

ACKNOWLEDGEMENTS

This solid waste management plan was prepared with the assistance and cooperation of many people throughout the Three Rivers Solid Waste Management Authority's planning area.

This plan would have not been possible without the assistance of Ronnie Bell and Dan Reese of the Three Rivers Solid Waste Management Authority (TRSWMA). Mr. Bell has devoted the majority of his career to solid waste management in the region and was one of the founders and charter members of the TRSWMA. Mr. Reese has spent the majority of his career in the solid waste profession and has been instrumental in the day-to-day management of solid waste throughout and beyond the TRSWMA planning area.

In addition to Mr. Bell and Mr. Reese, the Authority as a whole is comprised of a diversified group of volunteers that have poured their heart and souls into managing solid waste of the region. The diverse background and proactive leadership of these members has made TRSWMA one of the premier and fiscal responsible solid waste authorities in the United States.

The author would also like to thank Amberlyn Liles with the City of Oxford for her contributions toward recycling in the western portion of the TRSWMA planning area. Amberlyn has put together and manages one of the best recycling programs in north Mississippi. Her efforts clearly demonstrate that recycling is possible in rural areas.

Key contributors to this plan include:

Calvin G. Abernathy, PhD, P.E.
Cook Coggin Engineers, Inc.
Tupelo, Mississippi
(662) 842-7381

Dan Reese
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Pontotoc, Mississippi
(662)489-2415

Ronnie E. Bell
Three Rivers Planning & Development
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Pontotoc, Mississippi
(662)489-2415

Rick Faucette, Chairman
Three Rivers Solid Waste Management
Authority
Pontotoc, Mississippi
(662) 489-2415

Appendix A

Flow Control Ordinance

**RESOLUTION DECLARING NECESSITY OF
REQUIRING MANDATORY FLOW OF MUNICIPAL SOLID WASTE
WITHIN BOUNDARIES OF
THREE RIVERS SOLID WASTE MANAGEMENT AUTHORITY**

WHEREAS, the Three Rivers Solid Waste Management Authority (the "Authority") is a political subdivision of the State of Mississippi and regional solid waste management authority created under the provisions of Sections 17-17-301 through 17-17-319 of the Mississippi Code of 1972, as amended;

WHEREAS, the Authority operates a regional solid waste landfill in Pontotoc County Mississippi, as defined by Section 17-17-305(w) of the Mississippi Code of 1972, as amended;

WHEREAS, the Authority has operated the landfill since April, 1995 in accordance with the Three Rivers Regional Solid Waste Management Plan (the "Solid Waste Plan") adopted and amended by the Authority and the various counties and municipalities comprising the Authority and approved by the Commission on Environmental Quality in 1992 and amended in December, 2005;

WHEREAS, at the time the Authority was created and at the time the Solid Waste Plan was adopted, there were no permitted Subtitle D landfills within the boundaries of the Authority or outside the Authority in the State of Mississippi, that met the proposed or final Subtitle D Regulations and none were in existence on April 12, 1991 at the time Section 17-17-319 of the Mississippi Code of 1972 was adopted;

WHEREAS, the Solid Waste Plan specifically found that a single regional solid waste management landfill was needed for the disposal of all municipal solid waste generated within the Authority's boundaries and thereby demonstrated in writing that use of any other solid waste disposal facility other than the Authority's regional landfill would be inconsistent with the Solid Waste Plan;

WHEREAS, in February, 1992, the Authority selected a site in Pontotoc County, Mississippi, to permit and construct a regional solid waste management landfill designed to meet the disposal needs for the counties and municipalities comprising the Authority;

WHEREAS, the Authority has determined that no additional Subtitle D solid waste landfills have been built within the geographic boundaries of the Authority;

WHEREAS, the Authority has determined that the utilization of any other municipal solid waste management facility, other than the Authority's landfill for the disposal of municipal solid waste within the geographic boundaries of the Authority would be inconsistent with the Solid Waste Plan;

WHEREAS, Section 17-17-319 of the Mississippi Code of 1972, authorizes the Authority to enact a mandatory flow ordinance, if the Authority determines that the mandatory flow of municipal solid waste within its boundaries is necessary to ensure the viability of the Authority's landfill;

WHEREAS, for purposes of this Resolution, the term "Municipal Solid Waste" shall mean any nonhazardous solid waste resulting from the operation of residential, commercial, governmental, industrial, or institutional establishments except waste generated from oil field exploration and production waste, sewerage sludge, rubbish which is disposed of in a Class I Rubbish Site or a Class II Rubbish site and recycled material.

WHEREAS, for purposes of this Resolution, the term "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: Electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals;

iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

WHEREAS, for purposes of this Resolution, the term "Solid waste" means any garbage, or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permit under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

WHEREAS, for purposes of this Resolution, the term "Municipal solid waste management facility" means any land, building, plant, system, motor vehicles, equipment or other property, whether real, personal or mixed, or any combination of either thereof, used or useful or capable of future use in the collection, storage, treatment, utilization recycling, processing, transporting or disposal of municipal solid waste, including transfer stations, incinerators, sanitary landfill facilities or other facilities necessary or desirable.

WHEREAS, the Authority has determined that the mandatory flow of municipal solid waste within its boundaries is necessary to ensure the viability of the Authority's landfill for the following reasons: (1) Currently over thirty-three percent (33%) of all municipal solid waste generated within the Authority's geographic boundaries is being taken outside the region for

disposal; (2) over forty percent (40%) of the municipal solid waste currently disposed of at the landfill consists of non-residential waste which is subject to being taken elsewhere and any change in circumstances which would result in a portion of that waste stream being taken elsewhere would significantly affect the viability of the landfill; (3) the Authority will incur certain fixed expenses in the future which will be mandated by state and federal law and it is necessary to ensure the viability of the landfill that a waste stream be guaranteed to cover these anticipated fixed expenses; (4) due to its operation as a landfill designed to afford residents of the region affordable garbage disposal, the loss of any municipal solid waste would have a disproportionate impact on the Authority budget and would adversely affect the viability of the landfill;

WHEREAS, the Authority has further determined that there is a need to exempt certain industrial solid waste from the mandatory flow requirement to assist existing industry in the region with limiting potential liability exposure under federal law, namely the "cradle to grave" liability arising under the Resource Conservation and Recovery Act ("RCRA").

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS: the Authority hereby determines that the mandatory flow of municipal solid waste to the Authority's solid waste landfill in Pontotoc County, Mississippi, by any person generating municipal solid waste within the geographic boundaries of the Authority is necessary to ensure the viability of the Authority's landfill in Pontotoc County, Mississippi, and each county and municipality within the Authority's jurisdiction, is directed to comply with this resolution pursuant to Section 17-17-319 of the Mississippi Code of 1972 to adopt an ordinance requiring that all municipal solid waste generated within the boundaries of each county or municipality shall be disposed of at the Authority's landfill in Pontotoc County, Mississippi.

BE IT FURTHER RESOLVED that notwithstanding anything herein to the contrary, this Resolution shall not be applicable to any solid waste disposed of by a generator of industrial solid waste within the region which has provided for the collection, transportation and disposal of its solid wastes either directly or by contract for at least ten (10) consecutive years or since the inception of the generator within the region if less than ten (10) years immediately prior to enactment of the member ordinance at a single municipal solid waste management facility

BE IT FURTHER RESOLVED that a generator of industrial solid waste within the region which meets the criteria for this exemption shall seek a permit confirming this exemption from the Authority pursuant to a procedure established by the Authority. The permit for an exemption shall be valid for five (5) years from the date of issuance and may be reissued for consecutive five (5) year periods as long as the generator continues disposal in the same single municipal solid waste management facility.

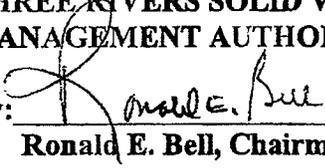
BE IT FINALLY RESOLVED that any generator of industrial solid waste which locates within the region after the effective date of the applicable ordinance shall comply with the mandatory flow requirements set forth herein and shall not be entitled to this exemption.

Upon motion duly made by Commissioner Rick Faucette and seconded by Commissioner Carl Cadden, and following discussion, the foregoing Resolution is hereby duly adopted upon the following vote of the members of the Board of Commissioners of the Three Rivers Solid Waste Management Authority:

Commissioner Ronnie Bell	voted: <u>AYE</u>
Commissioner Howard Boozer	voted: <u>AYE</u>
Commissioner Carl Cadden	voted: <u>AYE</u>
Commissioner Tom Cooper	voted: <u>AYE</u>
Commissioner Rick Faucette	voted: <u>AYE</u>
Commissioner Bobby Jones	voted: <u>AYE</u>
Commissioner Tim Kent	voted: <u>AYE</u>
Commissioner Raymond Patterson	voted: <u>AYE</u>
Commissioner Bill Rutledge	voted: <u>AYE</u>
Commissioner Paul Walker	voted: <u>ABSENT</u>
Commissioner Martha Martin	voted: <u>AYE</u>
Commissioner Kevin Payne	voted: <u>ABSENT</u>
Commissioner Alonzo Sykes	voted: <u>ABSENT</u>
Commissioner Russ Heard	voted: <u>AYE</u>

The motion having received the affirmative and unanimous vote of the members present, the Chairman declared the motion carried and the resolution adopted on this the 19th day of September, 2006.

**THREE RIVERS SOLID WASTE
MANAGEMENT AUTHORITY**

By: 
Ronald E. Bell, Chairman

ATTEST:

Carl Cadden, Secretary

Jackson 1284800v.3

Appendix B

Public Notice and Public Comments

PROOF OF PUBLICATION

PRINTER'S FEE \$ 84.62

THE STATE OF MISSISSIPPI
LAFAYETTE COUNTY

Personally appeared before me, a notary public in and for said county and State, the undersigned

Tim Phillips

Who, after being duly sworn, deposes and says that he is the Co-Publisher of the Oxford Eagle, a newspaper published daily in the City of Oxford, in said county and State, and that the said newspaper has been published for more than one year and that Three Rivers Solid Waste Public Notice a true copy of which is hereto attached was published for 2 consecutive weeks in said newspaper as follows:

VOLUME	NO.	DATE
140	135	4-08-08
140	140	4-15-08

Tim Phillips

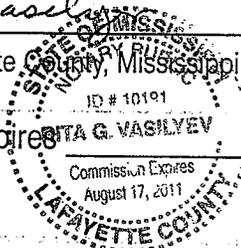
Sworn to and subscribed before me this

24 day of June, 2008

Rita G. Vasilyev

Notary Public, Lafayette County, Mississippi

My commission expires



PUBLIC NOTICE
Three Rivers Solid Waste Management Authority is hereby providing public notice of the development of a new solid waste management plan that covers seven counties in northeast Mississippi. Counties within the planning area include Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.
The solid waste management plan provides a comprehensive overview and needs of all solid waste management activities within the planning area. Items addressed in the solid waste management plan include but are not limited to: existing solid waste management facilities and services; recycling and waste reduction programs; fire disposal programs; household hazardous waste programs; disaster debris management; management of other non-typical solid waste and financing of solid waste management programs and facilities. Copies of the Solid Waste Management Plan can be viewed at the following locations and web sites:
Three Rivers Planning & Development District at 75 S. Main, Pontotoc, MS
Chancery Clerks office at 103 W. Main Street, Pittsboro, MS
Chancery Clerks office at 201 W. Main Street, Fulton, MS
Chancery Clerks office at 300 North Lamar, Oxford, MS
Chancery Clerks office at 200 Jefferson Street, Tupelo, MS
Chancery Clerks office at 201 W. Commercial Street, Aberdeen, MS
Chancery Clerks office at 34 S. Liberty Street, Pontotoc, MS
Chancery Clerks office at 109 E. Main Street, New Albany, MS
www.cookcoggin.com
www.ipod.com/sowas.htm
The solid waste management plan addresses many specific solid waste management needs within the designated planning area. Specific needs include but are not limited to:
Construction or addition of rubbish landfills in Calhoun County, Lafayette County, and Union County.
Construction of rubbish landfills for several municipalities within the planning area as a mechanism to reduce solid waste disposal costs and minimize illegal roadside dumping activities.
Modifications to the Three Rivers Landfill that could potentially increase the operational and disposal capacity of the existing Subtitle D landfills.
Increase the visibility of recycling programs in several areas within the planning area.
Any person or organization wishing to make public comments on the plan should attend the public comment meeting to be held at the Three Rivers Planning & Development District at 75 South Main Street in Pontotoc, Mississippi at 7:00 PM on May 13, 2008.
Publish: April 8, 15, 2008

APR 16 2008

STATE OF MISSISSIPPI, LEE COUNTY:

JACK KENT ADNAN

Personally appeared before me, DIANNE POWELL Notary Public, in and for said County and State, WILLIAM L. CREWS, Publisher of a newspaper printed and published in the City of Tupelo, Lee County, Mississippi, called The Northeast Mississippi Daily Journal, who being duly sworn, deposes and says that the publication of a certain notice, a true copy of which is hereunto attached, has been made in said newspaper for 2 weeks consecutively to-wit:

- Vol. 135 No. 8 Date Apr 8 2008
- Vol. 135 No. 15 Date Apr 15 2008
- Vol. _____ No. _____ Date _____ 20__

William L. Crews

Witness my hand and seal this 15 day of April, 2008

Dianne Powell

My Commission expires MISSISSIPPI STATEWIDE NOTARY PUBLIC
MY COMMISSION EXPIRES JUNE 17, 2009
BONDED THRU STEGALL NOTARY SERVICE

LEGAL NOTICE

PUBLIC NOTICE

Three Rivers Solid Waste Management Authority is hereby providing public notice of the development of a new solid waste management plan to cover seven counties in north-east Mississippi. The counties included are: Choctaw, Itawamba, Leake, Leflore, Lowndes, and Wilcox counties. The plan provides a comprehensive solid waste management plan for the area. The plan includes provisions for the collection, transport, and disposal of solid waste. The plan also includes provisions for the construction of additional landfills and the expansion of existing landfills. The plan is being developed in accordance with the requirements of the Mississippi Solid Waste Management Act of 1988. The plan is being developed in accordance with the requirements of the Mississippi Solid Waste Management Act of 1988. The plan is being developed in accordance with the requirements of the Mississippi Solid Waste Management Act of 1988.

PRINTERS FEES

To <u>378</u> words at <u>22</u> Cents per word	\$ <u>83.16</u>
To Proof of Publication	\$ <u>6.00</u>
Total	\$ <u>89.16</u>

Three Rivers Solid Waste Management Authority

Public Comments on Solid Waste Management Plan
May 13, 2008

Check One

Oral Public Comment Written Comment (not public)

Name: Boica Holl

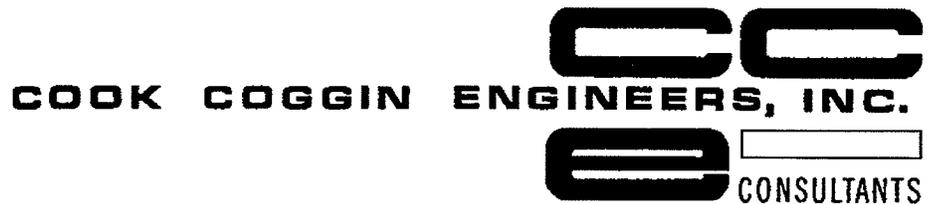
Address: P.O. Box 507, Plantersville, MS 38862

Phone: 662-844-2012

Comment (please use space below)

For the past three years, the Town of Plantersville has been in favor of converting the old lagoon into a rubbish disposal site. This lagoon has been inactive for nearly two decades & can put to better use than it is presently. Our goal is to establish a Class II site

Boica Holl
Mayor
Town of Plantersville
Plantersville, MS



April 8, 2008

Union County Board of Supervisors
P.O. Box 847
New Albany, Mississippi 38652

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

Please find enclosed five (5) copies of a CD that contains the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. A copy of the Solid Waste Management Plan can also be viewed on the internet at www.cookcoggin.com. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

The preparation of this management plan was funded by the Mississippi Department of Environmental Quality (MDEQ) and matching funds from the Three Rivers Solid Waste Management Authority. Although there are many items discussed in the plan, I would like to point out that all recommendations made in the final report will be incorporated into an Approval Order by MDEQ. Items identified in the Approval Order must be completed by the Authority, county, or city in accordance to a schedule defined by MDEQ. Failure to address these items may result in fines or penalties from MDEQ.

In view of the above, it is important to distinguish between a "needed project or service" and a "nice to have project or service". A "needed project or service" is defined as a deficiency in solid waste management service or facilities that are mandated by federal or state laws. "Nice to have project or service" is defined as something that would be nice to have, but are not necessary to comply with state or federal laws. An example of a "nice to have project" would be to provide a paved surface under each scrap metal facility.

Every effort has been made to make this solid waste management plan one of the most user friendly plans in the State of Mississippi. The plan has been written to identify solid waste management options for residents, industry, small towns, cities, and county governments. The final approved Solid Waste Management Plan will be on the Three Rivers Solid Waste Management Authority's web site so that it will be available for all residents, commercial and industrial users and government sectors throughout the planning area.

An overview of each chapter follows:

Chapter 1 – Introduction: Provides an overview of the history of solid waste management in the seven county area along with demographics for each county.

Chapter 2 – Existing Solid Waste Management in the Planning Area: Provides an overview of the waste management programs and facilities for the entire planning area. Specific information about transfer stations, Subtitle D landfill, residential collection, nonresidential collection, Class 1 rubbish landfills, Class 2 rubbish landfills, tire disposal facilities, household hazardous waste, and unauthorized dumping programs. Maps, phone numbers and addresses for all facilities are identified.

Chapter 3 – Solid Waste Composition and Quantification: Provides an overview of solid waste composition and solid waste production rates for each county within the planning area.

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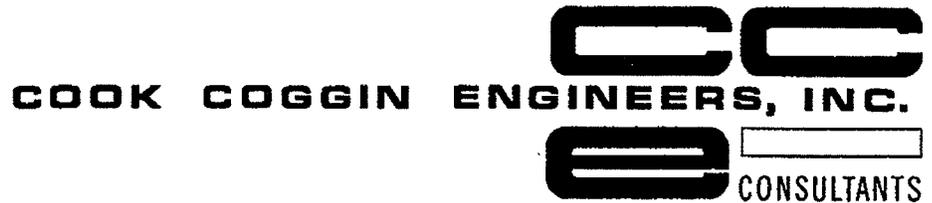
As with any planning document, this plan was prepared to reflect solid waste management needs within the planning area based on historical growth trends. In the event that international, national, or local economic conditions change (such as the automotive or furniture industry) significantly, the solid waste management plan will need to be updated to reflect these changes.

If any of you have any questions or comments about the content of the Solid Waste Management Plan, please feel free to contact by phone at (662) 842-7381 or by email at cgabernathy@cookcoggin.com. Each of you are also invited to attend the public comment meeting to be held at the Three Rivers Planning & Development District at 75 South Main Street in Pontotoc Mississippi at 2:00 PM on May 13, 2008.

Sincerely,



Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Pontotoc County Board of Supervisors
P.O. Box 209
Pontotoc, Mississippi 38863

Re: Three Rivers Solid Waste Management Authority
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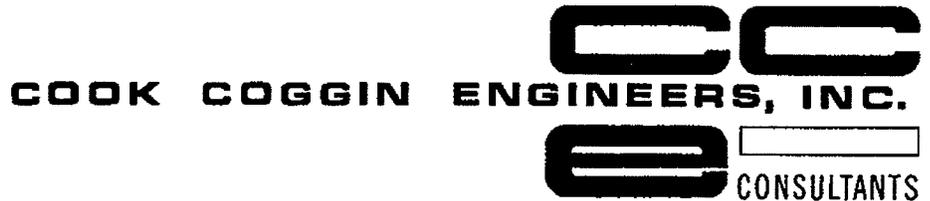
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Sincerely,



Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Monroe County Board of Supervisors
P.O. Box 578
Aberdeen, Mississippi 39730

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Solid Waste Management Plan

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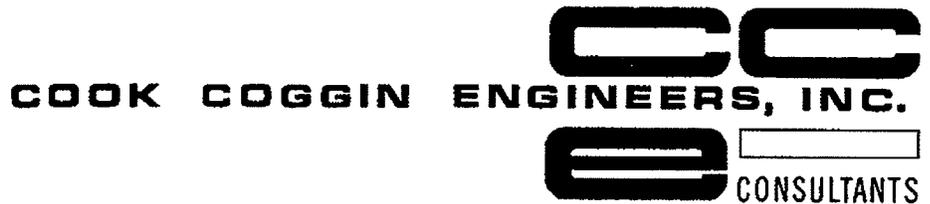
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Sincerely,



Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Lee County Board of Supervisors
P.O. Box 1785
Tupelo, Mississippi 38802

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

Please find enclosed five (5) copies of a CD that contains the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. A copy of the Solid Waste Management Plan can also be viewed on the internet at www.cookcoggin.com. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

The preparation of this management plan was funded by the Mississippi Department of Environmental Quality (MDEQ) and matching funds from the Three Rivers Solid Waste Management Authority. Although there are many items discussed in the plan, I would like to point out that all recommendations made in the final report will be incorporated into an Approval Order by MDEQ. Items identified in the Approval Order must be completed by the Authority, county, or city in accordance to a schedule defined by MDEQ. Failure to address these items may result in fines or penalties from MDEQ.

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Every effort has been made to make this solid waste management plan one of the most user friendly plans in the State of Mississippi. The plan has been written to identify solid waste management options for residents, industry, small towns, cities, and county governments. The final approved Solid Waste Management Plan will be on the Three Rivers Solid Waste Management Authority's web site so that it will be available for all residents, commercial and industrial users and government sectors throughout the planning area.

An overview of each chapter follows:

Chapter 1 – Introduction: Provides an overview of the history of solid waste management in the seven county area along with demographics for each county.

Chapter 2 – Existing Solid Waste Management in the Planning Area: Provides an overview of the waste management programs and facilities for the entire planning area. Specific information about transfer stations, Subtitle D landfill, residential collection, nonresidential collection, Class 1 rubbish landfills, Class 2 rubbish landfills, tire disposal facilities, household hazardous waste, and unauthorized dumping programs. Maps, phone numbers and addresses for all facilities are identified.

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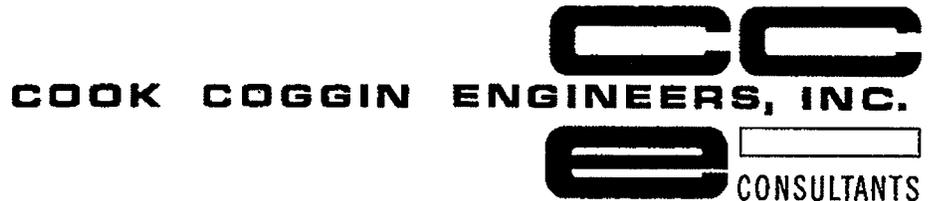
As with any planning document, this plan was prepared to reflect solid waste management needs within the planning area based on historical growth trends. In the event that international, national, or local economic conditions change (such as the automotive or furniture industry) significantly, the solid waste management plan will need to be updated to reflect these changes.

If any of you have any questions or comments about the content of the Solid Waste Management Plan, please feel free to contact by phone at (662) 842-7381 or by email at cgabernathy@cookcoggin.com. Each of you are also invited to attend the public comment meeting to be held at the Three Rivers Planning & Development District at 75 South Main Street in Pontotoc Mississippi at 2:00 PM on May 13, 2008.

Sincerely,



Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Lafayette County Board of Supervisors
P.O. Box 1240
Oxford, Mississippi 38655

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

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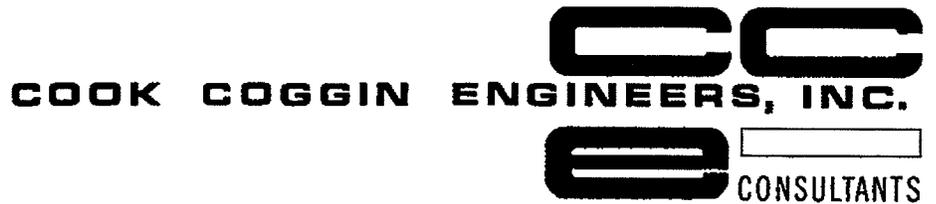
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Sincerely,



Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Itawamba County Board of Supervisors
P.O. Box 776
Fulton, Mississippi 38843

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

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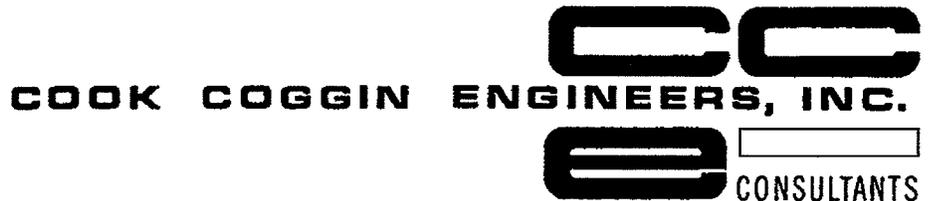
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Sincerely,


Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Calhoun County Board of Supervisors
P.O. Box 36
Pittsboro, Mississippi 38951

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

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Sincerely,



Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Mr. J.S. Moore, Jr., Chancery Clerk
103 W. Main Street
Pittsboro, Mississippi 38951

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Mr. Moore:

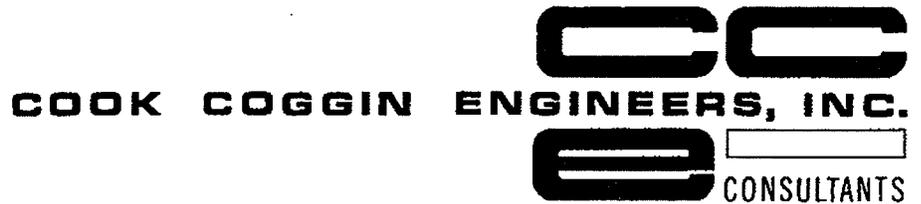
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Any person or organization wishing to make public comments on the plan should attend the public comment meeting to be held at the Three Rivers Planning & Development District at 75 South Main Street in Pontotoc Mississippi at 2:00 PM on May 13, 2008.

Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Mr. James E. Witt, Chancery Clerk
201 W. Main Street
Fulton, Mississippi 38843

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Mr. Witt:

Please find enclosed a copy of the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

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Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Sherry J. Wall, Chancery Clerk
300 North Lamar
Oxford, Mississippi 38655

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Ms. Wall:

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Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Mr. Bill Benson, Chancery Clerk
200 Jefferson Street
Tupelo, Mississippi 38804

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

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Sincerely,


Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Mr. Ronnie Boozer, Chancery Clerk
201 W. Commerce Street
Aberdeen, Mississippi 39730

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

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Sincerely,


Calvin G. Abernathy, Ph.D., P.E.



April 8, 2008

Mr. Reggie Collums, Chancery Clerk
34 South Liberty Street
Pontotoc, Mississippi 38863

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

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Sincerely,


Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Ms Annette Hickey, Chancery Clerk
109 East Main Street
New Albany, Mississippi 38652

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Ms. Hickey:

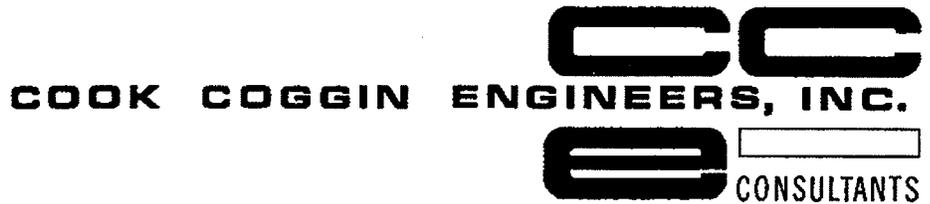
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Sincerely,


Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Tishomingo County Board of Supervisors
1008 Battleground Drive
Iuka, Mississippi 38852

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

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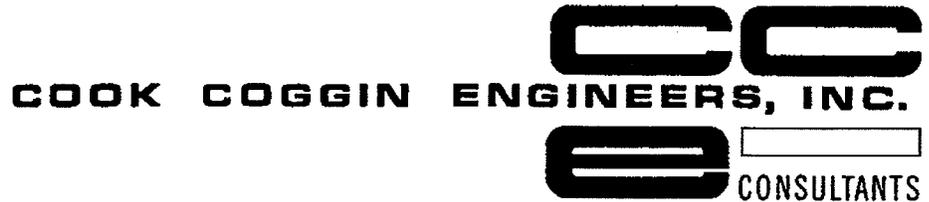
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Sincerely,

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April 8, 2008

Prentiss County Board of Supervisors
P.O. Box 477
Booneville, Mississippi 38829

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

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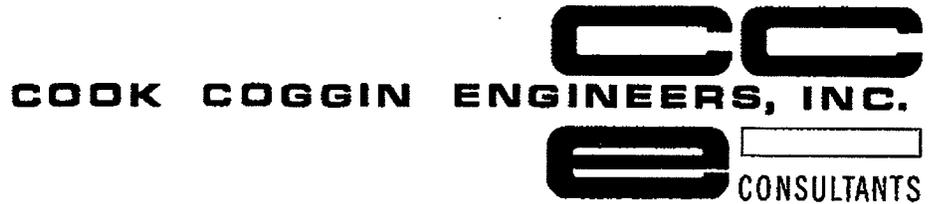
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The preparation of this management plan was funded by the Mississippi Department of Environmental Quality (MDEQ) and matching funds from the Three Rivers Solid Waste Management Authority. In accordance with the grant conditions, a copy of the Solid Waste Management Plan must be sent to the Board of Supervisors of each neighboring county.

If any of you have any questions or comments about the content of the Solid Waste Management Plan, please feel free to contact by phone at (662) 842-7381 or by email at cgabernathy@cookcoggin.com. Each of you are also invited to attend the public comment meeting to be held at the Three Rivers Planning & Development District at 75 South Main Street in Pontotoc Mississippi at 2:00 PM on May 13, 2008.

Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Tippah County Board of Supervisors
P.O. Box 99
Ripley, Mississippi 38663

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

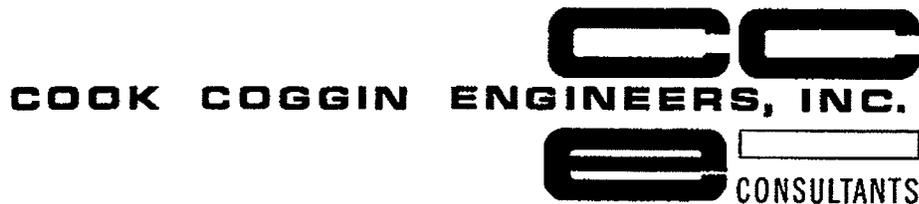
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Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Marshall County Board of Supervisors
P.O. Box 219
Holly Springs, Mississippi 38635

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

Please find enclosed a copy of a CD that contains the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. A copy of the Solid Waste Management Plan can also be viewed on the internet at www.cookcoggin.com. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

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Sincerely,

Calvin G. Abernathy, Ph.D., P.E.



April 8, 2008

Benton County Board of Supervisors
P.O. Box 218
Ashland, Mississippi 38603

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

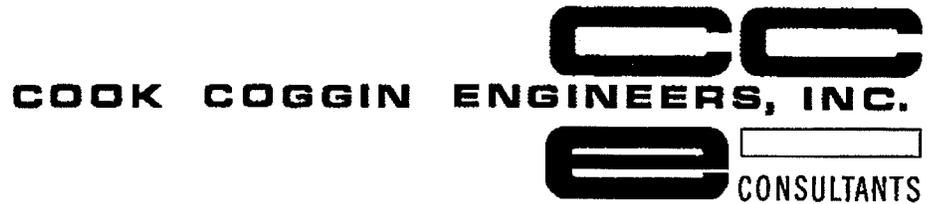
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Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Desoto County Board of Supervisors
365 Loshier Street
Hernando, Mississippi 38632

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

Please find enclosed a copy of a CD that contains the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. A copy of the Solid Waste Management Plan can also be viewed on the internet at www.cookcoggin.com. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

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Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Panola County Board of Supervisors
P.O. Box 807
Batesville, Mississippi 38632

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

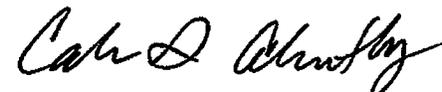
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Sincerely,


Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Chickasaw County Board of Supervisors
1 Pinson Square Road
Houston, Mississippi 38851

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

Please find enclosed a copy of a CD that contains the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. A copy of the Solid Waste Management Plan can also be viewed on the internet at www.cookcoggin.com. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

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Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Webster County Board of Supervisors
P.O. Box 398
Walthall, Mississippi 39771

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

Please find enclosed a copy of a CD that contains the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. A copy of the Solid Waste Management Plan can also be viewed on the internet at www.cookcoggin.com. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

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Sincerely,

Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Clay County Board of Supervisors
P.O. Box 815
West Point, Mississippi 39773

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

Please find enclosed a copy of a CD that contains the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. A copy of the Solid Waste Management Plan can also be viewed on the internet at www.cookcoggin.com. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

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Sincerely,


Calvin G. Abernathy, Ph.D., P.E



April 8, 2008

Lowndes County Board of Supervisors
P.O. Box 1364
Columbus, Mississippi 39703

Re: Three Rivers Solid Waste Management Authority
Solid Waste Management Plan

Dear Sir:

Please find enclosed a copy of a CD that contains the Final Draft of the Solid Waste Management Plan for the Three Rivers Solid Waste Management Authority. A copy of the Solid Waste Management Plan can also be viewed on the internet at www.cookcoggin.com. The plan is intended to address solid waste facilities and needs for the seven counties of the Three Rivers Solid Waste Management Planning area. The planning area consists of Calhoun County, Itawamba County, Lafayette County, Lee County, Monroe County, Pontotoc County and Union County.

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Sincerely,


Calvin G. Abernathy, Ph.D., P.E.

Appendix C

Board Resolution Adopting Solid Waste Management Plan

MINUTES
THREE RIVERS SOLID WASTE MANAGEMENT AUTHORITY
JUNE 10, 2008

The Three Rivers Solid Waste Management Authority met in regular session on June 10, 2008, in the conference room of Three Rivers Planning and Development District with the following Commissioners present: Faucette, Heard, Jones, Walker, Boozer, Cadden, Patterson, Cooper, Thomas and Kent.

Determination was made that a quorum was present.

Upon motion by Tim Kent and second by Russ Heard, the agenda was approved.

Upon motion by Tom Cooper and second by Paul Walker, minutes of the May 13, 2008 meeting were approved as printed.

The April 30, 2008 financial statements were approved as printed after motion by Bobby Jones and second by Howard Boozer.

Paul Walker moved that the listed claims be approved for payment, Howard Boozer seconded the motion, and the motion was approved.

The accounts receivable aging schedule was approved after motion by Bobby Jones and second by Tim Kent.

Landfill Manager Dee Shirley reported on landfill activities. He stated that 220,000 gallons of leachate had been re-circulated. He anticipates completion of the new cell by month end. A new compactor is in use at the landfill.

Authority Engineer Calvin Abernathy showed a picture of the new landfill cell under construction. He stated that an emissions report had been sent to DEQ. Abernathy noted that only one comment had been received at the solid waste plan public hearing held on May 13, 2008. Abernathy stated that the waste authority would need to submit a grant application to DEQ on the master plan. Tim Kent made a motion to approve the master plan. Howard Boozer seconded the motion which was unanimously approved. Ronnie Bell stated that the "Amendment to Contract for Professional Services between Owner and Engineer" would need to address OSHA requirements.

Bruce Crane, representing the Enerkem Company, stated that Enerkem had agreed to open their books for review. There was discussion as to the benefits of such a facility versus the potential increase in tipping fees. Calvin Abernathy presented four budget scenarios should we pursue a relationship with Enerkem. There was discussion as to how a reduction in landfill waste would impact the new operation contract with Waste Connections. Carl Cadden made the motion to call a special session at noon on July 1st at which time Enerkem representatives will be present to demonstrate their financial validity. Paul Walker seconded the motion.

Dan Reese reported that after advertising for RFPs on pine timber, we received two bids. The highest bid came from Miller Timber, LLC at \$8.00 per ton for pine fiber. The lowest bid came from Double B

Sawmill at \$5.00 per ton for pulpwood. Howard Boozier made the motion to use the services of Miller Timber, LLC. The motion was seconded by Carl Cadden.

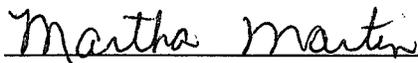
Dan Reese updated the commissioners concerning the flow control ordinance violations by Waste Management. Mike Welch of Waste Management stated that his attorney agreed with the solid waste authority's interpretation of section 2(a) of the ordinance. Ronnie Bell stated that guidelines need to be established for enforcement of a violation and any penalty processes.

Ronnie Bell stated that the solid waste authority's credit policy and application had been compared to others in the industry. Suggestions are to be brought before the board at the next regularly scheduled meeting to enhance credit guidelines.

Dan Reese mentioned the need for uniformity and updated computer hardware and software at all scale houses.

Ronnie Bell requested that a budget committee be established. A motion was made by Tim Kent and seconded by Bobby Jones that the officer committee composed of Rick Faucette, Carl Cadden, Martha Martin and two at large commissioners, Tim Kent and Bobby Jones, act as the budget committee.

Upon proper motion and second, the meeting was then adjourned.


SECRETARY


CHAIRMAN

1.1 Background and History

Prior to 1990, there were several active municipal sanitary landfills operating in the region that were nearing the end of their useful lives or needed to be closed to satisfy the requirements of the new Subtitle D regulations (Code of Federal Regulations, Title 40, Parts 257 and 258). Once these landfills were closed, the region would not have an active municipal solid waste landfill that met the requirements of the new Subtitle D regulations. Realizing the financial impacts to the region of not having affordable solid waste disposal, political leaders in the region recognized the need of having a regional solid waste disposal facility.

The Three Rivers Solid Waste Management Authority (TRSWMA) was established in 1990 by the Three Rivers Planning Development District (TRPDD) to serve the region's solid waste disposal needs. Under the direction of TRSWMA, a 30-year solid waste master plan was developed that would determine where to site a regional landfill that would provide a centralized location to minimize transportation costs along with a location that would result in minimal impacts to the environment.

The initial solid waste master plan recommended the construction of a single landfill at a site near the city of Pontotoc to serve the region. The Three Rivers Regional Landfill began receiving solid waste in the spring of 1995. As part of the Authority's regional solid waste collection and disposal services, three transfer stations were also constructed. The use of transfer stations allows local collection trucks to direct dump into large transport trailers that transport the waste more economically to the landfill.

1.2 Organization of Three Rivers Solid Waste Management Authority

The TRSWMA was created under the provisions of the Mississippi Regional Solid Waste Management Authority Act passed by the Mississippi Legislature in 1991. The Act provided municipalities and counties the statutory authority to act jointly in the creation of a regional authority to construct, own, finance, and operate a regional solid waste disposal facility.

Today, the Authority oversees or provides support for a variety of solid waste management facilities inclusive of a Subtitle D Landfill, three regional solid waste transfer stations, numerous recycling trailers, tire recycling trailers, white goods and scrap metal recycling. In addition to the above, the Authority also provides technical, financial and billing assistance to various counties (even some outside the planning area) for solid waste collection, coordination of household hazardous waste collection events and various other solid waste management components as needs and waste management trends change from day-to-day.

Members of the TRSWMA are listed in Table 1-1. Each member of the authority appoints a person to serve on the Board of Commissioners, which comprises the governing authority and leadership of the TRSWMA. The Board annually elects members to serve as Chairman, Vice-Chairman, and Secretary-Treasurer. In addition to internally elected officers, the Board will also elect members to serve on the Executive Committee and will internally create various other committees (such as a Landfill Gas Committee or RFP Committee) on an as needed basis.

The Board will typically meet on the 2nd Tuesday of each month at the Three Rivers Planning Development District (Three Rivers PDD) to discuss and make financial, technical and policy related decisions and oversight of solid waste management activities within the region.

In addition to the Board, Three Rivers SWMA also utilizes staff and resources from Three Rivers PDD and various outside people/firms for professional support (legal, auditing and engineering). An organizational chart illustrating the structure of the Three Rivers SWMA is presented in Figure 1-1.

Table 1-1 Members of the Three Rivers Solid Waste Management Authority

Calhoun County	City of Aberdeen (Monroe County)
Itawamba County	City of Amory (Monroe County)
Lafayette County	City of Fulton (Itawamba County)
Lee County	City of Oxford (Lafayette County)
Monroe County	City of New Albany (Union County)
Pontotoc County	City of Pontotoc (Pontotoc County)
Union County	City of Tupelo (Lee County)

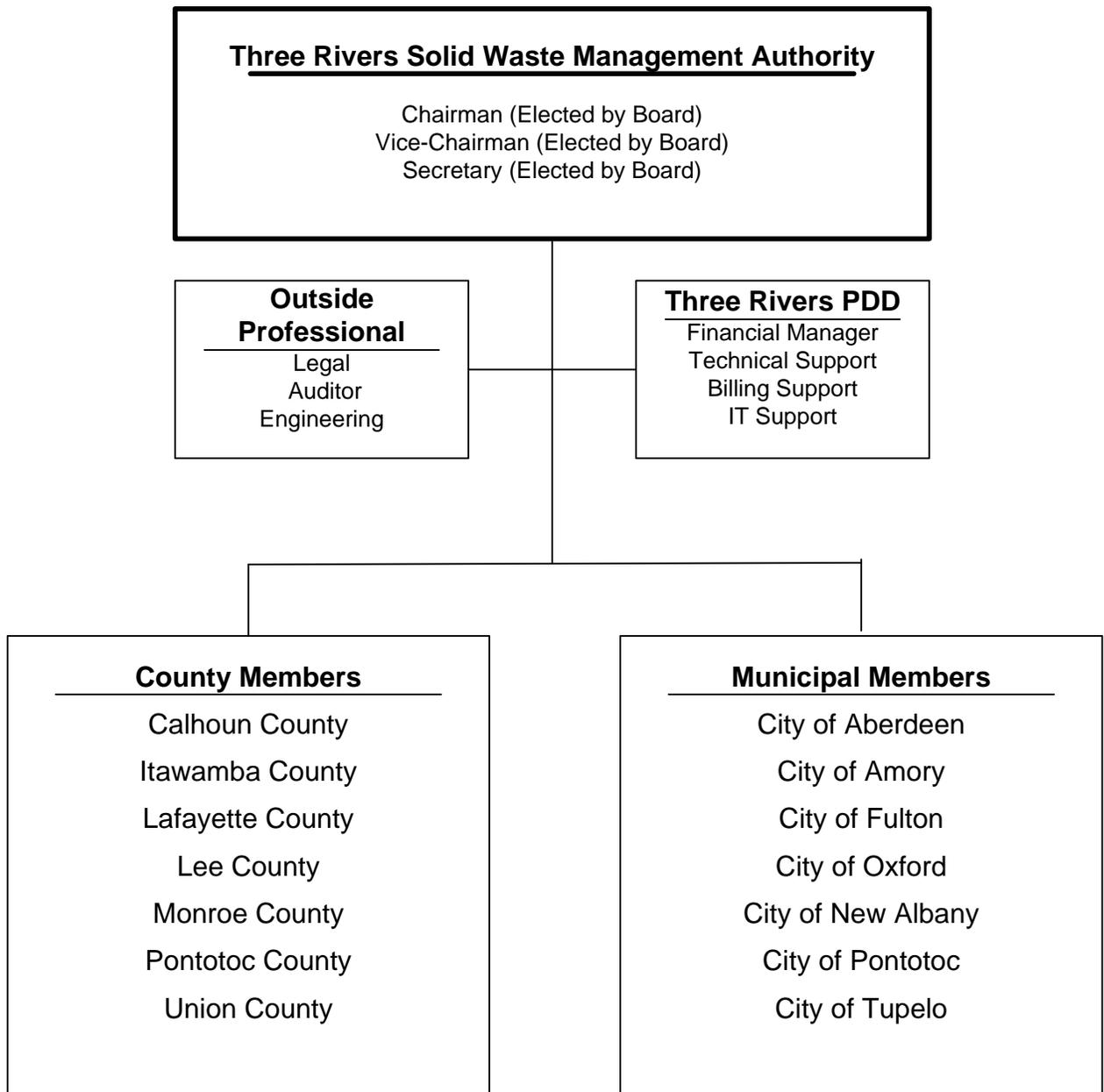


Figure 1-1 TRSWMA Organizational Chart

1.3 Description and Demographics of the Planning Area

The TRSWMA is organizationally comprised of seven municipalities and seven counties, as presented above in Table 1-1. The area served by the TRSWMA's planning area consists of approximately 3,876 square miles of lightly to moderately populated land in north Mississippi. The planning area is illustrated in Figure 1-2 and Figure 1-3.

Based on the 2000 U.S. Census Bureau data, the planning area has a population of approximately 242,400 people with a population density of approximately 62.5 people per square mile, which is slightly more than the state average of 60.6 people per square mile. Other relative demographical characteristics of the planning area are presented in Table 1-2.

Table 1-2 Demographical Characteristics of the Three Rivers Solid Waste Management Authority Planning Area (U.S. Census Bureau, 2000)

Counties in Planning Area	Population	Number of Persons per Household	Median Household Income	Average Income per Capita	Percent Below Poverty
Calhoun	15,069	2.46	\$27,113	\$15,106	18.1%
Itawamba	22,770	2.51	\$31,156	\$14,956	14.0%
Lafayette	38,744	2.36	\$28,517	\$16,406	21.3%
Lee	75,755	2.55	\$36,165	\$18,956	13.4%
Monroe	38,014	2.57	\$30,307	\$14,072	17.2%
Pontotoc	26,726	2.62	\$32,055	\$15,658	13.8%
Union	25,362	2.57	\$32,682	\$15,700	12.6%
Planning Area (a)	242,440	2.52	(b)	\$16,463	15.6%
State of Mississippi	2,844,658	2.63	\$31,330	\$15,853	19.9%
United States	281,421,906	2.59	\$41,994	\$21,587	12.4%

(a) Calculated based on published data, (b) Can not be calculated using available data

Boundaries as of January 1, 1990

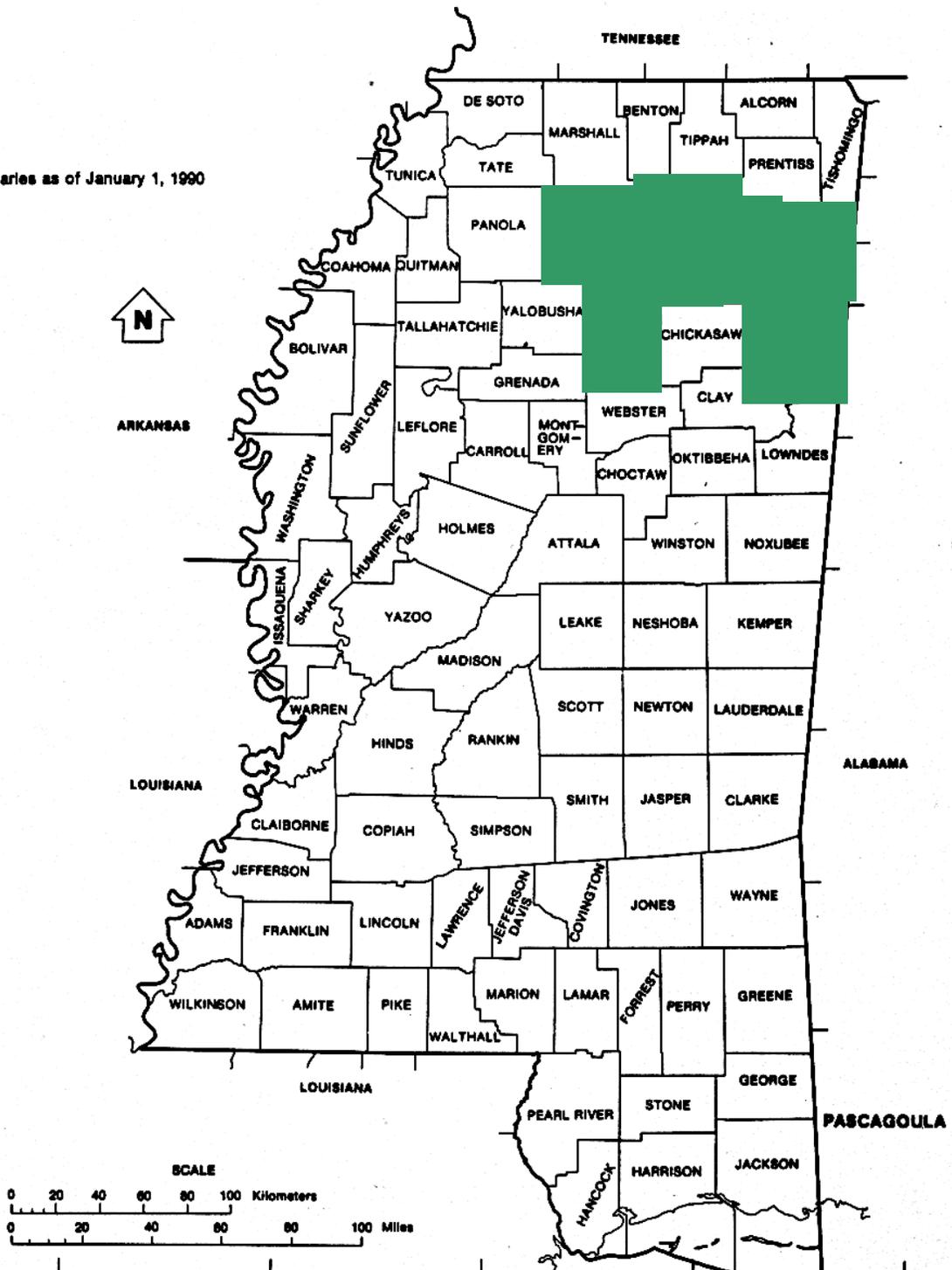


Figure 1-2 Map of Mississippi & Three Rivers SWMA Planning Area

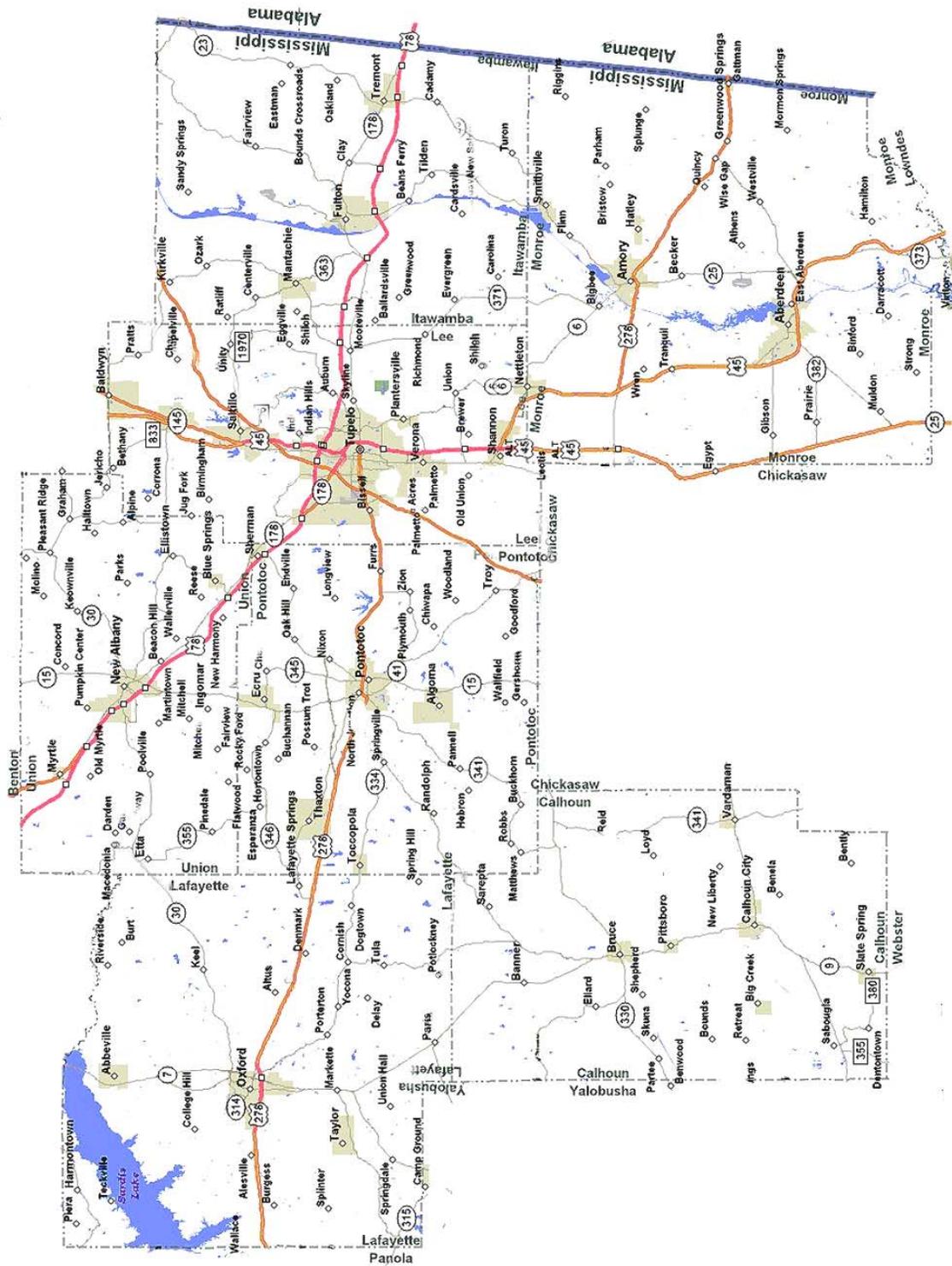


Figure 1-3 Map of the Three Rivers Solid Waste Management Authority Planning Area

1.4 Objectives for the Solid Waste Management Plan

The objectives of the solid waste management plan are to provide the Authority a strategic planning tool and to continue the Authority's compliance with the Mississippi Department of Environmental Quality (MDEQ) solid waste requirements. This plan was prepared in accordance with Mississippi Code § 17-17-225, § 17-17-227 along with the publication "Guidance to Local Governments for Preparing a Comprehensive Local Solid Waste Management Plan" as published by MDEQ in 2008. The plan will establish the groundwork for solid waste source reduction, reuse, recycling, collection, transfer, and safe disposal initiatives for TRSWMA out to the year 2030.

This plan has been developed using data and other information that is currently available. Federal or State regulations are subject to change in the future, which could have an impact on the suggested planning recommended by this plan. It should also be noted that this plan is based on population projections that could increase or decrease significantly depending on the economic prosperity within the planning area.

In general, this solid waste management plan is prepared for the intended use of government agencies, TRSWMA, residents and industry within the planning area along with potential residents and industry that may be interested in locating to the region. Key components of the solid waste management plan include but are not limited to:

- Identifies existing solid waste management practices within the planning area
- Identifies where recycling programs and drop off centers are located within the planning area
- Projects solid waste volumes for each county within the planning area
- Identifies proper handling and disposal practices for other wastes such as wastewater treatment sludges, medical waste, used tires, white goods, disaster debris and etc.
- Identifies recycling markets and waste minimization programs within the planning area and assess the potential needs for recycling programs and waste minimization practices
- Identifies future needs for solid waste collection programs, solid waste transfer stations, and future landfill operations including but not limited to landfill expansion, methane gas management, leachate management, landfill closure, and landfill post closure operations

Chapter 10

SOLID WASTE NEEDS ASSESSMENT

The purpose of this Chapter is to identify the various solid waste needs within the TRSWMA planning area. While there are numerous needs within the region, not all needs are equal and have different levels of importance. In view of this, this Chapter establishes categories of needs based on the urgency and degree of need. The Categories are presented below:

Category 1 This is a solid waste management need that is urgently needed to be addressed in order to comply with a permit condition, state or federal law. Category 1 needs that have a projected capacity shortfall are required to have an implementation schedule in accordance with Mississippi Code § 17-17-225(d) and § 17-17-227(1)(h). Examples of a Category 1 need would be a community that did not provide residential solid waste collection or a rubbish landfill that is about to exhaust its capacity.

Category 2 This is a solid waste management need that would be nice to have, but is not necessary to comply with a permit condition, state or federal law. A Category 2 need is essentially a “desired” need. Examples of Category 2 needs could include the construction of a new rubbish landfill that will more confidently serve local residents or providing a concrete pad under white goods collection area. In accordance Mississippi Code § 17-17-225(d) and § 17-17-227(1)(h), Category 2 needs do not require an implementation schedule.

Category 3 This is a solid waste management need that merits additional study and is not directly related to any state or federal law. Example of a Category 3 need would be for a community to evaluate reducing residential garbage collection from twice a week to once a week or to evaluate the possibility of changing the type of equipment used to pick up residential solid waste. In accordance Mississippi Code § 17-17-225(d) and § 17-17-227(1)(h), Category 3 needs do not require an implementation schedule.

This chapter also divides up needs into sections so that local governments can clearly locate and identify solid waste needs within their jurisdiction. For example, there are some needs that are best handled on a region wide basis while other needs may be directed toward a specific county.

10.1 Three Rivers SWMA Planning Area

The Three Rivers Solid Waste Management Authority (TRSWMA) provides the umbrella organization for solid waste management activities within the Three Rivers Planning Area. The umbrella type management structure provides the Authority the ideal mechanism to coordinate solid waste management issues on a systems wide basis. While the Authority does not have the legal authority to regulate the actions of a county, city or private business, the Authority is in a position to provide guidance and direction for addressing area wide initiatives. Needs for the entire region are identified in Table 10-1.

Table 10-1 Needs for the Entire Planning Area (administered by the Authority)

Category	Description of Solid Waste Management Need
Category 1	There are no known Category 1 needs that need addressing at this time.
Category 2	The Authority should place a digital copy of the Solid Waste Management Plan on their web site so that all residents and industry can have access to the report.
Category 2	The Authority should periodically (every few years) review and evaluate the billing software used by the Authority to invoice and track customers of the landfill.
Category 2	The Authority shall continue to pursue funding mechanisms for providing concrete surfaces under all white goods storage areas in the region.
Category 2	The Authority shall continue to investigate ways to provide disposal solutions for used computers and electronics for the region. The Authority should investigate purchasing an abandoned warehouse(s) in the region to securely store unwanted computers and electronics.
Category 2	The Authority shall continue to pursue funding for safe needle disposal programs for the region
Category 2	The Authority shall continue to pursue funding sources for a mobile mulching program that would assist communities across the region in dealing with wood waste associated with right-of-way clearing..
Category 2	The Authority should consider hiring a part-time recycling coordinator to provide recycling assistance and guidance for the region.
Category 2	The Authority shall continue to manage and administer trucking contracts for the three (3) transfer stations.

Table 10-1 (Continued) Needs for the Entire Planning Area (administered by the Authority)

Category	Description of Solid Waste Management Need
Category 2	The Authority shall continue to pursue funding for a flow control officer for the region or on a county-by-county basis.
Category 3	The Authority should pursue funding avenues for providing educational services associated with recycling, waste minimization efforts, yard waste programs and illegal/roadside dumping.
Category 3	The Authority should evaluate the feasibility of a regional wastewater sludge land application site.

10.2 Three Rivers Regional Landfill

This section of the report is dedicated and applicable only to the Three Rivers Regional Landfill located near Pontotoc.

Table 10-2 Needs Assessment of the Three Rivers Regional Landfill

Category	Description of Solid Waste Management Need
Category 1	The Authority needs to continue to address permit renewals for the solid waste permit, storm water permit, Title V air permit, and the pretreatment permit for leachate disposal. These permits are currently in the review process at MDEQ.
Category 2	The Authority shall continue to evaluate the condition of leachate storage facilities at the Landfill. The current leachate tanks are nearing the end of their useful lives.
Category 2	The Authority should evaluate the need of a second set of truck scales along with accessing the condition of the existing scale house. This project is currently under construction and should be fully functional in February 2010.
Category 2	The Authority should continue to market to identify an end user for the methane gas produced by the Landfill.
Category 2	The Authority shall continue to effectively manage the existing landfill gas collection system, blower and flare and pursue revenue from greenhouse gas destruction/carbon credits.
Category 2	The Authority shall continue annually reviewing the effectiveness of flow control.

Table 10-2 (Continued) Needs Assessment of the Three Rivers Regional Landfill

Category	Description of Solid Waste Management Need
Category 2	The Authority shall continue to develop and implement long-range Capital Improvement Projects for the landfill.
Category 2	The Authority shall continue to evaluate the feasibility of providing a pump station and associated force main for direct leachate disposal to the Pontotoc WWTP.
Category 2	The Authority shall continue to evaluate the need replacing the convenience station for local solid waste disposal, recycling, white goods and scrap metal storage, batteries and used tire trailers.
Category 2	The Authority shall continue to evaluate the need for providing a paved surface access road to the landfill.
Category 3	The Authority shall continue to evaluate the possibility of a Dirty Materials Recovery Facility (Dirty MRF) for providing region wide recycling at the landfill.
Category 3	The Authority shall continue to evaluate the need of a solidification facility for liquid waste produced in the region.

10.3 Calhoun County

Calhoun County, like all of the governmental entities within the Three Rivers SWMA region, has some solid waste issues that are unique to the county and others which are common with other members of the SWMA. Based on a site survey in the county and discussions with solid waste management personnel in the county, solid waste management issues that need evaluating are identified in Table 10-3.

Table 10-3 Needs Assessment for Calhoun County

Category	Description of Solid Waste Management Need
Category 1	<p>The City of Bruce Rubbish Disposal Landfill may reach capacity in very near future. The County needs to assess the necessity of permitting a new rubbish landfill in the county or of making other arrangements for disposal services for the citizens of Calhoun County. The other Class I facility in the county (Blueberry Class I Landfill) is rarely open and may be closed in the near future. Under Mississippi Code 17-17-5, the county is obligated to provide rubbish disposal for the citizens in the county.</p> <p>The Board of Supervisors shall initiate a plan of action for providing rubbish disposal for Calhoun County to the Three Rivers SWMA within 6 months of official approval of this plan by MDEQ.</p>

Table 10-3 (Continued) Needs Assessment for Calhoun County

Category	Description of Solid Waste Management Need
Category 2	The County should conduct an annual inspection of the solid waste maintenance building and associated equipment and make repairs/replacements as necessary.
Category 2	The County should consider constructing a concrete or asphalt surface for storage of recyclable materials at the solid waste operations building
Category 2	The county has not had a highly visible recycling program in the past. The Authority has recently provided three mobile recycle trailers. The county should make every effort to make beneficial use of the recycle trailers.
Category 2	In the event that Blueberry Class 1 Landfill is closed, the Owner shall provide all closure activities in accordance with the Class 1 permit.

10.4 Itawamba County

Itawamba County's and the City of Fulton are strategically located on the Tenn-Tom Waterway which is prime growth potential for industrial development. Specific solid waste management needs are identified in Table 10-4.

Table 10-4 Needs Assessment for Itawamba County

Category	Description of Solid Waste Management Need
Category 1	There are no known Category 1 needs for Itawamba County.
Category 2	The County should consider constructing a concrete or asphalt surface for storage of recyclable materials at the City of Fulton Rubbish Landfill.
Category 2	The County should conduct an annual inspection of the solid waste maintenance building and associated equipment and make repairs/replacements as necessary.
Category 2	The Authority has recently provided the City of Fulton with a mobile recycling trailer. The City should make every effort to make beneficial use of the recycle trailers.
Category 2	Itawamba Community College does not have a visible recycling program. The school is encouraged to evaluate and promote recycling for aluminum cans, plastics, paper and possibly unwanted computers and electronics.
Category 2	The County/City of Fulton recently landed an industry that will utilize scrap wood waste to make ethanol. The County/City of Fulton along with the industry should investigate some creative marketing programs to locate and utilize as much waste wood as possible from the area.

10.5 Lafayette County

Lafayette County is one of the more comprehensive counties in the Three River's region in solid waste management. Several areas that should be evaluated at the county level are identified in Table 10.5.

Table 10-5 Solid Waste Needs for Lafayette County

Category	Description of Solid Waste Management Need
Category 1	The existing Class I Rubbish landfill is nearing capacity. Additional land has been purchased in close proximity to the recycle processing facility. The existing Class I Rubbish landfill will need to be closed in accordance with MDEQ guidelines. A new Class I Rubbish landfill should be permitted and constructed prior to the final closure of the existing Class I Rubbish landfill. This is the only rubbish landfill in the County and Mississippi Code 17-17-5 requires that each county provide rubbish disposal for the citizens in the county. The permit application for this facility should be submitted to MDEQ within 6 months of approval of this plan by MDEQ.
Category 2	The County should consider constructing a concrete or asphalt surface for the storage of white goods and scrap metal at the Transfer Station.
Category 2	The County should conduct an annual inspection of the solid waste maintenance building and associated equipment and make repairs/replacements as necessary.
Category 2	The County should investigate the need for a wood/tree mulcher/grinder that would improve the yard waste recycling effort.
Category 2	The County should consider providing a storage area for unwanted computers and electronics.

10.6 Lee County

The Lee County is the most developed county within the TRSWMA planning region with a large industrial and medical base. Solid waste management needs for the county are identified in Table 10-6.

Table 10-6 Solid Waste Needs for Lee County

Category	Description of Solid Waste Management Need
Category 1	There are no known Category 1 needs for Lee County.
Category 2	The County should consider constructing a concrete or asphalt surface for storage of recyclable materials at the Lee County Transfer Station.
Category 2	The County should conduct an annual inspection of the solid waste maintenance building and associated equipment and make repairs/replacements as necessary.
Category 2	The County should provide better signage that identifies the location of the transfer station and recycling facilities located at the transfer station.
Category 2	The County should consider providing a storage area for unwanted computers and electronics.
Category 2	The Town of Plantersville has the desire to convert the old abandoned wastewater lagoon to a Class 2 Rubbish Landfill. Plantersville is encouraged to pursue this project once it becomes financially feasible for the Town to construct, maintain, and operate the facility.
Category 2	The Class 2 Rubbish facility owned and operated by Tupelo Light and Water will need closing in the near future. Tupelo Light and Water shall close the facility in accordance with the Class 2 Rubbish Landfill Permit.
Category 3	The City of Tupelo should develop a more accurate method of quantifying the amount of recyclable materials collected from the drop-off locations around Tupelo.
Category 3	The City of Tupelo should conduct regular audits of the curb-side recycling program and quantify % participation and tonnage of recyclable material collected.
Category 3	The City of Tupelo should evaluate the need for twice a week residential collection of solid waste.
Category 3	The Tupelo WWTP operates and maintains several sludge disposal lagoons. Although there has not been a need to remove any sludge from these lagoons in over 25 years, the City should develop a contingency plan for sludge management for this facility.

10.7 Monroe County

Recycling in Monroe County may be improved by relocating the recycling drop-off facility to a heavily traveled location and adequately identify the property. Within the county, some of the other issues that should be considered by the local government are as follows:

Table 10-7 Solid Waste Needs for Monroe County

Category	Description of Solid Waste Management Need
Category 1	There are no known Category 1 needs for Monroe County.
Category 2	The County should consider constructing a concrete or asphalt surface for the storage of white goods and scrap metal at the Transfer Station/Class 1 Rubbish Landfill
Category 2	The County should conduct an annual inspection of the solid waste maintenance building and associated equipment and make repairs/replacements as necessary.
Category 2	The County should investigate the need for a wood/tree mulcher/grinder that would improve the yard waste recycling effort.
Category 2	The County should consider providing a storage area for unwanted computers and electronics.
Category 2	The County should consider relocating the recycling drop-off facility to a more visible location.

10.8 Pontotoc County

There are very few solid waste management needs in Pontotoc County because most solid waste management facilities are centrally located that the Three Rivers Regional Landfill. Solid waste management issues within the county are presented in Table 10-8.

Table 10-8 Solid Waste Needs for Pontotoc County

Category	Description of Solid Waste Management Need
Category 1	There are no known Category 1 needs for Pontotoc County.
Category 2	The County/City of Pontotoc should evaluate improving the visibility of the recycling program.
Category 2	The County should conduct an annual inspection of the solid waste maintenance building and associated equipment and make repairs/replacements as necessary.
Category 2	The County and/or City of Pontotoc should consider providing a storage area for unwanted computers and electronics.
Category 3	The City of Pontotoc should study the possibility of converting some of the recently closed wastewater lagoons to Class 2 Rubbish facilities. Although these old lagoons will not likely provide a 20-year life expectancy, the available volume and structure of these abandoned lagoons are well suited for rubbish disposal and efficient use of otherwise unusable property.

10.9 Union County

Union County has the opportunity to be a fast growing county due the ongoing Toyota plant located in Blue Springs along with other suppliers/industry in the area. Although it is difficult to predict how much residential and industrial growth will occur in the county, it is clear that some new or expanded solid waste facilities and programs will need to be implemented in the future once the Toyota factory begins producing vehicles. Specific solid waste needs for Union County are identified in Table 10-9.

Table 10-9 Solid Waste Needs for Union County

Category	Description of Solid Waste Management Need
Category 1	<p>The existing Class I Rubbish landfill (Pumpkin Center) is nearing capacity. A new Class I Rubbish landfill should be permitted and constructed prior to the final closure of the existing Class I Rubbish landfill. This is the only rubbish landfill in the County and Mississippi Code 17-17-5 requires that each county provide rubbish disposal for the citizens in the county.</p> <p>The City of New Albany and the Board of Supervisors should jointly prepare a study that determines the best location to site a new rubbish facility along with developing a closure plan for the existing rubbish landfill. The report shall be prepared and submitted to the TRSWMA by within 6 months of MDEQ approval of this solid waste management plan. After approval, the report and necessary permit application shall be prepared and submitted to MDEQ for processing.</p>
Category 1	<p>The County does not have a Solid Waste Enforcement Officer. The Board of Supervisors should appoint a person to serve in this capacity within six months of MDEQ approval of this solid waste management plan.</p>
Category 2	<p>The County does not have a location for storage and collection for white goods and scrap metals. Facilities for these facilities could be incorporated in with the rubbish landfill identified above.</p>
Category 2	<p>The County should investigate the need for a wood/tree mulcher/grinder that would improve the yard waste recycling effort.</p>
Category 2	<p>The County does not have a visible recycling program. With the proposed influx of new industry and residential growth, a visible recycling program could be an asset to the County.</p>
Category 2	<p>The County should consider providing a storage area for unwanted computers and electronics.</p>

Chapter 2

EXISTING SOLID WASTE MANAGEMENT FACILITIES

2.1 Residential Solid Waste Collection in the Planning Area

Municipal solid waste (MSW) is collected in each county within the Three Rivers Solid Waste Management Authority (TRSWMA) planning area. Most communities provide their own collection equipment while several communities have collection contracts with private companies. Once the solid waste is collected, it is either transported directly to the Subtitle D Three Rivers Regional Landfill located near Pontotoc, or transported to one of the three solid waste transfer stations (Lafayette County, Lee County, or Monroe County) where the waste is transferred to larger trucks and transported to the Three Rivers Regional Landfill. Locations of each transfer station and the Three Rivers Regional Landfill are illustrated in Figure 2-1. Collection frequency, collection provider, collection equipment, and destination information for each community are also presented in Table 2-1.

TRSWMA utilizes three regional transfer stations within the planning area. These facilities are used to quantify and transfer solid waste from small collector trucks to larger trucks which economically transport the solid waste to the Three Rivers Solid Waste Landfill. Fees paid to dispose of collected waste at a transfer facility includes the tipping fee at the landfill, transportation costs to the landfill, maintenance and replacement of transfer trailers, and the operational cost of the transfer station. Disposal fees from the transfer station to the landfill vary by location based on the differences in facility and operational cost.

The Lafayette County Transfer Station is located to the south of Oxford off County Road 321 (Section 5, Township 9S, Range 3W). This facility is very efficient because it has a permitted Class 1 rubbish landfill, a recycling processing center, a ferrous metal recycle pile, and a used tire collection trailer. Any time a person or company brings in waste that can be classified as rubbish or recyclable, they are immediately diverted to the rubbish landfill portion or the recycling center.



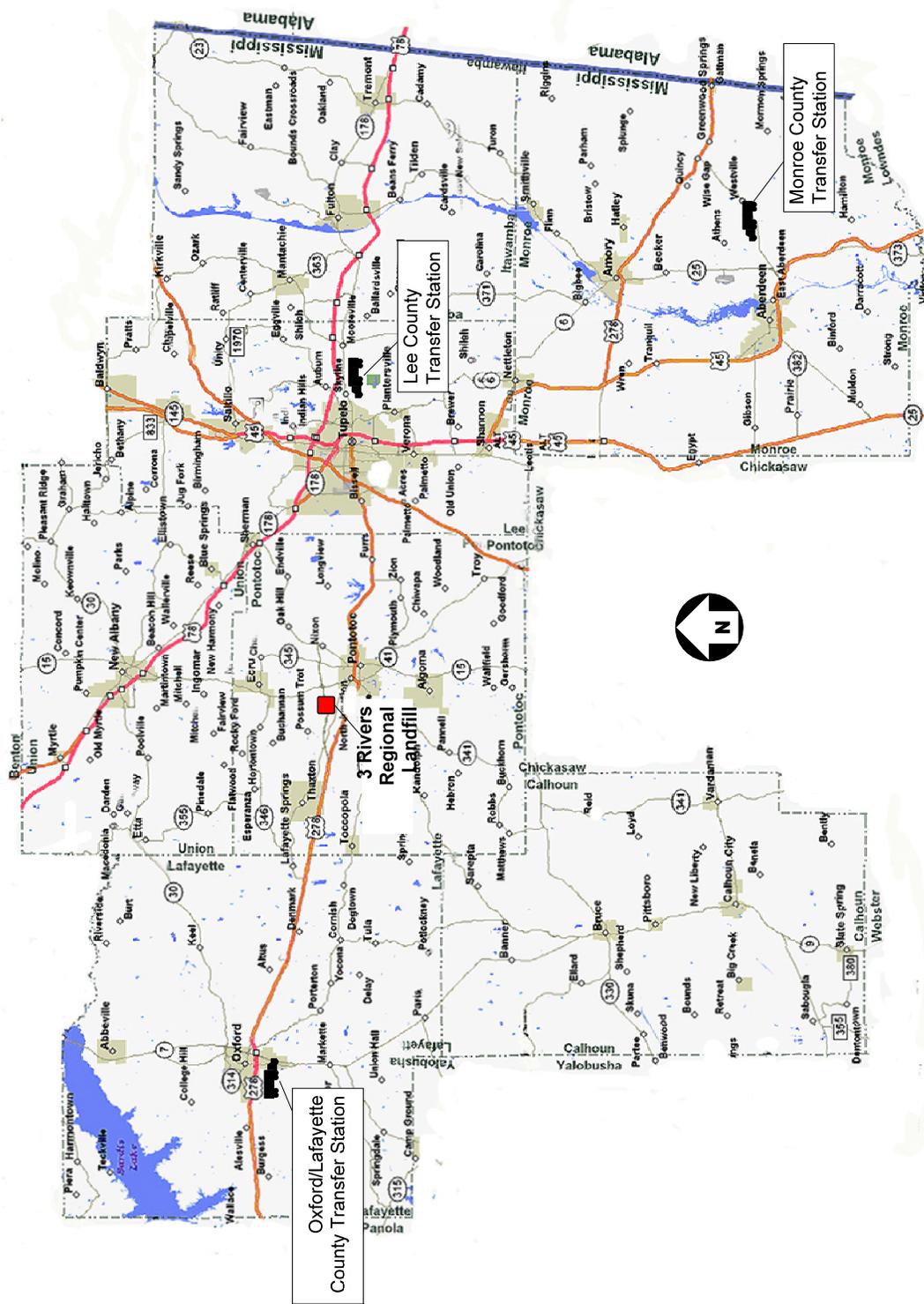


Figure 2-1 Major Solid Waste Facilities in the TRSWMA Planning Area

TABLE 2-1 INVENTORY OF RESIDENTIAL SOLID WASTE COLLECTION SYSTEMS

Community	Type of Collection	Extent of Collection	Collection Service Provider	Primary Users ²	Collection Frequency	Transport Fleet ³	Destination of Transport	Expiration of Private Contract
Calhoun County	Door-to-Door	G, BW, C	Calhoun County	SF, MF, C	Once Weekly	4 RL, 2 SL	TRSWL	
Big Creek	Door-to-Door	G, BW, C	Calhoun County	SF, MF, C	Once Weekly	"	TRSWL	
Bruce	Door-to-Door	G, BW, C	Calhoun County	SF, MF, C	Once Weekly	"	TRSWL	
Bruce	Door-to-Door	YW	City of Bruce	SF, MF, C	As Needed	Truck	Bruce Class II Landfill	
Calhoun City	Door-to-Door	G, BW, C	Calhoun County	SF, MF, C	Once Weekly	"	TRSWL	
Derma	Door-to-Door	G, BW, C	Calhoun County	SF, MF, C	Once Weekly	"	TRSWL	
Pittsboro	Door-to-Door	G, BW, C	Calhoun County	SF, MF, C	Once Weekly	"	TRSWL	
Slate Springs	Door-to-Door	G, BW, C	Calhoun County	SF, MF, C	Once Weekly	"	TRSWL	
Vardaman	Door-to-Door	G, BW, C	RES	SF, MF, C	Once Weekly	"	TRSWL	9/1/2014
Itawamba County	Door-to-Door	G, BW	Itawamba County	SF, MF, C	Twice Weekly	1 RL	TRSWL	
Fulton	Door-to-Door	G	Asco Sanitation	SF, MF, C	Once Weekly	9 RL	TS thence TRSWL	
Mantachie	Door-to-Door	G, BW	Itawamba County	SF, MF, C	Twice Weekly	N/A	TS thence TRSWL	7/1/13
Tremont	Door-to-Door	G, BW	Itawamba County	SF, MF, C	Once Weekly	9 RL	TS thence TRSWL	
Lafayette County	Door-to-Door	G, BW, C	Itawamba County	SF, MF, C	Once Weekly	9 RL	TS thence TRSWL	
Lafayette County	Door-to-Door	YW	Lafayette County	SF, MF, C	Once Weekly	2FL, 7 RL, 1 SL	TS thence TRSWL	
Abbeville	Door-to-Door	G, BW, C	Lafayette County	SF	As Needed	2 KB	Rubbish Landfill	
Oxford	Door-to-Door	G, BW, C	Lafayette County	SF, MF, C	Once Weekly	2FL, 7 RL, 1 SL	TS thence TRSWL	
Taylor	Door-to-Door	G, BW, C	Lafayette County	SF, MF, C	Once Weekly	3 RL	TS thence TRSWL	
Lee County	Door-to-Door	G, BW, C	Lee County	SF, MF, C	Once Weekly	11 RL, 1 FL, 1 SL	TS thence TRSWL	
Baldwin	Door-to-Door	G, BW, C	Lee County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Guntown	Door-to-Door	G, BW, C	Lee County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Mooreville	Door-to-Door	G, BW, C	Lee County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Paintersville	Door-to-Door	G, BW, C	Lee County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Salthill	Door-to-Door	G, BW, C	Lee County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Shannon	Door-to-Door	G, BW, C	Lee County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Tupelo	Door-to-Door	G, BW, C	Waste Management, Inc.	SF, MF, C	Twice Weekly	N/A	TRSWL	7/31/2011
Tupelo	Door-to-Door	YW	City of Tupelo	SF, MF, C	As Needed	3 KB	Composting Facility	
Verona	Door-to-Door	G, BW, C	Lee County	SF, MF, C	Once Weekly	5 RL, 1 FL, 1 SL, 2 SAT, 3 AUT, 2 FL, 1 KB	TS thence TRSWL	
Monroe County	Door-to-Door	G, BW	Monroe County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Aberdeen	Door-to-Door	G, BW, YW	City of Aberdeen	SF, MF, C	Twice Weekly	"	TS thence TRSWL	
Amory	Door-to-Door	G, BW, YW	City of Amory	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Gattman	Door-to-Door	G, BW	Monroe County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Hatley	Door-to-Door	G	Monroe County	SF, MF, C	Once Weekly	"	TS thence TRSWL	
Nettleton	Door-to-Door	G, BW, C	Asco Sanitation	SF, MF, C	Once Weekly	6 RL, 1 SL, 1 FL, 1 KE	TRSWL	10/31/2010
Pontotoc County	Door-to-Door	G, BW, C	Pontotoc County	SF, MF, C	Once Weekly	8 RL, 1 SL, 1 PU	TRSWL	
Algoma	Door-to-Door	G, BW, C	Pontotoc County	SF, MF, C	Once Weekly	"	TRSWL	
Ecu	Door-to-Door	G, BW, C	Pontotoc County	SF, MF, C	Once Weekly	"	TRSWL	
Pontotoc	Door-to-Door	G, BW, C	Waste Services	SF, MF, C	Once Weekly	N/A	TRSWL	9/30/2012
Pontotoc	Door-to-Door	BW, YW	City of Pontotoc	SF, MF, C	As Needed	2 R, 1 C	CIII Rubbish Site	
Sherman	Door-to-Door	G, BW, C	Pontotoc County	SF, MF, C	Once Weekly	8 RL, 1 SL, 1 PU	TRSWL	
Thaxton	Door-to-Door	G, BW, C	Pontotoc County	SF, MF, C	Once Weekly	"	TRSWL	
Tocopolia	Door-to-Door	G, BW, C	Pontotoc County	SF, MF, C	Once Weekly	"	TRSWL	
Union County	Door-to-Door	G, BW, C	Union County	SF, MF, C	Once Weekly	5 R, 1 SL, 1 PU	TRSWL	
Blue Springs	Door-to-Door	G, BW, C	Union County	SF, MF, C	Once Weekly	"	TRSWL	
Myrtle	Door-to-Door	G, BW, C	Union County	SF, MF, C	Once Weekly	"	TRSWL	
New Albany	Door-to-Door	YW	Union County	SF	As Needed	"	TRSWL	
New Albany	Door-to-Door	BW, C	New Albany	SF, MF, C	Once Weekly	5 R, 1 SL, 1 PU	Class 1 Rubbish Site	

1. G - GARAGE, REC - RECYCLABLES, BW - BULKY WASTES, YW - YARD WASTE
 2. SF - SINGLE FAMILY DWELLINGS, MF - MULTI FAMILY DWELLINGS, C - COMMERCIAL BUSINESSES
 3. RL - REAR LOADER, SL - SIDE LOADER, FL - FRONT LOADER, R - ROLL-OFF COLLECTOR, PU - PICK UP, KB - KNUCKLE BOOM, R - RUBBISH TRANSPORT, C - CHIPPER TRUCK, AUT - AUTOMATIC w/ROBOTIC ARM, SAT - SIDE TRANSFER
 4. TS - TRANSFER STATION, TRSWL - THREE RIVERS SOLID WASTE LANDFILL

The Lee County Transfer Station is a very busy facility that receives waste from mostly



Lee and Itawamba counties. This facility is located to the east of Tupelo off Old Highway 178 at Skyline on CR 1282 (Section 36, Township 9S, Range 6E). In addition to serving as a transfer station, this facility has a ferrous metal scrap pile, a used tire collection trailer, a newspaper

trailer, a cardboard bailer, and a recycling trailer. Operators also pull out bulk recyclable materials from the transfer floor when workloads permit. Although this facility is very efficient at removing recyclable materials from the solid waste stream, rubbish materials are not separated and are transferred directly to the Three Rivers Regional Landfill.

The Monroe County Transfer Station is located to the northeast of Aberdeen on Highway 8 between Vassar and Westville (Section 23, Township 14E, Range 18W). This facility is very efficient because it has a permitted Class 1 rubbish landfill located on-site along with a ferrous metal recycle pile and a used tire collection



trailer. Any time a person or company brings in waste that can be classified as rubbish, they are immediately diverted to the rubbish landfill portion of the site. Rubbish disposal is free to residents of Monroe County and has a small tipping fee for companies.

In addition to residential solid waste, several communities also have special collection programs for items such as unusable white goods (refrigerators, ovens, washers, etc.), recyclable goods, used tires, and yard waste. White goods are usually collected, stored, and picked up by a private company under a TRSWMA contract, while other waste may be routed to a locally owned and operated rubbish landfill or to another

disposal/recycling location in the Authority's area. Specific information on other solid waste can be found in Chapter 7 of this document.

2.2 Non-Residential Solid Waste Collection in the Planning Area



In addition to residences, private companies, businesses, and educational institutions also produce solid waste that must be collected and transported to the Three Rivers Regional Landfill or to a Class 1 or Class 2 rubbish disposal

landfill. Owners of these entities typically contract with a private hauling company that will routinely pick up and haul the waste either to one of the transfer stations or directly to the Three Rivers Regional Landfill for disposal. In the event that the waste can be classified as rubbish, the waste may be taken to a Class 1 or Class 2 rubbish landfill at a lower disposal fee.

Each county and city within the planning area of the Authority has implemented a flow control ordinance that requires all municipal solid waste (inclusive of residential, commercial, and industrial solid waste) to be disposed at the Three Rivers Regional Landfill located near Pontotoc. Solid waste classified as Class 1 or Class 2 rubbish (see Section 2.4 and Chapter 7), recyclable materials, or exempt industrial process waste (as defined and authorized by the Authority), may be disposed at other approved disposal sites within or near the Authority's planning area. Private haulers are allowed to collect non-residential solid waste within the Authorities planning area, but are required to deliver the waste to one of the three transfer stations or to the Three Rivers Regional Landfill near Pontotoc. The intent of the flow control ordinance is to financially optimize the operations of the Three Rivers Regional Landfill, which will enable the TRSWMA to provide the most economical solid waste disposal (tipping fee) to the residents and

businesses within seven county area that makes up the TRSWMA planning area. A copy of the flow control ordinance can be found in Appendix A.

2.3 Existing Subtitle D Landfills in the Planning Area

Prior to 1991, it was common practice for counties or communities to own and operate their own municipal solid waste landfill. However, with the enactment of new federal regulations (40 CFR Part 257 and 258), design, operating, and closure requirements were substantially tightened – resulting in most landfills ceasing operation. A municipal solid waste landfill meeting the requirements of 40 CFR Part 257 and 258 is typically referred to as a “Subtitle D Landfill”. Subtitle D landfills are designed, operated, and maintained to minimize the risk of adverse environmental contamination. Specific differences between new Subtitle D landfills and pre Subtitle D landfills include:

- Stricter location requirements with regard to airport safety, flood plains, wetland protection, seismic impacts, and public participation.
- Stricter design requirements with regard to protective liners, surface water runoff, leachate collection and treatment, groundwater monitoring, landfill gas collection, and air quality monitoring.
- More stringent operational requirements such as the type of allowable waste that can be accepted, cover requirements, disease vector controls, landfill access, and record keeping.
- Closure and post-closure requirements that require extensive sampling, monitoring, and maintenance of the landfill after it no longer accepts solid waste.
- Financial assurance criteria to ensure that a landfill has secure financial resources available to pay for closure and post closure activities.

The Three Rivers Regional Landfill is the primary disposal facility for the Three Rivers Solid Waste Management Authority. The Subtitle D landfill is located to the northwest of the City of Pontotoc at 1904 Pontotoc Parkway West, about 1.5 miles west of Highway 15 (34° 17' 07.9" N, 89° 03' 32.5" W – Section 23, Township 9S, Range 2E) as illustrated in Figure 2-2.



The landfill was permitted on December 14, 1993 with a permitted airspace of

23,000,000 cubic yards. The 207 acre disposal area has a calculated capacity of 14 million tons. The landfill site has facilities for scrap metal and unusable white goods disposal/storage, used tire storage, and a drop off station for local residents and companies to empty small loads of solid waste.

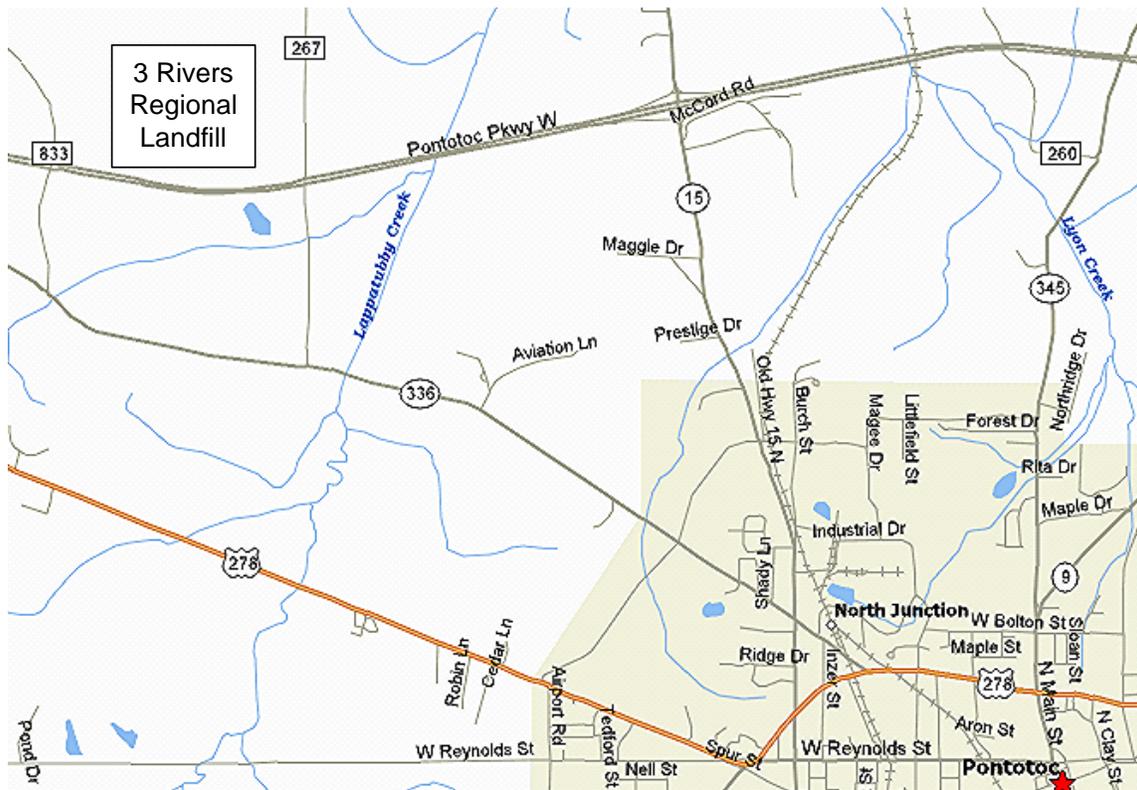


Figure 2-2 Location of Three Rivers Regional Landfill

Based on the anticipated tonnage of solid waste generated within the TRSWMA planning area, the facility would have a life expectancy of approximately 40 years. However, since the construction and operation of the Three Rivers Regional Landfill, and up until the passage of flow control in 2007, several Subtitle D landfills located outside the TRSWMA planning area have received solid waste generated from within the planning area. As result, the MSW quantities brought to the Three Rivers Regional Landfill are somewhat lower than anticipated; hence, the life expectancy of the landfill has increased. Data from the Mississippi Department of Environmental Quality Annual Status Report on Solid Waste Facilities from 2001 – 2005 are summarized in Table 2-2.

Table 2-2 Municipal Solid Waste Flow in the TRSWMA Planning Area*

Facility or Item	2001	2002	2003	2004	2005
Three Rivers Regional Landfill (tons)	165,932	152,858	152,754	164,110	161,516
Prairie Bluff Landfill (tons)	91,171	88,434	86,234	80,374	74,676
North East Mississippi Regional Landfill (tons)	4,870	8,330	13,367	5,343	0
Other Subtitle D Landfills in Mississippi	177	269	683	243	92
MSW Generated within the Three Rivers SWA Planning Area (tons)	262,150	249,891	253,038	250,070	236,284
MSW leaving the Three Rivers Planning Area (tons)	96,218	97,033	100,284	85,960	74,768
Percent Leaving Planning Area, %	36.7%	38.8%	39.6%	34.4%	31.6%
Tons/day in Three Rivers Regional Landfill (310 days/year)	535.3	493.1	492.8	529.4	521.0
Tons/day leaving the planning area (310 days/year)	310.4	313.0	323.5	277.3	241.2

* Does not include solid waste that leaves the State of Mississippi, Class 1 or Class 2 Rubbish or solid waste disposed in permitted industrial facilities

The counties and cities making up the TRSWMA planning area recently passed a flow control ordinance that will require all residential and non-residential solid waste classified as a Subtitle D waste to be transported and disposed in the Three Rivers Regional Landfill in Pontotoc. Industries that have a waste classified as an Industrial Process Waste may file for an exemption from flow control, provided they satisfy the following criteria:

1. Have a waste that classified as an industrial process waste in accordance with the definition of the industrial process waste as defined by the Mississippi Department of Environmental Quality.
2. The industry has been sending the industrial process waste exclusively to a single solid waste disposal site other than the Three Rivers Regional Landfill since 1996 or since the company's inception.

3. The industry files a request for exemption form with the TRSWMA. Necessary forms can be obtained by contacting TRSWMA at (662) 489-2415. The TRSWMA Board reviews the reserves the right to approve or disapprove the application for exemption.

2.4 Existing Class I and Class II Rubbish Landfills in the Planning Area

Rubbish landfills are specially permitted landfills that are allowed to receive solid waste that are not typically environmentally dangerous when stored for extended periods of time. In Mississippi, rubbish landfills are classified either as a Class I Rubbish landfill or a Class II Rubbish landfill. Class I or Class II Rubbish landfills are not allowed to



receive solid waste such as food waste, chemical waste, household garbage, liquids, sludges, contaminated soils, paint or paint buckets, oil containers, engines, motors, whole tires, batteries, toxic or hazardous waste, or regulated asbestos materials. Items that may be placed in Class I and Class II Rubbish Landfills are identified in Table 2-3.

Rubbish landfills are an asset to the comprehensive solid waste management disposal system as they provide a diversion from the Subtitle D landfill and provide a less costly disposal alternative for appropriate materials. Rubbish landfills are more suited to handle solid waste associated with construction activities, yard wastes, and debris generated from natural disasters. Tipping fees for most Class I Rubbish Landfills within the planning area range from \$2.50/yd³ to \$3.25/yd³ (based on 2006 rates); however, some facilities allow residents to use the rubbish landfill free-of-charge. Customers and residents are encouraged to contact the rubbish landfill to verify disposal fees and operating hours. Disposal/tipping fees are subject to change due to the volatile nature of fuel prices and economic conditions.

Due to the mode of operation and type of solid waste received at rubbish landfills, it is often difficult to predict the life of a rubbish landfill. Each rubbish landfill is required to fill out and submit an annual report to MDEQ each year. The annual report includes disposal tonnage for the previous year, landfill volume utilized during the previous year, and landfill volume remaining. Although this information is useful, it has been demonstrated numerous times that rubbish landfills can be quickly filled up after an ice storm, tornado, or major construction activity (such as widening of a highway or demolition of large industrial area) even if the previous annual report indicated that there were several years of life remaining in the landfill. In view of this, the Authority encourages the development and operation of private, commercial, and municipal Class I and Class II rubbish landfills in the region.

Table 2-3 Allowable Materials for Class I and Class II Rubbish Landfills

Material	Class I Rubbish Landfill	Class II Rubbish Landfill
Construction and demolition debris, such as wood, metal, etc.	X	
Brick, mortar, concrete, stone, and asphalt	X	X
Cardboard boxes	X	
Natural vegetation such as tree limbs, stumps, and leaves	X	X
Appliances (other than refrigerators and air conditioners) which have had the motor removed	X	
Furniture	X	
Plastic, glass, crockery, and metal, except containers	X	
Sawdust, wood shavings, and wood chips	X	
Other similar rubbish specifically approved by the Mississippi Department of Environmental Quality	X	X

Based on recent data from MDEQ, there are eight (8) permitted Class I Rubbish Landfills, ten (10) permitted Class II Rubbish Landfills, and three (3) permitted industrial landfills within the TRSWMA planning area. Locations and contact information for each permitted rubbish landfill are presented in Table 2-4 and illustrated graphically in Figure 2-3. Service area, landfill size and life expectancy of each landfill are based on the information obtained from 2006 Mississippi Department of Environmental Quality Annual

Reports along with the review of 2007 Annual Reports submitted by each solid waste facility.

2.5 Existing Recycling Programs/Facilities in the Planning Area

There are numerous recycling programs and facilities located throughout the planning area. Specific details of recycling programs can be found in Chapter 4 of this report.

2.6 Existing Waste Tire Management Programs

Disposal of waste tires is a large environmental concern and problem across the United States. Tires are problematic because:

- They do not biodegrade
- They collect water and serve as a breeding area for mosquitoes
- They tend to work themselves to the surface if buried whole in a landfill
- They are difficult to extinguish when burning

To address the problem of tire disposal, the TRSWMA has contracted with MAC's Recyclers for proper disposal of waste tires. The TRSWMA has waste tire drop off trailers or bins at each transfer station, the Three Rivers Regional Landfill, and at locations in each county. Companies can also drop off waste tires at MAC's for a \$55/ton fee (based on 2006 rates). Additional information on MAC's Tire Recyclers can be found in Chapter 4 of this report. Drop off locations for used tires can be found in Chapter 7 of this report.

Table 2-4 Non-Subtitle D Landfills in the TRSWMA Planning Area

Identification Key (Figure 2-3)	County (Public Status & MDEQ Approved Service Area)	Landfill Name and Contact Information Location Permitted Size and Expected Remaining Life	Rubbish Class	Operating Hours
1	Calhoun Calhoun, Chickasaw, Grenada, Itawamba, Lafayette, Lee, Monroe, Pontotoc, Union, Webster and Yalobusha counties	Blueberry Hill Disposal Site Waste Placement, Inc. (662) 983-0712 County Road 446 Vardaman, MS Section 1, Township 14S, Range 1E 15 acres - 20 years	Class I and sweet potato industry waste	Call first seldom open
2	Calhoun (City of Bruce use only)	Bruce Class II Rubbish Site City of Bruce (662) 983-5892 Section 13, Township 12S, Range 2W 14 acres - <1 year	Class II	7-4, M-F
3	Calhoun (private use only)	Weyerhaeuser Industrial Landfill Bruce, Mississippi (662)983-6382 Section 7, Township 12S, Range 1W 10 acres	Industrial	
4	Itawamba Calhoun, Itawamba, Lafayette, Lee, Monroe, Pontotoc, Prentiss, Tishomingo and Union counties in MS, Franklin and Marion counties in Alabama	Tilden Clay Road Rubbish Site Oxford Landfill Management, Inc. (901) 668-5458 Located north of Tilden on Tilden Clay Road Section 15, Township 10S, Range 9E 40 acres - >100 years	Class I	Call first

Table 2-4 Continued Non-Subtitle D Landfills in the TRSWMA Planning Area

Identification Key (Figure 2-3)	County (Public Status & MDEQ Approved Service Area)	Landfill Name and Contact Information Location Permitted Size and Expected Remaining Life	Rubbish Class	Operating Hours
5	Itawamba (open to in-state and out-of-state customers)	City of Fulton North Cummings Street (662) 862-9616 Section 19, Township 9S, Range 9E 6.58 acres – 4.5 years	Class II	7-3:30, M-F
6	Lafayette Calhoun, Lafayette, Marshall, Panola, Pontotoc, Tate, Union and Yalobusha counties	City of Oxford Rubbish Site Located at Oxford Transfer Station (662) 232-2359 Section 5, Township 9S, Range 3W 1.6 acres – 1.5 years	Class I	Call first
7	Lee Lee County only	TMCO Rubbish Site Birmingham Ridge Rd, Saltillo, MS (662) 869-2151 Section 3/34, Township 7/8S, Range 7E 30 acres - 25 years	Class I	7-4:40, M-F
8	Lee (private industrial use only)	TMCO Industrial Waste Landfill Birmingham Ridge Rd, Saltillo, MS (662) 869-2151 Section 3/34, Township 8S, Range 5E 4 acres	Industrial	7-4:30, M-F

Table 2-4 Continued Non-Subtitle D Landfills in the TRSWMA Planning Area

Identification Key (Figure 2-3)	County (Public Status & MDEQ Approved Service Area)	Landfill Name and Contact Information Location Permitted Size and Expected Remaining Life	Rubbish Class	Operating Hours
9	Lee (City of Tupelo and Lee County use only)	Red Oak Wood Waste/Recycling City of Tupelo (662) 841-6457 Section 8, Township 10S, Range 6E 9.5 acres	Class II	8-3:45, M-F
10	Lee (Tupelo Water & Light Only)	Tupelo Water and Light City of Tupelo (662) 841-6470 Section 3, Township 10S, Range 5E 2.82 acres – 12.7 years	Class II	
11	Lee MAC's Tire Recyclers and Cooper Tire only (private)	MAC's Recyclers, Inc Saltillo, MS (662) 869-1860 Section 8, Township 8S, Range 6E 28 acres - 25 years	Class I	

Table 2-4 Continued Non-Subtitle D Landfills in the TRSWMA Planning Area

Identification Key (Figure 2-3)	County (Public Status & MDEQ Approved Service Area)	Landfill Name and Contact Information Location Permitted Size and Expected Remaining Life	Rubbish Class	Operating Hours
12	Lee (City of Tupelo use only)	Tupelo CDF Rubbish Site City of Tupelo (662) 841-6457 Section 29, Township 9S, Range 6E 28.47 acres	Class II	8-3:45, M-F
13	Lee (City of Nettleton use only)	Nettleton Rubbish Site No. 1 West City of Nettleton (662) 963-2605 Section 26, Township 11S, Range 6E 7.25 acres - 5 years	Class II	Call first
14	Monroe (inactive – not open)	Nettleton Rubbish Site No. 2 South City of Nettleton (662) 963-2605 Section 1, Township 12S, Range 6E 1.5 acres	Class II	Closed
15	Monroe (open to in-state and out-of-state customers)	Monroe County Rubbish Site Monroe County Bd of Supervisors (662) 369-6654 52076 Highway 8 East Section 23, Township 14S, Range 18W 11.8 acres - 7 years	Class I	7-3:30, M-F

Table 2-4 Continued Non-Subtitle D Landfills in the TRSWMA Planning Area

Identification Key (Figure 2-3)	County (Public Status & MDEQ Approved Service Area)	Landfill Name and Contact Information Location Permitted Size and Expected Remaining Life	Rubbish Class	Operating Hours
16	Monroe (inactive)	Amory Landfill, Inc. (662) 256-4886	Class II	Closed
17	Monroe (Private Industry)	FFM, Inc. Rubbish Site (662) 256-9665 Section 9, Township 13S, Range 18W 3 acres	Class II	
18	Monroe (Private Industry)	Kerr-McGee (Tronox LLC) Hamilton, MS (662) 343-8576 Section 30, Township 15S, Range 18E 4 acres	Industrial	
19	Pontotoc Calhoun, Chickasaw, Lee, Itawamba, Lafayette, Monroe, Pontotoc, Union counties	Woodland Rubbish Landfill (662) 489-3331 Section 33, Township 10S, Range 4E 25 acres – 100 years	Class I	7:30-3:30, M-F

Table 2-4 Continued Non-Subtitle D Landfills in the TRSWMA Planning Area

Identification Key (Figure 2-3)	County (Public Status & MDEQ Approved Service Area)	Landfill Name and Contact Information Location Permitted Size and Expected Remaining Life	Rubbish Class	Operating Hours
20	Pontotoc (open City of Pontotoc residents only)	City of Pontotoc Rubbish Site (662) 489-4321 Section 3, Township 10S, Range 3E 9.67 acres - 5 years	Class II	7-5, M-F 7-12, Sat
21	Union Alcorn, Benton, Calhoun, Itawamba, Lafayette, Lee, Marshall, Monroe, Pontotoc, Prentiss, Tippah, Tishomingo and Union counties	New Albany Pumpkin Center Site City of New Albany (662) 534-1010 Section 18/7, Township 6S, Range 3E 54.9 acres - <1 year	Class I	8-3:30, M-F

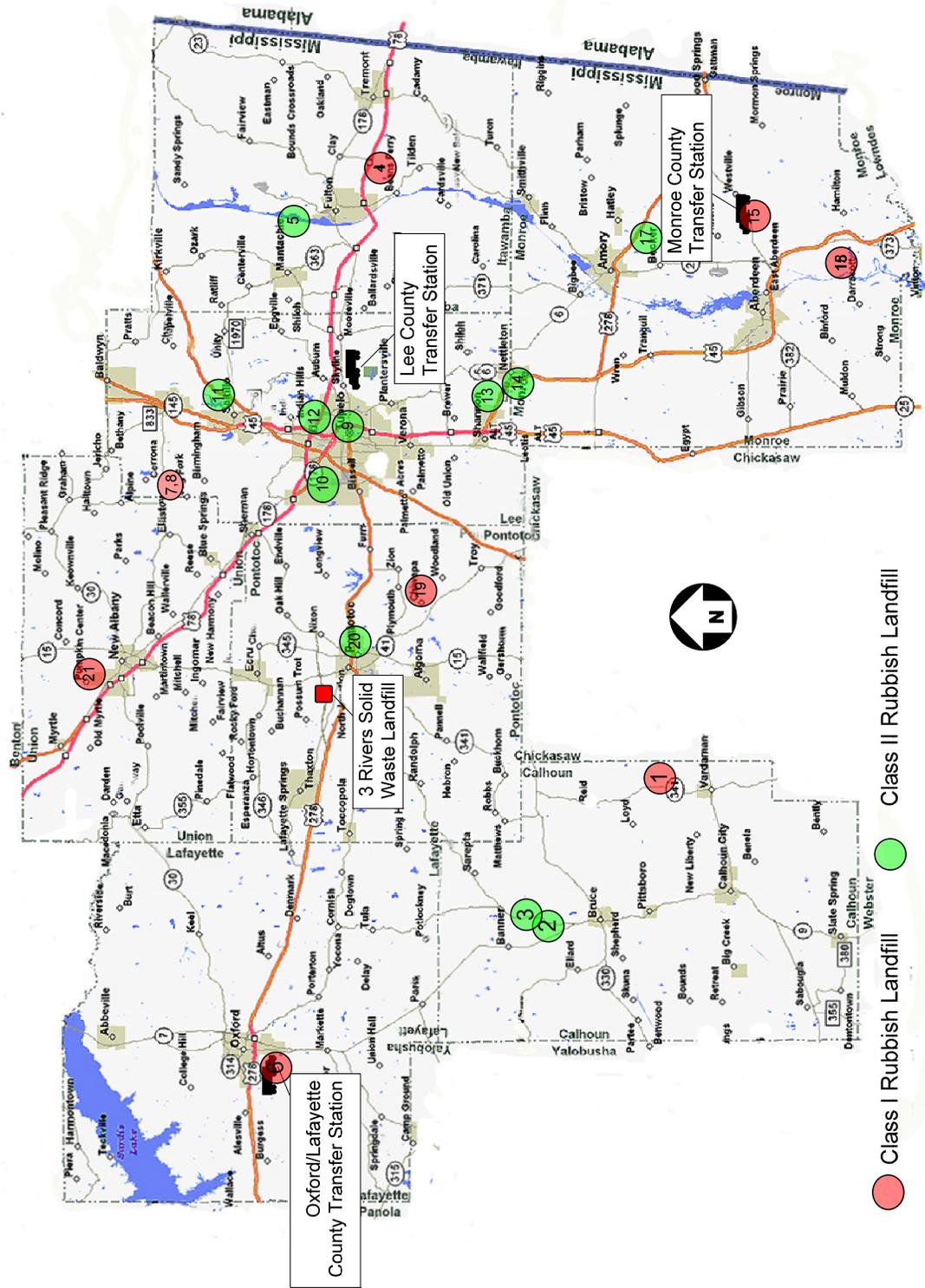


Figure 2-3 Location of Non-Subtitle D Landfills within the TRSWMA Planning Area

2.7 Existing Household Hazardous Waste Programs



Household hazardous waste items that exist in just about every home or office. Although these items are not classified as hazardous waste when purchased, they are later classified as hazardous because they can result in significant environmental problems and pose a threat to human health if disposed improperly. Common products that can be classified as

household hazardous waste are listed in Table 2-5.

As illustrated in Table 2-5, many of these products are used in the household on a daily basis. Disposal of these products with regular domestic solid waste may create problems when the waste is placed and compacted in the landfill because their containers may rupture and release hazardous fluids within the landfill.



The TRSWMA typically will typically organize one or more Household Hazardous Waste Collection Days each year. The program is typically partially funded by a MDEQ grant with a portion of the cost funded by the TRSWMA. The TRSWMA typically allocates a portion of the landfill tipping fee for the household hazardous waste program. TRSWMA will contract with a hazardous waste company to ensure that all hazardous materials are stored, packaged, transported, and disposed of properly in accordance with Federal and State regulations.

Some of the cities/towns in the region collect household hazardous waste for the Household Hazardous Waste Collection Day prior to the event and then transport the HHW to the site for proper packaging and disposal. Residents of Tupelo can bring paints, pesticides and other household chemicals to the Public Works Department

located at 604 Crossover Road during normal business hours (7-4:30, Monday-Thursday and 7-11 on Friday). Residents of Tupelo are encouraged to contact the Tupelo Public Works Department at (662) 841-6457 prior to bringing household hazardous wastes to this location.

2.8 Existing Composting & Mulching Facilities in the Planning Area



The City of Tupelo has a composting and mulching operation within the city limits. The compost is made by mixing decaying leaves, decaying grasses, street sweepings, and mulch. The composting operation is located on North Front Street. The compost is free to Tupelo residents. Mulch, from ground up tree limbs, etc., is

also produced by the City of Tupelo. Tupelo residents can pick up mulch at the North Commerce Street (same location as the compost site) or at the Tupelo CDF Rubbish Site located on Commerce Street just north of Franklin Street.

The City of Pontotoc also has a mulching operation where they collect and grind tree limbs collected within the city limits. Residents can obtain the mulch associated with the collection and mulching of limbs, etc. at the City of Pontotoc Class II Rubbish Landfill. Mulch from this operation is not placed in the Class II Rubbish Landfill.

Wood Recyclers of Mississippi in Ecrú (Pontotoc County) also runs a mulching/grinding operation associated with the wood waste generated from the furniture manufacturing industry. Mulch generated from this wood waste is sold to numerous landscaping companies in the region and to various other companies as feed stock for fuel. Residents may also purchase the mulch on-site.

Table 2-5 Household Hazardous Waste Products (www.epa.gov/msw/hhw-list.htm)

Cleaning Products

- Oven cleaners
- Drain cleaners
- Wood and metal cleaners and polishes
- Toilet cleaners
- Tub, tile, shower cleaners
- Bleach (laundry)
- Pool chemicals

Indoor Pesticides

- Ant sprays and baits
- Cockroach sprays and baits
- Flea repellents and shampoos
- Bug sprays
- Houseplant insecticides
- Moth repellents
- Mouse and rat poisons and baits

Automotive Products

- Motor oil
- Fuel additives
- Carburetor and fuel injection cleaners
- Air conditioning refrigerants
- Starter fluids
- Automotive batteries
- Transmission and brake fluid
- Antifreeze

Workshop/Painting Supplies

- Adhesives and glues
- Furniture strippers
- Oil or enamel based paint
- Stains and finishes
- Paint thinners and turpentine
- Paint strippers and removers
- Photographic chemicals
- Fixatives and other solvents
- Lead based paint wastes

Lawn and Garden Products

- Herbicides
- Insecticides
- Fungicides/wood preservatives

Miscellaneous

- Batteries
- Mercury thermostats or thermometers
- Fluorescent light bulbs
- Driveway sealer

Other Flammable Products

- Propane tanks and other compressed gas cylinders
- Kerosene
- Home heating oil
- Diesel fuel
- Gas/oil mix
- Lighter Fluid

2.9 Existing Special Waste Management Programs

The term “Special Waste” is frequently used in solid waste management to define waste that is not classified as typical residential or commercial waste. Since there is no known formal definition of “special waste”, this report classifies all non-residential waste and non-typical commercial waste as “Other Waste”. Management programs for Other Waste can be found in Chapter 7 of this report.

2.10 Existing Disaster Debris Management Programs

Disaster debris management is typically associated with tornadoes, hurricanes, winter snow and ice storms, and straight line winds. Management of disaster debris is coordinated by county, city and local utility companies. Disaster debris waste and planning are discussed in detail in Chapter 8 of this report.

2.11 Closed Solid Waste Facilities in the Planning Area

There are numerous closed solid waste facilities located within the TRSWMA planning area. Based on a 2005 report from the Mississippi Department of Environmental Quality (State of Mississippi Solid Waste Management Facilities Listing), there are 8 closed landfills, 6 closed rubbish sites, and 2 closed industrial/special waste disposal sites within the TRSWMA planning area. These closed facilities are identified in Table 2-6.



Based on past solid waste practices across the United States, there are thousands of old and undocumented solid waste facilities across the country that were operated and closed prior to the formation of regulatory agencies (such as EPA and MDEQ). In view of this, there could be hundreds of undocumented closed solid waste facilities (municipal

landfills, rubbish landfills, commercial landfills, and private landfills) located within the TRSWMA planning area. These undocumented solid waste facilities could have been

used by cities, towns, businesses, small communities, individuals or even tribal activity over the past 300 years within the TRSWMA planning area.

2.12 Unauthorized Dumping Operations within the Planning Area

In accordance with Section 17-17-3 of the Mississippi Code, an "Unauthorized dump" means any collection of solid wastes either dumped or caused to be dumped or placed on any property either public or private, whether or not regularly used. An abandoned automobile, large appliance or similar large item of solid waste shall be considered as forming an unauthorized dump, but not the careless, scattered littering of smaller individual items such as tires, bottles, cans and etc.

Table 2-6 Documented Closed Solid Waste Facilities within the Planning Area

County	Type of Solid Waste Facility	Name of Facility
Itawamba	Solid Waste Landfill	City of Fulton Sanitary Landfill
Itawamba	Solid Waste Landfill	Itawamba County, District 2 Landfill
Lafayette	Solid Waste Landfill	Oxford Sanitary Landfill
Lee	Solid Waste Landfill	Lee County Sanitary Landfill
Monroe	Solid Waste Landfill	Monroe Count Sanitary Landfill
Pontotoc	Solid Waste Landfill	City of Pontotoc Landfill
Union	Solid Waste Landfill	New Albany/Pumpkin Center Landfill
Union	Solid Waste Landfill	New Albany/Beacon Hill Landfill
Calhoun	Rubbish Landfill	City of Bruce Rubbish Landfill #1
Calhoun	Rubbish Landfill	City of Bruce Rubbish Landfill #2
Itawamba	Rubbish Landfill	Comer Rubbish Landfill
Lee	Rubbish Landfill	City of Tupelo Compost and Rubbish Site

Table 2-6 (Continued) Documented Closed Solid Waste Facilities within the Planning Area

County	Type of Solid Waste Facility	Name of Facility
Monroe	Rubbish Landfill	Whitlock Landfill
Union	Rubbish Landfill	Randy McDaniel Rubbish Landfill
Monroe	Industrial/Special Waste Landfill	American Colloid Company
Monroe	Industrial/Special Waste Landfill	Kerr-McGee Chemical Corporation

There are no known commercial illegal dumping operations within the TRSWMA planning area. Each county within the TRSWMA planning area has a person assigned to enforce unauthorized dumping activities on commercial or individual property. Citizens wishing to report unauthorized dumping activities should contact their county enforcement officer as identified in Table 2-7.

Table 2-7 Enforcement Officers for Unauthorized Dumping Activities

County	Solid Waste Enforcement Officer
Calhoun County	Richard Thacker Calhoun County Solid Waste Department P.O. Box 36 Pittsboro, MS 38951 (662) 415-3137
Itawamba County	David Thomas P.O. Box 776 Fulton, MS 38843 (662) 862-5600

Table 2-7 (Continued) Enforcement Officers for Unauthorized Dumping Activities

County	Solid Waste Enforcement Officer
Lafayette County	Bobby Jones Lafayette Co. Solid Waste Department P.O. Box 1240 Oxford, MS 38655 (662) 234-1707
Lee County	Shawn Hairald Code Enforcement P.O. Box 1785 Tupelo, MS 38802 shairald@leecomms.com (662) 841-0378
Monroe County	Carl Cadden P.O. Box 578 52076 Highway 8 East Aberdeen, MS 39730 (662) 369-2509
Pontotoc County	William Franklin P.O. Box 240 Pontotoc, MS 38863 (662) 489-3111
Union County	Ethan Mayeu Mississippi Department of Environmental Quality P.O. Box 2261 Jackson, MS 39225 (601) 961-5613
Mississippi Department of Environmental Quality	Ethan Mayeu Mississippi Department of Environmental Quality P.O. Box 2261 Jackson, MS 39225 (601) 961-5613
Three Rivers Solid Waste Management Authority	Mr. Dan Reese Three Rivers Solid Waste Management Authority 75 South Main Street Pontotoc MS (662) 489-2415

2.13 Solid Waste Transported Outside the Planning Area

In accordance with the flow control ordinance adopted by each county and city within the TRSWMA planning area, it is not legal to dispose of Subtitle D solid waste in a Mississippi county located outside the planning area. The only exceptions to the flow control ordinance are:

- Solid waste that can be disposed in a Class 1 or Class 2 rubbish landfill
- Infectious medical waste (See Chapter 7)
- Used motor oil and acid batteries (See Chapter 7)
- Industrial process waste that has been approved for exemption (See Section 2-3 of this chapter)
- Recyclable or reusable materials
- Hazardous or radioactive waste

A copy of the flow control ordinance can be found in Appendix A of this report.

Chapter 3

SOLID WASTE COMPOSITION AND QUANTIFICATION

3.1 Characteristics of Existing Waste Stream

A waste stream characterization study was performed as part of the original Three Rivers Regional Solid Waste Master Plan prepared by Neel-Schaffer, Inc. Data published in the original master plan are summarized in the following sections. Additional waste stream characterization was not performed other than up-dating the original data base for changes in industrial make-up of the region and additional data related to recycling activities in the TRSWMA planning area. Existing solid waste management systems are described in Chapter 2 of this document and will be referenced as necessary rather than reproduced in this Chapter. Similarly, recycling and waste reduction programs are presented in Chapter 4 of this document with appropriate data referenced in this Chapter.

3.2 Residential Waste Stream Characterization

The composition of the residential portion of the combined waste stream has been relatively consistent for the past decade nationally. Life styles, consumer purchasing habits, and packaging of products have not seen major changes in recent years. Based on these national trends, MDEQ granted permission to utilize the original waste stream composition data generated in the original Three Rivers Regional Solid Waste Master Plan in a May 1, 2006 meeting. The waste characterization performed for the original master plan sorted the residential solid waste into the following seventeen (17) waste categories defined in Table 3-1. Results from the waste composition analysis are presented in Table 3-2.

Table 3-1 Waste Characterization

Newsprint	Black & white, colored ads, handouts, comics and shredded newsprint
Other Paper	Magazines, filler, covers, notebooks, bags, wrappings
Corrugated Cardboard	Cardboard, corrugated paper
Textiles	Clothing, leather, cotton, socks, fur, etc.
Plastic (film)	Plastic wrap, trash liners, kitchen savers, cigarette wrappers
Plastic (rigid)	Molded toys, toothbrushes, utensils
Plastic (recyclable)	HDPE (soda bottles), PET (milk jugs)
Diapers	Disposable diapers
Food Waste	All food products, food waste
Wood/Lumber	Lumber yard stock, furniture, broomsticks, utensils
Yard Wastes	Grass, bedding plants, trimmings, brush
Sweepings	Fine material
Ferrous Metal	Metal containing iron
Nonferrous Metal	Metals except ferrous and aluminum
Aluminum	Pots, pans, cans, utensils, raw and stock material
Glass	All glass
Oversized Bulky Wastes	Large items, bicycles, lawnmowers, appliances

The waste composition for the Three Rivers region as well as comparable waste streams in Mississippi was summarized in the original study in Table 3-2 which is reproduced as follows:

Table 3-2 Residential Waste Stream Composition

Category	Three Rivers % of Waste Stream	Golden Triangle % of Waste Stream	Southwest MS % of Waste Stream	Pine Belt % of Waste Stream
Newsprint	9.5	8.1	6.6	5.7
Other Paper	24.1	22.6	24.2	22.4
Corrugated Cardboard	3.9	3.4	2.1	4.2
Textiles	3.3	3.4	4.3	4.1
Plastic (film)	3.0	5.2	4.7	3.3
Plastic (rigid)	2.5	3.4	4.3	3.7
Plastic (recyclable)	3.1	3.5	2.2	1.5
Diapers	3.0	4.7	5.2	3.5
Food Wastes	9.8	13.0	12.7	7.7
Wood/Lumber	0.6	0.1	0	0.7
Yard Waste	22.5	16.9	14.7	21.9
Sweepings	1.7	0.8	0.7	4.8
Ferrous	4.1	4.7	2.8	4.4
Nonferrous	0	0	2.3	0
Aluminum	1.6	1.7	1.9	1.1
Glass	6.1	8.5	10.6	9.6
Oversized Bulky Wastes	1.0	0.4	0.7	1.4

The characterization was performed for wastes from randomly selected collection vehicles. Recycling activities may bias the above composition in isolated areas where participation in recycling programs is encouraged. As discussed in Chapter 2, two municipalities are encouraging household source separation for curb-side recycling.

All of the residential solid waste generated in the TRSWMA region is delivered to the Three Rivers Regional Landfill at Pontotoc for disposal as mixed solid waste, i.e., no separate components unless the waste comes from a designated recycling center (see Chapter 4). While the potential for enhanced levels of recycling and recovery of such

components as paper, plastic, glass, and aluminum appears attractive, a materials recovery system (MRF) would be required to separate the mixed solid waste into recoverable components. This concept was included in the original master plan for the Three Rivers region.

One of the key elements in the implementation of a MRF would be the availability of markets for materials recovered from commingled solid waste. Where this concept is working successfully (i.e., Memphis and Jackson, TN) recyclables are collected separately and process at a MRF. In addition, the participation level at the individual recycling centers/locations (see Chapter 4) which send the recovered materials directly into secondary markets may impact the feasibility of a central MRF at the Three Rivers Regional Landfill.

3.3 Commercial Waste Stream Characterization

Unlike residential solid waste, the characteristics of the solid waste stream from commercial sources are highly variable, even within similar commercial activities. Commercial solid wastes are associated with stores, restaurants, markets, office buildings, hotels, motels, service stations, etc. Typical waste categories found in the commercial solid waste stream include paper, cardboard, plastics, wood, food waste, glass, metals, and hazardous wastes. As indicated in Chapter 4, numerous commercial units within the Three Rivers region participate in recycling activities which skew the composition of the waste from these sources. A majority of the commercial solid waste in the Three Rivers region is collected and transported by private haulers. The vast majority of this material ends up at the Three Rivers Regional Landfill (see Chapter 5) but a minimal amount is transported out of the region. The material transported out of the region is authorized by the Authority and exempted from the Authority's flow control ordinance.

The original Three Rivers Regional Solid Waste Master Plan did not attempt to characterize the commercial solid waste stream. Commercial solid waste sources were grouped into the following categories for the purpose of estimating the amount of commercial solid waste generated in the region:

- Schools
- Restaurants
- Offices
- Grocers
- Apparel/General Merchandise
- Miscellaneous Retail

The anticipated composition of solid wastes from these categories would include paper, packaging materials (cardboard and plastic), food wastes, textiles, and aluminum cans. The percentage breakdown of each category will be a function of individual recycling projects within each commercial category and each individual entity.

A subset of commercial solid waste is a broad category of wastes known as Construction and Demolition (C&D) wastes. Generated from construction activities (building, renovating, demolishing structures), this waste stream can include a wide variety of components such as lumber, bricks, concrete, asphalt, tile flooring, vinyl siding, insulation, electrical wiring, and unusable white goods such as stoves, refrigerators, etc. Much of this waste stream is diverted to landfills specifically permitted for C & D wastes as discussed in Chapter 7 of this document. As discussed in Chapter 4 of this document, some recovery of recyclable materials does occur at a few C & D locations where a recycling center is also located.

3.4 Industrial Waste Characterization

Industrial waste characterization begins with the identification of the industrial make-up of the region. For the Three Rivers region, wood related industrial waste (Furniture, Fixtures, Sawmill, and Wood Related industries) is the largest single industrial waste category. The original master plan study found that the wood related waste accounted for almost 90% of the industrial solid waste identified in the region. This waste stream is typically recycled directly on-site at the generator or sent to a secondary market (see Chapter 4). Very little of the industrial wood waste stream ends up in the Three Rivers Regional Landfill.

Industrial waste other than wood related waste is collected and transported to disposal facilities mostly by private haulers. The majority of the industrial waste in the region ends up in the Three Rivers Regional Landfill; however, a significant amount has historically been diverted to landfills outside the Three Rivers region. Recently enacted flow control ordinances (see Chapter 2) at the local level are anticipated to impact the quantity of industrial solid waste going to the Three Rivers Regional Landfill. However, the exemption provision in the ordinances may allow some quantity of industrial waste to continue to be transported out of the region. Waste materials generated by new industrial sources shall go to the Three Rivers Regional Landfill.

3.5 Solid Waste Quantification – Residential

In the original master plan study, solid waste quantity data in terms of pounds per residence per week was applied to preliminary 1990 U.S. Census population data to determine total and per capita residential waste generation for each county in the Three Rivers region. The residential component of the waste stream in the Three Rivers region was characterized and quantified in the original master plan study by sampling loads of waste collected from residential routes in selected counties and cities in the region. The per capita residential waste quantities for the indicated counties at the time of the preparation of the master plan are as follows:

- Calhoun 1.96 lbs per person per day
- Itawamba 1.74 lbs per person per day
- Lafayette 1.71 lbs per person per day
- Lee 1.70 lbs per person per day
- Monroe 1.72 lbs per person per day
- Pontotoc 1.75 lbs per person per day
- Union 1.80 lbs per person per day

The total solid waste generated in the Three Rivers region (residential, commercial, and industrial) was estimated in the original study as

- Calhoun 1.5 lbs per person per day
- Itawamba 3.2 lbs per person per day
- Lafayette 3.1 lbs per person per day

- Lee 1.2 lbs per person per day
- Monroe 2.2 lbs per person per day
- Pontotoc 2.4 lbs per person per day
- Union 3.1 lbs per person per day

Since the original master plan study, a data base has been generated by the State of Mississippi Department of Environmental Quality which contains solid waste generated by planning region each year beginning in 2003. The generation totals for the TRSWMA planning area are as follows:

- 2003 – 249,971 tons of MSW
- 2004 – 247,489 tons of MSW
- 2005 – 236,284 tons of MSW

These values represent total (residential, commercial, industrial) solid waste which was taken to a subtitle D landfill. A significant part of the total waste was taken to landfills outside the Three Rivers region, i.e. 31.64% in 2005, which represents primarily commercial and industrial solid waste handled by private haulers. The 2005 quantities for waste taken outside the region pre-date the implementation of flow control within the Three Rivers region.

A survey of waste generation within each county was performed to update the values presented in the original master plan study. The latest data available for all counties are shown in Tables 3-3 through 3-8 for residential, commercial, and C&D wastes. Any industrial waste hauled off-site was included in the “non-residential” category. The total per capita solid waste production has increased significantly in several of the counties due to the increase in “non-residential” wastes, assumed to be commercial wastes.

Both the original master plan study and this update do not include the recyclable and reused industrial waste produced by the furniture, fixtures, sawmill and wood industries. These industries produce a unique type of waste which is handled separately from regular municipal solid waste.

The per capita generation rates calculated for the 2005 time frame represent the total waste generated within the study area whether it is disposed at the Three Rivers

Regional Landfill or outside the Three Rivers region. These values will be used for the projections of total solid waste quantities to be managed in the Three Rivers region (see Chapter 5).

Table 3-3 A Subtitle D Waste Produced within TRSWMA Planning Area (2005)
(Contributions Prior to Implementation of Flow Control)

County	Residential	Inside (2005)		Outside (2005)	Total Tons
		Non-Residential	Non-Residential	Non-Residential	
Calhoun	5,407	1,146		1,653	8,205
Itawamba	7,472	3,276		1,091	11,840
Lafayette	12,576	20,097		242	32,914
Lee	25,047	23,533		53,466	102,046
Monroe	12,128	6,415		15,583	34,127
Pontotoc	8,836	21,662		616	31,114
Union	8,491	5,901		1,650	16,042
3 Rivers Area	79,957	82,030		74,301	236,288

Table 3-3 B Subtitle D Waste Produced within TRSWMA Planning Area (2005)

County	County Distribution, Percent			2005 Population
	% of Total	% Residential	% Non-Residential	
Calhoun	3.5	65.9	34.1	15,100
Itawamba	5.0	63.1	36.9	23,500
Lafayette	13.9	38.2	61.8	40,300
Lee	43.2	24.5	75.5	80,600
Monroe	14.4	35.5	64.5	38,700
Pontotoc	13.2	28.4	71.6	27,700
Union	6.8	52.9	47.1	25,900
3 Rivers Area	100.0	33.8	66.2	252,000

Table 3-3 C Subtitle D Waste Produced within TRSWMA Planning Area (2005)

County	Per Capita Production (lb/day)		
	Residential	Non-Residential	Total
Calhoun	1.96	1.02	2.98
Itawamba	1.74	1.02	2.76
Lafayette	1.71	2.77	4.48
Lee	1.70	5.23	6.94
Monroe	1.72	3.11	4.83
Pontotoc	1.75	4.41	6.15
Union	1.80	1.60	3.39
3 Rivers Area	1.74	3.40	5.14

Table 3-4 A Subtitle D Waste Received at the Three Rivers Regional Landfill (2005)

County	Residential	% of Total	Non-Residential	% of Total	Total Tons
Calhoun	4,939.7	6.0	1,145.5	1.4	6,085
Itawamba	7,472.2	9.1	3,276.3	4.0	10,749
Lafayette	12,575.9	15.4	20,096.5	24.4	32,672
Lee	25,047.1	30.6	23,532.5	28.5	48,580
Monroe	12,128.3	14.8	6,415.4	7.8	18,544
Pontotoc	8,832.3	10.8	21,662.2	26.3	30,495
Union	8,490.9	10.4	5,901.2	7.2	14,392
3 Rivers Area	79,486.4	97.1	82,029.7	99.5	161,516

Table 3-4 B Subtitle D Waste Received at the Three Rivers Regional Landfill (2005)

County	Total Tons	% of Total	% Residential	% Non-Residential	2005 Population	Residential	Non-Residential	Total
Calhoun	6,085	3.7	81.2	18.8	15100	1.79	0.42	2.21
Itawamba	10,749	6.5	69.5	30.5	23500	1.74	0.76	2.51
Lafayette	32,672	19.9	38.5	61.5	40300	1.71	2.73	4.44
Lee	48,580	29.6	51.6	48.4	80600	1.70	1.60	3.30
Monroe	18,544	11.3	65.4	34.6	38700	1.72	0.91	2.63
Pontotoc	30,495	18.6	29.0	71.0	27700	1.75	4.29	6.03
Union	14,392	8.8	59.0	41.0	25900	1.80	1.25	3.04
3 Rivers Area	161,516	98.3	49.2	50.8	252000	1.73	1.78	3.51

Table 3-5 A Total Waste Produced within TRSWMA Planning Area (Residential & C/D) - (Contributions Prior to Implementation of Flow Control)

County	Residential	Inside (2005) Non-Residential	Outside (2005) Non-Residential	Rubbish			Total Tons
				Class I	Class II	Total Rubbish	
Calhoun	5,407	1,146	1,653	6,510	150	6,660	14,864
Itawamba	7,472	3,276	1,091	18	422	440	12,280
Lafayette	12,576	20,097	242	1,902	0	1,902	34,816
Lee	25,047	23,533	53,466	33,586	18,298	51,884	153,930
Monroe	12,128	6,415	15,583	22,505	1,500	24,005	58,132
Pontotoc	8,836	21,662	616	3,795	0	3,795	34,909
Union	8,491	5,901	1,650	9,140	0	9,140	25,182
3 Rivers Area	79,957	82,030	74,301	77,455	20,370	97,825	334,113

Table 3-5 B Total Waste Produced within TRSWMA Planning Area
(Residential & C/D)

County	Percent Distribution in 3 Rivers Area				
	Total Tons	% of Total	% Residential	% Non-Residential	% Rubbish
Calhoun	14,864	4.4	1.6	0.8	2.0
Itawamba	12,280	3.7	2.2	1.3	0.1
Lafayette	34,816	10.4	3.8	6.1	0.6
Lee	153,930	46.1	7.5	23.0	15.5
Monroe	58,132	17.4	3.6	6.6	7.2
Pontotoc	34,909	10.4	2.6	6.7	1.1
Union	25,182	7.5	2.5	2.3	2.7
3 Rivers Area	334,113	100.0	23.9	46.8	29.3

Table 3-6 Total Residential & C/D Waste Produced within TRSWMA Planning Area
(Contributions Prior to Implementation of Flow Control)

County	Residential	Inside (2005)	Outside (2005)	Rubbish			Per Capita
		Non-Residential	Non-Residential	Class I	Class II	Total Rubbish	lb/day
Calhoun	5,407	1,146	1,653	6,510	150	6,660	5.4
Itawamba	7,472	3,276	1,091	18	422	440	2.9
Lafayette	12,576	20,097	242	1,902	0	1,902	4.7
Lee	25,047	23,533	53,466	33,586	18,298	51,884	10.5
Monroe	12,128	6,415	15,583	22,505	1,500	24,005	8.2
Pontotoc	8,836	21,662	616	3,795	0	3,795	6.9
Union	8,491	5,901	1,650	9,140	0	9,140	5.3
3 Rivers Area	79,957	82,030	74,301	77,455	20,370	97,825	7.3

Table 3-7 A Distribution of Total Solid Waste in TRSWMA Planning Area

County	Total Tons	Percent Distribution in 3 Rivers Area			
		% of Total	% Residential	% Non-Residential	% Rubbish
Calhoun	14,864	4.4	1.6	0.8	2.0
Itawamba	12,280	3.7	2.2	1.3	0.1
Lafayette	34,816	10.4	3.8	6.1	0.6
Lee	153,930	46.1	7.5	23.0	15.5
Monroe	58,132	17.4	3.6	6.6	7.2
Pontotoc	34,909	10.4	2.6	6.7	1.1
Union	25,182	7.5	2.5	2.3	2.7
3 Rivers Area	334,113	100	23.9	46.8	29.3

Table 3-7 B Distribution of Total Solid Waste in TRSWMA Planning Area

County	Total Tons	Percent Distribution within County			
		% Residential	% Non-Residential	% Class I Rubbish	% Class II Rubbish
Calhoun	14,864	36.4	18.8	43.8	1.0
Itawamba	12,280	60.9	35.6	0.1	3.4
Lafayette	34,816	36.1	58.4	5.5	0.0
Lee	153,930	16.3	50.0	21.8	11.9
Monroe	58,132	20.9	37.8	38.7	2.6
Pontotoc	34,909	25.3	63.8	10.9	0.0
Union	25,182	33.7	30.0	36.3	0.0
3 Rivers Area	334,113				

Table 3-8 Construction/Demolition Wastes Generated within Three Rivers Region

	C/D Waste, tons		
	2005		
Calhoun	Class I	Class II	Total
City of Bruce		149.65	
Weyerhaeuser Ind. Landfill	6023		
Blue Berry Hill Landfill	487		
Total	6510	149.65	6659.65
Itawamba			
City of Fulton		421.82	
Tilden-Clay Road Rubbish Landfill	18.2		
	18.2	421.82	440.02
Lafayette			
City of Oxford	1901.79		1901.79
Lee			
Tupelo (Red Oak Wood Landfill)		4527	
Tupelo Water & Light		95.32	
Town of Nettleton		245.9	
Tupelo (Commerce Dump Site)		13430	
TMCO Industrial Landfill	3410		
TMCO Rubbish Site	6950		
Mac's Tire Recyclers, Inc.	23226.2		
	33586.2	18298.2	51884.4
Monroe			
F.F.M., Inc.		1500	
Town of Nettleton		0	
Amory Landfill, Inc.		0	
Kerr-McGee	11539		
Monroe County Solid Waste	10965.5		
	22504.5	1500	24004.5
Pontotoc			
City of Pontotoc Rubbish Landfill		0	
Woodland Rubbish Landfill	3794.7		
	3794.7	0	3794.7
Union			
City of New Albany	9140		9140
3 Rivers Area	77455.4	20369.7	97825.1

3.6 Solid Waste Quantification – Construction & Demolition

Each county or city within the Three Rivers region provides access to one or more landfill sites for construction/demolition wastes for its citizens. The distribution between Class I and Class II rubbish by county is shown in Table 3-6. The rubbish values were included in Tables 3-5 and 3-6 to reflect the total per capita waste generation within each county and the region.

Chapter 4

RECYCLING AND WASTE REDUCTION PROGRAMS

4.1 Recycling Fundamentals

Recycling is the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product. Materials that are frequently recycled include:



- Metals - aluminum cans, tin or steel cans, ferrous metals such as steel, and non-ferrous metals such as aluminum, brass, copper, and lead
- Paper – newspaper, cardboard, white office paper, and colored paper such as catalogs, magazines, and phone books
- Plastics – #1 Plastics such as polyethylene terephthalate (PETE) used to make many plastic bottles (such as soda bottles, water bottles, and some food containers), #2 plastics made from clear and colored high density polyethylene (HDPE) such as milk jugs and detergent bottles, # 6 plastics made from polystyrene (better known as Styrofoam™), bubble wrap and plastic air pillows, and packing peanuts
- Glass – clear glass, brown glass, blue glass, and green glass
- Home/Office Waste – white goods (such as refrigerators, freezers, stoves, washing machines, driers, and air condition units), rechargeable batteries, electronics (computers, TV's, etc.), furniture, and used wooden pallets
- Yard Waste – vegetative (grass clippings and leaves), shrubs, limbs, tree trimmings, and used Christmas trees
- Automotive – used tires, car batteries, used motor oil, and auto bodies

The benefits of recycling are numerous, but the three most important benefits are:

- (a) Recycling protects and expands U.S. manufacturing jobs and increases U.S. competitiveness.
- (b) Recycling conserves natural resources such as timber, water, minerals, and energy along with lowering the air and water pollution associated with harvesting virgin materials.
- (c) Recycling reduces the need for solid waste landfills.

On the local or regional level, reducing the quantity of waste being placed in the landfill is of major interest because it will extend the useful life expectancy of the landfill, which will ultimately result in lower solid waste disposal cost for businesses, industries, and residents.

4.2 Recycling Success Factors

As with any type of program, there are typically numerous factors that influence the degree of success. For recycling, these factors include but are not limited to the:

- Population of the area
- Population density of the area
- Proximity to recycle receptors that produce useable products from recyclable materials
- Number of businesses and institutions (such as schools, hospitals, etc.) in the region
- Proactive political leadership focused on long-term goals
- Expensive solid waste disposal costs
- Public awareness programs for recycling

In the 1980's and 1990's, many states and communities passed recycling legislation that included recycling goals typically ranging from 15% to 80% waste volume reduction. Although many recycling programs have been highly successful, some programs struggle because they attempt to recycle materials that are not marketable or useable in the region. A recycling program for a specific material is considered a success when it completes all five steps of the recycling process. These five steps are:

1. Diversion, storage, and collection of materials from the solid waste stream;
2. Processing and preparation of these materials for the secondary materials market;
3. Sale or donation of the secondary materials;
4. Manufacture of new products using the secondary materials, and;
5. Purchasing or using the recycled product.

As illustrated above, a recycling program for a material is not considered a success until all five steps are complete. Although some degree of recycling can be successful in any community, the type of materials that can be cost effectively recycled will vary from community to community.

Another aspect of recycling is the manner in which recyclable materials are collected. Some communities utilize curbside pickup, while others rely exclusively on drop-off stations. While curbside pickup yields the highest quantity of recyclable materials, this method can be cost prohibitive in rural areas due to the added costs associated with providing separate recycle collection cans along with the added cost of collection/transportation. Most communities that have a successful curbside recycling collection program have population densities greater than 1,000 people per square mile and pickup bi-weekly or monthly. To offset the cost of the curbside recycling, many programs require the purchase of recycling bins/cans or even charge a small monthly collection fee. The City of Oxford is currently providing some curbside recycling. Details of this pilot study are presented in Section 4.6 of this report. The City of Tupelo has also implemented a city-wide curbside recycling program.

Another component of curbside recycling is with yard waste. According to EPA, yard wastes typically make up 15-25% of the solid waste (by weight) of domestic solid waste, so its removal may be economically attractive to many communities. Once collected, yard waste may be processed into a usable (and marketable) product such as mulch or compost. In the event that collected yard waste is not recycled, it can still be removed from the Subtitle D landfill waste stream and placed in a rubbish disposal landfill at a much lower cost.

Some communities issue special cans for yard waste only. These cans are placed on the curb and are collected (separately from household waste) and transported to a rubbish disposal site or taken to a compost site where the yard waste can be composted and recycled. Although disposing yard waste in a rubbish disposal landfill is not classified as recycling, rubbish disposal facilities are much more economical to operate and maintain and have a much lower environmental risk than Subtitle D (used for the disposal of non-hazardous waste) landfills.

The most popular method for collecting recyclable materials is the drop-off center. Drop-off centers are efficient provided they:

- are strategically located in an area of high traffic flow (preferably near residential areas) with easy entrance/exit access
- have flexible operating hours

- have good directional signage
- have high visibility to encourage public use
- are kept aesthetically clean

Due to the low population density of the TRSWMA planning area, most recycling materials are collected at drop-off recycling locations. Recycling efforts, locations, along with the type of materials collected are described for the seven counties in the TRSWMA planning area and are discussed in detail in the following sections.

4.3 Recycling Goals

Mississippi Code § 17-17-225(b) and § 17-17-227(1)(d) established a waste reduction goal of 25 percent. This goal was primarily established upon the onset of the Subtitle D regulations as a mechanism to remove yard waste and to encourage recycling that would reduce the volume of solid waste entering a Subtitle D landfill and increase the useful life of landfills.

4.4 Existing Recycling Facilities in Calhoun County

Calhoun County is the most rural county in the TRSWMA planning area. The county is approximately 587 square miles in area with a population density of 25.7 people/square mile. Three drop-off recycling trailers are located in Calhoun County.

Drop-off trailers are operated by Calhoun County and maintained by the Three Rivers Solid Waste Management Authority (TRSWMA). One trailer is located at the County Maintenance Building on Highway 9 in Pittsboro, another is located at the Town of Bruce while the last is located in Vardaman. Once full, the drop-off recycle trailers are transported to the City of Oxford Recycling Facility where they are emptied and their contents processed.

United Chair in Bruce is a major manufacturer of office furniture in the United States. United Chair has an aggressive recycling program which includes materials such as cardboard, steel, aluminum, white paper, styrofoam, scrap fabric, shrink wrap, scrap foam, used hydraulic fluid, wooden pallets, and plywood. Many of these products are not desirable in landfills because they have very low densities, poor compaction, and could take up significant volume in the landfill.



The majority of the recycling/reuse facilities in Calhoun County are associated with the wood products industry. Weyerhaeuser located in Bruce is the largest recycler/reuser in the TRSWMA planning area. This facility produces softwood lumber and recycles and reuses the majority of its wood waste. The majority of bark is used as boiler fuel, and chips and shavings are sold as a raw material to other types of industry. In 2005, Weyerhaeuser recycled and

sold 12,843 tons of bark; 303,275 tons of chips; and 33,087 tons of shavings. 3K Lumber is another wood products industry in Calhoun County that recycles/reuses approximately 1,375 tons/year of wood waste.

4.5 Existing Recycling Facilities in Itawamba County

Itawamba County is considered to be a rural county with a land area of approximately 532 square miles and a population density of 42.8 people/square mile. With over 23,000 residents, 331 multi-employee private businesses, Itawamba Community College, along with the close proximity of the Tupelo metropolitan area, opportunities for recycling are favorable.



Ferrous metals and tires are collected and processed for recycling at the City of Fulton Rubbish Disposal site. This facility has a tire collection trailer, a drop-off recycling trailer, and a storage area for the collection of ferrous metals and unusable white goods. Collected tires are hauled to MAC's Recyclers under an agreement with TRSWMA. Scrap ferrous metals are processed and recycled by Cumbaa Enterprises under an agreement with TRSWMA. The drop-off recycling trailer is also frequently taken to public schools in the area for use and educational purposes.

MJS Wood Products in Fulton is a large recycler in the TRSWMA planning area. MJS Wood Products serves the furniture manufacturing industry and recycles ground up wood products to a particle board manufacturing facility and to the poultry industry. In 2005, MJS Wood Products recycled approximately 15,000 tons of wood products.

Tri State Lumber and Tombigbee Lumber are two lumber mills located on the Tenn Tom Waterway in Fulton. These two mills recycle and reuse all of their wood waste for boiler feed, pine bark mulch, and paper mill stock. These two mills recycled and reused over 139,562 tons of wood waste in 2005.

There are five (5) documented recycling facilities within the county. Recycling facilities, locations, contact numbers, and types of materials collected are presented in Table 4-1.

Table 4-1 Recycling Facilities in Itawamba County

Recycling Facility	Materials Collected for Recycling
AutoZone (Customers Only) 1613 South Adams Fulton, MS (662) 862-3870	Used car batteries Used motor oil
Douglas Waste Paper 1720 Highway 178 Mantachie, MS (662) 862-7844	Corrugated cardboard Plastics in bulk quantities
Fulton Metal Recycling 3088 Highway 178 East Fulton, MS (662) 862-7167	Aluminum cans, tin or steel cans
MJS Wood Products 2315 Hopewell Keys Road Fulton, MS (662) 210-5560	Ground up wood products
TRSWMA Drop-Off Site North Cummings Street Fulton, MS (662) 489-2415	Ferrous metals (steel and iron), non-ferrous metals, unusable white goods, used tires, paper, plastics, cardboard, aluminum cans and tin cans

4.6 Existing Recycling Facilities in Lafayette County



Lafayette County has a land area of approximately 631 square miles and a population density of 61.4 people/square mile. With over 39,000 residents, 891 multi-employee private

businesses, and The University of Mississippi all located in the county, recycling opportunities are favorable. Recycle receptor markets in the Memphis metropolitan area should also have an influence on the success of various recyclable materials.

There are fifteen (15) documented recycling facilities within the county. Recycling facilities, locations, contact numbers, and types of materials collected are presented in Table 4-2.

The City of Oxford has an active recycling program and operates two drop-off centers and a recycling processing facility. Recycled materials are processed at the recycling



process facility located at the Lafayette County Transfer Station site and sold to a recycle broker. This facility includes a hopper/bailer (for bailing cans, plastics, paper, and cardboard), a sorter that separates aluminum and steel cans, a trailer for recycled newspaper, and a storage area for loose and bailed recyclable materials. This facility also voluntarily processes recyclable materials collected from the drop-off recycling trailers located in Pontotoc, Vardaman, Bruce and Pittsboro along with the University of Mississippi. The recycling program collected approximately 1,420 tons of recyclable materials during FY 2008/2009.



The City of Oxford provides curbside collection for the majority of the city. This program was initiated in March 2005 and for the first year of operation collected an additional 73,900 pounds (36.95 tons) of recyclable materials. Recycling material is picked up curbside four days each week based on a zone system. Residents should call the Recycling Center at (662) 232-2745 to find out which zone they live in or visit the web

site at www.oxfordms.net/departments/curbside.htm.

In addition to the recycling collection and processing program, the county also collects used tires and scrap metal at the Lafayette County Transfer Station. Tires are collected in a trailer and transported to MAC's Tire Recyclers in Saltillo under a Three Rivers SWMA contract. Scrap metal and white goods are collected on site and recycled by a scrap dealer under a Three Rivers SWMA contract.



Table 4-2 Recycling Facilities in Lafayette County

Recycling Facility	Materials Collected for Recycling
AutoZone (Customers Only) 1901 University Avenue Oxford, MS (662) 234-8288	Used car batteries Used motor oil (up to 3 gallons per customer)
Beard Auto Parts 2620 W Oxford Loop Oxford, MS (662) 234-3441	Used auto batteries
Belk Ford/Mercury 447 Highway 6 W Oxford, MS (662) 234-4661	Used motor oil
CARQUEST 1615 University Ave Oxford, MS (662) 234-7813	Used auto batteries
Grisanti Rebel Motors 1801 Jackson Ave Oxford, MS (662) 234-2311	Used motor oil
KOLCB Computers for Kidz! Security Self Storage 476 Highway 6 West Oxford, MS (662) 234-5670	Used computers and software
Oxford Paint Company (Habitat for Humanity at Oxford) 1116 N Lamar Blvd Oxford, MS (662) 513-4565	Collects ½ full to full gallons of good paint. All paint is donated to Habitat for Humanity
Lafayette County Drop-Off Site (Lafayette County Residents Only) Molly Bar Road Oxford, MS (662) 232-2745	Aluminum cans, tin or steel cans, newspaper, cardboard, mixed paper, #1 Plastic, #2 Plastic (colored)

Table 4-2 (Continued)

Recycling Facilities in Lafayette County

Recycling Facility	Materials Collected for Recycling
Lafayette County Drop-Off Site (Lafayette County Residents Only) Highway 7 Oxford, MS (662) 232-2745	Aluminum cans, tin or steel cans, newspaper, cardboard, #1 Plastic, #2 Plastic (colored)
Radio Shack 2550 West Jackson Avenue Oxford, MS (662) 236-4771	Used rechargeable batteries (non-NiCad) Used rechargeable NiCad batteries
Shell Rapid Lube 1716 University Avenue Oxford, MS (662) 236-3696	Used motor oil (5 gallons or less)
Spark's Auto Parts 1360 N Lamar Blvd Oxford, MS (662) 234-1611	Used auto batteries
The UPS Store 1739 University Drive Oxford, MS (662) 236-3800	Used bubble wrap and air pillows Used packing peanuts
Lafayette County Landfill/TRSWMA Transfer Station County Road 321 Oxford, MS (662) 232-2323	Unusable white goods, used NiCad batteries, used tires (residential only)
Wal-Mart (Customers only) 2530 West Jackson Ave. Oxford, MS (662) 234-9131	Used car batteries Used motor oil Plastic bags

4.7 Existing Recycling Facilities in Lee County

Lee County is the most populated county in the TRSWMA planning area. The county has a land area of approximately 450 square miles and a population density of 168.5 people/square mile. With over 76,000 residents, 2,222 multi-employee private businesses, a thriving regional medical center, and furniture manufacturing industry, recycling opportunities are highly favorable for this county.

There are thirty-two (32) documented recycling facilities within the county. Recycling facilities, locations, contact numbers, and types of materials collected are presented in Table 4-3. Many of these recycling centers are specialized facilities that not only receive recyclable materials, but also provide recycled products.



MAC's Recyclers in Saltillo, is not only a valuable recycler for the TRSWMA planning area, but a regional recycler that serves a large portion of the southeast United States. This company has over 800 tire collection trailers and processes approximately 2.3 million tires (23,000 tons) each year. The

recycling process uses mechanical shredders, chippers, and magnets to produce approximately 11,500 tons/year of rubber chips and rubber mulch that are sold to power companies (as a fuel supplement) and to a company in Florida that makes rubber mulch. The process also produces/collects approximately 2,500 pounds/day (325 tons/year) of tire rims that are separated and sent to a local metal recycler. As a service to the TRSWMA planning area, private companies can bring in tires for a \$55/ton disposal fee. Chipped up tires can also be purchased for \$50/ton.



Tupelo Recycling, Inc., is another privately owned recycler that serves Northeast Mississippi. This company sells and leases cardboard bailers to several hundred manufacturing and commercial companies and

purchases their cardboard bails. The cardboard bails are collected and shipped to paper mills throughout the southeast United States. Tupelo Recycling Inc. also collects plastics and mixed paper and sells these recycled materials to various companies in the southeast United States. In 2005, Tupelo Recycling Inc. processed and shipped 18,159 tons of recycled materials.

Hunter Douglas is another company in Lee County that has a very aggressive recycling and reuse program. This company has taken some very innovative and creative steps to



reuse the packaging of raw materials to package their finished product. In 2005, Hunter Douglas recycled approximately 488 tons of steel, 414 tons of aluminum, and 72 tons of cardboard. In addition to recycling, they also sent approximately 223 tons of wood

packaging materials back to the supplier of their raw products. They also recycle drink cans, office paper, plastics, and some solvents used in the manufacturing process. The recycling/reuse efforts by Hunter Douglas removed approximately 1,200 tons of solid waste from the waste stream.



The City of Tupelo operates a highly effective yard waste recycling/reuse facility. Yard waste is typically 15 to 25 percent of the total solid waste volume, so its removal from the waste stream can substantially reduce the volume of waste placed in the landfill as well as reduce the amount of money that the City of Tupelo has to pay in solid waste disposal costs. The Compost/Leaf Disposal Site is located on North Commerce Street and accepts yard waste (grass clippings, shrubs, and tree trimmings) from Tupelo residents. The yard waste is chipped and blended to make mulch and processed with street sweepings to make compost. The mulch is mostly shredded wood and bark and is ideal for topping

off flowerbeds and other landscaping uses. Compost is an excellent soil additive that is rich in organic and nutrient content - making it suitable for flowerbeds and gardens. These two products are available free of charge to Tupelo residents.

The mulching processing facility is located at the Tupelo CDF Rubbish Site located on Commerce Street just north of Franklin Street. This facility utilizes a chipper/grinder along with a bulldozer, track hoe, and a front-end loader to facilitate the flow of tree branches, limbs, and mulch to and from the chipper. In 2005, the mulching operations processed 4,527 tons of reusable mulch.



The City of Tupelo operates and maintains five (5) recycling drop-off locations. Four of these locations collect aluminum cans, steel cans, newspaper, #1 plastic, and #2 plastic. The fifth drop-off station is located at a retirement/assisted living community and only collects newspaper. These five recycling drop-off stations collect an estimated 39 tons of recyclable materials in 2005.

In August 2007, the City of Tupelo began a city-wide curbside recycling program that serves approximately 12,000 residential homes. Curb side materials are picked up by Waste Management of Mississippi every other Wednesday. Residents north of Main Street are picked up one week while residents south of Main Street are picked up the following week. To determine pick up dates, residents should contact Waste Management at (662) 844-5523. After curb side pickup the collected recyclable materials are transported to Tupelo Recycling for processing. In 2009, the curbside recycling program collected 747 tons of recyclable materials.



The Lee County/Tupelo Transfer Station also has an active recycling program. This facility receives municipal solid waste mostly from Lee and Itawamba

Counties. As solid waste is dumped on the loading floor, operations staff will often pull out recyclable materials such as ferrous metals, non-ferrous metals, car batteries, cardboard, wood pallets, and tires from the waste stream. The facility also has a recycle trailer, cardboard bailer, a ferrous metal scrap pile, newspaper trailer, and a trailer from MAC's Tire Recyclers. Many of the recycle trailers located around the region are also unloaded and processed at this facility. In 2005, the Lee County Transfer Station sent 45 tons of newspapers, 55 tons of scrap metal, and 54 tons of cardboard to recycling companies.

Table 4-3 Recycling Facilities in Lee County

Recycling Facility	Materials Collected for Recycling
Advance Auto Parts 1214 West Main Street Tupelo, MS (662) 690-5960	Used car batteries Used motor oil
Aluminum Can Buyers 511 South Spring Street Tupelo, MS (662) 844-0615	Aluminum cans
Auto Lube 402 Carter Ave Tupelo, MS (662) 534-3002	Used motor oil
AutoZone (Customers Only) 801 South Gloster Tupelo, MS (662) 844-6401	Used car batteries Used motor oil (up to 3 gallons per customer)
AutoZone (Customers Only) 3981 North Gloster Tupelo, MS (662) 840-0411	Used car batteries Used motor oil (up to 3 gallons per customer)
City of Baldwin 202 South 2 nd Street (City Hall) Baldwin, MS (662)365-2383	Aluminum cans, newspaper, and cardboard
City of Guntown 1589 Main Street (City Hall) Guntown, MS (662)348-5353	Aluminum cans, newspaper, and cardboard
MAC's Recyclers Old Highway 45 Saltillo, MS (662) 869-1860	Used tires and scrap rubber

Table 4-3 (continued) Recycling Facilities in Lee County

Recycling Facility	Materials Collected for Recycling
Northeast Metal Processors 551 Central Street Plantersville, MS (662) 844-2164	Ferrous metals (steel and iron) Non-ferrous metals (aluminum, brass, copper, tin)
Parker's Quick Lube 703 Pulltight Road Saltillo, MS (662) 869-9991	Used motor oil
Parker's Quick Lube 1957 Cliff Gookin Blvd Tupelo MS (662) 840-0019	Used motor oil
City of Plantersville Town Hall 2587 Main Street Plantersville, MS (662) 844-2012	Aluminum cans (Proceeds from sale of cans go to support the local park)
City of Tupelo Drop-Off Site (Tupelo Residents Only) North Front Street across from Tupelo Hardware Tupelo, MS (662) 841-6414	Aluminum cans, tin or steel cans, newspaper, #1 plastic, #2 plastic (clear)
City of Tupelo Drop-Off Site (Tupelo Residents Only) 412 Coley Road Tupelo, MS (662) 841-6414	Aluminum cans, tin or steel cans, newspaper, #1 plastic, #2 plastic (clear)
City of Tupelo Drop-Off Site Tupelo-Lee Humane Society 2400 South Gloster Tupelo, MS (662)	Aluminum cans, tin or steel cans, newspaper, #1 plastic, #2 plastic (clear) Recycling proceeds go to support the Tupelo-Lee County Humane Society

Table 4-3 (continued) Recycling Facilities in Lee County

Recycling Facility	Materials Collected for Recycling
<p>City of Tupelo Drop-Off Site Avonlea Assisted Living & Retirement Community 2429 Lawndale Drive Tupelo, MS (662) 840-6163</p>	<p>Newspaper</p>
<p>City of Tupelo Compost Site (Tupelo Residents Only) North Commerce Street Tupelo, MS (662) 841-6414</p>	<p>Yard waste such as leaves, shrubs, grass clippings, limbs, and tree trimmings. Tupelo residents can also pick up mulch and compost free-of-charge for use in flowerbeds and landscaping</p>
<p>City of Tupelo Drop-Off Site Tupelo High School 2500 Cliff Gookin Blvd Tupelo, MS (662) 841-8970</p>	<p>Aluminum cans, tin or steel cans, newspaper, #1 plastic, #2 plastic (clear)</p>
<p>Tupelo CDF Rubbish Site City of Tupelo Commerce Street just north of Franklin Street. (662) 841-6457</p>	<p>Mulch processing center. Residents of Tupelo can pick up mulch at this site. Employees will typically load trucks and trailers free-of-charge.</p>
<p>Radio Shack 2240 Rabbit Drive Tupelo, MS (662) 844-7910</p>	<p>Used rechargeable batteries (non-NiCad) Used rechargeable NiCad batteries</p>
<p>Radio Shack Barnes Crossing Mall Tupelo, MS (662) 844-1468</p>	<p>Used rechargeable batteries (non-NiCad) Used rechargeable NiCad batteries</p>
<p>S & T Auto Salvage 2343 Lee Line Road Tupelo, MS (662) 680-5194</p>	<p>Auto bodies</p>
<p>Sonny's Salvage North Hillsdale Tupelo, MS (662) 844-0551</p>	<p>Auto bodies</p>

Table 4-3 (continued) Recycling Facilities in Lee County

Recycling Facility	Materials Collected for Recycling
Tupelo Recycling, Inc. 669 Westmoreland Drive Tupelo, MS (662) 407-0708	Cardboard, mixed paper, white paper, and plastics
Texaco Xpress Lube 1081 Cliff Gookin Road Tupelo, MS (662) 840-0234	Used motor oil
Texaco Xpress Lube 299 St Highway 30 West Tupelo, MS (662) 534-0010	Used motor oil
Texaco Xpress Lube 2235 West Main Tupelo, MS (662) 840-5154	Used motor oil
Texaco Xpress Lube 475 East Main Tupelo, MS (662) 840-4112	Used motor oil
Texaco Xpress Lube 1630 North Gloster Tupelo, MS (662) 840-5111	Used motor oil
Three Rivers SWMA Drop-Off Site Lee County Transfer Station 281 County Road 1282 Tupelo, MS (662) 489-2415	Newspaper, cardboard, ferrous metals, and used tires
Three Rivers SWMA Drop-Off Site Highway 145 Saltillo, MS (662) 489-2415	Aluminum cans, tin or steel cans, newspaper, and cardboard

Table 4-3 (continued) Recycling Facilities in Lee County

Recycling Facility	Materials Collected for Recycling
Tupelo Scrap Corporation 2337 South Veterans Blvd Tupelo, MS (662) 842-7452	Aluminum cans, tin or steel cans, ferrous metals, used auto bodies
Wal-Mart (Customers only) 2270 West Main Tupelo, MS (662) 844-4011	Used car batteries Used motor oil Plastic bags
Wal-Mart (Customers only) 3929 North Gloster Tupelo, MS (662) 840-8401	Used car batteries Used motor oil Plastic bags
Xpress Lube 475 East Main Street Tupelo, MS (662) 840-4112	Used motor oil
Xpress Lube 1081 Cliff Gookin Blvd Tupelo, MS (662) 840-0234	Used motor oil
Xpress Lube 2235 West Main Street Tupelo, MS (662) 840-5154	Used motor oil

4.8 Existing Recycling Facilities in Monroe County

Monroe County is the largest county in the TRSWMA planning area with a land area of approximately 764 square miles. The population density of the county is 49.7 people/square mile. The county has approximately 38,000 residents with approximately 694 multi-employee private businesses. Due to the large land area and moderate population density, recycling opportunities are favorable but not expected to be as successful and widespread as Lafayette and Lee Counties.

The majority of the public recycling occurs at a drop-off recycling center at the Monroe County Transfer Station and at a small drop-off recycling trailer located at the Public Works building in Amory. The Monroe County Transfer



Station/Class I Rubbish Landfill maintains two designated locations for public disposal/recycling of used tires, unusable white goods, and ferrous metals. The tires are collected and transferred to MAC's Recyclers (See Section 4.6), while the unusable white goods and ferrous metals are collected by Cumbaa Enterprises under a contract with the TRSWMA. In 2005, approximately 296 tons of scrap metal were collected and sent to recyclers from the transfer station.



CKS Energy Inc. in Amory is a new company that will recycle scrap wood products to make wood pellets. The wood pellets will be used as fuel for home wood burning stoves/heaters and to wood burning boilers throughout the region and Europe. CKS Energy Inc. will mostly utilize the waste wood products from the lumber industry and the furniture manufacturing industry.

There are eight (8) documented recycling facilities within the county. Recycling facilities, locations, contact numbers, and types of materials collected are presented in Table 4-4.

Table 4-4 Recycling Facilities in Monroe County

Recycling Facility	Materials Collected for Recycling
Aberdeen Recycling 355 Highway 45 North Aberdeen, MS (662) 369-7429	Aluminum cans, ferrous metals, non-ferrous metals, used motor oil
AutoZone (Customers Only) 1103 Highway 278 East Amory, MS (662) 256-5610	Used car batteries Used motor oil (up to 3 gallons per customer)
AutoZone (Customers Only) 203 Highway 45 North Aberdeen, MS (662) 369-9920	Used car batteries Used motor oil (up to 3 gallons per customer)
CKS Energy, Inc P.O. Box 192 Martin Luther King Drive Amory, MS (662) 257-2150	Wood waste and scrap lumber
Northside Quick Lube 401 Highway 145 N Aberdeen MS 39730-2113 (662) 369-2315	Used motor oil (up to 10 gallons)
Three Rivers SWMA Drop-Off Site Monroe Co. Transfer Station 52076 Highway 8 East Aberdeen, MS (662) 369-6654	Ferrous metals, and used tires

Table 4-4 (Continued) Recycling Facilities in Monroe County

Recycling Facility	Materials Collected for Recycling
Three Rivers SWMA Recycling Drop-Off Trailer 5 th Avenue and 108 th Street Amory, MS (662) 489-2415	Newspaper only
Wheel City, Inc. 303 Highway 278 Amory, MS (662) 256-2699	Used tires

4.9 Existing Recycling Facilities in Pontotoc County

Pontotoc County is the fastest growing county in the TRSWMA planning area. The county has a land area of approximately 497 square miles and a population density of 53.7 people/square mile. The county has approximately 27,000 residents with approximately 479 multi-employee private businesses. Furniture manufacturing is the largest industry sector in Pontotoc County.

The majority of the public recycling occurs at a drop-off recycling center or at the Three Rivers Regional Landfill. The drop-off center is located on Highway 15 in the parking lot of the Salvation Army. This drop-off



location collects aluminum cans, tin and steel cans, #1 plastic, #2 plastic, newspaper, mixed paper, and cardboard. After collection, the contents of the drop-off recycling trailer are processed at the Lafayette County Recycling Processing Facility.

The City of Pontotoc also uses a mobile chipper for limbs, etc. picked up within the city limits. Mulch from this chipping operation is stockpiled at the city's rubbish landfill and is available "free of charge" to city residents.



The Three Rivers Regional Landfill has two designated locations for public disposal/recycling of used tires, unusable white goods, and ferrous metals. The tires are collected and transferred to MAC's Recyclers (See Section 4.6) while the unusable white goods and ferrous metals are collected by Cumbaa Enterprises under a contract with the TRSWMA. In

2005, approximately 72 tons of ferrous metals were collected and recycled at the landfill.



Wood Recyclers of Mississippi is the largest recycler in Pontotoc County. Wood Recyclers of Mississippi collects, recycles, and reuses large quantities of wood waste generated by the furniture industry. Wooden pallets

are also collected, repaired, and sold to various companies in the area. Scrap wood and lumber are collected and processed by a large wood grinder. The wood products can be ground into user-specified diameters ranging in size from sawdust to several inches in diameter. The ground-up wood products are sold as:

- Fuel for boilers at nearby paper mills
- Raw material for a particle board manufacturer in Mississippi
- Natural, brown, black, or red colored landscaping mulch that is sold to numerous landscaping companies or individuals in the region.

Individuals or companies are welcome to bring in dried scrap lumber or purchase mulch or sawdust. Wood Recyclers of Mississippi will also transport and operate the wood grinder off-site when there is a demand for on-site grinding/mulching operations. In 2005, Wood Recyclers of Mississippi refurbished and recycled approximately 3,437 tons of wooden pallets and approximately 37,500 tons of wood mulch.



There are seven (7) documented recycling facilities within the county. Recycling facilities, locations, contact numbers, and types of materials collected are presented in Table 4-5.

Table 4-5 Recycling Facilities in Pontotoc County

Recycling Facility	Materials Collected for Recycling
Advance Auto Parts 253 West Oxford Pontotoc, MS (662) 488-8848	Used car batteries Used motor oil
AutoZone (Customers Only) 220 Highway 15 North Pontotoc, MS (662) 489-0199	Used car batteries Used motor oil (up to 3 gallons per customer)
Wood Recyclers of Mississippi Industrial Drive Ecru, MS (662) 488-9108	Used and damaged wooden pallets Scrap lumber
Radio Shack 362 East Oxford Street Pontotoc, MS (662) 489-7700	Used rechargeable batteries (non-NiCad) Used rechargeable NiCad batteries

Table 4-5 (Continued)

Recycling Facilities in Pontotoc County

Recycling Facility	Materials Collected for Recycling
Three Rivers Regional Landfill 1904 Pontotoc Parkway Pontotoc, MS (662) 489-2415	Ferrous metals, unusable white goods, and used tires
Three Rivers SWMA Drop-Off Site (Salvation Army Thrift Store) Highway 15 Pontotoc, MS (662) 489-2415	Aluminum cans, tin or steel cans, newspaper, and cardboard
Wal-Mart (Customers only) 350 Wal-Mart Circle Pontotoc, MS (662) 489-7451	Used car batteries Used motor oil Plastic bags

4.10 Existing Recycling Facilities in Union County

Union County is the smallest county in the TRSWMA planning area, but also one of the fastest growing. The county has a land area of approximately 415 square miles with a population density of 61.0 people/square mile. The county has approximately 26,000 residents with approximately 477 multi-employee private businesses. Although the county has a moderate population density, recycling progress is one of the lowest in the TRSWMA planning area.

There are seven (7) documented recycling facilities within the county. Recycling facilities, locations, contact numbers, and types of materials collected are presented in Table 4-6.

Table 4-6 Recycling Facilities in Union County

Recycling Facility	Materials Collected for Recycling
AutoZone (Customers Only) 325 Bankhead Street West New Albany, MS (662) 534-0157	Used car batteries Used motor oil (up to 3 gallons per customer)
Metal Management, Inc. 2245 Highway 178 East Sherman, MS (662) 844-6441	Aluminum cans, tin or steel cans, ferrous metals (steel & iron), non-ferrous metals, and auto bodies
Metal Management 304 West Bankhead Street New Albany, MS (662) 534-9999	Aluminum cans, tin or steel cans, ferrous metals (steel & iron), and non-ferrous metals
701 South Central Street New Albany, MS (662) 534-1010	Used tires
Union County Wrecker 402 Carter Ave New Albany, MS (662) 534-5273	Aluminum cans
Wal-Mart (Customers only) 202 Park Plaza New Albany, MS (662) 534-9374	Used car batteries Used motor oil Plastic bags
Whittington Metal 1097 County Road 56 New Albany, MS (662) 534-0916	Aluminum cans, corrugated cardboard, and scrap metal

4.11 Recycling Efforts in Three Rivers Planning Area

In accordance with § 17-17-227 of the Mississippi Code, each county (or planning area) shall have a strategy for achieving a twenty-five percent (25%) waste reduction goal through source reduction, recycling or other waste reduction technologies. Estimating the recycling rate within the TRSWMA planning area was accomplished by surveying the major industry sectors, haulers, and recycle brokers that operate in the planning area

and comparing their recycle/reuse mass to the total amount of solid waste placed in Subtitle D landfills, industrial landfills, and rubbish facilities within the planning area. The recycling & reuse rate was calculated using the utilizes the definition of solid waste as defined by Mississippi Code § 17-17-3 (y) and the following equation:

$$\text{Recycle, Reuse and Reduction \%} = \frac{(\text{Recycle} + \text{Reuse Mass})}{(\text{Recycle} + \text{Reuse Mass}) + \text{Landfill Mass}} (100)$$

The first step in calculating the recycle rate was to quantify the mass of solid waste generated within the TRSWMA planning area. This information was obtained from the 2005 Status Report for Solid Waste Disposal Facilities produced each year by the Mississippi Department of Environmental Quality. This report quantifies the tonnage of waste disposed in each type of solid waste disposal facility and also identifies the county of origin. A summary of solid waste production quantities for each county is presented in Table 4-7. These reported quantities do not include solid waste produced and disposed on-site at water and wastewater treatment facilities, community recycling and reuse programs, individual recycling and reuse (such as yard waste composting), industrial recycling and reuse programs, solid waste taken out of state, or illegal dumping.

Table 4-7 2005 Tonnage of Solid Waste Disposed in Permitted Landfills

County	Subtitle D Residential	Subtitle D Non-Residential	Class I Rubbish	Class II Rubbish	Total Tons
Calhoun	5,407	2,799	6,510	150	14,864
Itawamba	7,472	4,367	18	422	12,280
Lafayette	12,576	20,339	1,902	0	34,816
Lee	25,047	76,999	33,586	18,298	153,930
Monroe	12,128	21,998	22,505	1,500	58,132
Pontotoc	8,836	22,278	3,795	0	34,909
Union	8,491	7,551	9,140	0	25,182
3 Rivers Area	79,957	156,331	77,455	20,370	334,113

Recycle and reuse masses were determined by calling or visiting recycling centers, recycling program coordinators, industries, and recycling brokers that serve the TRSWMA area. A summary of the recycling efforts in the TRSWMA planning area is presented in Table 4-8. These recycling masses are lower than actual numbers because:

- Recycling and reuse efforts by individual residences were not quantified. Many people recycle yard waste in on-site compost piles.
- Some major recyclers would not disclose recycle quantities. Many metal recyclers would not provide or disclose recycling information.
- Many professional tree trimming companies take pulp wood type material to a local lumber company, but do not keep tonnage records.
- The mass of used batteries was not quantified because retail companies seldom keep or compile this information.
- Used motor oil recycling was not quantified because motor oil is classified as a liquid waste.
- Many retailers, such as Wal-Mart, have recycle bins for plastic bags but do not keep up with recycle quantities.
- Some residential recycle programs collect recycled materials but do not quantify masses.
- Many industries reuse materials for packaging etc., but do not quantify the masses they reuse.
- Many companies pay haulers by the load and do not quantify the mass of products.
- Some companies utilize recycle brokers located outside the planning area.

Based on the quantities identified in Table 4-7 and Table 4-8, the recycling rate for the TRSWMA planning area is approximately 67.1% based on all solid waste (Class 1 landfills, Class 2 landfills, and Subtitle D landfills), and 74.25% based on Subtitle D solid waste.

As illustrated in Table 4-8, the lumber industry considerably skews the recycling rates within the TRSWMA planning area. Since many areas in Mississippi and across the United States do not have a significant lumber industry, a better measuring tool for quantifying recycling efficiency may be without the recycling efforts of the lumber industry. Taking out the lumber industry, the recycle rates for the Three Rivers SWMA planning area would be approximately 36.4% based on all solid waste (Class 1 landfills,

Class 2 landfills, and Subtitle D landfills) and 44.7% based on only Subtitle D landfills. These recycling rates exceed the recycling goal of 25% established by § 17-17-227.

Table 4-8 Recycling Summary of TRSWMA Planning Area in 2005

Description of company or market sector	Tonnage Recycled in 2005	% of Total
Municipal Recycling Programs	593.7	0.09%
Scrap Metal recycling by Three Rivers SWMA	679.5	0.10%
Newspaper recycling by Three Rivers SWMA	45.1	0.01%
Metal Recycling Companies ⁽¹⁾	97,910.2	14.38%
Tire Recycling (MAC's Recyclers)	11,500	1.69%
Wood waste from the furniture manufacturer industry	55,937	8.21%
Hunter Douglass	1,124	0.17%
Residential Mulching	4,527	0.66%
Newspaper Industry	455	0.07%
Lumber Industry	490,142.9	71.97%
Tupelo Recycling	18,159	2.67%
Total in TRSWMA Planning Area	681,073.4	100.00%

(1) Several metal recyclers would not volunteer information

4.12 Recycling Strategy in the TRSWMA Planning Area

As illustrated above, the TRSWMA significantly exceeds the 25% recycling, reuse and reduction goals established by Mississippi Code § 17-17-225(b) and § 17-17-227(1)(d) and does not need to implement or require any new recycling strategies for the planning area.

However, it has always been the Authority's policy to promote "Cost Effective Recycling" throughout the region. Cost effective recycling is defined as a recycling program in which the revenue generated from the recycling products exceeds the capital, operational, maintenance, labor and employee benefits associated with a recycling program.

The Authority also recognizes that the planning area is a very rural area and that curb side recycling programs are typically not cost effective in communities that have a population density less than 1,000 people per square mile because the cost of curb side collection (labor and fuel) exceeds the value of the collected products.

The Authority has also been (and will continue) to evaluate the effectiveness of a centralized dirty MRF (materials recovery facility) that could be located at the Three Rivers Regional Landfill. A centralized dirty MRF would process and remove recyclable materials from the waste stream that enters the landfill and would therefore provide recycling for the entire region. Preliminary cost estimates for a dirty MRF for the TRSWMA would be in the \$10- \$15 million range which is a very large capital investment that would require long-term financing. The cost effective analysis of a dirty MRF facility is questionable at this time due to the volatile market prices for recyclable materials.

4.13 Recycling Needs in the TRSWMA Planning Area

As illustrated in this Chapter, recycling is alive and well in the Three Rivers SWMA planning area. Areas for improvement (but not necessarily needs) include:

- Improved record keeping of recycling quantities and masses by municipalities, counties and businesses.

- Increased visibility of drop off recycling stations. Many drop-off recycling stations are located in low traffic/low visibility areas with poor signage. Improved site access, visibility, and public awareness would enhance recycling efforts in the region.
- There are a limited amount of yard waste recycling efforts throughout the region. Yard wastes can easily be recycled in residential areas by individually owned and operated compost piles, mulching mowers, and etc. Municipalities could significantly reduce solid waste disposal costs by encouraging yard waste recycling.
- There is a very limited effort to recycle/reuse used computers and other electronic equipment. The efficiency of electronics recycling/reuse has been enhanced by collecting these units during household hazardous waste collection days.
- There is limited colored paper and white paper recycling in the region. Increased storage area of bailed colored and white paper would likely enhance recycling efforts and allow municipal recyclers to take advantage of market prices and be more attractive to potential buyers.

Chapter 5

POPULATION AND WASTE QUANTITY PROJECTIONS

5.1 Population Trends and Projections

This chapter describes the three Rivers Solid Waste Management Authority's (TRSWMA) current waste stream characteristics and estimates solid waste quantities over the next 25 years. Once solid waste streams are forecasted, solid waste management programs can be evaluated for short-term and long-term needs. Solid waste quantity projections will be based on population projections and per capita solid waste production rates.

Although the population projections presented in this report are based on population data supplied by the United States Census Bureau, they are only considered to be estimates because impacts of the local or national economy (such as an economic depression, the collapse of a major business market in the planning area, or the arrival of a major business sector) cannot be predicted. In fact in the last few years the region as witnessed the rise and stall of the Toyota factory at Blue Springs, a slow down in the furniture manufacturing business in the region and a recession on the national level. The cumulative affect of these factors have resulted in significant reductions in solid waste tonnage in TRSWMA planning area and nationwide.

The first step of conducting a population projection is data collection. Data from the 1970, 1980, 1990, and 2000 Census counts were obtained from the U.S. Census Bureau data along with population densities in 2000 for each county in the TRSWMA planning area. Population and population density data are presented for each county in Table 5-1.

Based on population density data, the TRSWMA planning area (63.1 people/mi²) can be classified as a rural area. Rural areas commonly have straight line growth rates because they still have adequate land available for development. Highly urbanized communities will usually grow at a decreasing-rate-of-increase because they are comprised of very small lots, smaller houses, zero-lot-line/patio homes, and multi-level apartment homes. Shelby County, TN (1,189 people/mi²) and Fulton County, GA (1,543 people/mi²) are examples of highly urbanized counties.

Population projections for each county in the TRSWMA planning area were estimated using regression algorithms. Population projections for the entire TRSWMA planning area were estimated by adding the seven counties together. Projections for each county are presented in tabular form in Table 5-2.

Table 5-1 Population Data from the U.S. Census Bureau

County or Area	1970 Population	1980 Population	1990 Population	2000 Population	2000 Population Density (people/mi ²)
Calhoun County	14,623	15,664	14,908	15,069	25.7
Itawamba County	16,847	20,518	20,017	22,770	42.8
Lafayette County	24,181	31,030	31,826	38,744	61.4
Lee County	46,148	57,061	65,579	75,755	168.5
Monroe County	34,043	36,404	36,582	38,014	49.7
Pontotoc County	17,363	20,918	22,237	26,726	53.7
Union County	19,096	21,741	22,085	25,362	61.0
Three Rivers SWMA Planning Area	174,271	189,652	215,224	244,440	63.1
State of Mississippi	2,216,994	2,520,638	2,573,216	2,844,658	60.6

5.2 MSW Quantity Trends and Projections

Solid waste data is available from the Mississippi Department of Environmental Quality (MDEQ) from their annual Status Report on Solid Waste Disposal Facilities. The municipal solid waste facilities report to MDEQ the tons of waste received from each county. The tons of municipal solid waste generated by each county in the TTSWMA are presented in Tables 5-3, 5-4, and 5-5. The county generation totals are presented in Table 5-6.

Table 5-2 Population Projections for the TRSWMA Planning Area

County or Area	Year 2005	Year 2010	Year 2015	Year 2020	Year 2025	Year 2030
Calhoun County	15,100	15,200	15,300	15,400	15,400	15,500
Itawamba County	23,500	24,400	25,200	26,100	27,000	27,800
Lafayette County	40,300	42,600	44,800	47,000	49,200	51,500
Lee County	80,600	85,500	90,300	95,200	100,100	104,900
Monroe County	38,700	39,300	39,900	40,500	41,100	41,700
Pontotoc County	27,700	29,200	30,600	32,100	33,600	35,000
Union County	25,900	26,900	27,800	28,800	29,700	30,700
Three Rivers SWMA Planning Area	252,000	263,000	274,000	285,000	296,000	307,000

Table 5-3 MSW (tons) Generated within the TRSWMA Planning Area, 2003

County or Area	Disposal Location					
	Three Rivers	WM-Houston	Little Dixie	Leflore County	Tunica County	Northeast
Calhoun County	6,124	2,283				
Itawamba County	9,314	7,665				1,329
Lafayette County	29,997	444		9	661	3,214
Lee County	43,553	56,721				8,824
Monroe County	18,757	14,823	13			
Pontotoc County	28,428	3,344				
Union County	13,514	954				
Three Rivers SWMA Planning Area	149,687	86,234	13	9	661	13,367

Table 5-4 Disposal Locations & Tonnage from MSW Generated within the TRSWMA
Planning Area, 2004

County or Area	Disposal Location				
	Three Rivers	WM-Houston	Leflore County	Tunica County	Northeast
Calhoun County	6,127	2,165	12		
Itawamba County	10,661	4,283			400
Lafayette County	30,931	1,188	12	101	3,486
Lee County	48,710	53,003			1,457
Monroe County	19,098	16,778			
Pontotoc County	31,559	863			
Union County	14,443	2,094		108	
Three Rivers SWMA Planning Area	161,529	80,374	24	209	5,343

Table 5-5 Disposal Locations & Tonnage from MSW Generated within the TRSWMA
Planning Area, 2005

County or Area	Disposal Location						
	Three Rivers	WM-Houston	Little Dixie	Leflore County	Tunica County	Clearview	Big River
Calhoun County	6,085	2,102		17			
Itawamba County	10,749	1,091					
Lafayette County	32,672	200		23	18		
Lee County	48,580	53,454				12	
Monroe County	18,544	15,580	4				
Pontotoc County	30,495	598	8				10
Union County	14,392	1,650					
Three Rivers SWMA Planning Area	161,517	74,675	12	40	18	12	10

Table 5-6 Disposal Locations & Tonnage from MSW Generated within the TRSWMA
Planning Area, 2003-2005

County or Area	2003	2004	2005
Calhoun County	8,407	8,304	8,204
Itawamba County	18,308	15,344	11,840
Lafayette County	34,325	35,718	32,913
Lee County	109,098	103,180	102,046
Monroe County	33,593	35,876	34,128
Pontotoc County	31,772	32,422	31,111
Union County	14,468	16,645	16,042
Three Rivers SWMA Planning Area	249,971	247,489	236,284

The total quantity of MSW generated is generally consistent across the last three years. A MSW generation rate was developed by dividing the quantity of MSW generated by the population. Solid waste generation rates are typically expressed in the relationship of number of pounds generated per capita per day. The MSW generation rate to be used to forecast future MSW generation by county is presented in Table 5-7.

Table 5-7 MSW Generation Rate by County (lbs per day)

County or Area	MSW Generated (tons)	2005 Population	MSW Generation Rate (pounds per capita per day)
Calhoun County	8,204	15,100	2.98
Itawamba County	11,840	23,500	2.76
Lafayette County	32,913	40,300	4.48
Lee County	102,046	80,600	6.94
Monroe County	34,128	38,700	4.83
Pontotoc County	31,111	27,700	6.15
Union County	16,042	25,900	3.39

The projected quantity of municipal solid waste generated within the TRSWMA is shown in Table 5-8. The data in this table was generated by applying the current MSW

generation rate to the forecasted population presented in Table 5-2. Several industries have also been granted special exceptions to the flow control ordinance which allows these specific industries to continue to dispose their industrial process waste at another Subtitle D landfill. Any new industrial facility locating within the TRSWMA planning area will be required to dispose of all solid waste to the Three Rivers Regional Landfill.

The solid waste projections presented below in Table 5-8 are based on population projections and solid waste production rates. As previously discussed in Section 5.1, actual solid waste tonnages will vary due to national and regional economic factors. In fact, MSW tonnages at the Three Rivers Regional Landfill has dropped over the past couple of years in response to the sluggish national economy.

Table 5-8 MSW Disposal Forecast for the TRSWMA Planning Area (tons/year)

County or Area	Year 2005	Year 2010	Year 2015	Year 2020	Year 2025	Year 2030
Calhoun County	8,204	8,258	8,313	8,367	8,367	8,421
Itawamba County	11,840	12,293	12,697	13,150	13,603	14,006
Lafayette County	32,913	34,791	36,588	38,385	40,182	42,060
Lee County	102,046	108,250	114,327	120,531	126,735	132,812
Monroe County	34,128	34,657	35,186	35,715	36,244	36,774
Pontotoc County	31,111	32,796	34,368	36,053	37,738	39,310
Union County	16,042	16,661	17,219	17,838	18,396	19,015
Three Rivers SWMA Planning Area	236,284	247,730	258,946	270,163	281,379	292,596
Exempt Waste ⁽¹⁾	74,767 ⁽²⁾	30,880	32,346	33,813	35,279	36,746
Forecasted Disposal Tonnage in Three Rivers Landfill	161,517	216,850	226,600	236,350	246,100	255,850

(1) Exempt wastes are from industries that have been granted special permission to continue to dispose of industrial process wastes at another disposal site.

(2) Reflects actual MSW disposed at other Subtitle D landfills prior to flow control

5.3 Non MSW Quantity Trends and Forecast

Solid waste data is available from the Mississippi Department of Environmental Quality (MDEQ) from their annual Status Report on Solid Waste Disposal Facilities. The non-municipal solid waste facilities report to MDEQ the tons of waste received and whether the waste was received from within the State of Mississippi or from outside the state. Typical non-MSW facilities include local rubbish landfills, dedicated industrial landfills, and industrial rubbish landfills. For the purpose of projecting the quantity of non-MSW generated from the TRSWMA, it was assumed that all of the waste received by the non-MSW facilities was generated from the county that hosts the facility. The quantities of non-municipal solid waste generated by each county in the TRSWMA are presented in Tables 5-9, 5-10, and 5-11. The county generation totals are presented in Table 5-12.

Table 5-9 Non-MSW (tons) Received by Facilities within the TRSWMA, 2003

County or Area	Type of Non-MSW Waste			
	Class 1 Rubbish	Class 2 Rubbish	Industrial Rubbish	Industrial
Calhoun County	443	196		1,986
Itawamba County		344		
Lafayette County	3,575			
Lee County	19,870	10,986		2,003
Monroe County	4,983	49	2,000	4,948
Pontotoc County				
Union County	9,281			
Three Rivers SWMA Planning Area	38,152	11,575	2,000	8,937

Table 5-10 Non-MSW (tons) Received by Facilities within the TRSWMA, 2004

County or Area	Type of Non-MSW Waste			
	Class 1 Rubbish	Class 2 Rubbish	Industrial Rubbish	Industrial
Calhoun County	231	155		5,557
Itawamba County		376		
Lafayette County	1,376			
Lee County	14,776	14,681		
Monroe County	5,106		2,000	9,090
Pontotoc County	1,394	70		
Union County	8,364			
Three Rivers SWMA Planning Area	31,247	15,282	2,000	14,647

Table 5-11 Non-MSW (tons) Received by Facilities within the TRSWMA, 2005

County or Area	Type of Non-MSW Waste			
	Class 1 Rubbish	Class 2 Rubbish	Industrial Rubbish	Industrial
Calhoun County	487	150		6,023
Itawamba County	18	577		
Lafayette County	2,137			
Lee County	15,332	18,298		3,410
Monroe County	11,259		1,500	11,539
Pontotoc County	3,795			
Union County	9,140			
Three Rivers SWMA Planning Area	42,168	19,025	1,500	20,972

Table 5-12 Non-MSW (tons) Received by Facilities within the TRSWMA, 2003-2005

County or Area	2003	2004	2005
Calhoun County	2,625	5,943	6,660
Itawamba County	344	376	595
Lafayette County	3,575	1,376	2,137
Lee County	32,859	29,457	37,040
Monroe County	11,980	16,196	24,298
Pontotoc County	-	1,464	3,795
Union County	9,281	8,364	9,140
Three Rivers SWMA Planning Area	60,664	63,176	83,665

The annual quantities of non-MSW are similar for 2003 and 2004 with a significant increase in 2005. The increased non-MSW generation is mainly a result of debris cleanup from the Hurricane Katrina remnants that went through the area. The 2004 non-MSW quantities were used to develop a non-MSW generation rate for forecasting future generation of non-municipal solid waste. The 2005 population was the closest population data available to 2004. Due to the relatively low rate of growth in the area, the 2005 population data will be used with the 2004 waste quantities. The generation rates to be used to forecast future non-MSW generation by county are presented in Table 5-13.

Table 5-13 Non-MSW Generation Rate by County (lbs per day)

County or Area	Non-MSW Received (tons)	2005 Population	Non-MSW Generation Rate (pounds per capita per day)
Calhoun County	5,943	15,100	2.16
Itawamba County	376	23,500	0.09
Lafayette County	1,376	40,300	0.19
Lee County	29,457	80,600	2.00
Monroe County	16,196	38,700	2.29
Pontotoc County	1,464	27,700	0.29
Union County	8,364	25,900	1.77

The forecasted quantity of municipal solid waste generated within the TRSWMA is shown in Table 5-14. The data in this table was generated by applying the current MSW generation rate to the projected population presented in Table 5-2.

Table 5-14 Non-MSW Forecasted for the TRSWMA Planning Area (tons/year)

County or Area	Year 2005	Year 2010	Year 2015	Year 2020	Year 2025	Year 2030
Calhoun County	6,660	5,982	6,022	6,061	6,061	6,100
Itawamba County	595	390	403	418	432	445
Lafayette County	2,137	1,455	1,530	1,605	1,680	1,758
Lee County	37,040	31,248	33,002	34,793	36,584	38,338
Monroe County	24,298	16,447	16,698	16,949	17,200	17,452
Pontotoc County	3,795	1,543	1,617	1,697	1,776	1,850
Union County	9,140	8,687	8,978	9,301	9,591	9,914
Three Rivers SWMA Planning Area	83,665	65,752	68,250	70,823	73,324	75,857

The quantity of non-municipal solid waste can vary significantly due to weather events, construction projects such as a highway widening or significant industrial development. Significant hurricanes, storms with high winds, and ice storms to portions of the region can result in higher quantities of fallen trees and damaged homes. The cleanup from these storm events will increase the rubbish quantity. Storm debris management is addressed in Chapter 8 of this report.

Chapter 6

THREE RIVERS REGIONAL LANDFILL



The Three Rivers Regional Landfill (Landfill) is located approximately 2.5 miles northwest of the City of Pontotoc and is readily accessible from Mississippi State Highway 76. The Three Rivers Solid Waste Authority (Authority) owns approximately 692 acres at this site. The initial phase of

the landfill was permitted with three cells and began operation in 1995. The permitted area from the initial phase was approximately 33 acres. The permitted footprint was expanded in 1998 to a total area of approximately 207 acres.

The Landfill is accessible by vehicular traffic. All waste received at the Landfill must be from within the approved service area of the Authority and shall not originate outside the State of Mississippi. The approved service area includes Alcorn, Attala, Benton, Calhoun, Carroll, Chickasaw, Coahoma, Desoto, Grenada, Holmes, Itawamba, Lafayette, Lee, Leflore, Lowndes, Marshall, Monroe, Montgomery, Panola, Pontotoc, Prentiss, Quitman, Tallahatchie, Tate, Tippah, Tishomingo, Tunica, Union, Winston and Yalobusha counties in Mississippi. Solid waste from areas with established flow control ordinances that forbid the transport of solid waste to other landfills shall not be brought to the Three Rivers Regional Landfill.

6.1 Landfill Permits

Landfill activities are performed in compliance with a set of permits issued by the Mississippi Department of Environmental Quality (MDEQ). The base permit is the solid waste disposal permit. This permit, number SW0580010427, was originally issued in 1993 and modified in April 1999. The solid waste permit expires in 2010. The Landfill

has a Title V Air Permit, number 230000042, which expires in 2010. The Landfill also has a storm water discharge permit which expires in 2010, number MSS048917.

Leachate can be disposed at the Oxford and Pontotoc wastewater treatment plants under an NPDES Pretreatment Permit, number MSP090943, which expires in 2010. As of this writing, the Solid Waste Permit, Title V Air Permit, Storm Water Permit and NPDES Pretreatment Permit are all in the renewal process and under review by the MDEQ. All four permits should be renewed and reissued in the near future.

6.2 Landfill Funding

The Landfill generates a revenue stream for the Authority based on the per ton tipping fee. Tipping fees, whether collected at the landfill or at a transfer station, and revenue from recycling efforts are the only non-grant based source of revenue for the Authority at this time. The tipping fee is set by the Authority to cover all expenditures for the Authority; including landfill operation, cell construction, landfill closure, landfill post-closure expenses, various capital improvement projects, legal and engineering services, funds for equipment/facility replacement, and other events such as household hazardous waste collection days and recycling. The tipping fee is evaluated in the fall of each year (using conservative projected MSW tonnages) when the next years FY budget is prepared. The tipping fee is adjusted as needed to ensure that the Authority will have adequate revenue to fulfill its financial and environmental obligations. A breakdown of the tipping fee for FY 2009/2010 is presented in Table 6-1.

Table 6-1 Tipping Fee Breakdown for FY 2009/2010 (Adjusted Annually)

Tipping Fee Component	Tipping Fee, \$/ton	Basis for Component
Operations	\$ 8.33	Fee paid to Landfill Operator for operating scale house, landfill operations and day-to-day management of the landfill. This fee may be adjusted annually based on changes in the Consumer Price Index.
Fuel Surcharge	\$ 0.07	The landfill operations contract is based on an off-road fuel price of \$2.40/gal. The fuel surcharge is set aside to adjust the tipping fee for increases or decreases in fuel prices.

Table 6-1 (Continued) Tipping Fee Breakdown for FY 2009/2010 (Adjusted Annually)

Tipping Fee Component	Tipping Fee, \$/ton	Basis for Component
Debt Service	\$ 4.03	This is the amount of the tipping fee that is allocated to pay off the bonds used to initially finance the landfill and transfer stations. These bonds are scheduled to be paid off in 2014.
Capital Expansion	\$ 4.35	These funds are set aside in long-term and short-term interest bearing accounts and are used for paying for capital improvement projects such as landfill cell construction, road paving, scale house replacement, anticipated for the landfill. This fee is evaluated each year and is based on a 10-year updated Capital Improvement Plan.
Closure/Post Closure	\$ 0.95	This portion of the tipping fee is set aside in an interest bearing account for closure and post closure activities. Closure and post closure activities are not part of the Capital Expansion budget described above. Closure/Post Closure expenses are evaluated twice a year and adjusted during the FY budgeting process.
State Tax	\$ 1.00	Under current state law, TRSWMA must pay the State/MDEQ a \$1.00/ton tax for every ton of solid waste that crosses the gate at the Landfill.
Three Rivers PDD	\$ 0.76	This portion of the tipping fee is allocated to reimburse the expenses of the Three Rivers Planning Development District that provides administrative, management, technical support and billing support to the TRSWMA.
Host County	\$ 1.54	This portion of the tipping fee is allocated to offsetting the tipping fee for Pontotoc County residents. Under the initial agreement of the TRSWMA, the host county would receive a 50% discount in tipping fee for hosting the Three Rivers Regional Landfill.
Taxes	\$ 0.42	This portion of the tipping fee is allocated to paying property taxes.

Table 6-1 (Continued) Tipping Fee Breakdown for FY 2009/2010 (Adjusted Annually)

Tipping Fee Component	Tipping Fee, \$/ton	Basis for Component
Legal Fees	\$ 0.14	This portion of the tipping fee is allocated to paying for legal services associated with the day-to-day operations of the TRSWMA.
Engineering Fees	\$ 0.14	This portion of the tipping fee is allocated to paying outside professional services associated with the day-to-day operation of solid waste management activities.
Leachate Disposal	\$ 0.05	This portion of the tipping fee is allocated to paying for off-site leachate disposal.
Trustee Fees	\$ 0.01	This portion of the tipping fee is allocated to paying financial institutions for managing bond funds.
Audit Fees	\$ 0.03	This portion of the tipping fee is allocated to paying outside accounting fees associated with annual audits.
Insurance	\$ 0.10	This portion of the tipping fee is allocated for paying general liability insurance for TRSWMA.
HHW Collection Day	\$0.08	This portion of the tipping fee is allocated to funding activities associated with Household Hazardous Waste Day activities.
Total Tipping Fee	\$22.00	

The Landfill is constructed in cells which are portions of the phases identified in the permit documents. Cell construction consists of activities such as excavation, placement of compacted clay liner, placement of geosynthetics, placement of leachate drainage materials, installation of a leachate collection system, surrounding site work, and other various items. Other capital improvements may be made at the Landfill independent of cell construction. Part of the Landfill utilizes an active landfill gas collection system with a blower/flare system. This gas system was installed prior to regulatory requirements in an attempt to reduce the release of methane gas from the landfill and to reduce odors. A second set of weigh scales and a new scale house are currently under construction and should be fully functional by February 2010. Other activities, such as the construction of permanent leachate storage facility will be implemented in the near future

as well as some access road paving to reduce dust emissions and reduce wear-and-tear on the truck scales.

In an effort to minimize sudden increases and decreases in the future construction component of the tipping fee, a new funding model was developed in FY 2010. This new funding model identified and forecasted various future construction activities (such as new cell construction, new scales, road paving, new leachate tanks and etc.) over a 10 year period. Revenue from the Capital Expansion line item is invested in dedicated long-term and short-term interest bearing accounts. To keep the funding model current, the 10-year CIP program is updated each fall during the annual budgeting process. The future construction component of the tipping fee is adjusted annually to maintain a positive balance in the future construction accounts over the next ten years.

Landfill closure and post closure construction activities include site grading and shaping, placement of a low permeability earthen material, placement of a geomembrane liner, placement of a vegetative soil, various site activities, installation of gas management systems, along with ground water monitoring, subsurface gas monitoring and management, seeding, mowing, and leachate disposal and other permit requirements.

Considering the financial liability associated with closure and post closure activities and the fact that no tipping fee revenue funds will be available once the Landfill is closed, a Closure/Post Closure Model was developed for the Landfill. The Closure/Post Closure Model is very complex that allows for annual adjustments that reflect updated construction costs, inflation rates, interest rates, methane gas revenue projections, gas management replacement expenses, leachate management expenses along with other activities associated with on-site environmental monitoring. The Closure/Post Closure Model is evaluated in the fall of each year for preparing the next fiscal year budget and again in the spring to demonstrate the adequacy of the fund for regulatory purposes. A more detailed description of the Closure/Post Closure Model is presented in Chapter 10.

6.3 Landfill Life Expectancy and Expansion

Under the current solid waste permit, the Landfill has a gross airspace (the volume between the top of the leachate collection layer and base of the final cover) of 23 million

cubic yards. Landfill life projections use a compaction density of 1,200 pounds per cubic yard (does not include a 20% allowance for daily cover) prior to 2007 and a compacted density of 1,350 pounds per cubic yard after October 1, 2008 and a total available volume of 23 million cubic yards. If the Landfill operator consistently achieves a significantly greater compaction density, then the Landfill life will be longer. If this or future operators do not achieve this density, the landfill will have less capacity than estimated and a shorter useful life..

The Landfill began operating in 1995. Based on the data available, the Landfill has utilized approximately 3.1 million cubic yards of air volume through 2006. If flow control is completely effective in directing all municipal solid waste (MSW) to the Three Rivers Regional Landfill, the Authority will place approximately 7.485 million tons in the landfill through the year 2030, the length of the study period for this Solid Waste Management Plan. Additionally, with flow control as implemented in 2007, it is estimated that the Landfill will reach capacity in the year 2049.

The Authority has significant available air space for solid waste disposal within the permitted footprint. The Authority will need to continue to effectively manage the construction of new landfill cells and routinely evaluate compaction densities to ensure that the permitted air volume is utilized efficiently. Projected tonnages, volumes and cumulative volume estimates for the current solid waste permit design is presented in Table 6-2.

Table 6-2 Projected Tonnage and Disposal Volumes

End of Year	MSW Generated , tons	Exempt Waste, tons	Landfill Tons, Disposed	Cumulative Landfill Tons Disposed	Landfill Volume, yd ³	Cumulative Landfill Volume, yd ³
2007	241,000	30,000	211,000	2,093,793	390,741	3,528,729
2008	243,243	30,293	212,950	2,306,743	394,352	3,923,081
2009	245,487	30,587	214,900	2,521,643	397,963	4,321,044
2010	247,730	30,880	216,850	2,738,493	401,574	4,722,618
2011	249,973	31,173	218,800	2,957,293	405,185	5,127,803
2012	252,217	31,467	220,750	3,178,043	408,796	5,536,599
2013	254,460	31,760	222,700	3,400,743	412,407	5,949,007
2014	256,703	32,053	224,650	3,625,393	416,019	6,365,025

Table 6-2 (Continued) Projected Tonnage and Disposal Volumes

End of Year	MSW Generated , tons	Exempt Waste, tons	Landfill Tons, Disposed	Cumulative Landfill Tons Disposed	Landfill Volume, yd ³	Cumulative Landfill Volume, yd ³
2015	258,946	32,346	226,600	3,851,993	419,630	6,784,655
2016	261,190	32,640	228,550	4,080,543	423,241	7,207,895
2017	263,433	32,933	230,500	4,311,043	426,852	7,634,747
2018	265,676	33,226	232,450	4,543,493	430,463	8,065,210
2019	267,920	33,520	234,400	4,777,893	434,074	8,499,284
2020	270,163	33,813	236,350	5,014,243	437,685	8,936,969
2021	272,406	34,106	238,300	5,252,543	441,296	9,378,266
2022	274,650	34,400	240,250	5,492,793	444,907	9,823,173
2023	276,893	34,693	242,200	5,734,993	448,519	10,271,692
2024	279,136	34,986	244,150	5,979,143	452,130	10,723,821
2025	281,379	35,279	246,100	6,225,243	455,741	11,179,562
2026	283,623	35,573	248,050	6,473,293	459,352	11,638,914
2027	285,866	35,866	250,000	6,723,293	462,963	12,101,877
2028	288,109	36,159	251,950	6,975,243	466,574	12,568,451
2029	290,353	36,453	253,900	7,229,143	470,185	13,038,636
2030	292,596	36,746	255,850	7,484,993	473,796	13,512,432
2031	294,839	37,039	257,800	7,742,793	477,407	13,989,840
2032	297,083	37,333	259,750	8,002,543	481,019	14,470,858
2033	299,326	37,626	261,700	8,264,243	484,630	14,955,488
2034	301,569	37,919	263,650	8,527,893	488,241	15,443,729
2035	303,812	38,212	265,600	8,793,493	491,852	15,935,581
2036	306,056	38,506	267,550	9,061,043	495,463	16,431,044
2037	308,299	38,799	269,500	9,330,543	499,074	16,930,118
2038	310,542	39,092	271,450	9,601,993	502,685	17,432,803
2039	312,786	39,386	273,400	9,875,393	506,296	17,939,099
2040	315,029	39,679	275,350	10,150,743	509,907	18,449,007
2041	317,272	39,972	277,300	10,428,043	513,519	18,962,525
2042	319,516	40,266	279,250	10,707,293	517,130	19,479,655
2043	321,759	40,559	281,200	10,988,493	520,741	20,000,395
2044	324,002	40,852	283,150	11,271,643	524,352	20,524,747
2045	326,245	41,145	285,100	11,556,743	527,963	21,052,710
2046	328,489	41,439	287,050	11,843,793	531,574	21,584,284

Table 6-2 (Continued) Projected Tonnage and Disposal Volumes

End of Year	MSW Generated, tons	Exempt Waste, tons	Landfill Tons, Disposed	Cumulative Landfill Tons Disposed	Landfill Volume, yd ³	Cumulative Landfill Volume, yd ³
2047	330,732	41,732	289,000	12,132,793	535,185	22,119,469
2048	332,975	42,025	290,950	12,423,743	538,796	22,658,266
2049	335,219	42,319	292,900	12,716,643	542,407	23,200,673

The above table reflects projected solid waste tonnage generated within the Three Rivers Planning Area, estimated quantities of exempt solid waste that is granted a waiver to the flow control ordinance along with an assumed compaction rate of 1,350 lb/yd³ in the Landfill. At this time, these projections overestimate landfill tonnage mainly because of the slow local and national economy. These projections are routinely adjusted based on current tonnage annually as part of the annual 10-year CIP planning process. It should also be noted that the landfill volume consumed is somewhat sensitive to the compaction rate. In fact, changing the compaction rate from 1,300 lb/yd³ to 1,350 lb/yd³ increased the expected life of the Landfill by 4 years.

As part of the ongoing solid waste permitting process, the Authority realized that there were numerous landfill volume efficiency issues associated with the current permit that should be evaluated during the new solid waste permitting process. Specific items that are being addressed in the new solid waste permit include but are not limited to:

- Removal of the sediment pond located just to the north of proposed Cell 4B
- Removing the cul-de-sac located to the east of Cells 1 and Cell 2
- Adjusting the bottom grades of the landfill so that excess dirt can be properly managed.

Removing the above listed deficiencies and providing a more efficient layout is currently being proposed in the solid waste permit currently under review by MDEQ. In essence, the proposed permit design will provide several million more cubic yards of landfill volume in a footprint slightly smaller than the existing solid waste permit. The proposed new permit design will significantly extend the useful life of the Landfill and should also reduce the tipping fee requirements to the users of the Three Rivers Regional Landfill. More specific information will be provided once the permit is approved by MDEQ in the next solid waste management plan update

6.4 Leachate Collection, Treatment, and Disposal



A leachate collection system is required by Subtitle D regulations to remove liquid waste from the Landfill. The accumulation of leachate greater than 12 inches above the base of the Landfill is prohibited by regulation. The risk of liquids migrating through the landfill liner is minimized by the removal of liquids from the Landfill. Leachate is collected within the leachate collection layer placed above the barrier liner of each landfill cell. Eight inch perforated HDPE piping has been installed within the leachate collection layer to drain the leachate to a sump for withdrawal from the landfill cell. Leachate collection sumps are located at the lowest elevations in each cell.

Submersible pumps have been installed to remove leachate from the sumps to maintain less than 12 inches of liquid height within the sand underdrain layer. The leachate is pumped from the sumps into a force main system which routes the leachate into the modular leachate storage tanks.

The current leachate storage tank area consists of four 20,000 gallon modular tanks. Secondary containment is utilized around the storage tank area to contain potential releases. These tanks will be utilized until it is necessary to upgrade the storage facility to meet additional storage volume requirements. This new facility will provide leachate storage for the active and inactive life of the facility.

The permit expansion application documents include computer simulations of leachate generation. The approved permit document presents an average leachate generation rate of approximately 264 gallons per acre per day. The Authority currently has approximately 56 acres developed and receiving waste. This area could generate 14,784 gallons per day of leachate. At this rate, the Authority has only four or five days of storage capacity. While the actual generation rate per acre may not reach this level due to the relative impermeability and thickness of the cover material, the Authority should examine their current leachate management practices to ensure that adequate storage is available to account for the seasonal inability to recirculate and any issues

with transportation, such as impassable roads or the inability to remove the leachate from the site.

Leachate treatment and disposal is accomplished through two mechanisms. The Authority has authorization and approved plans for recirculation of leachate into the Landfill. For times when leachate recirculation is not possible, leachate will be transported to the City of Pontotoc or the City of Oxford Wastewater Treatment Plant for disposal under the requirements of an NPDES permit.

6.5 Landfill Gas Collection, Treatment, and Disposal



Landfill gas, comprised mainly of methane and carbon dioxide with some non-methane organic compounds, is generated from the decomposition of solid waste. Solid waste regulations allow for passive venting of landfill gas into the atmosphere until the non-methane organic compounds (NMOC) exceed 50 megagrams per year. Once NMOC concentrations exceed 50 megagrams per year, a design of a landfill gas collection system must be submitted within 12 months to the regulatory authority. The Authority would then have an additional 18 months to install the landfill gas collection system.

In the fall of 2008, the Authority completed the construction of a gas management system for a portion of the Landfill. The gas management system consists of numerous gas collection wells, gas collection pipelines and valves and a high-tech blower/flare facility. The blower/flare system was designed to accommodate long-term capacities and includes automatic data logging of gas flows, gas temperatures, methane content, and oxygen content. These facilities were installed in advance of the regulatory requirements of solid waste and air regulations in attempt to minimize the release of greenhouse gases to the environment and to minimize odors generated by the Landfill.



This gas collection system operates under a vacuum, pulling landfill gas from closed landfill sections to a central location away from the landfill footprint. At this point, the

collected gas is being flared as the primary disposal option. At some time in the near future, the gas will likely be utilized as a biogas to energy project that will enable the Authority to market the gas for its energy potential. Landfill gas-to-energy options may include:

1. **Active Collection with Gas Scrubbing and Gas Distribution** – This system cleans the gas to acceptable standards, compressed, and sold to a gas company. This type of system is highly mechanical. Due to the mechanical nature of this system, a flare is typically installed in the event of equipment failures. After the gas is cleaned, it must be pumped, measured, and transported to a nearby gas pipeline.
2. **Active Collection with Gas Drying and Sole Source Use** – This system also cleans the gas to a standard, dries the material, and places it into a pipeline for co-combustion with another fossil fuel at an industrial location.
3. **Active Collection with Electricity Generation** – This system also uses an active collection system with a scrubbing unit to remove sulfide gases and then routes the gas to an engine-generator system for electricity generation. Other than moisture and hydrogen sulfide, the fuel/BTU value of the landfill gas is the most critical factor. As with other systems, a flare is typically installed for equipment failures.

Presently there are more than 400 active landfill gas to energy systems in operation in the United States. Direct reuse of landfill gas to offset the use of another fuel (natural gas, coal, or fuel oil) is occurring in 192 of the currently operational projects, electricity production in 200, and enhancement to high BTU natural gas equivalent in 8 projects. Direct use of landfill gas can be in a boiler, dryer, kiln, greenhouse, or other thermal application. It can also be used directly to evaporate leachate.

6.6 Environmental Monitoring

As per the solid waste permit, ground water and landfill gas monitoring are conducted to ensure that pollutants are not migrating from the Landfill. Ground water is monitored to detect if leachate has migrated through the landfill liner and is migrating from the site. Landfill gas monitoring wells are used to determine if landfill gas is migrating through the subsurface. Gas migration is a potential danger as it can move through the sub-surface and collect in nearby structures, allowing for methane accumulations and a potentially explosive atmosphere.

As described in the permit expansion application documents, the ground water monitoring system consists of 12 ground water monitoring wells. These wells are sampled every six months and ground water monitoring reports are generated from the data. Ground water will be sampled and tested every six months through out the active life of the Landfill and throughout the post-closure time. The ground water testing results provide the basis for a statistical analysis to determine if the Landfill is impacting the subsurface in any way.

As described in the permit expansion application documents, methane monitoring has been in place since the beginning of Landfill operations. Methane monitoring is accomplished through the sampling of a total of 11 monitoring probes. The first eight probes were installed with the initial phase and the remaining three are being installed as the Landfill expands within the permitted footprint. Methane monitoring is performed quarterly with the results submitted to MDEQ within 60 days of the monitoring event. If the monitoring results indicate the presence of methane gas in any well at a level exceeding the lower explosive limit at the property line or 25% of the lower explosive limit in any facility structure, the Authority will immediately take steps to protect human health and the environment.

6.7 Ancillary Solid Waste Management Units

The Landfill currently has three ancillary solid waste storage areas. The first is an area for the collection of tires. The tires collected in this area are removed and processed by Mac's Recyclers of Saltillo. The second ancillary unit is a scrap metal area.

The third facility is a convenience station that consists of a couple of roll-off containers. The roll-offs are utilized by local/small vehicle customers for MSW trash disposal. The primary purpose of the convenience station is to prevent small vehicles from having to travel to the working face of the landfill which also reduces their time at the Landfill.

The Authority is currently investigating the possibility of providing a liquid waste processing facility at the Landfill. Although disposal of liquid wastes are prohibited, a solidification/stabilization unit can convert liquid wastes into a solid waste by adding bulking agents (such as saw dust, clays, and other liquid adsorbing agents). Once solidified, the waste would then be classified as a solid waste and can be disposed in the Landfill provided the wastes satisfies all requirements as described in Chapter 7 of this document.

In addition to the above, the Landfill also has a scale house and associated truck scales that are used to quantify the amount of solid waste that a customer disposes at the Landfill. A new scale house and a second set of truck scales are currently under construction. The new scale facilities will provide a dedicated scale for entering vehicles and a dedicated scale for exiting vehicles. The new scale system should increase check-in and check-out times along with providing some redundancy/reliability for ticketing and billing. An updated computer system and billing system is also planned with the new scale facilities. The new scale system should be fully functional by February 2010.

6.8 Closure

The purpose of landfill closure is to secure either the entire Landfill or a portion of the Landfill for long term stability after the owner has completed the placement of solid waste in that area. The Authority has an approved closure and post-closure plan on file with MDEQ. The permit application documents state that the largest area of a landfill unit ever requiring a final cover at any given time during the active life of the Landfill is 20 acres. Therefore, it is intended that the Authority execute multiple closure events over the life of the Landfill. The intent of this condition is that the Authority operates the landfill in a manner that limits the environmental liability by limiting the area of the

Landfill that needs to be closed at any given time. Currently, the Authority has approximately 56 acres of landfill that will require a final cover to be installed in the future. The closure activity for the landfill includes the placement of the final cap, the gas extraction wells (if they have not already been installed), and construction of any final access roads.

The purpose of the final cap on the Landfill is to provide an impermeable barrier over the in-place solid waste to limit the downward migration of liquid into the solid waste, thus minimizing the generation of leachate. The cover design for the Three Rivers Regional Landfill was presented and approved as part of the permit application for the landfill expansion. The approved cap is as follows:

- Eighteen inches of low permeability earthen material;
- A geomembrane liner with a minimum thickness of 20 mil;
- Eighteen inches of soil capable of sustaining vegetative growth; and
- A landfill gas extraction system comprised of extraction wells and gas conveyance piping to a landfill gas flare unit.

Subsequent to the acceptance of the landfill expansion permit application, the landfill cap cross section has been revised to include twelve inches of soil capable of sustaining vegetative growth rather than the initially approved eighteen, as detailed in email form from MDEQ to Cook Coggin Engineers. The Authority will need to be diligent during the 30 year post closure monitoring period and repair period to ensure that erosion rills and washout channels are repaired and reseeded in a timely manner as there will be less protective material above the geomembrane liner.

The permit documents allow for the submittal of proposed alternative landfill cover systems for approval to the Mississippi Department of Environmental Quality. The permit application documents provide plans for the construction activities for closure including the construction of site roads, access roads to the top of the Landfill, and other appurtenant items. Once a section of the Landfill has the final cap installed and certified by MDEQ, the 30 year post closure care time period begins for that section. It is possible, depending on the filling sequence for the latter stages of the Landfill, that portions of the Landfill could be well into the post closure period, or have the post-closure completed, as waste is still being placed in the Landfill.

6.9 Post Closure

The purpose of the post closure care period is to provide maintenance of the closure system, landfill gas extraction system, and leachate collection system until the biological activity within the Landfill has stabilized the organic mass. This period is codified by regulatory practice as being 30 years. The primary concern in maintaining the final cap is the repair of the vegetative soil layer. Significant erosion of this layer can lead to erosion or degradation of the barrier layer, which could allow rainwater into the solid waste or allow for solid waste to be exposed to vectors. The on-going maintenance of the gas and leachate extraction systems prevents the build-up of either gas pressure or excessive leachate levels. A gas build-up could result in a blowout of the final cap. Excessive leachate levels may lead to migration of the leachate through the liner, resulting in a ground water contamination issue and mitigation.

Post-closure activities will include the maintaining vegetative cover on the Landfill; repairing any erosion areas on the landfill; maintaining the leachate collection, removal, and disposal system; maintaining the landfill gas collection, removal, and disposal system; continued ground water monitoring; continued methane monitoring; and all record keeping components. Each closed section is considered stabilized 30 years after the closure activities are certified by MDEQ.

6.10 Landfill Audits and Reporting

To insure that the Landfill is being maintained and operated in accordance with the performance requirements of the operations contract, numerous inspections, surveys and audit reports are performed. Specific auditing and reporting requirements are discussed below:

Monthly Landfill Inspections – As part of the operations contract, TRSWMA personnel will conduct a monthly inspection of the Landfill operations and make specific notes relating to building maintenance, grass cutting and landscaping, dust control, road conditions and litter control at the Landfill and on Highway 76 near the Landfill. The inspection report is presented at each monthly Authority meeting.

Monthly Landfill Report – The landfill operator provides a written report at each monthly Authority meeting. The Landfill Report documents MSW tonnage brought to the landfill each month and compares the monthly tonnage to the previous month's tonnage and last years tonnage. The report also tracks monthly trends and year-to-date tonnage projections. The Landfill Report also addresses any regulatory inspections, staff training, fuel usage, and leachate recirculation and leachate disposal volumes.

Compaction Reports – Under the current landfill operations contract, the operator is required to survey the landfill four times a year and determine actual compaction densities. These surveys are necessary to demonstrate that the landfill is achieving compaction densities greater than 1,350 lb/yd³ as required by the operations contract. Results from the compaction surveys are presented by the landfill operator at the Authority meeting.

Annual Report – MDEQ requires that each landfill supply an annual report that identifies how many tons of MSW was placed in the landfill along with the origin of all MSW placed in the landfill. After MDEQ compiles the results from all landfills, the Authority will conduct an audit to determine how much MSW generated within the seven county planning area was placed in other Subtitle D landfills. This review is typically conducted in the fall of each year and is presented to the Authority at a monthly meeting. This report has proven to be the best audit that demonstrates the effectiveness of the flow control ordinance.

Annual Facility Inspection – The TRSWMA also conducts an annual inspection of all solid management facilities. Any facilities that need replacing, upgrading or repair are noted and considered for placement on the 10-year CIP list.

6.11 Facility and Equipment Needs

The Landfill is operated by Waste Connections under a 10-year contract that expires September 30, 2018. All equipment needs are provided and maintained by the contract operator. The contract operator provides the equipment required in the Operations section of the permit application.

Several of the appurtenant structures to the Landfill, such as the office, shop, fuel storage area and scales are within the permitted landfill footprint. Although these facilities are within the permitted footprint, these facilities will be beyond their useful lives once that portion of the Landfill will need to be in active use.

Items that are currently scheduled on the 10-year CIP plan include but are not limited to:

- Installation of a new leachate storage tank. The existing leachate tanks are nearing the end of their useful lives and will have to be relocated when a new landfill cell is constructed.
- Relocation of some overhead electrical transmission lines as necessary to accommodate future landfill cell construction.
- Paving some of the landfill access roads to reduce dust emissions and the tracking of mud to the scales.
- Construction of some new temporary and permanent access roads at the Landfill. These roads will be constructed along with landfill cell construction.
- Construction of new landfill cells when needed.
- Construction of a new convenience station, tire trailer location and white goods/scrap metal facilities.

Chapter 7

MANAGEMENT OF OTHER WASTE

This chapter of the solid waste management plan is written for all residential, commercial and industrial users that live and work within the TRSWMA planning area and have questions as to where they can properly dispose of unique waste. The objective of the chapter is to provide solid waste producers with disposal options that are cost effective, convenient and complies with all state and federal regulations.

7.1 Construction and Demolition (C&D) Waste



Construction and demolition (C&D) wastes are generated from the construction and renovation of homes and buildings. Also included are wastes resulting from development activities, including land clearing and demolition of buildings. C&D wastes may consist of a variety of materials that can include any of the following:

- Scrap lumber, saw dust, broken lumber, and cabinets
- Waste soil, bricks, mortar, concrete, stones, and asphalt
- Tile flooring, ceiling tiles, ceramic tile, porcelain plumbing fixtures, carpet, and carpet padding
- Vinyl siding, insulation, and dry wall (sheet rock)
- Roofing paper and shingles
- Electrical wiring, circuit boxes, outlets/switches, piping, and climate control duct work
- Unusable white goods such as stoves, heaters, washers, dryers, air conditioning units, hot water tanks, freezers, refrigerators, and dish washers
- Yard waste such as trees, branches, shrubs, fencing, and waste soil

The majority of the C&D wastes listed above can be handled without any special precautions. However, there are numerous items that may be damaging to construction workers and to the environment. Special precautions that should be made in the removal/disposal of C&D wastes include:

- Freon and oils should be removed from refrigerators and air conditioning units prior to disposal.
- Objects painted with lead based paint have been classified as household hazardous waste and may be disposed in a Subtitle D landfill as long as the material is associated with the renovation of an residential dwelling (63 FR 70233, 70241; December 18, 1998). EPA defines a household as residential housing inclusive of single family homes, multiple family dwellings such as condominiums, apartments, duplexes, dormitories, bunkhouses, hotels, crew quarters, campgrounds, picnic grounds, and day-use recreational areas.
- Lead based paint disposal from non-residential properties will be classified as a hazardous waste and should not be disposed in a Subtitle D Landfill , Class 2 Rubbish Landfill or a Class 1 Rubbish Landfill.
- Many older buildings may contain tile flooring, ceiling tiles, insulation, siding, and roofing shingles that contain asbestos. Subtitle D Landfills can accept asbestos containing materials as long as they do not contain airborne transportable particles. Disposal landfills should be notified well in advance so that they can prepare for the proper disposal practices necessary to handle asbestos containing wastes.



Disposal cost for C&D wastes are highly variable throughout the Three Rivers Solid Waste Management Authority (TRSWMA) planning area. Disposal fees are typically most economical at Class II Rubbish Landfills followed by Class I Landfills. A Subtitle D landfill will typically be the most expensive disposal location for C&D wastes.

Contact information for Class I and Class II Rubbish Landfills can be found in Section 2.4 of this report. Acceptable C&D wastes disposal options are identified in Table 7-1. Contractors should also make every effort to recycle materials where possible and feasible.

It should also be noted that the burning of C&D waste is not permitted in most incorporated areas. In accordance with Section § 17-17-9 of the Mississippi Code, the open burning of rubbish shall be permitted only under controlled circumstances where disposal at an appropriate landfill is not feasible.

Table 7-1 Disposal Options for C&D Wastes

Material	Class I Rubbish Landfill	Class II Rubbish Landfill	Subtitle D Landfill	Handled as a Hazardous Waste
Construction and demolition debris, such as wood, metal, etc.	X		X	
Brick, mortar, concrete, stone, and asphalt	X	X	X	
Residential materials containing lead based paint			X	
Non-residential materials containing lead based paint				X
Cardboard	X		X	
Natural vegetation such as tree limbs, stumps, and leaves	X	X	X	
Asbestos containing materials that do not have any airborne particles			X	
Asbestos containing materials that are loose and airborne				X
Thermostats containing mercury switches				X
Appliances (other than refrigerators and air conditioners) which have had the motor removed	X		X	
Furniture	X		X	
Plastic, glass, crockery, and metal, except containers	X		X	
Sawdust, wood shavings, and wood chips	X		X	

7.2 Yard Waste



Yard waste includes materials generated by lawn and yard care and landscaping activities. Items classified as yard waste include grass clippings and leaves, brush, tree and shrub trimmings, tree trunks, logs, limbs, and natural Christmas trees. Yard wastes tend to be bulky and take up significant volume. Disposal of yard

wastes in order of preference are:

- Recycled on-site by the use of mulching mowers, chippers, and compost piles
- Recycled off-site by making compost and mulch
- Disposal at a Class I or Class II Rubbish Landfill
- Disposal at a Subtitle D Landfill

In most areas in the TRSWMA planning area, the local government will pick up yard waste on a scheduled or appointment basis. Rural areas may have to call their local supervisor or transport the yard waste to a suitable Class I or Class II Rubbish Landfill or to one of the three transfer stations. The transfer stations in Lafayette and Monroe Counties each have a Class I Rubbish Landfill located on-site.



It should also be noted that the burning of yard waste is not permitted in most incorporated areas. In accordance with Section § 17-17-9 of the Mississippi Code, the open burning of rubbish shall be permitted only under controlled circumstances where sanitary landfilling and rubbish landfilling is not feasible.

7.3 Household Hazardous Waste



Household Hazardous Waste (HHW) can be defined as any household waste material that would be classified as a hazardous waste if it came from a business or industry. In accordance with 40 CFR 261.4 (b), household wastes are exempt from the hazardous waste regulations. Hazardous substances from business or industry

are not exempt, and must comply with the storage, transportation, treatment, and disposal requirements of the hazardous waste regulations.

Generally speaking, a substance can be considered hazardous if it can catch fire at low temperatures, react or explode when mixed with other substances, is corrosive, or toxic. HHW is not desirable in a Subtitle D landfill because it may ignite at the landfill or produce toxic gasses, and it can potentially form a toxic/hazardous leachate that could contaminate local ground water supplies. Hazardous substances are specifically defined as follows:

- **Corrosive.** A chemical, or its vapors, that can cause deterioration or irreversible alteration in body tissues at the site of contact and deteriorate or wear away the surface of a material. Household items that fall into this category include but are not limited to oven cleaners, drain cleaners, toilet cleaners, tub and tile cleaners, bleach, battery acid or used batteries, and brick cleaners.
- **Flammable.** A substance that can be ignited under almost all temperature conditions. Household items that fall into this category include but are not limited to propane tanks, kerosene, home heating oil, diesel fuel, gasoline, gas/oil mix, lighter fluid, fuel additives, starter fluids, motor oil, and aerosol hairsprays.
- **Irritant.** A substance that causes soreness or inflammation of the skin, eyes, mucous membranes, or respiratory system. Household items that fall into this category include but are not limited to liquid ammonia, bug sprays, adhesives and glues, paint thinners and paint strippers.
- **Toxic.** A substance that may cause injury or death upon ingestion, absorption, or inhalation. Household items that fall into this category include but are not limited to antifreeze, lead based batteries, paints and stains, bug sprays, herbicides and insecticides, and mercury thermostats or thermometers.



Section § 17-17-439 of the Mississippi Code established a “Right - Way - To - Throw - Away Program” that is designed to ensure the proper collection and management of hazardous materials from households, farms, schools, and small businesses. The program is administered by the Mississippi Department of Environmental Quality and requires each household hazardous waste program to:

- Register and be approved by MDEQ
- Each program must maintain and submit records in accordance with MDEQ guidelines
- Determine the types of household hazardous waste to be handled in the program
- Provide adequate storage facilities for household hazardous waste

The TRSWMA routinely applies for and receives grants from the Mississippi Department of Environmental Quality (MDEQ) to conduct household hazardous waste collection days. In years past, the household hazardous waste collection days have been advertised in the local newspapers and the TRSWMA website (<http://trpdd.com/solwas.html>).

Table 7-2 Household Hazardous Waste Products (www.epa.gov/msw/hhw-list.htm)

Cleaning Products

- Oven cleaners
- Drain cleaners
- Wood and metal cleaners and polishes
- Toilet cleaners
- Tub, tile, shower cleaners
- Bleach (laundry)
- Pool chemicals

Indoor Pesticides

- Ant sprays and baits
- Cockroach sprays and baits
- Flea repellents and shampoos
- Bug sprays
- Houseplant insecticides
- Moth repellents
- Mouse and rat poisons and baits

Automotive Products

- Motor oil
- Fuel additives
- Carburetor and fuel injection cleaners
- Air conditioning refrigerants
- Starter fluids
- Automotive batteries
- Transmission and brake fluid
- Antifreeze

Workshop/Painting Supplies

- Adhesives and glues
- Furniture strippers
- Oil or enamel based paint
- Stains and finishes
- Paint thinners and turpentine
- Paint strippers and removers
- Photographic chemicals
- Fixatives and other solvents
- Lead based paint wastes

Lawn and Garden Products

- Herbicides
- Insecticides
- Fungicides/wood preservatives

Miscellaneous

- Batteries
- Mercury thermostats or thermometers
- Fluorescent light bulbs
- Driveway sealer

Other Flammable Products

- Propane tanks and other compressed gas cylinders
- Kerosene and Lighter fluid
- Home heating oil
- Diesel fuel
- Gas/oil mix

7.4 White Goods

White goods can be classified as unusable appliances such as refrigerators, dish washers, washing machines, dryers, hot water tanks, freezers, and air conditioners. Most communities in the TRSWMA planning area have programs that will pick up such

items. Residents wishing to dispose of white goods should remove the doors from refrigerators and freezers and contact their local Public Works Department or call the county supervisor to arrange for pick up.

The Three Rivers SWMA maintains and administers a contract with a recycling company that collects and recycles white goods from the TRSWMA planning area. Drop off locations for unusable white goods are identified in Table 7-3. White goods are also collected and processed at the Household Hazardous Waste Day events.

Table 7-3 Drop-Off Locations for White Goods

County	Location	Contact Information Operating Hours
Calhoun	County Maintenance Building Highway 9 Pittsboro, MS	(662) 412-3137 7-5, M-F
Itawamba	Fulton Rubbish Disposal Landfill North Cummings Street Fulton, MS	(662) 862-4929 7-3:30, M-F
Lafayette	Lafayette County Transfer Station County Road 321 Oxford, MS	(662) 232-2323 7-3:30, M-F 7-11, Saturday
Lee	Lee County Transfer Station 281 County Road 1282 Tupelo, MS	(662) 844-2003 7-5, M-F 7-12, 2 nd & 4 th Saturdays
Monroe	Monroe County Transfer Station 52076 Highway 8 East Aberdeen, MS	(662) 369-6654 7-3:30, M-F
Pontotoc	Three Rivers Regional Landfill 1904 Pontotoc Parkway Pontotoc, MS	(662) 488-0444 7-5, M-F 7-12, Saturday

7.5 Computers & Electronic Goods

Computers are rapidly becoming the most commonly disposed electronic product. There are several national computer recycling/donation companies that accept old computers. Dell computers offers free computer recycling for on-line customers and will even provide a 10% off coupon on software & peripherals when donating workable computers to the Cristina Foundation which provides computers to disabled and economically disadvantaged children and adults. Other computer manufacturers provide computer recycling for a nominal fee. Computer recycling and donation information can be found in Table 7-4. The Salvation Army will also accept working computers in Tupelo, Fulton, Pontotoc, New Albany, Calhoun City, and Oxford.

For the past couple of years, the TRSWMA has been collecting computers and other electronics at Household Hazardous Waste Days. Residents are encouraged to save unusable electronics for the Household Hazardous Waste Day events or make arrangements with one of the programs identified in Table 7-4.

Table 7-4 Computer Recycling and Donation Information

Company or Program	Contact Information	Terms and usage
Dell Computers	1-800-915-3355 www.dell.com	Free with new computer purchase.
The National Cristina Foundation	(203) 863-9100 www.cristina.org	Foundation provides computer technology to people with disabilities, students at risk and economically disadvantaged persons. Dell Computers will also provide new computer buyers with a 10% off coupon for software & peripherals when donating used computers to the Cristina Foundation
KOLCB Computers for Kidz	Security Self Storage 476 Highway 6 West Oxford, MS (662) 234-5670	Rebuilds and donates computers to children in grades 5 - 12
Computers for Kids, Inc.	(203) 591-1714 http://www.c4k.org	This program receives older, obsolete computer equipment and upgrades it to meet today's basic computing needs. Items for donation are shipped to Computers 4 Kids.

7.6 Used Tires

The disposal of whole tires is an environmental problem across the United States because the tires become a breeding ground for mosquitoes, tend to migrate to the surface in a landfill when buried whole, and they can be difficult to extinguish when burning.

Many communities will collect tires placed at the curb. TRSWMA maintains several used tire collection trailers within the planning area. The used tire trailers are transported to MAC's Recyclers in Saltillo for recycling and proper disposal. Drop-off locations for used tires are identified in Table 7-5.

Retail stores that sell tires are required by law to collect and dispose of used tires associated with the purchase of new tires. Most retail stores will transport the tires to tire recycling facility. Residents within the TRSWMA planning area can drop off used tires at any location identified in Table 7-5 free of charge. Used tires are also collected at the Household Hazardous Waste Day event.

Table 7-5 Drop-Off Locations for Used Tires

County	Location	Contact Information Operating Hours
Calhoun	County Maintenance Building Highway 9 Pittsboro, MS	(662) 412-3137 7-5, M-F
Itawamba	Fulton Rubbish Disposal Landfill North Cummings Street Fulton, MS	(662) 862-4929 7-3:30, M-F
Lafayette	Lafayette County Transfer Station County Road 321 Oxford, MS	(662) 232-2323 7-3:30, M-F 7-11, Saturday
Lee	Lee County Transfer Station 281 County Road 1282 Tupelo, MS	(662) 844-2003 7-5, M-F 7-12, 2 nd & 4 th Saturdays

Table 7-5 Drop-Off Locations for Used Tires

County	Location	Contact Information Operating Hours
Lee	MAC's Recyclers Old Highway 45 Saltillo, MS	(662) 869-1860 7-3, M-F
Monroe	Monroe County Transfer Station 52076 Highway 8 East Aberdeen, MS	(662) 369-6654 7-3:30, M-F
Pontotoc	Three Rivers Regional Landfill 1904 Pontotoc Parkway Pontotoc, MS	(662) 488-0444 7-5, M-F 7-12, Saturday
Union	City of New Albany 701 South Central Street New Albany, MS	(662) 534-1010 7-3:30, M-F

7.7 Used Motor Oil and Acid Batteries

Used motor oil and batteries are undesirable in Subtitle D landfills because of the high concentration of organics, lead, and acids that may accidentally seep into the groundwater supplies. Most retailers that sell motor oil and oil changing companies will accept and recycle used motor oil. Retailers of automotive batteries are required by law to accept trade-in batteries from customers. A complete listing of oil and battery recyclers can be found in Section 4 of this report.

Used motor oil and other automotive fluids (brake fluid, transmission fluid, antifreeze, and etc.) are also collected at the Household Hazardous Waste Day event.

7.8 Medical Solid Waste

Medical solid waste is generated by hospitals, clinics, medical facilities, doctors' and dentists' offices, animal hospitals, and funeral homes. Medical solid wastes are classified in three categories: infectious medical waste, non-infectious medical waste,

and radioactive waste. In most medical facilities, it is common practice to segregate waste at the source.

Infectious Medical Waste includes solid or liquid waste that may contain pathogens. Infectious medical waste must be treated by an approved incinerator or sterilization process (autoclave) in accordance with the Mississippi Department of Health standards prior to disposal. Once treated, the waste is no longer classified as an infectious medical waste. Infectious medical wastes may include but not be limited to:

- Wastes resulting from the care of patients and animals that have diseases that can be transmitted by blood or body fluid
- Cultures and stocks of infectious agents including specimen cultures, culture collection devices, and petri dishes
- Blood and body fluids
- Pathological wastes such as tissues, organs, body parts, and body fluids that are removed during surgery and autopsy
- Contaminated carcasses, body parts, and bedding of animals that were exposed to pathogens
- All discarded sharps (hypodermic needles, syringes, pipettes, broken glass, scalpel blades) which have come into contact with infectious agents

Non-infectious Medical Waste is defined as all waste generated in the direct patient care, diagnostic or research that is non-infectious but aesthetically repugnant if found in the environment. Solid waste in this category can be disposed in a Subtitle D landfill.

Radioactive Medical Waste is produced at most medical facilities and typically associated with x-ray and cancer treatment. Radioactive wastes are regulated by the Nuclear Regulatory Committee (NRC) and are not allowed in any Subtitle D landfill.

7.9 Municipal Water/Wastewater Sludge

Sludge generated from water treatment plants and wastewater treatment plants is frequently discarded at Subtitle D landfills. In the TRSWMA planning area, there are no known water treatment plants or wastewater treatment plants that routinely dispose of sludge to a Subtitle D landfill.

The Northeast Mississippi Regional Water Supply District (NEMRWSD) is the only drinking water plant in the planning area that produces solid waste. This facility is located in Itawamba County near Peppertown and produces sludge from the sedimentation basins and filter backwashing. The water treatment plant utilizes sludge drying lagoons to separate the solids and liquids and land applies the dried solids on-site. There is a very large area available for dried sludge disposal on-site and no long-term plans are needed for locating or identifying off-site disposal locations. In the event that the land applied sludge needs removed from the water treatment plant site, it may be suitable to use as a daily cover at a landfill because it consists of mostly fine sand and silt removed in the treatment process.

There are numerous wastewater lagoons and mechanical wastewater treatment plants in the Three Rivers SWMA planning area. Lagoons typically do not produce wastewater sludge that will require off-site disposal. Some lagoon systems may utilize preliminary treatment systems (bar screens and grit removal facilities) that will produce solid waste. These wastes are typically conveyed to a dumpster and hauled to a Subtitle D landfill for disposal.

Wastewater lagoon systems that do not have preliminary treatment units (bar screens and grit removal) will over time have sediment accumulations that may require removal. In the event that the sludge is not disposed on-site or land applied at a permitted application site, the sludge may be disposed at a Subtitle D landfill provided it satisfies the same requirements of sludge disposal for mechanical wastewater treatment plants described below.

Mechanical wastewater treatment plants will typically produce solid waste from the preliminary treatment facilities (bar screens and grit removal system) along with biological waste activated sludge on a daily basis. The solids collected from the preliminary treatment systems can be processed and conveyed to a dumpster which can be transported to a landfill. Biological sludge must be treated, processed, and dewatered to be classified as a solid waste. In the TRSWMA planning area, all mechanical plants utilize sludge treatment lagoons, which do not require any off-site disposal. However, it should be noted that in the future, some sludge treatment lagoons will require emptying, which will likely require off-site disposal by either land application

or disposal at a Subtitle D landfill. In the event that a Subtitle D landfill is utilized, the wastewater sludge must satisfy the following requirements:

- Must be biologically stable and satisfy the requirements of the 503 Sludge Regulations
- Must demonstrate that the sludge can not be classified as a hazardous waste
- Must not have any free liquid in accordance with the Paint Filter Liquids Test (EPA Method 9095)

Considering that there are no wastewater sludges that have ever been disposed in a landfill in the TRSWMA planning area, there are no demanding needs that merit quantification of sludges at each mechanical wastewater treatment plant, sludge lagoon, or wastewater pond in the planning area. In the event that a wastewater sludge lagoon needs to be emptied, the wastewater treatment plant will likely hire an outside contractor that will bring in a trailer mounted sludge thickener and sludge dewatering equipment (such as a belt press) that will process the sludge to the criteria established above prior to transporting the sludge to the Three Rivers Regional Landfill. In addition to the above option, some wastewater facilities may elect to evaluate a land application site for sludge disposal because there is a lot of agricultural land in the area that could benefit from the nutrients found in wastewater sludge. Regardless of the type of wastewater sludge option, proper disposal will be the responsibility of the sludge generator.

7.10 Septic Tank Sludge

Sludge from residential septic tanks should be hauled to a wastewater treatment facility for proper treatment and processing. Septic sludge not delivered and processed at a wastewater treatment plant must meet the same requirements as sludge from a mechanical wastewater treatment plant as described above prior to disposal in a Subtitle D Landfill. At this time, there are no known companies that transport septage/wastewater sludge to any Subtitle D landfill in the planning area.

Residents that need sludge emptied from their septic tanks should contact one of the liquid waste pumping and hauling companies identified in Section 7.12 of this Chapter.

7.11 Industrial Sludge

Many industries in the TRSWMA planning area have wastewater treatment facilities that produce either chemical sludge, biological sludge, or a combination of chemical and biological sludge. Prior to disposal into a Subtitle D landfill, the producer of the sludge must clearly demonstrate the following:

- The industry must fill out the Industrial Process Waste Profile as required by the Mississippi Department of Environmental Quality (MDEQ). This form can be obtained at MDEQ's web site.
- The industry must document that the sludge is not classified as a liquid waste by successfully passing the Paint Filter Liquids Test (EPA Method 9095).
- The waste sludge shall be biologically stable.
- Must demonstrate that the sludge is not classified as ignitable in accordance with 40 CFR 261.21
- Must demonstrate that the sludge is not corrosive in accordance with 40 CFR 261.22
- Must demonstrate that the sludge is not reactive in accordance with 40 CFR 261.23
- Must demonstrate that the sludge is not toxic in accordance with 40 CFR 261.24
- Must demonstrate that the sludge does not contain any polychlorinated biphenyls (PCBs)

At this time there are no records of industrial sludge being disposed at a Subtitle D landfill within the TRSWMA planning area.

7.12 Residential and Commercial Bulk Liquid Waste

Liquid wastes are never allowable in a Subtitle D landfill because of the potential to generate leachate. Residential liquid waste from food/beverages should be discarded in the sanitary sewer system whenever possible. Bulk liquid wastes from commercial or industrial applications are not allowed in a Subtitle D landfill. Commercial and industrial liquid wastes can be solidified and disposed in a Subtitle D landfill provided they meet the same requirements of an industrial sludge. Some haulers of residential and commercial bulk wastes are identified in Table 7-6.

Table 7-6 Septic and Liquid Waste Haulers

Name	Address	Phone No.
C&D Plumbing	20448 Egypt Rd Aberdeen, MS 39730	662-386-0518
Rapid Jetting & Plumbing Services	611 E Commerce St, Aberdeen, MS 39730	662-369-2078
Fowlkes Plumbing & Pumping	110 Hwy 6, Amory, MS 38821	662-256-9972
Custom Service Company LLC	269 CR 1553, Baldwyn, MS 33824	662-678-6094
4A Septic Tank Service	146 Spencer Rd, Fulton, MS 38843	662-862-4403
Harrison Septic Tanks	978 State Hwy 30 E New Albany, MS	662-534-0741
Jack Edwards' Septic Tank Service	1413 CR 107, New Albany, MS	662-534-6688
Nelson Services	Northeast, MS	662-401-4383
Mid-South Septic Tank Service LLC	270 CR 445 Oxford, MS 38866	662-234-8721
Freeman Jetting Service Inc	828 Brentwood Cove Oxford, MS 38655	662-236-1163
Bill's Plumbing	Oxford, MS 38655	662-816-6118
Mahan Roland Plumbing	Oxford, MS 38655	662-234-9774
Michael Construction & Septic Tank Service	200 CR 162, Oxford, MS 38655	662-234-7135
Roto Rooter	303 Edinburg Way Oxford, MS 38655	662-234-5950
A&R Plumbing	Pontotoc, MS 38863	662-489-7888
L&L Septic Tank & Plumbing	Pontotoc, MS 38863	662-538-0415
A&R Plumbing	Tupelo, MS 38801	66-842-9500
Any Drain Any Time	Tupelo, MS 38801	662-871-4992
Bill's Septic Tank Service	Auburn Rd Tupelo, MS 38801	662-231-1941

Table 7-6 (Continued) Septic and Liquid Waste Haulers

Name	Address	Phone No.
C&D Plumbing	Tupelo, MS 38801	662-841-7868
Plumbing Doctor	1303 Nelle St Tupelo, MS 38801	662-842-8898
Rapid Jetting & Plumbing Services	Tupelo, MS 38801	662-891-1758
Ross Septic & Excavation	Tupelo, MS 38801	662-296-6906
Roto Rooter	157 Fenco Dr, Tupelo, MS 38801	662-690-9099
Sonny T's Plumbing	Tupelo, MS 38801	662-871-5693
Stegall & Robbins Septic Work	Tupelo, MS 38801	662-213-0908

7.13 Non-Hazardous Industrial/Commercial Waste

Non-hazardous industrial and commercial waste makes up approximately 66% of the solid waste generated in the TRSWMA planning area. Industrial/Commercial users should carefully review the composition of their solid waste and determine if a component can be segregated economically, recycled, or disposed in a Class I Rubbish Landfill in lieu of a Subtitle D Landfill.

Most Industrial and commercial business will contract with a solid waste hauler that will pick up dumpsters on a specified schedule and deliver the solid waste to one of the three transfer stations or directly to the Three Rivers Regional Landfill located north of Pontotoc. Business may also haul their solid waste to a transfer station or directly to the Three Rivers Regional Landfill.

7.14 Waste Metals

Waste metals are valuable resources that are recyclable. TRSWMA maintains several drop-off locations for scrap metals. There are also numerous private metal recyclers located within the TRSWMA planning area. Locations and contact information on metal recyclers can be found in Table 7-7. Potential customers of these companies are recommended to call the facility prior to delivering recyclable metals.

Table 7-7 Metal Recyclers in the Three Rivers SWMA Planning Area

County	Company address	Phone Number
Itawamba	Fulton Metal Recycling 3088 Highway 178 East Fulton, MS	(662) 862-7167
Itawamba	TRSWMA Drop-Off Site North Cummings Street Fulton, MS	(662) 862-4929
Lafayette	TRSWMA Drop-Off Site Lafayette Transfer Station Molly Bar Road Oxford, MS	(662) 232-2745
Lee	TRSWMA Drop-Off Site Lee County Transfer Station 281 County Road 1282 Tupelo, MS	(662) 844-2003
Lee	Tupelo Scrap Corporation 2337 South Veterans Blvd Tupelo, MS	(662) 842-7452
Monroe	Aberdeen Recycling 355 Highway 45 North Aberdeen, MS	(662) 369-7429
Monroe	TRSWMA Drop-Off Site Monroe Co. Transfer Station 52076 Highway 8 East Aberdeen, MS	(662) 369-6654
Pontotoc	Metal Management, Inc. 2245 Highway 178 East Sherman, MS	(662) 844-6441
Pontotoc	TRSWMA Drop-Off Site Three Rivers Regional Landfill 1904 Pontotoc Parkway Pontotoc, MS	(662) 488-0444
Union	Metal Management 304 West Bankhead Street New Albany, MS	(662) 534-9999
Union	Whittington Metal 1097 County Road 56 New Albany, MS	(662) 534-0916

7.15 Waste Wood and Scrap Lumber

Waste wood and scrap lumber are two types of waste produced in the furniture manufacturing industry. These waste materials can be disposed in landfills or reused to make mulch, particleboard, or fuel for boilers. The most economical disposal options for wood waste in order of preference are:

1. Recycling or reuse by processing the wood to make mulch, particle boards, wood pellets for wood burning stoves, or fuel for boilers
2. Disposal in a Class 1 Rubbish Landfill
3. Disposal in a Subtitle D Landfill

Acceptable disposal locations for wood waste are presented in Table 7-8.

Table 7-8 Waste Wood and Scrap Lumber Recycling and Disposal Facilities

County (Public Status)	Landfill Name and Contact Information	Facility Type
Pontotoc	Wood Recyclers of Mississippi Industrial Drive Ecu, MS (662) 488-9108	Recycles and reuses scrap lumber for mulch, particle boards, and boiler fuel.
Monroe	CKS Energy 217 Martin Luther King Drive Amory, MS (662) 257-2150	Recycles sawdust and scrap wood into wood pellets for wood burning stoves and wood burning boilers.
Calhoun (open to public)	Blueberry Hill Disposal Site Waste Placement, Inc. (662) 983-0712	Class I Rubbish Landfill
Itawamba (open to public)	Tilden Clay Road Rubbish Site Oxford Landfill Management, Inc. (901) 668-5458	Class I Rubbish Landfill
Lafayette (open to residential use)	City of Oxford Rubbish Site Located at Lafayette County Transfer Station (662) 232-2359	Class I Rubbish Landfill
Lee (open to public)	TMCO Rubbish Site Birmingham Ridge Rd, Saultillo, MS (662) 869-2151	Class I Rubbish Landfill

Table 7-8 (Continued) Waste Wood and Scrap Lumber Recycling and Disposal Facilities

County (Public Status)	Landfill Name and Contact Information	Facility Type
Monroe (Open to Public)	Monroe County Rubbish Site Monroe County Bd of Supervisors (662) 369-6654	Class I Rubbish Landfill
Pontotoc (open to public)	Woodland Rubbish Landfill (662) 489-3331	Class I Rubbish Landfill
Union (open to public)	New Albany Pumpkin Center Site City of New Albany (662) 534-1010	Class I Rubbish Landfill
Pontotoc	Three Rivers Regional Landfill 1904 Pontotoc Parkway Pontotoc, MS (662) 488-0444	Subtitle D Landfill

Chapter 8

DISASTER DEBRIS WASTE AND PLANNING

8.1 Characterization of Disaster Debris



Natural disasters associated with tornadoes, winter snow and ice storms, straight line winds, and remnants of hurricanes occur every few years in the planning area. Types of debris associated with each storm are identified in Table 8-1.

Table 8-1 Disaster Debris Disposal Options

Type of Natural Disaster	Type of Disaster Debris	Preferred Disposal Options
Tornadoes and Hurricane remnants	Demolition waste Trees and limbs Scrap metals	Class I , Class II, and Subtitle D Landfills Class II and Class I Landfills Recycling, Class I, and Subtitle D Landfills,
Winter snow and ice storms	Trees and limbs	Class II, Class I, and Subtitle D Landfills
Straight line winds	Trees and limbs Demolition wastes	Class II, Class I, and Subtitle D Landfills Class II, Class I, and Subtitle D Landfills

An earthquake could also occur in the area, but it is unlikely to result in catastrophic damage due to the distance from the New Madrid fault. The Oxford/University of Mississippi area appears to have the highest potential for earthquake damage because it is the most western metropolitan area in the planning area with several tall masonry structures. Although the New Madrid fault is still active, it has not produced any catastrophic quakes in since 1811 and 1812 (nearly 200 years) and the probability of significant earthquake damage is so low that it is not practical to plan for debris removal.

8.2 Disaster Debris Planning

The most likely type of natural disaster that could impact the planning area are tornadoes, straight line winds and winter ice storms. Straight line winds and tornadoes will produce the most significant disaster debris and will typically be isolated on a community or neighborhood level. Considering the type of storm and the inability of



anyone to predict where a tornado or straight line wind may hit, it is impractical for any community to plan for solid waste disposal facilities for this type of natural disaster.

Ice storms are known to occur in north Mississippi every few years. Disaster debris associated with ice storms are typically limited to broken limbs and trees that fall onto power lines, roads and roofs. Cleanup after an ice storm is typically slow because restoring utilities and opening up roads for utility workers will typically be the first response activity.

Regardless of the type of storm event that may occur, the debris generation rates may be so high that they overwhelm removal equipment and could possibly exhaust the capacity of rubbish landfills and city/county workers. Depending on the magnitude of the natural disaster, assistance (manpower and equipment) from utility companies across the region are frequently dispatched to help restore utilities in impacted communities. Communities stricken by natural disasters should also contact the local Emergency Response Coordinator for the county along with contacting the Mississippi Emergency Management Association (MEMA). Contact numbers for local and state emergency officials are listed in Table 8-2.

Table 8-2 Emergency Directors in the Three Rivers SWMA Region

County	Contact Person	Telephone Number
Calhoun	Mike Dunogain	(662) 628-8345
Itawamba	Shae Collum	(662) 862-2735
Lafayette	David Shaw	(662) 234-5667
Lee	Paul Harkins	(662) 841-9020
Monroe	Robert Goza	(662) 369-3683
Pontotoc	Ricky Jagers	(662) 509-8950
Union	Hal Sanders	(662) 534-1992
MEMA	Mike Womack	(601) 933-6362

Planning for disaster debris is very difficult because there are only 14 Class 1 and Class 2 rubbish landfills that are open to the public within the TRSWMA planning area. This equates to one rubbish landfill for every 277 square miles and the probability of a natural disaster (such as a tornado) hitting near a rubbish landfill is very low. Considering that it is simply not practical to build new rubbish landfills to accommodate local disaster debris disposal, the use of short-term/temporary facilities for Class 1 and Class 2 rubbish landfills will likely be necessary. Guidelines for building and operating emergency temporary facilities for Class 2 and Class 1 rubbish facilities are presented in Sections 8.3 and 8.4 respectively.

Each community and county should evaluate locations for temporary staging areas and alternate and secondary disposal sites as part of their emergency response plans. Guidelines for establishing, operating, maintaining, and closing emergency temporary solid waste staging areas are presented in the following sections.

In addition to disaster debris management, communities will also face some challenges with the collection of residential solid waste after an event. Residential solid waste collection can be challenging after a storm event due to lack of available workers and poor street/road access to neighborhoods. Guidelines for residential solid waste collection and disposal are presented in Section 8.5.

8.3 Emergency Temporary Facilities for Class II Debris Disposal

Depending on the magnitude of the natural disaster, temporary storage and staging areas for debris (trees, limbs, brush, brick, mortar, and concrete) may be necessary prior to transportation to sites for ultimate disposal. Recommended guidelines for establishing, selecting, operating, and maintaining temporary Class II debris facilities include:

- Temporary debris sites should be located in areas with convenient access and entry for easy drop-off and collection. These temporary areas could be a nearby park, vacant property, median of the road, other nearby public property or the road itself.
- A fire lane shall be maintained around the temporary facility at all times
- Local governments should supervise temporary storage and staging areas to ensure that only Class II debris are allowed in the facility. If chipping facilities are to be used to grind up wood waste, the debris waste should be segregated to prevent possible equipment damage.
- Burning of vegetative waste should not be practiced without permission from the Mississippi Department of Environmental Quality (MDEQ).
- Within 48 hours of establishing an emergency temporary facility, the local government should submit a written notification to MDEQ at P.O. Box 2261 Jackson, Mississippi 39225 that contains the following information:
 - A description of the nature of the disposal operation
 - A description of the physical address which identifies the temporary facility (street address and GPS coordinates if available)
 - A local contact person and contact information
- Upon closure of the temporary facility, all remaining debris (including wood chips and ashes) shall be removed to an appropriate disposal site.

8.4 Emergency Temporary Facilities for Class I Debris Disposal

In the event that a natural disaster destroys many residential and non-residential structures, debris wastes associated with building materials may require temporary staging facilities prior to disposal in an approved disposal site. Recommended guidelines for establishing, selecting, operating, maintaining, and closure of temporary Class I facilities include:

- Within 48 hours of establishing an emergency temporary facility, the local government should submit a written notification to MDEQ at P.O. Box 2261 Jackson, Mississippi 39225 which contains the following information:
 - A description of the nature of the disposal operation
 - A description of the physical address which identifies the temporary facility (street address and GPS coordinates if available)
 - The proposed final disposal site for the wastes
 - A local contact person and contact information
- Temporary debris sites should be located in areas with convenient access and entry for easy drop-off and collection. These temporary areas could be a nearby park, vacant property, median of the road, other nearby public property or the road itself.
- A fire lane shall be maintained around the temporary facility at all times
- Local governments should supervise temporary storage and staging areas to ensure that only Class I and Class II debris are allowed in the facility. Household garbage, household chemicals, and food waste shall be transported directly to a Subtitle D landfill. Dumpsters designated for Subtitle D waste are recommended at temporary storage sites.
- Recyclable materials such as unusable white goods, scrap metals, and bulk deliveries of plastics and paper should be recycled when possible.
- Building wastes that contain asbestos, lighting ballasts and lamps, thermostats, electronic and electrical equipment should be segregated and stored separately and disposed at a Subtitle D landfill.
- Burning of vegetative waste should not be practiced without permission from the Mississippi Department of Environmental Quality (MDEQ).
- Upon closure of the temporary facility, all remaining debris (including wood chips and ashes) shall be removed to an appropriate disposal or recycling facility.

8.5 Emergency Temporary Facilities for Household Garbage Disposal

During a natural disaster, most solid waste equipment and manpower initially will be dedicated to debris removal necessary to open traffic flow and to restore utilities. Household waste will tend to accumulate at residences until services (electrical, water, and sewer) are restored. If dumpsters are available (or can be temporarily borrowed

from government and business) they could be placed at subdivision entrances or nearby public areas for residential uses until regular solid waste pickup routes are restored.

Chapter 9

FINANCING OF SOLID WASTE SYSTEMS

This chapter discusses how solid waste management units across the TRSWMA planning area are funded and financed.

9.1 Funding for Residential Collection

In accordance with state law, the county or city must provide solid waste collection for all single family residential dwellings. The majority of the residential waste is collected by the individual counties or local municipal government. There are five cities in the TRSWMA planning area that contract with private companies. Specific details of residential solid waste collection can be found in Chapter 2 of this report. Funding for residential solid waste collection is based on monthly user fees throughout the planning area. User fees are evaluated and adjusted each fall during the annual budgeting period. Fees collected are utilized to pay for solid waste collection equipment, labor, fuel, and routine maintenance and replacement of equipment and facilities.

Muulti-family dwellings, such as apartment complexes, are typically collected by private companies at a negotiated fee. In some cases, the County will pick up these at a negotiated fee.

9.2 Funding for Commercial and Institutional Collection

For the most part, commercial and institutional collections are provided by private companies at a negotiated fee. In some cases, counties will provide commercial and institutional collection from roll-offs or drop-off containers at a negotiated price.

9.3 Funding for Transfer Stations

The TRSWMA manages the collection and transportation of wastes from the transfer stations located in Monroe County, Lee County and Lafayette County. The Authority provides/manages the transportation contracts and supplies the walking floor trailers for each transfer station while the perspective County provides the labor and other equipment to operate and maintain the transfer station.

Each transfer station includes a scale house where customers are weighed prior and after delivering the waste to the tipping floor. Customers that utilize the transfer station are billed for actual tonnage delivered at a flat \$/ton rate that includes the tipping fee at the Landfill, transportation fee from the transfer station to the Landfill, O&M fee for the transfer station and maintenance and replacement fee for the walking floor trailers. Tipping fee rates vary between the three (3) transfer stations due to the differences in distance between the transfer station and the Three Rivers Regional Landfill. The replacement fee is evaluated annually by the Authority and is utilized to provide funds for the maintenance and replacement cost of the walking floor trailers. At the present time, the replacement fee is \$0.75/ton.

The TRSWMA administers a hauling contract with a private trucking company that transports the waste from the transfer station to the Three Rivers Regional Landfill. This contract is competitively bid and includes unit prices for each trip from the transfer station to the Landfill. Unit prices are adjusted annually based on changes in the Consumer Price Index. Unit prices are also adjusted monthly based on the monthly average of diesel fuel. At the present time the hauling contract utilizes Bell & Sons Trucking. The hauling contract is set to expire in 2011.

9.4 Landfill Operational Costs

The TRSWMA has contracted the operation of the Landfill to an outside vendor, selected through a "Request for Proposal" procedure. The contract is a Master Services contract that will enable the Authority to issue Work Assignments on an as-needed basis for the duration of the contract. The contract will expire on September 30, 2018. At the present time, Work Assignments have been issued for the construction of Cell 4B-1 and for the day-to-day operation and maintenance of the Landfill throughout the life of the contract. Operational fees for the Landfill are adjusted each year based on the Consumer Price Index and the average cost of off-road diesel.

The Landfill generates a revenue stream for the Authority based on the per ton tipping fee. Tipping fees, whether collected at the Landfill or at a transfer station, and revenue from recycling efforts are the only non-grant based source of revenue for the Authority at this time. The tipping fee is set by the Authority to cover all expenditures for the

Authority; including landfill operation, cell construction, landfill closure, landfill post-closure expenses, various capital improvement projects, legal and engineering services, funds for equipment/facility replacement, and other events such as household hazardous waste collection days and recycling. The tipping fee is evaluated in the fall of each year (using conservative projected MSW tonnages) when the next years FY budget is prepared. The tipping fee is adjusted as needed to ensure that the Authority will have adequate revenue to fulfill its financial and environmental obligations. A breakdown of the tipping fee for FY 2009/2010 is presented in Table 9-1.

Table 9-1 Tipping Fee Breakdown for FY 2009/2010 (Adjusted Annually)

Tipping Fee Component	Tipping Fee, \$/ton	Basis for Component
Operations	\$ 8.33	Fee paid to Landfill Operator for operating scale house, landfill operations and day-to-day management of the Landfill. This fee may be adjusted annually based on changes in the Consumer Price Index.
Fuel Surcharge	\$ 0.07	The landfill operations contract is based on an off-road fuel price of \$2.40/gal. The fuel surcharge is set aside to adjust the operations fee for increases or decreases in fuel prices.
Debt Service	\$ 4.03	This is the amount of the tipping fee that is allocated to pay off the bonds used to initially finance the Landfill and transfer stations. These bonds are scheduled to be paid off in 2014.
Capital Expansion	\$ 4.35	These funds are set aside in long-term and short-term interest bearing accounts and are used for paying for capital improvement projects such as landfill cell construction, road paving, scale house replacement, anticipated for the Landfill. This fee is evaluated each year and is based on a 10-year updated Capital Improvement Plan.

Table 9-1 (Continued) Tipping Fee Breakdown for FY 2009/2010 (Adjusted Annually)

Tipping Fee Component	Tipping Fee, \$/ton	Basis for Component
Closure/Post Closure	\$ 0.95	This portion of the tipping fee is set aside in an interest bearing account for closure and post closure activities. Closure and post closure activities are not part of the Capital Expansion budget described above. Closure/Post Closure expenses are evaluated twice a year and adjusted during the FY budgeting process.
State Tax	\$ 1.00	Under current state law, TRSWMA must pay MDEQ a \$1.00/ton tax for every ton of solid waste that crosses the gate at the Landfill.
Three Rivers PDD	\$ 0.76	This portion of the tipping fee is allocated to reimburse the expenses of the Three Rivers Planning and Development District that provides administrative, management, technical support and billing support to the TRSWMA.
Host County	\$ 1.54	This portion of the tipping fee is allocated to offsetting the tipping fee for Pontotoc County residents. Under the initial agreement of the TRSWMA, the host county would receive a 50% discount in tipping fee for hosting the Landfill.
Taxes	\$ 0.42	This portion of the tipping fee is allocated to paying property taxes.
Legal Fees	\$ 0.14	This portion of the tipping fee is allocated to paying for legal services associated with the day-to-day operations of the TRSWMA.
Engineering Fees	\$ 0.14	This portion of the tipping fee is allocated to paying outside professional services associated with the day-to-day operation of solid waste management activities.
Leachate Disposal	\$ 0.05	This portion of the tipping fee is allocated to paying for off-site leachate disposal.

Table 9-1 (Continued) Tipping Fee Breakdown for FY 2009/2010 (Adjusted Annually)

Tipping Fee Component	Tipping Fee, \$/ton	Basis for Component
Trustee Fees	\$ 0.01	This portion of the tipping fee is allocated to paying financial institutions for managing bond funds.
Audit Fees	\$ 0.03	This portion of the tipping fee is allocated to paying outside accounting fees associated with annual audits.
Insurance	\$ 0.10	This portion of the tipping fee is allocated for paying general liability insurance for TRSWMA.
HHW Collection Day	\$0.08	This portion of the tipping fee is allocated to funding activities associated with Household Hazardous Waste Day activities.
Total Tipping Fee	\$22.00	

Although Table 9-1 provides an overview of funding to operate and maintain the Three Rivers Regional Landfill, several components of the merit additional discussion which are presented below:

Funding for Capital Expansion

In an effort to minimize sudden increases and decreases in the future construction component of the tipping fee, a new funding model was developed in FY 2010. This new funding model identified and forecasted various future construction activities (such as new cell construction, new scales, road paving, new leachate tanks and etc.) over a 10 year period. Revenue from the Future Construction line item is invested in dedicated long-term and short-term interest bearing accounts. To keep the funding model current, the 10-year CIP program is updated each fall during the annual budgeting process. The future construction component of the tipping fee is updated annually for inflation, short-term interest rates and long-term interest rates. The model is adjusted annually based on the updated 10-year CIP budget requirements and the tipping fee allocation adjusted to a level that maintains a positive balance in the future construction accounts over the next 10 years.

The TRSWMA is investigating the opportunities to develop a two-pronged revenue stream from the landfill gas generated from the decomposition of the organic solid waste. The first portion of this potential revenue stream will be associated with the sale and marketing of greenhouse gas credits (better known as carbon credits) which is based on the mass of methane gas oxidized by the gas management system. This potential revenue stream is only available when the gas management system is installed prior to regulatory requirements. A portion of this revenue stream may be allocated to the Closure and Post Closure Fund.

The second portion of this potential revenue stream is the selling of the landfill gas to a third party for refinement or other use. This portion of the potential revenue stream will be available as long as the Landfill is generating gas from organic decomposition. However, the quality and quantity of the product will vary significantly over time. A portion of this revenue stream will be allocated to the Closure/Post Closure Fund.

Closure and Post-Closure Costs

As a condition of the solid waste permit from the Mississippi Department of Environmental Quality (MDEQ), the TRSWMA is required to establish and maintain a fund to pay for the cost of closure of active and/or completed sections of the Landfill in case of cessation of operation by the owner and for post-closure maintenance and monitoring of the closed areas for thirty (30) years after closure. This requirement provides the MDEQ the funds if it is necessary for a third party to close and maintain the Landfill. Estimates of the cost of closure and post-closure are typically provided by consulting engineers retained by the permittee and are subject to adjustment on a periodic basis due to inflation, deflation, technology or applicable laws or regulations. The creation of a closure/post-closure fund may be viewed by the owner as a sinking fund from which to withdraw funds for closure operations and post-closure expenses. The assessment of the existing fund was analyzed from both perspectives.

The closure/post-closure fund is presently funded by an assessment of \$0.95 per ton of waste received at the Landfill. These values are reviewed and adjusted annually to determine the adequacy of the closure/post-closure fund. The estimated costs of closure and post-closure activities were reviewed as the basis for evaluating the adequacy of the present funding levels. Considering that the financing of the closure and post closure fund is required by law, a financial model was developed to simulate current and future costs associated with closure and post closure activities.

Closure of the Landfill will include capping with a final cover (including liner) and gas management facilities. Due to the size of the Landfill (currently permitted at 207 acres), there will be times when the Landfill will have portions of the landfill in the active mode (receiving solid waste), closure mode, and in the post closure mode. Items funded by the Closure/Post Closure fund include:

- Construction and annual maintenance of landfill gas collection systems (Closure and Post Closure Activity)
- Construction, operation and maintenance of a landfill flare system (Closure and Post Closure Activity)
- Construction, operation and maintenance of gas processing and pumping facilities (Closure and Post Closure Activity). This component of the project may be included by the buyer/developer of the landfill gas.
- Construction of all landfill caps (inclusive of liners and drainage) necessary for closure
- Grass cutting, reseeding, and wash/drainage repair after the landfill is no longer in the active mode (Post Closure Activity)
- Leachate treatment after the Landfill is no longer in the active mode (Post Closure Activity).
- Groundwater and air sampling (Post Closure Activity)

Funding for Closure and Post Closure Activities are of interest because once the Landfill is officially closed (no longer accepting solid waste), there is no source for revenue.

Due to the magnitude of closure and post closure expenses, revenue must be generated and saved in a fund during the active life of the Landfill. Revenue is typically generated from dedicating a portion of the tipping fee and/or other revenue sources. Other

revenue may be from interest income, investment income, recycling revenue, taxes, liquidating property, or from the sale of landfill gases generated by the Landfill.

The Three Rivers Regional Landfill is a very large landfill that will likely remain in active service for another 40 to 60 years. The active life of the Landfill may change depending on growth in the region and recycling activities. The post closure period will last up to 30 years after the Landfill is no longer in the active mode. Due to the many variables associated with closure and post closure revenue, a financial model was developed to forecast closure and post closure income sources and expenditures. The financial model enables the Authority to track and forecast revenue and expenses and to make annual adjustments for the following parameters:

- Interest rate on invested income
- Inflation rate
- Annual tonnage of solid waste received at the Landfill
- Contributions from the tipping fee
- Construction and maintenance activities associated with the landfill gas management system
- Contributions from the sale of landfill gas
- Closure and post closure expenditures (time forecasted)

Specific expenditures and revenue for the closure and post closure model are described below:

Closure Expenses

Year – The fiscal year

Beginning Value of Closure Fund – The initial balance in the closure fund at the beginning of the fiscal year. Interest earned from the previous fiscal year and net revenue from the previous fiscal year are added to the previous year's balance.

Inflation rate - the inflation rate is calculated each year by the Department of Labor. The inflation rate for 2007 (January – August) has averaged 2.445% and for the past 10 years, the inflation rate has averaged 2.546%. Inflation rates can be adjusted annually in the Closure and Post Closure Financial Model.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVE
2007	2.08%	2.42%	2.78%	2.57%	2.69%	2.69%	2.36%	1.97%					
2006	3.99%	3.60%	3.36%	3.55%	4.17%	4.32%	4.15%	3.82%	2.06%	1.31%	1.97%	2.54%	3.24%
2005	2.97%	3.01%	3.15%	3.51%	2.80%	2.53%	3.17%	3.64%	4.69%	4.35%	3.46%	3.42%	3.39%
2004	1.93%	1.69%	1.74%	2.29%	3.05%	3.27%	2.99%	2.65%	2.54%	3.19%	3.52%	3.26%	2.68%
2003	2.60%	2.98%	3.02%	2.22%	2.06%	2.11%	2.11%	2.16%	2.32%	2.04%	1.77%	1.88%	2.27%
2002	1.14%	1.14%	1.48%	1.64%	1.18%	1.07%	1.46%	1.80%	1.51%	2.03%	2.20%	2.38%	1.59%
2001	3.73%	3.53%	2.92%	3.27%	3.62%	3.25%	2.72%	2.72%	2.65%	2.13%	1.90%	1.55%	2.83%
2000	2.74%	3.22%	3.76%	3.07%	3.19%	3.73%	3.66%	3.41%	3.45%	3.45%	3.45%	3.39%	3.38%
1999	1.67%	1.61%	1.73%	2.28%	2.09%	1.96%	2.14%	2.26%	2.63%	2.56%	2.62%	2.68%	2.19%
1998	1.57%	1.44%	1.37%	1.44%	1.69%	1.68%	1.68%	1.62%	1.49%	1.49%	1.55%	1.61%	1.55%
1997	3.04%	3.03%	2.76%	2.50%	2.23%	2.30%	2.23%	2.23%	2.15%	2.08%	1.83%	1.70%	2.34%

Interest rate - the annual rate of return on the Closure/Post Closure Fund CD. The interest rate will have a substantial impact on the present worth of the Closure/Post Closure Fund. Changes in the amount of money in tipping fee and/or methane gas fee may need to be changed annually to maintain a positive balance of the Closure/Post Closure Fund throughout the life of the Landfill.

Annual Tonnage - the projected tonnage of solid waste entering the landfill. The annual tonnage will impact the expected active life of the landfill.

\$/ ton for closure and post closure - the cost per ton charged in the tipping fee that is dedicated to the Closure/Post Closure Fund. This value may be adjusted annually to make the necessary adjustments to the long-term balance of the Closure/Post Closure Fund.

Active Gas Collection System in operation, Acres - the cumulative number of acres of the landfill that has an active gas collection system. It is anticipated that new gas collection wells will be installed every two years. The model assumes the gas collection system for a specific area will operate for 25 years.

Active Final Closure, Acres - the cumulative number of acres of the Landfill that has been closed with a final cover. A closed area of the landfill is considered inactive after 30 years.

\$ for gas flare - the construction costs for a landfill gas flare for a given year. This value is adjusted for inflation. The model assumes that the gas flare will be completely replaced every 15 years.

\$/acre for gas collection - the construction costs per acre for a landfill gas collection system including gas wells, condensate drops, and collection piping. This value is adjusted for inflation. The model assumes a per acre construction cost of \$13,500 based on 2007 prices. The model adjusts the unit \$/acre for inflation.

\$/acre for closure - the construction costs per acre for installing final cover, liners, grassing, and drainage for a closed portion of the Landfill. The model assumes a per acre construction cost of \$ 45,255 based on 2007 prices. The model adjusts the unit \$/acre for inflation.

\$ for gas processing ,pumping and pipeline - the construction costs for landfill gas processing and gas pumping equipment. The 2007 construction cost for gas processing and pumping is estimated at \$850,000. The construction cost for the pipeline is not included in the model. These costs are adjusted for inflation. If the end user of the landfill gas takes responsibility of the gas processing, pumping and pipeline cost, this price should be adjusted to \$0 in the model.

\$ per million BTU dedicated toward closure - the amount of the purchase price for methane gas that is dedicated to the Closure/Post Closure Fund. The price per million BTU is the costs after operating expenses are deducted from the sale price. The operating expenses include the cost of electricity/energy necessary to operate the gas system. The actual price per million BTU should depend on the market price for natural gas.

million BTUs produced - the total amount of million BTU's generated from the Landfill. The BTU value is based on 100% capture of methane gas from the landfill. BTU produced is based on calculation from the LandGEM model using default kinetic coefficients. Default LandGEM coefficients are lower than values used by EPA for southern landfills in moist climates. The values for million BTUs produced should be updated annually based on actual tonnages placed in the landfill using the LandGEM model and appropriate conversion factors.

Methane Capture, % - the percent of methane gas actually collected from the Landfill in a given year. A collection efficiency of 75% is considered typical. The model uses a conservative initial efficiency of 70%. In the event that the gas collection efficiency changes, the user can adjust in value in the model.

million BTUs sold - the quantity of million BTU's of landfill gas actually sold to a company. It is assumed that the landfill gas will be sold in units equivalent to a million BTU. A million BTU's is equivalent to 1,000 cubic feet of natural gas.

Replacement of Gas processing & pumping - The model assumes that one half of the replacement of gas processing and pumping equipment is replaced every 10 years. Maintenance of the gas processing and gas pumping is covered in the gas system maintenance fee. If the end user of the landfill gas assumes responsibility of these facilities, this value should be 0 for all years.

Replacement of Gas Flare System & Controls - The model assumes replacement of flare equipment to be replaced every 15 years. Annual maintenance of the gas processing and gas pumping is covered in the gas system maintenance fee.

Acres of gas collection under construction - the number of acres of Landfill added to the landfill gas collection system during the fiscal year. It is anticipated that the gas collection system will be expanded to new area every two years.

Acres of landfill under closure - the number of acres of the Landfill under construction for final closure during the fiscal year. It is anticipated that 20 – 25% of the landfill will be closed at the beginning of each 10 year contract.

Interest from Closure Fund - the revenue earned from the Closure/Post Closure Fund CD. Interest earned is applied to the beginning balance of the Closure/Post Closure Fund the next fiscal year.

Closure revenue from tipping fee - the revenue generated from the tipping fee that is allocated to the Closure/Post Closure Fund.

Closure revenue from methane – a portion of the revenue generated from the sale of landfill gas from the landfill that is allocated to the Closure/Post Closure Fund.

Construction of flare system - the construction costs of the landfill gas flare system. This cost is adjusted for inflation.

Construction of gas processing & pumping - the construction costs of the gas processing and pumping facilities. This cost is adjusted for inflation.

Construction \$ for gas collection - the construction costs for the landfill gas collection system during a particular fiscal year. This cost is adjusted for inflation.

Construction \$ for landfill closure - the construction costs for closing a portion of the landfill during a particular fiscal year. This cost is adjusted for inflation.

Gas Maintenance at 5% of value - This cost represents the annual maintenance costs necessary to maintain the landfill gas collection system, landfill flare, gas processing equipment and gas pumping equipment operating as designed. This cost is conservatively estimated to be 5% of the present worth value of the entire landfill gas collection system and is adjusted annually for inflation. Gas maintenance is a cost that will be incurred any time a portion of the Landfill is producing methane gas in the active or post closure period.

Contingency & Engineering @ 15% - This cost is an estimation of contingencies and engineering associated with a construction project. Left over funds in a given year should be applied to the Closure/Post Closure Fund.

Net Annual Closure Expenses – This is the summation of all expenses associated with closure activities. A negative value represents a net positive income that is credited to the Closure/Post Closure Fund. A positive value represents the amount of cash needed to be withdrawn from the Closure/Post Closure Fund in a given fiscal year. This value is automatically subtracted from the Closure & Post Closure Fund balance.

Post Closure Unit Prices

Sampling of Wells - the analytical cost of sampling each groundwater well twice a year. The sampling of wells will be included in the day-to-day operation of the landfill while the Landfill is in active use. Once the Landfill is closed (no longer receiving solid waste) the money necessary to pay for analytical laboratory expenses will be paid from the Closure/Post Closure Fund. Sampling cost for this model was estimated at \$ 7,343 per year based on 2007 cost estimates. This value is adjusted for inflation.

Sample Collection - Sample collection will be provided by the landfill operator while the Landfill is in active operation. After the Landfill is closed, samples will be collected by an outside firm. The 2007 estimated cost of sampling is 8 hours @ \$75/hour for each semi-annual sampling event (\$1,200/year). Sample collection costs are adjusted annually for inflation.

Shipping of samples to lab - This is the cost of shipping well samples to the analytical lab. It is assumed \$50/sampling event (\$100/year) will cover shipping costs from the Landfill. This cost is based on 2007 estimates and is adjusted for inflation each year in the financial model.

Engineering Evaluation of Laboratory Data - Current regulations require an evaluation of data to determine the magnitude of contamination created by the Landfill. The 2007 cost for conducting a statistical analysis of well data is estimated at \$2,100 per semi-annual sampling event (\$4,200/year). This value is adjusted for inflation. In the event that laboratory results are all below the minimum detection limit, no data analysis will be necessary.

Air Sampling - the costs associated with air quality sampling at the landfill. This value is adjusted annually for inflation. Air sampling costs are paid by the landfill operation while the landfill is in active use. After the entire landfill is in closure or post closure mode, the air sampling expenses will be paid from the Closure/Post Closure Fund.

Leachate Treatment - It is assumed that leachate will be generated at a rate of 20 gallons/day per acre. The model assumes a 10 percent reduction in leachate quantity each year after that particular portion of landfill is officially in closure mode. The 2007 leachate treatment cost is estimated at \$0.05/gallon for treatment and \$0.02/gallon for transportation. Leachate cost is adjusted annually for inflation. Leachate treatment will be paid by the Closure/Post Closure Fund after the Landfill is no longer active.

Grass Cutting - Grass cutting (bush hogging) will be conducted 4 times a year by an outside contract. The 2007 estimated cost for grass cutting is \$30/acre and is adjusted annually for inflation. The landfill operator will be responsible for grass cutting operations while the Landfill is in active service.

Grass Reseeding (10 acres/year) – The model assumes that 10 acres will be reseeded each year during the post closure period. Grass reseeded will be performed by an outside contractor. The 2007 cost estimate for reseeded is \$1,800/acre. This value is adjusted annually for inflation. Grass reseeded will be performed by the landfill operator while the Landfill is in active use and by an outside contractor during the post closure period.

Wash/Drainage Repair – The model assumes a 2007 cost of \$10,000/year to have an outside contractor repair any wash that may occur at the landfill. Wash/drainage repair will be provided by the landfill operator during the active life of the Landfill and by an outside contractor during the post closure period.

Post Closure Expenses

Annual Post Closure excluding leachate treatment – The summation of all post closure expenses except leachate treatment expenses. This item is only used during the post closure period when the Landfill is no longer accepting solid waste and is automatically subtracted from the Closure/Post Closure Fund balance.

Leachate Treatment – This parameter is the cost associated with leachate treatment and disposal. It is assumed that a wastewater collection system will be nearby that can accept the leachate by the post closure period (leachate is currently hauled by truck to a wastewater treatment facility for disposal). The cost of leachate treatment is assumed to be \$0.05/gallon for treatment and \$0.02/gallon for pumping cost. Leachate quantities are assumed to reduce 10% per year during the post closure period.

9.5 Household Hazardous Waste Program

Limited Household Hazardous Waste Programs (HHW) have occurred in the region in the past and were generally funded by matching grants from the Mississippi Department of Environmental Quality. The TRSWMA tipping fee allocates a portion of the tipping fee for “HHW Collection Day events”. Funds from the MDEQ are also solicited each year to supplement the Authority funds. Funding for HHW activities are evaluated and budgeted each year in the tipping fee.

9.6 Funding for Curbside Recycling

The City of Oxford and the City of Tupelo are the only two communities that provide curbside recycling to residents. The City of Oxford funds their program by an appropriation from the city budget. Residents of Tupelo pay a monthly fee that averages approximately \$1.35/resident. Collection fees for Tupelo are adjusted for economic conditions and changes in fuel prices.

9.7 Funding for Other Authority Expenses

In addition to the above listed items, part of the tipping fee is also allocated to fund other miscellaneous operating expenses. These expenses are budgeted and adjusted each year and include but are not limited to:

- Debt retirement for active bonds
- Mississippi Solid Waste Tax (currently at \$1.00/ton)
- Advalorem taxes (Host County Agreement)

- Leachate disposal fees (cost shared with operations contractor)
- Title V fees (air emissions fee paid to Mississippi Department of Environmental Quality)
- Host County Fees (Residents of Pontotoc County only pay 50% of the normal tipping fee)
- A management fee paid to the Three Rivers Planning & Development District. The Planning District provides employees associated with the day-to-day management (including billing) of all solid waste management activities within the TRSWMA planning area.
- Legal, auditing and engineering fees
- Liability insurance for TRSWMA.
- Trustee Fees

9.8 Funding for Rubbish Landfill Operations

Funding for the construction, maintenance and day-to-day operation of private and government owned rubbish landfills are borne entirely by the owner of the rubbish landfill.

All of the privately owned rubbish landfills charge based on established billing units which are typically by the cubic yard or by the ton. Some privately owned rubbish landfills also negotiate disposal prices by the job.

Government owned rubbish landfills are financed through local taxes and/or by unit prices charged to the customer.

Three Rivers Solid Waste Management Authority

Solid Waste Management Plan

January 2010



COCE
COOK COGGIN ENGINEERS, INC.

EXECUTIVE SUMMARY

The enclosed solid waste management plan was prepared to be in compliance with the criteria established by the Mississippi Legislature, specifically Mississippi Code § 17-17-225 and § 17-17-227 along with other State and Federal regulations. The solid waste management plan provides a comprehensive overview of the numerous solid waste facilities and solid waste management programs across the 3,876 square mile area of Calhoun, Itawamba, Lafayette, Lee, Monroe, Pontotoc and Union counties.

It is the intended purpose of this solid waste management plan to be used by government agencies, Three Rivers Solid Waste Management Authority (TRSWMA), residents, institutions, and businesses across throughout the planning area. An overview of each chapter of the solid waste management plan is provided below:

Chapter 1 – Introduction

This chapter provides an overview of the history of solid waste management in the seven county areas, the organizational structure of the TRSWMA and the demographics for the planning area and for each county. Overall, the TRSWMA planning area is classified as a rural area with an average population density of 62.5 people per square mile.

Chapter 2 – Existing Solid Waste Management in the Planning Area

This chapter provides an overview of the waste management programs and facilities for the entire planning area. Specific information about residential solid waste collection programs, nonresidential collection programs, the three (3) solid waste transfer stations, the Three Rivers Regional Landfill which is the only Subtitle D landfill in the planning area, Class 1 rubbish landfills, Class 2 rubbish landfills, tire disposal facilities, household hazardous waste programs, and unauthorized dumping programs. Maps, phone numbers, addresses and operational hours for all facilities open to the public are identified.

Chapter 3 – Solid Waste Composition and Quantification

This chapter provides an overview of solid waste composition and solid waste production rates for each county within the planning area. Based on available data, approximately 34% of the Subtitle D waste (municipal solid waste) is generated by residential sources while the remaining 66% is produced by non-residential users. The total solid waste stream (Subtitle D waste and rubbish waste) is approximately 24% residential, 47% non-residential and 29% rubbish. Overall the average person produces about 3.5 pounds of municipal solid waste per day within the region.

Chapter 4 – Recycling and Waste Reduction Programs

This chapter provides a county-by-county overview of recycling and reuse programs in the planning area. Phone numbers, addresses and types of materials recycled by various recyclers can be found in this chapter. Recycling, reuse and waste reduction programs are widespread across the TRSWMA planning area.

The City of Oxford and Tupelo have very aggressive recycling programs and are the only two cities to provide city-wide curbside collection of residential recyclable materials. The TRSWMA also provides numerous drop-off recycle trailers that are strategically placed across the planning area.

In addition to residential recycling, there are numerous commercial operations that have aggressive recycling, reduction and reuse programs. The furniture manufacturing and lumber industry have been heavily involved participants of finding unique ways to utilize waste wood of the region. The region is also home to Mac's Recycling of Saltillo which is one of the premier recyclers of waste tires in the southeast United States.

Overall, the TRSWMA planning area recycles approximately 67% of all solid waste (Subtitle D wastes, Class 1 Rubbish and Class 2 Rubbish) produced in the region. The 67% recycling and reduction rate is largely skewed by the lumber industry. If the lumber industry is taken out of the equation, the recycling rate would be approximately 36% which is significantly higher than the 25% recycling and reduction goal established by Mississippi Code § 17-17-225(b) and Mississippi Code § 17-17-227(1)(d).

Chapter 5 – Population and Waste Quantity Projections

This chapter provides a forecast of future growth and corresponding solid waste projections for each county within the planning area. Although the TRSWMA has experienced reduced solid waste production in the past couple of years due to the struggling local and national economy, the solid waste production forecast should rebound once the economy improves and the Toyota plant in Blue Springs begins to operate.

Chapter 6 – Three Rivers Regional D Landfill

This chapter is dedicated exclusively to the only Subtitle D landfill that serves the TRSWMA planning area. This chapter provides a detailed discussion of landfill permits, funding mechanisms for the landfill, the life expectancy of the landfill, how leachate and landfill gases are managed along with detailed information relating to landfill closure and post closure activities.

Chapter 7 – Management of Other Waste

This chapter provides information to residents, industry, and government bodies about the proper disposal of non-typical solid waste. Non-typical wastes include construction and demolition (C&D) waste, yard wastes, household hazardous wastes, white goods such as used appliances, computers and electronics, used tires, used motor oil and batteries, medical wastes, municipal water/wastewater sludges, septic tank sludge, industrial sludge, residential and commercial liquid waste, non-hazardous industrial/commercial waste, waste metals, and waste wood and scrap lumber. Disposal options, locations and phone numbers for each type of waste described above are provided in this chapter.

Chapter 8 – Disaster Debris Waste and Planning

This chapter provides a comprehensive guide for local communities for managing debris associated with a natural disaster. The chapter includes guidance for locating and operating temporary Class 1 and Class 2 rubbish facilities along with guidance to provide temporary residential solid waste collection shortly after a natural disaster.

Chapter 9 – Financing of Solid Waste Systems

This chapter provides a comprehensive overview of how solid waste facilities and programs across the TRSWMA planning area are funded.

Chapter 10 – Solid Waste Needs Assessment

This chapter provides an overview of the various types of solid waste needs of the TRSWMA planning area. Solid waste needs are placed in categories based on the severity of the need. A Category 1 need is a need that is desperately needed to comply with a solid waste capacity limitation, a permit condition or a violation of a State or Federal law. Category 2 needs are solid waste facilities or programs that would be nice to have, but are not necessary to comply with a permit condition, State or Federal law. Category 3 needs are solid waste needs that merit additional study and are not directly related to any State or Federal law.

This chapter is divided into sections that are dedicated to jurisdictional boundaries. Based on the review of all solid waste needs across the TRSWMA planning area, there are several Category 1 solid waste needs at this time. Category 1 needs include new permits for the Three Rivers Regional Landfill (all currently under review by MDEQ) and specific facility needs associated with rubbish disposal for Calhoun, Union and Lafayette counties.

Three Rivers Solid Waste Management Authority

Solid Waste Management Plan

January 2010



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Appendix A

Flow Control Ordinance

Appendix B

Public Notice and Public Comments

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Board Resolution Adopting Solid Waste Management Plan