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

RUSSELL J. HARDING, Director

April 19, 2000

Mr. Lowell Eisenmann, Chairperson
Lenawee County Board of Commissioners
301 N. Main Street
Adrian, Michigan 49221

Dear Mr. Eisenmann:

The Department of Environmental Quality (DEQ) received the locally approved update to the Lenawee County Solid Waste Management Plan (Plan) on February 23, 2000.

By this letter, this Plan is hereby approved and Lenawee County (County) now assumes responsibility for the enforcement and implementation of this Plan. The DEQ would like to thank the County for its efforts in addressing the County's solid waste management issues.

By approving the Plan, the DEQ has determined that it complies with the provisions of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the Part 115 administrative 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 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 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.

If you have any questions, please contact Mr. Seth Phillips, Chief, Solid Waste Management Unit, Waste Management Division, at 517-373-4750.

Sincerely,

Russell J. Harding
Director
517-373-7917

cc: Senator Beverly S. Hammerstrom
Representative Doug Spade
Representative Gene DeRossett
Mr. Arthur R. Nash Jr., Deputy Director, DEQ
Ms. Cathy Wilson, Legislative Liaison, DEQ
Mr. Jim Sygo, DEQ
Ms. Joan Peck, DEQ
Mr. Philip Schrantz, DEQ - Jackson
Mr. Seth Phillips, DEQ
Ms. Lynn Dumroese, DEQ
Lenawee County File

Solid Waste Management Plan

Lenawee County, Michigan

1997 Update

Prepared By:
Lenawee County Solid Waste Management Planning Committee

With Assistance By:
Region 2 Planning Commission

Released for Public Comment on December 1, 1998
Public Hearing Held by Lenawee County Planning Commission on March 18, 1999
Recommended for Approval by Solid Waste Management Committee on April 22, 1999
Approved by Lenawee County Board of Commissioners on June 9, 1999

Region 2 Planning Commission

Jackson County Tower Building
120 West Michigan Avenue
Jackson, Michigan 49201

Fax: 517-788-4635 **517-788-4426** Email: Region2@dmci.net

February 16, 2000

Mr. Seth Phillips
Waste Management Division
Michigan Department of Environmental Quality
P.O. Box 30241
Lansing, MI 48909

Dear Mr. Phillips:

On February 1, 2000, the Lenawee County Solid Waste Management Plan was approved by the 23rd unit of government in Lenawee County. With a total of 34 local units in the County, it is necessary for 23 units to approve a plan for the county to retain local control of solid waste management.

I am pleased to submit two copies of the Plan for your review and approval. The planning process took many months and involved the work of several dedicated members of the Lenawee County Solid Waste Planning Committee. We believe that the plan as submitted reflects the desired future of solid waste management for the people of Lenawee County.

If you have any questions, please feel free to contact me at (517) 768-6703.

Sincerely,

Timothy Anderson
Principal Planner

1997 PLAN UPDATE COVER PAGE

The Natural Resources and Environmental Protection Act, PA 451, (NREPA), Part 115, Solid Waste Management, as amended, and its Administrative Rules, requires that each County have a Solid Waste Management Plan Update (Plan) approved by the Michigan Department of Environmental Quality (DEQ). Section 11539a requires the DEQ to prepare and make available, a standardized format for the preparation of this plan update. This document is that format. The Plan should be prepared using this format without alteration. Please refer to the document entitled "Guide to Preparing the Solid Waste Management Plan Update" for assistance in completing this Plan format.

DATE SUBMITTED TO THE DEQ: February 16, 2000
If this Plan includes more than a single County, list all counties participating in this Plan.

Not applicable.

The following lists all the municipalities from outside the County who have requested and have been accepted to be included in the Plan, or municipalities within the County that have been approved to be included in the Plan of another County according to Section 11536 of Part 115 of the NREPA. Resolutions from all involved County boards of commissioners approving the inclusion are included in Appendix E.

Not applicable.

DESIGNATED PLANNING AGENCY PREPARING THIS PLAN UPDATE

Lenawee County Planning Commission
c/o Region 2 Planning Commission
120 W. Michigan Avenue
Jackson, Michigan 49201

CONTACT PERSON: Timothy G. Anderson, Senior Planner

ADDRESS: Region 2 Planning Commission
120 W. Michigan Avenue
Jackson, MI 49201

PHONE: (517) 768-6703 **FAX**: (517) 788-4635
EMAIL: tanderson@region2planning.com

CENTRAL REPOSITORY LOCATION(S): 1. Lenawee County Courthouse, 301 N. Main Street, Adrian, Michigan 49221. 2. Region 2 Planning Commission, 120 W. Michigan Avenue, Jackson, Michigan 49201.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The following summarizes the solid waste management system selected to manage solid waste within Lenawee County. In case of conflicting information between the executive summary and the remaining contents of the Plan update, the information provided 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

Township or Municipality Name	Population	% Land Use		% of Economic Base				
		Rural	Urban	Ag	For	Ind	Com	Oth
Lenawee County	97,133 (1996)[1]	95[2]	5	0.6[3]	0	22.1	14.9	62.4

Lenawee County is primarily rural in nature, however, during the 1990's it experienced considerable residential growth. The Michigan Department of Management and Budget estimates that the County population increased 6.2% from 1990-1996. The largest population growth was within the area from the Village of Clinton to Madison Charter Township which lies south of the City of Adrian.

Lenawee County contains 4 cities, 8 villages and 22 townships. The largest community is the City of Adrian with a 1996 estimated population of 22,262.

In 1996, Lenawee County had a total labor force of 46,250 of which 44,175 were employed and 2,075 were unemployed for an unemployment rate of 4.5%. There are considerably fewer jobs available than workers in Lenawee County. Therefore, many Lenawee County residents work in locations outside of the county such as Toledo, Jackson, Ann Arbor and Lansing.

[1] Michigan Department of Management and Budget population estimate.

[2] All land use estimates based on Michigan Resource Inventory System (1978).

[3] All employment estimates from Michigan Employment Security Agency (1996).

EXECUTIVE SUMMARY

This 5-year update to the Lenawee County Solid Waste Management Plan has been prepared pursuant to Part 115 of Public Act 451 of 1994 as amended, also known as the Natural Resources and Environmental Protection Act. In preparing this plan update, goals and objectives were established to serve as an overall policy framework against which a plan for solid waste management could be developed. Inherent in the established goals is to integrate waste disposal options to achieve an efficient, cost effective and environmentally sound waste disposal system; achieve environmentally safe solid waste management practices; and encourage establishment of an efficient, cost effective and environmentally sound waste collection system. Other goals include the use of public education to promote a better understanding of solid waste management planning; developing and maintaining adequate public facilities to support the waste management system; and to achieve an on-going solid waste planning, evaluation and management process. Objectives of significance established for achieving these goals include reducing the county's reliance on sanitary landfills as a means of waste disposal; creating an environment conducive to recycling and assisting the private and public sector in instituting recycling/composting programs.

As part of the plan update process, information was collected and analyzed on population and land development; environmental conditions; the waste stream; components of the solid waste management system including waste disposal, processing, collection, transportation, source reduction, resource recovery and ultimate disposal area uses; and the current institutional arrangements for the solid waste management system; for the purpose of developing and evaluating solid waste management alternatives.

The following is a summary of information determined to be relevant to the development of solid waste management alternatives for Lenawee County:

1. The distribution of centers of waste generation is not expected to change significantly in the next 10-year planning period. However, residential growth on large lots in rural areas of the County may result in reduced efficiency and higher cost in the waste hauling industry.

2. With the exception of the Rollin Township Type B transfer station, waste disposal in Lenawee County is dominated by the private sector. The only Type II landfill in Lenawee County is owned by Adrian Landfill, Inc.

3. Over the 10-year planning period, stricter design and operating standards are expected to increase the unit cost of using landfills as a primary waste disposal option. There may be pressure to develop alternative waste management components such as a waste-to-energy incinerator.

4. Recycling and composting will increase the life of the Adrian Landfill. Therefore, public education in recycling and composting is important to developing a source reduction program.

5. One of the greatest potentials for expanding recycling and composting opportunities in Lenawee County lies with the private waste haulers.

6. The Adrian Landfill has an approved capacity of 23.4 years.

7. Waste collection in Lenawee County is dominated by the private sector. Residential waste collection is provided exclusively through agreements between private sector haulers and county residents.

8. The movement of waste between counties must be recognized in the plan of both the importing and exporting county.

9. Lenawee County is nearly self-sufficient in the ability to dispose of its own waste. In 1997, over 98% of the waste generated in the county was disposed of at the Adrian Landfill.

CONCLUSIONS

After considering three alternative waste management systems, the existing system was determined to be the most practicable. In addition, Lenawee County will encourage increased recycling in order to extend the life of the Adrian Landfill.

SELECTED ALTERNATIVES

The alternative selected by this plan and the recommended strategies for implementation are summarized below:

1. Landfilling is likely to continue as the primary means of waste disposal. However, increased recycling and Michigan's ban the landfilling of yard waste will reduce the amount of waste disposed of at the Adrian Landfill.

2. The alternative selected for the 10-year plan calls for increased emphasis on recycling, composting, and source reduction. Incineration will be studied as a waste reduction method.

3. Several facilities including the Adrian Landfill, Irish Hills Transfer Station, Rollin Township Transfer Station, and landfills and transfer stations in adjacent counties have been identified as specific sites which will be used to implement the selected alternatives.

4. The Lenawee County Board of Commissioners shall have the responsibility for ensuring that adequate waste disposal area are provided in a timely manner to meet the County's waste disposal needs and that adequate funding is provided to implement this plan. Funding will continue to be derived from a surcharge on waste disposed of in the Adrian Landfill. Other possible sources of funding should also be considered.

5. The Lenawee County Solid Waste Coordinating Committee will continue in their plan implementation and monitoring roles.

6. Since the main objective of a solid waste plan is to reduce the use of landfills, all efforts to increase source reduction, recycling and composting are included as part of this plan.

7. Any new landfill operating within Lenawee County shall be required to erect a recycling processing center and a composting area, with appropriate equipment to accept materials designated by the Solid Waste Coordinating Committee. This structure should preferably be located at the landfill, but may be sited elsewhere if consistent with the solid waste plan. Drop-off centers are to be located at various sites throughout the County per contractual agreement between the designated recycling coordination agency and the drop-off center. The Solid Waste Coordinating Committee will determine which materials are to be recycled and will ensure that new sites are established, operated and maintained according to appropriate guidelines that the Committee will develop.

8. All proceeds from sales of recycled material shall be kept by the landfill operator. An annual report on the landfill recycling activities will be required by the Solid Waste Coordinating Committee.

9. The County will continue to fund resource recovery education using funding from the surcharge on waste disposed of at the Adrian Landfill.

10. The total solid waste received at the Adrian Landfill shall not exceed an rolling six-month average weekly cap of 6,600 tons. Using a six-day operating week, the total is therefore equivalent to 1,100 tons per day and provides some latitude for typical daily tonnage fluctuations.

11. The plan recommends maintaining private sector operation of landfills in Lenawee County.

12. The plan recommends that each local unit of government determine which alternative for management of solid waste is best for it.

13. The Solid Waste Coordinating Committee will be responsible for overseeing the enforcement of the Lenawee County Solid Waste Management Plan and will refer any suspected violations of the plan to the proper law enforcement authorities. Other duties of the committee include the investigation of illegal dumping, illegal use of the County's solid waste disposal facilities, and other duties necessary for enforcement of this plan.

14. The Solid Waste Coordinating Committee shall be responsible for implementation of the Lenawee County Solid Waste Management Plan. The Lenawee County Planning Commission, as designated solid waste planning agency, shall make recommendations to the Lenawee County Board of Commissioners on the make up of the Lenawee County Solid Waste Coordinating Committee. The Solid Waste Coordinating Committee will maintain bylaws and shall conduct its activities consistent with the goals and objectives of this plan.

15. The Solid Waste Coordinating Committee shall be responsible for the following:

- Recycling/solid waste education.
- Implementation of recycling and composting goals as set forth in this plan.
- Assisting the Board of Commissioners in ensuring that adequate waste disposal areas are provided in a timely manner to meet the County's waste disposal needs.
- Determining the adequacy of funds received from the solid waste surcharge toward meeting the County's solid waste management goals.
- Monitoring the waste received at the Adrian Landfill for compliance with this plan.
- Other duties determined to be necessary by the County Board of Commissioners.

INTRODUCTION

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 resources 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 a waste management system which integrates use of all waste disposal options to achieve an efficient, cost effective, and environmentally sound waste disposal system and which maximizes the utilization of resources.***

Objective 1a: Assure development of the landfill capacity needed to meet the County's waste disposal needs for the next 5 and 10 years.

Objective 1b: Encourage reduced reliance on sanitary landfills as a means of waste disposal.

Objective 1c: Create an environment conducive to recycling and assist the private and public sector in instituting recycling programs. Increase recycling by 1% of the total waste stream per year through 2007.

Objective 1d: Expand source reduction methods.

Objective 1e: Expand composting practices.

Objective 1f: Consider a study on the feasibility of an incinerator.

Objective 1g: Encourage private sector involvement in all waste management activities.

Objective 1h: Encourage further study and assessment of the feasibility of developing a regional facility for mixed use processing.

Objective 1i: Coordinate any future changes in the county waste management system with necessary changes in processing and collection methods.

Objective 1j: Encourage continued appropriate disposal of household hazardous waste.

Goal 2: ***Achieve environmentally safe solid waste management practices.***

Objective 2a: All disposal areas are required to comply with adopted regulatory standards for proper solid waste management to protect the public health and safety.

Objective 2b: Provide public education on proper techniques and methods for disposal of solid waste on personal property through media and other educational tools.

Objective 2c: Increase efforts at enforcement of existing ordinances against illegal solid waste disposal in the County.

Objective 2d: Ensure solid waste collection does not create environmental problems.

Goal 3: ***Encourage establishment of an efficient, cost effective and environmentally sound waste collection system.***

Objective 3a: Encourage local units of government to evaluate cost effectiveness of alternative collection methods as collection represents a large portion of total waste management costs.

Objective 3b: Ensure that any changes in the collection system are coordinated with existing disposal practices.

Objective 3c: Coordinate any future changes in collection methods with changes in other components of the waste management system.

Goal 4: ***Use public education to promote a better understanding of solid waste management and solid waste management planning.***

Objective 4a: Make public officials aware of solid waste management regulations.

Objective 4b: Inform the public about the existing solid waste management system and any proposed changes in the system.

Objective 4c: Inform the public about individual waste collection and disposal alternatives and proper waste management practices.

Objective 4d: Educate the public on the value of recycling as a waste disposal option and an opportunity to recycle in the Lenawee County area.

Objective 4e: Continue to develop financial support for solid waste management education in Lenawee County.

Goal 5: ***Develop and maintain adequate public facilities to support the waste management system.***

Objective 5a: Minimize any road deterioration associated with overweight solid waste transport vehicles.

Objective 5b: Consider solid waste transportation needs when planning and implementing future road and bridge improvements.

Objective 5c: Encourage local regulatory agencies and local units of government to consider the impact of ordinances (noise, etc.) on the overall cost effective operation of solid waste management businesses.

Goal 6: ***Achieve an on-going solid waste planning, evaluation, and management process.***

Objective 6a: All new facilities are required to comply with the operating criteria set forth in this plan.

Objective 6b: Monitor on an annual basis indicators of successful plan implementation, including existing landfill capacity, volume of waste diverted from the waste stream due to recycling and composting, and opportunities to implement waste-to-energy incineration.

Objective 6c: Update the solid waste management plan as necessary or as directed by the State of Michigan.

DATA BASE

Identification of sources of waste generation within the county, total quantity of solid waste generated to be disposed, and sources of information.

The following table estimates waste generation rates in Lenawee County for the years 1997, 2002 and 2007.

Waste Type	Current Annual Volume, Tons (1997)	Five-Year Annual Volume, Tons (2002)	Ten-Year Annual Volume, Tons (2007)
Municipal Solid Waste [4]	66,531	68,650	71,224
Industrial Solid Waste [5]	33,981	35,063	36,378
Municipal Sludge [6]	1,543	1,796	1,843
Construction Demolition[7]	10,730	11,073	11,488
Yard Waste[8]	18,360	18,978	19,687
TOTAL	**131,145**	**135,560**	**140,620**

TOTAL QUANTITY OF SOLID WASTE GENERATED - 131,145 tons (1997)

TOTAL QUANTITY OF SOLID WASTE NEEDING DISPOSAL - 108,537 tons (1997)[9]

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[4]Municipal solid wastes include wastes generated from residential, commercial and office uses. MSW is composed of food waste, rubbish, ashes, street sweepings, roadside litter, and other special wastes. Assumes average daily *per capita* weight of 3.72 lbs. per day (Source: Characterization of MSW in the U.S.: 1996 Update, US EPA. Washington, D.C. Deducts 14.3% for yard waste from 1995 waste generation rate of 4.34 lbs./day per person).

[5] Industrial solid wastes include food wastes, rubbish, special wastes, and hazardous waste. Generation rates are based on SWANA (Solid Waste Association of North America) assumption of 1.9 pounds per person per day.

[6]Assumes 0.16 lbs./day for persons in households serviced by municipal sewer systems *(Recommended Standards for Wastewater Facilities, 1990)*, Great Lakes-Upper Mississippi River Board of State Public Health and Environmental Managers). Applies 1990 percentages for households served by public sewer systems, persons per occupied household, and vacancy rates. Assumes MDMB's 1996 total estimated housing units.

[7]Assumes construction/demolition materials generation rate of 0.6 lbs./person per day (from Solid Waste Association of North America estimates).

[8]Uses US EPA's estimate that yard waste comprises 14.3% of the waste stream (Characterization of MSW in US: 1996 Update, US EPA. Washington, D.C.)

[9]Based on 100% diversion of municipal sludges and yard waste and 0% recycling rate for construction/demolition materials. The following documented recycled waste volumes are deducted from total (totals from 1997): Private programs: Materials Management - 600 tons, Wacker Silicones - 71.47 tons, and Great Lakes commercial recycling - 422.0 tons; Municipal programs: City of Tecumseh - 234.58 tons, City of Adrian - 537.16 tons, curbside programs (City of Hudson, Village of Clinton, Village of Cement City, and Loch Erin) - 363.0 tons, Village of Blissfield - 380.0 tons, City of Morenci - 86.42 tons, and Raisin Charter Township - 40.0 tons. Total documented recycled waste = 2,704.63 tons.

The solid waste needing disposal is significantly reduced from the total of solid waste generated due to recycling, reuse, field application of municipal sludge, alternative disposal of construction and demolition materials, and the State of Michigan's ban on disposal of yard waste in landfills.

DATA BASE

Inventory and description of all solid waste disposal areas within Lenawee County or to be utilized by Lenawee County to meets is disposal needs for the planning period.

The following facilities are anticipated to process the majority of Lenawee County's solid waste within the 10-year planning period. Both in-county and out-of-county facilities are considered.

Lenawee County Facilities

Adrian Landfill

The majority of Lenawee County's solid waste will be disposed of at the Adrian Landfill. The Adrian Landfill currently handles approximately 98% of solid waste generated in Lenawee County. [10] The Adrian Landfill has an approved capacity of over 5 million cubic yards - sufficient capacity for about 23.4 years at the current disposal rate. The landfill has received approvals to expand into the former Thompson Auto Sales site thereby extending the potential life of the landfill to well beyond the 10-year planning period. Documentation of landfill capacity is included in Appendix D2.

The Adrian Landfill is located on a 421-acre site in sections 6 and 7 of Palmyra Township in Lenawee County. Approximately 20 acres of the site is currently being used for disposal while an additional 20 acres has received state and local approvals for expansion. The landfill is privately-operated by Great Lakes Waste Services.

Irish Hills Transfer Station

The Irish Hills Transfer Station is located in Section 7 of Franklin Township in Lenawee County. Waste from this transfer station is ultimately disposed of at the Adrian Landfill. The privately-owned Irish Hills Transfer Station is located on a 3-acre site with 1.5 acres actively in use.

Rollin Township Transfer Station

The Rollin Township Transfer Station is located in Rollin Township. This transfer station is publicly-owned and is located on a 5-acre site. Waste taken to the Rollin Township Transfer Station is ultimately disposed of at the Williams County Landfill.

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[10] Report of Solid Waste Landfilled in Michigan (October 1, 1996-September 30, 1997), Michigan Department of Environmental Quality, Waste Management Division, February 27, 1998.

Out-of-County Facilities

Jackson County Resource Recovery Facility and Landfill

Located in Section 14 of Blackman Charter Township in Jackson County, the Jackson County resource recovery facility and landfill are privately-operated. Jackson's incinerator is a waste-to-energy facility with a capacity of 200 tons per day. Ash and non-combustible solid waste are disposed of at the McGill Road Landfill also located in Jackson County.

Liberty Environmentalists Landfill

Most of Lenawee County's Type III waste will be disposed of at the Liberty Environmentalists Landfill in Section 13 of Liberty Township in Jackson County. With expansion, the landfill will have an estimated lifetime of 20 years.

Williams County Landfill

Lenawee County anticipates sending a small portion of its waste to the Williams County Landfill in Ohio. This landfill has sufficient capacity for an estimated 86 years.

City of Hillsdale Transfer Station

A portion of Lenawee County's waste stream will be exported through the City of Hillsdale Transfer Station. This transfer station is privately-owned and is located on a 10-acre site. The ultimate disposal area for waste processed through the City of Hillsdale Transfer Station is the Williams County Landfill in Ohio.

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: Resource recovery facility

Facility Name: Jackson County Resource Recovery Facility

County: Jackson Location: Town: 2S Range: 1W Section(s): 14

Map identifying location included in Attachment Section: __X__ Yes _____ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: McGill Road Landfill
__X__ Public _____ Private Owner: Jackson County

Operating Status	Waste Types Received
__X__ open	__X__ residential
_____ closed	__X__ commercial
__X__ licensed	__X__ industrial
_____ construction permit	_____ construction and demolition
_____ open, but closure	__X__ contaminated soils
_____ pending	_____ special wastes*
	_____ other:

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

Site Size:

Total area of facility property:	_____ acres
Total area site for use:	_____ acres
Total area permitted:	_____ acres
Operating:	_____ acres
Not excavated:	_____ acres

Current capacity:	200 tons or cubic yards per day
Estimated lifetime:	20 years
Estimated days open per year:	328 days
Estimated yearly disposal volume:	59,807 tons or cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	15,138 megawatts

FACILITY DESCRIPTIONS

Facility Type: Type II landfill

Facility Name: McGill Rd. Landfill

County: Jackson Location: Town: 2S Range: 1W Section(s): 24

Map identifying location included in Attachment Section: __X__Yes _____ No

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

_____ Public __X__ Private Owner: Waste Management, Inc

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	__X__commercial
__X__licensed	__X__industrial
_____construction permit	__X__construction and demolition
_____open, but closure	__X__contaminated soils
_____pending	__X__special wastes*
	_____other:

- Explanation of special wastes, including a specific list and/or conditions: Incinerator ash

Site Size:

Total area of facility property:	50.5	acres
Total area site for use:	41.8	acres
Total area permitted:	18.7	acres
Operating:	7.8	acres
Not excavated:	17.51	acres

Current capacity:	1,236,300	tons
Estimated lifetime:	15	years
Estimated days open per year:	310	days
Estimated yearly disposal volume:	63,226	tons

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____	megawatts
Waste-to-energy incinerators:	_____	megawatts

FACILITY DESCRIPTIONS

Facility Type: Type III landfill

Facility Name: Liberty Environmentalists Landfill

County: Jackson Location: Town: 4S Range: 1W Section(s): 13

Map identifying location included in Attachment Section: __X__Yes _____ No

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

_____ Public __X__ Private Owner: Liberty Environmentalists, Inc.

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	__X__commercial
__X__licensed	__X__industrial
_____construction permit	__X__construction and demolition
_____open, but closure	_____contaminated soils
_____pending	__X__special wastes*
	_____other:

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

Shredder fluff, foundry sand

Site Size:

Total area of facility property:	285 acres
Total area site for use:	65 acres
Total area permitted:	15 acres
Operating:	7.5 acres
Not excavated:	40 acres

Current capacity:	400,000 cubic yards
Estimated lifetime:	20 years
Estimated days open per year:	300 days
Estimated yearly disposal volume:	165,000 cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Transfer station

Facility Name: Rollin Township Transfer Station

County: Lenawee Location: Town: 6S Range: 1E Section(s): 29

Map identifying location included in Attachment Section: __X__Yes _____ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: Williams County Landfill, Bryan, Ohio
__X__ Public _____ Private Owner: Rollin Township

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	_____commercial
_____licensed	_____industrial
_____construction permit	_____construction and demolition
_____open, but closure	_____contaminated soils
_____pending	_____special wastes*
	_____other:

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

Site Size:

Total area of facility property:	__5__ acres
Total area site for use:	_____ acres
Total area permitted:	_____ acres
Operating:	_____ acres
Not excavated:	_____ acres
Current capacity:	_____ tons or cubic yards
Estimated lifetime:	_____ years
Estimated days open per year:	__52__ days
Estimated yearly disposal volume:	_____tons or cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Type II landfill

Facility Name: Williams County Landfill

County: Williams (Ohio) Location: Town: 1N Range: 2E Section(s): 35,36

Map identifying location included in Attachment Section: _____Yes __X__ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes:
_____ Public __X__ Private Owner: __Tri-State Waste, Inc._____

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	__X__commercial
__X__licensed	__X__industrial
_____construction permit	__X__construction and demolition
_____open, but closure	__X__contaminated soils
_____pending	__X__special wastes*
	_____other:

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

Site Size:

Total area of facility property:	614 acres
Total area site for use:	374 acres
Total area permitted:	160 acres
Operating:	58 acres
Not excavated:	101 acres
Current capacity:	22,505,000 cubic yards
Estimated lifetime:	86 years
Estimated days open per year:	307 days
Estimated yearly disposal volume:	168,850 tons

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Transfer station and compost facility

Facility Name: Irish Hills Transfer Station

County: Lenawee Location: Town: 5S Range: 2E Section(s): 7

Map identifying location included in Attachment Section: X Yes _____ No

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

_____ Public X Private Owner: Larry K. Wibbeler

Operating Status	Waste Types Received
X open	X residential
_____ closed	X commercial
_____ licensed	_____ industrial
_____ construction permit	X construction and demolition
_____ open, but closure	_____ contaminated soils
_____ pending	_____ special wastes*
	X other: Compost

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

Site Size:

Total area of facility property:	3 acres
Total area site for use:	1.5 acres
Total area permitted:	3 acres
Operating:	3 acres
Not excavated:	_____ acres
Current capacity:	_____ tons or cubic yards
Estimated lifetime:	_____ years
Estimated days open per year:	120 days
Estimated yearly disposal volume:	2,000 cubic yards

(if applicable)

Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Type II landfill

Facility Name: Adrian Landfill

County: Lenawee Location: Town: 7,8 S Range: 4E Section(s): 6,7

Map identifying location included in Attachment Section: X Yes _____ No

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

_____ Public X Private Owner: Adrian Landfill, Inc.

Operating Status	Waste Types Received
X open	X residential
_____ closed	X commercial
X licensed	X industrial
_____ construction permit	X construction and demolition
_____ open, but closure	X contaminated soils
_____ pending	X special wastes*
	X other:

- Explanation of special wastes, including a specific list and/or conditions: Asbestos and sludges per operating policy.

Site Size:

Total area of facility property:	421 acres
Total area site for use:	287 acres
Total area permitted:	40 acres
Operating:	19 acres
Not excavated:	20 acres

Current capacity:	5,043,838 cubic yards
Estimated lifetime:	23.5 years
Estimated days open per year:	307 days
Estimated yearly disposal volume:	71,460 tons

(if applicable)
Annual energy production:

Landfill gas recovery projects:	20,148 megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Class A Transfer Station

Facility Name: City of Hillsdale Transfer Station

County: Hillsdale Location: Town: 6S Range: 3W Section(s): 22

Map identifying location included in Attachment Section: __X__Yes _____ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: Williams County Landfill, Bryan, Ohio
_____ Public __X__ Private Owner: Williams County Landfill

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	__X__commercial
__X__licensed	__X__industrial
_____construction permit	__X__construction and demolition
_____open, but closure	_____contaminated soils
_____pending	_____special wastes*
	_____other:

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

Site Size:

Total area of facility property:	__10__ acres
Total area site for use:	__10__ acres
Total area permitted:	__10__ acres
Operating:	_____ acres
Not excavated:	_____ acres
Current capacity:	__52__ tons or cubic yards
Estimated lifetime:	_____ years
Estimated days open per year:	__312__ days
Estimated yearly disposal volume:	16,239 tons or cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

DATA BASE

SOLID WASTE COLLECTION SERVICES AND TRANSPORTATION INFRASTRUCTURE

The following describes the solid waste collection services and transportation infrastructure that are utilized within the County to collect and transport solid waste.

Collection

The following table provides a list of Lenawee County's licensed waste hauling providers, the type of service they provide, and the areas served:

Provider	Type of Service	Area Served in Lenawee County
Jackson Iron and Metal	Recycling	Entire county
Steven's Disposal	Residential and office	Eastern Lenawee County
Modern Waste Disposal	Residential and commercial	Western Lenawee County
K&D Disposal Systems	Residential	Western Lenawee County
Great Lakes Waste Systems	Residential, office and commercial	Entire county
BFI	Residential, office and commercial. Curbside in Tecumseh and Morenci	Entire county
City Environmental	Industrial	City of Adrian
Irish Hills Sanitation	Residential and office	Irish Hills area

While the cost of waste collection may be greater in rural areas where the density of development is relatively low, there does not appear to be any area in the County where it is impossible for a resident to find a private hauler willing to provide waste collection service. In areas with a higher density of residential development, there are a large number of haulers providing service and their service areas often overlap.

Solid waste transport vehicles are required to be built in such a manner that public health and safety are not jeopardized. Each vehicle must be covered and leak-proof. Enforcement of this requirement is the responsibility of the various police departments and the Lenawee County Health Department.

The frequency of collection is based on a combination of factors including sanitation, cost, fuel consumption, and storage facilities available to residents.[11] Densely populated cities and villages generally have little storage capacity and therefore require frequent collection to maintain health standards. Rural areas with low population densities can be serviced less frequently as waste generation and its storage do not pose as serious a health problem.

The frequency of collection in Lenawee County varies from once-a-week to more than twice-a-week. The frequency of collection of residential waste varies with the density of residential land use. Incorporated areas, where densities are higher, have more frequent collection than rural townships. The frequency of collection of industrial and commercial waste is determined by the rate at which individual establishments generate waste.

The collection of bulky items, such as hot water heaters, stoves, and other "white goods", requires a different collection method than once-a-week, curbside pick-up. Haulers generally require notification prior to pick-up of such items. An additional fee is generally charged for the collection of bulky items.

Transportation

Transportation is the movement of waste from collection areas to temporary or ultimate disposal sites. All refuse, other than that disposed of on personal property, is currently transported by personal or hauler vehicle. Although several railroad lines run through the County, none are engaged in the transportation of solid waste and their use for this purpose is not anticipated in the future.

The major routes used to transport refuse from the collection areas to the disposal sites are state highways and county primary roads. Of course, within a collection area, it is often necessary to travel on secondary and residential streets but these are not generally used as transportation arteries to and from disposal sites.

Weight limitations on roads in Lenawee County are set by the Michigan Department of Transportation in the Motor Vehicle Traffic Code. There are two agencies charged with enforcement of the Code: the Lenawee County Road Commission and the Michigan Public Service Commission. There are no locally imposed width limitations.

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[11] U.S. Environmental Protection Agency, Decision-Makers Guide to Solid Waste Management. U.S. Government Printing Office, 1976, p. 28.

DATA BASE

EVALUATION OF DEFICIENCIES AND PROBLEMS

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

Limited recycling. Though Lenawee County has seen increases in the level of recycling, more can be done. The County is dependent on the surcharge at the Adrian Landfill for education and administration of recycling programs. Different sources of funding should be considered.

Illegal dumping. Though there is a county ordinance prohibiting illegal dumping, the practice continues. Roadside dumping is a particular concern in the county. More community clean-up days would help alleviate this problem.

Solid waste collection. There are no municipal waste collection systems in Lenawee County. Therefore waste collection is handled on a customer basis resulting in a system that is not as efficient as possible.

Limited composting. Opportunities to compost are limited to a few programs. Since the 1995 ban on yard waste disposal in landfills, there has not been a concurrent increase in composting opportunities in the County. For the most part, composting has been left to the individual home owner.

Dependency on surcharge. Many of the County's programs for education and solid waste management are dependant on the surcharge at the Adrian Landfill. If this surcharge were somehow cut off or reduced, funding would be limited for these programs.

DATA BASE

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 by using 365 days per year, or another number of days as indicated.

Demographic information is essential in solid waste management planning because it provides data used in the analysis and policy-making portions of the plan. These data are used in projecting future waste generation and the determination of the feasibility of various collection, recycling and disposal alternatives. The two principal sources of the population data are the U.S. Census Bureau and the Michigan Department of Management and Budget.

Current Population

The Michigan Department of Management and Budget estimated Lenawee County's 1997 population to be 97,998. This is a 7.1% increase over the population of the County in 1990.

Population Growth Trends

From 1930 to 1997, Lenawee County's population nearly doubled from 49,849 in 1930 to 97,998 in 1997 (see table below).

Population		Growth Trends	
Year	**Population**	**Period**	**Percentage Population Growth**
1930	49,849	-	-
1940	53,110	1930-1940	6.5
1950	64,629	1940-1950	21.7
1960	77,789	1950-1960	20.4
1970	81.951	1960-1970	5.4
1980	89,948	1970-1980	9.8
1990	91,476	1980-1990	1.7
1997 (est.)	97,998	1990-1997	7.1
		Change, 1930-1997	96.6

As the table indicates, Lenawee County saw its greatest growth during the 1940's and 1950's. During the 1960's, the County's population was relatively stagnant but grew 9.8% during the 1970's. Michigan's recession contributed to the slow growth rate of 1.7% during the 1980's, but a good local and state economy has resulted in considerable population growth during the 1990's.

Population Projections

Lenawee County's population is expected to continue to rise. Lenawee County population projections for the years 2002 and 2007 were extrapolated from Michigan Department of Management projections for the year 2000 and assumed an annual percentage growth rate of 0.75% for the years 2000-2007. The population projections for the years 2002 and 2007 are 101,119 and 104,911, respectively.

The Lenawee County population estimates and projections are summarized in the following table:

Year	***Population***
1990	*91,476 (actual)*
1995	*96,418 (estimated)*
1997	*97,998 (estimated)*
2000	*99,625 (projected)*
2002	*101,119 (projected)*
2005	*103,361 (projected)*
2007	*104,911 (projected)*
2010	*107,237 (projected)*

Population Density

An area's population density gives an indication of how efficiently waste hauling services can operate. In areas with a high population density, haulers can usually serve relatively high numbers of dwellings by traveling the same distance.

Lenawee County had a population density of 121.9 persons/square mile in 1990. The density rose to 130.6 persons/square mile in 1997, and is expected to continue to rise to 134.2 in 2002, and 137.5 in 2007.

Population Distribution

Information on the distribution of the County's population is necessary in order to analyze alternative waste collection, transportation, recycling and disposal systems. The following table shows the population of the cities, villages and townships in Lenawee County from 1930 through 1996.

LENAWEE COUNTY POPULATION BY LOCAL UNIT OF GOVERNMENT, 1930-1996

Unit of Government	Population							
	1930	1940	1950	1960	1970	1980	1990	1996 (est.)
Cities								
Adrian	13,064	14,230	18,393	20,347	20,382	21,276	22,097	22,262
Hudson	2,361	2,426	2,773	2,546	2,618	2,545	2,580	2,587
Morenci	1,773	1,845	1,983	2,053	2,132	2,110	2,342	2,311
Tecumseh	2,456	2,921	4,020	4,020	7,120	7,320	7,462	8,032
Villages								
Addison	452	465	488	575	595	655	632	630
Blissfield	2,013	2,144	2,365	2,653	2,753	3,107	3,172	3,252
Britton	368	409	517	622	697	693	694	675
Cement City *	n/a	n/a	n/a	429	489	501	465	468
Clayton	372	375	467	470	505	396	384	375
Clinton	1,026	1,126	1,344	1,481	1,677	2,342	2,475	2,516
Deerfield	512	569	725	866	834	957	922	918
Onsted	375	414	486	526	555	670	801	843
Townships								
Adrian	1,759	2,728	2,600	3,341	3,725	4,522	4,336	5,047
Blissfield	725	715	803	805	722	637	677	718
Cambridge	695	794	1,081	1,617	2,092	3,130	3,628	3,848
Clinton	432	437	525	817	863	1,071	1,082	1,147
Deerfield	833	776	822	790	755	772	737	782
Dover	964	1,007	1,082	1,259	1,325	1,703	1,608	1,705
Fairfield	1,739	1,790	2,025	2,117	2,047	1,986	1,883	1,924
Franklin	1,108	1,107	1,499	1,813	1,768	2,463	2,473	2,671
Hudson	910	911	966	1,145	1,180	1,384	1,300	1,378
Macon	905	862	1,000	1,262	1,316	1,480	1,421	1,542
Madison Charter	1,655	1,773	2,990	5,226	5,494	5,035	5,351	7,450
Medina	1,359	1,215	1,345	1,301	1,227	1,455	1,368	1,387
Ogden	1,399	1,372	1,249	1,305	1,553	1,224	1,146	1,135
Palmyra	1,551	1,652	1,767	2,418	2,424	2,476	2,602	2,299
Raisin Charter	1,196	1,258	1,767	3,061	4,322	5,499	5,648	6,328
Ridgeway	936	897	953	983	1,059	1,053	878	932
Riga	1,781	1,607	1,646	1,863	1,675	1,671	1,471	1,481
Rollin	1,151	1,228	1,977	2,361	2,620	3,012	2,891	3,066
Rome	971	1,017	1,111	1,219	1,330	1,681	1,632	1,617
Seneca	1,170	1,185	1,262	1,297	1,337	1,377	1,289	1,323
Tecumseh	435	469	1,032	775	1,048	1,480	1,539	1,843
Woodstock	1,313	1,386	1,566	1,401	1,712	2,265	2,490	2,641
TOTAL	**49,849**	**53,110**	**64,629**	**77,789**	**81,951**	**89,948**	**91,476**	**97,133**

*The Village of Cement City incorporated during the 1950's.

In 1990, 38.6% of the County population was classified as urban and 61.4% was classified as rural according the Census Bureau's definitions of the terms. While the population is disbursed throughout the County, there are some areas with higher population densities than others.

In terms of population, Lenawee County can be divided into four geographical areas: the urban corridor which is an area of significant residential, commercial, and industrial development which includes the areas in and between the Village of Clinton and the cities of Adrian and Tecumseh; the US-12 corridor including the Irish Hills area which includes areas of significant residential lake development in the northwest part of the County, the balance of the incorporated places, and the balance of the townships. The following table shows the population growth in the four regions from 1930-1996:

Demographic Region	Population							
	1930	1940	1950	1960	1970	1980	1990	1996
Urban Corridor*	22,023	24,942	32,671	42,093	44,631	48,545	49,990	54,625
US-12/Irish Hills Area**	3,491	3,701	4,632	5,357	6,127	8,528	9,857	10,471
Balance of Incorporated Areas***	7,941	8,233	9,318	10,214	10,623	10,964	10,726	10,748
Rural Townships****	16,394	16,234	18,008	20,125	20,570	21,911	20,903	21,289
TOTAL	49,849	53,110	64,629	77,789	81,951	89,948	91,476	97,133

No demographic region lost population from 1930 to 1996 but there were differences in growth rates. In 1996, 54,625 people, or approximately 56% of the County population, resided in the urban corridor. In comparison, only 44% in of the population lived in this region in 1930.

The other fast-growing demographic region in the County is the US-12/Irish Hills area. While this region represents 11% of the County's population, it contains nearly three times the population that it did in 1930, and is now equal to the balance of incorporated areas in terms of percentage of the County population.

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* Includes the cities of Tecumseh and Adrian, Village of Clinton, and townships of Clinton, Tecumseh, Adrian, Raisin, and Madison.

** Includes the village of Cement City and Onsted, and the townships of Woodstock, Cambridge and Franklin.

*** Includes the cities of Hudson and Morenci, and the villages of Addison, Blissfield, Britton, Clayton, and Deerfield.

**** Includes the townships of Blissfield, Deerfield, Dover, Fairfield, Hudson, Macon, Medina, Ogden, Palmyra, Ridgeway, Riga, Rollin, Rome, and Seneca.

The other two regions grew from 1930 to 1996 in population, but declined as a percentage of County population. To some extent, the rural townships have avoided the adverse effects of sprawl and the undesired mixture of agriculture and low-density residential development.

DATA BASE

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.

Land use studies are concerned with the present and future pattern of land development, including the location, amount, arrangement, and density of various types of land uses. This information is used to determine the location of current and future centers of waste generation. These projections are used in turn to evaluate alternative solid waste management systems.

Due to a lack of available data on land use, 1978 data from the Michigan Resource Inventory System (MIRIS) were used. The MIRIS data indicate that of the 761 square miles in Lenawee County, 37 square miles are used for urban purposes such as residential, commercial, industrial, transportation and communications, and 724 square miles are used for rural purposes such as agriculture, forest, water, wetlands, and barren lands. Though land use has changed considerably since the 1978 data were compiled, Lenawee County is still primarily rural in nature. However, the County is seeing signs of urban sprawl as low-density residential development takes place in agricultural areas.

As indicated in a previous section, over half of the population in Lenawee County is concentrated in the urban corridor between Clinton and Adrian. Because public sewer facilities are available in much of this area, it contains some of Lenawee County's most intensive concentrations of residential, commercial and industrial land uses. The incorporated villages and cities outside of the urban corridor contain high-density residential, commercial and industrial uses but not at the intensities found within the urban corridor.

The US-12/Irish Hills area and the rural townships primarily contain agricultural and low-density residential land uses. However, there are small pockets of commercial and industrial use in these areas.

Recent residential building permit data confirm that the fastest growing areas in Lenawee County are within the urban corridor and the US-12/Irish Hills regions. Since 1990, over 84% of the building permits for new residential units have occurred within the Urban Corridor and the US-12/Irish Hills regions.

Future land use patterns in Lenawee County are likely to retain the existing pattern of development. That is, most of the high-density residential, industrial and commercial development is likely to take place in the urban corridor and incorporated cities and villages. However, low-density residential development is likely to take place in rural townships, a process that has already begun.

DATA BASE

SOLID WASTE MANAGEMENT ALTERNATIVES

The following briefly describes all solid waste management systems considered by Lenawee County and how each alternative will meet the needs of Lenawee County. The manner of evaluation and ranking of each alternative is also described. Details regarding selected alternatives are located in the following section. Details regarding each non-selected alternative are located in Appendix B.

This section presents a description and evaluation of the alternatives that were considered to best satisfy the goals and objectives of the plan, as well as the criteria listed below. The alternatives assume the following volumes of waste generation for Lenawee County in 1997:

Municipal Solid Waste	-	66,531 tons
Industrial Solid Waste	-	33,981 tons
Construction/Demolition	-	10,730 tons
TOTAL WASTE GENERATION		111,242 tons

Also, the USEPA estimates that approximately 14.3% of the waste stream is made up of yard waste. Therefore, approximately 18,562 tons of yard waste were generated in Lenawee County in 1997.

The Lenawee County Solid Waste Management Planning Committee considered the following alternatives for solid waste management: 1) Lenawee County meets the State of Michigan goals for solid waste management; 2) Close the landfill and send all waste out of county through transfer stations; and 3) Allow the current system to continue with modifications. The following factors were considered for each alternative as part of the analysis:

- ❑ waste reduction, pollution prevention
- ❑ resource conservation
- ❑ resource recovery
- ❑ volume reduction
- ❑ sanitary landfill disposal method
- ❑ collection process and transportation
- ❑ ultimate disposal area uses
- ❑ institutional arrangements
- ❑ recycling and composting programs

The following is a summary of each alternative:

Alternative # 1 **Lenawee County sets as its goal the overall State goal for solid waste management.**

In accordance with the Michigan Department of Environmental Quality's goals for solid waste management, Alternative #1 calls for the county to meet the following standards in 2005.*

Reduction in waste generation	-	10%
Reuse of waste	-	5%
Composting	-	10%
Recycling	-	25%
Waste-to-energy	-	40%
Landfilling	-	15%

Approximately 75-80% of Lenawee County's waste is currently landfilled. Therefore, meeting the State's goals for solid waste management would involve dramatic changes in the current disposal system.

Alternative # 2 **Close the Adrian Landfill, Transfer Waste out of County through Transfer Stations**

This alternative assumes that the Adrian Landfill will be closed and capped and that all waste will be transferred out of Lenawee County using transfer stations. These transfer stations would be located at 5-6 convenient sites throughout the county. Waste would be delivered to the transfer stations by waste haulers and residents. Each transfer station is assumed to provide recycling drop-off facilities. Presorted waste is assumed to remain sorted after leaving the transfer station. Ultimate disposal areas are likely to include the Williams County Landfill, Vienna Junction Landfill, Arbor Hills Landfill, and the Jackson County incinerator and landfill.

The Adrian Landfill currently takes in over 98% of Lenawee County's solid waste so this alternative would involve dramatic changes from the current solid waste management system.

Alternative # 3 **Retain the Existing System with Modifications**

Alternative # 3 calls for the retention of the existing system with modifications. The modifications to the system would be intended to reduce waste generation, increase recycling and composting, encourage conservation, and improve the environment.

Lenawee County is nearly self-sufficient in its ability to dispose of its own municipal solid waste. A recent study by the Michigan Department of Environmental Quality showed

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*Percentages are averaged from MDEQ policy ranges.

that, from October 1, 1996 through September 30, 1997, the residents of Lenawee County generated 81,701 tons of waste that was disposed of in Michigan landfills. Over 98%, or 80,179 tons, of this waste was disposed of in the Adrian landfill. The following landfills took in the remaining waste from Lenawee County that was disposed in Michigan landfills.

Exports[12]

Jackson (McGill/Philip Environmental landfill) - 101 tons
Venice Park landfill - 6 tons
Monroe County (Vienna Junction landfill) - 1,402 tons
Wayne County (Woodland Meadows landfill) - 13 tons
Total Waste Exported to Other Counties in Michigan - 1,522 tons

Lenawee County had the capacity to dispose of all of its own waste. In addition, the County took in waste from the following Michigan counties and the State of Ohio:

Imports

Ohio - 15,688 tons
Hillsdale - 360 tons
Monroe - 4,376 tons
Washtenaw - 2,573 tons
Total Imported Waste - 22,997 tons

The total waste disposed of at the Adrian Landfill was 103,176 tons.

Since September of 1992, the landfill owned by Adrian Landfill, Inc. has made payments to Lenawee County based on the waste disposed at the landfill. The County uses funds from the surcharge to finance the county's rural recycling program, household hazardous waste collections, used tire collections, Christmas tree recycling program, and used paper recycling boxes. The surcharge also pays for activities associated with the Solid Waste Coordinating Committee. In 1997, the surcharge was $0.75 per ton. The surcharge will increase to $0.80 in 1999, $0.85 in 2000, and $0.90 in 2001. The surcharge generated $78,552.73 in revenue in 1997.

There are no public waste hauling services in the county. Waste is handled through private contractors either with a municipal contract or household-by-household prescription service.

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[12]Import and export data from Report of Solid Waste Landfilled in Michigan (October 1, 1996-September 30, 1997), Michigan Department of Environmental Quality, Waste Management Division, February 27, 1998.

Evaluation of Solid Waste Management Alternatives

Each of the above alternatives were evaluated and ranked according to the following criteria:

- **Technical feasibility for five- and ten-year periods** - Can the alternative be implemented using presently available technology?

- **Economic feasibility for five- and ten-year periods** - How much will it cost to implement the alternative? Is this cost greater than the financial capability of existing public or private entities?

- **Access to land and transportation networks for five- and ten-year periods** - Does the alternative require the acquisition of land to develop new facilities? Would the facilities be efficiently located? Are there existing all-season roads in proximity to the facilities?

- **Energy consumption/production** - Is the alternative energy efficient for transportation and operation? Will energy be produced as part of the disposal process? If so, would income cover costs of energy recovery?

- **Environmental impacts** - What impacts would result from the implementation of the alternative? Would these result from the continuation of an existing facility or the construction of a new one? Would implementation result in long-term environmental impacts associated with the operation and maintenance of solid waste facilities?

- **Public health effects** - Would implementation of the alternative create, continue or mitigate public health hazards associated with improper handling or disposal of solid waste?

- **Public acceptability** - Is the proposed alternative likely to be acceptable to local residents? Is the alternative likely to be politically acceptable to local municipalities? Would the alternative comply with applicable state laws, particularly Act 451?

The following table provides the committee's evaluation of each alternative. The evaluation criteria were given the ratings of good, fair and poor.

Evaluation Criterion	Alternative #1	Alternative #2	Alternative #3
Technical feasibility for 5- and 10-year periods	Poor	Poor	Good
Economic feasibility for 5- and 10-year periods	Poor	Poor	Good
Access to land for 5- and 10-year periods	Poor	Poor	Good
Access to transportation networks for 5- and 10-year periods	Poor	Poor	Good
Effects on energy for 5- and 10-year periods, production possibilities and impacts of shortages	Poor	Poor	Good
Environmental impacts for 5- and 10-year periods	Poor	Poor	Good
Public acceptability	Poor	Poor	Good
Public health effects	Poor	Poor	Good

SELECTED SYSTEM

IMPORT AUTHORIZATION

If a licensed solid waste disposal area is currently operating within the county, disposal of solid waste generated by the following EXPORTING COUNTIES are authorized by Lenawee 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

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME	AUTHORIZED QUANTITY/DAILY	AUTHORIZED QUANTITY/ANNUAL	AUTHORIZED CONDITIONS
Lenawee	Branch	Adrian Landfill	[13]	[13]	P
Lenawee	Calhoun	Adrian Landfill	[13]	[13]	P
Lenawee	Eaton	Adrian Landfill	[13]	[13]	P
Lenawee	Genesee	Adrian Landfill	[13]	[13]	P
Lenawee	Hillsdale	Adrian Landfill	[13]	[13]	P
Lenawee	Ingham	Adrian Landfill	[13]	[13]	P
Lenawee	Jackson	Adrian Landfill	[13]	[13]	P
Lenawee	Lapeer	Adrian Landfill	[13]	[13]	P
Lenawee	Livingston	Adrian Landfill	[13]	[13]	P
Lenawee	Monroe	Adrian Landfill	[13]	[13]	P
Lenawee	Macomb	Adrian Landfill	[13]	[13]	P
Lenawee	Oakland	Adrian Landfill	[13]	[13]	P
Lenawee	Washtenaw	Adrian Landfill	[13]	[13]	P
Lenawee	Wayne	Adrian Landfill	[13]	[13]	P

n/a - not applicable

a. **Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county.**
b. **Authorization indicated by P = Primary Disposal; C = Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section.**

[13] Lenawee County imposes a cap of 6,600 tons per week on a six-month rolling average of MSW at the Adrian Landfill. Other counties may dispose of waste at the Adrian Landfill up to the cap with no caps on individual counties. In accordance with the host community agreement between Adrian Landfill, Inc. and Lenawee County, the Adrian Landfill may accept waste from Ontario, Canada, Ohio and Indiana. The Adrian Landfill may also accept special waste in accordance with this agreement.

THE SELECTED SOLID WASTE

MANAGEMENT SYSTEM

The Selected Solid Waste Management System (Selected System) is a comprehensive approach to managing Lenawee County's solid waste and recoverable materials. The Selected System addresses the generation, transfer and disposal of Lenawee 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:

SELECTED SYSTEM

EXPORT AUTHORIZATION

If a licensed solid waste disposal area is currently operating with 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

EXPORTING COUNTY	IMPORTING COUNTY	FACILITY NAME	AUTHORIZED QUANTITY/DAILY	AUTHORIZED QUANTITY/ANNUAL	AUTHORIZED CONDITIONS
Lenawee	Branch	n/a	n/a	n/a	P
Lenawee	Calhoun	n/a	n/a	n/a	P
Lenawee	Eaton	n/a	n/a	n/a	P
Lenawee	Genesee	n/a	n/a	n/a	P
Lenawee	Hillsdale	n/a	n/a	n/a	P
Lenawee	Ingham	n/a	n/a	n/a	P
Lenawee	Jackson	n/a	n/a	n/a	P
Lenawee	Livingston	n/a	n/a	n/a	P
Lenawee	Macomb	n/a	n/a	n/a	P
Lenawee	Monroe	n/a	n/a	n/a	P
Lenawee	Oakland	n/a	n/a	n/a	P
Lenawee	Washtenaw	n/a	n/a	n/a	P
Lenawee	Wayne	n/a	n/a	n/a	P

n/a - not applicable

a. **Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county.**
b. **Authorization indicated by P = Primary Disposal; C = Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section.**

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 authorized conditions in Table 1-B.

Table 1-B

FUTURE IMPORT VOLUME AUTHORIZATION OF SOLID WASTE CONTINGENT ON NEW FACILITIES BEING SITED

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME	AUTHORIZED QUANTITY/DAILY	AUTHORIZED QUANTITY/ANNUAL	AUTHORIZED CONDITIONS
None					

n/a - not applicable

a. Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county.
b. Authorization indicated by P = Primary Disposal; C = Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section.

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 authorized conditions 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 CONTINGENT ON NEW FACILITIES BEING SITED

EXPORTING COUNTY	IMPORTING COUNTY	FACILITY NAME	AUTHORIZED QUANTITY/DAILY	AUTHORIZED QUANTITY/ANNUAL	AUTHORIZED CONDITIONS
Lenawee	Lapeer	n/a	n/a	n/a	P

n/a - not applicable

a. **Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county.**
b. **Authorization indicated by P = Primary Disposal; C = Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section.**

SELECTED SYSTEM

SOLID WASTE DISPOSAL AREAS

The following identifies the names of existing disposal areas which will be used to provide the required capacity and management needs for the solid waste generated within the county for the next five and ten years and, if possible, the next ten years. Pages III-7 through III-14 contain descriptions of the solid waste disposal facilities which area located within the county and the disposal facilities located outside of the county which will be used by the county for the planning period. Additional facilities within the county with applicable permits and licenses may be used 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 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.

Type II Landfill:

Adrian Landfill
Williams County Landfill
McGill Road Landfill

Type III Landfill:

Liberty Environmentalists Landfill

Incinerator:

None

Waste-to-Energy Incinerator:

Jackson County Incinerator

Type A Transfer Facility:

City of Hillsdale Transfer Station

Type B Transfer Facility:

Rollin Township Transfer Station
Irish Hills Transfer Station

Processing Plant:

None

Waste Piles:

None

Other:

None

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Resource recovery facility

Facility Name: Jackson County Resource Recovery Facility

County: Jackson Location: Town: 2S Range: 1W Section(s): 14

Map identifying location included in Attachment Section: __X__ Yes _____ No

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

__X__ Public _____ Private Owner: Jackson County

Operating Status	Waste Types Received
__X__ open	__X__ residential
_____ closed	__X__ commercial
__X__ licensed	__X__ industrial
_____ construction permit	_____ construction and demolition
_____ open, but closure	__X__ contaminated soils
_____ pending	_____ special wastes*
	_____ other:

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

Site Size:

Total area of facility property:	_____ acres
Total area site for use:	_____ acres
Total area permitted:	_____ acres
Operating:	_____ acres
Not excavated:	_____ acres

Current capacity:	200 tons or cubic yards per day
Estimated lifetime:	20 years
Estimated days open per year:	328 days
Estimated yearly disposal volume:	59,807 tons or cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	15,138 megawatts

FACILITY DESCRIPTIONS

Facility Type: Type II landfill

Facility Name: McGill Rd. Landfill

County: Jackson Location: Town: 2S Range: 1W Section(s): 24

Map identifying location included in Attachment Section: X Yes _____ No

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

_____ Public X Private Owner: Waste Management, Inc

Operating Status	Waste Types Received
X open	X residential
_____ closed	X commercial
X licensed	X industrial
_____ construction permit	X construction and demolition
_____ open, but closure	X contaminated soils
_____ pending	X special wastes*
	_____ other:

- Explanation of special wastes, including a specific list and/or conditions: Incinerator ash

Site Size:

Total area of facility property:	50.5 acres
Total area site for use:	41.8 acres
Total area permitted:	18.7 acres
Operating:	7.8 acres
Not excavated:	17.51 acres

Current capacity:	1,236,300 tons
Estimated lifetime:	15 years
Estimated days open per year:	310 days
Estimated yearly disposal volume:	63,226 tons

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Type III landfill

Facility Name: Liberty Environmentalists Landfill

County: Jackson Location: Town: 4S Range: 1W Section(s): 13

Map identifying location included in Attachment Section: __X__Yes _____ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes:
_____ Public __X__ Private Owner: __Liberty Environmentalists_____

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	__X__commercial
__X__licensed	__X__industrial
_____construction permit	__X__construction and demolition
_____open, but closure	_____contaminated soils
_____pending	__X__special wastes*
	_____other:

- Explanation of special wastes, including a specific list and/or conditions: Shredder fluff, foundry sand

Site Size:

Total area of facility property:	285 acres
Total area site for use:	65 acres
Total area permitted:	15 acres
Operating:	7.5 acres
Not excavated:	40 acres

Current capacity:	400,000 cubic yards
Estimated lifetime:	20 years
Estimated days open per year:	300 days
Estimated yearly disposal volume:	165,000 cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Class B transfer station

Facility Name: Rollin Township Transfer Station

County: Lenawee Location: Town: 6S Range: 1E Section(s): 29

Map identifying location included in Attachment Section: __X__Yes _____ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: Williams County Landfill, Bryan, Ohio
__X__ Public _____ Private Owner: Rollin Township

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	_____commercial
_____licensed	_____industrial
_____construction permit	_____construction and demolition
_____open, but closure	_____contaminated soils
_____pending	_____special wastes*
	_____other:

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

Site Size:

Total area of facility property:	__5__ acres
Total area site for use:	_____ acres
Total area permitted:	_____ acres
Operating:	_____ acres
Not excavated:	_____ acres
Current capacity:	_____ tons or cubic yards
Estimated lifetime:	_____ years
Estimated days open per year:	__52__ days
Estimated yearly disposal volume:	_____tons or cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Type II landfill

Facility Name: Williams County Landfill

County: Williams (Ohio) Location: Town: 1N Range: 2E Section(s): 35,36

Map identifying location included in Attachment Section: _____Yes __X__ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes:
_____ Public __X__ Private Owner: Tri-State Waste, Inc.

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	__X__commercial
__X__licensed	__X__industrial
_____construction permit	__X__construction and demolition
_____open, but closure	__X__contaminated soils
_____pending	__X__special wastes*
	_____other:

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

Site Size:

Total area of facility property:	614 acres
Total area site for use:	374 acres
Total area permitted:	160 acres
Operating:	58 acres
Not excavated:	101 acres
Current capacity:	22,505,000 cubic yards
Estimated lifetime:	86 years
Estimated days open per year:	307 days
Estimated yearly disposal volume:	168,850 tons

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Class B transfer station and compost facility

Facility Name: Irish Hills Transfer Station

County: Lenawee Location: Town: 5S Range: 2E Section(s): 7

Map identifying location included in Attachment Section: __X__Yes _____ No

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

_____ Public __X__ Private Owner: Larry K. Wibbeler

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	__X__commercial
_____licensed	_____industrial
_____construction permit	__X__construction and demolition
_____open, but closure	_____contaminated soils
_____pending	_____special wastes*
	__X__other: Compost

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

Site Size:

Total area of facility property:	__3__ acres
Total area site for use:	__1.5__ acres
Total area permitted:	__3__ acres
Operating:	__3__ acres
Not excavated:	_____ acres
Current capacity:	_____ tons or cubic yards
Estimated lifetime:	_____ years
Estimated days open per year:	__120__ days
Estimated yearly disposal volume:	__2,000__ cubic yards

(if applicable)

Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Type II landfill

Facility Name: Adrian Landfill

County: Lenawee Location: Town: 7,8 S Range: 4E Section(s): 6,7

Map identifying location included in Attachment Section: _X_ Yes _____ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes:
_____ Public _X_ Private Owner: Adrian Landfill, Inc.

Operating Status	Waste Types Received
_X_ open	_X_ residential
_____ closed	_X_ commercial
_X_ licensed	_X_ industrial
_____ construction permit	_X_ construction and demolition
_____ open, but closure	_X_ contaminated soils
_____ pending	_X_ special wastes*
	_X_ other:

- Explanation of special wastes, including a specific list and/or conditions: Asbestos and sludges per operating policy.

Site Size:

Total area of facility property:	421 acres
Total area site for use:	287 acres
Total area permitted:	40 acres
Operating:	19 acres
Not excavated:	20 acres
Current capacity:	5,043,838 cubic yards
Estimated lifetime:	23.5 years
Estimated days open per year:	307 days
Estimated yearly disposal volume:	71,460 tons

(if applicable)
Annual energy production:

Landfill gas recovery projects:	20,148 megawatts
Waste-to-energy incinerators:	_____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Class A Transfer Station

Facility Name: City of Hillsdale Transfer Station

County: Hillsdale Location: Town: 6S Range: 3W Section(s): 22

Map identifying location included in Attachment Section: __X__Yes _____ No

If facility is an incinerator or a transfer station, list the final disposal site and location for incinerator ash or transfer station wastes: Williams County Landfill, Bryan, Ohio
_____ Public __X__ Private Owner: Williams County Landfill

Operating Status	Waste Types Received
__X__open	__X__residential
_____closed	__X__commercial
__X__licensed	__X__industrial
_____construction permit	__X__construction and demolition
_____open, but closure	_____contaminated soils
_____pending	_____special wastes*
	_____other:

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

Site Size:

Total area of facility property:	__10__ acres
Total area site for use:	__10__ acres
Total area permitted:	__10__ acres
Operating:	_____ acres
Not excavated:	_____ acres
Current capacity:	__52__ tons or cubic yards
Estimated lifetime:	_____ years
Estimated days open per year:	__312__ days
Estimated yearly disposal volume:	16,239 tons or cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____ megawatts
Waste-to-energy incinerators:	_____ megawatts

SELECTED SYSTEM

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.

It is expected that solid waste collection services and transportation will continue to operate as described in Section II. The current system is efficient and inexpensive, and serves the residents of Lenawee County well.

All solid waste is currently collected by private haulers. It is expected that private waste haulers will continue to play a large part in the collection and transport of waste. In the event that municipal waste collection systems are initiated, communities will be encouraged to include curbside recycling and composting programs as part of the waste hauling operations.

Haulers will be encouraged to offer curbside recycling as part of their services. Communities currently offering curbside recycling programs are encouraged to continue these services. In the event that curbside recycling fails, the County will encourage drop-off facilities.

SELECTED SYSTEM

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.

Effort Description	Estimated Diversion (tons/year)		
	Current[14]	5th year	10th year
Education regarding reduction of packaging	10,051	15,557	21,520
Composting programs	18,360	18,978	19,687
Education of commercial establishments	1,331	1,604	1,994
Office automation	665	1,337	2,137
Use of internet services to reduce paper	1,331	2,006	2,849
Education of industrial establishments	5,097	6,311	7,639
TOTAL	**36,835**	**45,793**	**55,826**

[14] Assumes the following composition of municipal solid waste: 60% - residential, 20% office, and 20% commercial. Partially based on US EPA estimates in *Characterization of Municipal Solid Waste in the United States: 1996 Update*. US EPA. Washington D.C., page 9. MSW estimates from data on page II-1.

SELECTED SYSTEM

WASTE REDUCTION, RECYCLING, & COMPOSTING PROGRAMS:

Volume Reduction Techniques

The following describes the techniques used and proposed to be used throughout the county which reduces 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 practiced voluntarily and because technologies change and equipment may need replacing, it is not this plan update's intention to limit the techniques 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.

Technique Description	Estimated Air Space Conserved (cubic yards/year)		
	Current (1997)[15]	5th year (2002)	10th year (2007)
Landfill compaction	116,000	163,000	190,000

[15]The source for all compaction estimates is Hull and Associates, Toledo, Ohio (see Appendix D2). The estimates assume the following:

1. Density of incoming refuse = 650 lbs./yd³
2. In-place density (1997)=1,045 lbs./yd³
3. In-place density (2002)=1,200 lbs./yd³
4. In-place density (2007)=1,300 lb.s/yd³

Changing in-place density calculations based on improvements in equipment over time; use of alternate daily covers (e.g. tire shreddings, foam, fabric); continuously improving operating technology; and leachate recirculation to enhance biodegradation.

SELECTED SYSTEM

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.

In compliance with state requirements, yard waste is diverted from the Adrian Landfill. The US EPA estimates that 14.3% of the waste stream is made up of yard waste.[16] Therefore, approximately 18,360 tons of yard waste is currently available for composting. As more of the County becomes urbanized, it is anticipated that yard waste will make up a higher percentage of the waste stream.

The lack of a market for recyclables and compost is the largest impediment to success in Lenawee County. The county will continue to promote recycling and composting through education.

While some communities have given significant support to recycling, others have been reluctant to make recycling and composting a priority. The County believes that the best approach to this problem is education of the public who will persuade local elected officials to make recycling and composting a higher priority.

☒ Recycling programs within the county are feasible. Details of existing and planned programs are included in the following pages.

☐ Recycling 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:

[16] Characterization of MSW in the US: 1996 Update, US EPA. Washington, D.C.

[X] Composting programs within the county are feasible. Details of existing and planned programs are included in the following pages.

[ ] 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:

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

[ ] Separation of potentially hazardous materials from the county's waste stream has been evaluated and it has been determined that it is not feasible to conduct any separation programs because of the following:

SELECTED SYSTEM

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-23, 24, & 25 list the existing recycling, composting, and source separation of hazardous material 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-26, 27, & 28 list the recycling, composting, and source separation of hazardous materials programs that are proposed in the future for the county. It is not this plan update's intent to prohibit additional programs or expansions of current programs to be implemented beyond those listed.

Recycling

Lenawee County has seen a large increase in recycling since the last plan update when only a handful of businesses and municipalities provided recycling opportunities. Today, many commercial and industrial concerns have internal recycling programs (only a few of which are known), and many communities maintain successful recycling programs.

As shown in Table III-1, nine city or village recycling programs exist in the County. Five of these programs feature curbside recycling, and four are available on a drop-off basis. Opportunities also exist for recycling in rural areas through Lenawee County's Rural Recycling program which currently provides recycling drop-offs at five rural locations. The private sector assists with delivery of these programs.

Lenawee County offers a Christmas Tree recycling program. As part of this program, Great Lakes Waste Services picks up trees at several locations throughout the County and the trees are then chipped. The chips are used as bedding at Hidden Lake Gardens in Franklin Township. After Christmas, 1997 Christmas Tree drop-offs were provided at nine locations throughout the County. Approximately 400 trees were collected after Christmas, 1997. The cities of Adrian and Tecumseh also offer Christmas Tree recycling programs.

Great Lakes Waste Services recently acquired a tire shredder and offers periodic tire recycling opportunities at a reasonable cost to residents of the County. The shreddings are used for daily cover at the Adrian Landfill. In 1997, nearly 3,500 tires were collected from over 400 County residents.

Table III-4 indicates that the County will support the maintenance of existing recycling programs, and assist additional programs to the greatest extent possible.

Composting

As shown on Table III-2, there are limited composting opportunities in Lenawee County. Much of the composting that takes place in the County is done by homeowners. However, there are three composting locations in the County. Since the 1995 ban on yard waste disposal in Michigan landfills, yard waste diversion has been successfully dealt with in the County.

Table III-5 shows that the County, at a minimum, supports the continuation of existing composting programs. If possible, the County will support the creation of new composting facilities.

Household Hazardous Waste

As shown in Table III-3, Lenawee County maintains a Home Toxics Center. The following table shows the types and amount of materials collected, the disposal method used for the materials collected, and the amount of the materials that were recycled:

Material	Number of Gallons Collected	Disposal Method	Number of Gallons Recycled
Oil based paints	1,475	Recycled	1,475
Aerosols	500	Supplemental fuel	500
Oils and antifreeze	4,020	Recycled	4,020
Liquid pesticides	332	Incinerated	0
Solid pesticides	331	Incinerated	0
Flammable liquids	3,125	Supplemental fuel	3,125
Acids	365	Treated	0
Corrosives	375	Treated	0
Household batteries	11 batteries	Recycled	11 batteries
Car batteries	110 batteries	Recycled	110 batteries
Latex Paints	5,005	Recycled	5,005
Other	27	Incinerated	0

Oil and household battery recycling opportunities are also available at several locations in Lenawee County. These locations are listed on Table III-3.

Table III-6 indicates that the County, at a minimum, will attempt to maintain the existing household hazardous waste recycling and disposal opportunities.

Conclusion

Various factors are at work against the attempted establishment of recycling and composting programs in many Michigan counties. These factors include poor markets for recyclable materials, lack of public education on the benefits of recycling, and lack of available

public funds to make community recycling programs a priority. Concerned citizens, business owners and government officials in Lenawee County have attempted to address these problems by establishing recycling and composting programs and educating the public. Some progress is evident, but more can be done.

At a minimum, Lenawee County will attempt to maintain the existing opportunities for recycling, composting, and disposal of household hazardous wastes. The County will support these programs in any way possible.

Lenawee County's goal is to increase the volume of recycling by 1% per year as a percentage of total municipal and industrial solid waste. From the table on waste generation rates on page II-1, it is estimated that 11,750 tons, or approximately 10% of Lenawee County's waste was recycled in 1997. To meet the recycling goal, 15% of the municipal, industrial and construction/demolition waste stream would be recycled in 2002 and 20% in 2007. This equates to 17,218 tons recycled in 2002, and 23,818 tons recycled in 2007.

TABLE III-1

RECYCLING:

Program Name	Service Area (a)	Public or Private	Collection Point (c)	Collection Frequency (d)	Materials Collected (e)	Program Management Responsibilities (b)		
						Development	Operation	Evaluation
Rural Recycling Program	Lenawee County	Public	Drop-off	w	A,B,D,E,F	4	4	4
Great Lakes Waste Services	Lenawee County	Private	Drop-off	d	A,B,C,D,E,FK	5	5	5
Village of Blissfield	Village of Blissfield	Public	Drop-off	d	A,E,F	3	3	3
City of Hudson	City of Hudson	Public	Curbside	w	A,B,C,D,E,F	3	3	3
City of Morenci	City of Morenci	Public	Drop-off	d	A,B,D,E,F	3	3	3
Village of Onsted	Village of Onsted	Public	Curbside	w	A,B,C,D,E,F	3	3	3
Rollin Twp. Transfer Station	Rollin Township	Public	Drop-off	w	E,F	5	5	5
City of Tecumseh	City of Tecumseh	Public	Curbside	w	A,B,D,E,F, Trees	3	3	3
Jackson Iron and Metal	Available to all customers	Private	On-site	d	F	5	5	5
Sorenson Paperboard	Available to all customers	Private	On-site	d	B,C,D	5	5	5
City of Adrian	City of Adrian	Public	Drop-off	w	A,B,C,E,F, Trees	3	3	3
Village of Britton	Village of Britton	Public	Curbside	w	A,B,D,E,F	3	3	3
Village of Cement City	Village of Cement City	Public	Curbside	w	A,B,C,D,E,F	3	3	3
Christmas Tree Recycling	Lenawee County	Public	Drop-off	Wi	Trees	2	2	2
Tire Recycling	Lenawee County	Private	Drop-off	Fa, Sp	K	2	2	2
Village of Deerfield	Village of Deerfield	Public	Drop-off	w	A,B,D,E,F	2	2	2

(a) **Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.**

(b) **Identified by 1= Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group (Identified on page 27); 5 = Private Owner/Operator; 6 = Other (identified on page 27)**

(c) **Identified by c = curbside; d = drop-off; o = onsite' and if other, explained.**

(d) **Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.**

(e) **Identified by the materials collected by listing of the letter located by that material type. A = Plastics; B = Newspaper; C = Corrugated Containers; D = Other Paper; E = Glass; F = Metals; P = Pallets; J = Construction/Demolition; K = Tires; L1, L2 etc. = as identified on page 29.**

TABLE III-2

COMPOSTING:

Program Name	Service Area (a)	Public or Private	Collection Point (c)	Collection Frequency (d)	Materials Collected (e)	Program Management Responsibilities (b)		
						Development	Operation	Evaluation
City of Adrian	City of Adrian	Public	Curbside	w	G,L,F,W	3	3	3
Great Lakes Waste Services	Lenawee County	Private	Drop-off	d	G,L,F,W	5	5	5
Irish Hills Transfer Station	Irish Hills area	Private	Drop-off	w	G,L,F,W	5	5	5

(a) Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

(b) Identified by 1= Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group (Identified on page 27); 5 = Private Owner/Operator; 6 = Other (identified on page 27)

(c) Identified by c = curbside; d = drop-off; o = onsite; and if other, explained.

(d) Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

(e) Identified by the materials collected by listing of the letter located by that material type. G = Grass Clippings; L = Leaves; F = Food; W = Wood; P = Paper; S = Municipal Sewage Sludge; A = Animal Waste/Bedding; M = Municipal Solid Waste; L1, L2 etc = as identified on page 29.

TABLE III-3

SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS:

Since improper disposal of non-regulated hazardous materials has the potential to create risks to the environment and human health, the following programs have been implemented to remove these materials from the county's solid waste stream.

Program Name	Service Area (a)	Public or Private	Collection Point (c)	Collection Frequency (d)	Materials Collected (e)	Program Management Responsibilities (b)		
						Development	Operation	Evaluation
Lenawee County Household Hazardous Waste Program	Lenawee County	Public	Drop-off	By appointment only	AR,AN,B1, B2,C,P,PS, U,OT	2	2	2
Great Lakes Waste Services	Lenawee County	Private	Drop-off	d	U	5	5	5
TSC Farm Home Auto Store	Available to all customers	Private	On-site	d	U	5	5	5
Dick's Amoco East	Available to all customers	Private	On-site	d	U, B2	5	5	5
Dick's Amoco West	Available to all customers	Private	On-site	d	U, B2	5	5	5
Lenawee Tire	Available to all customers	Private	On-site	d	U	5	5	5
Bart's Place	Available to all customers	Private	On-site	d	B2	5	5	5
Battery Wholesale	Available to all customers	Private	On-site	d	B2	5	5	5
D&E Auto Repair	Available to all customers	Private	On-site	d	B2	5	5	5
Wilson's Auto Parts	Available to all customers	Private	On-site	d	B2	5	5	5
B&M Mehan's Repair	Available to all customers	Private	On-site	d	B2	5	5	5

(a) **Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.**

(b) **Identified by 1= Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group (Identified on page 27); 5 = Private Owner/Operator; 6 = Other (identified on page 27)**

(c) **Identified by c = curbside; d = drop-off; o = onsite; and if other, explained.**

(d) **Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.**

(e) **Identified by the materials collected by listing of the letter located by that material type. AR = Aerosol Cans; A = Automotive Products except Used Oil, Oil Filters & Antifreeze; AN = Antifreeze; B1 = Lead Acid Batteries; B2 = Household Batteries; C= Cleaners and Polishers; H = Hobby and Art Supplies; OF = Used Oil Filters; P = Paints and Solvents; PS = Pesticides and Herbicides; PH = Personal and Health Care Products; U = Used Oil; OT = Other Materials and identified.**

TABLE III-4

PROPOSED RECYCLING:

Program Name	Service Area (a)	Public or Private	Collection Point (c)	Collection Frequency (d)	Materials Collected (e)	Program Management Responsibilities (b)		
						Development	Operation	Evaluation
Rural Recycling Program	Lenawee County	Public	Drop-off	w	A,B,D,E,F	4	4	4
Great Lakes Waste Services	Lenawee County	Private	Drop-off	d	A,B,C,D,E,FK	5	5	5
Village of Blissfield	Village of Blissfield	Public	Drop-off	d	A,E,F	3	3	3
City of Hudson	City of Hudson	Public	Curbside	w	A,B,C,D,E,F	3	3	3
City of Morenci	City of Morenci	Public	Drop-off	d	A,B,D,E,F	3	3	3
Village of Onsted	Village of Onsted	Public	Curbside	w	A,B,C,D,E,F	3	3	3
Rollin Twp. Transfer Station	Rollin Township	Public	Drop-off	w	E,F	5	5	5
City of Tecumseh	City of Tecumseh	Public	Curbside	w	A,B,D,E,F, Trees	3	3	3
Jackson Iron and Metal	Available to all customers	Private	On-site	d	F	5	5	5
Sorenson Paperboard	Available to all customers	Private	On-site	d	B,C,D	5	5	5
City of Adrian	City of Adrian	Public	Drop-off	w	A,B,C,E,F, Trees	3	3	3
Village of Britton	Village of Britton	Public	Curbside	w	A,B,D,E,F	3	3	3
Village of Cement City	Village of Cement City	Public	Curbside	w	A,B,C,D,E,F	3	3	3
Christmas Tree Recycling	Lenawee County	Public	Drop-off	Wi	Christmas Trees	2	2	2
Tire Recycling	Lenawee County	Private	Drop-off	Fa, Sp	K	2	2	2
Village of Deerfield	Village of Deerfield	Public	Drop-off	w	A,B,D,E,F	2	2	2

(a) **Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.**

(b) **Identified by 1= Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group (Identified on page 27); 5 = Private Owner/Operator; 6 = Other (identified on page 27)**

(c) **Identified by c = curbside; d = drop-off; o = onsite' and if other, explained.**

(d) **Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.**

(e) **Identified by the materials collected by listing of the letter located by that material type. A = Plastics; B = Newspaper; C = Corrugated Containers; D = Other Paper; E = Glass; F = Metals; P = Pallets; J = Construction/Demolition; K = Tires; L1, L2 etc. = as identified on page 29.**

TABLE III-5

PROPOSED COMPOSTING:

Program Name (if known)	Service Area	Public or Private	Collection Point	Collection Frequency	Materials Collected	Program Management Responsibilities		
						Development	Operation	Evaluation
City of Adrian	City of Adrian	Public	Curbside	w	G,L,F,W	3	3	3
Great Lakes Waste Services	Entire county	Private	Drop-off	d	G,L,F,W	5	5	5
Irish Hills Transfer Station	Irish Hills area	Private	Drop-off	w	G,L.F,W	5	5	5

(a) Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

(b) Identified by 1= Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group (Identified on page 27); 5 = Private Owner/Operator; 6 = Other (identified on page 27)

(c) Identified by c = curbside; d = drop-off; o = onsite; and if other, explained.

(d) Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

(e) Identified by the materials collected by listing of the letter located by that material type. G = Grass Clippings; L = Leaves; F = Food; W = Wood; P = Paper; S = Municipal Sewage Sludge; A = Animal Waste/Bedding; M = Municipal Solid Waste; L1, L2 etc = as identified on page 29.

TABLE III-6

PROPOSED SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS:

Program Name	Service Area (a)	Public or Private	Collection Point (c)	Collection Frequency (d)	Materials Collected (e)	Program Management Responsibilities (b)		
						Development	Operation	Evaluation
Lenawee County Household Hazardous Waste Program	Lenawee County	Public	Drop-off	By appointment only	AR,AN,B1, B2,C,P,PS, U,OT	2	2	2
Great Lakes Waste Services	Lenawee County	Private	Drop-off	d	U	5	5	5
TSC Farm Home Auto Store	Available to all customers	Private	On-site	d	U	5	5	5
Dick's Amoco East	Available to all customers	Private	On-site	d	U, B2	5	5	5
Dick's Amoco West	Available to all customers	Private	On-site	d	U, B2	5	5	5
Lenawee Tire	Available to all customers	Private	On-site	d	U	5	5	5
Bart's Place	Available to all customers	Private	On-site	d	B2	5	5	5
Battery Wholesale	Available to all customers	Private	On-site	d	B2	5	5	5
D&E Auto Repair	Available to all customers	Private	On-site	d	B2	5	5	5
Wilson's Auto Parts	Available to all customers	Private	On-site	d	B2	5	5	5
B&M Mehan's Repair	Available to all customers	Private	On-site	d	B2	5	5	5

(a) **Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.**

(b) **Identified by 1= Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group (Identified on page 27); 5 = Private Owner/Operator; 6 = Other (identified on page 27)**

(c) **Identified by c = curbside; d = drop-off; o = onsite; and if other, explained.**

(d) **Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.**

(e) **Identified by the materials collected by listing of the letter located by that material type. AR = Aerosol Cans; A = Automotive Products except Used Oil, Oil Filters & Antifreeze; AN = Antifreeze; B1 = Lead Acid Batteries; B2 = Household Batteries; C= Cleaners and Polishers; H = Hobby and Art Supplies; OF = Used Oil Filters; P = Paints and Solvents; PS = Pesticides and Herbicides; PH = Personal and Health Care Products; U = Used Oil; OT = Other Materials and identified.**

SELECTED SYSTEM

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.

Environmental Groups:

The Lenawee County Natural Resource Conservation Service (NRCS) and the River Raisin Watershed Council (RRWC) educate the public on the importance of recycling and composting. In addition to teaching children in classrooms throughout the County, both of these agencies distribute educational materials to the general public.

The NRCS is funded through federal, state and county sources. The RRWC is a non-profit organization funded on a membership basis. The RRWC covers the entire River Raisin watershed.

Other:

The Lenawee County Solid Waste Coordinating Committee (LCSWCC) has primary responsibility for solid waste management in Lenawee County. The Committee, composed of nine members representing a cross section of the County, meets once a month to discuss solid waste issues. The LCSWCC directs the staff of the Solid Waste Department and is responsible to the Board of Commissioners.

Among other responsibilities, the LCSWCC oversees the County's household hazardous waste center, Christmas Tree recycling, and rural recycling programs. The Committee also leads the County education effort. In the past, the Committee provided grants to assist communities attempting to establish recycling programs.

The Lenawee County Board of Commissioners has authority over all resource recovery and recycling programs that are implemented by the Lenawee County Solid Waste Coordinating Committee.

The Lenawee County Solid Waste Department takes care of the day-to-day responsibilities of solid waste management. Staff duties include:

- Staffing the LCSWCC including mailings and minutes;
- Grant preparation and coordination;
- Monitoring solid waste entering the Adrian Landfill for compliance with the Solid Waste Plan;
- Response to complaints regarding solid waste;
- Management of rural recycling and household hazardous waste programs;
- Budgeting;

- Education of the public regarding solid waste issues;
- Publicity for recycling programs; and
- Publication of an annual report of the LCSWCC.

As the Designated Planning Agency, the Lenawee County Planning Commission plays an advisory role to both the Board of Commissioners and the LCSWCC.

As manager of the Adrian Landfill, Great Lakes Waste Services offers recycling and resource recovery programs designed to ensure the proper disposal of municipal solid waste. The Landfill also has a composting facility and recently acquired a tire shredder.

There are many businesses which provide recycling services to customers. These services are under the management of the individual business owners. Commercial recycling services are geared toward the customer, while manufacturers tend to orient their recycling efforts toward preserving and recycling the by-products of the manufacturing process.

SELECTED SYSTEM

)JECTED 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.

Collected Material	Projected Annual Tons Diverted		
	Current	5th Year	10th Year
A. TOTAL PLASTICS:			
B. NEWSPAPER:			
C. CORRUGATED CONTAINERS			
D. TOTAL OTHER PAPER:			
E. TOTAL GLASS:			
F. OTHER MATERIALS			
F1.			
F2.			

Collected Material	Projected Annual Tons Diverted		
	Current	5th Year	10th Year
G. GRASS & LEAVES:			
H. TOTAL WOOD WASTE:			
I. CONSTRUCTION AND DEMOLITION			
J. FOOD AND FOOD PROCESSING:			
K. TIRES:			
L. TOTAL METALS:			
F3.			
F4.			

MARKET AVAILABILITY FOR COLLECTED MATERIALS:

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

Collected Material	In-State Markets	Out-of-State Markets
A. TOTAL PLASTICS:		
B. NEWSPAPER:		
C. CORRUGATED CONTAINERS:		
D. TOTAL OTHER PAPER:		
E. TOTAL GLASS:		
F1.		
F2.		

Collected Material	In-State Markets	Out-of-State Markets
G. GRASS AND LEAVES		
H. TOTAL WOOD WASTE:		
I. CONSTRUCTION AND DEMOLITION:		
J. FOOD AND FOOD PROCESSING:		
K. TIRES:		
L. TOTAL METALS:		
F3.		
F4.		

SELECTED SYSTEM

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 participate 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 (a)	Delivery Medium (b)	Target Audience (c)	Program Provider (d)
1,2,3,4,5	r,n,o,f	p,b,i,s (K-12)	O (Lenawee County Solid Waste Department)
3	ot (in-service training)	b	O (Wacker Silicones Inc.)
1 (oil)	o,f	p	EX
3 (latex paint)	r	p	O (Lenawee County Solid Waste Department)
1,2,3,4,5	ot (landfill tours)	p	O (Great Lakes Waste Services)
1,2,3,4,5	r,n,o,f,e	p,b,i,s (K-12)	EG (River Raisin Watershed Council)

(a) Identified by 1 = recycling; 2 = composting; 3 = household hazardous waste; 4 = resource conservation; 5 = volume reduction; 6 = other which is explained.

(b) Identified by w = workshop; r = radio; t = television; n = newspaper; o = organizational newsletters; f = flyers; e = exhibits and locations listed; and ot = other which is listed.

(c) Identified by p = general public; b = business; I = industry; s = students with grade levels listed. In addition if the program is limited to a geographic area, then that county, city, village, etc. is listed.

(d) Identified by EX = MSU Extension; EG = Environmental Group (identify name); OO = Private Owner/Operator (identify name); HD = Health Department (identify name); DPA = Designated Planning Agency; CU = College/University (identify name); LS = Local School (identify name); ISD = Intermediate School District (identify name); O = Other which is explained.

SELECTED SYSTEM

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.

The following table presents the timetable for implementing components of the Solid Waste Plan:

TABLE III-7

Management Components	Timeline
HHW disposal program	Ongoing (by appointment only)
Rural Recycling program	Ongoing (semi-weekly)
Educational programs (recycling, household hazardous waste, waste reduction, composting, etc.)	Ongoing
Waste hauling	Ongoing
Transfer stations	Ongoing
Composting	Ongoing
Tire recycling	Ongoing (semi-annual)

SELECTED SYSTEM

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.

Lenawee County has sufficient capacity to dispose of the waste it generates during the ten- year planning period. Therefore, in accordance with Section 11538 (2) of the administrative rules of Part 115 of P.A. 451, there will be no need for a Type II Sanitary Landfill to be sited in Lenawee County.

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.

Due to the lack of a need to site a solid waste disposal facility, this does not apply.

SELECTED SYSTEM

SOLID WASTE MANAGEMENT COMPONENTS

The following identifies the management responsibilities and institutional arrangements necessary for the implementation of the selected waste management system. Also included is a description of the technical, administrative, financial and legal capabilities of each identified existing structure of persons, municipalities, counties and state and federal agencies responsible for solid waste management including planning, implementation, and enforcement.

As the following pages indicate, the Lenawee County solid waste system will be managed by a variety of agencies, individuals, and private interests. For most management components, ultimate responsibility is given by the County's electors to the Lenawee County Board of Commissioners. The BoC appoints members of the Lenawee County Solid Waste Coordinating Committee which oversees the solid waste department. The BoC also appoints members of the Lenawee County Planning Commission which has been named as the County's Designated Planning Agency.

Lenawee County formerly employed a solid waste coordinator and a recycling education specialist. Due to reduced revenues from the County's surcharge on waste entering the Adrian Landfill, these positions have been eliminated. Management of the Solid Waste Department is now dealt with by the staff of the County Administrator. If the need arises and funding is available, the County Board of Commissioners may restore the full-time solid waste coordinator position.

The County will maintain its host community agreement with Great Lakes Waste Services (see Appendix D4). Together with the proposed expansion of the Adrian Landfill, the agreement ensures that Lenawee County has sufficient disposal capacity for the 10-year planning period.

Some of the responsibilities for plan implementation are left to private businesses, industries, agencies and individuals. The policies in this plan are unlikely to be implemented without private participation. The County's educational programs will be geared toward continuing public participation in programs regarding waste reduction, recycling, and reuse of materials.

The Michigan Department of Environmental Quality has ultimate solid waste management authority in the State of Michigan. Lenawee County will continue to work with the MDEQ to implement this solid waste management plan.

SELECTED SYSTEM

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 - LCSWCC (Lenawee County Solid Waste Coordinating Committee), Lenawee County Board of Commissioners (BoC), Lenawee County Solid Waste Department, individual industries

Product Reuse - LCSWCC, BoC, Solid Waste Department, individual industries

Reduced Material Volume - LCSWCC, BoC, Solid Waste Department, individual industries

Increased Product Lifetime - LCSWCC, BoC, Solid Waste Department, individual industries

Decreased Consumption - LCSWCC, BoC, Solid Waste Department, individual industries, schools

Resource Recovery Programs:

Composting - LCSWCC, BoC, Solid Waste Department, Great Lakes Waste Services, City of Adrian

Recycling - LCSWCC, BoC, Solid Waste Department, Great Lakes Waste Services, municipalities, individuals, businesses and industries

Energy Production - Great Lakes Waste Services

VOLUME REDUCTION TECHNIQUES: LCSWCC, BoC, Solid Waste Department, schools, hospitals, businesses and industries

COLLECTION PROCESSES: LCSWCC, BoC, Solid Waste Department, Great Lakes Waste Services, county-licensed haulers (see Lenawee County Solid Waste Ordinance in Appendix D8), municipalities

SELECTED SYSTEM

Transportation: LCSWCC, BoC, Solid Waste Department, Lenawee County Road Commission, Michigan Department of Transportation, municipalities

Disposal Areas:

Processing Plants - LCSWCC, BoC, Solid Waste Department, Lenawee County Health Department

Incineration - Hospitals

Transfer Stations - Rollin Township, Irish Hills Transfer Station (private)

Sanitary Landfills - LCSWCC, BoC, Solid Waste Department, Great Lakes Waste Services, Michigan Department of Environmental Quality, Lenawee County Health Department, United States Environmental Protection Agency

Ultimate Disposal Area Uses: BoC, Great Lakes Waste Services, Lenawee County Solid Waste Department, Lenawee County Solid Waste Coordinating Committee

Local Responsibility for Plan Update Monitoring & Enforcement: LCSWCC, BoC, Solid Waste Department, Lenawee County Planning Commission

Educational and Informational Programs: LCSWCC, BoC, Solid Waste Department, schools, Great Lakes Waste Services, Lenawee County Natural Resource Conservation Service, River Raisin Watershed Council, MSU Extension Office

Documentation of acceptance of responsibilities is contained in Appendix D.

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:

__X__ 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.

Solid waste management in Lenawee County shall be conducted in accordance with the Lenawee County Solid Waste Ordinance (see Appendix D8).

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

____ 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 amendment to the plan.

___ Additional listings are on attached pages.

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.

[X] This county has more than ten years capacity identified in this plan and an annual certification process is not included in this plan.

Information regarding the approved capacity of the Adrian Landfill may be found in Appendix D2.

[ ] Ten years of disposal capacity has not been identified in this plan. The county will annually submit capacity certifications to the DEQ by June 30 of each year on the form provided by the DEQ. The county's process for determination of annual capacity and submission of the county's capacity certification is as follows: