STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

C. HEIDI GRETHER
DIRECTOR

April 9, 2018

Mr. James E. Shotwell, Jr., Chairperson
Jackson County Board of Commissioners
120 West Michigan Avenue
Jackson, Michigan 49201

Dear Mr. Shotwell:

SUBJECT: Jackson County Solid Waste Management Plan Amendment

The locally approved amendment to the Jackson County Solid Waste Management Plan (Plan Amendment) received by the Department of Environmental Quality (DEQ) on May 1, 2017, is hereby approved with modifications. The Plan Amendment required modifications that were sent to the Jackson County Designated Planning Agency contact, Mr. Grant Bauman, on November 13, 2017. The approval of the modifications, dated December 28, 2017, was received from the Jackson County Board of Commissioners (BOC).

The following modifications were made to the Plan Amendment:

Page II-4, Facility Description – Liberty Environmentalist Landfill (Liberty). Liberty has a permit as a Type III Construction and Demolition Waste Landfill, as well as a Type III Industrial Waste Landfill, which only allows the facility to accept these types of materials; however, the commercial box is checked under the waste-type received section of the facility description, and this facility is not authorized to accept commercial waste. Therefore, this box shall be unchecked.

Page III-21, Facility Description – Henrietta Township Transfer Facility. The "Licensed" box is checked under the operating status section; however, this facility does not have a license and is exempt from being permitted and licensed. Therefore, the "Unlicensed" box shall be checked instead.

Page III-32, Table III-2, Composting. The DEQ database shows that there are two registered compost facilities located in Jackson County: Cooper Street Compost Site, located at 2995 Lansing Avenue, Jackson, Michigan, and Lester Brothers Excavating – Hawkins, located on 2700 Hawkins, Jackson, Michigan. Based upon this information, these facilities shall also be identified in this table.

Page III-42, Siting Review Procedures, Authorized Disposal Area Types, states the following: "Type II and Type III landfills, if required by the Department of Environmental Quality (DEQ) for capacity purposes…" However, on page III-44, the first paragraph states that "expansions may be sited in Jackson County at any time by the owners of the then currently operating landfills, which are serving Jackson County…" These are contradicting statements. Therefore, to clarify the intent of the County, the sentence found on page III-42 shall be changed to the following:

> Type II landfill vertical expansions are authorized to follow the siting process of this plan. Other Type II landfill expansions are allowed only if required by the Department of

Environmental Quality (DEQ) for capacity purposes, as the goal of this plan is to minimize Type II landfilling. New or expanded Type III landfills may be sited if: (1) built to the siting criteria of this plan; and (2) to the Type II landfill construction specifications. New or expanded transfer facilities and processing plants other than incinerators may be sited by this plan. No incinerators maybe sited by this plan.

Page III-45, Solid Waste Disposal Area Siting Constraints Mapping. The last paragraph under this header, states, "The map layers and composite maps are represented in the plan document as Maps 3-1 through 3-11." However, there is not a map labeled 3-11. Therefore, it shall be noted that the maps are represented in the plan document as Maps 3-1 through 3-10.

Page III-47, item number 5, states "Transfer facilities and processing plants shall be located only in districts consistent with local zoning ordinances." However, a siting mechanism cannot be subject to discretionary acts by the local planning entity; also, the phrase "consistent with local zoning ordinances" is not measurable or objective and could be discretionary. Therefore, this phrase shall be deleted from item number 5.

The DEQ would like to thank Jackson County for its efforts in addressing its solid waste management issues. If you have any questions, please contact Ms. Christina Miller, Solid Waste Planning, Reporting, and Surcharge Coordinator, Sustainable Materials Management Unit, Solid Waste Section, Waste Management and Radiological Protection Division, at 517-614-7426; millerc1@michigan.gov; or DEQ, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Jack Schinderle

Jack Schinderle, Director
Waste Management and Radiological
Protection Division
517-284-6551

cc: Senator Mike Shirkey
Representative Julie Alexander
Representative Brett Roberts
Mr. Grant Bauman, Region 2 Planning Commission
Ms. C. Heidi Grether, Director, DEQ
Ms. Susan Leeming, External Relations Deputy Director, DEQ
Mr. Michael McClellan, Environment Deputy Director, DEQ
Ms. Sarah M. Howes, Legislative Liaison, DEQ
Mr. Steven R. Sliver, DEQ
Ms. Rhonda S. Oyer, DEQ
Mr. Larry Bean, DEQ
Mr. Jeff Spencer, DEQ
Ms. Christina Miller, DEQ/Jackson County File

JACKSON COUNTY
BOARD OF COMMISSIONERS

James E. Shotwell, Jr., Chairperson

Philip S. Duckham III, Vice-Chair

Dr. Allan Tompkins
Sarah L. Lightner
Rodney Walz
Jon Williams

Daniel Mahoney
Carl Rice, Jr.
David K. Elwell

December 28, 2017

Ms. Christina Miller
Solid Waste Planning, Reporting and Surcharge Coordinator
Sustainable Materials Management Unit
Solid Waste Section
Waste Management and Radiological Protection Division
Department of Environmental Quality
P.O. Box 30241
Lansing, MI 48909-7741

Dear Ms. Miller:

SUBJECT: **Jackson County Solid Waste Management Plan Amendment Modifications**

As a follow up to your letter dated November 13, 2017, the Jackson County Board of Commissioners respectfully requests the DEQ to issue its approval of the *Jackson County Solid Waste Management Plan Amendment*. The Jackson County Board of Commissioners met in regular session on December 19, 2017 and reviewed the recommended administrative modifications to the Plan Amendment. The Board of Commissioners concurred with your recommendation of approving the six (6) modifications as follows:

(1) Uncheck the "commercial" box under the waste type received section of the Liberty Environmentalist Landfill Facility Description found on Page II-4 of the Amendment.

(2) Uncheck the "licensed" box and check the "unlicensed" box under the operating status section of the Henrietta Township Transfer Facility Description found on Page III-21 of the Amendment.

(3) Add the following compost facilities to Table III-2, Composting, found on Page III-32 of the Amendment:

- Cooper Street Compost Site, located at 2995 Lansing Avenue, Jackson, Michigan.
- Lester Brothers Excavating- Hawkins, located on 2700 Hawkins, Jackson, Michigan.

(4) Replace the two-sentence paragraph under Siting Review Procedures, Authorized Disposal Area Types, found of Page III-42 of the Amendment, with the following:

(Continued on Page 2)

RECEIVED
JAN [illegible] 3
DEPARTMENT OF ENVIRONMENTAL QUALITY

Type II landfill vertical expansions are authorized to follow the siting process of this plan. Other Type II landfill expansions are allowed only if required by the Department of Environmental Quality (DEQ) for capacity purposes as the goal of this plan is to minimize Type II landfilling. New or expanded Type III landfills may be sited if: (1) built to the siting criteria of this plan, and (2) to the Type II landfill construction specifications. New or expanded transfer facilities and processing plants other than incinerators may be sited by this plan. No incinerators maybe sited by this plan.

(5) Note of Page III-45 of the Amendment that there are Maps 3-1 through 3-10 rather than Maps 3-1 through 3-11 as mistakenly stated.

(6) Delete item number 5 on Page III-47 of the Amendment given that the MDEQ considers local zoning ordinances to be discretionary and therefore prohibited.

Thank you for your attention to this request. If there is anything further you require, please contact Grant Bauman, the designated Jackson County Planning Agency Contact, at (517) 768-6711 or gbauman@co.jackson.mi.us.

Sincerely,

James E. Shotwell, Jr., Chairman
Jackson County Board of Commissioners

Jackson County Solid Waste Planning Committee

Staffed by the Region 2 Planning Commission (R2PC)
120 W. Michigan Avenue • Jackson, MI 49201
Phone (517) 788-4426 • Fax (517) 788-4635

May 1, 2017

Ms. Christina Miller
Solid Waste Planning, Reporting and Surcharge Coordinator
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
PO Box 30241
Lansing, MI 48933

Sent via email to MILLERC1@michigan.gov

Subject: **Jackson County Solid Waste Management Plan | Proposed 2016 Amendment**

Dear Ms. Miller:

The County of Jackson is pleased to officially announce that the proposed 2016 Amendment of the *Jackson County Solid Waste Management Plan* was approved locally. The County Board of Commissioners adopted the proposed Plan Amendment on July 26, 2016, and the required approval of 67% of the 27 municipalities which comprise Jackson County was exceeded. That requirement means that at least 18 (i.e., 67%) of those municipalities must choose to adopt the proposed Plan Amendment locally. Fortunately, 21 municipalities voted to adopt the proposed Plan Amendment. A series of attachments to this letter contain the proposed Plan Amendment and associated documentation requested by the MDEQ. If you require further information, please contact me via (517) 768-6711 or gbauman@co.jackson.mi.us.

Sincerely,

Grant E. Bauman, AICP
Recording Secretary

- *Jackson County Solid Waste Management Plan | Proposed 2016 Amendment*
- A Summary of the 2016 Proposed Amendment
- Proposed 2016 Plan Amendment Notices and County Resolution
- Municipal Resolutions
- Landfill Capacity Letters
- Solid Waste Planning Committee Meeting Minutes

Solid Waste Management Plan

Jackson County, Michigan

2016 Amendment of the 1998 Update

This page was left intentionally blank

2016 PLAN AMENDMENT COVER PAGE

Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, PA 451, (NREPA), 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:

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.

Municipality	Original Planning County	New Planning County

Not applicable.

DESIGNATED PLANNING AGENCY PREPARING THIS PLAN UPDATE:

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

CONTACT PERSON: Grant E. Bauman, AICP, Principal Planner

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

PHONE: (517) 768-6711
FAX: (517) 788-4635
EMAIL: gbauman@co.jackson.mi.us

CENTRAL REPOSITORY LOCATION(S):

1. Jackson County Administrator's Office, 120 W. Michigan Ave. (6th Floor), Jackson, MI 49201
2. Region 2 Planning Commission, 120 W. Michigan Ave. (9th Floor), Jackson, MI 49201

TABLE OF CONTENTS

EXECUTIVE SUMMARY I-1
OVERALL VIEW OF THE COUNTY I-3
CONCLUSIONS I-6
SELECTED ALTERNATIVES I-6

INTRODUCTION I-7
GOALS AND OBJECTIVES I-7

DATA BASE II-1
SOLID WASTE DISPOSAL AREAS II-2
SOLID WASTE FACILITY DESCRIPTIONS II-3
SOLID WASTE COLLECTION SERVICES AND
TRANSPORTATION INFRASTRUCTURE II-12
EVALUATION OF DEFICIENCIES AND PROBLEMS II-14
DEMOGRAPHICS II-15
LAND DEVELOPMENT II-18

SOLID WASTE MANAGEMENT ALTERNATIVES II-20

SELECTED SOLID WASTE MANAGEMENT SYSTEM III-1
IMPORT/EXPORT AUTHORIZATIONS III-4
SOLID WASTE DISPOSAL AREAS III-10
FACILITY DESCRIPTIONS III-11
SOLID WASTE COLLECTION SERVICES AND
TRANSPORTATION INFRASTRUCTURE III-24
RESOURCE CONSERVATION EFFORTS III-25
WASTE REDUCTION, RECYCLING, & COMPOSTING PROGRAMS III-26
EDUCATIONAL AND INFORMATIONAL PROGRAMS III-40
TIMETABLE III-41
SITING PROCEDURE III-42
MANAGEMENT COMPONENT III-58

LOCAL ORDINANCES AND REGULATIONS III-61

CAPACITY CERTIFICATION PROCESS III-62

APPENDIX A - ADDITIONAL INFORMATION REGARDING THE SELECTED SYSTEM

EVALUATION OF RECYCLING ..... Appendix A-2

DETAILED FEATURES OF RECYCLING
& COMPOSTING PROGRAMS ..... Appendix A-9

COORDINATION EFFORTS ..... Appendix A-12

COSTS & FUNDING ..... Appendix A-13

EVALUATION SUMMARY ..... Appendix A-14

ADVANTAGES AND DISADVANTAGES ..... Appendix A-16

APPENDIX B - NON-SELECTED SYSTEMS

NON-SELECTED SYSTEMS ..... Appendix B-1

APPENDIX C - PUBLIC PARTICIPATION

PUBLIC PARTICIPATION AND APPROVAL ..... Appendix C-1

APPENDIX D – ATTACHMENTS

This page was left intentionally blank

EXECUTIVE SUMMARY

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

The management of solid waste has changed locally since the approval of the 1998 Update of the Jackson County Solid Waste Management Plan:

- There has been a shift in the local concept of recycling from the burning of solid waste to create energy to the removal of items from the solid waste stream via recycling and source reduction.
- Jackson County's Resource Recovery Facility (RRF), a waste to energy incinerator, lost its contracts for selling its energy (i.e., steam and electricity) to the Michigan Department of Corrections, which made it economically unviable and, led to its permanent closure.
- The County's flow control ordinance and tipping fees set to support the RRF were subsequently rescinded, opening Jackson County up to the importation and exportation of solid waste. This shift to private enterprise creates an opportunity for reductions in the cost to consumers given the potential for greater competition.
- Private haulers have placed an increased emphasis on recycling and Jackson County has contracted for a part-time recycling coordinator.

The 2015 Amendment to the Jackson County Solid Waste Management Plan has been prepared pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act (PA 451 of 1994, MCL 324.11501 et seq.). In preparing the 2015 Amendment, goals and objectives were established to serve as an overall policy framework against which a plan for solid waste management could be developed. The goals include: protecting public health, safety, and welfare; protecting natural resources from pollution and contamination; recognizing solid waste as a resource; promoting and using public education, marketing, and outreach; maintaining an efficient and environmentally sound waste collection system; and developing and implementing an on-going solid waste planning, evaluation and management process.

In order to develop and evaluate the solid waste management alternatives contained in the 2015 Amendment, information was collected and analyzed regarding: the population of the County; local land use patterns; pertinent environmental conditions; the waste stream; components of the solid waste management system (e.g., waste disposal, processing, collection, transportation, source reduction, recycling, and ultimate disposal area uses); and the current arrangements for the solid waste management system.

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

1. The quantity of waste in Jackson County is expected to decrease slightly (0.4%) over the next ten years.

2. The centers of waste generation are not expected to change significantly in the next ten years

3. Waste hauling in Jackson County is controlled by the private sector. Residential waste collection is provided for almost exclusively through individual contracts between private sector haulers and county residents.

4. Waste disposal in Jackson County is substantially controlled by the private sector, but Henrietta and Rives Townships operate Type B Transfer Facilities.

5. The McGill Road (Type II) Landfill is privately owned with another 15 years of capacity.

6. Diverting recyclable material from the waste stream prior to landfilling is a good public goal and a positive environmental practice.

7. The greatest potential for expanding recycling and composting opportunities in Jackson County lies with the education of the citizens and their understanding of the recycling process, and with the expansion of private waste haulers recycling centers.

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

OVERALL VIEW OF THE COUNTY

The Jackson Urbanized Area (UA)—comprised of the City of Jackson and portions of surrounding townships—was home to 56.2% of the Jackson County population in 2010 (please see Map I-1). The Brooklyn Urban Cluster (UC)—comprised of much of the Village of Brooklyn as well as part of Columbia Township— was home to 1.7% of the countywide population. Finally, portions of the Albion and Somerset Urban Clusters—which extend into the County from the counties of Calhoun and Hillsdale, respectively—are home to smaller urban populations. However, the majority of Jackson County in 2010 was considered to be rural by the U.S. Census Bureau.

Township or Municipal Name	Population, 2010[1]	% of Land Use, 2010[2]		Estimated % of Economic Base, 2012[a]				
		Rural	Urban	Ag.	For.[b]	Ind.	Com.	Other
Jackson Urbanized Area	90,057	—	—	—	—	—	—	—
Urban Clusters[3]	—[4]	—	—	—	—	—	—	—
City of Jackson	33,534	0.0%	100.0%	—	—	—	—	—
Urban Townships[5,6]	68,633	68.9%	31.1%	—	—	—	—	—
Rural Townships[7,8]	58,081	99.4%	0.6%	—	—	—	—	—
Jackson County	160,248	91.4%	8.6%	46.6%	—	4.8%	3.2%	48.8%

[a] Property class classification for each tax parcel in Jackson County's parcel and assessing databases. "Ag." = Agriculture; "For." = Forestry; "Ind." = Industrial; and "Com." = Commercial.
[b] Information for this land use was not available for the databases cited above.

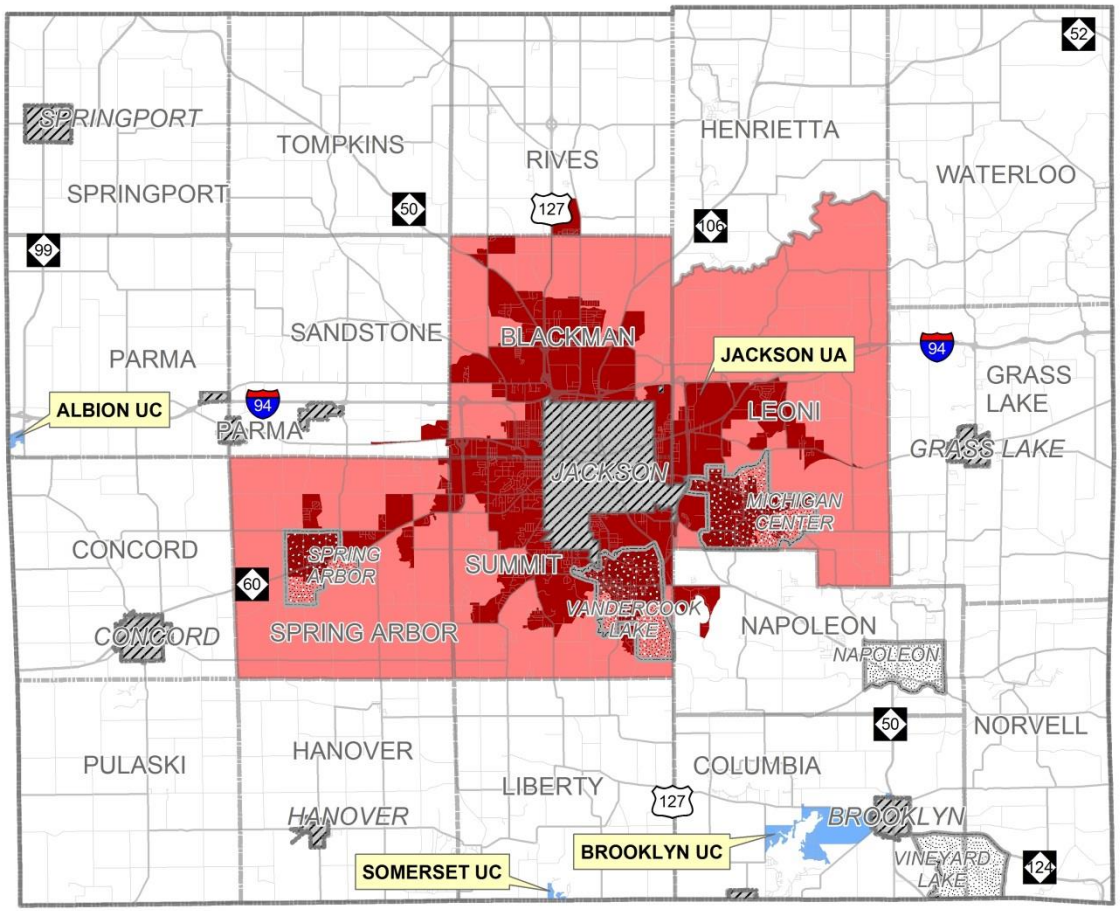
[1] 2010 U.S. Census, compiled by the Region 2 Planning Commission.
[2] Region 2 Planning Commission, based on a 2010 Urban Area/Urban Cluster shape file generated by the U.S. Census Bureau
[3] The Brooklyn, Albion (partial) and Somerset (partial) Urban Clusters.
[3] The Brooklyn Urban Cluster had a population of 2,733. The population of the Jackson County portion of the other urban clusters was not available.
[4] Comprised of the Townships of Blackman, Leoni, Spring Arbor, and Summit.
[5] Includes the Census Designated Places (CDPs) of Michigan Center, Spring Arbor, and Vandercook Lake
[6] Includes the Villages of Brooklyn, Concord, Grass Lake, Hanover, Parma, Springport, and Cement City (partial)
[7] Includes the Census Designated Places (CDPs) of Napoleon and Vineyard Lake

For the purposes of this plan, the townships of Blackman, Leoni, Spring Arbor, and Summit are considered to be Urban Townships because the Jackson UA extends into them extensively. The remaining townships are considered to be Rural Townships. However, it should be noted that the Rural Townships contain clusters of denser development in the form of portions of the Jackson UA, the Brooklyn and other Urban Clusters, and the various villages and census designated places (CDPs) located outside of the Urban Townships (please see Map I-1 and the Demographic Database in Section II).

JACKSON COUNTY SOLID WASTE MANAGEMENT PLAN 2016 AMENDMENT

MAP I-1

URBAN AREAS AND PLACES*

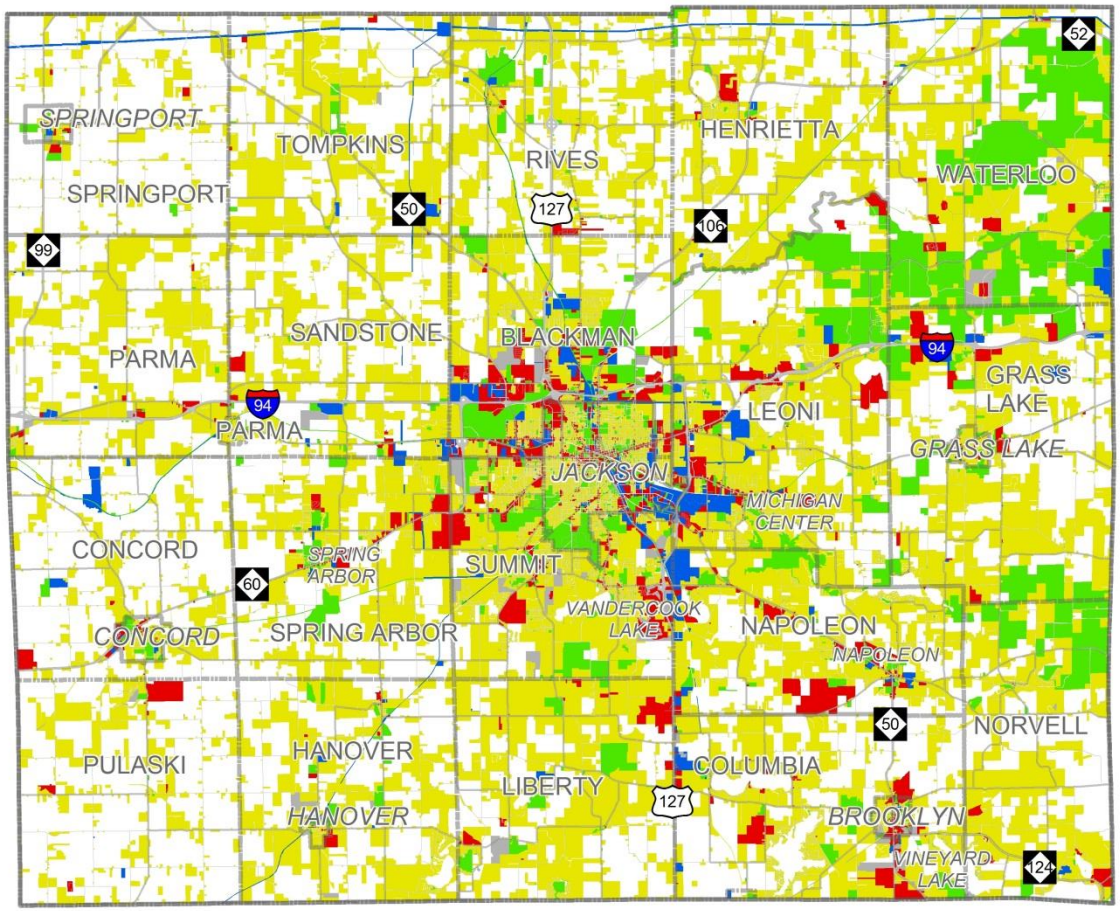


- URBANIZED AREA (UA)
- URBAN CLUSTER (UC)
- URBAN TOWNSHIPS
- *CITY AND VILLAGES*
- *CENSUS DESIGNATED PLACES (CDP)*

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- US BUREAU OF THE CENSUS
-REGION 2 PLANNING COMMISSION

JULY 13, 2016

Miles
0 2 4 6



JACKSON COUNTY SOLID WASTE MANAGEMENT PLAN 2016 AMENDMENT

MAP I-2

EXISTING LAND USE*

- AGRICULTURAL
- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- PUBLIC/EXEMPT
- DEVELOPMENTAL/OTHER

*BASED UPON THE PROPERTY CLASS (I.E., USE) ASSIGNED TO EACH PARCEL BY MUNICIPAL ASSESSORS

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- JACKSON COUNTY GIS (9/24/2014)

July 13, 2016

Miles
0 2 4 6

EXECUTIVE SUMMARY

CONCLUSIONS

As part of the 2015 Amendment, three solid waste management alternatives were investigated. Alternative A is "government does it all," including the reestablishment of a flow control ordinance and the need for a county-operated landfill. Alternative B is "the free market (all private)," relying exclusively on the private sector and limiting government involvement as much as possible. Alternative C is "the best of both hybrid," which relies on a public-private partnership that optimizes the strengths of both sectors as it relates to solid waste management. Recycling is an important component of all three alternatives.

After considering the alternative waste management systems listed above, Alternative C was determined to be the most practical, including an enhanced emphasis on recycling.

SELECTED ALTERNATIVES

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

1. The selected alternative calls for continued availability and collection of source separated and single-source materials for recycling or composting as a means of increasing the volume of residential waste recovered prior to landfilling.
2. Private sector waste haulers are encouraged to include recycling and composting in the package of waste management options available to their customers.
3. The McGill Rd. landfill, Liberty Environmentalists landfill, and landfills with reciprocity to Jackson County will be used to implement the selected alternative.
4. The Jackson County Board of Commissioners shall have ultimate responsibility for ensuring that adequate waste disposal areas are provided in a timely manner to meet the county's waste disposal needs and for determining whether a proposal to establish a new disposal area is consistent with the Jackson County Solid Waste Management Plan.
5. Environmentally sensitive or other restricted locations are established in the plan using the solid waste sensitivity overlay maps. These locations shall be avoided before a proposed disposal area shall be considered consistent with this plan.*
6. Transfer facilities may be sited at any time according to the criteria and procedures provided in the plan.*
7. The plan recommends that each local unit of government determine which alternatives for the management of waste collection are best for it.
8. The plan recommends that the waste collection industry remain involved in material recovery.
9. The County Board of Commissioners or its agents shall be responsible for collecting all information needed to ensure implementation of this plan through the appointment and funding of a recycling coordinator.

* *Please note that the siting process and criteria a disposal area must be consistent with and reviewed upon is only found in Section III, starting on page III-42, and siting of a disposal area will not be reviewed against any other Section found within the Plan.*

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:

Goal 1: ***Provide protection for the public health, safety, and welfare of the citizens of the County as it relates to the management of solid waste.***

Objective 1a: To insure that all operating solid waste disposal areas comply with adopted state laws and regulations for proper solid waste management.

Objective 1b: To insure that existing, licensed solid waste disposal facilities are sufficient to meet the County's waste disposal needs for the ten-year period immediately following adoption of this plan.

Objective 1c: To insure that there is a contingency plan (i.e., alternatives) for meeting the County's waste disposal needs in emergency situations.

Goal 2: ***Protect the County's natural resources from pollution and contamination that could result from improper or mismanaged waste disposal.***

Objective 2a: To insure that proper disposal methods are being used in accordance with current regulations.

Objective 2b: To insure that ground and surface waters are not being contaminated from solid waste management practices.

Objective 2c: To minimize the use of landfills within Jackson County in order to protect the County's land resources.

Objective 2d: To insure compliance of operating facilities with air quality regulations minimizing the impact on neighboring uses of airborne particulate matter and odors associated with waste disposal practices.

Goal 3: ***Recognize solid waste as a resource that should be managed to promote economic vitality, ecological integrity, and improved quality of life in a way that fosters sustainability.***

Objective 3a: To promote the reduction and reuse of solid waste where feasible.

Objective 3b: To assist both the private and public sectors in instituting composting and recycling programs where feasible.

Goal 4: ***Promote and use public education, marketing, and outreach to foster a better understanding and encourage broader participation in achieving the goals and objectives of this plan.***

Objective 4a: To inform the public about the existing solid waste management system and any proposed changes in the system.

Objective 4b: To inform the public about solid waste management and the value of recycling.

Goal 5: ***Maintain an efficient and environmentally sound waste collection system with adequate public and/or private facilities, including transportation.***

Objective 5a: To encourage local regulatory agencies and units of government to consider the impact of ordinances (e.g., noise, hours of operation, etc.) on the overall cost-effectiveness of operations which implement the solid waste management plan and conserve local transportation infrastructure.

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

Objective 6a: To develop and implement measurements of successful plan implementation (i.e., metrics), as well as ongoing operation metrics.

Objective 6b: To amend/update the solid waste management plan every five years.

Objective 6c: To monitor State and Federal legislation affecting solid waste management.

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 (i.e., cubic yards) in Jackson County for the years 2015, 2020 and 2025.

Waste Type	Current Annual Volume, 2015	Five-Year Annual Volume, 2020	Ten-Year Annual Volume, 2025
Municipal Solid Waste	201,662 cy	201,254 cy	200,847 cy
Industrial Waste	32,616 cy	32,500 cy	32,484 cy
Construction & Demolition	70,038 cy	69,896 cy	69,755 cy
Total Waste	304,316 cy	303,701 cy	303,085 cy

1. Current annual volumes were collected from the Michigan Department of Environmental Quality's *Report of Solid Waste Landfilled in Michigan* for FY 2014, after the closure of the RRF.
2. MSW projections were made by calculating the ratio of the estimated county population for 2015 to the actual annual volume in FY 2014. The result is that in 2015, Jackson County generated an estimated 1.26 cubic yards of MSW per person. The 1.26 cy/capita factor is multiplied by the 2020 and 2025 population projections.
3. Industrial waste volumes made by calculating the ratio of the estimated county population for 2015 to the actual annual volume in FY 2014. The result is that in 2015, Jackson County generated an estimated 0.20 cubic yards of IW per person. The 0.44 cy/capita factor is multiplied by the 2020 and 2025 population projections.
4. Construction demolition was projected by calculating the ratio of the estimated county population for 2015 to the actual annual volume in FY 2014. The result is that in 2015, Jackson County generated an estimated 0.44 cubic yards of C&D per person. The 0.44 cy/capita factor is multiplied by the 2020 and 2025 population projections.

TOTAL QUANTITY OF SOLID WASTE GENERATED – 303,701 cy (2020)

TOTAL QUANTITY OF SOLID WASTE NEEDING DISPOSAL - 303,701 cy (2020)

Overall, the county does not anticipate major problems associated with managing the solid waste generated with its borders. Because the projected population decreases are low and manageable within the current system.

DATA BASE

Inventory and description of all solid waste disposal areas within Jackson County to meet its disposal needs for the planning period (not inclusive of out-county disposal areas)

Solid waste disposal areas within Jackson County (as of October 1, 2015) used by its residents, businesses, and haulers include:

McGill Road Landfill

McGill Road Landfill is a Type II facility with an approved capacity of 40.2 acres and a constructed capacity of 15.2 acres, on a 34.1-acre site. It handled a volume of 50,000 tons.

Liberty Environmentalist Landfill

Liberty Environmental Landfill is a Type III landfill in Liberty Township with an estimated lifetime of 50 years. The landfill receives an annual volume of 125,000 tons of material. *A Type B Transfer Facility is also operated within the landfill.*

Modern Waste Systems

Modern Waste Systems Type A Transfer Facility & Processing Plant operates 300 days a year and has an estimated yearly disposal rate of 105,000 tons. Recycling also takes place.

Northwest Refuse, Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)

Northwest Refuse, Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)Type A Transfer Facility & Processing Plant operates over 300 days a year and has an estimated yearly disposal/transfer rate of 130,000 cubic yards. Recycling also takes place at this facility.

Rives Township Transfer Facility

The Rives Township Type B Transfer Facility operates on Saturdays year-round and Wednesday afternoons during the summer. Recycling also takes place at this facility. The waste is disposed of at the discretion of their hauler.

Henrietta Township Transfer Facility

The Henrietta Township Type B Transfer Facility operates on Saturdays between 9:00 a.m. and 3 p.m. Recycling also takes place at this facility. The waste is disposed of at the discretion of their hauler.

Note:
A Facility Description Sheet for each area follows.

FACILITY DESCRIPTIONS

Facility Type: Type II Landfill

Facility Name: McGill Road Landfill

County: Jackson Location: Town: 2S Range: 1E &1W Section(s): 19 & 24

Map identifying location included in Map II-1: ☒ Yes ☐ No

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

☐ Public ☒ Private Owner: Waste Management of Michigan, Inc.

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☐	Special Wastes*
☐	Pending		

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

Site does not accept friable asbestos

Site Size:

Total area of facility property:	134.08	acres
Total area sited for use:	134.08	acres
Total area permitted:	134.08*	acres
Operating:	30.26	acres
Not excavated:		_____ acres
Closed	10.78	acres
Isolation and Ancillary		93.04 acres

* Permit No. 4037, issued on August 23, 2005, identifies 41.1 acres permitted for waste disposal. Construction for waste disposal beyond this acreage will require a new construction permit

Current capacity:	838,000	☐ tons or ☒ cubic yards per day
Estimated lifetime:	13	years
Estimated days open per year:		270 days
Estimated yearly disposal volume:	50,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

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

Return to Amendment Letter

FACILITY DESCRIPTIONS

Facility Type: Type III Landfill

Facility Name: Liberty Environmentalist Landfill

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

Map identifying location included in Map II-1: ☒ Yes ☐ No

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

☐ Public ☒ Private Owner: Liberty Environmentalists

Operating Status		Waste Types Received	
☒	Open	☐	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Foundry sand; transfer of recycling; waste water treatment plant sewage when vented with gas burn-off

Site Size:

Total area of facility property:	339	acres
Total area site for use:	339	acres
Total area permitted:	339*	acres
Operating:	34.0	acres
Not excavated:	30.2	acres
Closed	17.46	acres
Isolation and Ancillary	257.34	acres

* Permit No. 4163, issued on October 28, 2013, identifies 82.1 acres permitted for waste disposal. Construction for waste disposal beyond this acreage will require a new construction permit.

Current capacity:	500	☒ tons or ☐ cubic yards per day
Estimated lifetime:	50	years
Estimated days open per year:	300	days
Estimated yearly disposal volume:	125,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:
Landfill gas recovery projects: _____ megawatts
Waste-to-energy incinerators: _____ megawatts

FACILITY DESCRIPTIONS

Facility Type: Type A Transfer Facility & Processing Plant

Facility Name: Modern Waste Systems

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

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: All authorized landfills in the County Plan

☐ Public ☒ Private Owner: Modern Waste Systems

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☐	Contaminated Soils
☐	Open, but Closure	☐	Special Wastes*
☐	Pending		

*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:	3	acres
Total area permitted:	3	acres
Operating:		acres
Not excavated:		acres

Current capacity:	500	☒ tons or ☐ cubic yards per day
Estimated lifetime:		years
Estimated days open per year:		300 days
Estimated yearly disposal volume:	105,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

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

FACILITY DESCRIPTIONS

Facility Type: Type A Transfer Facility & Processing Plant

Facility Name: Northwest Refuse, Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)

County: Jackson Location: Town: 2S Range: 1W Section(s): 22

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: Granger Wood Street Landfill or Granger Grand River Avenue Landfill.

☐ Public ☒ Private Owner: Northwest Refuse, Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Accepts special wastes as authorized by Part 115 of Act 451. Requires review and approval of operator.

Site Size:

Total area of facility property:	29.27	acres
Total area site for use:	29.27	acres
Total area permitted:	29.27	acres
Operating:	9.65	acres
Not excavated:	N/A	acres
Current capacity:	~250	☒ tons or ☐ cubic yards per day
Estimated lifetime:	N/A	years
Estimated days open per year:	312	days
Estimated yearly disposal volume:	130,000	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

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

FACILITY DESCRIPTIONS

Facility Type: Type B Transfer Facility

Facility Name: Henrietta Township Transfer Facility

County: Jackson Location: Town: 1S Range: 1E Section(s): 16

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: All authorized landfills in the County Plan

☒ Public ☐ Private Owner: Henrietta Township

Operating Status	Waste Types Received
☒ Open	☒ Residential
☐ Closed	☒ Commercial
☐ Licensed	☒ Industrial
☒ Unlicensed	☒ Construction and Demolition
☐ Construction Permit	☐ Contaminated Soils
☐ Open, but Closure	☐ Special Wastes*
☐ Pending	

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

Site Size:

Total area of facility property:	30	acres
Total area site for use:	1	acres
Total area permitted:	1	acres
Operating:		acres
Not excavated:		acres

Current capacity:	170	☐ tons or ☒ cubic yards per day
Estimated lifetime:		years
Estimated days open per year:		52 days
Estimated yearly disposal volume:	3,640	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

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

FACILITY DESCRIPTIONS

Facility Type: Type B Transfer Facility

Facility Name: Rives Township Transfer Facility

County: Jackson Location: Town: 1S Range: 1W
Section(s): 15

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: All authorized landfills in the County Plan

☒ Public ☐ Private Owner: Rives Township

Operating Status	Waste Types Received
☒ Open	☒ Residential
☐ Closed	☒ Commercial
☐ Licensed	☒ Industrial
☒ Unlicensed	☒ Construction and Demolition
☐ Construction Permit	☐ Contaminated Soils
☐ Open, but Closure	☐ Special Wastes*
☐ Pending	

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

Site Size:

Total area of facility property:	5.25	acres
Total area site for use:	1+	acres
Total area permitted:		acres
Operating:		acres
Not excavated:		acres
Current capacity:	160	☐ tons or ☒ cubic yards per day
Estimated lifetime:		years
Estimated days open per year:		74 days
Estimated yearly disposal volume:	6,510	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

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

FACILITY DESCRIPTIONS

Facility Type: Type B Transfer Facility

Facility Name: Liberty Environmentalist Landfill

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

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: All authorized landfills in the County Plan

☐ Public ☒ Private Owner: Liberty Environmentalists

Operating Status	Waste Types Received
☒ Open	☒ Residential
☐ Closed	☒ Commercial
☐ Licensed	☐ Industrial
☒ Unlicensed	☐ Construction and Demolition
☐ Construction Permit	☐ Contaminated Soils
☐ Open, but Closure	☐ Special Wastes*
☐ Pending	

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

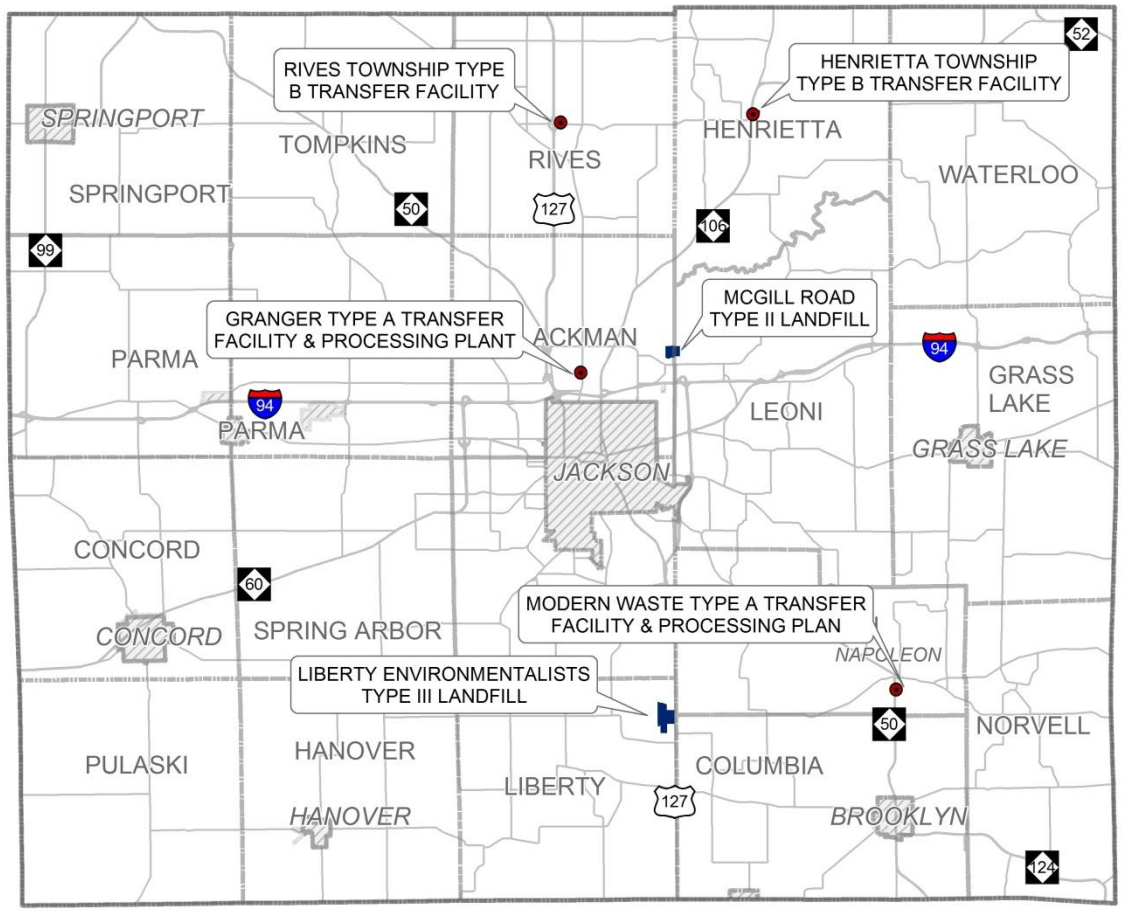
Site Size:

Total area of facility property:	339	acres
Total area site for use:	339	acres
Total area permitted:		acres
Operating:		acres
Not excavated:		acres
Closed		acres
Isolation and Ancillary		acres

Current capacity:	100	☐ tons or ☒ cubic yards per day
Estimated lifetime:		years
Estimated days open per year:		300 days
Estimated yearly disposal volume:	4,500	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

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



JACKSON COUNTY SOLID WASTE MANAGEMENT PLAN 2016 AMENDMENT

MAP II-1

SOLID WASTE FACILITIES

LANDFILLS

TRANSFER FACILITIES

LEARN MORE ABOUT RECYCLING OPPORTUNITIES BY VISITING RECYCLING JACKSON'S WEBSITE -- HTTP://RECYCLINGJACKSON.COM

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- COUNTY OF JACKSON
- REGION 2 PLANNING COMMISSION

JULY 13, 2016

Miles
0 2 4 6

Other Jackson County Recycling Opportunities

Scrap Metal Dealers

Various local companies divert metals from the waste stream, including (but not necessarily limited to: We Buy Your Junk, T&B Hauling and Metal Recycling, Omnisource, Jackson Iron & Metal, We Buy Junk Cars & Pay More/Cash for Junk Cars Today Free Removal, United Metals, Jay's Helping Hand, and A-1 Auto Salvage & Scrap.

Recycling Jackson

Recycling Jackson (RJ) focuses on educating children and adults about the benefits of recycling and providing a recycling center. Patrons may dispose of electronics, florescent bulbs, batteries, and latex paint for set fees as well as paper, clear glass, metal cans, and Styrofoam.

Greater Jackson Habitat for Humanity

Habitat for Humanity's ReStore is a nonprofit home improvement store/donation center that sells new and gently used furniture, home accessories, building materials, and appliances.

Various second-hand stores

Goodwill, St. Vincent DePaul, and various for profit consignment stores are engines of source reduction by accepting clothes, furniture, and other household items that would otherwise end up in the waste stream.

Pharmaceuticals

Some pharmacies may accept unused pharmaceuticals for proper disposal. The City of Jackson Police Department accepts and disposes of old pharmaceuticals. The Jackson County Health Department also disposes of unused pharmaceuticals as part of its Household Hazardous Waste events.

Tire recycling

Kurpinski Metal Recycling accepts tires as does the local Northwest Refuse Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson) transfer facility. Tire shops and other automotive centers may also dispose of tires for their patrons.

Municipal recycling centers

The transfer facilities operated by Henrietta and Rives Townships accept recyclables. Leoni and Grass Lake Townships also operate drop-off-facilities.

Municipal Cleanup Days

Many other municipalities sponsor cleanup days for their residents. Those events will be different in every community. Residents and businesses should contact their municipality directly for specific information.

Educational programs

Jackson County is developing an educational program regarding recycling through the Jackson County Conservation District. Many trash haulers may also have some educational materials. The Dahlem Center and local school districts may also be resources.

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

There are no governmentally operated municipal collection systems in Jackson County other than the transfer facilities provided by two townships (Henrietta and Rives) for their residents. All of the haulers are private operators. Three villages (Concord, Cement City, and Parma) and the Lake Columbia Association (Columbia Township) contract with private haulers to provide residential service.

Below is a list of the collection services/haulers within Jackson County. However, this is not intended to be an all-inclusive. The services are provided county-wide. There are no service area limitations.

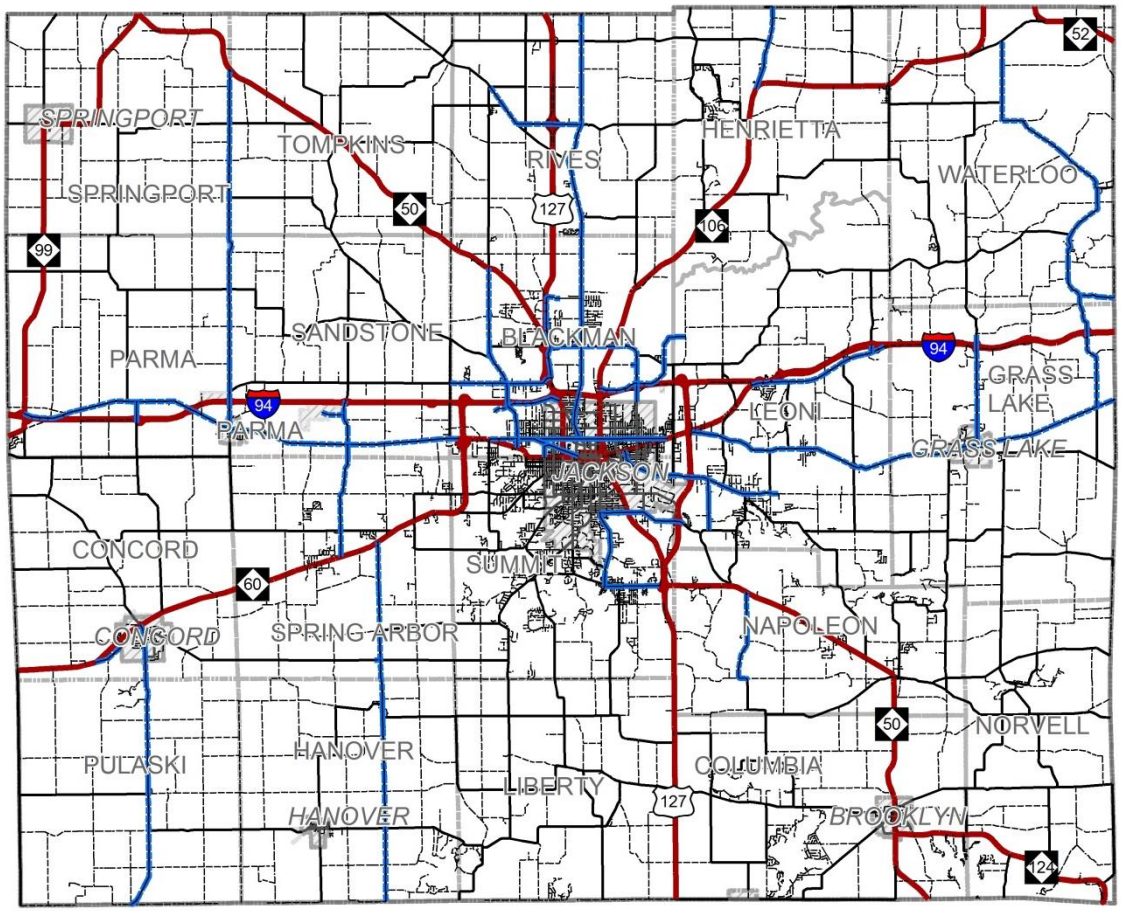
- Republic Services, Inc.
- Bradford Service
- Buckner's Garbage Service
- Bulldog Refuse
- Cyclone Environmental
- Emmons Service Inc.
- Get it Out of Here Co.
- Ideal Disposal Inc.
- Liberty Environmentalists Landfill
- Bulldog Refuse

- Republic Services, Inc.
- Bradford Service
- Buckner's Garbage Service
- Bulldog Refuse
- Cyclone Environmental
- Emmons Service Inc.
- Get it Out of Here Co.
- Ideal Disposal Inc.
- Liberty Environmentalists Landfill
- Bulldog Refuse

Transportation

The major routes used to transport refuse from the collection areas to the disposal sites are state highways (built to all-season standards), other all-season routes, and other county primary roads and city major streets (please see Map II-2). Road weight restrictions on routes which are not built to all-season standards, especially when frost laws are in effect, can have a significant impact on the movement of solid waste because these are generally high-density loads. Weigh limitations are set by the State of Michigan in the Motor Vehicle Traffic Code. The enforcement agency is the Commercial Vehicle Enforcement Division of the Michigan State Police.

There are no locally imposed width limitations on these highways other than all vehicles greater than 8 feet, 6 inches, must obtain a permit from the Jackson County Department of Transportation for an oversized load.



JACKSON COUNTY SOLID WASTE MANAGEMENT PLAN 2015 AMENDMENT

MAP II-2

PRIMARY TRANSPORT ROUTES

- STATE HIGHWAYS
- COUNTY PRIMARY ROADS AND CITY MAJOR STREETS
- OTHER ALL SEASON ROUTES*
- COUNTY LOCAL ROADS AND CITY MINOR STREETS

**THERE ARE MORE ALL SEASON ROUTES IN THE CITY AND VILLAGES THAN DISPLAYED. CONNECTIONS WERE SIMPLY MADE TO THOSE ROUTES EXTENDING OUT INTO THE TOWNSHIPS.*

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- JACKSON COUNTY DEPARTMENT OF TRANSPORTATION
-REGION 2 PLANNING COMMISSION

JULY 13, 2016

Miles
0 2 4 6

DATA BASE

EVALUATION OF DEFICIENCIES AND PROBLEMS

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

Closure of the RRF. The State of Michigan's Department of Corrections decided to not renew its contract with Jackson County for the sale of steam and electricity produced by the RRF (i.e., the waste to energy incinerator). The loss of that contract and the unavailability of an alternative customer made the operation economically unviable, leading to its permanent closure. The benefit of solid waste volume reduction from incineration ceased, resulting in an immediate increase in the volume of solid waste needing to be dealt with. The additional volume of solid waste now that it is no longer incinerated must be recycled or landfilled.

Termination of flow control. The legal basis for the County's flow control ordinance was eliminated with the closure of the RRF. The County subsequently terminated its flow control ordinance, opening the county up to the importation and exportation of solid waste at the discretion of landfill operators and trash haulers. The ability of County government to control the volume of solid waste disposed of within Jackson County has been severely reduced.

Landfill Capacity. It is in the interest of the operator of the county's single Type II landfill to maximize the importation of solid waste into the county while it is in the interest of county residents to minimize the importation of solid waste so that the life of the McGill Road Landfill is not shortened.

Recycling. Given the closure of the RRF, recycling is even more important as it pertains to decreasing the volume of solid waste generated in Jackson County. Although non-profit organizations, local governments, and trash haulers have instituted various recycling programs and facilities, the opportunity to further increase the level of recycling still exists.

Some municipal recycling transfer facilities have been very successful while others closed due to a variety of operational issues.

Illegal dumping. Dumping on back roads and empty lots continues to be a problem. Tires are a particular disposal problem along back roads, waterways, and other remote areas.

Siting of new facilities. There is little land suitable in Jackson County for the siting of a new Type II landfill.

Enforcement of regulations/standards. Roadside dumping and other illegal disposal continue to be a problem which may require local or county ordinances to properly enforce.

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.

Current and Projected Population

The 2010 population figures utilized in this plan come from the 2010 U.S. Census. The 2040 population projections were developed for the Jackson Area Comprehensive Transportation Study's *2040 Long Range Transportation Plan* "based on previous trends as depicted in" historic U.S. Census data "and on the Regional Economic Models Inc. (REMI) forecast data developed for the Michigan Department of Transportation. The REMI data forecast is based upon the Cohort Survival methodology in association with economic development factors for a particular jurisdiction." The data was then "straight-lined" to obtain 5-year increments. As the table below depicts, the countywide population is projected to remain fairly stable, decreasing slightly to 0.20% by 2015, 0.40% by 2020, 0.61% by 2025, and 1.21% by 2040.

Table II-1
Current and Projected Population

	2010	2015	2020	2025	2030	2035	2040
Jackson County	160,248	159,924	159,600	159,276	158,952	158,628	158,304

Source: REMI & Region 2 Planning Commission

Current and Projected Population Density and Centers

For the purposes of this plan, Jackson County has been divided into several segments: the City of Jackson; the surrounding Urban Townships of Blackman, Leoni, Summit, and Spring Arbor; and the remaining Rural Townships, including the various villages (please see the Map II-3).

The slight population loss projected for Jackson County is due to the City of Jackson which is projected to lose 11.23% of its population by 2040. However, the population will be fairly stable in the remainder of Jackson County. A small amount of population growth is projected in the Urban Townships (1.01%) and Rural Townships (1.94%).

Table II-2
Current and Projected Population

	2010	2015	2020	2025	2030	2035	2040
City of Jackson	33,534	32,881	32,253	31,626	30,999	30,371	29,744
Urban Townships	68,633	68,784	68,900	69,016	69,131	69,247	69,363
Rural Townships	58,081	58,260	58,447	58,635	58,822	59,010	59,197

Source: REMI & Region 2 Planning Commission

Population density is also projected to remain fairly stable countywide, decreasing by and

estimated 2.7 persons per square mile between 2010 and 2040. Consequently, the estimated population density range is 221.0- 220.1 persons per square mile for 2015-2025. However, the City of Jackson is projected to lose 345.4 people per square mile between 2010 and 2040. Nevertheless, the City will remain the most densely populated area in Jackson County with an estimated population density range of 2,997.0-2,882.6 persons per square mile for 2015-2025.

Table II-3
Current and Projected Population Density (Persons Per Square Mile)

	2010	2015	2020	2025	2030	2035	2040
Jackson County	221.5	221.0	220.6	220.1	219.7	219.2	218.8
City of Jackson	3,056.5	2,997.0	2,939.8	2,882.6	2,825.4	2,768.3	2,711.1
Urban Townships	460.7	461.8	462.5	463.3	464.1	464.9	465.6
Rural Townships	80.3	80.5	80.8	81.0	81.3	81.6	81.8

Source: Region 2 Planning Commission

In contrast, the population density within the remainder of Jackson County is projected to remain fairly stable with a slight increase in population density. Population density within the Urban Townships is projected to increase by 4.9 persons per square mile between 2010 and 2040. Consequently, the population density range within the Urban Townships is estimated to be 461.8-463.3 persons per square mile for 2015-2025. The Rural Townships are also projected to increase slightly by 1.5 persons per square mile between 2010 and 2040. Accordingly, the population density range within the Rural Townships is estimated to be 80.5-81.0 persons per square mile for 2015-2025.

Current and Projected Centers of Solid Waste Generation

Centers of waste generation can often be related to the density of development. Areas which contain concentrations of residential, commercial, or industrial uses also generate concentrations of waste. In general, the density of development is greatest in the City of Jackson, decreasing outward through the Urban Townships and Rural Townships. However, other concentrated pockets of development exist in the various villages located within the Rural Townships, the census designated places (CDPs) located with the Urban Township and Rural Townships, and other clustered development (please see the Map II-3). Factors which influence the pattern of development in Jackson County include the location of transportation facilities such as I-94, US-127, M-60, M-106 and M-50 (please see Maps II-2 and II-3); the predominance of development; and the lack of central sewer and water services in much of the county.

Other Jackson County
Population Centers

Villages

Brooklyn
Concord
Grass Lake
Hanover
Parma
Springport
Cement City (partial)

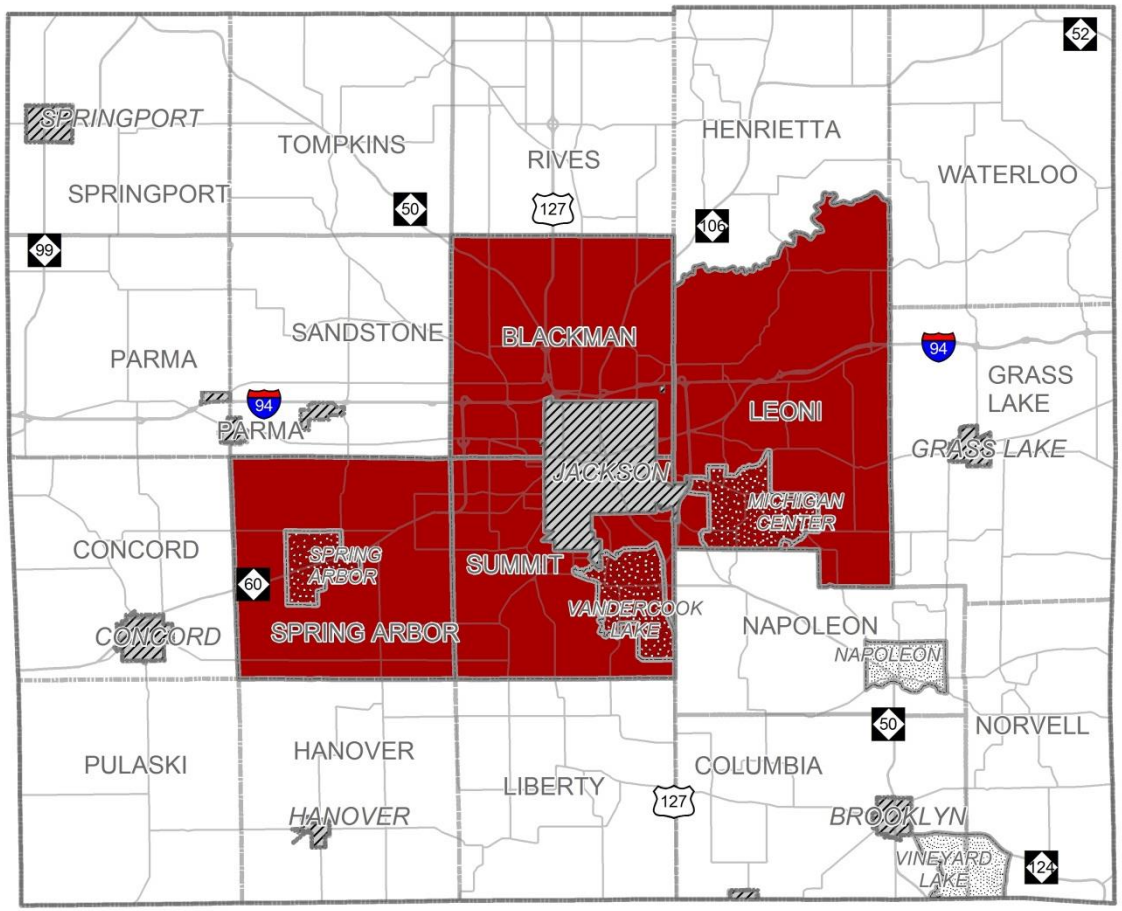
Census Designated Places (CDPs

Michigan Center
Napoleon
Spring Arbor
Vandercook Lake
Vineyard Lake

JACKSON COUNTY SOLID WASTE MANAGEMENT PLAN 2016 AMENDMENT

MAP II-3

MUNICIPALITIES AND PLACES



URBAN TOWNSHIPS

CITY AND VILLAGES

CENSUS DESIGNATED PLACES (CDP)

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- US BUREAU OF THE CENSUS
-REGION 2 PLANNING COMMISSION

July 13, 2016

Miles
0 2 4 6

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.

The land development pattern of Jackson County is characterized by the Jackson Urbanized Area—comprised of the City of Jackson at its core, substantial portions of the townships of Blackman, Leoni, Spring Arbor, and Summit, and small extensions into the townships of Napoleon, Rives, and Sandstone (see Map I-1)—and the surrounding rural area, including small urban settlements located in and around both incorporated and unincorporated villages, lakeside developments, and dispersed development along county roads.

For the purpose of this plan Jackson County is divided into three sectors (see Map II-2):

- the City of Jackson;
- the surrounding Urban Townships of Blackman, Leoni, Spring Arbor, and Summit; and
- the remaining Rural Townships, including the incorporated villages.

Residential development is found throughout the county and continues to disperse. The percentage of the county's population residing in the City of Jackson has decreased (-4.1%) while the percentage of the population living in the Urban Townships (1.4%) and Rural Townships (2.6%) grew between 1990 and 2010. Although the slight population growth projected within the county is limited to the Urban and Rural Townships over the next ten years, the replacement of older housing stock and the formation of new households can be expected to create some demand for new residential development. However, the increasing value of agricultural land may slow the dispersal of residential growth within the Rural Townships (outside of villages, census designated places, lake developments, and other settlements) as well as the undeveloped portions of the Urban Townships. The incidence of adult children living in their parents' homes may also decrease the need for additional dwelling units. Various initiatives within Jackson may reduce population decline in the City as young people gravitate towards urban centers. The high level of renters within the City may also impact how solid waste is disposed of in Jackson.

Residential development is most dense in the City of Jackson with 3,065.5 people per square mile. Despite its projected population decrease, the City is still estimated to have 2,711 people per square mile in 2040. The next most densely populated area is the Urban Townships with 460.7 people per square mile in 2010 and a projected 456.6 people per square mile in 2040. The Rural Townships have the least population density with 80.3 people per square mile in 2010 and a projected 81.8 people per square mile in 2040.

However, the pattern of residential development in the Urban Townships and Rural Townships is sporadic. Population density is likely to be much greater within and surrounding villages, census designated places, lake communities, and other settlements (see Map II-2). Much of that residential development has occurred in subdivisions whose placement is controlled by one or more of the following factors:

- the location of transportation corridors,
- the availability of central sewer and water, and
- various environmental constraints.

However, a significant amount of residential development in the Urban Townships and Rural Townships has also occurred on scattered sites along county roads and state highways.

Most of the commercial development in Jackson County is located in the City of Jackson and the Urban Townships (see Map I-1). It is concentrated in Downtown Jackson and smaller central business districts (e.g., Michigan Center, and Spring Arbor), in various shopping centers (e.g., Jackson Crossing, Westwood Mall, etc.), and in strip development along the major thoroughfares. Outside the urban area, the most intense commercial development is located in the villages (e.g., Brooklyn, Springport, etc.) and census designated places (e.g., Napoleon, Vineyard Lake, etc.) as well as other settlements. However, small commercial establishments continue to be scattered throughout Jackson County.

Industrial land uses are focused in the City of Jackson and the Urban Townships. Businesses and industries in the Rural Townships are likely to be located in the vicinity of a village, census designated place, or designated industrial park. However, small industrial facilities continue to be scattered throughout Jackson County. Future industrial development is likely to occur along the I-94 Corridor as well as state highways (e.g., M-50, US-127, etc.) and other all-season roads.

DATA BASE

SOLID WASTE MANAGEMENT ALTERNATIVES

The following briefly describes all solid waste management systems considered by Jackson County and how each alternative will meet the needs of Jackson 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.

SOLID WASTE MANAGEMENT ALTERNATIVES AND EVALUATION

Description of the Alternative

Several alternatives are considered for solid waste management in Jackson County. Two fundamental approaches (i.e., alternatives) were considered. Due to past solid waste management practices, the initial alternatives considered were a system controlled by the County versus a system controlled by the private sector. Using the 'decision table' (see below), the Solid Waste Management Planning Committee defined each alternative as a set of 'decision choices' across all the 'decision areas'. After those alternatives were defined, it was clear that each possessed certain strengths missing in the other. Consequently, the Solid Waste Management Planning Committee built a third alternative—using the 'decision table'—which sought to combine wherever possible the strengths of Alternatives A and B.

Decision Table Template

Dispose at Landfill(s) Located	Landfill Sites to include in the selected system	Flow Control In Effect	Landfill Sites to Utilize Chosen By	Solid Waste Collection & Transport Done By	Education Performed By	Education Funded By	Utilize Transfer Facilities	Transfer Facility Site Selection	Method to Increase Amount of Solid Waste Collected	Method to Increase Amount of Solid Waste Recycled	Collecting Recyclable Solid Waste
Entirely Inside Jackson County	Establish New County Owned & Operated Landfill	Yes	County Government	County Run Organization	Full Time County Employee	Portion of County Disposal Fee	County Owned and Operated	County Selects	Mandated by County	Mandated by County	Separate Containers & Separate Trucks
Entirely Outside Jackson County	McGill Road Privately Operated	No	Private Haulers	Private Haulers Competing for Individual Customers	Part Time County Employee	Surcharge on Private Haulers	Township Owned and Operated	County Recommends	Advocated by County	Advocated by County	Bagged Separately, Same Container, Same Truck
Both Inside and Outside Jackson County	Liberty Landfill Privately Operated	-	-	Private Haulers Under County Contracts	County Contracts Service from Existing Local Organization	Surcharge on Private Landfills	Privately Owned and Operated	Owner Selects	Allow Mandate by Municipality	Advocated by Private Haulers	Mixed at Source, Separated After Collected
-	Out of County Sites	-	-	Private haulers under municipal contracts	Private Haulers at Their Discretion	County Budget	Municipal cleanup events	None	Advocated by Municipality	Financial Incentives by Private Haulers (Pricing)	Other Innovative Methods
-	-	-	-	-	-	Private Hauler Self Funded	None	-	No Mandate	-	-
-	-	-	-	-	-	Pursue Grants	-	-	-	-	-

Alternative A, 'The County Does It All', is built around the premise that exercising county government's power to control, compel, prohibit, and charge is necessary for solid waste management to be successful. Alternative B, 'The Free Market (All Private)', is built around the premise that private enterprise and free market forces can deliver the best results in solid waste

management. Alternative C, 'The Best of Both Hybrid', is built around the premise that neither government nor the private sector can deliver the best results in solid waste management. Combining the strengths and capabilities of both approaches enables a better outcome than could be achieved by either one alone. Each alternative addresses the following 'decision areas' (i.e., questions).

- Will solid waste be disposed of in landfills located inside and/or outside of the County and what landfills will be included in the selected system?
- Will a flow control ordinance be in effect and who will choose the landfills to be utilized?
- Who will collect and transport solid waste?
- Who will provide and fund solid waste education?
- How will transfer facilities be utilized and who will choose the transfer facilities to be utilized?
- What methods will be used to increase the amount of solid waste collected?
- What methods will be used to increase the amount of solid waste recycled?
- How will recyclable solid waste be collected?

Alternative A 'The County Does It All'

Alternative A is built around the premise that exercising county government's power to control, compel, prohibit, and charge is necessary for solid waste management to be successful. This approach would have all solid waste generated within Jackson County directed to a County-owned and -operated landfill, enforced by a County ordinance. Solid waste collection and transport would be provided by a County-run organization. Transfer facilities would be owned and operated by the County. Education would be performed by a full-time County employee funded by a portion of disposal fees. Recycling would be mandated by Jackson County as well as how it is collected and transported.

Alternative B 'The Free Market (All Private)'

Alternative B is built around the premise that private enterprise and free market forces can deliver the best results in solid waste management. This approach would have private haulers competing for individual customers and transporting solid waste for disposal in landfills located inside or outside Jackson County, at their own discretion. Transfer facilities would be privately owned and operated. Any education would be performed and funded by private haulers, utilizing grants when available. There would be no flow control or other mandates from county government to increase the amount of solid waste collected. Any recycling would be encouraged and advocated by private haulers, with price incentives being a possible method. Recycling would be up to the private sector, including how it is collected and transported.

Alternative C 'The Best of Both Hybrid'

Alternative C is built around the premise that neither government nor the private sector can deliver the best results in solid waste management. Combining the strengths and capabilities of both approaches enables a better outcome than could be achieved alone. Private haulers would dispose of solid waste at landfills of their choosing, both inside and outside Jackson County. They would also compete for private customers, but could also have municipal contracts.

Education would be performed by a part-time Jackson County employee, by contract with an existing local organization, and/or by private haulers. County education would be funded through its general fund and hauler efforts would be self-funded. Transfer facilities could be operated by township governments as well as privately owned and municipalities could also schedule special collection events. Increasing the amount of recyclables and solid waste collected would be advocated by both Jackson County and private haulers and encouraged through private hauler price incentives. Private haulers would also choose how to collect and transport recyclables.

Evaluation of Alternatives

Each of the three alternatives was evaluated against ten criteria: two major purposes required by the State of Michigan regarding compliance with Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act (PA 451 of 1994, MCL 324.11501 *et seq.*), the six updated *Jackson County Solid Waste Management Plan* goals, and sets of project management and process quality attributes.

Part 115, Solid Waste Management, Purposes

- 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.
- 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.

Updated *Jackson County Solid Waste Management Plan* Goals

- Provide protection for the public health, safety, and welfare of the citizens of the County as it relates to the management of solid waste.
- Protect the County's natural resources from pollution and contamination that could result from improper or mismanaged waste disposal.
- Recognize solid waste as a resource that should be managed to promote economic vitality, ecological integrity, and improved quality of life in a way that fosters sustainability.
- Promote and use public education, marketing, and outreach to foster a better understanding and encourage broader participation in achieving the goals and objectives of this plan.
- Maintain an efficient and environmentally sound waste collection system with adequate public and/or private facilities, including transportation.
- Develop and implement an on-going solid waste planning, evaluation and management process.

Project Management and Process Quality Attributes

- Implementation and operation cost, implementation and operation complexity/difficulty, length of time to implement, and risk of failure during implementation or operation.
- Process effectiveness, process efficiency, and process flexibility/adaptability when circumstances change.

The Solid Waste Management Planning Committee considered each of the alternatives against each of these criteria and ranked them as excellent, good, fair, or poor.

Evaluation Criteria	Alternative A	Alternative B	Alternative C
Resource Use	good	good	good
Prevent Adverse Effects	good	good	good
Protect Health, Safety, Welfare	good	good	good
Protect Natural Resources	excellent	good	good
Solid Waste as a Resource	good	good	excellent
Promote Vitality, Ecology, Quality, Sustainability	good	good	excellent
Efficient and Sound Collection System	fair	good	excellent
Planning, Evaluation, Management Process	good	good	good
Cost, Complexity, Time to Implement, Risk	poor	excellent	good
Effectiveness, Efficiency, Flexibility	fair	good	excellent

Alternative C is the solid waste management system selected by the Solid Waste Management Planning Committee for Jackson County.

This page was left intentionally blank

THE SELECTED SOLID WASTE MANAGEMENT SYSTEM

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

Alternative C—'The Best of Both Hybrid'—is described below, utilizing the 'decision areas' and 'decision choices' identified in the 'decision table'.

- **Will solid waste be disposed of in landfills located inside and/or outside of the County and what landfills will be included in the selected system?**

  Solid waste generated in Jackson County may be disposed of in landfills located inside and outside of Jackson County. The McGill Road (Type II) and Liberty Environmental Landfill (Type III)—which are located in Jackson County—are included in the selected system. Various landfills located outside of the County which are utilized regularly by trash haulers are also included in the selected system. The plan does not foresee any need for a new landfill to be located within the County.

- **Will a flow control ordinance be in effect and who will choose the landfills to be utilized?**

  No flow control ordinance will be in effect and trash haulers will choose the landfills where the trash they collect is deposited, provided the county in which a landfill is located is listed in Table 2-A—Current Export Volume Authorization of Solid Waste—of the *Jackson County Solid Waste Management Plan*.

- **Who will collect and transport solid waste?**

  Solid waste will be collected and transported by private sector trash haulers. Throughout most of Jackson County, trash haulers will compete directly for individual customers (i.e. households and businesses). However, local governments with appropriate authority may evaluate and implement a contract or agreement with a hauler(s).

- **Who will provide and fund solid waste education?**

  Jackson County will hire a part-time employee and/or contract with an existing local organization to develop and execute a solid waste education program. The program will be funded through the County's general fund on an annual basis. Trash haulers and other private sector organizations involved in solid waste management may also provide educational programs to their customers, at their own discretion and expense. However, the County and the private sector may also pursue grants to fund solid waste education.

- **How will transfer facilities be utilized and who will choose the transfer facilities to be utilized?**

  Municipalities may own and operate transfer facilities in the County so long as they are included in or consistent with the Plan; Rives and Henrietta Townships already operate such facilities. Transfer facilities may also be owned and operated by the private sector; Modern Waste operates a private facility in Napoleon Township. Northwest Refuse Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson) operates a private facility in Blackman Township. Individual households and businesses will make the decision to utilize transfer facilities in general as well as a specific facility. The County and municipalities may also organize various community clean-up events (e.g., electronics and other household items, unused pharmaceuticals, batteries, etc.).

- **What methods will be used to increase the amount of solid waste collected?**

  Jackson County will not enact a mandate to increase the proper collection and disposal of solid waste although it may be an advocate. The plan does not bar municipalities from enacting their own mandates or to become advocates of the practice.

- **What methods will be used to increase the amount of solid waste recycled?**

  Jackson County will not enact a mandate to increase the amount of recycled solid waste although it may be an advocate. The private sector may also advocate for increased recycling by providing the option to their customers as well as providing financial incentives (e.g., a customer may require a smaller less costly container if more is recycled). Those municipalities which contract for trash hauling services on behalf of their constituents may also advocate by including recycling in that service.

- **How will recyclable solid waste be collected?**

  The plan allows for all of the current local collection practices for recyclables: separate containers and separate trucks; bagged separately but same container or truck; and mixed at source and separated after collection. However, it also allows for other innovative methods to be introduced as they become available.

Alternative C: The Best of Both Hybrid

Dispose at Landfill(s) Located	Landfill Sites to include in the selected system	Flow Control In Effect	Landfill Sites to Utilize Chosen By	Solid Waste Collection & Transport Done By	Education Performed By	Education Funded By	Utilize Transfer Facilities	Transfer Facility Site Selection	Method to Increase Amount of Solid Waste Collected	Method to Increase Amount of Solid Waste Recycled	Collecting Recyclable Solid Waste
Entirely Inside Jackson County	Establish New County Owned & Operated Landfill	Yes	County Government	County Run Organization	Full Time County Employee	Portion of County Disposal Fee	County Owned and Operated	County Selects	Mandated by County	Mandated by County	Separate Containers & Separate Trucks
Entirely Outside Jackson County	McGill Road Privately Operated	No	Private Haulers	Private Haulers Competing for Individual Customers	Part Time County Employee	Surcharge on Private Haulers	Township Owned and Operated	County Recommends	Advocated by County	Advocated by County	Bagged Separately, Same Container, Same Truck
Both Inside and Outside Jackson County	Liberty Landfill Privately Operated	-	-	Private Haulers Under County Contracts	County Contracts Service from Existing Local Organization	Surcharge on Private Landfills	Privately Owned and Operated	Owner Selects	Allow Mandate by Municipality	Advocated by Private Haulers	Mixed at Source, Separated After Collected
-	Out of County Sites	-	-	Private haulers under municipal contracts	Private Haulers at Their Discretion	County Budget	Municipal cleanup events	None	Advocated by Municipality	Financial Incentives by Private Haulers (Pricing)	Other Innovative Methods
-	-	-	-	-	-	Private Hauler Self Funded	None	-	No Mandate	-	-
-	-	-	-	-	-	Pursue Grants	-	-	-	-	-

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 Jackson 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
Jackson	Allegan				P
Jackson	Barry				P
Jackson	Berrien				P
Jackson	Calhoun				P
Jackson	Cass				P
Jackson	Clinton				P
Jackson	Eaton				P
Jackson	Genessee				P
Jackson	Gratiot				P
Jackson	Hillsdale				P
Jackson	Ingham				P
Jackson	Ionia				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.

Table 1-A (cont'd)
CURRENT IMPORT VOLUME AUTHORIZATION OF SOLID WASTE

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME	AUTHORIZED QUANTITY/DAILY	AUTHORIZED QUANTITY/ANNUAL	AUTHORIZED CONDITIONS
Jackson	Kalamazoo				P
Jackson	Lenawee				P
Jackson	Livingston				P
Jackson	Macomb				P
Jackson	Monroe				P
Jackson	Montcalm				P
Jackson	Muskegon				P
Jackson	Newaygo				P
Jackson	Oakland				P
Jackson	St. Clair				P
Jackson	St. Joseph				P
Jackson	Sanilac				P
Jackson	Shiawassee				P
Jackson	Van Buren				P
Jackson	Washtenaw				P
Jackson	Wayne				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

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

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

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
Jackson	Allegan				P
Jackson	Barry				P
Jackson	Berrien				P
Jackson	Calhoun				P
Jackson	Cass				P
Jackson	Clinton				P
Jackson	Eaton				P
Jackson	Genesee				P
Jackson	Gratiot				P
Jackson	Hillsdale				P
Jackson	Ingham				P
Jackson	Ionia				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.

Table 2-A (cont'd)
CURRENT EXPORT VOLUME AUTHORIZATION OF SOLID WASTE

EXPORTING COUNTY	IMPORTING COUNTY	FACILITY NAME	AUTHORIZED QUANTITY/DAILY	AUTHORIZED QUANTITY/ANNUAL	AUTHORIZED CONDITIONS
Jackson	Kalamazoo				P
Jackson	Lenawee				P
Jackson	Livingston				P
Jackson	Macomb				P
Jackson	Monroe				P
Jackson	Montcalm				P
Jackson	Muskegon				P
Jackson	Newaygo				P
Jackson	Oakland				P
Jackson	St. Clair				P
Jackson	St. Joseph				P
Jackson	Sanilac				P
Jackson	Shiawassee				P
Jackson	VanBuren				P
Jackson	Washtenaw				P
Jackson	Wayne				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

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

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-12 through III-22 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.

This list is not all inclusive:

Type II Landfill:

McGill Road Landfill
Granger Wood Street Landfill
Granger Grand River Avenue Landfill
C & C Expanded Sanitary Landfill
Advanced Disposal Services Arbor Hills Landfill, Inc.
Carleton Farms Landfill
Woodland Meadows RDF – Van Buren

Type III Landfill:

Liberty Environmentalists Landfill

Incinerator:

None

Waste-to-Energy Incinerator:

None

Type A Transfer Facility:

Modern Waste Systems
Northwest Refuse Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)

Waste Piles:

None

Type B Transfer Facility:

Henrietta Township
Rives Township

Processing Plant:

Modern Waste Systems
Northwest Refuse Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)

Other:

None

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type II Landfill

Facility Name: McGill Road Landfill

County: Jackson Location: Town: 2S Range: 1E &1W Section(s): 19 & 24

Map identifying location included in Map II-1: ☒ Yes ☐ No

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

☐ Public ☒ Private Owner: Waste Management of Michigan, Inc.

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☐	Special Wastes*
☐	Pending		

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

Site does not accept friable asbestos

Site Size:

Total area of facility property:	134.08	acres
Total area sited for use:	134.08	acres
Total area permitted:	134.08*	acres
Operating:	30.26	acres
Not excavated:		acres
Closed	10.87	acres
Isolation and Ancillary	93.04	acres

* Permit No. 4073, issued on August 23, 2005, identifies 41.1 acres permitted for waste disposal. Construction for waste disposal beyond this acreage will require a new construction permit.

Current capacity:	838,000	☐ tons or ☒ cubic yards per day
Estimated lifetime:	13	years
Estimated days open per year:		270 days
Estimated yearly disposal volume:	50,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

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

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type II Landfill

Facility Name: Granger Wood Street Landfill

County: Clinton Location: Town: 5N/4N Range:2W
Section(s): 34/3

Map identifying location included in Map II-1: ☐ Yes ☒ No

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

☐ Public ☒ Private Owner: Granger Waste Management Company and Granger Meadows

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Accepts special wastes as authorized by Part 115 of Act 451

Site Size:

Total area of facility property:	416.9	acres
Total area site for use:	416.9	acres
Total area permitted:	229.7	acres
Operating:	127.2	acres
Not excavated:	102.5	acres

Current capacity:	19,432,449	☐ tons or ☒ cubic yards per day
Estimated lifetime:	25.97	years
Estimated days open per year:		312 days
Estimated yearly disposal volume:	748,180	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	8	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type II Landfill

Facility Name: Granger Grand River Avenue Landfill

County: Clinton Location: Town: 5N Range: 3W Section(s): 29

Map identifying location included in Map II-1: ☐ Yes ☒ No

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

☐ Public ☒ Private Owner: Granger Land Development Co.

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Accepts special wastes as authorized by Part 115 of Act 451

Site Size:

Total area of facility property:	181	acres
Total area site for use:	181	acres
Total area permitted:	85.7	acres
Operating:	67.8	acres
Not excavated:	17.9	acres

Current capacity:	5,431,088	☐ tons or ☒ cubic yards per day
Estimated lifetime:	433.45	years
Estimated days open per year:	on call/by appt.	days
Estimated yearly disposal volume:	12,530	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	3.2	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type II Landfill

Facility Name: C & C Expanded Sanitary Landfill

County: Calhoun Location: Town: 1S Range: 6W Section(s): 28

Map identifying location included in Map II-1: ☐ Yes ☒ No

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

☐ Public ☒ Private Owner: Republic Services of Michigan, LLC

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Friable asbestos.

Site Size:

Total area of facility property:	749.0	acres
Total area site for use:	223.0	acres
Total area permitted:	116.7	acres
Operating:	10.0	acres
Not excavated:	0.0	acres

Current capacity:	36,384,728	☒ tons or ☐ cubic yards per day
Estimated lifetime:	4.6	years
Estimated days open per year:		313 days
Estimated yearly disposal volume:	450,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	32,800	scfm
Waste-to-energy incinerators:	_____	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type II Landfill

Facility Name: Advanced Disposal Services Arbor Hills Landfill, Inc.

County: Wayne Location: Town: 1S Range: 8E Section(s): 16

Map identifying location included in Map II-1: ☐ Yes ☒ No

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

☐ Public ☒ Private Owner: Advanced Disposal

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Friable and non-friable asbestos, foundry sand, ash, wastewater bio-solids, sludge, inert waste

Site Size:

Total area of facility property:	686.3	acres
Total area site for use:	337.2	acres
Total area permitted:	242.4	acres
Operating:	18.0	acres
Not excavated:	22.0	acres
Current capacity:	64,310,000	☒ tons or ☐ cubic yards per day
Estimated lifetime:	11	years
Estimated days open per year:	313	days
Estimated yearly disposal volume:	2,168,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

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

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type II Landfill

Facility Name: Carleton Farms Landfill

County: Wayne Location: Town: 4S Range: 8E Section(s): 36

Map identifying location included in Map II-1: ☐ Yes ☒ No

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

☐ Public ☒ Private Owner: Republic Services of Michigan, LLC

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Sludges, Ash, Auto Fluff

Site Size:

Total area of facility property:	664.1	acres
Total area site for use:	426.9	acres
Total area permitted:	374.6	acres
Operating:	241.8	acres
Not excavated:	170.4	acres
Current capacity:	6,200	☒ tons or ☐ cubic yards per day
Estimated lifetime:	38	years
Estimated days open per year:		286 days
Estimated yearly disposal volume:	1,780,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

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

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type II Landfill

Facility Name: Woodland Meadows RDF – Van Buren

County: Wayne Location: Town: 3S Range: 8E Section(s): 1

Map identifying location included in Map II-1: ☐ Yes ☒ No

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

☐ Public ☒ Private Owner: Waste Management of Michigan, Inc.

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☐	Special Wastes*
☐	Pending		

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

_____

_____

Site Size:

Total area of facility property:	269.0	acres
Total area site for use:	206.2	acres
Total area permitted:	206.2	acres
Operating:	156.2	acres
Not excavated:	0.0	acres
Current capacity:	16,340,000	☐ tons or ☒ cubic yards per day
Estimated lifetime:	10	years
Estimated days open per year:		307 days
Estimated yearly disposal volume:	1,600,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

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

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type III Landfill

Facility Name: Liberty Environmentalist Landfill

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

Map identifying location included in Map II-1: ☒ Yes ☐ No

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

☐ Public ☒ Private Owner: Liberty Environmentalists

Operating Status		Waste Types Received	
☒	Open	☐	Residential
☐	Closed	☐	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Foundry sand, transfer of recycling

Site Size:

Total area of facility property:	339	acres
Total area site for use:	339	acres
Total area permitted:	339*	acres
Operating:	34.0	acres
Not excavated:	30.2	acres
Closed	17.46	acres
Isolation and Ancillary	257.34	acres

* Permit No. 4163, issued on October 28, 2013, identifies 82.1 acres permitted for waste disposal. Construction for waste disposal beyond this acreage will require a new construction permit.

Current capacity:	500	☒ tons or ☐ cubic yards per day
Estimated lifetime:	50	years
Estimated days open per year:		300 days
Estimated yearly disposal volume:	125,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

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

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type A Transfer Facility & Processing Plant

Facility Name: Modern Waste Systems

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

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: _All authorized landfills in the County Plan

☐ Public ☒ Private Owner: _Modern Waste Systems

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☐	Contaminated Soils
☐	Open, but Closure	☐	Special Wastes*
☐	Pending		

*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:	3	acres
Total area permitted:	3	acres
Operating:	_____	acres
Not excavated:	_____	acres

Current capacity:	500	☒ tons or ☐ cubic yards per day
Estimated lifetime:	_____	years
Estimated days open per year:		300 days
Estimated yearly disposal volume:	105,000	☒ tons or ☐ cubic yards

(if applicable)
Annual energy production:

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

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type A Transfer Facility & Processing Plant

Facility Name: Northwest Refuse, Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)

County: Jackson Location: Town: 2S Range: 1W Section(s): 22

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: Granger Wood Street Landfill or Granger Grand River Avenue Landfill.

☐ Public ☒ Private Owner: Northwest Refuse, Inc. (leased and operated by Granger

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☒	Commercial
☒	Licensed	☒	Industrial
☐	Unlicensed	☒	Construction and Demolition
☒	Construction Permit	☒	Contaminated Soils
☐	Open, but Closure	☒	Special Wastes*
☐	Pending		

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

Accepts special wastes as authorized by Part 115 of Act 451. Requires review and approval by operator.

Site Size:

Total area of facility property:	29.27	acres
Total area site for use:	29.27	acres
Total area permitted:	29.27	acres
Operating:	9.65	acres
Not excavated:	N/A	acres
Current capacity:	~250	☒ tons or ☐ cubic yards per day
Estimated lifetime:	N/A	years
Estimated days open per year:	312	days
Estimated yearly disposal volume:	130,000	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

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

Return to
Amendment
Letter

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type B Transfer Facility

Facility Name: Henrietta Township Transfer Facility

County: Jackson Location: Town: 1S Range: 1E Section(s): 16

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: _All authorized landfills in the County Plan

☒ Public ☐ Private Owner: Henrietta Township

Operating Status	Waste Types Received
☒ Open	☒ Residential
☐ Closed	☒ Commercial
☒ Licensed	☒ Industrial
☐ Unlicensed	☒ Construction and Demolition
☐ Construction Permit	☐ Contaminated Soils
☐ Open, but Closure	☐ Special Wastes*
☐ Pending	

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

Site Size:

Total area of facility property:	30	acres
Total area site for use:	1	acres
Total area permitted:	1	acres
Operating:		acres
Not excavated:		acres
Current capacity:	170	☐ tons or ☒ cubic yards per day
Estimated lifetime:		years
Estimated days open per year:		52 days
Estimated yearly disposal volume:	3,640	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

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

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type B Transfer Facility

Facility Name: Rives Township Transfer Facility

County: Jackson Location: Town: 1S Range: 1W Section (s): 15

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: All authorized landfills in the County Plan

☒ Public ☐ Private Owner: Rives Township

Operating Status	Waste Types Received
☒ Open	☒ Residential
☐ Closed	☒ Commercial
☐ Licensed	☒ Industrial
☒ Unlicensed	☒ Construction and Demolition
☐ Construction Permit	☐ Contaminated Soils
☐ Open, but Closure	☐ Special Wastes*
☐ Pending	

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

Site Size:

Total area of facility property:	5.25	acres
Total area site for use:	1+	acres
Total area permitted:		acres
Operating:		acres
Not excavated:		acres
Current capacity:	160	☐ tons or ☒ cubic yards per day
Estimated lifetime:		years
Estimated days open per year:		74 days
Estimated yearly disposal volume:	6,510	☐ tons or ☒ cubic yards

(if applicable)
Annual energy production:

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

FACILITY DESCRIPTIONS

Facility Type: Type B Transfer Facility

Facility Name: Liberty Environmentalist Landfill

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

Map identifying location included in Map II-1: ☒ Yes ☐ No

If facility is an incinerator or a transfer facility, list the final disposal site and location for incinerator ash or transfer facility wastes: All authorized landfills in the County Plan

☐ Public ☒ Private Owner: Liberty Environmentalists

Operating Status		Waste Types Received	
☒	Open	☒	Residential
☐	Closed	☐	Commercial
☐	Licensed	☐	Industrial
☒	Unlicensed	☐	Construction and Demolition
☐	Construction Permit	☐	Contaminated Soils
☐	Open, but Closure	☐	Special Wastes*
☐	Pending		

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

Site Size:

Total area of facility property:	339	acres
Total area site for use:	339	acres
Total area permitted:		acres
Operating:		acres
Not excavated:		acres
Closed		acres
Isolation and Ancillary		acres

Current capacity:	100	☐ tons or ☒ cubic yards per day
Estimated lifetime:		years
Estimated days open per year:	300	days
Estimated yearly disposal volume:	4,500	☐ 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. All solid waste is currently collected by private haulers. It is expected that private waste haulers will continue to play a primary part in the collection and transport of waste.

Collection

There are no governmentally operated municipal collection systems in Jackson County. All of the haulers are private operators. Three villages (Concord, Cement City, and Parma) and the Lake Columbia Association (Columbia Township) contract with private haulers to provide residential service.

Below is a list of the collection services/ haulers within Jackson County.

- Republic Services of Michigan, LLC
- Bradford Service
- Bulldog Refuse
- Buckner's Garbage Service
- Bulldog Refuse
- Cyclone Environmental
- Emmons Service Inc.
- Get it Out of Here Co.
- Ideal Disposal Inc.
- Liberty Environmentalists Landfill
- Granger Recycling & Disposal Center of Jackson
- J's Hauling
- Cascade Recycling
- M & M Hauling
- Earl Miles
- Modern Waste Systems Inc.
- Right Away Hauling & Demolition Inc.
- Rubbish Removal Service
- U-Call We Haul-Grama PLT Hauling
- Waste Management Inc.

Transportation

The major routes used to transport refuse from the collection areas to the disposal sites are state highways (built to all-season standards), other all-season routes, and other county primary roads and city major streets (please see Map II-1). Road weight restrictions on routes which are not built to all-season standards, especially when frost laws are in effect, can have a significant impact on the movement of solid waste because these are generally high-density loads. Weigh limitations are set by the State of Michigan in the Motor Vehicle Traffic Code. The enforcement agency is the Commercial Vehicle Enforcement Division of the Michigan State Police.

There are no locally imposed width limitations on these highways other than all vehicles greater than 8 feet, 6 inches, must obtain a permit from the Jackson County Department of Transportation for an oversized load.

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	5th year	10th year
Public education and promotional activities	11,200	19,900	28,800

Projections were based upon a goal of increasing recycling/waste reduction from 6% of the waste stream to 15%

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	5th year	10th year

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.

Most of the materials found in MSW can be recycled somewhere. Glass, plastics, motor oil, cardboard, newspaper, office paper, wood, grass clippings leaves and metals can all be recycled within the county. Most of the recycling requires the consumer to separate the waste. Drop-off and curbside collection opportunities exist based on household density and service offerings from the private and public sectors.

There are no ordinances that require haulers to collect recyclable materials or for consumers to sort and handle recyclables outside of household disposal waste. The Selected System does not include any for the future.

☒ 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:

☒ 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:

☒ 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-31 through III-35 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-36 through III-38 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.

In Jackson County recycling is handled by private haulers and by Recycling Jackson and other local non-profit groups engaged in recycling.

Private Haulers.

The use of (and dependence on) private haulers is part of the current system and is continued into the selected system. This is because the private waste haulers have primary responsibility for collecting and transporting waste. Individual residents and business pay them a fee for providing waste management services offered.

The Selected System includes the continuation and possible expansion of recycling by private haulers. The haulers will continue to be responsible for designing their own recycling and/or composting programs, including designing the types of materials to be collected and the collection methods and equipment to be used. The volume of waste targeted for recovery by these recycling and composting programs is that which will reduce landfilling in Jackson County and elsewhere.

Finally, while recovery of either source or site separated materials is acceptable, program developers are encouraged to include curbside collection of source separated materials in their program design because of the higher recovery rates achievable through such a program.

Recycling Jackson

Recycling Jackson will be encouraged to continue operating its recycling drop-off site and to continue recycling education.

Conservation District

The Conservation District is expanding recycling efforts in Jackson County. These efforts include working with local schools to reduce food and classroom waste such as milk cartons, paper, plastic beverage bottles, and cardboard. Efforts are also being focused on

developing relationships with event locations, such as the fairgrounds, to maintain a positive presence within the community. The Conservation District is also encouraging an increase in the amount of household hazardous waste properly recycled.

Jackson County

Recycling Jackson, the Jackson County Health Department, and the Jackson County Conservation District work together to sponsor an annual household hazardous waste disposal day. County residents may bring certain items to a designated site for proper disposal.

City of Jackson

The City of Jackson contracts the collection of leaves from property owners. The City is under the impression that the haulers contracted to collect those leaves are composting them, although there is no requirement to do so.

SELECTED SYSTEM

TABLE III-1

RECYCLING:

Program Name	Service Area	Public or Private	Collection Point	Collection Frequency	Materials Collected	Program Management Responsibilities		
						Development	Operation	Evaluation
Recycling Jackson	Jackson County	Private	d	w	A,B,C,D,E,F	4	4	4
Emmons Services	Jackson County	Private	d	d	A,B,C,D,E,F	5	5	5
Modern Waste	Jackson County	Private	d	d	A,B,C,D,E,F	5	5	5
Republic Services	Jackson County	Private	d	d	A,B,C,,E,F	3	3	3
Henrietta Township	Jackson County	Public	d	w	A,B,D,E,F	3	3	3
Rives Township	Rives Township	Public	d	w	A,B,C,D,E,F	3	3	3

(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; 5 = Private Owner/Operator; 6 = Other

(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.

TABLE III-1 (cont'd)

Program Name	Service Area	Public or Private	Collection Point	Collection Frequency	Materials Collected	Program Management Responsibilities		
						Development	Operation	Evaluation
Omni Source	Jackson County	Private	d	d	CFD	3	3	3
Waste Management	Jackson County	Private	d	d	CFJ	5	5	5
Liberty Environmentalist	Jackson County	Private	d	d	D,F	5	5	5
Northwest Refuse Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)	Jackson County	Private	d	d	A,B,C,D,E,F,	3	3	3
Grass Lake Township	Grass Lake Township	Public	d	d	A,B,C,D,E	3	5	3
Leoni Township	Leoni Township	Public	d	d	A,B,C,D,E	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; 5 = Private Owner/Operator; 6 = Other

(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.

Return to
Amendment
Letter

SELECTED SYSTEM

TABLE III-2

COMPOSTING:

Program Name	Service Area	Public or Private	Collection Point	Collection Frequency	Materials Collected	Program Management Responsibilities		
						Development	Operation	Evaluation
Emmons Service	Jackson County	Private*	d	d	G,L	5	5	5
Liberty Environmentalist	Jackson County	Private	d	d	G,L,W	5	5	5
City of Jackson	City of Jackson	Public**						

* Emmons Service is currently applying for a composting permit.
** This facility is no longer operating.

(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; 5 = Private Owner/Operator; 6 = Other
(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.

SELECTED SYSTEM

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	Public or Private	Collection Point	Collection Frequency	Materials Collected	Program Management Responsibilities		
						Development	Operation	Evaluation
Household Hazardous Waste Program	Jackson County	Public	Collection Point	By appointment only	AR, A, AN, B,2,C,P,PS	2	2	2
Emmons Service	Jackson County	Private	d	d	U,B1	5	5	5
Liberty Environmentalist	Jackson County	Private	d	d	UP,B1	5	5	5
Henrietta Township	Jackson County	Public	d	d	B1	6	6	6
Rives Township	Rives Township	Public	d	d	B1	6	6	6
Omni Source	Jackson County	Private	d	d	B1	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; 5 = Private Owner/Operator; 6 = Other

(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-3 (cont'd)

Program Name	Service Area	Public or Private	Collection Point	Collection Frequency	Materials Collected	Program Management Responsibilities		
						Development	Operation	Evaluation
Taylor Rental	Jackson County	Private	d	d	B2	5	5	5
K-Mart	Jackson County	Private	d	d	B1	5	5	5
Autoworks	Jackson County	Private	d	d	UA	5	5	5
Jenk's Oil	Jackson County	Private	d	d	U	5	5	5
Valvoline Instant Oil Change	Jackson County	Private	d	d	U	5	5	5
T.C.'s Garage	Jackson County	Private	d	d	AN,UA	d	d	d

(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; 5 = Private Owner/Operator; 6 = Other

(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

TABLE III-4

PROPOSED RECYCLING:

Program Name	Service Area	Public or Private	Collection Point	Collection Frequency	Materials Collected	Program Management Responsibilities		
						Development	Operation	Evaluation
N/A								

SELECTED SYSTEM

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
N/A								

SELECTED SYSTEM

TABLE III-6

PROPOSED SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS:

Program Name	Service Area	Public or Private	Collection Point	Collection Frequency	Materials Collected	Program Management Responsibilities		
						Development	Operation	Evaluation
N/A								

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:

Recycling Jackson
Jackson County Conservation District

Other:

Jackson County Board of Public Works
Emmons Service
Modern Waste
Republic Services of Michigan, LLC
Northwest Refuse Inc. (operated under agreement by Granger Recycling & Disposal Center of Jackson)
Henrietta Township
Rives Township
Waste Management
Liberty Environmentalists
Omni Source

SELECTED SYSTEM

PROJECTED DIVERSION RATES:

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

Collected Material	Projected Annual Tons Diverted		
	Current	5th Year	10th Year
A. TOTAL PLASTICS:	1,120	1,990	2,880
B. NEWSPAPER + D.	5,488	9,751	14,112
C. CORRUGATED CONTAINERS			
D. TOTAL OTHER PAPER:	See "B"		
E. TOTAL GLASS:	896	1,592	2,304
F. OTHER MATERIALS	1,568	2,786	4,032
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:	1,008	1,791	2,592
K. TIRES:			
L. TOTAL METALS:	1,120	1,990	2,880
F3.			
F4.			

Current diversions based on the current estimate of total waste that is recycled(page II-I) and proportioned by the % component of the waste stream (from the paper, Official Position of Recycling Jackson. - Paper = 49%, Plastic = 10%, Glass = 8%, Food = 9%, other = 14%.

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.		
G. GRASS AND LEAVES		

Collected Material	In-State Markets	Out-of-State Markets
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, ot (email & website)	p,b,i,s (K-12)	EG (Jackson County Conservation District)

(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.

TABLE III-7

Management Components	Timeline
Landfilling	Ongoing
Waste hauling	Ongoing
Educational programs	Ongoing
Hazardous waste collection day	Ongoing
Transfer facilities (Henrietta and Rives Townships)	Ongoing
Recycling drop-off (Recycling Jackson / private haulers)	Ongoing
Recycling drop-off centers	Ongoing
Composting	Ongoing

SELECTED SYSTEM

SITING REVIEW PROCEDURES

AUTHORIZED DISPOSAL AREA TYPES

Type II and type III landfills, if required by the Department of Environmental Quality (DEQ) for capacity purposes, transfer facilities and processing plants other than incinerators may be sited by this plan, but the goal of this plan is to reduce landfilling to a minimum. No incinerators maybe sited by this plan.

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.

The Jackson County Board of Commissioners shall have ultimate responsibility for ensuring that adequate waste disposal areas are provided in a timely manner to meet the County's waste disposal needs and for determining whether a proposal to establish a new disposal area is consistent with the Jackson County Solid Waste Management Plan.

The following procedure shall be used to determine if a proposal to develop a new solid waste disposal area is consistent with the Jackson County Solid Waste Management Plan. The Jackson County Board of Public Works shall be responsible for initial review of such proposals. All steps must be completed within the given time-frame, otherwise, if no decision is made, it will act as an automatic approval upon completion of the time-frame and move to the subsequent step in the process.

The sponsor of a proposed solid waste disposal area shall make a request in writing to the County Board of Public Works asking for a determination of consistency. The request shall include at a minimum the following information:

- The names and addresses of the project sponsor, the owners of the proposed facility and of the property where the disposal area will be sited, the operators of the proposed disposal area if different from the owners.
- A brief written description of the type of disposal area proposed for construction.
- A description of similar facilities operated elsewhere by any of the following: the project sponsor, the owners of the property, and/or facility, and the proposed operators of the facility.
- A written description of the anticipated type and quantity of waste to be managed and of the geographic area, by county and state, from which the waste will be obtained.
- A written description of how the owners of the proposed disposal area will ensure compliance with the goals of this plan.
- A site plan of the proposed disposal area which shall include at a minimum a map

at a scale of: one (1) inch = two hundred (200) feet showing the property boundaries of the proposed disposal area, and the location of all features from the *Solid Waste Disposal Area Siting Constraints* mapping, which are either on site or within five hundred (500) feet of the proposed site. If the proposed disposal area is a landfill, the boundaries of the area which will receive fill must also be shown on the site plan. The site plan must be presented on a sheet no larger than twenty-four (24) inches by thirty-six (36) inches.

- If areas mapped as wetlands on the *Solid Waste Disposal Area Siting Constraints* mapping are found on site or within five hundred (500) feet of the site, the County Board of Public Works will require that the proposal's sponsor obtain a wetlands determination from either the MDEQ or another qualified professional to confirm that no wetlands are located within the boundaries of the proposed disposal area.
- A copy of the application submitted to the MDEQ.

The County Board of Public Works shall review the request for a determination of consistency at a public meeting, within sixty (60) days of receipt, after receiving a recommendation from the DPA (Designated Planning Agency). A review meeting may be adjourned for up to thirty (30) days to allow the proposal's sponsor to gather additional information needed for the Board of Public Works to complete their review.

The County Board of Public Works shall report their findings to the County Board of Commissioners within fifteen (15) days after the review meeting, along with a recommendation to either find the proposed solid waste disposal area consistent or not consistent with the County Solid Waste Management Plan.

Within 45 days of receiving the County Board of Public Works recommendation, the County Board of Commissioners shall review, at a public meeting, the request for a determination of consistency.

In addition to the applicant, the County Board of Commissioners shall notify the following of their findings: the chief elected or appointed officials of municipalities within 2½ miles of the proposed site; the Jackson County Health Department; the Jackson County Department of Transportation; the Michigan Department of Environmental Quality; the Jackson County Drain Commissioner; and the County Board of Public Works.

Because the consistency of a proposal to develop a new waste disposal area may change with time, if within one year of receiving a determination of consistency from the County Board of Commissioners a construction permit has not been issued by the MDEQ, the project sponsor shall obtain an extension of the determination of consistency from the County Board of Commissioners.

In evaluating for consistency with the County Solid Waste Management Plan, a proposal to construct or operate a solid waste disposal area, the following shall be considered:

Type II Landfills

Any Type II Landfill developed to serve Jackson County's waste disposal needs shall be developed with the understanding that the goal of the plan is to reduce landfilling to a minimum, to be used for disposal of non-recoverable wastes, and thus the quantity of waste being landfilled

in the County will decrease with time.

Type II Landfill expansions may be sited in Jackson County at any time by the owners of the then currently operating landfills, which are serving Jackson County's waste disposal needs, provided that the landfill shall receive non-recoverable wastes from the Jackson County waste stream and the waste streams of those exporting counties listed in Table 1-A of this plan. An expansion must meet the siting criteria for a new Type II Landfill.

If the owners of the then currently operating landfills have not applied for and received a determination of consistency for an expanded Type II landfill by the time the remaining Type II Landfill capacity available to the County reaches 66 months, or if they have not applied for or received a MDEQ construction permit for an expanded Type II Landfill, which was previously found to be consistent with this plan, by the time the remaining landfill capacity available to the County reaches 4 years, the County Board of Commissioners shall assume responsibility for providing a new or expanded Type II Landfill to meet the county's waste disposal needs through one or more of the following mechanisms:

- Negotiations with the owners of the then currently operating Type II landfill, or the conversion of a Type III Landfill to a Type II Landfill for expansion of landfill capacity.
- Negotiations with officials from surrounding counties for inclusion in their solid waste management plan and use of landfill capacity in their county.
- Development of a Request for Proposals (RFP) to construct and operate a new Type II Landfill to serve Jackson County and selection of a new landfill operator based on specifications in the RFP (this may include either county or private sector ownership of landfills).

Type III Landfills

The maximum number of Type III landfills operating in Jackson shall be one. A new or expanded Type III Landfill shall be constructed to the standards for a Type II Landfill.

Transfer Facilities and Processing Plants (see definitions on Page D-7)

In evaluating proposed transfer facilities and processing plants for consistency with this plan, the following shall be considered. Type II waste shall only be transferred to other disposal areas in counties which are listed in Table 2A. Transfer facilities and processing plants will not have to prove a need but will meet the requirements of the plan and the Michigan Department of Environmental Quality (MDEQ) and may be sited at any time. The construction of transfer facilities must comply with Rule 504 (R299.4504) of the Michigan Department of Environmental Quality's rules regarding solid waste management, as authorized by Sections 11538, 11539, and 11540 of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act (PA 451 of 1994, MCL 324.11538 to 324.11540). Transfer facility and processing plant containers must be watertight. Any leachate occurring at a transfer facility or processing plant must be collected and disposed of properly. All transfer facilities and processing plants must be maintained and operated so as to be consistent with this plan.

Return to
Amendment
Letter

Solid Waste Disposal Area Siting Constraints Mapping

Eight *Solid Waste Disposal Area Siting Constraints* maps were prepared by the Region 2 Planning Commission—utilizing a GIS (geographic information system) platform and data—for this amendment to the solid waste management plan. Each map displays the characteristics of a hydrological or land use feature which should constrain the establishment of a new solid waste disposal area:

- Hydrology: (1) surface waters (i.e., lakes, ponds, rivers, streams, county drains, and wetlands); (2) floodplains; (3) wellhead protection areas; and (4) ground water recharge areas
- Land Use: (5) institutions and public lands; (6) licensed public use airports; and (7) the agricultural preservation area (as delineated in the *Jackson Community Comprehensive Plan*); (8) Primary Transport Routes

When composite maps are created by combining the first seven 'solid waste facility siting constraints' map layers, areas not suitable for hosting Type II Landfills are identified. The map layers and composite maps are represented in the plan document as Maps 3-1 through 3-11. These maps are intended for general planning purposes and need to be verified by the applicant when an application is submitted.

New and Expanded Type II Landfills

New type II Landfills must meet the following location criteria in order to be considered consistent with the plan:

Hydrology Features

1. The landfill shall not be located within five hundred (500) feet of a lake, pond, river, stream, county drain, or in a wetland regulated by Part 303, Wetlands Protection, of Act 451 unless a permit is issued.
2. The landfill shall not be located within a 100-year floodplain as defined by Rule 323.311(e) of the administrative rules of Part 31, Floodplains and Floodways, of Act 451.
3. The landfill shall not be located within the boundaries of the wellhead protection areas as defined by the Safe Drinking Water Act 399 of 1976 and its administrative rules.
4. The landfill shall not be located within the boundaries of the high and moderate ground water recharge areas as defined by the most current available map from the United States Geographical Survey.

Land Use Features

5. The landfill shall not be located within the boundaries of an institutional property or public land (unless a public institution purchases the land for such purpose).

   Nor shall the landfill be located closer than three hundred (300) feet to any area, site, or structure included on the federal or state registers of historic places or included in a local historic district.

6. The landfill shall not be located within ten thousand (10,000) feet of a licensed public use airport.

7. The landfill shall not be located within the agricultural preservation area—as delineated in the current *Jackson Community Comprehensive Plan*— unless it can be documented that at least seventy-five (75) percent of the proposed site is already utilized for nonagricultural purposes.

8. The landfill must be located on a State Highway or other Class A Road or brought up to Class A standards prior to its accepting of solid waste.

The active work area and leachate collection system of any landfill shall not be located closer than one hundred (100) feet to adjacent road rights-of-way. Nor shall the active work area and leachate collection system of any landfill be located closer than 300 feet to the property lines of residences existing at the time of issuance of a construction permit. Nor shall active work areas and leachate collection systems be located within four (4) feet of the high water mark of the ground water table (as defined by the Public Health Code (PA 368 of 1978, MCL 333.1101 *et seq*.).

Type III Landfills

New type III landfills must meet the same location criteria identified for new type II landfills in order to be considered consistent with the plan. However, the prohibition against locating a type III landfill within 10,000 feet of a licensed public use airport is suspended. The conversion of an existing type III landfill into a type II landfill will be considered a new type II landfill and must meet the siting criteria for new type II landfills and meet all pertinent DEQ regulations.

Incinerators

No incinerators or waste-to-energy incinerators (i.e., RRFs) shall be sited.

Transfer Facilities and Processing Plants

New transfer facilities and processing plants must meet the following location criteria in order to be considered consistent with the plan:

Hydrology Features

1. The transfer facility or processing plant shall not be located within five hundred (500) feet of a lake, pond, river, stream, county drain, or in a wetland regulated by Part 303, Wetlands Protection, of Act 451 unless a permit is issued. Non-storm water liquids will be properly contained onsite and managed appropriately which may include being transported to a sanitary sewer, or directly connected to a sanitary sewer, or appropriate measures are taken to prevent storm water contact with waste materials; appropriate measures may include covered containers and paved surfaces.

2. The transfer facility or processing plant shall not be located within a 100-year floodplain as defined by Rule 323.311(e) of the administrative rules of Part 31, Floodplains and Floodways, of Act 451.

3. The transfer facility or processing plant shall not be located within the boundaries

of the wellhead protection areas as defined by the Safe Drinking Water Act 399 of 1976 and its administrative rules.

4. The transfer facility or processing plant shall not be located within the boundaries of the high and moderate ground water recharge areas as defined by the most current available map from the United States Geographical Survey.

Land Use Features

Return to Amendment Letter

5. Transfer facilities and processing plants shall be located consistent with this this Solid Waste Management Plan and with applicable local zoning ordinances.

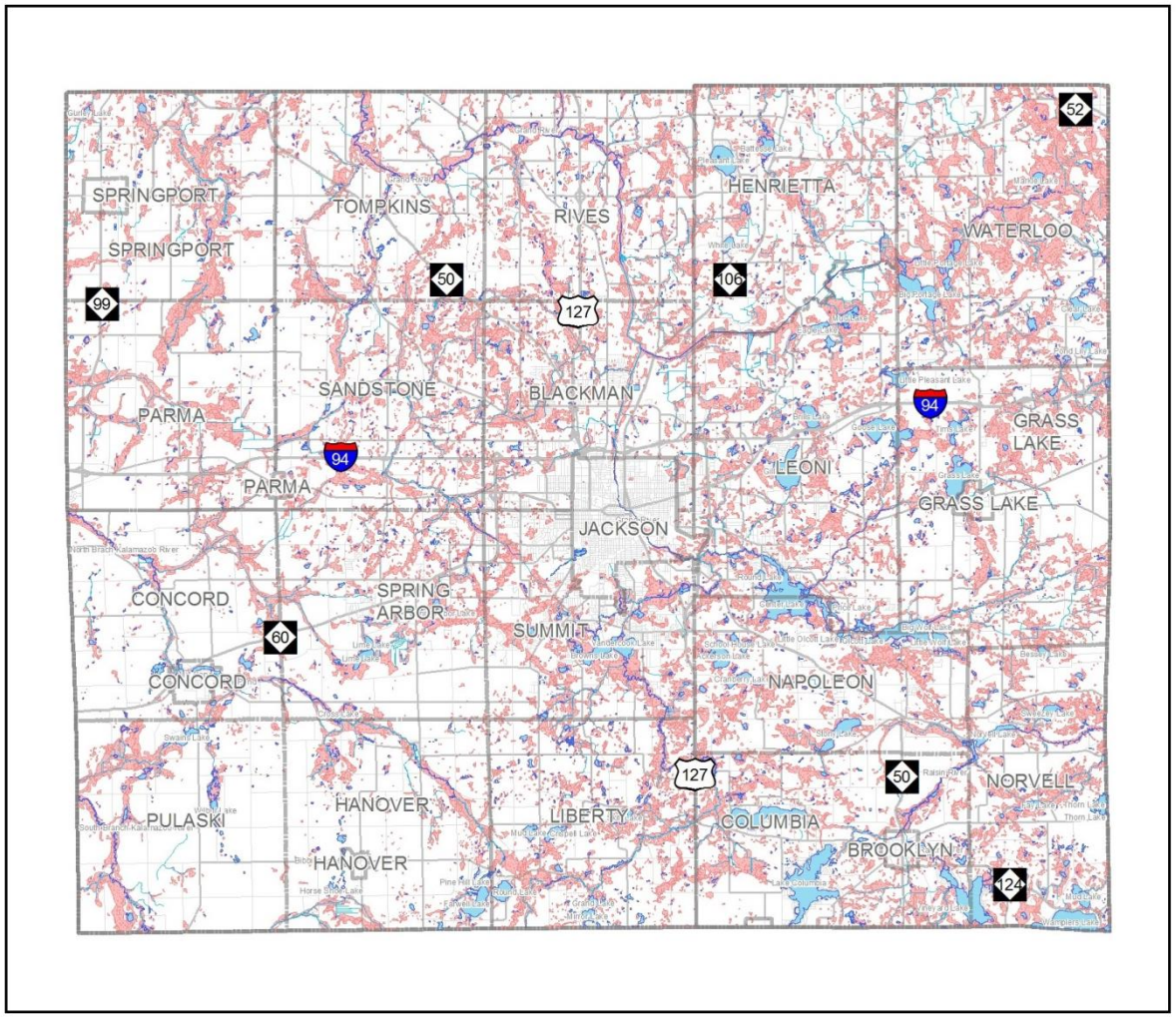
6. The transfer facility or processing plant shall not be located in any areas identified by the MDNR natural resources inventory as habitats of threatened or endangered species.

7. The transfer facility or processing plant shall not be located closer than three hundred (300) feet to any residence existing at the time the construction permit is issued.

8. The transfer facility or processing plant must be located on a State Highway or other class A road, or brought up to class A standards prior to its opening.

Appeals Process

Should the applicant believe that the Board of Public Works was arbitrary or capricious, or clearly errored, an appeal shall first be made to the Jackson County Board of Commissioners to assess such issue. Such appeal shall be made within sixty (60) days from the date of the Board of Public Work's decision. The Board of Commissioners shall make its determination within sixty (60) days.



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.1

SURFACE WATERS

LAKES AND PONDS

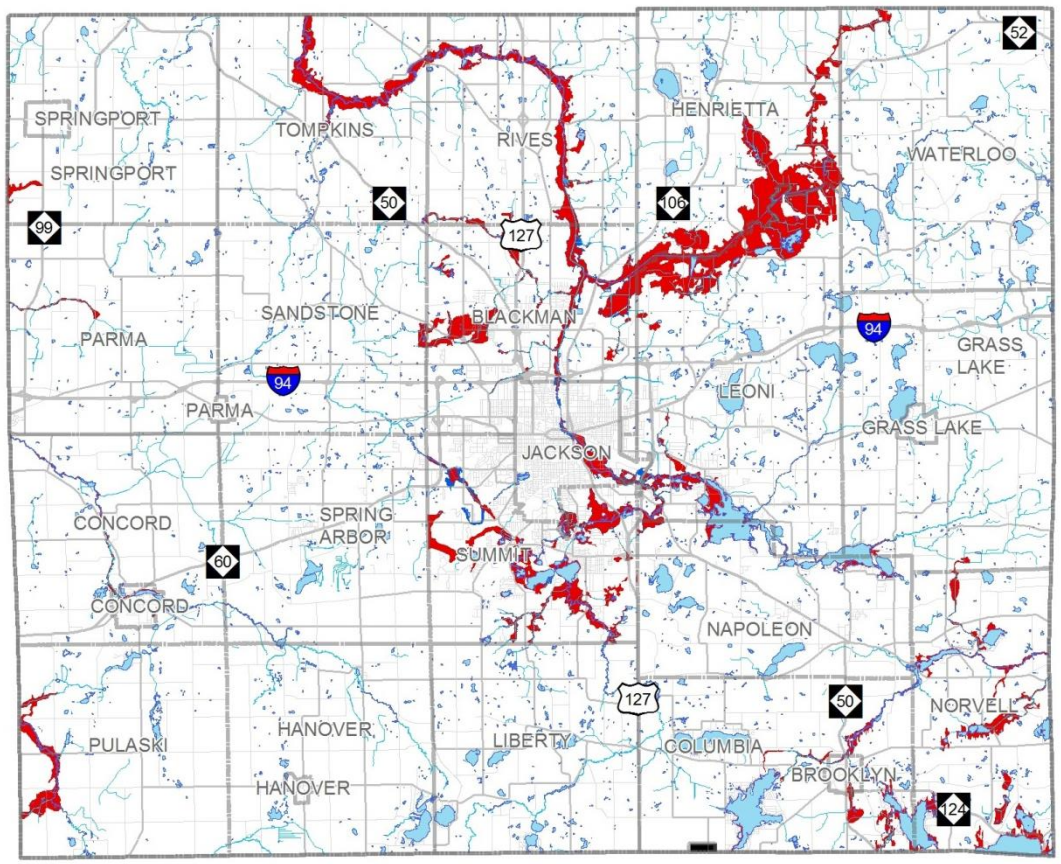
RIVERS, STREAMS, AND DRAINS

WETLANDS

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- NATIONAL WETLANDS INVENTORY (NWI)

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.2

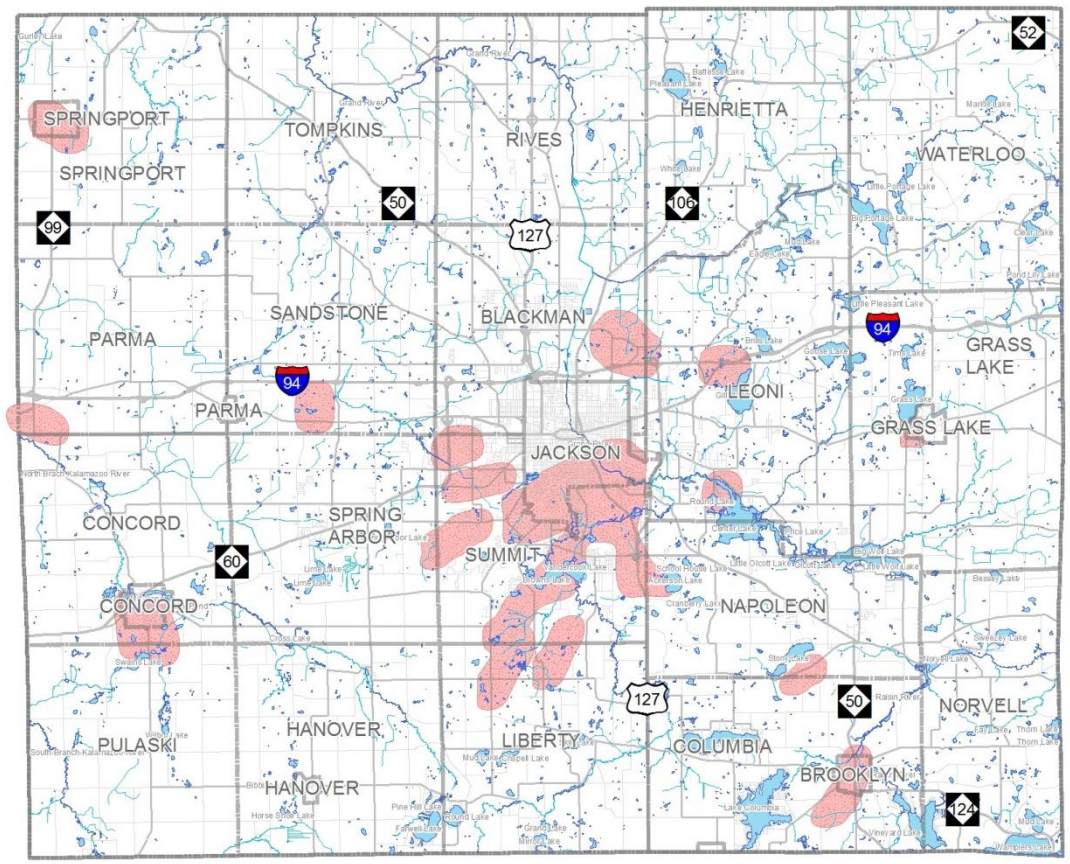
FLOODPLAINS

- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- UNMAPPED

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- FEMA FLOODPLAIN DATA

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.3

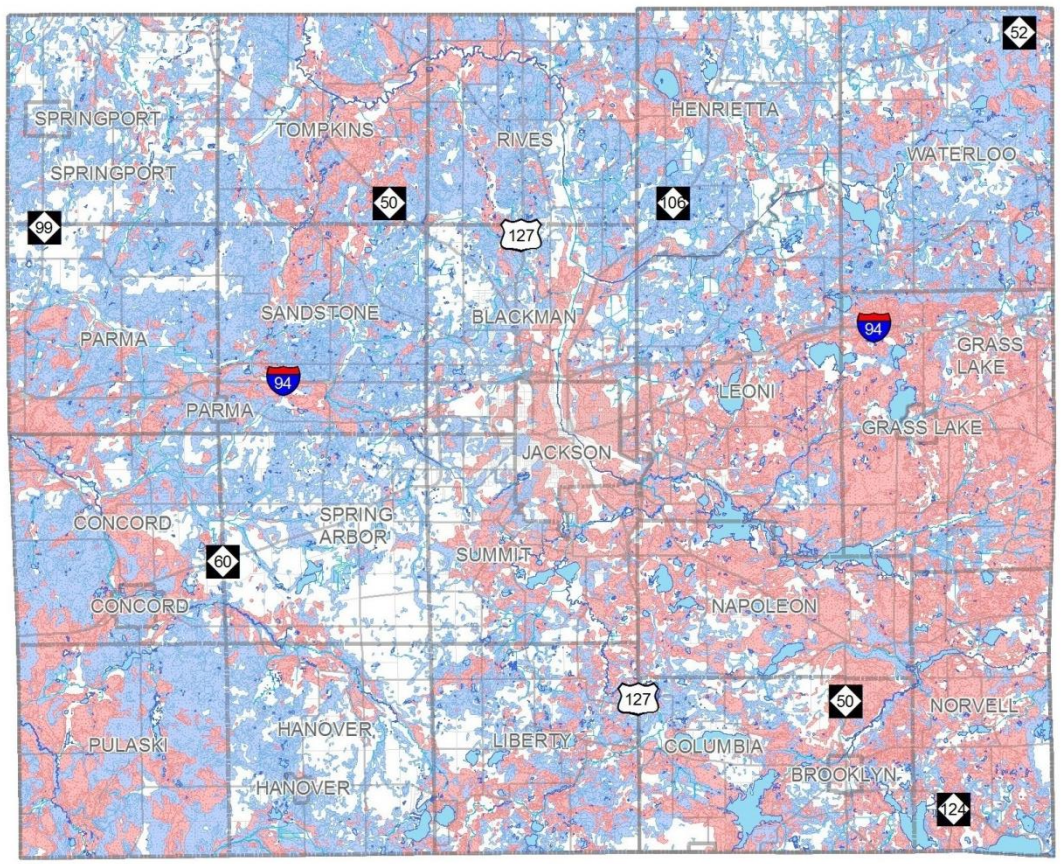
WELLHEAD PROTECTION AREAS

WELLHEAD PROTECTION AREA

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- COUNTY OF JACKSON, MICHIGAN

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.4

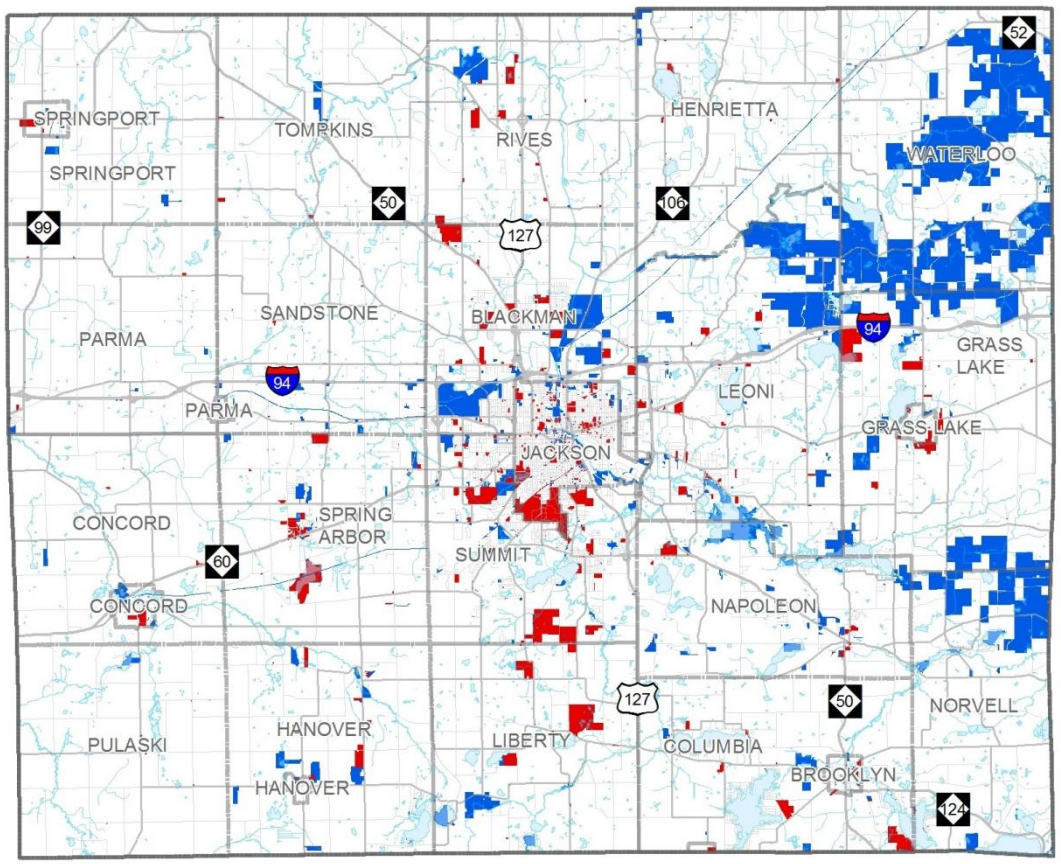
GROUND WATER RECHARGE AREAS

- HIGH RECHARGE AREAS
- MODERATE RECHARGE AREAS
- OTHER SOILS

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- JACKSON COUNTY SOIL SURVEY
- DR. BRUCE PAPE, PROFESSOR OF GEOGRAPHY, CENTRAL MICHIGAN UNIVERSITY

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.5

INSTITUTIONS AND PUBLIC LANDS*

INSTITUTIONS**

PUBLIC LANDS***

* BASED UPON THE PROPERTY CLASS (I.E., USE) ASSIGNED TO EACH PARCEL BY MUNICIPAL ASSESSORS

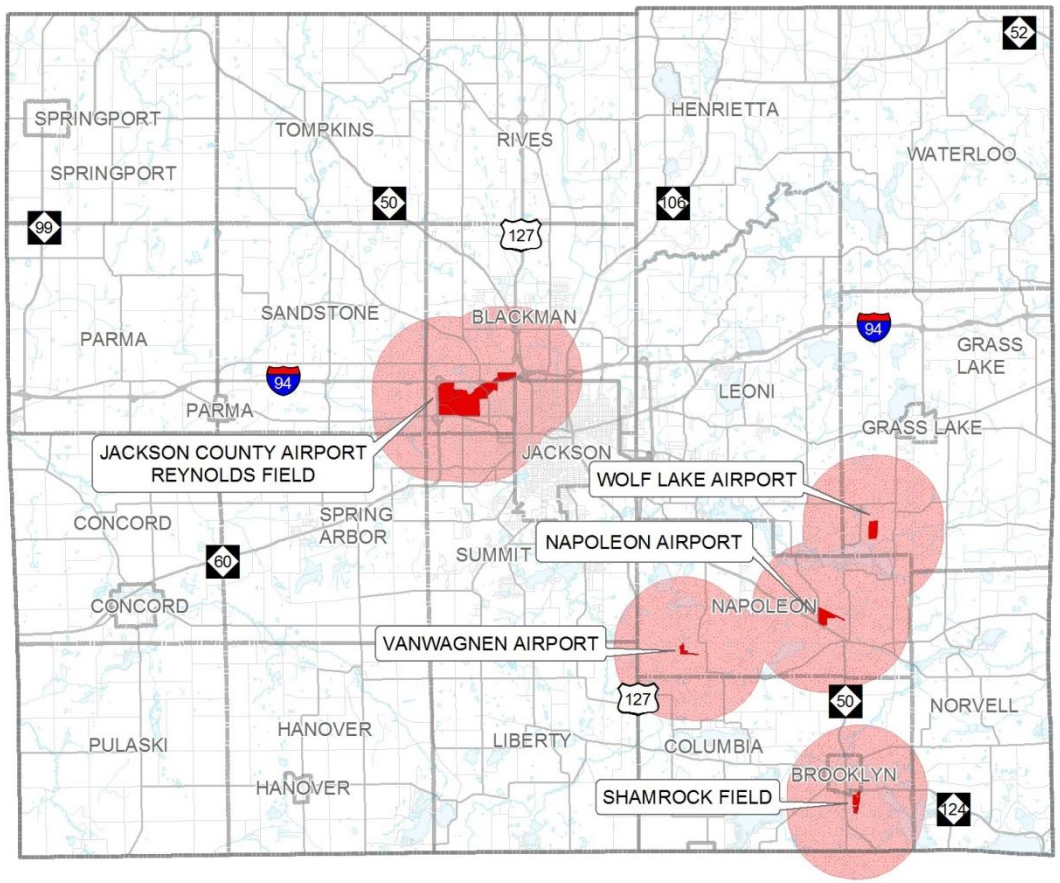
** CEMETERIES, CHURCHES, PARKS, SCHOOLS, AND HOSPITAL/MEDICAL BUILDINGS

*** GOVERNMENT OWNED AND OTHER EXEMPT PROPERTIES

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- COUNTY OF JACKSON
- REGION 2 PLANNING COMMISSION

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.6

LICENSED PUBLIC USE AIRPORTS

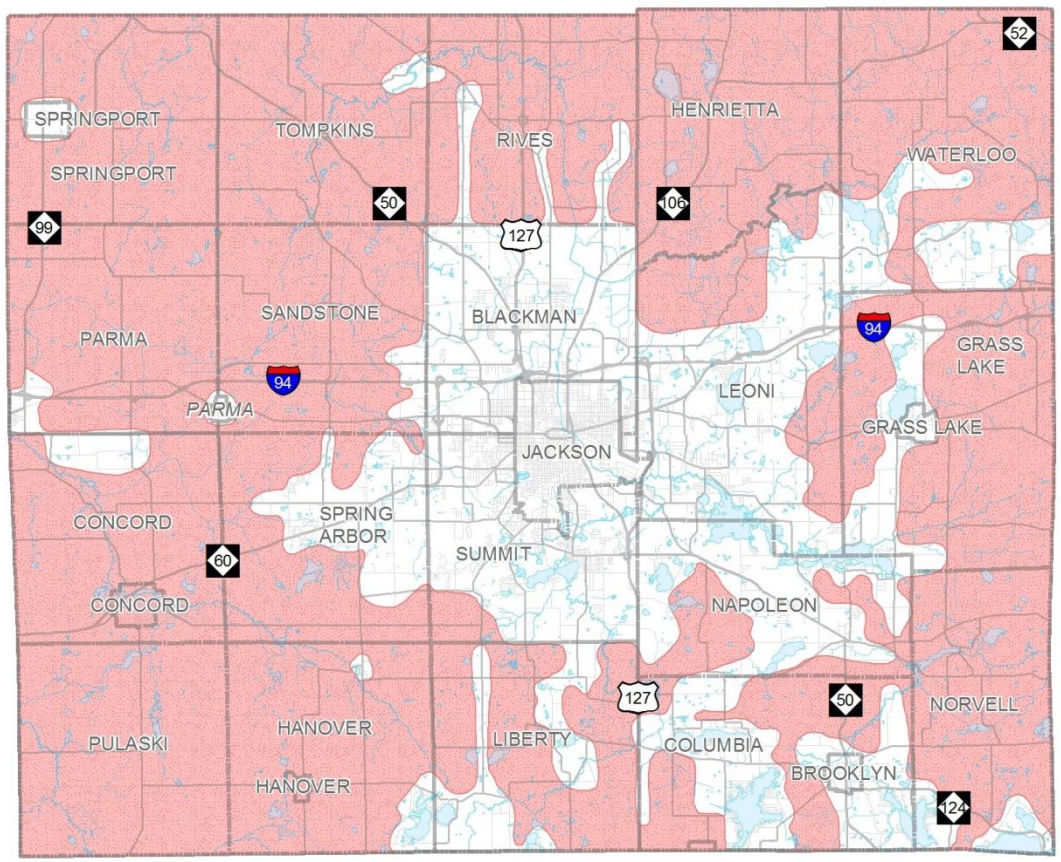
AIRPORT

10,000 FOOT BUFFER

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- MICHIGAN AIRPORT DIRECTORY
- REGION 2 PLANNING COMMISSION

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.7

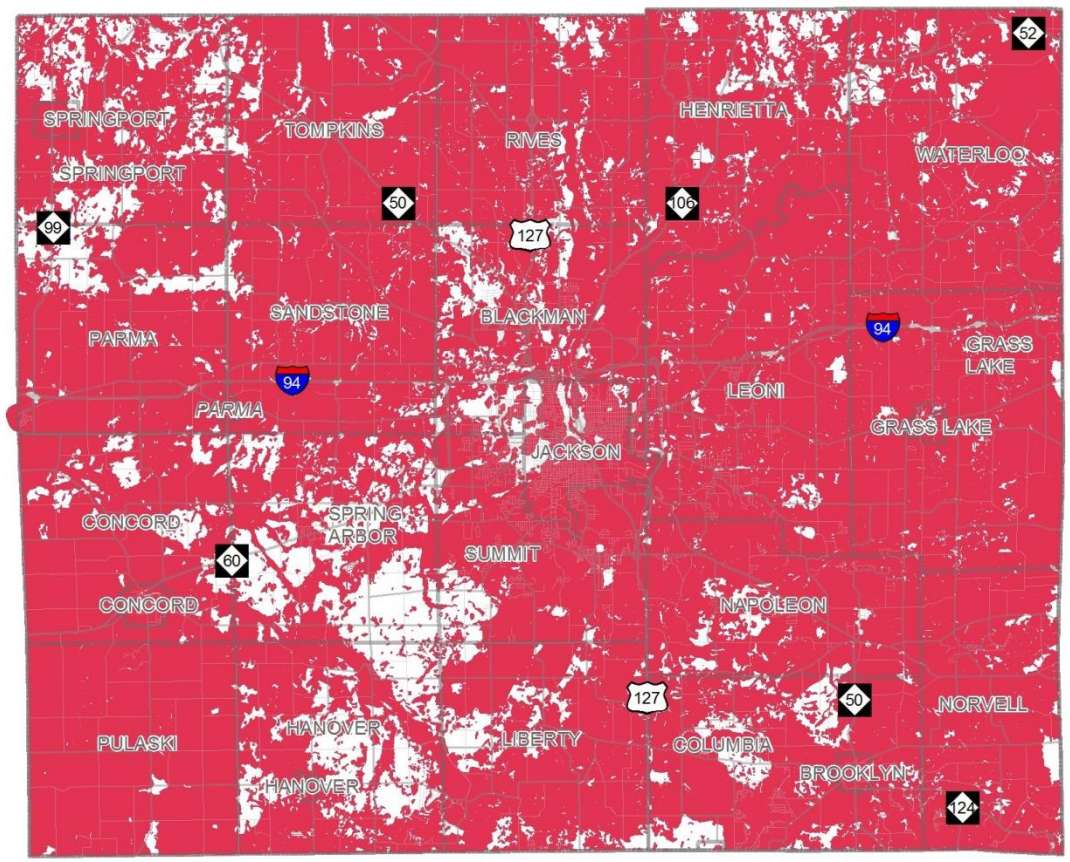
AGRICULTURAL PRESERVATION AREA

AGRICULTURAL PRESERVATION AREA

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- JACKSON COUNTY COMMUNITY PLANNING COMMITTEE
- REGION 2 PLANNING COMMISSION

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.8

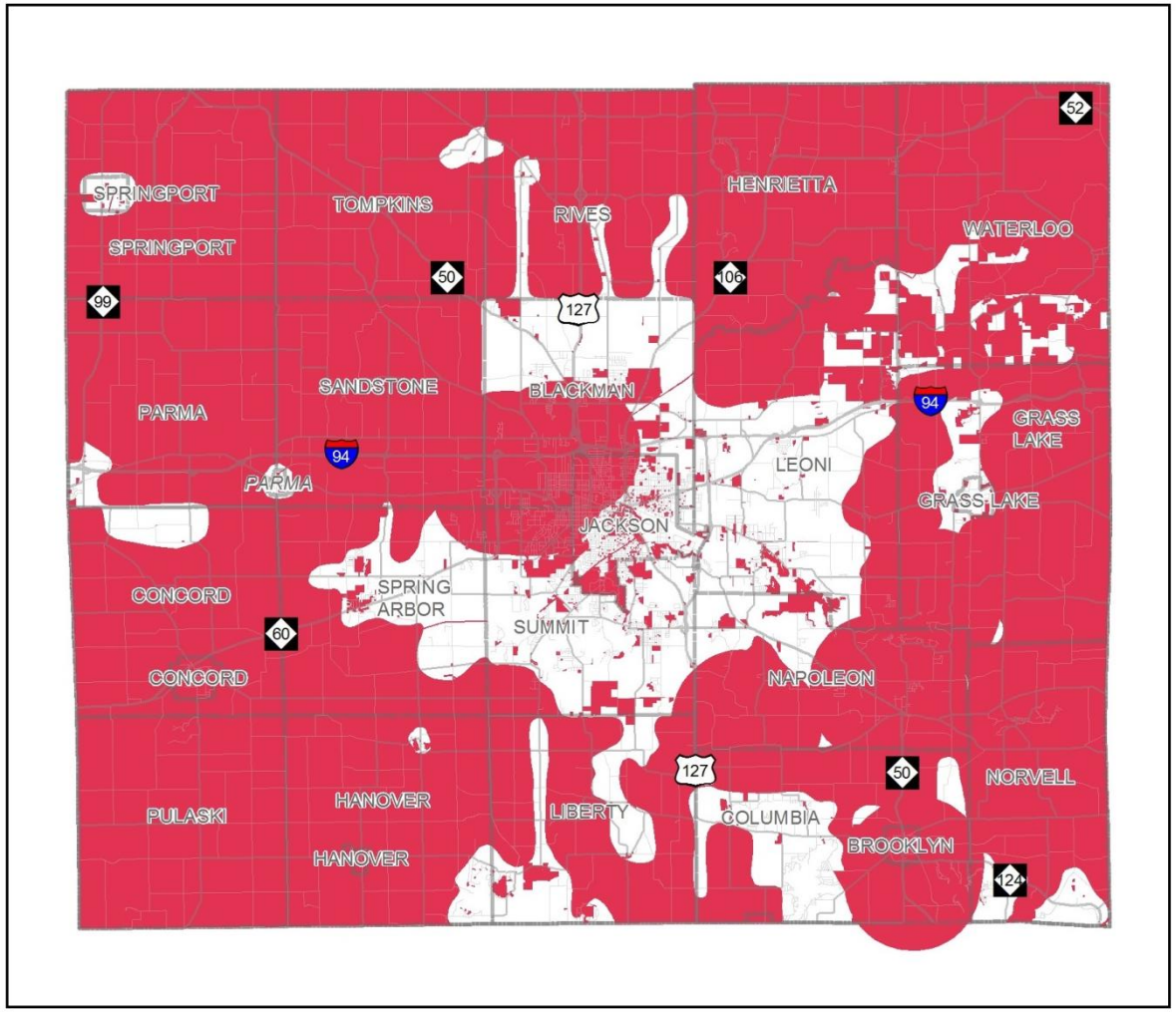
HYDROLOGY:
AREAS UNSUITABLE FOR LANDFILL SITING

AREAS UNSUITABLE FOR LANDFILL SITING

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- COUNTY OF JACKSON, MICHIGAN
- FEMA FLODPLAIN DATA
- JACKSON COUNTY SOIL SURVEY
- NATIONAL WETLANDS INVENTORY (NWI)
- REGION 2 PLANNING COMMISSION

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.9

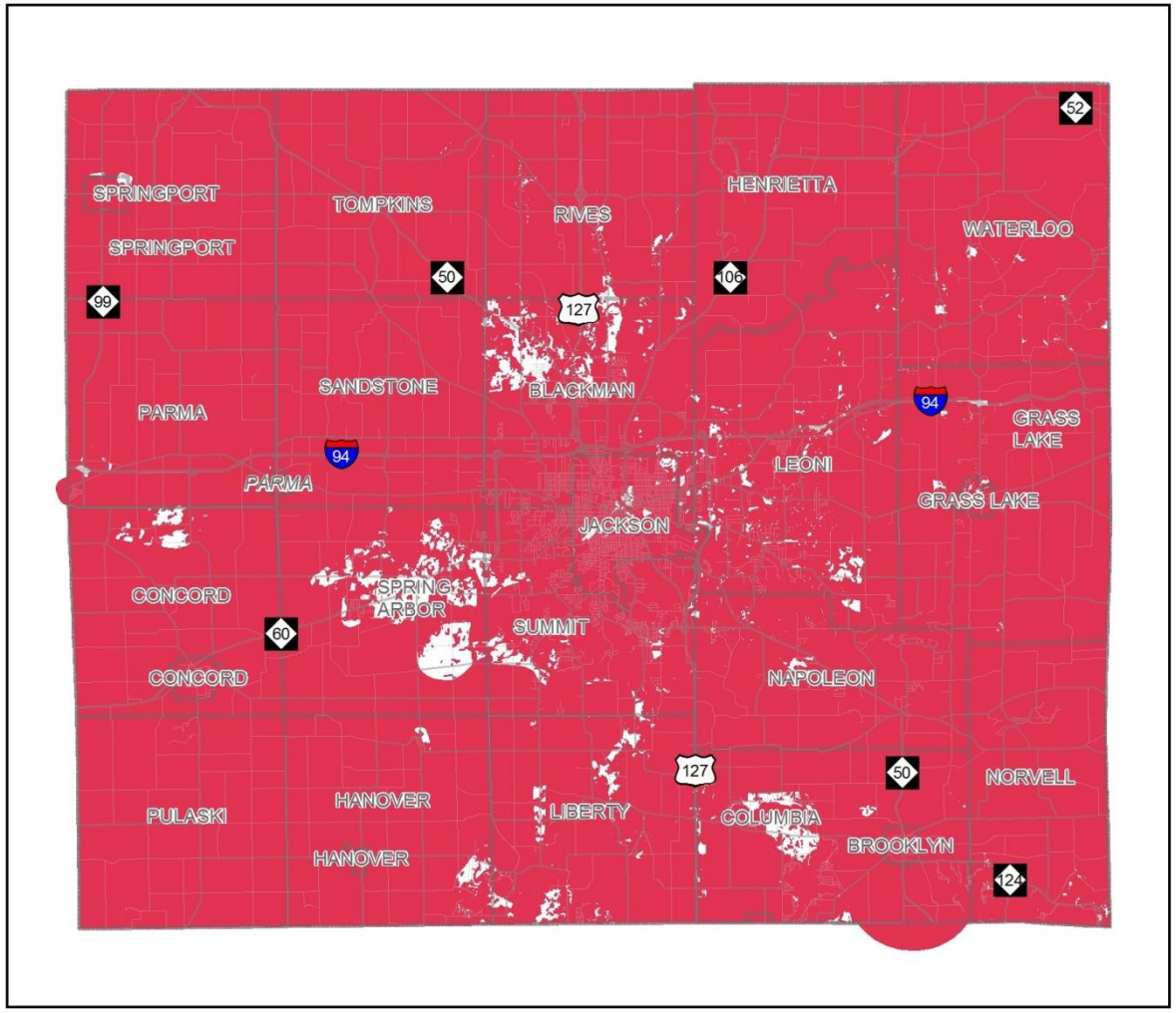
LAND USE:
AREAS UNSUITABLE FOR LANDFILL SITING

AREAS UNSUITABLE FOR LANDFILL SITING

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- COUNTY OF JACKSON, MICHIGAN
- FEMA FLODPLAIN DATA
- JACKSON COUNTY SOIL SURVEY
- NATIONAL WETLANDS INVENTORY (NWI)
- REGION 2 PLANNING COMMISSION

JANUARY 7, 2015

Miles
0 2 4 6



LANDFILL SITING CONSTRAINTS

JACKSON COUNTY MICHIGAN

MAP 3.10

COMPOSITE:
AREAS UNSUITABLE FOR LANDFILL SITING

AREAS UNSUITABLE FOR LANDFILL SITING

SOURCE(S):
- MICHIGAN GEOGRAPHIC DATA LIBRARY
- COUNTY OF JACKSON, MICHIGAN
- FEMA FLODPLAIN DATA
- JACKSON COUNTY SOIL SURVEY
- NATIONAL WETLANDS INVENTORY (NWI)
- REGION 2 PLANNING COMMISSION

JANUARY 7, 2015

Miles
0 2 4 6

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.

The Jackson County solid waste system will be managed by a variety of governments and private interests. However, the ultimate responsibility belongs to the Jackson County Board of Commissioners (BoC). The BoC oversees the management of hazardous waste and recycling coordination, as well as plan implementation and enforcement, by way of funding. The Jackson County Board of Public Works (BPW) has responsibility for approving permit applications as being consistent with this plan for new or expanding solid waste disposal facilities. The applicant may appeal a decision of the BPW to the BoC.

Some of the responsibilities for plan implementation are left to private businesses, industries, organizations and individuals. The policies in this plan are unlikely to be implemented without private participation. Especially important are the educational programs implemented by Recycling Jackson, and the recycling opportunities offered by the private haulers and by Recycling Jackson.

Henrietta and Rives Townships also have management responsibilities with the operation of their transfer facilities.

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 - None

Product Reuse - None

Reduced Material Volume - None

Increased Product Lifetime - None

Decreased Consumption - None

Resource Recovery Programs:

Composting - private haulers

Recycling - Recycling Jackson, private haulers, Jackson County

Energy Production - None

VOLUME REDUCTION TECHNIQUES:

Education - Jackson County Board of Commissioners

COLLECTION PROCESSES:

Transportation:

Private haulers, Jackson County Department of Transportation, City of Jackson Department of Public Works (DPW)

Disposal Areas:

Processing Plants – Private industry

Incineration - None

Transfer Facilities – Private industry, Rives Township, Henrietta Township

Sanitary Landfills - Jackson County Board of County Commissioners, private industry

Ultimate Disposal Area Uses:

Existing Regional Facilities – Jackson County Board of Commissioners, private industry

Local Responsibility for Plan Update Monitoring & Enforcement:

Jackson County Board of Commissioners

Educational and Informational Programs:

Jackson County Board of Commissioners (funding and appointment), non-profits and private industry.

LOCAL ORDINANCES AND REGULATIONS AFFECTING SOLID WASTE DISPOSAL

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

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

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

__X_ 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.

1. Certain ancillary construction details, such as landscaping and screening
2. Hours of operation
3. Noise, litter, odor and dust control
4. Operating records and reports
5. Facility Security
6. Monitoring of wastes accepted and prohibited
7. Composting and recycling

___ 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.

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

☐ 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:

APPENDIX A

ADDITIONAL INFORMATION

REGARDING THE

SELECTED

SYSTEM

EVALUATION OF RECYCLING

The following provides additional information regarding implementation and evaluations of various components of the selected system.

In Jackson County, private waste haulers have primary responsibility for collecting and transporting waste. Individual residents and business pay them a fee for providing waste management services. Waste haulers have the opportunity to include recycling and composting as part of the waste management services, which are made available through avoided tipping fees, to cover the costs associated with operating a recycling or composting program.

Recycling Jackson, the local community recycling group, will be encouraged to continue operating its recycling drop-off site to provide recycling opportunities for individuals living in communities where the private sector has not yet implemented a recycling program and for individuals who take responsibility for disposal of their own waste. Recycling Jackson will also be encouraged to continue its efforts in the area of recycling education.

The Jackson County Conservation District provides an annual *Household Hazardous Waste Collection Day*. The collection provides an opportunity for county residents to dispose of their household hazardous waste in one location for a nominal fee.

Finally, Jackson County will conduct a public information campaign designed to inform residents of the various opportunities for recycling within the county.

According to the U.S. Environmental Protection Agency (EPA), approximately 75% of our waste can be recycled. In Michigan, the recycling rate averages around 15%, lower than any other Great Lakes state. Can you help make the difference?

Contact us for more information

JACKSON
CONSERVATION DISTRICT

Jackson Conservation District

211 W. Ganson Street, Suite 200
Jackson, MI, 49201
517-784-2800 x 5

www.jacksoned.org

Users Guide For:

Recycling in Jackson County

Why recycling matters

- Items thrown away can take decades to break down, taking up valuable land space. Recycling reduces the need for landfill use
- Recycling helps conserve resources, reduce pollution, reduce land degradation, and create jobs
- When hazardous materials such as batteries and household chemicals are thrown away instead of recycled, the break-down process often releases dangerous materials into our soil and water

Many recycling companies accept standard recyclable materials (paper, plastic, cardboard, etc), but what about non-standard, or hazardous, materials? Many of those items can be recycled too!

- On the first Saturday of every month from 9-1 at 1401 N. Brown Street, Recycling Jackson (www.recyclingjackson.com) accepts standard recyclables as well as non-standard materials such as:

Latex paint	Clear Glass
Styrofoam	Batteries
Electronics	Florescent bulbs

- Annually, the Conservation District hosts a Household Hazardous Waste Collection day. Look out for details for 2016's collection day!

Recycling providers in Jackson

Most recycling services are free with your regular trash pick-up. Call your waste management provider to find out more details, as well as what products they accept!

➢ Curbside pick-up (standard items):

- Granger
- Republic Services
- Modern Waste Systems
- Emmons Service, Inc

➢ Drop-off (specialty items):

- OmniSource: Scrap metal
  711 Lewis Street
- Cascade Recycling: Scrap metal and tires
  1401 E. Morrell Street

➢ Additional resources:

- MDK Recycling, LLC, offers on-site document shredding and paper/cardboard pickup for industrial and commercial businesses. www.mdkrecycling.com
- Check with your township office to find out what drop-off recycling options may be offered in your township!
- Jackson County recycling website: **www.tinyurl.com/JacksonRecycling**

Jackson County Conservation District

Completed recycling efforts in Jackson. Except where noted, all were completed since September 1.

- Household Hazardous Waste collection day (September 19)
- Recycling website for Jackson County: www.tinyurl.com/JacksonRecycling
- An application was completed for a scrap tire collection grant through the DEQ. We are still awaiting results.
- A recycling brochure (attached) was created with basic information for interested residents. It is available at the County Health Department and the County Building.
- Meeting with Breina Pugh from Granger regarding outreach and increased school participation
- Meeting with Emily Freeman from the DEQ regarding networking and planning a community-wide meeting in late winter.
- Meeting with Roger Cargill from Schupan Recycling regarding Earth Day and networking
- Meeting with Lisa Perschke and Christine Chessler-Stull from Recycle Ann Arbor regarding surveying residents and potential partnerships.
- Phone call with Shannon Mills, Area Account Manager for Republic Services, to introduce myself and open up a pathway to collaboration.
- Recycling bins were purchased for St. Mary Star of the Sea to help increase their water bottle and other plastic waste
- Lori attended the Michigan Recycling Coalition Training October 2014
- Lori attended the Governor's Recycling Council Meeting in January 2015
- Lori attended the Sierra Club recycling forum at the Jackson District Library in May 2015
- JAXPO event stressing our recycling efforts, door prize was a home/office recycling bin filled with energy efficient and recycled items.

In-progress recycling efforts in Jackson

- Residential Survey, the goal of which is to find out who's recycling, who isn't (and what might incentivize them to recycle), and if residents are willing to support a millage to increase recycling efforts in the county.
- We are in the process of applying for a milk carton recycling grant from the Carton Council. I have four elementary schools interested in being part of the pilot program, and I am in discussion with recycling haulers to determine interest.
- An annual 'recycling guide' is in the works to be distributed in January. Included is information regarding township recycling options, hazardous waste disposal, non-standard item disposal (paints, Styrofoam, etc), composting, and more.
- The Earth Day theme this year will center around recycling, so I created a flyer for an art contest (attached) which was dispersed to all Jackson County middle and high schools. See the attached flyer for details.
- We are in discussion with Meijer, Menard's, and Polly's Market to sell clear and blue plastic recycling bags with the JCCD logo to encourage higher recycling participation by making the proper bags available.
- Aleta is signed up to attend the Governor's Recycling Council forum on January 12, 2016

December, 2015

2016 EARTH DAY ART CONTEST

ORGANIZED BY: THE JACKSON AREA OUTDOOR COALITION

It's time to start getting our 2016 Earth Day event planned, and we want YOU to help out! The 2016 Earth Day event, organized by the Jackson Area Outdoor Coalition (JAOC), is going to include a first annual art contest! As an artist, you will have two options, as explained below. This year's theme is 'Recycled'. All entries must be completed by **FRIDAY, MARCH 4TH**. Winners will be announced by Friday, March 11th, followed by instructions for the next steps of the contest.

Option 1: Poster

- The piece must clearly represent the 'Recycled' them
- Must be created by a student currently in grades 6-12
- Must be 11" x 17"
- Student must include name, grade, and school on the *back* of the poster
- The poster must be original artwork of the student submitting the piece
- Entries may be completed in any desired medium
- Entries may include words, but the words should not make up more than 25% of the piece

Option 2: 3-D Model

- Must be created by a student currently enrolled in grades 6-12
- The piece must be at made of at least 75% recycled material. The base is not included in this number.
- The student's name, grade, and school name must be submitted with the piece, but is not required to be on the model
- The piece must be no larger than 17 inches tall and 10 inches wide (the base is not included in these numbers)
- The model must be the original work of the student submitting the piece

So, what are the prizes, you ask? The top 12 entries will be represented in our 2016/2017 Calendar, and will be on display at Art 634 during the Earth Day and Fairy Festival the weekend of Earth Day, April 22-24. Two grand prizes will be given, one for each Option. The grand prizes will be for the winners to work with a local artist to re-create their piece on a larger scale; a mural for Option 1, and a larger 3-D model for Option 2. These prizes are in thanks to the efforts of Ed Thayer (Steam Punk Eddie), and the Jackson School of the Arts.

What is recycling?

Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Recycling can benefit the community and the environment.

Why Recycle?

- Over 70% of our trash can be recycled;
- Reduces the amount of waste sent to landfills and the need for new landfills;
- Conserves natural resources such as trees, water, and minerals;
- Prevents pollution by reducing the need to collect new raw materials;
- Saves energy;
- Reduces greenhouse gas emissions that contribute to global climate change;
- Preserves the environment for future generations;
- Creates new well-paying jobs in the recycling and manufacturing industries in the United States.

Source: U.S. Environmental Protection Agency

Location

Recycling Jackson
1401 N. Brown St.
Jackson, Michigan 49201
recyclingjackson@gmail.com
517-414-6142

We are located one block behind Home Depot, behind the Jackson Public Schools Bus Garage and just north of Hunt School.

Hours: First Saturday of the Month
9 a.m. to 1 p.m.

A $2 donation is requested to help us cover costs and continue to provide these services.

www.recyclingjackson.com

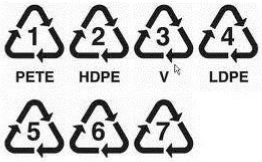
Recycling Jackson

Helping Jackson County Recycle Since 1983

* A Michigan 501(c)3 Non-Profit

2016 Recycling Guide

www.recyclingjackson.com

Type of Material	Preparation	Fee
Paper - We accept all forms of paper: Office paper, boxboard, card-board, junk mail, newspaper, magazines, shredded office paper, refrigerated cartons, shelf stable cartons	Separate into types (paper, boxboard, cardboard, etc.). Package in recycling bins, paper bags or cardboard boxes. ***Please - no plastic sacks***	No
Glass - We accept clear glass only.	***Rinse and remove lids.*** Recycle lids with cans/tin/other metals.	No
Cans/Tin/Other Metals - All types of metals are accepted.	***Tin cans should be rinsed and labels removed.*** Separate from other recyclables.	No
Plastic - We accept all types of plastics **IF MARKED** with these recycling symbols. 	Separate into #1 thru #7 plastic containers and bottles and other material (plastic films). Grocery bags should be sorted by color and tied into bundles.	No
Electronics - We accept all electronics and most things with an electric cord. Most electronics are recycled for free. ***Some items may have a charge associated with the proper recycling of that material.*** Those items currently include tube-type televisions, tube-type computer monitors and projection televisions.	For vacuum cleaners, please empty the collection container or remove the vac bag.	See Recycling Jackson website (www.recyclingjackson.com) for current pricing.
Styrofoam: We recycle styrofoam, including packing peanuts.	Please bag packing peanuts in a plastic bag and tie closed. All material must be free of foodstuffs. Some food stains are OK, but no food.	No
Florescent bulbs - YES we recycle them. CFLs, Tubes (up to 4 foot), U-shaped and circles.		$0.25 each
Batteries - We will recycle all types of batteries. All lithium and rechargeable type batteries **MUST** be separated.	Sort into alkaline, lithium and rechargeable batteries.	$1 per pound (weight estimated). For bulk containers (pails, etc.) of batteries that are not separated, there is a $5 sorting charge.
Latex Paint - Watch the Recycling Jackson website for latex paint recycling days. They are held during warm months.		$1 per gallon

DETAILED FEATURES OF RECYCLING AND COMPOSTING PROGRAMS:

List below the types and volumes of material available for recycling or composting.

The following table illustrates the potential for recycling and composting in Jackson County. The table is based on waste composition estimates of the U.S. Environmental Protection Agency and on the waste generation estimates found in Section II of this plan

Category	% of Municipal Solid Waste Tonnage	Amount Available for Recycling/Composting (Tons)
Paper and Paperboard	37.5	40,411
Glass	6.7	7,220
Metals	8.3	8,944
Plastics	8.3	8,944
Other	14.6	15,733
TOTAL		81,252

Therefore, it is estimated that 81,252 tons of materials are available for recycling.

The following briefly describes the processes used or to be used to select the equipment and locations of the recycling and composting programs included in the selected system. Difficulties encountered during past selection processes are also summarized along with how those problems were addressed:

Equipment Selection

Existing Programs:

The process of equipment selection is dealt with by the private sector and does not involve direct expenditures by County agencies.

Proposed Programs:

It is anticipated that the private sector will continue to select the equipment needed for the County's recycling and composting programs.

Site Availability & Selection

Existing Programs:

Proposed Programs:

No additional programs are proposed. Recycling Jackson may have a future need to expand.

Composting Operating Parameters:

The following identifies some of the operating parameters which are to be used or are planned to be used to monitor the composting programs.

Existing Programs:

Program Name	pH Range	Heat Range	Other Parameter	Measurement Unit

Proposed Programs:

Program Name	pH Range	Heat Range	Other Parameter	Measurement Unit
City of Jackson Leaf Collection and Composting Contract				

COORDINATION EFFORTS:

Solid waste management plans need to be developed and implemented with due regard for both local conditions and the state and federal regulatory framework for protecting public health and the quality of the air, water, and land. The following states the ways in which coordination will be achieved to minimize potential conflicts with other programs and, if possible, to enhance those programs.

It may be necessary to enter into various types of arrangements between public and private sectors to be able to implement the various components of this solid waste management system. The known existing arrangements are described below which are considered necessary to successfully implement this system within the county. In addition, proposed arrangements are recommended which address any discrepancies that the existing arrangements may have created or overlooked. Since arrangements may exist between two or more private parties that are not public knowledge, this section may not be necessary to cancel or enter into new or revised arrangements as conditions change during the planning period. The entities responsible for developing, approving, and enforcing these arrangements are also noted.

Ultimate responsibility for the Jackson County solid waste management program rests with the Jackson County Board of Commissioners.

The current collection system is dependent on the private sector. The residential collection system used most frequently is personal contracts with private haulers and personal delivery to a transfer facility.

Jackson County coordinates the proper disposal of solid waste through the Jackson County Conservation District's Household Hazardous Waste Day and recycling education efforts.

COSTS & FUNDING:

The following estimates the necessary management, capital, and operational and maintenance requirements for each applicable component of the solid waste management system. In addition, potential funding sources have been identified to support those components.

System Component	Estimated Costs	Potential Funding Sources
Resource Conservation Efforts	n/a	
Volume Reduction Techniques	n/a	
Collection Processes	n/a	
Transportation	n/a	
Disposal Areas	n/a	
Future Disposal Area Uses	n/a	
Management Arrangements	n/a	
Educational & Informational Programs	$50,000	*$20,000 for recycling education and promotion and $30,000 for household hazardous waste disposal*

Calculation of the costs of the various system components is not possible due to the number of agencies and business providing the services. Agencies and businesses tend to absorb the cost of performing these tasks without knowledge of their specific cost.

EVALUATION SUMMARY OF THE SELECTED SYSTEM:

The solid waste management system has been evaluated for anticipated positive and negative impacts on the public health, economics, environmental conditions, siting considerations, existing disposal areas, and energy consumption and production which would occur as a result of implementing this selected system. In addition, the selected system was evaluated to determine if it would be technically and economically feasible, whether the public would accept this selected system, and the effectiveness of the educational and informational programs. Impacts to the resource recovery programs created by the solid waste collection system, local support groups, institutional arrangements, and the population in the county in addition to market availability for the collected materials and the transportation network were also considered. Impediments to implementing the solid waste management system are identified and proposed activities which will help overcome those problems are also addressed to assure successful programs. The selected system was also evaluated as to how it relates to the Michigan Solid Waste Policy's goals. The following summarizes the findings of this evaluation and the basis for selecting this system:

Different arrangements for the management of waste disposal, collection and material recovery have been evaluated. What follows is a summary of the evaluation of the selected system: 'The Best of Both Hybrid'.

Waste Disposal

Jackson County government no longer directly participates in the management of solid waste disposal options. Those arrangements are left to waste generators and trash haulers servicing Jackson County. For example, although Rives and Henrietta Townships operate public Type B transfer facilities, they are serviced by private haulers. The advantages of relying on the private sector are that each hauler can seek the best disposal price for their customers and to do that in an efficient and effective manner.

Collection

The effective and efficient movement of waste from its generators to disposal sites is imperative if the public health and welfare is to be protected. The current collection system is controlled by the private sector. Most households and businesses contract with private haulers or personally deliver their solid waste to a landfill or a transfer facility/processing plant.

Overall, this system has been effective, resulting in the collection of most of the County's waste in a way which causes few environmental or public health concerns. Although there continue to be incidents of illegal dumping, they do not appear to have resulted from a lack of viable collection alternatives.

However, there are some situations in which the potential exists for developing more cost-effective or energy-efficient disposal alternatives. Potential problems with dependence on private sector collection are as follows:

1. Severe competition among haulers may result in business failures which then cause service interruptions.

2. Overlapping trash hauler service routes may waste fuel, add to road deterioration, and increase traffic.

The preferred alternative allows for each local unit of government within Jackson County to choose an alternate option which better serves local market forces and preferences. The unique demographic and land use development characteristics found in each municipality combined with its location relative to disposal areas and preferred level-of-service will determine which alternative collection systems are appropriate.

Material Recovery

Jackson County has taken the lead in educating the public about recycling and further promoting the practice. Appropriations from the general fund are currently set aside for recycling education and promotion as well as household hazardous waste collection. The Jackson County Conservation District currently has the contract for recycling education and promotion (please see the attached flyer and other documents at the beginning of this appendix). The management of recycling is also promoted by three private sector groups: the private waste haulers, the county-based scrap recycling industries and other non-profit community groups, including Recycling Jackson.

Trash haulers have taken the responsibility for providing a primary recycling opportunity as part of the municipal solid waste stream. Many haulers provide single-stream recycling to their customers. The benefit to customers is the potential to use a smaller trash container with a corresponding decrease in price. The benefit to the haulers is the sale of those recyclables as commodities.

Trash haulers are not the only entities to provide opportunities for re-use and recycling. For example, Henrietta and Rives Townships operate recycling drop-off centers as part of their transfer facilities and Grass Lake and Leoni Townships provide stand-alone drop-off centers. Recycling Jackson, Greater Jackson Habitat for Humanity, and other non-profits; second-hand stores and scrap metal dealers; and other specialty recyclers/re-users (e.g., pharmaceuticals and batteries) provide opportunities for the proper recycling or reuse of commodities that would otherwise end up in a landfill.

ADVANTAGES AND DISADVANTAGES OF THE SELECTED SYSTEM:

Each solid waste management system has pros and cons relating to its implementation within the county. Following is an outline of the major advantages and disadvantages for this selected system.

ADVANTAGES:

1. The preferred system currently works well and Jackson County households and businesses are familiar with the system.

2. Retaining the current system will not require additional public infrastructure.

3. There are a variety of opportunities for recycling in the County. Most trash haulers currently provide single-stream recycling programs. Several municipalities provide recycling drop-off sites. Various non-profit and for-profit entities also accept other hard-to-recycle items.

DISADVANTAGES:

1. The development of a successful county-led educational and informational program regarding recycling is in its infancy and will take time to mature.

2. The market for recyclables is unpredictable and the cost of recycling can be high when the demand for recyclables is low.

NON-SELECTED

SYSTEMS

Before selecting the solid waste management system contained within this plan update, the county developed and considered other alternative systems. The details of the non-selected systems are available for review in the county's repository. The following section provides a brief description of these non-selected systems and an explanation why they were not selected. Complete one evaluation summary for each non-selected alternative system.

SYSTEM COMPONENTS:

The following briefly describes the various components of the non-selected systems.

Description of Alternative A

Alternative A—'The County Does it All'—is described below, utilizing the 'decision areas' and 'decision choices' identified in the 'decision table'.

- **Will solid waste be disposed of in landfills located inside and/or outside of the County and what landfills will be included in the selected system?**

  Solid waste generated in Jackson County would be disposed of exclusively in landfills located in Jackson County. The County of Jackson would establish and operate a new landfill.

- **Will a flow control ordinance be in effect and who will choose the landfills to be utilized?**

  A flow control ordinance would be in effect and the County of Jackson would choose the landfills where the solid waste collected is deposited.

- **Who will collect and transport solid waste?**

  Solid waste would be collected and transported by a county-run organization.

- **Who will provide and fund solid waste education?**

  Jackson County would hire a full-time employee to develop and execute a solid waste education program.

- **How will transfer facilities be utilized and who will choose the transfer facilities to be utilized?**

  Jackson County would own and operate transfer facilities and would select the facilities to be used.

- **What methods will be used to increase the amount of solid waste collected?**

  Jackson County would mandate the proper collection and disposal of solid waste.

- **What methods will be used to increase the amount of solid waste recycled?**

  Jackson County would enact a mandate to increase the amount of recycled solid waste.

- **How will recyclable solid waste be collected?**

  Most recyclables would be bagged separately but disposed of in the same container and transported in the same truck.

Alternative A: The County Does it All											
Dispose at Landfill(s) Located	Landfill Sites to include in the selected system	Flow Control In Effect	Landfill Sites to Utilize Chosen By	Solid Waste Collection & Transport Done By	Education Performed By	Education Funded By	Utilize Transfer Facilities	Transfer Facility Site Selection	Method to Increase Amount of Solid Waste Collected	Method to Increase Amount of Solid Waste Recycled	Collecting Recyclable Solid Waste
Entirely Inside Jackson County	Establish New County Owned & Operated Landfill	Yes	County Government	County Run Organization	Full Time County Employee	Portion of County Disposal Fee	County Owned and Operated	County Selects	Mandated by County	Mandated by County	Separate Containers & Separate Trucks
Entirely Outside Jackson County	McGill Road Privately Operated	No	Private Haulers	Private Haulers Competing for Individual Customers	Part Time County Employee	Surcharge on Private Haulers	Township Owned and Operated	County Recommends	Advocated by County	Advocated by County	Bagged Separately, Same Container, Same Truck
Both Inside and Outside Jackson County	Liberty Landfill Privately Operated	-	-	Private Haulers Under County Contracts	County Contracts Service from Existing Local Organization	Surcharge on Private Landfills	Privately Owned and Operated	Owner Selects	Allow Mandate by Municipality	Advocated by Private Haulers	Mixed at Source, Separated After Collected
-	Out of County Sites	-	-	Private haulers under municipal contracts	Private Haulers at Their Discretion	County Budget	Municipal cleanup events	None	Advocated by Municipality	Financial Incentives by Private Haulers (Pricing)	Other Innovative Methods
-	-	-	-	-	-	Private Hauler Self Funded	None	-	No Mandate	-	-
-	-	-	-	-	-	Pursue Grants	-	-	-	-	-

Description of Alternative B

Alternative B—'The Free Market (All Private)'—is described below, utilizing the 'decision areas' and 'decision choices' identified in the 'decision table'.

- **Will solid waste be disposed of in landfills located inside and/or outside of the County and what landfills will be included in the selected system?**

  Solid waste generated in Jackson County would be disposed of in landfills located inside and outside of Jackson County. The McGill Road (Type II) and Liberty Environmental Landfill (Type III)—which are located in Jackson County—are included in the selected system. Various landfills located outside of the County which are utilized regularly by trash haulers are also included in the selected system.

- **Will a flow control ordinance be in effect and who will choose the landfills to be utilized?**

  No flow control ordinance would be in effect and trash haulers would choose the landfills where the trash they collect is deposited, provided the county in which a landfill is located is listed in Table 2-A—Current Export Volume Authorization of Solid Waste—of the *Jackson County Solid Waste Management Plan*.

- **Who will collect and transport solid waste?**

  Private haulers would compete for individual customers.

- **Who will provide and fund solid waste education?**

  Private haulers would provide and fund and execute solid waste education programs at their own discretion. They could also pursue grants.

- **How will transfer facilities be utilized and who will choose the transfer facilities to be utilized?**
  Any transfer facilities would be privately owned and operated.
- **What methods will be used to increase the amount of solid waste collected?**
  There would be no mandate for the proper collection and disposal of solid waste.
- **What methods will be used to increase the amount of solid waste recycled?**
  There would be no mandate to increase the amount of recycled solid waste.
- **How will recyclable solid waste be collected?**
  All current local collection practices for recyclables would be permitted: separate containers and separate trucks; bagged separately but same container or truck; and mixed at source and separated after collection.

Alternative B: The Free Market (All Private)

Dispose at Landfill(s) Located	Landfill Sites to include in the selected system	Flow Control In Effect	Landfill Sites to Utilize Chosen By	Solid Waste Collection & Transport Done By	Education Performed By	Education Funded By	Utilize Transfer Facilities	Transfer Facility Site Selection	Method to Increase Amount of Solid Waste Collected	Method to Increase Amount of Solid Waste Recycled	Collecting Recyclable Solid Waste
Entirely Inside Jackson County	Establish New County Owned & Operated Landfill	Yes	County Government	County Run Organization	Full Time County Employee	Portion of County Disposal Fee	County Owned and Operated	County Selects	Mandated by County	Mandated by County	Separate Containers & Separate Trucks
Entirely Outside Jackson County	McGill Road Privately Operated	No	Private Haulers	Private Haulers Competing for Individual Customers	Part Time County Employee	Surcharge on Private Haulers	Township Owned and Operated	County Recommends	Advocated by County	Advocated by County	Bagged Separately, Same Container, Same Truck
Both Inside and Outside Jackson County	Liberty Landfill Privately Operated	-	-	Private Haulers Under County Contracts	County Contracts Service from Existing Local Organization	Surcharge on Private Landfills	Privately Owned and Operated	Owner Selects	Allow Mandate by Municipality	Advocated by Private Haulers	Mixed at Source, Separated After Collected
-	Out of County Sites	-	-	Private haulers under municipal contracts	Private Haulers at Their Discretion	County Budget	Municipal cleanup events	None	Advocated by Municipality	Financial Incentives by Private Haulers (Pricing)	Other Innovative Methods
-	-	-	-	-	-	Private Hauler Self Funded	None	-	No Mandate	-	-
-	-	-	-	-	-	Pursue Grants	-	-	-	-	-

EVALUATION SUMMARY OF THE NON-SELECTED SYSTEMS:

The non-selected systems were evaluated to determine their potential of impacting human health, economics, environmental, transportation, siting and energy resources of the county. In addition, the alternatives were reviewed for technical feasibility, and whether they would have public support. Following is a brief summary of that evaluation along with an explanation why these systems were not chosen to be implemented.

Three alternative solid waste management systems were evaluated and rated in terms of technical and economic feasibility; access to land and transportation networks; effects on energy, environmental impacts, public acceptability, and public health effects. Alternative A was rated "excellent" for protecting natural resources and "good" for resource use; the prevention of adverse effects; the protection of health, safety, and welfare; the promotion of vitality, ecology, quality, and sustainability; and planning, evaluation, and management processes. It rated "fair" or "poor" in all other categories (see page II-22). Alternative B received an 'excellent' rating for cost, complexity, time to implement, and risk. All other categories rated "good".

ADVANTAGES AND DISADVANTAGES OF THE NON-SELECTED SYSTEM:

Each solid waste management system has pros and cons related to its implementation within the county. Following is a summary of the major advantages and disadvantages for this non-selected system.

Alternative A – The County Does it All.

ADVANTAGES:

1. Natural resource protection would be easier under County control.

2. Recycling programs would be uniform countywide and easier to quantify and measure success.

DISADVANTAGES:

1. The administration of a County-mandated program would be complex and time consuming.

2. It would be challenging for the County to manage that complexity and its associated costs in a cost-effective manner that also minimizes risk.

3. The County would also find it challenging to operate a collection system which is effective, efficient, and flexible.

Alternative B – The Free Market (All Private).

ADVANTAGES:

1. The administration of individual private-sector programs would be less complex and time consuming.

2. The private sector has the resources to manage a collection system and its associated costs in a cost-effective manner that also minimizes risk.

3. The private sector also has the resources to operate a collection system which is effective, efficient, and flexible.

DISADVANTAGES:

1. Natural resource protection would be more difficult under private sector control.

2. Recycling programs would be less uniform and harder to quantify and measure success.

PUBLIC PARTICIPATION
AND APPROVAL

The following summarizes the processes which were used to the development and local approval of the plan including a summary of public participation in those processes, documentation of each of the required approval steps, and a description of the appointment of the solid waste management planning committee along with the members of that committee.

PUBLIC PARTICIPATION

<u>PUBLIC INVOLVEMENT PROCESS:</u> A description of the process used, including dates of public meeting, copies of public notices, documentation of approval from the solid waste management planning committee, county board of commissioners, and municipalities.

Meetings of the Solid Waste Management Planning Committee were generally held in the 5th Floor Commission Chambers located in the County Tower Building (120 W. Michigan Avenue, Downtown Jackson). The regular meeting schedule was posted in the 1st Floor Lobby of the County Tower Building as well as the 8th Floor. Special meetings were also posted in the same manner. Meeting notices/agendas were emailed to Solid Waste Management Planning Committee members prior to the meetings. Staff added citizen attendees to the email list upon request.

PLANNING COMMITTEE APPOINTMENT PROCEDURE

September 17, 2013, the Jackson County Board of Commissioners authorized the filing of a notice of intent with the Michigan Department of Environmental Quality to prepare a solid waste management plan amendment. In order to amend the plan, it was necessary to reactivate the Jackson County Solid Waste Planning Committee.

Jackson County's Designated Planning Agency (i.e., the Region 2 Planning Commission) staff notified the Board of Commissioners about the need to amend the *Jackson County Solid Waste Management Plan* during its August, 2013, Study Session. The Board of Commissioners subsequently solicited appointments to the Jackson County Solid Waste Planning Committee which prepared the plan amendment.

The Board of Commissioners appointed the 14-member Solid Waste Management Planning Committee on September 17, 2013. Appointment letters to the Committee were mailed on September 20, 2013. The Committee held its first meeting on October 20, 2013 and elected Mr. Geoff Snyder as Chair and James (Steve) Shotwell as the Vice-Chair.

PUBLIC PARTICIPATION

PLANNING COMMITTEE

Committee member names and the company, group, or governmental entity represented from throughout the county are listed below.

Four representatives of the solid waste management industry:
1. Charles (later replaced by David) Dunigan, Liberty Landfill
2. David Emmons, Emmons Service
3. Tonia Olson, Granger
4. James Schweikert, Northwest Refuse

One representative from an industrial waste generator:
1. Jason Kurpinski,

Two representatives from environmental interest groups from organizations that are active within the county:
1. Pegg Clevenger,
2. Mark Muhich,

One representative from county government. All governmental representatives shall be elected officials or designees of an elected official.
1. James (Steve) Shotwell, Jr., County of Jackson

One representative from township government:
1. Dan Wymer, Napoleon Township

One representative from city government:
1. Derek Dobies, City of Jackson

One representative from the regional solid waste planning agency:
1. Phil Duckham, Region 2 Planning Commission

Three representatives from the general public who reside in the county:
1. Glenn Remington
2. Jack Ripstra
3. Geoff Snyder

ATTACHMENTS

APPENDIX D

Plan Implementation Strategy:

Jackson County, through its Board of Public Works, shall be responsible for implementation of the Goals and Objectives set forth within the Solid Waste Management Plan, and review all Part 115 applications and determine whether or not the application is consistent with the Solid Waste Management Plan.

Additionally, the Jackson County Conservation District shall be responsible for the implementation of the Plan and the Jackson County Recycling Program, as determined by the Jackson County Board of Public Works.

ATTACHMENTS

Resolutions:

ATTACHMENTS

Listed Capacity:

Documentation from landfills that the County has access to their listed capacity:

ATTACHMENTS

Maps:

Maps showing locations of solid waste disposal facilities used by the County.

Please see Map II-1 on Page II-10 for the location of disposal facilities in Jackson County.

ATTACHMENTS

Inter-County Agreements:

Copies of Inter-County agreements with other Counties (if any)

N/A

ATTACHMENTS

Special Conditions:

Special conditions affecting import or export of solid waste:

There are no special conditions affecting the importation or exportation of solid waste.

ATTACHMENTS

Common Definitions

The following definitions are needed in order to ensure that all stakeholders know what the terms utilized throughout the Solid Waste Management Plan mean. The sources for most of the definitions are Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act (PA 451 of 1994), as amended, and the associated rules promulgated by the Office of Waste Management, Department of Environmental Quality.

"**Disposal area**" means 1 or more of the following, as licensed by the Department of Environmental Quality:

- Landfill
- Transfer Facility
- Processing Plant
- Incinerator (none identified in the Preferred Alternative)

(MCL 324.11503 (5))

"**Landfill**" means a disposal area consisting of 1 or more units and active work areas licensed/classified as follows:

- "**Type II Landfill**" means a municipal solid waste landfill which receives household waste or municipal solid waste incinerator ash and which may also receive any of the following types of solid waste:
    - Construction and demolition waste.
    - Sewage sludge.
    - Commercial waste.
    - Nonhazardous sludge.
    - Hazardous waste from conditionally exempt small quantity generators.
    - Industrial waste. Such a landfill may be publicly or privately owned.
- "**Type III Landfill**" means any landfill not defined as a municipal solid waste landfill or hazardous waste landfill, including the following:
    - Construction and demolition waste landfills.
    - Industrial waste landfills.
    - Landfills which accept waste other than household waste, municipal solid waste incinerator ash, or hazardous waste from conditionally exempt small quantity generators.

(MCL 324.11504 (4); R 299.4105 (a); and R 299.4104 (d)

"**Solid Waste Transfer Facility**" means a parcel(s) of land, building(s), and/or container(s) licensed for use in the re-handling or storage of solid waste—incidental to its transportation— but not located at the sites of generation or ultimate disposal. Based on design and type of refuse received, solid waste transfer facilities are classified as follows:

- "**Type A Transfer Facility**" means a facility designed and operated to receive solid waste primarily from mechanically unloaded vehicles
- "**Type B Transfer Facility**" means a facility designed and operated to receive domestic and commercial solid waste from vehicles unloaded by hand

MCL 324.11506 (5) and R 299.4501 (3)

"**Hauler**" means a person who owns or operates a container—which may be an integral part of a truck or other piece of equipment—used for the transportation of solid waste.

MCL 324.11506 (2) and MCL 324.11506 (4)

"**Recycling**" means the removal, storage, transportation, and eventual sale or reuse of any site- or source-separated materials taken from the solid waste stream that would otherwise be disposed of in a landfill.

"**Recycling Center and Service**" means a drop-off site which accepts a variety of recyclable materials or particular types of solid waste which need proper disposal. These sites can be operated by for-profit, non-profit, or governmental providers and are often included in the services provided by Transfer Facilities and Haulers.

"**Resource Recovery Facility (RRF)**" means the former waste-to-energy incinerator operated by the County of Jackson.

"**Solid Waste Processing Plant**" means a parcel(s) of land, building(s), and/or container(s) licensed for the processing of solid waste or the separation of material for salvage or disposal, or both, but does not include plants associated with ferrous or nonferrous scrap metal scrap or slag or slag products.

MCL 324.11506 (3)

"Solid waste" means garbage, rubbish, ashes, incinerator ash, incinerator residue, street cleanings, municipal and industrial sludges, solid commercial waste, solid industrial waste, and animal waste. However, solid waste does not include the exceptions listed in MCL 324.11506 (1).

MCL 324.11506 (1)

"**Special Event**" means an event during which a variety of recyclable materials or particular types of solid waste which need proper disposal are accepted for a certain period of time. These events are provided by for-profit, non-profit, or governmental institutions.