Leelanau County's existing road system for the transportation of solid waste, shown below, utilizes state highways, county roads, and major arterial roads. The roads follow section and quarter lines in portions of the County although the majority of roads are dictated by natural features such as lakes, wetlands, and topography. All state highways and paved county roads have load restrictions with the exception of M-204 and portions of M-22 and M-72. All roads in Leelanau County have seasonal reductions in allowable loads during the spring breakup period.



**RESOURCE CONSERVATION EFFORTS:**

*The following describes the selected system's proposed conservation efforts to reduce the amount of solid waste generated throughout the County. The annual amount of solid waste currently or proposed to be diverted from landfills and incinerators is estimated for each effort to be used, if possible. Since conservation efforts are provided voluntarily and change with technologies and public awareness, it is not this Plan update's intention to limit the efforts to only what is listed. Instead citizens, businesses, and industries are encouraged to explore the options available to their lifestyles, practices, and processes which will reduce the amount of materials requiring disposal.*

<b>Effort Description</b>	<b>Estimated Diversion Tons Per Year</b>		
	<b>Current</b>	<b>5<sup>th</sup> Year</b>	<b>10<sup>th</sup> Year</b>
<b>Waste Reduction Program</b>	<b>0</b>	<b>1,200</b>	<b>2,520</b>
<ul style="list-style-type: none"><li>• Prepare a Source Reduction Plan with a Public Education Program to reduce the quantity of unnecessary items thereby eliminating waste materials produced.</li><li>• Estimates based on State Solid Waste Policy with five percent reduction in five years and ten percent reduction in ten years.</li></ul>			



**WASTE REDUCTION, RECYCLING, & COMPOSTING PROGRAMS:**

**Volume Reduction Techniques**

*The following describes the techniques used and proposed to be used throughout the County which reduce the volume of solid waste requiring disposal. The annual amount of landfill air space not used as a result of each of these techniques is estimated. Since volume reduction is practically voluntary and because technologies change and equipment may need replacing, it is not this Plan update's intention to limit the technologies to only what is listed. Persons within the County are encouraged to utilize the technique that provides the most efficient and practical volume reduction for their needs. Documentation explaining achievements of implemented programs or expected results of proposed programs is attached.*

Volume reduction techniques will be determined by members of the industry for their respective facilities. Currently, only one volume reduction program is in use throughout the county. Households are offered the option to pay a per-bag fee rather than pay a flat monthly collection fee. This encourages households, who take advantage of the program, to compact trash in order to use less bags. This program not only encompasses recycling it promotes volume reduction. For detailed descriptions of existing and proposed recycling techniques, see *Appendix A*.

### **Overview of Resource Recovery Programs**

*The following describes the type and volume of material in the County's waste stream that may be available for recycling or composting programs. How conditions in the County affect or may affect a recycling or composting program and potential benefits derived from these programs is also discussed. Impediments to recycling or composting programs which exist or which may exist in the future are listed, followed by a discussion regarding reducing or eliminating such impediments.*

#### **RECYCLING**

According to the 1989 Plan, approximately forty percent (40%) of the total quantity of waste generated could be recycled including newsprint, cardboard, office paper, brown paper, glass, ferrous materials, aluminum and tin, and plastics. The following factors have an affect on the feasibility of the recycling program in Leelanau County:

- Public perception and willingness to source separate waste.
- Geographically convenient drop-off site locations.
- Hauler participation and willingness to pick up source separated wastes.
- Governmental financial support and oversight of the program.

The following impediments to recycling were identified in the 1989 Plan. No new impediments were identified during the update process although some were altered.

- Inconvenience to the individual.
- Present cost to the individual higher than for landfilling.
- Lack of public knowledge as to the importance of recycling and actual costs for disposal of materials.

Some of the available methods by which the impediments to recycling can be removed are as follows:

- Public education programs through the media, schools, etc.
- Annually evaluate the location of drop-off sites for geographic convenience.
- Financial incentives to encourage recycling.
- Adopt an ordinance prohibiting certain materials from being disposed of by landfilling.
- Create markets by requiring all governmental units to purchase supplies made from recycled materials.
- Establish landfill tipping fees based on a by-the-bag system only.

**Recycling programs within the County are feasible. Details of existing and planned programs are included on the following pages.**

### COMPOSTING

According to the 1989 Plan, approximately fourteen percent (14%) of the total quantity of waste generated could be composted including paper, food wastes, yard wastes, wood products, and other biodegradable materials. The following factors would have an effect on composting in the County:

- Public perception and willingness to participate.
- Convenient of the program.
- Governmental financial support of the program.

The following impediments to composting were identified in the 1989 Plan.

- Unknown costs to the individual and community.
- Lack of public knowledge as to the importance of composting.
- No organized composting program in existence.

The following are methods by which the impediments to composting can be overcome:

- Public education programs through the media, schools, etc.
- Institute pilot programs in higher populated areas of the County.
- Revenue from the sale of the final product to help offset the cost of the program.
- Financial incentives to encourage composting.
- Adopt an ordinance prohibiting certain materials from being disposed of by landfilling or burned.
- Establish landfill tipping fees based on a by-the-bag system only.

**Composting programs for the County have been evaluated and it has been determined that it is not feasible to conduct any programs because of the following:**

The unknown costs of equipment, collection methods, and disposal techniques make it economically unfeasible for countywide composting without a Composting Plan. This does not preclude any household from operating a single family compost pile using waste generated at their residence for use in their garden.

### HAZARDOUS MATERIALS

The County currently coordinates household and agricultural collection with Grand Traverse County paid for by a fee collected on tax bills. Materials accepted include oil based paint, pesticides, batteries, automotive liquids, and aerosol cans.

**Programs for source separation of potentially hazardous materials are feasible and details are included on the following pages.**

## RECYCLING AND COMPOSTING

*The following is a brief analysis of the recycling and composting programs selected for the County in this Plan. Additional information on operation of recycling and composting programs is included in Appendix A. The analysis covers various factors within the County and the impacts of these factors on recycling and composting. Following the written analysis, the tables on pages III-18, III-19, and III-20 list the existing recycling, composting, and hazardous materials source separation programs that are currently active in the County and which will be continued as part of this Plan. The second group of three tables on pages III-21, III-22, and III-23 list the recycling, composting and hazardous materials source separation programs that are proposed in the future for the County. It is not this Plan update's intent to prohibit additional programs or expansion of current programs to be implemented beyond those listed.*

Leelanau County will maintain an appropriate number (*currently seven*) of recycling drop-off sites for the collection of paper products, cardboard, glass, aluminum and tin. Private companies are also encouraged to operate recycling drop-off sites. Additional materials may be collected in the future as technology for recycling improves and markets are developed. Participation will be on a voluntary basis. The location of the sites and operational hours will be periodically evaluated to encourage accessible recycling while being economically feasible.

Leelanau County will encourage household composting through education and legislative support. In addition, the Leelanau County Board of Commissioners will appoint a committee to develop a Composting Plan. The Plan will include the following:

- The kinds and volumes of wastes that will be composted.
- Collection Methods.
- Measures to ensure collection such as ordinances or cooperative arrangements.
- Ordinances or regulations affecting the program.
- The role of the County, municipalities, and townships in implementing the Plan.
- The involvement of solid waste haulers and the community.
- Anticipated costs.
- On-going program financing.
- Equipment selection.
- Public and private sector involvement.
- Site availability and selection.
- Operating parameters such as pH and heat range.

Leelanau County will annually fund a number of household hazardous waste collection days. The location and operating hours of the household hazardous waste collection days and the agricultural hazardous waste collection sites will be advertised.

Table 3-A

EXISTING RECYCLING PROGRAMS

PROGRAM NAME	SERVICE AREA	PUBLIC OR PRIVATE	COLLECTION POINT	COLLECTION FREQUENCY	MATERIALS COLLECTED*	MANAGEMENT RESPONSIBILITIES		
						DEVELOPMENT	OPERATION	EVALUATION
<b>Leelanau County Drop-Off Recycling Sites</b>								
Cedar	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Empire	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Glen Arbor	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Greilickville	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Lake Leelanau	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Northport	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Suttons Bay	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA

**Private Recycling Operations**

Cedar Disposal	Western Townships County	Private	On-Site	Daily	C	Cedar Disposal	Cedar Disposal	Cedar Disposal
CWR	County	Private	On-Site	Daily	F, J	CWR	CWR	CWR
Glen's Landfill	County	Private	Drop-Off	Daily	A,B,C,D,E,F	USA Waste	USA Waste	USA Waste
Kalchik Disposal	Northern Townships	Private	On-Site	Daily	C	Kalchik Disposal	Kalchik Disposal	Kalchik Disposal
Renewable Waste	County	Private	Drop-Off	Daily	A,B,C,D,E,F,K,J	RWI	RWI	RWI

The above programs identify organizations that collect recyclable materials. This Plan is not authorizing the creation of a recycling facility within Leelanau County. Regulating that type of facility is not a function of the Solid Waste Plan.

\* Identified by the materials collected using the letter located by that material type:

- A (Plastics), B (Newspaper), C (Corrugated Containers), D (Other Paper), E (Glass),
- F (Metals), J (Construction and Demolition), K (Tires)

Table 3-B

**EXISTING COMPOSTING PROGRAMS**

PROGRAM NAME	SERVICE AREA	PUBLIC OR PRIVATE	COLLECTION POINT	COLLECTION FREQUENCY	MATERIALS COLLECTED	MANAGEMENT RESPONSIBILITIES
						DEVELOPMENT OPERATION EVALUATION

None.

Table 3-C

EXISTING SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS

PROGRAM NAME	SERVICE AREA	PUBLIC OR PRIVATE	COLLECTION POINT	COLLECTION FREQUENCY	MATERIALS COLLECTED*	MANAGEMENT RESPONSIBILITIES		
						DEVELOPMENT	OPERATION	EVALUATION
Hazardous Waste Days	County	Public	Drop-Off	Four Times a Year	All	Grand Traverse	DPA	DPA
Agricultural Waste	County	Public	Drop-Off	Daily	PS	Grand Traverse	MSU Extension	MSU Extension

\* Identified by the materials collected using the letter located by that material type:

- AR (Aerosol Cans), A (Automotive Products), AN (Antifreeze),
- B1 (Lead Acid Batteries), B2 (Household Batteries), C (Cleaners and Polishers),
- H (Hobby and Art Supplies), OF (Used Oil and Filters), P (Paints and Solvents),
- PS (Pesticides and Herbicides), PH (Personal and Health Care Products),
- U (Used Oil), OT (Other Materials), ALL (All of the Above)

Table 4-A

**PROPOSED RECYCLING PROGRAMS**

PROGRAM NAME	SERVICE AREA	PUBLIC OR PRIVATE	COLLECTION POINT	COLLECTION FREQUENCY	MATERIALS COLLECTED*	MANAGEMENT RESPONSIBILITIES		
						DEVELOPMENT	OPERATION	EVALUATION
<b>Leelanau County Drop-Off Recycling Sites</b>								
Cedar Empire	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Glen Arbor	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Greilickville	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Lake Leelanau	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Northport	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
Suttons Bay	County	Public	Drop-Off	Weekly	A,B,C,D,E	DPA	USA Waste	DPA
<b>Private Recycling Operations</b>								
Cedar Disposal CWR	Western Townships County	Private	On-Site	Daily	C	Cedar Disposal CWR	Cedar Disposal CWR	Cedar Disposal CWR
Glen's Landfill	County	Private	On-Site	Daily	F, J	USA Waste	USA Waste	USA Waste
Kalchik Disposal	County	Private	Drop-Off	Daily	A,B,C,D,E,F	USA Waste	USA Waste	USA Waste
Renewable Waste	Northern Townships County	Private	On-Site	Daily	C	Kalchik Disposal RWI	Kalchik Disposal RWI	Kalchik Disposal RWI
		Private	Drop-Off	Daily	A,B,C,D,E,F,K	RWI	RWI	RWI

\* Identified by the materials collected using the letter located by that material type:

- A (Plastics), B (Newspaper), C (Corrugated Containers), D (Other Paper), E (Glass),
- F (Metals), J (Construction and Demolition), K (Tires)



Table 4-B

**PROPOSED COMPOSTING PROGRAMS**

PROGRAM NAME	SERVICE AREA	PUBLIC OR PRIVATE	COLLECTION POINT	COLLECTION FREQUENCY	MATERIALS COLLECTED	MANAGEMENT RESPONSIBILITIES	EVALUATION
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No programs are proposed until following the preparation of the Composting Plan. Leelanau County will encourage private household composting through education.

Table 4-C

**PROPOSED SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS**

PROGRAM NAME	SERVICE AREA	PUBLIC OR PRIVATE	COLLECTION POINT	COLLECTION FREQUENCY	MATERIALS COLLECTED*	MANAGEMENT RESPONSIBILITIES		
						DEVELOPMENT	OPERATION	EVALUATION
Hazardous Waste Days Agricultural Waste	County	Public	Drop-Off	Four Times a Year	All	Grand Traverse	DPA	DPA
	County	Public	Drop-Off	Daily	PS	Grand Traverse	MSU Extension	MSU Extension

\* Identified by the materials collected using the letter located by that material type:

- AR (Aerosol Cans), A (Automotive Products), AN (Antifreeze),
- B1 (Lead Acid Batteries), B2 (Household Batteries), C (Cleaners and Polishers),
- H (Hobby and Art Supplies), OF (Used Oil and Filters), P (Paints and Solvents),
- PS (Pesticides and Herbicides), PH (Personal and Health Care Products),
- U (Used Oil), OT (Other Materials), ALL (All of the Above)

**IDENTIFICATION OF RESOURCE RECOVERY MANAGEMENT ENTITIES:**

*The following identifies those public and private parties, and the resource recovery or recycling programs for which they have management responsibilities.*

**Cedar Disposal**

On-site cardboard collection in the western four townships and the unincorporated villages of Leland and Lake Leelanau.

**Construction Waste Recycling**

On-site construction and demolition collection throughout the County.

**Leelanau County Planning Department**

Development and evaluation of the County drop-off recycling sites and the household hazardous waste program.

**MSU Extension**

Development and evaluation of the County agricultural waste collection program.

**Renewable Waste Inc**

Operation of a transfer station for recycling operations.

**USA Waste Inc**

Operation of the County drop-off recycling sites and Glen's Sanitary Landfill.

**Walt Kalchik Disposal Service**

On-site cardboard collection in the Northern two townships.

## PROJECTED DIVERSION RATES

The following estimates the annual amount of solid waste which is expected to be diverted from landfills and incinerators as a result of the current resource recovery programs and in five and ten years.

<i>Collected Material</i>	<i>Projected Annual Tons Diverted</i>		
	<i>Current</i>	<i>5<sup>th</sup> Year</i>	<i>10<sup>th</sup> Year</i>
Total Plastics	20	30	60
Newspaper	120	200	340
Corrugated Containers	700	800	980
Total Other Paper Products	240	400	690
Total Glass	140	240	400
Textiles	60	80	100
Grass and Leaves	n/a	?	?
Total Wood Waste	n/a	?	?
Construction and Demolition	1,040	1,030	1,120
Food and Food Processing	n/a	?	?
Tires	n/a	?	?
Total Metals	1,390	1,470	1,610

? Number will be dependent upon the conclusions of the Composting Plan and its implementation.

## MARKET AVAILABILITY FOR COLLECTED MATERIALS

The following identifies how much volume that existing markets are able to utilize of the recovered materials which were diverted from the County's solid waste stream.

<i>Collected Material</i>	<i>In-State Markets</i>	<i>Out of State Markets</i>
Total Plastics	100%	
Newspaper	100%	
Corrugated Containers	100%	
Total Other Paper Products	100%	
Total Glass	100%	
Textiles*	99%	
Grass and Leaves	?	
Total Wood Waste	?	
Construction and Demolition	100%	
Food and Food Processing	?	
Tires	?	
Total Metals	100%	

\* A very small percentage of textiles collected are sent to markets over seas.

? Number will be dependent upon the conclusions of the Composting Plan.

## EDUCATIONAL AND INFORMATIONAL PROGRAMS

*It is often necessary to provide educational and informational programs regarding the various components of a solid waste management system before and during its implementation. These programs are offered to avoid miscommunication which results in improper handling of solid waste and to provide assistance to the various entities who participated in such programs as waste reduction and waste recovery. Following is a list of the programs offered or proposed to be offered in this County.*

PROGRAM TOPIC	DELIVERY MEDIUM	TARGETED AUDIENCE	PROGRAM PROVIDER
Recycling	Newspaper	General Public	Planning Department
Recycling	Flyers	General Public	Planning Department
Recycling	Phone Book	General Public	Planning Department
Household Composting	Newspaper	General Public	Planning Department*
Hazardous Waste	Newspaper	General Public	Planning Department
Agricultural Waste	Newsletters	Industry	MSU Extension
Volume Reduction	Newspaper	General Public	Planning Department**

\* Additional educational programs may be included following the completion of the Composting Plan

\*\* Additional educational programs may be included following the completion of the Source Reduction Plan

## TIMETABLE FOR SELECTED SYSTEM IMPLEMENTATION

*This timetable is a guideline to implement components of the Selected System. The Timeline gives a range of time in which the component will be implemented such as "1995-1999" or "on-going." Timelines may be adjusted later, if necessary.*

**Table 5-A**

<i>Management Components</i>	<i>Timeline</i>
Utilize existing recycling and solid waste facilities	1998-2007
Implement recommended educational programs	1998-2007
Participate in household and agricultural waste collection	1998-2007
Annually evaluate recycling drop-off locations and operating hours	1998-2007
Complete Composting and Source Reduction Plans	1999-2001
Implement Composting and Source Reduction Plans	2002-2007
Update the Solid Waste Management Plan	2002-2003

## **SITING REVIEW PROCEDURES**

### **AUTHORIZED DISPOSAL AREA TYPES**

*The following solid waste disposal area types may not be sited by this Plan. Any proposal to construct a facility listed herein shall be deemed inconsistent with this Plan.*

Incinerators

### **SITING CRITERIA AND PROCESS**

*The following process describes the criteria and procedures to be used to site solid waste disposal facilities and determine consistency with this Plan.*

There is sufficient capacity at current sites within Leelanau County for type II and type III solid waste disposal.

## **SOLID WASTE MANAGEMENT COMPONENTS**

*The following identifies the management responsibilities and institutional arrangements necessary for the implementation of the Selected Solid Waste Management System. Also included is a description of the technical, administrative, financial, and legal capabilities of each identified existing structure of management including planning, implementation, and enforcement.*

### **Department of Environmental Quality (DEQ)**

Various sections of the DEQ are charged by law with the regulation, enforcement and review of the conduct of the solid waste management systems in Leelanau County and all other Michigan counties. The county will be dependent upon the appropriate offices of the DEQ to be informed of changes in the requirements for solid waste management from both federal and state levels. This information from the DEQ will include new solid waste legislation, regulatory rulings, changes in the handling of disposal of all types of solid waste, national or state public information programs, financial aid programs from the national or state level available to the county, and technical assistance from DEQ staff.

### **Leelanau County Board of Commissioners**

The County Board is responsible for the overall supervision of the solid waste management system for the county. This responsibility includes the implementation of the 5 year and 10 year plans. It also includes financing, administration and operations of the county solid waste management system, as well as accountability to the public. The County Board shall designate a board responsible for implementing the Solid Waste Management Plan. The County Board will continue to fund its portion of the costs for a resource Recovery Agent for the Cooperative Extension Service. The County Board will be responsible for funding a portion of recycling and household hazardous waste collection programs. The County will also be responsible for the enforcement of Plan violations. Any violations will be referred to the County Prosecutors Office for further action.

### **Leelanau County Planning Department**

The Leelanau County Planning Department is responsible for the continued planning effort in the solid waste management field for the county. This planning should be done in coordination with other units of government actively involved in solid waste planning and implementation of plans. The Planning Department must be the "Central Informational Repository" of all solid waste planning information as it relates to Leelanau County.

### **Solid Waste Management Planning Committee (SWMPC)**

The Leelanau County SWMPC is responsible for sending a recommended 5 year and 10 year Solid Waste Management Plan to the County Board for their approval, as is the purpose of this report. The SWMPC is also responsible to the County Board to assist in the approval process of the plan. Every five years, the SWMPC will update the 5 and 10 year management plans for the County Board. The SWMPC will begin work on the 5 year updates two years prior to the deadline for submission of the revised plan.



### **Township and Village Governments**

The local units of government in the county will continue to inform the SWMPC as to the effectiveness of the Solid Waste Management Plan and will, on a continuing basis, inform the County Board as to solid waste problems. The County Board will in turn keep the local units of government informed as to solid waste management activities so the townships and villages may keep the citizenry totally informed as to the solid waste management. The villages and townships will be called upon to provide labor and assistance in managing the recycling drop-off sites. The townships will be responsible for funding a portion of the recycling programs and the household hazardous waste collection program.

### **Private Enterprises**

The private sector should manage those activities which it can and is willing to manage. This includes both collection and disposal. The private sector is encouraged to develop alternative solid waste management facilities and services.

### **Private Individuals**

The public of Leelanau County will need to support the solid waste management plans in order for them to be successful. This support will include source separation, willingness to accept new information on solid waste, and general support of any specific solid waste projects.

### **Cooperative Extension Service**

The Cooperative Extension Service will develop the public education and promotional programs necessary for implementing various components of the plan, including recycling and composting programs. Cooperative Extension will assist in efforts to encourage local units of government, businesses, schools, etc. to participate in or expand resource recovery methods and programs. Cooperative Extension will also assist in developing and disseminating information and literature designed to inform the public on matters related to recycling, resource recovery, and conservation. Finally, Cooperative Extension will develop educational and promotional programs for the proper disposal of household hazardous wastes.

**IDENTIFICATION OF RESPONSIBLE PARTIES**

*Document which entities within the County will have management responsibilities over the following areas of the Plan.*

**Resource Conservation**

Source or Waste Reduction:	To be determined in the Source Reduction Plan
Product Reuse:	To be determined in the Source Reduction Plan
Reduced Material Volume:	To be determined in the Source Reduction Plan
Increased Product Lifetime:	To be determined in the Source Reduction Plan
Decreased Consumption:	To be determined in the Source Reduction Plan

**Resource Recovery Programs**

Composting:	To be determined in the Composting Plan
Recycling:	Leelanau County Planning Department
Energy Production:	N/A

**Volume Reduction Techniques:**

USA Waste Inc

**Collection Processes:**

Private waste haulers

**Transportation:**

Private waste haulers

**Disposal Areas**

Processing Plants:	USA Waste Inc
Incineration:	N/A
Transfer Stations:	Renewable Waste Inc
Sanitary Landfills:	USA Waste Inc

**Ultimate Disposal Area Uses:**

USA Waste Inc

**Local Plan Update**

Monitoring and Enforcement:	Leelanau County Planning Department
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**Educational and Informational Programs**

Recycling:	Leelanau County Planning Department
Composting:	Leelanau County Planning Department
Hazardous Waste:	Leelanau County Planning Department
Agricultural Waste:	MSU Extension Service
Source Reduction:	Leelanau County Planning Department

**LOCAL ORDINANCES AND REGULATIONS AFFECTING  
SOLID WASTE DISPOSAL**

*This Plan update's relationship to local ordinances and regulations within the County is described in the option(s) marked below:*

1. Section 11538.(8) and rule 710.(3) of Part 115 prohibits enforcement of all County and local ordinances and regulations pertaining to solid waste disposal areas unless explicitly included in an approved Solid Waste Management Plan. Local regulations and ordinances intended to be part of this Plan must be specified below and the manner in which they will be applied described.

The Leelanau County Junk Yard Ordinance regulates waste piles on private property throughout Leelanau County by authority of P.A. 156 of 1851.

2. This Plan recognizes and incorporates as enforceable the following specific provisions based on existing zoning ordinances:

Although the Plan has not identified any siting criteria for new facilities in Leelanau County, the following ordinances have been listed in order to emphasize the importance of local zoning when making land use decisions. If this Plan is amended to allow new solid waste facilities, local zoning ordinances will still apply.

<i>Unit of Government</i>	<i>Disposal Area Affected</i>	<i>Legal Basis</i>
1. Bingham Township Board	Solid Waste	PA 184 of 1943
2. Centerville Township Board	Solid Waste	PA 184 of 1943
3. Cleveland Township Board	Solid Waste	PA 184 of 1943
4. Elmwood Township Board	Solid Waste	PA 184 of 1943
5. Empire Township Board	Solid Waste	PA 184 of 1943
6. Glen Arbor Township Board	Solid Waste	PA 184 of 1943
7. Kasson Township Board	Solid Waste	PA 184 of 1943
8. Leelanau Township Board	Solid Waste	PA 184 of 1943
9. Leland Township Board	Solid Waste	PA 184 of 1943
10. Solon Township Board	Solid Waste	PA 184 of 1943
11. Suttons Bay Township Board	Solid Waste	PA 184 of 1943
12. Empire Village Council	Solid Waste	PA 207 of 1921
13. Northport Village Council	Solid Waste	PA 207 of 1921
14. Suttons Bay Village Council	Solid Waste	PA 207 of 1921

3. This Plan authorizes adoption and implementation of local regulations governing the following subjects by the indicated units of government without further authorization from or amendments to the Plan.

If this Plan is amended to allow new solid waste facilities, local zoning ordinances will still apply.

## CAPACITY CERTIFICATIONS

*Every County with less than ten years of capacity identified in their Plan is required to annually prepare and submit to the DEQ an analysis and certification of solid waste disposal capacity validly available to the County. This certification is required to be prepared and approved by the County Board of Commissioners.*

Less than fifteen percent of the annual volume of waste disposed at Glen's Landfill comes from Leelanau County. This represents the vast majority of solid waste produced in Leelanau County. Since Glen's Landfill has an estimated sixty (60) year lifetime, an annual certification process is not included in this Plan.