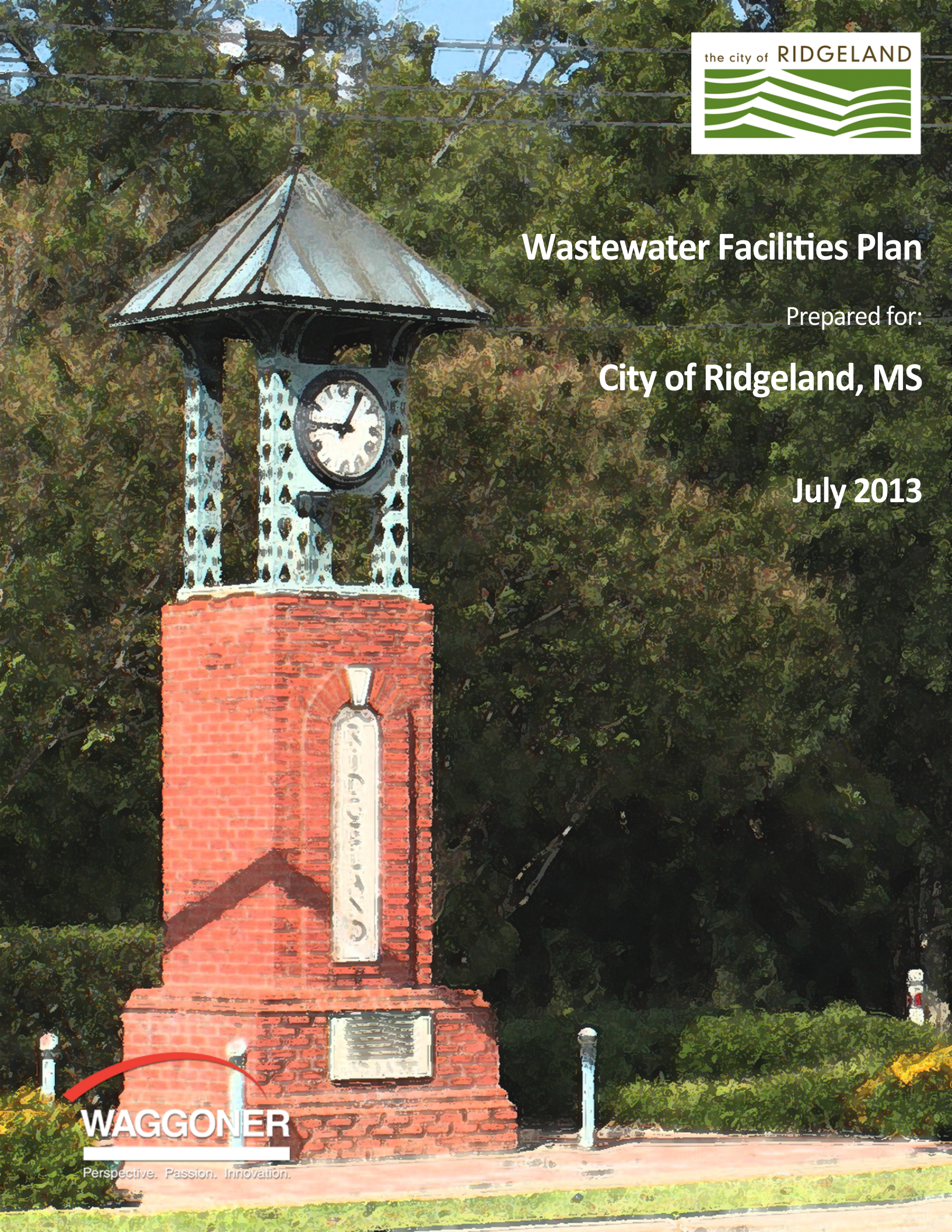

the city of RIDGELAND

Wastewater Facilities Plan

Prepared for:

City of Ridgeland, MS

July 2013

WAGGONER

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1. Summary, Conclusions, and Recommendations

The Ridgeland Area Master Plan (RAMP), completed in 2007, discussed priorities of the growing city and outlined a framework of projects, programs, and policies which would allow the city to continue its status as an attractive location for residential, commercial, and business growth. This Plan responds to the needs outlined in the RAMP. These needs generally include maintaining a high quality of infrastructure in existing areas and supporting growth both within the city and in its western growth path.

Ridgeland has previously issued basin-specific facilities plans:

- School Creek, Purple Creek, White Oak Creek Drainage Basins (1992)
- LaRue Creek (1998)
- White Oak Creek Update (2007, revised 2009)

Ridgeland has also produced an Implementation Plan for the White Oak Creek, LaRue Creek, and Hanging Moss tributary basins (2005).

The recommendations for the School Creek, Purple Creek, and portions of the White Oak Creek basin have generally been followed.

Ridgeland operates its own collection system, as well as the facilities of the East Madison County Sewage Disposal System (EMCSDS). Wastewater flows to Jackson through 6 metering stations for treatment at the Savanna Street Wastewater Treatment Facility.

RECOMMENDATIONS

Ridgeland conducts sewer system evaluation surveys (SSES) on its collection system to determine the condition of the manholes and pipes and needs for repair and rehabilitation. A detailed SSES is necessary for the School Creek and Purple Creek interceptors to determine necessary repairs and rehabilitation. After sources of inflow and infiltration have been found in the SSES, necessary repairs and rehabilitation should be made. In addition, a previous SSES has identified work to be performed on the Cully-Brasher interceptor system.

- **School Creek and Purple Creek Interceptor SSES $ 366,500**
- **School Creek and Purple Creek Interceptor Rehabilitation and Repair $ 824,600**
- **Culley-Brashear Interceptor System Rehabilitation and Repair $ 2,218,800**

As Ridgeland continues to grow and its sewer system continues to age, the City will need to continue preemptive activities to ensure that the system is capable of meeting the needs of the future. Ridgeland should initiate a Capacity, Management, Operations, and Maintenance (CMOM) program as a tool to assist in monitoring the performance of the sewerage system.

- **CMOM Assessment and Compliance: $167,500**

Several pump stations are within short distances of gravity sewers with capacity to accept flow, and should be abandoned. Eliminating these pump stations will reduce energy consumption and more efficiently utilize the City's gravity sewer system. Ridgeland should abandon the following pump stations:

- **Beaver Creek Pump Station Abandonment $ 101,900**
- **Tico's Pump Station Abandonment $ 146,900**
- **Rice Road Pump Station Abandonment $ 149,200**
- **MEA Clinic Pump Station Abandonment $ 181,000**
- **M&F Bank Pump Station Abandonment $ 271,600**
- **Brame Road Pump Station Abandonment $ 325,000**
- **West Jackson Street Pump Station Abandonment $ 397,600**
- **Salem Square Street Pump Station Abandonment $ 624,100**

The City of Ridgeland does not have sufficient meters to measure flow from Ridgeland, Madison, and PRVWSD into the EMCSDS system. In addition, Ridgeland does not have control over the readings into Jackson. Therefore, Ridgeland should install ten flow meters and rehabilitate one meter:

- **Flow meter installation and rehabilitation $ 334,300**

Several of the pump stations require the installation of transfer switches to allow portable generators to be directly connected to them during emergencies. Transfer switches should be installed on the three pump stations not to be abandoned that do not have them.

- **Transfer switches for pump stations $ 17,700**

Residents in some areas use individual onsite wastewater disposal systems. Ridgeland should develop a cost-sharing program and construct sewers to serve these areas.

- **Bird Lanes Sewer System $ 1,294,400**
- **Richardson Road Area Sewer System $ 1,839,700**

The City of Ridgeland should extend sewer service to the proposed Colony Park Boulevard corridor. The extension of sewer service will facilitate development of the area. Additionally, the extension will allow the abandonment of two small pump stations currently serving a residential area.

- **Colony Park Area Sewer System $ 1,365,900**

The City of Ridgeland should extend the collection system in the western part of the planning area. Short-term projects include:

- **White Oak Creek Sewer Improvements, Phase 2** **$ 3,244,000**
- **LaRue Creek Sewer Improvements** **$ 3,534,000**
- **Hanging Moss Sewer Improvements** **$ 5,526,000**

The long-term project is:

- **Limekiln Basin Sewer Improvements** **$ 19,652,900**

2. Need for the Project

The City of Ridgeland completed its Ridgeland Area Master Plan (RAMP) in 2007. The RAMP discussed priorities of the growing city and outlined a framework of projects, programs, and policies which will allow the city to continue its status as an attractive location for residential, commercial, and business growth. Some of the items in the RAMP include:

- Growth of commercial corridors**. Sewer capacity must be adequate to serve the needs of a growing community. In addition, management, operation, and maintenance of facilities must be carried out to provide reliability for the future.**
- Demolition of apartment complexes and redevelopment as less dense residential and commercial zones. **Less capacity will be required if there is less demand. However, execution of management, operation, and maintenance activities must be continued to allow future redevelopment.**
- Growth in the previously annexed western part of the City, as well as in the "Additional Planning Area" to the north and west of the city. **For example, new sewer improvements will be required for the Costas Lake area along West County Line Road and Highland Colony Parkway. Other unsewered areas will also require sewer infrastructure to reduce pollution of groundwater and surface waters from improperly functioning individual onsite wastewater disposal systems.** These unsewered areas have previously been noted in facilities plans and implementation plans. Some of the unsewered areas include:
    - White Oak Creek basin west of Bridgewater Subdivision
    - LaRue Creek basin north of Old Agency Road
    - Hanging Moss tributary basin north of County Line Road, in Livingston Road area
    - Purple Creek basin, off Richardson Road, and in "Bird Lanes" area off Old Agency Road
    - Corridors under construction and being proposed, such as:
        - I-55 Frontage Roads
        - Colony Park Boulevard
        - Lake Harbour Drive Extension

As Ridgeland continues to grow, it must also be aware of ongoing concerns of the wastewater system. Ongoing needs include:

- **Energy costs**. **Energy costs have been trending upward and are uncertain for the future.** Steps should be taken to make the wastewater system's energy usage more efficient.
- **Infiltration and inflow**. Infiltration is water other than wastewater that enters the sewerage system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Inflow is water other than wastewater that enters the wastewater system(including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage. **As the system ages, infiltration and inflow will increase, reducing available capacity in the system for wastewater flows.**
- **Sanitary sewer overflows (SSOs)**. An SSO is any discharge of wastewater to waters of the United States or the State from the sewer system through a point source not specified in any NPDES permit, as well as any overflow, spill, or release of wastewater to public or private property from the sewer system that may not have reached waters of the United States or the State, including all building backups. These are causes by such factors as excessive wet weather flow, obstructions, or line breaks.
- **Lack of reliability of existing flow meters**. The City of Ridgeland operates flow meters at metering stations into the East Madison County Sewage Disposal System (EMCSDS), which is managed by the City of Ridgeland. However, not all entry points into the EMCSDS system have properly operating flow meters. Therefore, it is impossible to accurately determine the amount of flows originating from the three members, the City of Ridgeland, the City of Madison, and the Pearl River Valley Water Supply District (PRVWSD). Additionally, EMCSDS discharges into the City of Jackson's collection system at five points. West of Interstate 55, the Ridgeland-West Sewage Disposal System (R-WSDS) discharges into Jackson's system through two metering stations. Jackson maintains meters at these locations. However, the City of Ridgeland has no control over the accuracy of these meters.

3. Existing Situation

A. Planning Area Location and Boundaries

Generally, the planning area is the area presently served by wastewater systems managed by the City of Ridgeland, as well as unserved areas inside the present city limits and those areas west of the City defined as "Additional Planning Area."

Exhibit 3.1 shows the planning area. The EMCSDS area includes portions of Ridgeland, Madison, and PRVWSD inside the drainage basins of Hearn Creek, Culley Creek, the Culley-Brashear-Diversion Ditch, School Creek, and Purple Creek. The R-WSDS area includes areas inside Ridgeland and the Additional Planning Area in the White Oak, LaRue, and Hanging Moss Tributary basins. The Additional Study area also includes portions of the Limekiln Creek drainage basin and its Tributaries B and K, as well as a small amount of the Upper Bogue Chitto Creek basin in western Madison County.

For purposes of this study, the planning area is divided into sewersheds. Each sewershed consists of the area served by a network of sewers flowing to a common terminal point. Currently, in Ridgeland, the terminal point is a flow meter. The sewersheds are generally identical to the stream basins in the area. However, the Country Club metering station sewershed consists of the portions of the Hearn Creek, Culley Creek, and Culley-Brashear Diversion Ditch basins served by the sewerage system. The School Creek basin is divided into the sewershed served by the School Creek and Northpointe stations. The Purple Creek basin consists of the Purple Creek metering station and Somerset metering station sewersheds.

The Lake Lorman and Lake Cavalier areas are served by the Lake Lorman Utility District. Although these areas are included in the RAMP's Additional Study Area, they are excluded from the planning area of this study.

B. Population Served

The City of Ridgeland and surrounding areas served by the wastewater system have grown from simply being "bedroom communities" for the Jackson area to also having significant commercial and educational populations during the daytime. Therefore, populations for residential, employment, and educational sectors are instrumental in determining wastewater flows for the area.

Populations for the entire planning area, including areas of Madison and PRVWSD served by EMCSDS were obtained by Traffic Analysis Zones (TAZ) as published by the Central Mississippi Planning and Development District in its Jackson Urbanized Area Transportation Plan (2011). In that study, populations were determined for the year 2008 and projected through 2035. **Exhibit 3.2** and **Exhibit 3.3** show projected residential and total population for each TAZ for 2015 and 2035, respectively.

Populations for residential, commercial, and educational sectors inside each sewershed were estimated for 2008 through 2035 by distributing population in each TAZ by sewershed. Although census data were

available for 2010 by census tract, there are no corresponding projections for the time frame in this study. In addition, the census tracts are generally larger in area than the TAZ's, producing less reliable distribution of population by sewershed. Therefore, TAZ data were chosen over Census data.

For this study, the sewer lines flowing into a metering station or other terminal point are considered a sewershed. Populations for some areas were modified to reflect updated expectations after discussions with staff of Ridgeland's Community Development and Public Works Departments. Each nonresident, i.e., each person counted in "total employment" or "school enrollment," was counted as one-half for "equivalent population." Where possible, school populations were included in the exact location of the school rather than distributed throughout a TAZ.

Equivalent populations for 2008 and projected equivalent populations for 2015, 2025, and 2035 are summarized in **Table 3.1.** Populations by TAZ are included in **Appendix A**. It should be noted that according to the study, populations in some parts of southeastern Ridgeland, such as those areas served by the Northpointe and Somerset metering stations, will decline in population during the study period.

Table 3.1
Equivalent Population Projections

Sewershed	2008	2015	2025	2035
Country Club MS	41,514	44,733	47,953	51,173
School Creek MS	9,941	10,013	10,084	10,156
Northpointe MS	1,160	1,056	953	850
Somerset MS	1,025	918	811	704
Purple Creek MS	8,116	8,827	9,025	9,485
White Oak Creek	3,432	4,079	4,943	5,805
LaRue Creek	979	1,086	1,266	1,448
Hanging Moss	592	680	923	1,165
Upper Bogue Chitto	4	5	3	5
Limekiln Tributary B	1,191	1,455	1,721	1,984
Limekiln Creek	188	198	207	217
Limekiln Tributary K	130	164	199	233
Total	68,273	73,214	78,088	83,224

C. Surface Waters Affected by and/or Improved by the Proposed Project

Portions of the EMCSDS served by Madison and PRVWSD drain into Hearn Creek, a tributary of the Ross Barnett Reservoir. Tributaries of the Middle Pearl River draining the EMCSDS area include Culley Creek, Brashear Creek, Culley-Brasher Diversion Ditch, School Creek, and Purple Creek. The R-WSDS includes the drainage basins of White Oak, LaRue, and Hanging Moss Tributaries, which are tributaries of the Middle Pearl River. West of Ridgeland, in the Additional Study Area, Limekiln Creek and its Tributaries B and K, are tributaries of the Big Black River.

D. Organizational Context

The City of Ridgeland operates its own collection system inside its corporate limits.

The East Madison County Sewage Disposal System (EMCSDS) composed of the City of Ridgeland, the City of Madison, and the Pearl River Valley Water Supply District (PRVWSD), was established to construct interceptors for connection with the City of Jackson's collection system. **Appendix B** is the agreement between Jackson and EMCSDS for transportation and treatment of wastewater from EMCSDS. Ridgeland operates and maintains the interceptors of EMCSDS.

The Ridgeland-West Sewage Disposal System (R-WSDS) consists of the Ridgeland sewer system in the White Oak, LaRue, and Hanging Moss tributary basins. Wastewater is transported to Jackson for treatment through metering stations. The agreement between R-WSDS and Jackson in included in **Appendix C**.

The Planning area includes unserved unincorporated areas west of the City of Ridgeland. These areas are included in Ridgeland's RAMP plans as the "Additional Study Area."

E. Location, Description, and performance of Existing Facilities

Exhibit 3.4 shows the existing Ridgeland wastewater system.

The wastewater system has approximately 113 miles of gravity mains. The pipe is composed of various materials, including PVC, concrete, vitrified clay, ductile iron, and cast iron. **Table 3.2** summarizes the collection system.

Ridgeland inventoried its gravity sewer system in 2010 and 2011 and compiled the results in GIS format. Each year, Ridgeland makes television inspections and cleans portions of its collection system. The results are used to determine priorities for repairs, rehabilitation, and replacement of sewer. Gravity sewer mains identified by television inspections are usually rehabilitated in the same year as inspection.

Table 3.2
Gravity Sewer Main Summary

Diameter, in.	Length, ft.	Length, mi.
4	55	0.01
6	10,654	2.02
8	484,619	91.78
10	38,736	7.34
12	17,576	3.33
15	11,567	2.19
18	6,594	1.25
21	3,467	0.66
24	10,060	1.91
27	9,492	1.80
Total	**592,820**	**112.28**

Ridgeland performed a capacity analysis on the EMCSDS interceptor system in 2006. The study and subsequent flow monitoring indicated that excessive infiltration and inflow overloaded the capacity of the interceptor system. Recommendations were made to evaluate and repair the EMCSDS system. It was also recommended that each contributor to the system evaluate its own collection system and eliminate sources of infiltration and inflow. In 2007, Ridgeland began a program of rehabilitating the manholes and gravity lines of the interceptor.

The Ridgeland sewerage system has fourteen pump stations, as shown in **Table 3.3**. These pump stations are monitored and controlled by a SCADA system. They are inspected weekly by a Public Works Department crew. Ridgeland maintains several portable generators to supply power to critical facilities during power outages. However, only four pump stations have transfer switches, allowing them to connect directly to a generator.

The Mule Jail pump station, which is operated by Jackson, accepts flow from the School Creek metering station. Wastewater is pumped into the Culley-Brashear Interceptor just upstream of Jackson's Country Club metering station.

Table 3.3
Pump Stations

	Pump Station	Transfer Switch Installed
1	Beaver Creek	
2	Brame Road	X
3	Cole Road	
4	Dyess Road	
5	Harbour Pines	X
6	M&F Bank	
7	Matthews Road	
8	MEA Clinic	
9	Rice Road	X
10	Salem Court	
11	Stokes Road	
12	Ticos	
13	West Jackson	X
14	Windsong Cove	

The City of Ridgeland operates fourteen metering stations on EMCSDS. These stations measure flow from collection lines owned by the individual systems to EMCSDS. However, aggregate flow from each member is not measured. In order to determine the total contribution of wastewater from each member, each station must be analyzed, and the results must be aggregately compiled. The reliability of the meter readings is often hindered by meter fouling, debris, and/or power outages. EMCSDS also operates the Purple Creek metering station which meters flow to Jackson. **Table 3.4** summarizes the metering stations operated by Ridgeland for EMCSDS.

The City of Jackson operates flow meters from EMCSDS, through three meters, and the Ridgeland West system, through two meters. These meters are summarized in Table 3.5

Table 3.4
Metering Stations Operated by Ridgeland for EMCSDS

Metering Station	Flow From	Flow To
Hoy Road	Madison	EMCSDS
Sandalwood	Madison	EMCSDS
South Madison	Madison	EMCSDS
St Augustine	Madison	EMCSDS
Stone Gate	Madison	EMCSDS
Traceland North	Madison	EMCSDS
Treasure Cove	Madison	EMCSDS
Reservoir	PRVWSD	EMCSDS
Beaver Creek	Ridgeland	EMCSDS
Diversion Ditch	Ridgeland	EMCSDS
North Ridgeland	Ridgeland	EMCSDS
Rice Road	Ridgeland	EMCSDS
School Creek	Ridgeland	EMCSDS
Trace Ridge IV	Ridgeland	EMCSDS
Purple Creek	Ridgeland/EMCSDS	Jackson

Table 3.5
Metering Stations Operated by Jackson

Metering Station	Flow From	Flow To
Country Club	EMCSDS	Jackson
North Pointe	Ridgeland/EMCSDS	Jackson
Somerset	Ridgeland/EMCSDS	Jackson
Purple Creek	Ridgeland/EMCSDS	Jackson
Lake LaRue	R-WSDS	Jackson
White Oak	R-WSDS	Jackson

Locations of metering stations and pump stations are shown in **Exhibit 3.4**.

The City of Ridgeland operates the Culley-Brashear interceptor system for EMCSDS. The system includes approximately 9 miles of gravity lines and 14 metering stations, and 1 pump station. In addition, the Mule Jail pumping station is owned by EMCSDS but operated by the City of Jackson. This station pumps into the interceptor system just upstream of the Country Club metering station. The EMCSDS is included in the map of the sewerage system shown in **Exhibit 3.4**.

Ridgeland has reported only 20 sanitary sewer overflows (SSOs) in the eight years from 2005 to 2012. Locations are shown in **Exhibit 3.5**. Total overflow volume for the period was approximately 80,000 gallons. The largest overflow was 30,000 gallons. Nine occurrences were from 1,000 to 12,000 gallons, and seven were less than 1,000 gallons. Causes were:

- grease (9 occurrences)
- failure in Jackson pump station downstream (3)
- failure in Ridgeland pump stations (2)
- solids (2)
- excessive inflow (2)
- pipe damage by contractor for other type of utility (2)

- collapsed pipe (1)
- damaged manhole (1).

Because some SSOs had multiple causes, the number of causes exceeds the number of SSOs.

F. Identification of Significant Users

No users use more than 5% of the capacity of the sewer systems. However, there are two industries with pretreatment permits in the planning area. One of these industries, Parker-Hannifin Corporation, Fluidex Division, in Madison, is permitted to pretreat and discharge 0.01 million gallons per day (MGD) to the Madison collection system. The pretreatment removes heavy metals from the waste stream. BFI Waste Systems of Mississippi, LLC, Little Dixie Landfill, west of Ridgeland, pretreats landfill sludge, which is then hauled directly to the City of Jackson's Savanna Street Wastewater Treatment Facility. BFI does not discharge into the sewerage system. The two pretreatment permits are in **Appendix D**.

G. Identification of Unsewered areas and On-site Systems

Previous facilities plans outlined the need for collection systems in the Purple, White Oak, LaRue Creek, and Hanging Moss Tributary Basins. Specifically, these areas include:

- White Oak Creek basin west of Bridgewater Subdivision
- LaRue Creek basin north of Old Agency Road
- Hanging Moss tributary basin north of County Line Road, in Livingston Road area
- Purple Creek basin, off Richardson Road, and in "Bird Lanes" area off Old Agency Road
- Corridors under construction and being proposed, such as:
    - I-55 Frontage Roads
    - Colony Park Boulevard
    - Lake Harbour Drive Extension

An implementation plan was prepared in 2005 to outline the steps to add collection lines in the White Oak, LaRue, and Hanging Moss tributary basins and connect them to Jackson's system. Portions of the lines in the White Oak Creek basin have been constructed since that time.

A Transportation Plan updated in 2012 recommended extensions of several roads. The plan also notes the construction of frontage roads for Interstate 55 through Ridgeland. Some of the roads in the Transportation Plan do not presently have sewer access:

- I-55 East Frontage Roads
- Colony Park Boulevard

- Lake Harbour Drive Extension

The Limekiln basin drainage basin is not currently sewered. As commercial and residential growth expands westward, sewerage infrastructure in this area will be required to accommodate new users.

4. Waste Flow and Load

A. Residential Flow

Wastewater flows for each sewershed were determined at various intervals based on the population projections discussed in Section 3. For residential populations, average flow estimates of 70 gallons per capita per day (gpcd) were used, based on MDEQ and "Ten States Standards" guidelines.

B. Commercial/Industrial/Significant User Flow

Projected school enrollment and employment populations were included in the Jackson Urbanized Area Transportation Plan cited in Section 3. Average flow of 35 gallons per day per student was used in this study. Average flow of 35 gallons per day was also used for each employee in the commercial sector. . As discussed in Section 3, each person counted in "total employment" or "school enrollment," was counted as one-half for "equivalent population" in determining flow projections.

As discussed in Section 3, there are no significant users of the sewer systems operated by Ridgeland.

C. Infiltration/Inflow

As recommended by MDEQ and "Ten States Standards," 30 gpcd for equivalent population was used for infiltration and inflow.

D. Total Flow/Load

For this study, total flow of 100 gpcd for equivalent population was used. This amount is the sum of 70 gallons per day per equivalent person and 30 gpcd for infiltration and inflow. Peak flows were projected using a statistical formula from MDEQ and "Ten States Standards."

The wastewater of the service area is primarily domestic in terms of its characteristics and strength, since the majority of it emanates from residents, employees and students. Wastewater is ultimately treated by the Savanna Street Wastewater Treatment Plant operated by Jackson, which is designed to treat influents of this quality.

Average projected wastewater flows are shown in **Table 4.1.** Projected peak flows are shown in **Table 4.2**

Table 4.1
Average Flow, gallons per day

Sewershed	2008	2015	2025	2035
Country Club MS	4,151,600	4,473,400	4,795,100	5,117,500
School Creek MS	994,100	1,001,300	1,008,300	1,015,700
Northpointe MS	116,000	105,600	95,300	85,000
Somerset MS	102,500	91,800	81,100	70,400
Purple Creek MS	811,700	882,700	902,600	948,400
White Oak Creek	343,300	407,900	494,300	580,500
LaRue Creek	98,000	108,600	126,600	144,900
Hanging Moss	59,100	68,000	92,300	116,600
Upper Bogue Chitto	400	600	300	500
Limekiln Tributary B	119,100	145,400	172,000	198,400
Limekiln Creek	18,800	19,800	20,700	21,600
Limekiln Tributary K	13,100	16,500	19,900	23,400
Total	6,827,700	7,321,600	7,808,500	8,322,900

Table 4.2
Peak Hourly Flow, gallons per minute

Sewershed	2008	2015	2025	2035
Country Club MS	6,748	7,176	7,597	8,015
School Creek MS	2,042	2,054	2,066	2,079
Northpointe MS	303	278	252	227
Somerset MS	270	244	217	190
Purple Creek MS	1,716	1,844	1,880	1,961
White Oak Creek	809	942	1,115	1,284
LaRue Creek	259	285	328	371
Hanging Moss	162	184	245	304
Upper Bogue Chitto	1	2	1	2
Limekiln Tributary B	310	373	434	494
Limekiln Creek	54	57	60	62
Limekiln Tributary K	38	48	57	67

5. Alternative Selection

A. Unsewered Areas

One of the most significant challenges for a city preparing for growth in an area is to have a sewer collection system ready to serve the area when it is needed. If a sewer system is not available, development will consist of large estate lots with installation of individual onsite wastewater treatment and disposal systems. After full development of the area, it is often unfeasible to extend sewer service across existing rights of way and underground utility easements. **Exhibit 5.1** shows proposed sewer extension in currently unsewered parts of Ridgeland, as well as in the Additional Planning Area.

Some developed areas in the western part of Ridgeland do not have sewer service. Ridgeland has begun discussion with residents of the "Bird Lanes" south of Old Agency Road to provide sewer service to this area. Residents would pay a portion of the extension of service to allow them to abandon individual onsite wastewater disposal systems. A similar arrangement should be made with residents of Richardson Road, Lake Castle Road, and Rolling Meadows Road to provide sewer service.

Commercial corridors under development will require sewer service. Colony Park Boulevard will extend from Highway 51 at McClellan Drive to Highland Colony Parkway. The western portion is currently under construction. Ridgeland should extend sewer service to this area, including the Interstate 55 east frontage road. The project includes abandonment of the Stokes Road and Matthews Road pump stations, presently serving the extreme northeast parts of the City, by connecting them to the Colony Park Boulevard main.

New businesses on the west frontage road will have access to existing sewer from Highland Colony Boulevard. Lake Harbour Drive will be extended from Highway 51 westward to Highland Colony Boulevard. Although some sewer mains will be relocated during road construction, all development will be able to be served from existing sewer mains.

The Western Wastewater Implementation Plan for White Oak Creek, LaRue Creek, and Hanging Moss Tributary Drainage Basins (2005) outlined steps for providing sewer inside recently annexed areas and areas to the west of the Ridgeland. Phase 1 of the White Oak Creek collection system was completed in 2012. The sewer systems for Phase 2 of White Oak Creek drainage basin, as well as for the LaRue Creek and Hanging Moss Creek basins, have not been constructed, as shown in this Plan. Some of the areas to be served include the White Oak Creek basin west of Bridgewater Subdivision, the LaRue Creek basin north of Old Agency Road and the Natchez Trace, and the Hanging Moss Tributary basin north of County Line Road, in the Livingston Road area.

Other portions of the planning area do not have municipal sewer service. An additional collection line is proposed for the LaRue Creek collection system to accommodate growth around Costas Lake as anticipated by the RAMP. Lines are also proposed near West County Line Road in the Hanging Moss Tributary drainage basin.

Further west, long term growth will warrant sewer service in the drainage basin of Limekiln Creek, a tributary of the Big Black River. It is assumed that wastewater in this area will be pumped northward to the Madison County Wastewater Authority's (MCWA) treatment facility at Beattie's Bluff on the Big Black River.

The preliminary opinions of probable cost for improvements are summarized in **Table 5.1**. Preliminary opinions of probable cost for individual reaches are in **Appendix E**.

Table 5.1
Probable Cost, Sewerage Improvements

Project	Probable Cost
White Oak Creek Phase 2 Sewer Improvements	$ 3,244,000
LaRue Creek Sewer Improvements	$ 3,534,400
Hanging Moss Creek Sewer Improvements	$ 5,526,100
Limekiln Basin Sewer System	$ 19,652,900
Bird Lanes Sewer System	$ 1,294,400
Richardson Rd Area Sewer System	$ 1,839,700
Colony Park Area Sewer System	$ 1,365,900
TOTAL	$ 36,457,400

B. Flow Meters

The City of Ridgeland operates the EMCSDS interceptor system, which collects wastewater from Ridgeland as well as the City of Madison and the Pearl River Valley Water Supply District. The system includes 14 metering stations upstream of the City of Jackson's Country Club metering station. In order to determine the total contribution of wastewater from each member, each station must be analyzed, and the results must be aggregately compiled. The reliability of the meter readings is often hindered by meter fouling, debris, and/or power outages. In addition, the City of Ridgeland does not have control over Jackson's metering stations and cannot vouch for their accuracy and reliability. To simplify the flow accounting procedure, and to insure the reliability of readings, new flow meters should be installed on EMCSDS at each point where jurisdiction changes. These flow meters will also provide a backup to the existing meters at the discharge points and provide a check on I/I in the interceptor system. In addition, flow meters should be installed on Ridgeland's system at each discharge point to the Jackson system. New meters should be installed at ten locations shown in **Table 5.2** and **Exhibit 5.2**.

Table 5.2
Proposed Flow Meters

Metering Station
Wolcott
Montrose
Brashear
Culley
Culley-Brashear
Pear Orchard
Northpark
I-220 (East)
I-220 (West)
LaRue Creek

The proposed Wolcott and Montrose meters will measure flow from previously unmetered areas of Ridgeland. The Brashear meter will measure flow from parts of Ridgeland and Madison. The Culley meter will measure flow from parts of Madison. The Montrose meter will measure flow from a previously unmetered area of Ridgeland. The Culley-Brashear meter will measure combined flows from Madison, PRVWSD, and parts of Ridgeland, and will serve to provide a check on Jackson's Country Club metering station. The Pear Orchard and North Park meters will serve as checks on Jackson's meters on EMCSDS.

The I-220 and LaRue Creek meters will match Jackson's meters for the Ridgeland-West system. Note that two meters are required to measure flow from the White Oak sewershed at I-220. Flow at this point comes from two main interceptors.

The Purple Creek Metering Station should be rehabilitated. This flow meter is not operating. Flows are not being measured or transmitted to Ridgeland's SCADA system.

Power is not available at all the proposed locations. Flow monitoring and SCADA equipment could be powered with solar-charged batteries. This will result in zero power consumption for each unit, meeting the City's goal for energy reduction.

Estimated cost for the project is $334,300. A preliminary Opinion of Probable Cost is located in **Appendix F**.

C. PUMP STATIONS

The Ridgeland wastewater system currently has 14 pump stations. Eight of these pump stations are within short distances of gravity sewers with available capacity to accept flow, thereby allowing the Public Works Department to abandon the pump stations. Eliminating pump stations will reduce energy consumption and more efficiently utilize the City's gravity sewer system. The pump stations that are feasible to abandon are included in **Table 5.3.** A preliminary Opinion of Probable Cost is located in **Appendix G**.

Table 5.3
Pump Stations Proposed for Abandonment

Description	Cost
Beaver Creek Pump Station	$ 101,900
Tico's Pump Station	$ 146,900
Rice Road Pump Station	$ 149,200
MEA Clinic Pump Station	$ 181,000
M & F Bank Pump Station	$ 271,600
Brame Road Pump Station	$ 325,000
West Jackson Street Pump Station	$ 397,600
Salem Square Pump Station	$ 624,100
Stokes Road Pump Station	*
Matthews Road Pump Station	*
TOTAL	**$ 2,197,300**

* Included in cost of Colony Park Boulevard Sewer Extension

The Beaver Creek pump station, at the intersection of Beaver Creek Drive and Patrick Cove, pumps wastewater away from a small number of homes in a low part of Beaver Creek Subdivision. Approximately 390 linear feet of gravity main will be constructed to the Beaver Creek Interceptor of EMCSDS. Total probable cost is $101,900.

The Tico's pump station serves several businesses north of East County Line Road, east of Pear Orchard Road. Construction will consist of approximately 840 linear feet of gravity main to a manhole on the North County Line Road right of way. Total probable cost is $146,900.

The Rice Road pump station, at the intersection with Pear Orchard Road, serves a few houses in the area. The Public Works Department has determined that approximately 1,300 linear feet of gravity main is required. Total probable cost is $149,200.

A small pump station serves the MEA clinic near Highland Colony Parkway. A gravity main will be constructed through wooded terrain approximately 1,300 linear feet. Total probable cost is $181,000.

The M&F Bank pump station is on the west side of Highway 51, approximately 450 feet north of Lake Harbour Drive. Construction of a gravity main to bypass this pump station will pass through the proposed Lake Harbour Drive Extension. Therefore, this project should be performed simultaneously with the Lake Harbour Drive Extension. Total probable cost is $271,600.

The Brame Road pump station serves Highland Elementary School and neighboring residences. The pump station sits on the opposite side of a ridge from the nearest gravity main, making pump abandonment difficult. Approximately 1,800 linear feet of gravity main will be constructed. Approximately 1,000 linear feet will be at depths of greater than 20 feet. Total probable cost is $325,000.

Abandonment of the Jackson Street Pump Station is currently proposed for term bid. The probable construction cost for the term bid project is $266,633. With contingencies and professional services, total probable cost is $397,600.

The Salem Square pump station on School Street is approximately 900 feet west of its proposed discharge point. Pipes flowing to and from the pump station are located under the pavement of School Street and other streets. Ridgeland's Transportation Plan has recommended that this part of School Street be widened. Abandonment of the pump station and collection lines to the east, as well as construction of a discharge line, will need to be performed in conjunction with street widening. The cost of $624,100 is the estimated cost of the sewerage and necessary roadway improvements for the project.

As discussed above, the Stokes Road and Matthews Road pump stations will be abandoned during construction of the Colony Park Boulevard sewer main. The cost of abandoning these tow pumps and constructing gravity mains to serve them is included in the cost of the Colony Park project.

To facilitate connection to portable generators during power emergencies, pump stations should have transfer switches. Three pump stations, not scheduled for abandonment, do not have transfer switches. Transfer switches should be installed for these pump stations, as shown in **Table 5.4**. Construction cost is approximately $3,500 each. Total cost, including construction contingencies and professional services, is $17,700. A preliminary Opinion of Probable Cost in is **Appendix H**.

Table 5.4
Pump Stations Proposed for Transfer Switches

Pump Station
Cole Road
Dyess Road
Windsong Cove

D. Collection System

As collection systems age, infiltration and inflow become significant contributors to flow. Defects in sewer mains, manholes, and private service laterals, as well as connections to storm sewers or roof drains, will result in excessive flow during wet weather, causing reduction in capacity, or sanitary sewer overflows.

Ridgeland conducts television inspections of sewer mains each year to determine priorities for repair, rehabilitation, and replacement of sewer mains for subsequent years. The city should continue these Sewer System Evaluation Surveys (SSES). Priority should be given to the larger lines which have been in place 20 years or more.

A detailed SSES should be performed on the Purple Creek School Creek Interceptors. SSES will include smoke testing, cleaning where necessary, television inspections where warranted, and visual inspection of manholes. Total cost for SSES of these two interceptors is $366,500. After the SSES is completed, a determination should be made of the required rehabilitation and repair work to reduce infiltration and inflow. A detailed opinion of probable cost can be developed at that time. However, based on experience with similar projects, rehabilitation and repair cost is estimated to be $824,600.

Portions of the Culley-Brashear Interceptor System were inspected and repaired in 2008 and 2009. Manholes were repaired and sealed as required. The SSES revealed that the portion of the 36-inch

interceptor from Lake Harbour Drive to County Line Road, has excessive infiltration and requires rehabilitation. The Public Works Department has determined that cured in place pipe line should be installed to rehabilitate 55,179 linear feet of the 36-inch interceptor. Total probable cost is $2,218,000. Since this project will benefit Ridgeland, Madison, and PRVWSD, the cost will be shared by these three members of EMCSDS based on the flow contributed by each.

SSES and rehabilitation projects are summarized in **Table 5.5**. Locations are shown in **Exhibit 5.4**. The preliminary Opinions of Probable Cost can be found in **Appendix I**.

Table 5.5
Proposed SSES and Rehabilitation Projects

Project	Cost
School Creek and Purple Creek Interceptors SSES	$ 366,500
School Creek and Purple Creek Interceptors Rehabilitaion and Repair	$ 824,600
Culley-Brashear Interceptor Rehabilitaion and Repair	$2,218,000
TOTAL	$3,409,100

The SSES and rehabilitation/repairs listed above should be part of a comprehensive Capacity, Management, Operations, and Maintenance (CMOM) program as outlined below.

As Ridgeland continues to grow and its sewer system continues to age, the City will need to continue preemptive activities to ensure that the system is capable of meeting current and future needs. Integral to planning is a Capacity, Management, Operations, and Maintenance (CMOM) program. Originally proposed as a requirement by EPA, CMOM is used as a proactive tool by many cities to remain in compliance with EPA regulations. The CMOM is essentially a self-audit by the utility to outline its strengths and weaknesses and make recommendations for improvements to its programs. CMOM activities are intended to:

1. Properly manage, operate and maintain, at all times, all parts of collection system that the City owns or over which it has operational control;
2. Provide adequate capacity to convey base flows and peak flows for all parts of the collection system that the City owns or operationally controls;
3. Take all feasible steps to stop, and mitigate the impact of, sanitary sewer overflows in portions of the collection system owned or operationally controlled by the City;
4. Provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event; and
5. Develop a written summary of the City's CMOM program and make it available to any member of the public upon request.

Examples of CMOM programs that the City typically is required to develop and implement include the following:

1. Training Program;

2. Capacity Assurance Program;
3. Sewer Overflow Response Plan (SORP);
4. Inter-Jurisdictional Agreement Program;
5. Private Lateral Program;
6. Water Quality Monitoring Program;
7. Pump Station Operations Program;
8. Pump Station Preventive Maintenance Program;
9. Fats, Oils and Grease Control Program (FOG); and
10. Gravity Line Preventive Maintenance Program

The City of Ridgeland is already performing many of the activities included in a CMOM. For example, Ridgeland continuously performs routine operation and maintenance activities on it pump stations. These activities should be formally organized as part of a CMOM. For each program, Ridgeland should

- Develop standard operating procedures
- Develop and maintain inspection reports
- Develop annual reports

Ridgeland should also initiate an asset management program for its sewer facilities. This planning process will aid the City in controlling the flow of operation and maintenance of its facilities through integration of graphic, operation, maintenance, financial, and other programs. Criticality and condition of components are used to prioritize repairs, rehabilitation, or replacement.

The Public Works Department has already created a Geographic Information System (GIS) of the sewer system. This powerful tool is being used by Public Works, Planning, other city departments, and the public to determine locations and sizes of sewer mains and manholes. The GIS should be used as the nucleus of an asset management program to keep track of repairs and replacements and to make recommendations for future activities. Features such as depths, materials, maintenance records, and links to record drawings, television inspections, or hydraulic models, should be added to the system to use for the asset management program. Ridgeland should develop standard operating procedure for the GIS system. The following items should be included in the standard operating procedures:

- Personnel to utilize the system
- Determination of what facilities to include in the GIS
- Editing of features in the GIS
- Determination what data to publish to the public

6. Selected Plan

A. General Information

The selected plan includes those items that should be initiated within five years. Feasibility will depend on availability of funding at the time of construction.

SSES of School Creek and Purple Creek Interceptors $ 366,500

Sanitary sewer evaluation surveys (SSES) should be made of the School Creek Interceptor, and the Purple Creek Interceptor. Television inspections and cleaning of the lines should be made and the lines should be evaluated.

Interceptor Rehabilitation $ 3,042,600

Necessary repairs to the Culley-Brasher interceptor system have previously been identified. After SSES is complete, a determination of necessary repairs to the School Creek and Purple Creek interceptors will be made.

CMOM Assessment and Compliance: $ $167,500

A CMOM program will allow Ridgeland to maintain its compliance with EPA regulations and to continue operating its wastewater system efficiently. The following activities can be initiated:

- Inventory and Assessment
- Training
- Ordinances and Agreements
- Capacity Assurance Plan (CAP)
- Sewer Overflow Response Plan (SORP)
- Pump Station Operations and Maintenance Plan
- Gravity System Operations and Maintenance Plan

Pump Station Abandonment: $ 2,197,300

Abandonment of pump stations will reduce energy costs for the City of Ridgeland. Bypass lines allowing abandonment of the Beaver Creek, Tico's, Rice Road, MEA, and Brame Road pump stations should be constructed as soon as funds are available. The City of Ridgeland is initiating a project to abandon the Jackson Street pump station. Abandonment of the Salem Square and M&F pump station should be accomplished as part of a proposed road improvement projects. The total cost cited above does not include abandonment of the Stokes Rad and Matthews Road pump stations, which are included in the Colony Park Boulevard sewer extension discussed below.

Flow Meters: **$ 334,300**

The selected plan includes ten new flow metering stations and rehabilitation of the Purple Creek station. Ridgeland will be able to more accurately measure flow into the EMCSDS system from the three members and also will be able to check flows into Jackson.

Transfer Switches for Pump Stations: **$ 17,700**

Transfer switches should be installed at the three pump stations not listed for abandonment: Cole Road, Dyess Road, and Windsong Cove. As critical facilities, these installations should qualify for Federal Emergency Grant Administration (FEMA) Hazard Mitigation Grant Program (HMGP) funding.

Extensions to Unsewered Residential Areas: **$ 3,134,100**

Sewer service should be extended to residents in the Bird Lanes and Richardson Road areas who currently use individual onsite systems. Since these areas are nearly fully developed, the City should develop a cost-sharing arrangement with homeowners.

Colony Park Area Sewer System: **$ 1,365,900**

The City of Ridgeland should extend sewer service to the proposed Colony Park Boulevard corridor. The extension of sewer service will facilitate development of the area. Additionally, the extension will allow the abandonment of two small pump stations currently serving a residential area.

Western Sewer System: **$ 12,304,500**

Unsewered portions of the Hanging Moss, LaRue, and White Oak basins are within areas to be developed within the next decade. Some of these areas are currently within the corporate limits of the City of Ridgeland. Without adequate sewers, the quality of surface water and groundwater will deteriorate. The selected plan includes construction of the Hanging Moss Creek, LaRue Creek, and White Oak Creek Phase 2 Sewer Improvements as discussed above.

The Limekiln Basin sewer system is not a selected project at this time. This project will be constructed as the area develops in the future

Total Selected Plan: **$ 22,930,400**

B. Environmental Information

Each of the proposed improvements will address one or more needs of the City of Ridgeland and will aid in maintaining the quality of the area's waters:

- The Western sewer system expansion will allow the subject area to continue to grow in an orderly fashion without the addition of less efficient individual onsite wastewater disposal systems. Development will be denser, providing for more sewer customers and a larger tax base. Wastewater from the projects in the LaRue, White Oak, and Hanging Moss basins will be treated by the City of Jackson under the existing Ridgeland-West Sewage Disposal System agreement.
- Additional flow meters will increase the reliability of the billing to the members of EMCSDS, and also to Jackson.
- Abandoning pump stations will reduce energy costs of the sewer system.
- The addition of transfer switches to pump stations will allow the use of portable generators, minimizing the likelihood of SSOs during power emergencies.
- SSES and rehabilitation interceptors will increase flow volume and reduce SSOs in the system.

Several State and Federal agencies may have interests in the selected projects. Each agency must be contacted to determine whether Ridgeland must conduct further investigations or applications as follows:

- Mississippi Department of Archives and History: archaeological/cultural resources survey
- Mississippi Natural Heritage Program: vegetative/wildlife survey
- U.S. Army Corps of Engineers: Section 10 or 404 permit application

Any comments received from these agencies must be addressed prior to submitting an application to MDEQ for funding.

C. Environmental Impact

The environmental impact of the selected plan is minimal, as shown in the following table:

Environmental Impact	No Action Alternative	Selected Plan
Surface/Groundwaters	Construction in Unsewered area will require individual; onsite disposal systems, which would pose an environmental threat to area waterways.	Construction of western sewer improvements will enable flow to a regional wastewater treatment facility. Pump station abandonment and installation of transfer switches for portable generators, and collection system rehabilitation will minimize possibility of wet weather SSOs. Ridgeland will monitor construction to ensure compliance with Stormwater Pollution Prevention Plan.
Archeology/Historical/Cultural Resources	No Impact	LaRue Creek interceptor will be bored under Natchez Trace Parkway, eliminating any impact.
Vegetative/Wildlife	No Impact	No post-construction impact, and all reasonable efforts will be made during construction to prevent disturbance.
Wetlands/Navigable Waterways	Extensive use of individual onsite disposal systems, which would pose an environmental threat to area waterways.	No post-construction impact, and all reasonable efforts will be made during construction to prevent disturbance.
Floodplains	Peak hour overflows and extensive use if individual onsite disposal systems could contribute to negative effects upon the floodplains.	No post-construction impact, and all reasonable efforts will be made during construction to prevent disturbance.
Coastal Zones	Not Applicable	Not Applicable
Wild/Scenic Rivers	Not Applicable	Not Applicable
Air Quality	No Impact	No Impact

Additionally, abandonment of pump stations will reduce pumping requirements, thereby reducing energy usage and lowering power costs.

Once the City of Ridgeland determines which elements of the selected plan it wishes to pursue, the appropriate Federal and state agencies should be notified to review the locations.

7. Financial Analysis

Section 6 of this Plan lists the recommended improvements to the Ridgeland sewer system. Once the City determines which projects it wishes to construct, it should begin to apply for financing from various agencies. One source of low interest funding is the Water Pollution Control Revolving Loan Fund (WPCRLF), which is administered by the Mississippi Department of Environmental Quality. (MDEQ). MDEQ requires a financial analysis to determine whether the City can afford to pay its existing and proposed financial obligations for its sewer system, as well as determining whether the proposed rates are affordable to low and moderate income residents.

A. Cost of Selected Plan

The cost of improvements to a sewer system should be borne by the users of that system and by any other beneficiaries to the reduction of pollution. The total cost of all elements of the selected plan is $ 22,930,400.

The City of Ridgeland sets separate rates for the City's sewer system and for the regional systems. The cost of improvements for each of the systems should be compared with the existing rates to determine whether the improvements are feasible within existing rate structures.

B. Interlocal Agreements

Under the East Madison County Sewage Disposal System agreement with Jackson, Ridgeland operates and maintains the facilities of the EMCSDS. Jackson bills EMCSDS two years in arrears, based on proportionate flow in the West Bank Interceptor (WBI) and to the Savanna Street Wastewater Treatment Facility (SSWWTF). Ridgeland bills each member based on proportionate flow for each member's share of operation and maintenance and debt service.

Under the Ridgeland-West Sewage Disposal System agreement with Jackson, Ridgeland owns, operates, and maintains its system in the western part of the City. Jackson bills Ridgeland two years in arrears, based on proportionate flow in the West Bank Interceptor (WBI) and to the Savanna Street Wastewater Treatment Facility (SSWWTF).

C. Local Funding Calculations

The City must be able to demonstrate that it will be able to meet existing sewer system obligations as well as pay for all proposed projects. Once Ridgeland decides which projects it seeks funding assistance from WPCRLF, it will list all funding sources and annual debt for existing as well as proposed projects. Other sources of funding, such as local funds and bonds, will be included.

D. User Charge Calculations

Under Ridgeland's user charge ordinance, passed in 2006, sewer rates are based on metered water usage. A flat rate or $1.00 is charged to each customer. Usage fees automatically increase by 2 percent each year. Currently usage fees are $1.48 per 1000 gallons for use in the Ridgeland system, and $1.79 per 1000 gallons for payment to the EMCSDS and Jackson systems for transmission and treatment.

E. Loan Repayment

Loans may be repaid rates subsidized with ad valorem taxes or sales taxes. The City must show clear details of the funding approach, mechanisms to collect user charges, and plans for addressing nonpayment.

F. Average Household Cost

Average annual bills are currently $335, or 0.79 percent of Ridgeland's mean household income of $43,066. This is below the affordability threshold of 1.75 percent. Theoretically, Ridgeland could increase rates to $753 annually, or $62.80 per month. This increase of 125% over current rates would induce a severe rate shock to customers and is not practical. Therefore, the City must determine which of the selected projects it chooses to construct. In addition, Ridgeland should pursue any available grant funding to minimize the impact to customers.

8. Public Participation

A. Routine Projects

According to MDEQ regulations, applicants for all projects requesting WPCRLF funding must provide notice of the project in a local newspaper and give the public the opportunity to comment. MDEQ also encourages additional notice in direct mail, billings, etc. The required notice period is 30 days prior to the application. If Ridgeland determines that it will seek WPCRLF funding for any of the selected projects, it must provide the required notice. In its application, the City must include all comments it receives.

B. Controversial Projects

If MDEQ determines that any of the requested projects are controversial, the applicant must conduct a public hearing for those projects. Typical projects that are likely to be controversial include entirely new systems, new or substantially increased discharges, high cost or substantially increased user charges, etc. Public notice must be given at least 30 days prior to the hearing in a local newspaper of general circulation. The City must address any adverse comments it receives. Any significant changes in the project site, cost estimates, or user charge estimates may trigger an additional notice or hearing.

Exhibits

EXHIBIT 3.1: PLANNING AREA

Wastewater Facilities Plan

Exhibit 3.1 - Planning Area

the city of RIDGELAND

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Legend

- Planning Area Sewer
- Sewershed
- Drainage basin
- City of Ridgeland
- City of Madison
- Ridgeland Additional Planning Area
- Madison Future Planning Area

Limekiln Creek
Limekiln Creek Tributary K
Limekiln Creek Tributary B
Limekiln Creek Tributary B
White Oak Creek
Purple Creek
Hanging Moss Creek
LaRue Creek
Upper Bogue Chitto Creek
NATCHEZ TRACE
Hanging Moss Creek
Brashear Creek
Culley Creek
Country Club
Hearn Creek
School Creek
Somerset
North Pointe
Culley-Brashear Diversion Ditch
Reach 9

LAKE CASTLE RD
MADISON AVE
RICHARDSON RD
STEED RD
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
DINSMOR XING
HIGHLAND COLONY PKWY
SUNNYBROOK RD
JACKSON ST E
SCHOOL STE
PEAR ORCHARD RD
S WHEATLEY ST
OLD CANTON RD
LAKE HARBOUR DR
TOWNE CENTER BLVD
NORTH PARK DR
ST AUGUSTINE DR
W COUNTY LINE RD
E COUNTY LINE RD
RIDGEWOOD RD
N STATE ST
HANGING MOSS RD

55
51
220

0 1,500 3,000 6,000 9,000 12,000 Feet

N

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EXHIBIT 3.2: 2015 POPULATION PROJECTIONS

Wastewater Facilities Plan

Exhibit 3.2 - 2015 Traffic Analysis Population Projections

the city of RIDGELAND

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Legend

Planning Area Sewer

TAZ 461
2015 Pop: 3,975
2015 Total Pop: 4,052

TAZ 462
2015 Pop: 3,448
2015 Total Pop: 5,194

TAZ 463
2015 Pop: 1,162
2015 Total Pop: 2,382

TAZ 436
2015 Pop: 781
2015 Total Pop: 811

TAZ 484
2015 Pop: 1,254
2015 Total Pop: 1,279

TAZ 487
2015 Pop: 168
2015 Total Pop: 168

TAZ 485
2015 Pop: 112
2015 Total Pop: 293

TAZ 483
2015 Pop: 391
2015 Total Pop: 1,838

TAZ 482
2015 Pop: 964
2015 Total Pop: 1,272

TAZ 488
2015 Pop: 1,151
2015 Total Pop: 1,173

TAZ 486
2015 Pop: 1,045
2015 Total Pop: 4,750

TAZ 481
2015 Pop: 4
2015 Total Pop: 384

TAZ 480
2015 Pop: 2,864
2015 Total Pop: 3,077

TAZ 491
2015 Pop: 335
2015 Total Pop: 598

TAZ 492
2015 Pop: 0
2015 Total Pop: 671

TAZ 493
2015 Pop: 89
2015 Total Pop: 1,683

TAZ 494
2015 Pop: 55
2015 Total Pop: 254

TAZ 490
2015 Pop: 78
2015 Total Pop: 80

TAZ 513
2015 Pop: 132
2015 Total Pop: 167

TAZ 511
2015 Pop: 122
2015 Total Pop: 578

TAZ 489
2015 Pop: 189
2015 Total Pop: 246

TAZ 514
2015 Pop: 390
2015 Total Pop: 1,760

TAZ 512
2015 Pop: 640
2015 Total Pop: 5,089

TAZ 516
2015 Pop: 430
2015 Total Pop: 433

TAZ 515
2015 Pop: 1,854
2015 Total Pop: 2,644

TAZ 522
2015 Pop: 0
2015 Total Pop: 1,031

TAZ 523
2015 Pop: 7
2015 Total Pop: 211

TAZ 524
2015 Pop: 426
2015 Total Pop: 1,439

TAZ 517
2015 Pop: 498
2015 Total Pop: 513

TAZ 520
2015 Pop: 2,093
2015 Total Pop: 3,409

TAZ 539
2015 Pop: 33
2015 Total Pop: 1,479

TAZ 536
2015 Pop: 414
2015 Total Pop: 560

TAZ 521
2015 Pop: 49
2015 Total Pop: 1,736

TAZ 538
2015 Pop: 173
2015 Total Pop: 607

TAZ 537
2015 Pop: 810
2015 Total Pop: 833

TAZ 540
2015 Pop: 132
2015 Total Pop: 354

TAZ 518
2015 Pop: 152
2015 Total Pop: 182

TAZ 519
2015 Pop: 79
2015 Total Pop: 1,480

TAZ 541
2015 Pop: 618
2015 Total Pop: 1,825

TAZ 545
2015 Pop: 1,639
2015 Total Pop: 1,864

TAZ 544
2015 Pop: 1,132
2015 Total Pop: 2,869

TAZ 543
2015 Pop: 21
2015 Total Pop: 786

TAZ 546
2015 Pop: 91
2015 Total Pop: 2,140

TAZ 542
2015 Pop: 0
2015 Total Pop: 49

TAZ 618
2015 Pop: 2,316

TAZ 478
2015 Pop: 184
2015 Total Pop: 229

TAZ 502
2015 Pop: 472
2015 Total Pop: 487

TAZ 501
2015 Pop: 457
2015 Total Pop: 471

TAZ 479
2015 Pop: 23
2015 Total Pop: 1,329

TAZ 500
2015 Pop: 2,936
2015 Total Pop: 3,311

TAZ 504
2015 Pop: 1,117
2015 Total Pop: 1,123

TAZ 495
2015 Pop: 0
2015 Total Pop: 264

TAZ 498
2015 Pop: 0
2015 Total Pop: 327

TAZ 499
2015 Pop: 970
2015 Total Pop: 1,131

TAZ 497
2015 Pop: 20
2015 Total Pop: 207

TAZ 507
2015 Pop: 173
2015 Total Pop: 175

TAZ 506
2015 Pop: 558
2015 Total Pop: 578

TAZ 508
2015 Pop: 3,488
2015 Total Pop: 3,545

TAZ 510
2015 Pop: 1,048
2015 Total Pop: 1,317

TAZ 509
2015 Pop: 592
2015 Total Pop: 2,000

TAZ 527
2015 Pop: 1,145
2015 Total Pop: 2,291

TAZ 526
2015 Pop: 685
2015 Total Pop: 1,206

TAZ 529
2015 Pop: 1,828
2015 Total Pop: 1,867

TAZ 530
2015 Pop: 1,074
2015 Total Pop: 1,102

TAZ 528
2015 Pop: 739
2015 Total Pop: 835

TAZ 525
2015 Pop: 1,446
2015 Total Pop: 1,724

TAZ 532
2015 Pop: 87
2015 Total Pop: 105

TAZ 531
2015 Pop: 562
2015 Total Pop: 710

TAZ 533
2015 Pop: 54
2015 Total Pop: 204

TAZ 535
2015 Pop: 2,614
2015 Total Pop: 3,762

TAZ 534
2015 Pop: 1,789
2015 Total Pop: 2,163

TAZ 547
2015 Pop: 1,575
2015 Total Pop: 2,986

TAZ 548
2015 Pop: 1,673
2015 Total Pop: 4,665

TAZ 549
2015 Pop: 3,457
2015 Total Pop: 4,092

TAZ 550
2015 Pop: 767
2015 Total Pop: 854

LAKE CASTLE RD
MADISON AVE
RICHARDSON RD
STEED RD
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
SUNNY LOOK RD
DINSMORE
HIGHLAND COLONY PKWY
JACKSON ST E
NATCHEZ TRACE
SCHOOL ST E
PEAR ORCHARD RD
W WHEATLEY
LAKE HARBOUR DR
OLD CANTON RD
TOWNE CENTER
NORTH PARK
ST AUGUSTINE DR
E COUNTY LINE RD
W COUNTY LINE RD
Reach 9
HANGING MOSS RD
N STATE ST
RIDGEWOOD RD
PEAR ORCHARD RD

55 220 51

N

0 1,500 3,000 6,000 9,000 12,000 Feet

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EXHIBIT 3.3: 2035 POPULATION PROJECTIONS

Wastewater Facilities Plan

Exhibit 3.3 - 2035 Traffic Analysis Population Projections

the city of RIDGELAND

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Planning Area Sewer

TAZ 461
2035 Pop: 5,612
2035 Total Pop: 5617

TAZ 462
2035 Pop: 6,891
2035 Total Pop: 6997

TAZ 463
2035 Pop: 1,945
2035 Total Pop: 7359

TAZ 436
2035 Pop: 748
2035 Total Pop: 772

TAZ 484
2035 Pop: 1,267
2035 Total Pop: 1309

TAZ 487
2035 Pop: 183
2035 Total Pop: 183

TAZ 485
2035 Pop: 126
2035 Total Pop: 659

TAZ 483
2035 Pop: 420
2035 Total Pop: 1263

TAZ 482
2035 Pop: 977
2035 Total Pop: 1269

TAZ 488
2035 Pop: 1,657
2035 Total Pop: 1657

TAZ 486
2035 Pop: 1,409
2035 Total Pop: 2781

TAZ 481
2035 Pop: 0
2035 Total Pop: 1681

TAZ 480
2035 Pop: 3,277
2035 Total Pop: 3880

TAZ 491
2035 Pop: 409
2035 Total Pop: 1126

TAZ 493
2035 Pop: 82
2035 Total Pop: 2509

TAZ 490
2035 Pop: 117
2035 Total Pop: 117

TAZ 492
2035 Pop: 0
2035 Total Pop: 4029

TAZ 494
2035 Pop: 52
2035 Total Pop: 387

TAZ 495
2035 Pop: 0
2035 Total Pop: 890

TAZ 498
2035 Pop: 0
2035 Total Pop: 548

TAZ 497
2035 Pop: 23
2035 Total Pop: 419

TAZ 499
2035 Pop: 1,577
2035 Total Pop: 1660

TAZ 513
2035 Pop: 171
2035 Total Pop: 254

TAZ 511
2035 Pop: 223
2035 Total Pop: 791

TAZ 510
2035 Pop: 1,069
2035 Total Pop: 1235

TAZ 509
2035 Pop: 793
2035 Total Pop: 901

TAZ 489
2035 Pop: 274
2035 Total Pop: 431

TAZ 514
2035 Pop: 494
2035 Total Pop: 3423

TAZ 512
2035 Pop: 1,183
2035 Total Pop: 2216

TAZ 527
2035 Pop: 1,436
2035 Total Pop: 1672

TAZ 516
2035 Pop: 443
2035 Total Pop: 443

TAZ 515
2035 Pop: 2,940
2035 Total Pop: 3315

TAZ 522
2035 Pop: 0
2035 Total Pop: 3334

TAZ 523
2035 Pop: 0
2035 Total Pop: 756

TAZ 524
2035 Pop: 569
2035 Total Pop: 823

TAZ 526
2035 Pop: 812
2035 Total Pop: 1270

TAZ 525
2035 Pop: 1,828
2035 Total Pop: 2310

TAZ 528
2035 Pop: 846
2035 Total Pop: 846

TAZ 517
2035 Pop: 559
2035 Total Pop: 559

TAZ 520
2035 Pop: 2,510
2035 Total Pop: 4789

TAZ 539
2035 Pop: 39
2035 Total Pop: 1398

TAZ 536
2035 Pop: 474
2035 Total Pop: 474

TAZ 535
2035 Pop: 2,729
2035 Total Pop: 3341

TAZ 533
2035 Pop: 0
2035 Total Pop: 207

TAZ 538
2035 Pop: 286
2035 Total Pop: 988

TAZ 537
2035 Pop: 870
2035 Total Pop: 915

TAZ 534
2035 Pop: 2,247
2035 Total Pop: 3274

TAZ 521
2035 Pop: 0
2035 Total Pop: 1480

TAZ 540
2035 Pop: 0
2035 Total Pop: 942

TAZ 518
2035 Pop: 253
2035 Total Pop: 384

TAZ 519
2035 Pop: 118
2035 Total Pop: 1992

TAZ 545
2035 Pop: 1,664
2035 Total Pop: 1890

TAZ 547
2035 Pop: 2,010
2035 Total Pop: 3990

TAZ 541
2035 Pop: 627
2035 Total Pop: 962

TAZ 544
2035 Pop: 1,296
2035 Total Pop: 4192

TAZ 543
2035 Pop: 0
2035 Total Pop: 1010

TAZ 546
2035 Pop: 0
2035 Total Pop: 3203

TAZ 548
2035 Pop: 1,680
2035 Total Pop: 3830

TAZ 549
2035 Pop: 3,514
2035 Total Pop: 4884

TAZ 550
2035 Pop: 831
2035 Total Pop: 831

TAZ 542
2035 Pop: 0
2035 Total Pop: 295

TAZ 478
2035 Pop: 299
2035 Total Pop: 424

TAZ 501
2035 Pop: 886
2035 Total Pop: 886

TAZ 502
2035 Pop: 616
2035 Total Pop: 616

TAZ 479
2035 Pop: 24
2035 Total Pop: 2028

TAZ 500
2035 Pop: 3,549
2035 Total Pop: 4700

TAZ 504
2035 Pop: 1,210
2035 Total Pop: 1210

TAZ 507
2035 Pop: 190
2035 Total Pop: 190

TAZ 506
2035 Pop: 1,330
2035 Total Pop: 1440

TAZ 508
2035 Pop: 3,384
2035 Total Pop: 3392

TAZ 529
2035 Pop: 2,585
2035 Total Pop: 2585

TAZ 530
2035 Pop: 1,491
2035 Total Pop: 1491

TAZ 532
2035 Pop: 94
2035 Total Pop: 94

TAZ 531
2035 Pop: 630
2035 Total Pop: 630

LAKE CASTLE RD
MADISON AVE
RICHARDSON RD
STEED RD
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
HIGHLAND COLONY PKWY
SUNNYBROOK RD
JACKSON ST E
NATCHEZ TRACE
SCHOOL ST E
LAKE HARBOUR DR
TOWNE CENTER
NORTH PARK
W COUNTY LINE RD
E COUNTY LINE RD
ST AUGUSTINE DR
OLD CANTON RD
HANGING MOSS RD
N STATE ST
RIDGEWOOD RD
PEAR ORCHARD RD
Reach 9

55 220 51

0 1,500 3,000 6,000 9,000 12,000 Feet

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EXHIBIT 3.4: EXISTING FACILITIES

Wastewater Facilities Plan

Exhibit 3.4 - Existing Facilities

the city of RIDGELAND

WAGGONER
Perspective. Passion. Innovation.

Legend

- Existing Metering Station - Jackson
- Existing Metering Station - Ridgeland
- Existing Pump station
- Less than 10"
- 10" - 12"
- 15" - 21"
- Greater than 21"
- Planning Area Sewer
- City of Ridgeland
- City of Madison
- Ridgeland Additional Planning Area
- Madison Future Planning Area

Hoy Rd.
Stone Gate
S. Madison
St. Augustine
Traceland North
Stokes Road
Matthews Rd.
Beaver Creek
N. Ridgeland
Trace Ridge
Beaver Creek
Sandlewood
Treasure Cove
Windsong Cove
W. Jackson St.
Rice Rd.
Salem Square
Rice Road
Reservoir
M&F Bank
Brame Rd.
MEA Clinic
Harbour Pines
LaRue Creek
White Oak
Lake La Rue
Cole Road
Dyess
Purple Creek
Tico's
School Creek MS
Diversion Ditch
Purple Creek
Somerset
North Pointe
Country Club

LAKE CASTLE RD
MADISON AVE
ST AUGUSTINE DR
RICHARDSON RD
STEED RD
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
SUNNYBROOK RD
OLD CANTON RD
JACKSON ST E
NATCHEZ TRACE
PEAR ORCHARD RD
LAKE HARBOUR DR
TOWNE CENTER BLVD
NORTHPARK DR
E COUNTY LINE RD
W COUNTY LINE RD
HANGING MOSS
RIDGEWOOD RD
N STATE ST

55
51
220

0 1,600 3,200 6,400 9,600 12,800 Feet

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EXHIBIT 3.5: LOCATION OF SSOS

Wastewater Facilities Plan

Exhibit 3.5 - Location of SSOs

the city of RIDGELAND

WAGGONER
Perspective. Passion. Innovation.

Legend

- SSO
- Planning Area Sewer
- City of Ridgeland
- City of Madison
- Ridgeland Additional Planning Area
- Madison Future Planning Area

12-02
11-03
11-07
11-01
11-02
10-01
11-06
11-04
10-02
12-04
11-05
12-01
12-03
06-01
06-03
06-02
06-04
05-01
09-01
07-01

LAKE CASTLE RD
MADISON AVE
ST AUGUSTINE DR
RICHARDSON RD
STFED
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
DINSMOR XING
SUNNYBROOK RD
OLD CANTON RD
JACKSON ST E
NATCHEZ TRACE
SCHOOL ST E
PEAR ORCHARD
S WHEA Y ST
LAKE HARBOUR DR
TOWNE CENTER BLVD
NORTHPARK DR
HIGHLAND COLONY PKWY
W COUNTY LINE RD
E COUNTY LINE RD
HANGING MOSS
STATE ST
RIDGEWOOD RD

55 51 220

0 1,500 3,000 6,000 9,000 12,000 Feet

N

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EXHIBIT 5.1: PROPOSED COLLECTION SYSTEM ADDITIONS

Wastewater Facilities Plan

Exhibit 5.1 - Proposed Collection Additions

the city of RIDGELAND

WAGGONER
Perspective. Passion. Innovation.

Legend

- Existing Metering Station - Jackson
- Existing Metering Station - Ridgeland
- Existing Pump station
- Proposed Pump Station
- Proposed Metering Station
- Proposed Less than 10"
- Proposed Gravity 10" - 12"
- Proposed Gravity 15" - 21"
- Proposed Forcemain Less than 10"
- Less than 10"
- 10" - 12"
- 15" - 21"
- Greater than 21"
- Planning Area Sewer
- City of Ridgeland
- City of Madison
- Ridgeland Additional Planning Area
- Madison Future Planning Area

Exist. N Madison PS
1800 GPM

Robinson Springs Rd PS
700 GPM

Limekiln PS
500 GPM

Richardson Road Area

Colony Park Boulevard

Bird Lanes

Hanging Moss MS

Reach FM
Reach 1
Reach 2
Reach 3
Reach 4
Reach 5
Reach 6
Reach 7
Reach 8
Reach 9
Reach 10
Reach 10
Reach 12
Reach 13
Reach 16
Reach 18
Reach 20
Reach 21
Reach 22
Reach 23
Reach 24
Reach 25
Reach 26
Reach 27
Reach 28
Reach 29
Reach 30
Reach 31
Reach 32
Reach 33
Reach 34

Windsong Cove
MEA Clinic
Cole Road
LaRue Creek
Lake La Rue
White Oak
Stokes Road
Matthews Rd.
Beaver Creek
N. Ridgeland
Trace Ridge
Beaver Creek
W. Jackson St.
Salem Square
M&F Bank
Brame Rd.
Dyess
Purple Creek
Purple Creek
Somerset
Tico's
North Pointe
Hoy Rd.
S. Madison
Stone Gate
St. Augustine
Traceland North
Sandlewood
Treasure Cove
Rice Rd.
Rice Road
Reservoir
Harbour Pines
School Creek MS
Diversion Ditch
Country Club

LAKE CASTLE RD
MADISON AVE
RICHARDSON RD
STEED RD
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
SUNNYBROOK RD
OLD CANTON RD
JACKSON ST E
NATCHEZ TRACE
SCHOOL ST E
REARORCHARD RD
LAKE HARBOUR DR
TOWNE CENTER BLVD
NORTHPARK DR
ST AUGUSTINE DR
W COUNTY LINE RD
E COUNTY LINE RD
HANGING MOSS
RIDGEWOOD RD
PEAR ORCHARD
N STATE ST

55
51
220

0 1,600 3,200 6,400 9,600 12,800 Feet

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EXHIBIT 5.2: PROPOSED METERING STATIONS

Wastewater Facilities Plan

Exhibit 5.2 - Proposed Metering Stations

the city of RIDGELAND

WAGGONER
Perspective. Passion. Innovation.

Legend

- Existing Metering Station - Jackson
- Existing Metering Station - Ridgeland
- Proposed Metering Station
- Planning Area Sewer
- City of Ridgeland
- City of Madison
- Ridgeland Additional Planning Area
- Madison Future Planning Area

Hoy Rd.
Stone Gate
S. Madison
St. Augustine
Traceland North
N. Ridgeland
Wolcott
Beaver Creek
Trace Ridge
Sandlewood
Brashear
Treasure Cove
Culley
Rice Road
Reservoir
Diversion Ditch
Culley-Brashear
Pear Orchard
North Pointe
School Creek
Purple Creek
Purple Creek
North Park
Somerset
Montrose
Country Club
LaRue Creek
White Oak
I-220 West
I-220 East
Lake La Rue

LAKE CASTLE RD
MADISON AVE
ST AUGUSTINE DR
RICHARDSON RD
STEED RD
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
DINSMORE RD
HIGHLAND COLONY PKWY
NATCHEZ TRACE
SUNNYBROOK RD
OLD CANTON RD
JACKSON ST E
SCHOOL ST E
PEAR ORCHARD RD
S WHEATLEY ST
LAKE HARBOUR DR
TOWNE CENTER BLVD
NORTHPARK DR
RIDGEWOOD RD
W COUNTY LINE RD
E COUNTY LINE RD
HANGING MOSS
N STATE ST

55 51 220

0 1,600 3,200 6,400 9,600 12,800 Feet

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EXHIBIT 5.3: PUMP STATIONS TO BE ABANDONED

Wastewater Facilities Plan

Exhibit 5.3 - Pump Stations To Be Abandoned

the city of RIDGELAND

WAGGONER
Perspective. Passion. Innovation.

Legend

- Existing Pump Station - To Be Abandoned
- Existing Pump Station
- Planning Area Sewer
- City of Ridgeland
- City of Madison
- Ridgeland Additional Planning Area
- Madison Future Planning Area

Stokes Road
Matthews Rd.
Beaver Creek
Windsong Cove
W. Jackson St.
Rice Rd.
Salem Square
M&F Bank
Brame Rd.
MEA Clinic
Harbour Pines
Cole Road
Dyess
Tico's

LAKE CASTLE RD
MADISON AVE
ST AUGUSTINE DR
RICHARDSON RD
STEED RD
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
DINSMOR XING
SUNNYBROOK RD
OLD CANTON RD
JACKSON ST E
NATCHEZ TRACE
SCHOOL ST E
PEAR ORCHARD RD
S WHEATLEY ST
LAKE HARBOUR DR
TOWNE CENTER BLVD
NORTHPARK DR
W COUNTY LINE RD
E COUNTY LINE RD
HANGING MOSS RD
N STATE ST
RIDGEWOOD RD
Reach 9

55 51 220

0 1,550 3,100 6,200 9,300 12,400 Feet

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EXHIBIT 5.4: PROPOSED INTERCEPTOR REHABILITATION

Wastewater Facilities Plan

Exhibit 5.4 - Proposed Interceptor Rehabilitation

the city of RIDGELAND

WAGGONER
Perspective. Passion. Innovation.

Legend

- Interceptor Buffer
- Planning Area Sewer
- Less than 10"
- 10" - 12"
- 15" - 21"
- Greater than 21"
- City of Ridgeland
- City of Madison
- Ridgeland Additional Planning Area
- Madison Future Planning Area

Culley-Brashear Interceptor Rehabilitation

Purple Creek Interceptor SSES & Rehabilitation

School Creek Interceptor SSES & Rehabilitation

School Creek MS

LAKE CASTLE RD
MADISON AVE
ST AUGUSTINE DR
RICHARDSON RD
STEED RD
GREENS CROSSING RD
LIVINGSTON RD N
OLD AGENCY ROAD
DUNSMORE XING
HIGHLAND COLONY PKWY
NATCHEZ TRACE
SUNNYBROOK RD
OLD CANTON RD
JACKSON ST E
SCHOOL ST E
PEARTORCHARD RD
LAKE HARBOUR DR
TOWNE CENTER BLVD
NORTHPARK DR
W COUNTY LINE RD
E COUNTY LINE RD
RIDGEWOOD RD
55
51
220

0 1,600 3,200 6,400 9,600 12,800 Feet

N

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Appendices

APPENDIX A: POPULATION AND FLOW PROJECTIONS

Waggoner Engineering, Inc.

City of Ridgeland
Wastewater Facility Plan
Projected Flow Calculations

Limekiln Tributary K Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
484	1,256	3	1,267	3	1,278	3	1,288	3	0.20%
487	160	1	168	1	176	1	183	1	0.49%
488	915	127	1,162	161	1,409	195	1,657	230	13.86%
Total	**2,331**	**130**	**2,596**	**164**	**2,862**	**199**	**3,128**	**233**	

Average Daily Flow (gpd)

TAZ	2008 Within Service Area	2015 Within Service Area	2025 Within Service Area	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
484	300	300	300	300	100%	100%
487	100	100	100	100		
488	12,700	16,100	19,500	23,000		
Total	**13,100**	**16,500**	**19,900**	**23,400**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area
	4.21	55,200	4.18	68,900	4.15	82,600	4.12	96,500
Total		**55,200**		**68,900**		**82,600**		**96,500**
Peak, gpm		**38**		**48**		**57**		**67**

67 gpm Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.

Waggoner Engineering, Inc.

City of Ridgeland
Wastewater Facility Plan
Projected Flow Calculations

Limekiln Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008		2015		2025		2035		% of TAZ Within Drainage Basin
	Entire TAZ	Within Drainage Basin & Planning	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	
436	814	142	796	139	778	136	760	133	17.47%
488	915	46	1,162	59	1,409	71	1,657	83	5.04%
489	166	0	217	0	269	0	321	0	0.12%
Total	**1,894**	**188**	**2,175**	**198**	**2,457**	**207**	**2,738**	**217**	

Average Daily Flow (gpd)

TAZ	2008		2015		2025		2035		% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
		Within Service Area		Within Service Area		Within Service Area		Within Service Area		
436		14,200		13,900		13,600		13,300	100%	100%
488		4,600		5,900		7,100		8,300		
489		0		0		0		0		
Total		**18,800**		**19,800**		**20,700**		**21,600**		

Peak Hourly Flow (gpd)

	2008		2015		2025		2035	
	Peak Factor	Within Service Area	Peak Factor	Within Service Area	Peak Factor	Within Service Area	Peak Factor	Within Service Area
	4.16	78,200	4.15	82,200	4.14	85,700	4.14	89,300
Total		**78,200**		**82,200**		**85,700**		**89,300**
Peak, gpm		**54**		**57**		**60**		**62**

62 gpm Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.
-Adjustments

Waggoner Engineering, Inc.

City of Ridgeland
Wastewater Facility Plan
Projected Flow Calculations

Limekiln Tributary B Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
518	103	0	167	0	232	0	296	0	0.15%
Adjustment		3		3		6		7	
516	426	2	432	2	437	2	443	2	0.52%
486	2,507	27	2,897	31	3,288	36	3,678	40	1.08%
490	60	23	79	31	98	38	117	46	39.18%
436	814	1	796	1	778	1	760	1	0.13%
488	915	677	1,162	860	1,409	1,043	1,657	1,226	74.03%
489	166	163	217	214	269	265	321	316	98.26%
517	479	238	506	251	532	264	559	278	49.66%
Adjustment		57		61		65		68	
Total	**5,469**	**1,191**	**6,256**	**1,455**	**7,043**	**1,721**	**7,830**	**1,984**	

Average Daily Flow (gpd)

TAZ	2008 Within Service Area	2015 Within Service Area	2025 Within Service Area	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
518	0	0	0	0	100%	100%
Adjustment	300	300	600	700		
516	200	200	200	200		
486	2,700	3,100	3,600	4,000		
490	2,300	3,100	3,800	4,600		
436	100	100	100	100		
488	67,700	86,000	104,300	122,600		
489	16,300	21,400	26,500	31,600		
517	23,800	25,100	26,400	27,800		
Adjustment	5,700	6,100	6,500	6,800		
Total	**119,100**	**145,400**	**172,000**	**198,400**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area
	3.75	446,600	3.69	536,400	3.64	625,300	3.59	712,000
Total		**446,600**		**536,400**		**625,300**		**712,000**
Peak, gpm		**310**		**373**		**434**		**494**

494 gpm Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.
-Adjustments

Waggoner Engineering, Inc.

City of Ridgeland
Wastewater Facility Plan
Projected Flow Calculations

Upper Bogue Chitto Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning Area	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
517	479	61	506	65	532	68	559	72	12.80%
Adjustment		-57		-61		-65		-68	
518	103	3	167	5	232	6	296	8	2.69%
Adjustment		-3		-3		-6		-7	
Total	**582**	**4**	**673**	**5**	**764**	**3**	**855**	**5**	

Average Daily Flow (gpd)

TAZ	2008 Within Service Area	2015 Within Service Area	2025 Within Service Area	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
517	6,100	6,500	6,800	7,200	100%	100%
Adjustment	-5,700	-6,100	-6,500	-6,800		
518	300	500	600	800		
Adjustment	-300	-300	-600	-700		
Total	**400**	**600**	**300**	**500**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area
	4.44	1,800	4.44	2,700	4.45	1,300	4.44	2,200
Total		**1,800**		**2,700**		**1,300**		**2,200**
Peak, gpm		**1**		**2**		**1**		**2**

2 gpm Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.
-Adjustments

Country Club MS Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
516	426	5	432	6	437	6	443	6	1.29%
517	479	161	506	170	532	179	559	188	33.62%
Adjustment		0		0		40		80	
518	103	100	167	163	232	225	296	288	97.16%
Adjustment		0		0		40		80	
519	743	323	779	339	816	355	852	371	43.53%
Adjustment		0		0		75		150	
489	166	2	217	2	269	3	321	3	1.03%
Total	**1,917**	**592**	**2,101**	**680**	**2,286**	**923**	**2,471**	**1,165**	

Average Daily Flow (gpd)

Census Tract	2008 Within Service Area	2015 Within Service Area	2025 Within Service Area	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
516	500	600	600	600	100%	100%
517	16,100	17,000	17,900	18,800		
Adjustment	0	0	4,000	8,000		
518	10,000	16,300	22,500	28,800		
Adjustment	0	0	4,000	8,000		
519	32,300	33,900	35,500	37,100		
Adjustment	0	0	7,500	15,000		
489	200	200	300	300		
Total	**59,100**	**68,000**	**92,300**	**116,600**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area
	3.94	232,600	3.90	265,300	3.82	352,800	3.76	438,000
Total		**232,600**		**265,300**		**352,800**		**438,000**
Peak, gpm		**162**		**184**		**245**		**304**

304 gpm Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.
-Adjustments

Additional population	80 residents	discussion with Ridgealnd Community Development Dept. - TAZ 517
	80 residents	discussion with Ridgealnd Community Development Dept - TAZ 518
	150 residents	discussion with Ridgealnd Community Development Dept - Costas Lake - TAZ 519

Waggoner Engineering, Inc.

City of Ridgeland
Wastewater Facility Plan
Projected Flow Calculations

Country Club MS Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
489	166	0	217	0	269	0	321	1	0.17%
515	1,677	48	2,249	64	2,822	80	3,395	97	2.84%
Adjustment		-8		-8		-9		-10	
516	426	48	432	48	437	49	443	50	11.20%
517	479	19	506	20	532	21	559	22	3.91%
519	743	369	779	387	816	405	852	423	49.68%
Adjustment		0		0		75		150	
520	2,390	484	2,751	557	3,111	630	3,472	703	20.24%
521	933	30	893	29	853	28	813	26	3.23%
Adjustment		-10		-11		-13		-13	
Total	**6,813**	**979**	**7,827**	**1,086**	**8,841**	**1,266**	**9,855**	**1,448**	

Average Daily Flow (gpd)

TAZ	2008 Within Service Area	2015 Within Service Area	2025 Within Service Area	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
489	0	0	0	100	100%	100%
515	4,800	6,400	8,000	9,700		
Adjustment	-800	-800	-900	-1,000		
516	4,800	4,800	4,900	5,000		
517	1,900	2,000	2,100	2,200		
519	36,900	38,700	40,500	42,300		
Adjustment	0	0	7,500	15,000		
520	48,400	55,700	63,000	70,300		
521	3,000	2,900	2,800	2,600		
Adjustment	-1,000	-1,100	-1,300	-1,300		
Total	**98,000**	**108,600**	**126,600**	**144,900**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area
	3.81	373,000	3.78	410,100	3.73	472,400	3.69	534,800
Total		**373,000**		**410,100**		**472,400**		**534,800**
Peak, gpm		**259**		**285**		**328**		**371**

371 gpm Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.
-Adjustments

Reductions
10 pop equiv at St. Andrew's School in TAZ 515 moved to Purple Creek
10 pop equiv at Highland Elem School in TAZ 521 moved to Purple Creek

Additions
150 residents in TAZ 519 at Costas Lake (discussion with Ridgeland Community Development Dept.)

Waggoner Engineering, Inc.

City of Ridgeland
Wastewater Facility Plan
Projected Flow Calculations

Country Club MS Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
488	915	13	1,162	16	1,409	20	1,657	23	1.40%
490	60	7	79	9	98	12	117	14	11.99%
514	910	1	1,075	1	1,240	1	1,405	2	0.11%
515	1,677	1,257	2,249	1,687	2,822	2,117	3,395	2,546	75.01%
Adjustment		-205		-223		-240		-257	
516	426	357	432	362	437	366	443	371	83.80%
Adjustment						215		430	
519	743	51	779	53	816	56	852	58	6.86%
520	2,390	1,598	2,751	1,839	3,111	2,080	3,472	2,321	66.85%
521	933	431	893	413	853	394	813	376	46.27%
Adjustment		-143		-159		-174		-190	
540	226	3	243	3	260	3	278	3	1.12%
542	0	0	25	25	49	49	74	74	100.00%
543	476	63	403	53	331	44	259	34	13.20%
Total	**8,753**	**3,432**	**10,090**	**4,079**	**11,427**	**4,943**	**12,763**	**5,805**	

Average Daily Flow (gpd)

TAZ	2008 Within Service Area	2015 Within Service Area	2025 Within Service Area	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
488	1,300	1,600	2,000	2,300	100%	100%
490	700	900	1,200	1,400		
514	100	100	100	200		
515	125,700	168,700	211,700	254,600		
Adjustment	-20,500	-22,300	-24,000	-25,700		
516	35,700	36,200	36,600	37,100		
Adjustment			21,500	43,000		
519	5,100	5,300	5,600	5,800		
520	159,800	183,900	208,000	232,100		
521	43,100	41,300	39,400	37,600		
Adjustment	-14,300	-15,900	-17,400	-19,000		
540	300	300	300	300		
542	0	2,500	4,900	7,400		
543	6,300	5,300	4,400	3,400		
Total	**343,300**	**407,900**	**494,300**	**580,500**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area	
	3.39	1,164,500	3.33	1,356,600	3.25	1,606,300	3.18	1,848,500	
Total		**1,164,500**		**1,356,600**		**1,606,300**		**1,848,500**	**1,284 Design Flow**
Peak, gpm		**809**		**942**		**1,115**		**1,284**	

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.
-Adjustments
  - Reductions 257 pop equiv at St. Andrew's School in TAZ 515 moved to Purple Creek
  - 190 pop equiv at Highland Elem School in TAZ 521 moved to Purple Creek
  - Additions 430 added to Bridgewater area per Chris Bryson

Country Club MS Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008		2015		2025		2035		% of TAZ Within Drainage Basin
	Entire TAZ	Within Drainage Basin & Planning	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	
490	60	1	79	2	98	2	117	3	2.23%
512	2,509	10	2,865	12	3,221	13	3,578	14	0.40%
Adjustment		0		-8		-8		-8	
513	119	11	150	14	181	17	212	20	9.34%
514	910	768	1,075	907	1,240	1,046	1,405	1,185	84.35%
515	1,677	368	2,249	493	2,822	619	3,395	745	21.93%
Adjustment		214		232		250		267	
520	2,390	327	2,751	637	3,111	426	3,472	475	13.68%
521	933	491	893	470	853	449	813	428	52.61%
		147		162		178		194	
522	357	356	515	515	674	674	833	833	100.00%
523	61	51	109	90	157	130	205	170	82.95%
524	851	190	933	208	1,015	226	1,096	244	22.27%
Adjustment		253		278		303		329	
536	494	52	487	51	481	50	474	49	10.44%
537	786	210	822	219	857	229	893	238	26.70%
538	350	350	390	390	430	430	470	470	100.00%
539	896	832	756	702	616	572	475	441	92.88%
540	226	223	243	240	260	257	278	275	98.88%
543	476	413	403	350	331	288	259	225	86.80%
544	1,984	1,984	2,001	2,001	2,017	2,017	2,034	2,034	100.00%
545	1,761	866	1,752	862	1,743	858	1,734	853	49.21%
Total	**16,835**	**8,116**	**18,471**	**8,827**	**20,107**	**9,025**	**21,743**	**9,485**	

Average Daily Flow (gpd)

TAZ	2008	2015	2025	2035	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
	Within Service Area	Within Service Area	Within Service Area	Within Service Area		
490	100	200	200	300	100%	100%
512	1,000	1,200	1,300	1,400		
Adjustment	0	-800	-800	-800		
513	1,100	1,400	1,700	2,000		
514	76,800	90,700	104,600	118,500		
515	36,800	49,300	61,900	74,500		
Adjustment	21,400	23,200	25,000	26,700		
520	32,700	63,700	42,600	47,500		
521	49,100	47,000	44,900	42,800		
	14,700	16,200	17,800	19,400		
522	35,600	51,500	67,400	83,300		
523	5,100	9,000	13,000	17,000		

524		19,000		20,800		22,600		24,400
Adjustment		25,300		27,800		30,300		32,900
536		5,200		5,100		5,000		4,900
537		21,000		21,900		22,900		23,800
538		35,000		39,000		43,000		47,000
539		83,200		70,200		57,200		44,100
540		22,300		24,000		25,700		27,500
543		41,300		35,000		28,800		22,500
544		198,400		200,100		201,700		203,400
545		86,600		86,200		85,800		85,300
Total		**811,700**		**882,700**		**902,600**		**948,400**

Peak Hourly Flow (gpd)

	2008		**2015**		**2025**		**2035**	
	Peak Factor	**Within Service Area**	**Peak Factor**	**Within Service Area**	**Peak Factor**	**Within Service Area**	**Peak Factor**	**Within Service Area**
	3.04	2,470,900	3.01	2,655,400	3.00	2,706,700	2.98	2,823,800
Total		**2,470,900**		**2,655,400**		**2,706,700**		**2,823,800**
Peak, gpm		**1,716**		**1,844**		**1,880**		**1,961**

1,961 Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.
-Adjustments

Reductions
- 8 pop equiv at Ridgealnd High School in TAZ 512 moved to Brashear Creek

Additions
- 267 pop equiv at St. Andrew's in TAZ 515 from other basins
- 194 pop equiv at Highland Elem School in TAZ 521 from other basins
- 329 pop equiv at Olde Towne Middel School in TAZ 524 from other basins

Waggoner Engineering, Inc.

City of Ridgeland
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Country Club MS Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
546	1,246	1,025	1,116	918	986	811	856	704	82.29%
Total	**1,246**	**1,025**	**1,116**	**918**	**986**	**811**	**856**	**704**	

Average Daily Flow (gpd)

TAZ	2008	2008 Within Service Area	2015	2015 Within Service Area	2025	2025 Within Service Area	2035	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
546		102,500		91,800		81,100		70,400	100%	100%
Total		**102,500**		**91,800**		**81,100**		**70,400**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area
	3.79	388,800	3.82	351,000	3.86	312,800	3.89	274,100
Total		**388,800**		**351,000**		**312,800**		**274,100**
Peak, gpm		**270**		**244**		**217**		**190**

190 gpm Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.

Waggoner Engineering, Inc.

City of Ridgeland
Wastewater Facility Plan
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Country Club MS Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
548	3,479	1,160	3,169	1,056	2,859	953	2,550	850	33.33%
Total	**3,479**	**1,160**	**3,169**	**1,056**	**2,859**	**953**	**2,550**	**850**	

Average Daily Flow (gpd)

TAZ	2008	2008 Within Service Area	2015	2015 Within Service Area	2025	2025 Within Service Area	2035	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
548		116,000		105,600		95,300		85,000	100%	100%
Total		**116,000**		**105,600**		**95,300**		**85,000**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area
	3.76	435,900	3.78	399,600	3.81	363,400	3.84	326,800
Total		**435,900**		**399,600**		**363,400**		**326,800**
Peak, gpm		**303**		**278**		**252**		**227**

227 gpm Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.

Waggoner Engineering, Inc.

City of Ridgeland
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Country Club MS Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008 Entire TAZ	2008 Within Drainage Basin & Planning	2015 Entire TAZ	2015 Within Drainage Basin & Planning Area	2025 Entire TAZ	2025 Within Drainage Basin & Planning Area	2035 Entire TAZ	2035 Within Drainage Basin & Planning Area	% of TAZ Within Drainage Basin
535	3,128	2,085	3,188	2,125	3,247	2,165	3,307	2,205	66.67%
536	494	442	487	436	481	430	474	425	89.56%
537	786	576	822	602	857	628	893	654	73.30%
539	896	64	756	54	616	44	475	34	7.12%
545	1,761	894	1,752	890	1,743	885	1,734	881	50.79%
546	1,246	221	1,116	198	986	175	856	152	17.71%
547	2,042	2,042	2,281	2,281	2,520	2,520	2,760	2,760	100.00%
548	3,479	2,319	3,169	2,113	2,859	1,906	2,550	1,700	66.67%
549	3,729	1,298	3,775	1,314	3,821	1,330	3,867	1,346	34.82%
Total	**17,559**	**9,941**	**17,344**	**10,013**	**17,130**	**10,084**	**16,915**	**10,156**	

Average Daily Flow (gpd)

TAZ	2008 Within Service Area	2015 Within Service Area	2025 Within Service Area	2035 Within Service Area	% of Existing Population Expected to Connect to System	% of New Growth Population Expected to Connect to System
535	208,500	212,500	216,500	220,500	100%	100%
536	44,200	43,600	43,000	42,500		
537	57,600	60,200	62,800	65,400		
539	6,400	5,400	4,400	3,400		
545	89,400	89,000	88,500	88,100		
546	22,100	19,800	17,500	15,200		
547	204,200	228,100	252,000	276,000		
548	231,900	211,300	190,600	170,000		
549	129,800	131,400	133,000	134,600		
		0	0	0		
Total	**994,100**	**1,001,300**	**1,008,300**	**1,015,700**		

Peak Hourly Flow (gpd)

	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area
	2.96	2,939,800	2.95	2,958,000	2.95	2,975,600	2.95	2,994,300
Total		**2,939,800**		**2,958,000**		**2,975,600**		**2,994,300**
Peak, gpm		**2,042**		**2,054**		**2,066**		**2,079**

2,079 Design Flow

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.

Country Club MS Sewershed Population and Flow Projections

Population Equivalents (Includes Residential, Employment, and Schools)

TAZ	2008		2015		2025		2035		% of TAZ Within Drainage Basin
	Entire TAZ	Within Drainage Basin & Planning	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	
Diversion Ditch									
534	1,707	720	1,976	833	2,245	947	2,514	1,060	42.17%
535	3,128	1	3,188	1	3,247	1	3,307	1	0.04%
549	3,729	2,430	3,775	2,460	3,821	2,490	3,867	2,521	65.18%
550	800	683	810	692	820	700	831	709	85.37%
Total	**9,364**	**3,834**	**9,749**	**3,987**	**10,134**	**4,139**	**10,519**	**4,291**	

TAZ	2008		2015		2025		2035		% of TAZ Within Drainage Basin
	Entire TAZ	Within Drainage Basin & Planning	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	
Brashear Creek									
479	535	3	676	4	818	5	959	6	0.58%
480	2,734	58	2,971	63	3,207	68	3,444	73	2.11%
481	71	3	194	7	318	12	441	16	3.63%
482	1,129	112	1,118	111	1,107	110	1,096	109	9.93%
483	1,086	820	1,115	842	1,144	864	1,173	886	75.55%
484	1,256	219	1,267	221	1,278	223	1,288	225	17.44%
485	172	172	202	202	233	233	264	264	100.00%
486	2,507	2,333	2,897	2,696	3,288	3,059	3,678	3,422	93.04%
487	160	118	168	124	176	130	183	135	73.78%
490	60	26	79	34	98	42	117	50	43.16%
491	374	374	466	466	559	559	652	652	100.00%
492	0	0	336	336	671	671	1,007	1,007	100.00%
493	829	811	886	867	944	924	1,002	980	97.87%
494	146	135	155	144	164	152	174	161	92.76%
495	77	26	132	45	187	64	242	83	34.08%
496	89	62	92	65	96	67	100	70	70.12%
510	1,211	101	1,183	99	1,155	97	1,127	94	8.36%
511	307	302	350	345	394	388	437	431	98.60%
512	2,509	2,498	2,865	2,853	3,221	3,208	3,578	3,563	99.60%
Adjustment		8		8		8		8	
513	119	107	150	136	181	164	212	193	90.66%
514	910	141	1,075	167	1,240	193	1,405	218	15.54%
523	61	10	109	19	157	27	205	35	17.05%
524	851	661	933	725	1,015	789	1,096	852	77.73%
Adjustment		-253		-279		-304		-328	
525	1,401	1,401	1,585	1,585	1,769	1,769	1,953	1,953	100.00%
526	945	945	945	945	946	946	946	946	100.00%
527	1,534	994	1,718	1,114	1,902	1,233	2,087	1,353	64.82%
528	758	126	787	131	817	136	846	141	16.61%
533	167	93	129	72	91	51	53	30	55.61%

534	1,707	866	1,976	1,003	2,245	1,140	2,514	1,276	50.75%
535	3,128	3,127	3,188	3,186	3,247	3,246	3,307	3,306	99.96%
536	494	442	487	436	481	430	474	425	89.56%
537	786	576	822	602	857	628	893	654	73.30%
539	896	64	756	54	616	44	475	34	7.12%
545	1,761	894	1,752	890	1,743	885	1,734	881	50.79%
546	1,246	221	1,116	198	986	175	856	152	17.71%
547	2,042	2,042	2,281	2,281	2,520	2,520	2,760	2,760	100.00%
548	3,479	3,479	3,169	3,169	2,859	2,859	2,550	2,550	100.00%
549	3,729	1,298	3,775	1,314	3,821	1,330	3,867	1,346	34.82%
Total	**41,255**	**25,414**	**43,902**	**27,279**	**46,549**	**29,144**	**49,196**	**31,011**	

TAZ	2008		2015		2025		2035		% of TAZ Within Drainage Basin
	Entire TAZ	Within Drainage Basin & Planning	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	
Culley Creek									
479	535	10	676	13	818	15	959	18	1.87%
495	77	32	132	55	187	77	242	100	41.41%
496	89	26	92	28	96	29	100	30	29.88%
497	94	94	114	114	134	134	154	154	100.00%
498	176	175	163	163	151	151	139	139	100.00%
499	767	547	1,051	750	1,335	953	1,619	1,155	71.37%
500	2,738	435	3,124	497	3,509	558	3,895	619	15.90%
509	1,152	1,008	1,296	1,134	1,440	1,260	1,584	1,386	87.51%
510	1,211	1,110	1,183	1,084	1,155	1,058	1,127	1,033	91.64%
511	307	4	350	5	394	5	437	6	1.40%
527	1,534	539	1,718	604	1,902	669	2,087	734	35.18%
528	758	632	787	656	817	681	846	706	83.39%
529	1,479	1,450	1,847	1,811	2,216	2,173	2,585	2,535	98.07%
530	887	16	1,088	19	1,290	23	1,491	27	1.79%
531	639	53	636	52	633	52	630	52	8.22%
533	167	74	129	57	91	40	53	24	44.39%
534	1,707	26	1,976	30	2,245	34	2,514	38	1.51%
Total	**14,312**	**6,231**	**16,362**	**7,072**	**18,413**	**7,914**	**20,463**	**8,755**	

TAZ	2008		2015		2025		2035		% of TAZ Within Drainage Basin
	Entire TAZ	Within Drainage Basin & Planning	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	Entire TAZ	Within Drainage Basin & Planning Area	
Hearn Creek									
499	767	220	1,051	301	1,335	382	1,619	463	28.63%
500	2,738	734	3,124	837	3,509	941	3,895	1,044	26.81%
501	253	17	464	30	675	44	886	58	6.54%
507	166	89	174	94	182	98	190	103	54.02%
508	3,581	3,562	3,517	3,498	3,453	3,434	3,388	3,370	99.46%
509	1,152	144	1,296	162	1,440	180	1,584	198	12.49%
529	1,479	29	1,847	36	2,216	43	2,585	50	1.93%
530	887	871	1,088	1,069	1,290	1,267	1,491	1,465	98.21%
531	639	370	636	369	633	367	630	365	57.94%
Total	**11,660**	**6,035**	**13,196**	**6,395**	**14,732**	**6,756**	**16,268**	**7,116**	
TOTAL ALL		**41,514**		**44,733**		**47,953**		**51,173**	

Average Daily Flow (gpd)

TAZ	2008		2015		2025		2035		% of Existing Population Expected to Connect to System
		Within Service Area		Within Service Area		Within Service Area		Within Service Area	
Diversion Ditch									
534		72,000		83,300		94,700		106,000	100%

535		100		100		100		100
549		243,000		246,000		249,000		252,100
550		68,300		69,200		70,000		70,900
Total		**383,400**		**398,600**		**413,800**		**429,100**

TAZ	2008 Within Service Area		2015 Within Service Area		2025 Within Service Area		2035 Within Service Area	% of Existing Population Expected to Connect to System
Brashear Creek								
479		300		400		500		600	100%
480		5,800		6,300		6,800		7,300	
481		300		700		1,200		1,600	
482		11,200		11,100		11,000		10,900	
483		82,000		84,200		86,400		88,600	
484		21,900		22,100		22,300		22,500	
485		17,200		20,200		23,300		26,400	
486		233,300		269,600		305,900		342,200	
487		11,800		12,400		13,000		13,500	
490		2,600		3,400		4,200		5,000	
491		37,400		46,600		55,900		65,200	
492		0		33,600		67,100		100,700	
493		81,100		86,700		92,400		98,000	
494		13,500		14,400		15,200		16,100	
495		2,600		4,500		6,400		8,300	
496		6,200		6,500		6,700		7,000	
510		10,100		9,900		9,700		9,400	
511		30,200		34,500		38,800		43,100	
512		249,800		285,300		320,800		356,300	
Adjustment		800		800		800		800	
513		10,700		13,600		16,400		19,300	
514		14,100		16,700		19,300		21,800	
523		1,000		1,900		2,700		3,500	
524		66,100		72,500		78,900		85,200	
Adjustment		-25,300		-27,900		-30,400		-32,800	
525		140,100		158,500		176,900		195,300	
526		94,500		94,500		94,600		94,600	
527		99,400		111,400		123,300		135,300	
528		12,600		13,100		13,600		14,100	
533		9,300		7,200		5,100		3,000	
534		86,600		100,300		114,000		127,600	
535		312,700		318,600		324,600		330,600	
536		44,200		43,600		43,000		42,500	
537		57,600		60,200		62,800		65,400	
539		6,400		5,400		4,400		3,400	
545		89,400		89,000		88,500		88,100	
546		22,100		19,800		17,500		15,200	
547		204,200		228,100		252,000		276,000	
548		347,900		316,900		285,900		255,000	
549		129,800		131,400		133,000		134,600	
Total		**2,541,500**		**2,728,000**		**2,914,500**		**3,101,200**	

TAZ	2008 Within Service Area		2015 Within Service Area		2025 Within Service Area		2035 Within Service Area	% of Existing Population Expected to Connect to System
Culley Creek								
479		1,000		1,300		1,500		1,800	100%
495		3,200		5,500		7,700		10,000	
496		2,600		2,800		2,900		3,000	
497		9,400		11,400		13,400		15,400	

498		17,500		16,300		15,100		13,900
499		54,700		75,000		95,300		115,500
500		43,500		49,700		55,800		61,900
509		100,800		113,400		126,000		138,600
510		111,000		108,400		105,800		103,300
511		400		500		500		600
527		53,900		60,400		66,900		73,400
528		63,200		65,600		68,100		70,600
529		145,000		181,100		217,300		253,500
530		1,600		1,900		2,300		2,700
531		5,300		5,200		5,200		5,200
533		7,400		5,700		4,000		2,400
534		2,600		3,000		3,400		3,800
Total		**623,100**		**707,200**		**791,200**		**875,600**

TAZ	2008	Within Service Area	2015	Within Service Area	2025	Within Service Area	2035	Within Service Area	% of Existing Population Expected to Connect to System
Hearn Creek									
499		22,000		30,100		38,200		46,300	100%
500		73,400		83,700		94,100		104,400	
501		1,700		3,000		4,400		5,800	
507		8,900		9,400		9,800		10,300	
508		356,200		349,800		343,400		337,000	
509		14,400		16,200		18,000		19,800	
529		2,900		3,600		4,300		5,000	
530		87,100		106,900		126,700		146,500	
531		37,000		36,900		36,700		36,500	
Total		**603,600**		**639,600**		**675,600**		**711,600**	
TOTAL ALL		**4,151,600**		**4,473,400**		**4,795,100**		**5,117,500**	

Peak Hourly Flow (gpd)

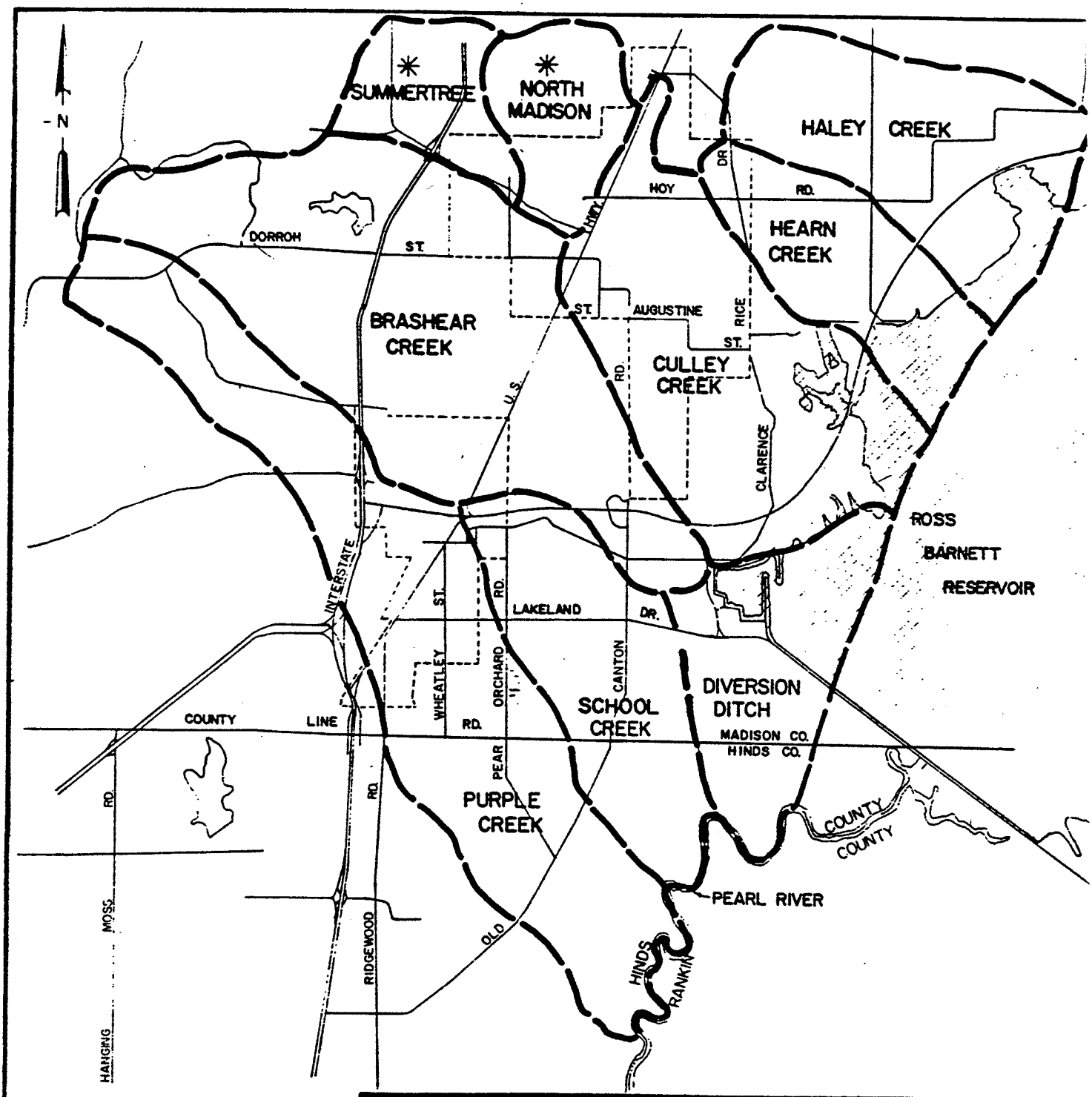
	2008 Peak Factor	2008 Within Service Area	2015 Peak Factor	2015 Within Service Area	2025 Peak Factor	2025 Within Service Area	2035 Peak Factor	2035 Within Service Area	
	2.34	9,717,200	2.31	10,332,900	2.28	10,940,000	2.26	11,541,000	
Total		**9,717,200**		**10,332,900**		**10,940,000**		**11,541,000**	**8,015 Design Flow**
Peak, gpm		**6,748**		**7,176**		**7,597**		**8,015**	

Design Assumptions

- Average Daily flow 100 gpcd
- Peak factors based on 10 States/MDEQ formula.
-Adjustments

8 additional pop equivlanents in TAZ 512 from other basins: Ridgeland High School
-328 pop equivalents moved in TAZ 524 moved to Purple Creek: Olde Towne Middle School

APPENDIX B: EAST MADISON COUNTY SEWAGE DISPOSAL SYSTEM AGREEMENT



DRAINAGE BASINS

EAST MADISON COUNTY SEWAGE DISPOSAL SYSTEM

✳ DRAINS TO BIG BLACK RIVER

JOE A. WAGGONER
Civil Engineer – Brandon / Jackson, Miss.

DRAWN BY: H.L.J.	DATE: 11-24-82	FIGURE NO. 3-1
CHECKED BY: C.H.W.	SCALE: 1" = 6000'	

CHANGES FROM THIS AGREEMENT SHOWN IN YELLOW

EAST MADISON COUNTY

SEWAGE DISPOSAL SYSTEM AGREEMENT

WHEREAS the City of Jackson, Mississippi, is an incorporated city having a population in excess of one hundred fifty thousand (150,000) according to the most recently completed federal decennial census and is a "municipality" within the meaning of Chapter 496, General Laws of Mississippi, Regular Session 1975, appearing as Sections 21-27-161 through 21-27-191, Mississippi Code of 1972, designated as the "Metropolitan Area Waste Disposal Act of 1975"; and

WHEREAS the Town of Ridgeland, Mississippi is a municipality lying wholly or partially within the Metropolitan Area of the Municipality as defined in the Act and has power to own and operate waterworks, water supply systems, sewerage systems, treatment facilities or sewage disposal systems and other facilities or systems for the collection, transportation, treatment and disposal of Wastewater; and

WHEREAS heretofore pursuant to the authority granted by and in compliance with the provisions of Chapter 498, General Laws of Mississippi, Regular Session 1974, appearing as Section 17-13-1 through 17-13-17, Mississippi Code of 1972, the Municipality and the Public Agency did enter into a contract dated February 27, 1975 whereunder the Municipality did agree to construct certain sewage interceptor lines connecting the sewerage system of the Public Agency with the Wastewater Treatment Facility of the Municipality in Hinds County and to provide treatment for and ultimate disposal of the Wastewater collected by the Public Agency; and

WHEREAS heretofore pursuant to the authority granted by and in compliance with the provisions of Chapter 13, Title 17, Mississippi Code of 1972, and Section 21-27-23, Mississippi Code of 1972, the Municipality and the Public Agency did enter into a contract dated March 13, 1975 whereunder the Municipality did agree to construct a sewer interceptor to the Public Agency's South Lagoon, and to receive and provide

treatment for and ultimate disposal of the Wastewater received by said interceptor; and

WHEREAS heretofore pursuant to the authority granted by and in compliance with the provisions of Chapter 13, Title 17, Mississippi Code of 1972, the Municipality and the Public Agency did enter into a contract dated March 13, 1975 whereunder the Municipality did agree to receive and provide treatment for and ultimate disposal of the Wastewater transported by a sewer force main constructed by the Public Agency and connected to the Municipality's Wastewater collection system in the approximate area of Northpointe Subdivision and Old Canton Road; and

WHEREAS subsequent to the execution of the aforesaid contracts the "Metropolitan Area Waste Disposal Act of 1975" has been adopted; and

WHEREAS, in order to be able to take advantage of the beneficial provisions of the "Metropolitan Area Waste Disposal Act of 1975", and also in order to be able to issue bonds for the purposes announced herein in a manner and form which will be marketable and salable to investment bankers, banks and other financial institutions, it is necessary to amend the aforesaid agreements heretofore entered into between the parties hereto dated February 27, 1975, March 13, 1975 and ~~March 13, 1975, and~~

WHEREAS, the Public Agency and other Contracting Parties have requested the Municipality to provide for the construction of the East Madison County portion of the Metropolitan Area Plan for water quality management and for the control and abatement of pollution within the Metropolitan Area by the issuance of revenue bonds of the Municipality payable solely and only from and secured by an irrevocable pledge of the revenues to be received by the Municipality under contracts with the Public Agency and other Contracting Parties within the East Madison County portion of the Metropolitan Area as defined in the Act;

NOW, THEREFORE, the TOWN OF RIDGELAND, MISSISSIPPI and the CITY OF JACKSON, MISSISSIPPI do hereby contract and agree as follows:

ARTICLE I

DEFINITIONS

Section 1.01. DEFINITION OF TERMS. Terms and expressions used in this agreement, including the preamble hereof, shall have the meaning set forth in this Article; terms not otherwise defined shall have the meaning set forth in the Act:

(a) "Act" means Chapter 496, General Laws of Mississippi, Regular Session 1975, appearing as Sections 21-27-161 through 21-27-191, Mississippi Code of 1972, also referred to as the "Metropolitan Area Waste Disposal Act of 1975".

(b) "Additional Contracting Party" means any public agency or other person as defined in Section 21-27-163, Mississippi Code of 1972 not defined as a Contracting Party, with whom Municipality, when approved by the vote of members of the Operating Committee representing two-thirds of the use of the East Madison County Sewage Disposal System, determined by reference to the Annual Payment or Adjusted Annual Payment of the respective Contracting Parties or Additional Contracting Parties, may hereafter make an Agreement for receiving, transporting, treating and disposing of Wastewater through the East Madison County Sewage Disposal System.

(c) "Adjusted Annual Payment" means the Annual Payment, as adjusted due to service to Additional Contracting Parties and/or as required during or after each Fiscal Year.

(d) "Annual Payment" means the amount of money to be paid to Municipality by the Public Agency during each Fiscal Year or part thereof as its proportionate share of the Annual Requirement.

(e) "Annual Requirement" means the components of cost set forth in (a), (b), (c), (d), (e), (f), (g), (h), (i), (j) (k) and (l) of Section 5.02 of this instrument.

(f) "Bond Resolution" means the resolution(s) of the governing body of the Municipality authorizing the issuance of the Bonds and providing for their security and payment, as such resolution(s) may be amended from time to time as therein permitted.

(g) "Bonds" means any bonds to be issued by the Municipality pursuant to the Act and this agreement for the acquisition, construction, expansion, improvement or completion of the East Madison County Sewage Disposal System, whether one or more issues, or any bonds issued to refund same.

(h) "Comprehensive Sewer Use Ordinance" means an ordinance adopted by the Municipality or the Public Agency, as the case may be, pursuant to the

standards and requirements of Federal and State Regulatory Agencies for pollution control and abatement, as such ordinance exists at the date of this agreement or as thereafter modified, adopted, or revised.

(i) "Contracting Party" or "Contracting Parties" means one or more of the following which, prior to the issuance, sale and delivery of the initial issue of the Municipality's Bonds issued to finance the East Madison County Sewage Disposal System, enters into an agreement with the Municipality for receiving, transporting, treating, and disposing of Wastewater through the East Madison County Sewage Disposal System: (1) the Pearl River Valley Water Supply District, (2) the Town of Madison, (3) the Town of Ridgeland and (4) any public agency or other person as defined in Section 21-27-163, Mississippi Code of 1972.

(j) "Domestic Wastewater" means liquid and water-carried waste discharged from sanitary conveniences of dwellings, business buildings, institutions and the like, as distinct from wastes in Industrial Waste.

(k) "East Madison County Sewage Disposal System" means facilities in Madison County, Mississippi, so designated on Exhibit B hereto, as now existing or as hereafter acquired or constructed for receiving, measuring, transporting and disposing of Wastewater from the Contracting Parties and Additional Contracting Parties together with any improvements, enlargements or additions to said facilities and any extensions or replacements of said facilities constructed or otherwise incorporated into said facilities in the future, and any metering equipment therefor located in Hinds County necessary to compute the Annual Requirement. Except for such metering equipment, said term shall include only those facilities which are located in Madison County, Mississippi, and are constructed or acquired, by the Municipality for receiving, measuring, transporting and disposing of Wastewater from the Contracting Parties and Additional Contracting Parties.

(l) "Engineering Report" means that certain report of Clark, Dietz and Associates, Engineers, Inc. and Smith and Sanders, Inc., entitled Jackson Metropolitan/ Regional Water Quality Management Plan dated July, 1973 and transmitted by letter dated October 30, 1973, but only insofar as such report relates to the East Madison County Sewage Disposal System and the West Bank Interceptor, as now and hereafter amended, modified, updated, and expanded by the Municipality or its consulting engineers, including that certain report of Engineering Service, Consulting Engineers, entitled Preliminary Design Report Revised for Culley-Brashear Creek Regional Water Quality Management Plan, dated September, 1976.

(m) "Fiscal Year" means the twelve (12) month period beginning October 1 of each year and applies only to Municipality.

(n) "Industrial Waste" means the liquid and waterborne wastes from industrial processes as distinct from wastes in Domestic Wastewater.

(o) "Infiltration Water" or "Infiltration" means water that has migrated from the ground into the Public Agency's Local Wastewater Facilities or into the East Madison County Sewage Disposal System.

(p) "Inflow Water" or "Inflow" means water which is not Domestic Wastewater or Industrial Waste or Infiltration Water, which enters into the Public Agency's Local Wastewater Facilities or into the East Madison County Sewage Disposal System; Inflow includes but is not limited to, storm water, ground water, roof run-offs, sub-surface drainage, downspouts, yard drains, fountains, ponds and swimming pools.

(q) "Local Wastewater Facilities" means the facilities of Contracting Parties and Additional Contracting Parties for transportation of Wastewater to Points of Entry and any facilities used exclusively or primarily for the pre-treatment of Industrial Waste.

(r) "Month" means calendar month.

(s) "Municipality" means the City of Jackson, Mississippi.

(t) "Operation and Maintenance Expense of the East Madison County Sewage Disposal System" means all costs of operation and maintenance of the Municipality's East Madison County Sewage Disposal System including (for greater certainty but without limiting the generality of the foregoing) repairs and replacements for which no special fund is created in the Bond Resolution, the cost of utilities, supervision, engineering, accounting, auditing, legal services, and any other supplies, services, administrative costs and equipment necessary for proper operation and maintenance of the Municipality's East Madison County Sewage Disposal System, any portion of the last preceeding Fiscal Year Annual Requirement that is unpaid and outstanding at the end of said prior Fiscal Year and payments made by Municipality in satisfaction of judgments resulting from claims not covered by Municipality's insurance or not paid by one particular Contracting Party or Additional Contracting Party as a payment in addition to the Annual Payment arising in connection with the operation and maintenance of the East Madison County Sewage Disposal System. The term also includes the fees of the bank or banks where the Bonds are payable, but shall not include any allowance for depreciation.

(u) "Operation and Maintenance Expense of the Municipality's Wastewater Treatment Facility" means the current expenses paid or accrued in the operation, maintenance and ordinary current repair of the Wastewater Treatment Facility of the Municipality in Hinds County and shall include without limiting the generality of the foregoing insurance premiums and administrative expenses of Municipality and such other reasonable and necessary current expenses relating solely to the Wastewater Treatment Facility, as shall be in accordance with sound accounting practice, but shall not include any allowance for depreciation.

(v) "Operation and Maintenance Expense of the West Bank Interceptor" means all costs of operation and maintenance of the Municipality's West Bank Interceptor.

(w) "Point of Entry" means the point at which Wastewater enters Municipality's East Madison County Sewage Disposal System.

(x) "Public Agency" means the Town of Ridgeland, Mississippi.

(y) "Surcharge" means the cost for discharge of Wastewater of a strength in excess of the standards set forth in the Comprehensive Sewer Use Ordinance for normal Domestic Wastewater, said cost to be computed in accordance with the formula in said Comprehensive Sewer Use Ordinance.

(z) "Wastewater" means Domestic Wastewater and Industrial Waste, together with such Infiltration Water and Inflow Water that may be present.

(aa) "Wastewater Treatment Facility" means the facility of the Municipality for treatment and disposal of Wastewater, situated in Hinds County, Mississippi as such facility now exists and as it may be hereafter improved and/or expanded by Municipality.

(bb) "West Bank Interceptor" means the interceptors so designated on Exhibit B hereto and any other interceptors owned by the Municipality and located in Hinds County, which transport Wastewater from the East Madison County Sewage Disposal System to the Wastewater Treatment Facility.

ARTICLE II

CONSTRUCTION OF FACILITIES BY MUNICIPALITY

Section 2.01. FACILITIES. In order to provide for the receiving, transporting, treating and disposing of Wastewater from the Public Agency and other Contracting Parties and

Additional Contracting Parties, Municipality will design and construct the sewage transportation lines, extensions, improvements and enlargements comprising the East Madison County Sewage Disposal System, as designated on Exhibit B, and will own, operate and maintain the East Madison County Sewage County Disposal System. Municipality shall at all times endeavor to maintain the Engineering Report for the East Madison County Sewage Disposal System in a manner acceptable to Federal and State Regulatory Agencies and take all reasonable measures to assure that the East Madison County Sewage Disposal System is at all times eligible for available Federal and State grants for the construction thereof.

ARTICLE III

DISCHARGE OF WASTEWATER, TITLE AND METERING

Section 3.01. NOTICE. Municipality will give Public Agency not less than thirty (30) days advance written notice of the date on which Public Agency will be authorized to discharge Wastewater into the East Madison County Sewage Disposal System under this agreement; such notice may be waived by written agreement of the parties hereto.

Section 3.02. DISCHARGE. Public Agency shall have the right to discharge Wastewater into the East Madison County Sewage Disposal System, when and if the East Madison County Sewage Disposal System becomes available for use by the Public Agency.

Section 3.03. POINT OF ENTRY. Public Agency shall discharge its Wastewater at the Point or Points of Entry designated for Public Agency in the Engineering Report, or at such additional Points of Entry along the interceptors comprising the East Madison County Sewage Disposal System as may be determined by the Operating Committee to be cost effective, based upon a cost-effective analysis performed by and at the expense of Public Agency. Once a Point of Entry

and an area to be served by that Point of Entry are established and the Municipality has provided, or undertaken to provide, facilities to receive, transport, treat and dispose of Wastewater generated and discharged into the East Madison County Sewage Disposal System by Public Agency at that Point of Entry, Public Agency shall continue to discharge all of such Wastewater at that Point of Entry.

Section 3.04. CONVEYANCE TO POINT OF ENTRY. It shall be the sole responsibility of Public Agency, including any liability incurred in connection therewith, to convey such Wastewater to the Point or Points of Entry through its Local Wastewater Facilities. Public Agency further agrees and covenants at its own expense to complete such construction, expansion or improvements necessary to connect to the East Madison County Sewage Disposal System at such time as the East Madison County Sewage Disposal System shall be available to receive Wastewater from the Public Agency.

Section 3.05. TITLE TO WASTEWATER AND RESPONSIBILITY THEREFOR. Title to all Wastewater discharged hereunder shall remain in Public Agency to Points of Entry, and upon passing through Municipality's meters installed at Points of Entry title thereto and to all effluent therefrom shall pass to Municipality. As between the parties, each party hereto agrees to save and hold the other party harmless from all claims, demands, and causes of action which may be asserted by anyone on account of the reception, transportation, delivery, and disposal while title remains in such party. Provided, however, that any charge against the Municipality resulting from the operation of the East Madison County

Sewage Disposal System shall be deemed an Operation and Maintenance Expense of the East Madison County Sewage Disposal System for purposes of determining the Annual Requirement, regardless of whether title to the Wastewater giving rise to any such charge against the Municipality had vested in the Municipality. This covenant is not made for the benefit of any third party. Municipality takes the responsibility as between the parties hereto for the proper reception, transportatio treatment and disposal of all such Wastewater received by it, and the responsibility of and right to ownership of the effluent from such operation, transportation, treatment and disposal; provided, however, that the Wastewater meets applicable standards and restrictions of the Comprehensive Sewer Use Ordinance of the Municipality.

Section 3.06. METERING. At each Point of Entry the necessary equipment and devices of standard type for measuring properly all Wastewater shall be installed, operated and maintained. Such meters and other equipment shall be the property of the Municipality. Public Agency shall have access to such metering equipment at all reasonable times for inspection and examination, but the reading, calibration, and adjustment thereof shall be done only by employees or agents of Municipality in the presence of a representative of the Public Agency if requested by the Public Agency. All readings of meters will be entered upon proper books of record maintained by the Municipality. Upon written request Public Agency may have access to said record books during reasonable business hours.

Not more than once each month, Municipality shall calibrate its meters, if requested in writing by Public Agency to do so, in the presence of a representative of Public Agency, and the parties shall jointly observe any adjustments which are made to the meters in case any adjustment is found to be necessary.

If, for any reason, any meters are out of service or out of repair, or if, upon any test, the percentage of inaccuracy of any meter is found to be five percent (5%) or more, plus or minus, registration thereof shall be corrected for a period of time extending back to the time when such inaccuracy began, if such time is ascertainable, and if such time is not ascertainable, then for a period extending back one-half (1/2) of the time elapsed since the date of the last calibration, but in no event further back than a period of three (3) months.

Public Agency may, at its option and its own expense, install and operate a check meter to check each meter installed by Municipality, but the measurement for the purpose of this agreement shall be solely by Municipality's meters, except in the cases hereinbelow in this Section specifically provided to the contrary. All such check meters shall be of standard make and shall be subject at all reasonable times to inspection and examination by any employee or agent of Municipality, but the reading, calibration and adjustment thereof shall be made only by Public Agency, except during any period when a check meter may be used by Municipality, with the written consent of the Public Agency, for measuring the volume of Wastewater delivered into the East Madison County Sewage Disposal System, in which case the reading, calibration and adjustment thereof shall be made by Municipality with like effect as if such check meter or meters had been furnished or installed by Municipality, to the extent specified in the written consent of the Public Agency.

Section 3.07. INFILTRATION/INFLOW. The total volume of Wastewater from the East Madison County Sewage Disposal System shall be metered at points at or near the line dividing Madison and Hinds Counties, Mississippi, and compared to the aggregate volume of Wastewater metered at the Points of Entry for all Contracting Parties and Additional Contracting Parties. In the event a difference results from such comparison,

the difference shall be applied proportionately among the Contracting Parties and Additional Contracting Parties. The Public Agency's proportionate share of any such difference shall be a percentage obtained by dividing its total metered volume of Wastewater at its Point or Points of Entry by the aggregate volume of Wastewater metered at all Points of Entry in the East Madison County Sewage Disposal System and multiplying this percentage times the difference between the total volume of Wastewater metered at or near the line dividing Madison and Hinds Counties, Mississippi, and the aggregate volume metered at the Points of Entry of all Contracting Parties and Additional Contracting Parties in the East Madison County Sewage Disposal System.

Section 3.08. UNIT OF MEASUREMENT. The unit of measurement for Wastewater delivered hereunder shall be 1,000,000 gallons, U.S. Standard Liquid Measure, or such other lawful unit as the Municipality may determine to be appropriate and applicable.

ARTICLE IV

COMPREHENSIVE SEWER USE ORDINANCE

Section 4.01. ADMISSIBLE DISCHARGES. Public Agency agrees that Wastewater discharged into the East Madison County Sewage Disposal System by it shall be of such quality that:

(a) effluent discharged from Municipality's Wastewater Treatment Facility meets the current standards of the Mississippi Air and Water Pollution Control Commission and the United States Environmental Protection Agency and any other governmental body having legal authority to set standards for such effluents; and

(b) the East Madison County Sewage Disposal System, the West Bank Interceptor and Municipality's Wastewater Treatment Facility are not damaged to the extent to cause unnecessary repairs or replacements or increased Operation and Maintenance Expense of the East Madison County Sewage Disposal System, the West Bank Interceptor, or increased Operation and Maintenance Expense of the Municipality's Wastewater Treatment Facility.

Section 4.02. COMPREHENSIVE SEWER USE ORDINANCE-MUNICIPALITY. The Municipality shall adopt and maintain in effect a Comprehensive Sewer Use Ordinance in conformity with the standards and restrictions of the United States Environmental Protection Agency and the Mississippi Air and Water Pollution Control Commission and that of any other governmental body having legal authority to set such standards and restrictions. Municipality shall periodically review and, if necessary, revise its Comprehensive Sewer Use Ordinance to insure compliance with Federal and State standards and requirements and that of any other governmental body having legal authority to set such standards and restrictions.

Section 4.03. COMPREHENSIVE SEWER USE ORDINANCE-PUBLIC AGENCY. The Public Agency shall adopt and maintain in effect a Comprehensive Sewer Use Ordinance compatible with the Comprehensive Sewer Use Ordinance of the Municipality and in conformity with the standards and restrictions of the United States Environmental Protection Agency and the Mississippi Air and Water Pollution Control Commission and that of any other governmental body having legal authority to set such standards and restrictions. The Public Agency shall periodically review and, if necessary, revise its Comprehensive Sewer Use Ordinance to insure compliance with Federal and State standards and requirements and that of any other governmental body having legal authority to set such standards and restrictions. Public Agency agrees that it will file a copy of its Comprehensive Sewer Use Ordinance with the Municipality as soon as the same Comprehensive Sewer Use Ordinance is prepared and available; provided, however, that under no circumstances will Public Agency be permitted to begin discharging Wastewater into the East Madison County Sewage Disposal System under this agreement prior to filing a copy of its Comprehensive Sewer Use Ordinance with the Municipality.

Section 4.04. INDUSTRIAL WASTE. Municipality and Public Agency agree to work jointly in processing applications for discharge of Industrial Waste into any sewer system operated by Public Agency which ultimately discharges Wastewater into the East Madison County Sewage Disposal System. Municipality and Public Agency shall have the authority to withhold approval of an application for discharge of Industrial Waste, but only in accordance with standards set out in the applicable Comprehensive Sewer Use Ordinance.

Public Agency covenants and agrees to pay to the Municipality amounts recovered under the industrial cost recovery system of its Comprehensive Sewer Use Ordinance from the identifiable industrial users of the East Madison County Sewage Disposal System and Municipality's Wastewater Treatment Facility to be utilized as follows:

(a) Fifty percent (50%) of the amount so recovered, including any interest earned thereon, shall be returned to the U.S. Treasury on an annual basis.

(b) A minimum of forty percent (40%) of the total amount received, including any interest earned thereon, shall be deposited in a separate fund and used solely for the eligible costs of the expansion or reconstruction of the East Madison County Sewage Disposal System and the Municipality's Wastewater Treatment Facility as approved by the Environmental Protection Agency. Provided that the proportion of such fund expended for the expansion and reconstruction of the Wastewater Treatment Facility of the Municipality shall not be greater than the proportion of Wastewater received from the East Madison County Sewage Disposal System at the Wastewater Treatment Facility.

(c) Ten percent (10%) of the total amount received shall be equally divided by Public Agency and Municipality for unrestricted use. Such division shall be made not less often than annually.

Provided, that the funds collected pursuant to industrial cost recovery system shall be allocated in accordance with Public Law 92-500 as now or hereafter amended and the standards and requirements of the then current federal regulations thereunder.

Public Agency may authorize discharge of Industrial Waste to its Local Wastewater Facilities subject to the foregoing provisions and subject to the filing by applicant industry of a statement, a copy of which shall be forwarded to Municipality, showing the average analysis of the Industrial Waste it wishes to discharge, but only if such Industrial Waste has passed through an inspection manhole located so as to be accessible at all times to inspectors of Municipality and of Public Agency. If inspection indicates that damage may be resulting from the discharge, the industry permit shall be revoked by Public Agency unless and until the industry establishes successful remedial measures and pays to the Municipality any damages resulting from such discharge.

ARTICLE V

FINANCE

Section 5.01. ISSUANCE OF BONDS. Municipality will pay for the cost of acquisition and construction of the East Madison County Sewage Disposal System and will issue its Bonds pursuant to Section 21-27-161 through 21-27-191, Mississippi Code of 1972, in such amounts as necessary to produce funds which, together with other available funds, will be sufficient to accomplish such acquisition and construction Such funds shall constitute a trust fund for the purposes provided in the Bond Resolution and shall be kept separate and distinct from all other funds of Municipality. This provision shall apply to the avails of all Bonds now or hereafter to be issued for the purpose of acquiring, constructing, improving, enlarging, extending and repairing the East Madison County Sewage Disposal System.

Section 5.02. ANNUAL REQUIREMENT. It is acknowledged and agreed that payments to be made under this agreement and similar agreements with other Contracting Parties and Additional Contracting Parties are the only source available to Municipality hereunder to provide the Annual Requirement, and that the Municipality has a specific statutory duty as

set out in Section 21-27-181, Mississippi Code of 1972, to fix, maintain and collect and, from time to time, revise the rates and charges for services to be rendered and made available to Public Agency hereunder so that the Annual Requirement shall at all times be not less than an amount sufficient to pay or provide for the payment, during the current Fiscal Year, of:

(a) the principal of and the interest on the Bonds, as such principal and interest become due, less any interest to be paid out of bond proceeds as permitted by the Bond Resolution;

(b) during each Fiscal Year, the amount required to be deposited into any special or reserve funds in order to establish or maintain such funds pursuant to the provisions of the Bond Resolution adopted pursuant to the Act and this agreement;

(c) recovery by the Municipality during each Fiscal Year of sales tax revenues withheld for repayment of grants received by the Municipality pursuant to the Water Pollution Abatement Grant Program of the State of Mississippi for the construction, expansion and improvement of the East Madison County Sewage Disposal System, plus recovery in the first Fiscal Year of any sales tax revenues already withheld for any such grant;

(d) recovery by the Municipality during each Fiscal Year of the proportionate share of the principal of and interest on outstanding bonds of the Municipality which will mature and become due during such Fiscal Year from the proceeds of which were paid costs of construction, expansion and improvement of those portions of the Purple Creek Interceptor located in Madison County, Mississippi, and shown on Exhibit B hereto.

(e) recovery by the Municipality during each Fiscal Year of the proportionate share of the sales tax revenues withheld for repayment of grants received by the Municipality pursuant

to the Water Pollution Abatement Grant Program of the State of Mississippi from the proceeds of which were paid costs of construction, expansion and improvement of those portions of the Purple Creek Interceptor located in Madison County, Mississippi, and shown on Exhibit B hereto;

(f) all Operation and Maintenance Expense of the East Madison County Sewage Disposal System;

(g) the proportionate share of the Operation and Maintenance Expense of the West Bank Interceptor;

(h) recovery by the Municipality during each Fiscal Year of a proportionate share of the principal of and interest on outstanding bonds of the Municipality which will mature and become due during such Fiscal Year issued for construction, expansion and improvement of the West Bank Interceptor;

(i) recovery by the Municipality during each Fiscal Year of a proportionate share of the sales tax revenues withheld for repayment of grants received by the Municipality pursuant to the Water Pollution Abatement Grant Program of the State of Mississippi for construction, expansion and improvement of the West Bank Interceptor;

(j) recovery by the Municipality during each Fiscal Year of a proportionate share of the sales tax revenues withheld for repayment of grants received by the Municipality pursuant to the Water Pollution Abatement Grant Program of the State of Mississippi for construction, expansion and improvement of the Wastewater Treatment Facility of the Municipality in Hinds County;

(k) recovery by Municipality during each Fiscal Year of a proportionate share of the principal of and interest on outstanding bonds of the Municipality which will mature and become due during such Fiscal Year issued for construction, expansion and improvement of the Wastewater Treatment Facility of the Municipality in Hinds County; and

(l) the proportionate share of the Operation and Maintenance Expense of the Municipality's Wastewater Treatment Facility in Hinds County.

The proportionate share allocable to the East Madison County Sewage Disposal System under subparagraph (d) of this Section 5.02 shall be obtained by dividing that portion of the cost of all such facilities located in Madison County funded out of bonds proceeds by the total amount of the bonds issued by the Municipality from which such construction costs were paid.

The proportionate share allocable to the East Madison County Sewage Disposal System under subparagraph (e) of this Section 5.02 shall be obtained by dividing 25 per cent of the eligible item cost of construction, expansion and improvement of those portions of the Purple Creek Interceptor located in Madison County, Mississippi, and shown on Exhibit B hereto, by the total amount of grants received from the Water Pollution Abatement Grant Program of the State of Mississippi from the proceeds of which a portion of such costs were paid.

The proportionate share allocable to the East Madison County Sewage Disposal System under subparagraphs (g), (h), and (i) of this Section 5.02 shall be obtained by dividing the total metered volume of Wastewater measured at the metering points at or near the Hinds-Madison County line by the total volume of Wastewater processed through the Municipality' Wastewater Treatment Facility, excluding therefrom the metered volume of Wastewater measured on the discharge side of the Municipality's Rankin Pumping Station and the metered volume of Wastewater from Caney Creek Basin and those basins South of Caney Creek measured before entry into the Municipality's interceptor at the Municipality's Wastewater Treatment Facility.

The proportionate share allocable to the East Madison County Sewage Disposal System under subparagraphs (j), (k) and (l) of this Section 5.02 shall be obtained by dividing the total metered volume of Wastewater from the East Madison County Sewage Disposal System metered at or near the line dividing Madison and Hinds Counties, Mississippi, by the total volume of Wastewater processed through the Wastewater

Section 5.03. PAYMENTS BY PUBLIC AGENCY.

(a) Public Agency hereby unconditionally and irrevocably covenants and agrees to pay to the Municipality during each Fiscal Year or part thereof from the revenue derived by the Public Agency from its combined waterworks system, water supply system, sewerage system and sewage disposal system or, at the option of the Public Agency, from any other moneys legally available for such purpose to the Public Agency, at the time and in the manner hereinafter provided, an Annual Payment representing its proportionate share of the Annual Requirement, commencing with the first Fiscal Year beginning after all Contracting Parties shall be contributing Wastewater to the East Madison County Sewage Disposal System. The Public Agency's Annual Payment shall be a percentage of the Annual Requirement obtained by dividing the Public Agency's estimated contributing volume of Wastewater to the East Madison County Sewage Disposal System for such year by the total estimated contributing volume of Wastewater to the East Madison County Sewage Disposal System by all Contracting Parties and Additional Contracting Parties being served at the beginning of each such year. At the close of each Fiscal Year the Municipality shall redetermine the Public Agency's Annual Payment by dividing the Public Agency's actual metered contributing volume of Wastewater to the East Madison County Sewage Disposal System by the total actual metered contributing volume of Wastewater to the East Madison County Sewage Disposal System by all Contracting Parties and Additional Contracting Parties and the Public Agency's Adjusted Annual Payment shall be calculated by multiplying the Public Agency's redetermined percentage times the Annual Requirement. The difference between the Adjusted Annual Payment and the Annual Payment, if any, when determined, shall be applied as a credit or debit to the Public Agency's account with the Municipality and shall be credited or debited to the Public Agency's next subsequent payment.

For each Fiscal Year or part thereof prior to the first Fiscal Year commencing after all Contracting Parties are contributing Wastewater to the East Madison County Sewage Disposal System, without regard to whether the Public Agency shall be receiving service hereunder, the Public Agency covenants and agrees to pay to the Municipality an Annual Payment which shall be that percent of the components of the Annual Requirement set out in Paragraphs (a), (b), (c), (d) and (e) of Section 5.02 hereof allocated to the Public Agency in Exhibit A attached hereto and made a part of this agreement by reference. In addition, for each Fiscal Year or part thereof prior to the first Fiscal Year commencing after all Contracting Parties are contributing Wastewater to the East Madison County Sewage Disposal System, the Public Agency, if then contributing Wastewater to the East Madison County Sewage Disposal System, covenants and agrees to pay to the Municipality an Annual Payment representing its proportionate share of the components of the Annual Requirement set out in Paragraphs (f), (g), (h), (i), (j), (k) and (l) of Section 5.02 hereof, which proportionate share shall be that allocated amount determined in the manner described above for establishing the Public Agency's percentage of the Annual Requirement for each Fiscal Year occurring after all Contracting Parties shall be contributing Wastewater to the East Madison County Sewage Disposal System. The Municipality will for two years defer payment of principal on those bonds which are initially issued pursuant to Section 5.01 hereunder. A debt service reserve will be created from the proceeds of that bond issue which will pay the interest due on the bonds during the two-year deferment period. When the two-year debt service reserve is depleted or at such other time as the Municipality may direct, the Municipality will, anything herein to the contrary notwithstanding, be entitled to receive from the Public Agency the appropriate Annual Payment prescribed in the foregoing Paragraphs of the Section 5.03. Whether the appropriate Annual Payment is for all or a part

of a Fiscal Year, the Municipality may, anything herein to the contrary notwithstanding, require the appropriate Annual Payment to be made on a monthly basis on or before the tenth (10th) day of each month remaining in said Fiscal Year, and the Public Agency shall be obligated to make said monthly payments under the same terms and limitations as is set forth herein for succeeding Fiscal Years.

(b) The Public Agency recognizes and agrees that the covenants and agreements herein set forth to be performed on behalf of the Public Agency shall be for the benefit, protection and security of the holders of the Bonds, and the Public Agency does consent and agree that the Municipality may secure and finance the issuance of the Bonds by an unconditional and irrevocable pledge of all sums to be received pursuant to this agreement. Accordingly the Public Agency does hereby unconditionally and irrevocably obligate itself and covenant and agree to pay to Municipality an Annual Payment which shall be an amount equal to its proportionate share of the Annual Requirement; Public Agency does agree that so long as any of the Bonds or interest thereon shall be outstanding or unpaid, the obligation of the Public Agency to pay its Annual Payment representing its proportionate share of the Annual Requirement shall be absolute and unconditional, shall not be subject to any counterclaim, set-off, deduction, release, recoupment or defense and shall remain in full force and effect until the principal of and interest on the Bonds shall have been fully paid. Nothing contained in this Section shall be construed to release the Municipality from the performance of any of the agreements on its part herein contained, and in the event the Municipality should fail to perform any such agreement on its part, the Public Agency may institute such action against the Municipality as the Public Agency may deem necessary to compel performance or recover its damages for nonperformance as long as such action shall not do violence to the agreements on the part of the Public Agency

contained in the preceeding sentence.

If, and as long as, service is discontinued hereunder for any reason whatsoever, the Public Agency's Annual Payment for the period during which service is discontinued shall be that percentage of the components of the Annual Requirement set out in Paragraphs (a), (b), (c), (d) and (e) of Section 5.02 hereof determined by dividing the volume of Wastewater actually discharged into the East Madison County Sewage Disposal System by the Public Agency during the corresponding period of the last preceding Fiscal Year during which the East Madison County Sewage Disposal System was operational by the total volume of Wastewater discharged into the East Madison County Sewage Disposal System by all Contracting Parties and Additional Contracting Parties during such period; provided, that in the event service is discontinued after one or more Contracting Parties are contributing Wastewater to the East Madison County Sewage Disposal System, but prior to the time when all Contracting Parties are contributing Wastewater to the East Madison County Sewage Disposal System, then Public Agency covenants and agrees to pay that percentage of the Annual Requirement set out in paragraphs (a), (b), (c), (d) and (e) of Section 5.02 hereof as is set out in Exhibit A attached hereto and incorporated herein by reference.

This page appears the same in text.

(c) The Public Agency's Annual Payment shall be made to the Municipality in twelve equal monthly installments.

(d) The Annual Payments set forth in this Section shall be considered the basic charge for the service hereunder, and the Public Agency shall pay a surcharge if required by the Comprehensive Sewer Use Ordinance of the Municipality in the manner set forth therein.

(e) Public Agency represents, covenants and agrees that the services to be obtained pursuant to this agreement are essential and necessary to the operating of Public Agency and its combined waterworks system, water supply system, sewerage system and sewage disposal system and that

each Annual Payment to be made hereunder by it will constitute reasonable and necessary "operating expense" of Public Agency's combined waterworks system, water supply system, sewerage system and sewage disposal system within the meaning of Section 21-27-173, Mississippi Code of 1972, and within the meaning of the provisions of all ordinances hereinafter adopted authorizing the issuance of all revenue bond issues of Public Agency with respect to any or all parts of such combined waterworks system, water supply system, sewerage system and sewage disposal system, with the effect that Public Agency's obligation to make payments from revenues derived from its combined waterworks system, water supply system, sewerage system and sewage disposal system under this agreement shall have priority over its obligations to make payments of the principal of and interest on any and all of such of its revenue bonds hereafter issued, and shall be subordinate only to the amounts required to be paid from the net revenues of such combined systems for principal of and interest on bonds of the Public Agency outstanding at the effective date of this agreement and which are payable solely from such net revenues.

(f) On or before September 1 of each year, Municipality shall furnish Public Agency with a schedule of the monthly payments to be made by Public Agency to the Municipality for the ensuing Fiscal Year. Said schedule shall be established by Municipality based on the Annual Budget for the East Madison County Sewage Disposal System, as adopted by the Municipality pursuant to Section 7.01, which shall include but not be limited to, prior years usage information and customer service data provided to Municipality by Public Agency. Public Agency hereby agrees that it will make such payments to the Municipality on a current basis for the then present month on or before the 10th day of such month of such Fiscal Year. If the Public Agency at any time disputes the amount to be paid by it to Municipality, the Public Agency shall nevertheless promptly make the payment or

payments determined by Municipality, and, if it is subsequently determined by agreement, arbitration or court decision that such disputed payments made by Public Agency should have been less, Municipality shall promptly revise and reallocate the charges among all parties then being served by Municipality in such manner that Public Agency will recover its overpayment. In the event Public Agency is assessed a surcharge pursuant to the Comprehensive Sewer Use Ordinance of the Municipality, Municipality will bill Public Agency for such surcharge on or before the fifth day of the month following the determination of the surcharge and Public Agency shall pay such surcharge on or before the tenth day of the month of receipt of any such bill.

(g) If Public Agency's Annual Payment is redetermined as is herein provided, Municipality will promptly furnish all Contracting Parties and Additional Contracting Parties with an updated schedule of monthly payments reflecting such redetermination.

Section 5.04. MAINTENANCE AND ADJUSTMENT OF RATES. The Public Agency covenants and agrees that so long as this agreement remains in effect and until the principal of and interest on the Bonds shall have been paid in full, the Public Agency shall establish and maintain and from time to time adjust the rates charged by the Public Agency for services of its combined waterworks system, water supply system, sewerage system and sewage disposal system, to the end that the revenues therefrom will be sufficient at all times to pay (i) the costs of operating and maintaining such system including the Public Agency's obligation to pay the Annual Payment to Municipality under this agreement, and (ii) all of the Public Agency's obligations under and in connection with revenue bonds heretofore or hereafter issued which may be secured by revenues of such system. The Public Agency agrees to retain consulting engineers of its choice having experience in the matter of water and sewerage rates to advise the Public Agency at least annually whether, when

and to what extent its rates should be so adjusted, and to furnish a copy of such report to the Municipality.

ARTICLE VI

GENERAL PROVISIONS

Section 6.01. CONSTRUCTION. Municipality agrees to proceed promptly and with due diligence with the construction of all the facilities necessary to the performance of its obligations hereunder. Municipality shall not be liable to the Public Agency for any damages occasioned by delay in the commencement of such service to Public Agency.

Section 6.02. CONDITIONS PRECEDENT. It is expressly understood and agreed that the obligations on the part of the Municipality under this agreement to complete and operate the East Madison County Sewage Disposal System shall be conditioned upon the following:

(a) Execution of agreements in substantially the form of this agreement with each of the other Contracting Parties who heretofore executed contracts similar to the contract executed by the Municipality and the Public Agency dated February 27, 1975.

(b) Sale of bonds in an amount recommended by the Municipality's consulting engineers and fiscal agent, which, together with available federal funds and the proceeds of any necessary further issues of sewer revenue bonds of The East Madison County Sewage Disposal System, will be adequate to insure construction of the System.

Public Agency agrees to assist Municipality with the preparation of all documents relating to the sale of the Bonds and to authorize the inclusion in the Municipality's Official Statement relating to the sale of the Bonds any information, audit reports, or other financial data of the Public Agency that, in the opinion of Municipality, should be so included.

Section 6.03. ACQUISITION AND USE OF PUBLIC PROPERTY, EASEMENTS AND RIGHTS-OF-WAY. Public Agency authorizes use by the Municipality of any and all real property, streets and general utility or sewer easements of Public Agency for construction, operation and maintenance of the East Madison County Sewage Disposal System, subject however, to all of the Public Agency's ordinances respecting the manner of such

use and restoration of lands, pavement or improvements resulting from exercise of the rights provided in this Section, including the cost of relocation as an expense of the East Madison County Sewage Disposal System. Public Agency shall assist Municipality within the limits of Public Agency's jurisdiction in obtaining easements and rights-of-way necessary to the construction and operation and maintenance of the East Madison County Sewage Disposal System through use of its good offices and its powers and authority. All expenses incurred by Public Agency under this Section shall be deemed an expense of the East Madison County Sewage Disposal System, and not an expense of the Public Agency.

Section 6.04. USE OF REVENUES OF EAST MADISON COUNTY SEWAGE DISPOSAL SYSTEM. All revenues received from any source whatsoever by Municipality by reason of its ownership of the East Madison County Sewage Disposal System shall, to the extent permitted by law, be credited to the funds of the East Madison County Sewage Disposal System as established in the Bond Resolutions. Municipality will operate such East Madison County Sewage Disposal System in accordance with accepted good business practices.

Section 6.05. FORCE MAJEURE. In case by reason of "Force Majeure" either party hereto shall be rendered unable wholly or in part to carry out its obligations under this agreement, then if such party shall give notice and full particulars of such "Force Majeure" in writing to the other party within a reasonable time after occurrence of the event or cause relied on, the obligation of the party giving such notice, so far as it is affected by such "Force Majeure," with the exception of the obligation of Public Agency to make the payments required in Section 5.03(b) hereof, shall be suspended during the continuance of the inability then claimed, but for no longer period, and any such party shall endeavor to remove or overcome such inability with all reasonable dispatch. It is understood and agreed that the settlement of strikes and lockouts shall be entirely within

the discretion of the party having the difficulty, and that the above requirement that any Force Majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or parties when such settlement is unfavorable to it in the judgment of the party having the difficulty.

Section 6.06. INSURANCE. The Bond Resolution will contain appropriate provisions requiring Municipality to carry insurance for purposes and in amounts which would ordinarily be carried by a privately owned utility company under contract to perform services similar to those undertaken by Municipality in this agreement. Such provisions will be so designed as to afford protection not only for the holders of the Bonds but to assure and facilitate, to the extent feasible and practicable, the restoration of damaged or destroyed properties and to minimize the interruption of service to Public Agency and others.

Section 6.07. STATISTICAL DATA. Approximately thirty (30) days before Municipality determines that its facilities for service will be available to Public Agency and thereafter no less than semiannually Public Agency shall furnish to Municipality under Certificate, the following information for the preceding unreported period: the number of active Domestic Wastewater connections, active commercial and business Wastewater connections, active industrial connections, and active educational institutions, hospitals or other similar institutional connections, tributary to the Public Agency's Local Wastewater Facilities which will be served by the East Madison County Sewage Disposal System, together with the total measured water and/or Wastewater volumes for each class enumerated used for billing by the Public Agency, to permit Municipality to accumulate statistical data which will enable it to render better service and facilitate plans for betterment and future facilities expansion.

Section 6.08. OPERATING COMMITTEE. The Public Agency's governing body shall annually appoint its Mayor or one of its officers as a voting member of the Operating Committee to be known as "The East Madison County Operating Committee" for the East Madison County Sewage Disposal System. The Director of Public Works of the Municipality shall be an ex officio non-voting member of the Operating Committee. The Operating Committee, at its first called meeting, shall elect a Chairman, a Vice Chairman and a Secretary. The Operating Committee shall establish bylaws governing the election of officers, meeting dates and other matters pertinent to the functioning of the Operating Committee, including the right to employ necessary clerical or secretarial help, purchase necessary supplies, equipment and provide and rent quarters therefor. The Operating Committee shall consult with and advise the Municipality, with regard to the following matters pertaining to the East Madison County Sewage Disposal System:

(i) future plans for expansion and industrial development;

(ii) methods for improved service;

(iii) the inclusion of Additional Contracting Parties;

(iv) the proposed Annual Budget;

(v) review of the Annual Report and Annual Audit; and

(vi) all such matters as relate to management, operation and maintenance of the East Madison County Sewage Disposal System.

The Committee shall have the right to inspect or cause to be inspected annually, all physical elements of the East Madison County Sewage Disposal System. A copy of the minutes of the meetings of the Operating Committee and all other pertinent data, shall be provided to the Municipality.

The Operating Committee shall have the sole authority by the vote of its members representing two-thirds of the use of the East Madison County Sewage Disposal System to approve or disapprove the application of any person or

entity to become an Additional Contracting Party and to determine a reasonable one-time connection fee to be paid by any Contracting Party or Additional Contracting Party approved for connection. The funds received from such connection fees shall be collected by the Municipality and applied toward funding the Annual Budget of the East Madison County Sewage Disposal System for the ensuing fiscal year.

The term of membership on the Operating Committee shall be for twelve months beginning on October 1st of each year and ending on September 30th of the succeeding year. A member may serve more than one term if so appointed by the governing body of the Public Agency. All expenses of the Operating Committee shall be considered as an operating expense of the East Madison County Sewage Disposal System. No portion of the expenses of the Operating Committee shall be paid by the Municipality except to the extent same shall have been included in the Annual Budget for the East Madison County Sewage Disposal System for the operation of the East Madison County Sewage Disposal System, as set out in Section 7.01 hereof.

Except as otherwise provided, voting on the Operating Committee shall be on the basis of a majority of the use of the East Madison County Sewage Disposal System determined by reference to the Annual Payment or Adjusted Annual Payment of the respective Contracting Parties or Additional Contracting Parties.

Section 6.09. MUNICIPALITY CONTRACTS WITH OTHERS. The Municipality reserves the right to contract with other persons, natural or corporate, private or public, to perform services similar to those to be performed under this agreement or other services; provided that such contracts shall not provide service through the East Madison County Sewage Disposal System except as provided in Section 6.08.

Section 6.10. PUBLIC AGENCY CONTRACTS WITH OTHERS. Public Agency shall have the right to enter into contracts with other persons not more than one mile outside the limits

of Public Agency, natural or corporate, private or public, to receive Wastewater from such persons. Public Agency covenants and agrees that it will not enter into any contract for receiving Wastewater from any source that is located more than one (1) mile outside the corporate limits of Public Agency or extend its sewage system more than one mile outside the limits of the Public Agency, other than an area served by Public Agency pursuant to certification by the Mississippi Public Service Commission, without the prior written approval of the Municipality, which approval shall not be unreasonably withheld.

Section 6.11. ANNUAL REPORT AND AUDIT OF EAST MADISON COUNTY SEWAGE DISPOSAL SYSTEM. The Municipality shall, at the close of each Fiscal Year, prepare and furnish to the Public Agency an Annual Report which shall include an audit of the East Madison County Sewage Disposal System by a competent and independent certified public accountant. Such report shall contain such matters and information as may be considered necessary and useful by Municipality and the Operating Committee.

Section 6.12. PUBLICATION, REFERENCE WORKS, GOVERNMENTAL REGULATIONS. In each instance herein where reference is made to a publication, reference work or Federal or State regulation, it is the intention of the parties that at any given time the then current edition of any such publication, reference work, or Federal or State regulation shall apply. If a publication or reference work is discontinued or ceases to be the generally accepted work in its field or if conditions change or new methods or processes are adopted by the Municipality, the Municipality reserves the right to adopt new standards, which new standards shall be promptly communicated to Public Agency in writing.

ARTICLE VII

MUNICIPALITY'S ANNUAL BUDGET FOR THE EAST MADISON COUNTY SEWAGE DISPOSAL SYSTEM

Section 7.01. FILING WITH PUBLIC AGENCY. Not less than sixty (60) days before the commencement of the second Fiscal Year and not less than sixty (60) days before the commencement of each Fiscal Year thereafter while this agreement is in effect, Municipality shall cause to be prepared as herein provided its tentative budget solely for the operation of the East Madison County Sewage Disposal System for the next ensuing Fiscal Year. A copy of such tentative budget shall be filed with the Secretary of the Operating Committee, each Contracting Party and Additional Contracting Party. If no protest or request for a hearing on such tentative budget is presented to Municipality within thirty (30) days after such filing of the tentative budget by one or more Contracting Parties or Additional Contracting Parties or by the holders of a minimum of 25% in amount of the Bonds then outstanding, the tentative budget for the East Madison County Sewage Disposal System, when adopted by the Municipality, shall be considered for all purposes as the "Annual Budget for the East Madison County Sewage Disposal System" for the next ensuing Fiscal Year. If protest or request for a hearing is duly filed, it shall be the duty of the Municipality to fix the date and time for a hearing on the tentative budget and shall so advise all Contracting Parties and Additional Contracting Parties in writing. The Municipality may adopt the budget or make such amendment thereof as to it may seem proper. The budget thus approved by the Municipality shall be the Annual Budget for the next ensuing Fiscal Year.

The Annual Budget may be amended to provide for transfers of budgeted funds between expenditure accounts, provided however that said transfers do not result in an overall

increase in budgeted funds as approved in the Annual Budget. The Annual Budget may be increased through formal action by the Municipality. Certified copies of the amended Annual Budget and resolution shall be filed by the Municipality with each Contracting Party and Additional Contracting Party.

ARTICLE VIII

EFFECTIVE DATE AND TERM OF AGREEMENT

Section 8.01. EFFECTIVE DATE. This agreement shall become effective as of the date hereof. As of the date of approval hereof by the Attorney General of the State of Mississippi, this agreement shall constitute the sole and only agreement between Public Agency and Municipality regarding Wastewater disposal services for the East Madison County Sewage Disposal System and it is agreed that as of such date, that certain contract dated February 27, 1975, and those certain two contracts dated March 13, 1975, and any other agreements pertaining to the treatment of Wastewater between Public Agency and Municipality shall become null and void and of no further force and effect.

Section 8.02. TERM OF AGREEMENT. This agreement shall be in force and effect from the effective date hereof and shall continue in effect until any Bonds, issued hereunder and any Bonds issued to refund same, if any, have been paid in full. Thereafter this contract shall be continued from year to year unless either party hereto shall give not less than 12 months notice in writing to the other that this contract shall no longer be in force and effect.

Section 8.03. DISTRIBUTION OF EXCESS FUNDS. Upon termination of this Agreement, each Contracting Party and Additional Contracting Party shall receive an amount which bears the same ratio to the total of excess funds as the cumulative amount contributed by that Contracting Party or Additional Contracting Party bears to the aggregate cumulative amount contributed by all Contracting Parties and Additional Contracting Parties under this agreement.

IN WITNESS WHEREOF, the parties hereto acting under authority of their respective governing bodies have caused this agreement to be duly executed in several counterparts, each of which shall constitute an original, all as of the 12 day of Oct., 1979.

TOWN OF RIDGELAND, MISSISSIPPI

BY H. G. Wolcott
Mayor

ATTEST:

Priscilla Cannon
Town Clerk

CITY OF JACKSON, MISSISSIPPI

BY Dale Danks, Jr.
Mayor

ATTEST:

Evelyn Ballard
City Clerk

9/12/83

APPENDIX C: RIDGELAND-WEST SEWAGE DISPOSAL SYSTEM AGREEMENT

CITY OF JACKSON, MISSISSIPPI
AND
CITY OF RIDGELAND, MISSISSIPPI

RIDGELAND-WEST SEWAGE DISPOSAL SYSTEM AGREEMENT

WHEREAS, the City of Jackson, Mississippi, and the City of Ridgeland, Mississippi, have heretofore entered into contracts for the construction, operation and maintenance of regional sewer projects; and,

WHEREAS, it has been determined to be necessary to construct new water and sewer segments in the area of the City of Ridgeland formerly annexed by the City of Jackson and now wholly within the City of Ridgeland, with such area generally described as:

(1) Lines serving the White Oak Creek Drainage Basin,
(2) Lines serving the LaRue Creek Drainage Basin,
(3) Lines serving the Hanging Moss Tributary Drainage Basin, and
(4) Lines serving the Hanging Moss Drainage Basin,

hereinafter called the "Ridgeland-West Sewage Disposal System" (See Exhibit A); and

WHEREAS, the system involved, and to be constructed, is a regional water and sewer project within the Jackson-Metropolitan area.

THEREFORE, IN CONSIDERATION of the premises herein, the City of Jackson, Mississippi, a Municipal Corporation (hereinafter referred to as "Municipality"), and the City of Ridgeland, Mississippi, a Municipal Corporation (hereinafter referred to as "Ridgeland"), do hereby contract and agree as follows:

ARTICLE I
DEFINITIONS

Sections 1.01. DEFINITION OF TERMS. Terms and expressions used in this agreement, including the preamble hereof, shall have the meaning set forth in this Article:

(a) "Adjusted Annual Payment" means the Annual Payment as adjusted during or after each Fiscal Year as provided in Section 6.04 of this instrument.

(b) "Annual Payment" means the amount of money to be paid to Municipality by Ridgeland during each Fiscal Year or part thereof based on the projected budget as set forth in Article VII of this instrument.

(c) "Capacity Expansion" means an increase in the treatment capacity at the Wastewater Treatment Facility or enlargement of the West Bank Interceptor realized by the construction or the addition of capital improvements which allow greater treatment and/or transportation capacity. The payment by Ridgeland for any cost of Capacity Expansion shall not create any ownership interest in the facilities.

(d) "Capacity Expansion Charge" means the amount of money to be paid to Municipality by Ridgeland in addition to the Annual Payment for Ridgeland's proportionate share of expenses for Capacity Expansion, if any, payable in monthly installments of principle and interest as agreed between the parties at the time the debt for Capacity Expansion is incurred.

(e) "Comprehensive Sewer Use Ordinance" means an ordinance adopted by the Municipality or by Ridgeland, as the case may be, pursuant to the standards and requirements of Federal and State Regulatory Agencies for pollution and abatement, specifically including but not limited to an acceptable user charge system, as such ordinance exists at the date of this agreement or as thereafter modified, adopted, or revised.

(f) "Domestic Wastewater" means liquid and water-carried waste discharged from sanitary conveniences of dwellings, business buildings, institutions and the like, as distinct from wastes in Industrial Waste.

(g) "Ridgeland-West Sewage Disposal System" means Ridgeland's facilities in Madison County, Mississippi, so designated on Exhibit A hereto, as now existing or as hereafter acquired or constructed for receiving, measuring, transporting and disposing of Wastewater from Madison County together with any improvements, enlargements or additions to said facilities and any extensions or replacements of said facilities constructed or otherwise incorporated into said facilities in the future.

(h) "Fiscal Year" means the twelve (12) month period beginning October 1 of each year.

(i) "Industrial Waste" means the liquid and waterborne wastes from industrial processes as distinct from wastes in Domestic wastewater.

(j) "Infiltration Water" or "Infiltration" means water that has migrated from the ground into the Ridgeland-West Sewage Disposal System.

(k) "Inflow Water" or "Inflow" means water which is not Domestic Wastewater or Industrial Waste or Infiltration Water which enters into the Ridgeland-West Sewage Disposal System; Inflow includes but is not limited to, storm water, ground water, roof runoffs, sub-surface drainage, downspouts, yard drains, fountains, ponds and swimming pools.

(l) "Month" means calendar month.

(m) "Municipality" means the City of Jackson, Mississippi.

(n) "Municipality's System" means the "Wastewater Treatment Facility" and "West Bank Interceptor" of Municipality as defined herein.

(o) "Operation and Maintenance Expense of the Municipality's Wastewater Treatment Facility" means the then current expenses paid or accrued in the operation, maintenance and ordinary repair of the Wastewater Treatment Facility of the Municipality in Hinds County and shall include without limiting the generality of the foregoing capital expenditures, insurance premiums and administrative expenses of Municipality and such other reasonable and necessary current expenses relating solely to the Wastewater Treatment Facility, as shall be in accordance with sound accounting practice, but shall not include any allowance for debt retirement or depreciation.

(p) "Operation and Maintenance Expense of the West Bank Interceptor" means all costs then current or accrued in the operation and maintenance and ordinary repair of the Municipality's West Bank Interceptor and shall include without limiting the generality of the foregoing capital expenditures, insurance premiums and administrative expenses of Municipality and such other reasonable and necessary current expenses relating solely to the West Bank Interceptor, as shall be in accordance with sound accounting practice, but shall not include any allowance for debt retirement or depreciation.

(q) "Person" means and includes the State of Mississippi, the City of Ridgeland as defined herein, or any municipal entity, town or political subdivision or governmental agency of the State of Mississippi or of the United States of America, or any individual, co-partnership, association, firm, trust, estate or any other entity whatsoever.

(r) "Point of Entry" means the point or points at which Wastewater enters Municipality's system from the Ridgeland-West Sewage Disposal System at or near the Madison/Hinds County line within the Municipality's corporate boundary and as generally indicated on Exhibit A.

(s) "Ridgeland" means the City of Ridgeland, Mississippi.

(t) "Surcharge" means the cost for discharge of Wastewater of a strength in excess of the standards set forth in the Comprehensive Sewer Use Ordinance for normal Domestic Wastewater, said cost to be computed in accordance with the formula in said Comprehensive Sewer Use Ordinance.

(u) "Wastewater" means Domestic Wastewater and Industrial Waste, together with such Infiltration Water and Inflow Water that may be present.

(v) "Wastewater Treatment Facility" means the facility of the Municipality (known as the Savanna Street Facility) for treatment and disposal of Wastewater, situated in Hinds County, Mississippi, as such facility now exists and as it may be hereafter improved and/or expanded by Municipality.

(w) "West Bank Interceptor" means the interceptors so designated on Exhibit A hereto and any other interceptors owned by the Municipality and located in Hinds and Madison County, which transports Wastewater from the Ridgeland-West Sewage Disposal System to the Wastewater Treatment Facility.

(x) "Upstream" means toward the source of wastewater.

(y) "Downstream" means away from the source of wastewater or along the normal direction of flow.

ARTICLE II
SCOPE OF AGREEMENT

Section 2.01. RESPONSIBILITIES OF THE PARTIES. With reference to the Ridgeland-West Sewage Disposal System:

1. Ridgeland will be responsible for the financing and construction of improvements to the Ridgeland-West Sewage Disposal System including but not limited to the construction of metering stations necessary for determining the flow of the wastewater to be treated. The parties agree that Municipality may advertise and procure the construction of the metering stations and improvements and if it does so, Ridgeland will reimburse the Municipality all costs within thirty (30) days of the Municipality's acceptance and completion of the project.

2. The Municipality agrees to accept and treat all volumes of wastewater delivered by Ridgeland from the Ridgeland-West Sewage Disposal System;

3. Upon final completion of the construction of improvements, Ridgeland would own, operate, and maintain that portion of the System which lies upstream of the point of wastewater entry to the Municipality;

4. Upon final completion of the construction of improvements, the Municipality would own, operate, and maintain that portion of the sewer system which includes the metering station at the point of wastewater entry to the Municipality and the downstream lines connecting thereto;

5. Ridgeland would be responsible for service contracts with other entities which might now, or hereafter, be served by the System; and

6. The Municipality would retain the right to inspect that portion of the System lying within Ridgeland for problems which could affect the Municipality's interceptor system or problems which could affect the treatment capability of the Municipality's Savanna Street Wastewater Treatment Plant in Hinds County. In the event the System is not being operated according to the terms of the Agreement, the Municipality would retain the right either to suspend service or to take corrective action at Ridgeland's expense; and

Section 2.02. EXISTING FACILITIES. It is agreed by the Municipality that the existing facilities of the Municipality have sufficient capacity for the proper transport and treatment of the proposed wastewater to be received via the Ridgeland-West Sewage Disposal System. If, however, an interceptor or other directly affected facilities of the Municipality should become inadequate, in the opinion of the City Engineer of the Municipality, to properly transport or treat the flow of wastewater from the Ridgeland-West Sewage Disposal System, then upon written notification from the Municipality, Ridgeland shall refrain from further increasing the flow of wastewater into the Municipality's system and, if necessary, shall take reasonable and appropriate steps to reduce such flow to a level deemed appropriate by the City Engineer of the Municipality. The Municipality will then immediately proceed to repair, replace, or enlarge its facilities such that Ridgeland may, upon completion of the repairs, resume full and unrestricted flow to the Municipality. Failure of Ridgeland to respond to such notice shall be grounds for immediate suspension of service by the Municipality until it responds to the notice.

Section 2.03. REPAIR OR REPLACEMENT OF FACILITIES. If an interceptor or municipal facility transporting or treating the wastewater flow from the Ridgeland-West Sewage Disposal System requires, in the opinion of the City Engineer of the Municipality, repair or replacement, Ridgeland will participate in the cost of such improvement by paying a proportionate share to construct such improvements. Upon proper and timely notice, Ridgeland will pay to the Municipality a sum of money equal to the product of the cost of the improvement times the percentage of flow contributed to the improved segment or facility by Ridgeland during the preceding fiscal year. Ridgeland's cost share previously described will be due within thirty (30) days of the award of the construction contract for such improvements. Ridgeland shall participate in, and concur with, the design and construction practices of the changes or improvements to the facilities that require cost participation by Ridgeland.

ARTICLE III
CONSTRUCTION OF FACILITIES

Section 3.01. CITY OF RIDGELAND FACILITIES. In order to provide for the receiving, transporting, treating and disposing of Wastewater from its service area, Ridgeland will design and

construct the sewage transportation lines, extensions, improvements and enlargements to or near the county line between Hinds County and Madison County as designated on Exhibit A.

Section 3.02. CITY OF JACKSON FACILITIES. Upon final completion of the construction of the portion of the Ridgeland-West Sewage Disposal System which includes the metering stations at the points of entry and the downstream lines, if required, to connect to the Municipality, will be conveyed to and shall become the property of the Municipality.

ARTICLE IV

DISCHARGE OF WASTEWATER, TITLE AND METERING

Section 4.01. DISCHARGE. Ridgeland shall have the right to discharge Wastewater into Municipality's System, when the system becomes available for use by Ridgeland.

Section 4.02. POINT OF ENTRY. Ridgeland shall discharge its Wastewater at the Point or Points of Entry designated for Ridgeland near the county line between Hinds County and Madison County, as indicated on Exhibit A or at such additional Points of Entry along the county line as may be mutually agreed to by Municipality and Ridgeland.

Section 4.03. CONVEYANCE TO POINT OF ENTRY. It shall be the sole responsibility of Ridgeland, including any liability incurred in connection therewith, to convey such Wastewater to the Point or Points of Entry through the Ridgeland-West Sewage Disposal System to Municipality's System. Ridgeland further agrees and covenants at its own expense to complete such construction, expansion or improvements necessary to connect the Ridgeland-West Sewage Disposal System to Municipality's System at such time as the Municipality's System shall be available to receive Wastewater from Ridgeland.

Section 4.04. TITLE TO WASTEWATER AND RESPONSIBILITY THEREFORE. Title to all Wastewater discharged hereunder shall remain with Ridgeland to Points of Entry, and upon passing through Municipality's meters installed at Points of Entry, title thereto and to all effluent therefrom shall pass to Municipality. As between the parties, each party hereto agrees to save and hold the other party harmless from all claims, demands, and causes of action which may be asserted by anyone on account of the reception, transportation, delivery, and disposal while title remains in such party. Provided, however, that any non-routine, emergency or other specific charge against the Municipality resulting from the operation of the Ridgeland-West Sewage Disposal System shall be deemed an expense of the Ridgeland-West Sewage Disposal System and shall be payable by Ridgeland upon presentation of adequate evidence of cost and responsibility, regardless of whether title to the Wastewater giving rise to any such charge against the Municipality had vested in the Municipality. This covenant is not made for the benefit of any third party. Municipality takes the responsibility as between the parties hereto for the proper reception, transportation, treatment and disposal of all such Wastewater received by it, and the responsibility of and right to ownership of the

effluent from such operation, transportation, treatment and disposal; provided, however, that the Wastewater meets applicable standards and restrictions of the Comprehensive Sewer Use Ordinance of the Municipality.

Section 4.05. METERING. At each Point of Entry the necessary equipment and devices of standard type for measuring properly all Wastewater shall be installed by Ridgeland but operated and maintained by the Municipality. After installation such meters and other equipment shall be the property of the Municipality. Municipality shall calibrate and maintain the meters in accordance with the recommendations of the manufacturer. Ridgeland shall have access to such metering equipment at all reasonable times for inspection and examination, but the reading, calibration, and adjustment thereof shall be done only by employees or agents of Municipality in the presence of a representative of Ridgeland if requested by Ridgeland. All readings of meters will be entered upon proper books of record maintained by the Municipality. Upon written request Ridgeland may have access to said record books during reasonable business hours. If, for any reason, any meters are out of service or out of repair, or if, upon any test, the percentage of inaccuracy of any meter is found to be ten percent (10%) or more, plus or minus, registration thereof shall be corrected for a period of time extending back to the time when such inaccuracy began, if such time is ascertainable, and if such time is not ascertainable, then for a period extending back one-half (1/2) of the time elapsed since the date of the last calibration, but in no event further back than a period of three (3) months.

Section 4.06. UNIT OF MEASUREMENT. The unit of measurement for Wastewater delivered hereunder shall be 1,000,000 gallons, U.S. Standard Liquid Measure, or such other lawful unit as the Municipality may determine to be appropriate and applicable.

ARTICLE V
COMPREHENSIVE SEWER USE ORDINANCE

Section 5.01. ADMISSIBLE DISCHARGES. Ridgeland agrees that Wastewater discharged from the Ridgeland-West Sewage Disposal System into Municipality's System shall be of such quality that:

(a) the Municipality's Wastewater Treatment Facility will not be prohibited from meeting the then current effluent standards of the Department of Natural Resources-Bureau of Pollution Control and the United States Environmental Protection Agency and any other governmental body having legal authority to set standards for such effluents; and

(b) the West Bank Interceptor and Municipality's Wastewater Treatment Facility are not damaged to the extent to cause unnecessary repairs or replacements or increased Operation and Maintenance Expense.

Section 5.02. COMPREHENSIVE SEWER USE ORDINANCE-MUNICIPALITY. The Municipality shall adopt and maintain in effect a Comprehensive Sewer Use Ordinance in

conformity with the standards and restrictions of the United States Environmental Protection Agency and the Department of Natural Resources-Bureau of Pollution Control and that of any other governmental body having legal authority to set such standards and restrictions. Municipality shall periodically review and, if necessary, revise its comprehensive Sewer Use Ordinance to ensure compliance with Federal and State standards and requirements and that of any other governmental body having legal authority to set such standards and restrictions.

Section 5.03. COMPREHENSIVE SEWER USE ORDINANCE-RIDGELAND. Ridgeland shall adopt and maintain in effect a Comprehensive Sewer Use Ordinance specifically including but not limited to an acceptable user charge system, compatible with the Comprehensive Sewer Use Ordinance of the Municipality and in conformity with the standards and restrictions of the United States Environmental Protection Agency and the Department of Natural Resources-Bureau of Pollution Control and that of any other governmental body having legal authority to set such standards and restrictions. Ridgeland shall periodically review and, if necessary, revise its Comprehensive Sewer Use Ordinance to ensure ongoing compliance with Federal and State standards and requirements and that of any other governmental body having legal authority to set such standards and restrictions as they now exist or may exist in the future. Ridgeland agrees that it will file a copy of its Comprehensive Sewer Use Ordinance with the Municipality as soon as the Comprehensive Sewer Use Ordinance is prepared and available; provided, however, that under no circumstances will Ridgeland be permitted to begin discharging Wastewater from the Ridgeland-West Sewage Disposal System into Municipality's System under this agreement prior to filing a copy of its Comprehensive Sewer Use Ordinance with the Municipality.

Section 5.04. INDUSTRIAL WASTE. Municipality and Ridgeland agree to work jointly in processing applications for discharge of Industrial Waste into any sewer system operated by or serviced by Ridgeland which ultimately discharges Wastewater from the Ridgeland-West Sewage Disposal System into Municipality's System. Municipality and Ridgeland shall have the authority to withhold approval of an application for discharge of Industrial Waste, but only in accordance with standards set out in the applicable Comprehensive Sewer Use Ordinance.

Ridgeland may authorize discharge of Industrial Waste to the Ridgeland-West Sewage Disposal System subject to the foregoing provisions and subject to the filing by applicant industry of a statement, a copy of which shall be forwarded to Municipality, showing the average analysis of the Industrial Waste it wishes to discharge, but only if such Industrial Waste has passed through an inspection manhole located so as to be accessible at all times to inspectors of Municipality and of Ridgeland, and only after express approval of the Municipality. If inspection indicates that damage may be resulting from the discharge, Ridgeland shall be responsible to the Municipality for any such damages, payable immediately upon determination of the amount involved.

Section 5.05. REPORTING. Ridgeland agrees to promptly notify Municipality of any bypasses, sewer system overflows, breaks, or other significant events coming to its attention within the system.

ARTICLE VI
FINANCING

Section 6.01. ISSUANCE OF BONDS BY MUNICIPALITY. The Municipality will pay for the cost of acquisition and construction of the Municipality's System and will issue or has issued its bonds in such amounts as necessary to produce funds which, together with other available funds, will be sufficient to accomplish such acquisition and construction.

Section 6.02. ISSUANCE OF BONDS BY RIDGELAND. Ridgeland will pay for the cost of acquisition and construction of the Ridgeland-West Sewage Disposal System and will issue its bonds in such amounts as necessary to produce funds which, together with other available funds, will be sufficient to accomplish such acquisition and construction.

Section 6.03. ANNUAL REQUIREMENT. It is acknowledged and agreed by the parties that payments to be made under the Agreement by Ridgeland to the Municipality shall be the only source of funds available to the Municipality from the Ridgeland-West Sewage Disposal System. The Municipality has the duty and responsibility to fix, maintain, and collect, and from time-to-time revise, the rates and charges for services to be rendered and made available to Ridgeland under said Agreement so that the payments to the Municipality shall at all times be, during any given fiscal year, not less than an amount sufficient to pay, or to provide for the payment of:

(a) the proportionate share of the operation and maintenance expense of the West Bank Interceptor;

(b) the proportionate share of the principal of and interest on outstanding bonds of the Municipality which will mature and become due during such fiscal year issued for construction, expansion, and improvement of the West Bank Interceptor, excluding bonds issued by the Municipality wherein Ridgeland has already paid a proportionate share of the costs;

(c) the proportionate share of the sales tax revenues withheld for repayment of grants and loans received by the Municipality from the State of Mississippi for construction, expansion, and improvement of the West Bank Interceptor, excluding sales tax revenues withheld for grants and loans wherein Ridgeland has already paid a proportionate share of the costs;

(d) the proportionate share of the sales tax revenues withheld for repayment of grants and loans received by the Municipality from the State of Mississippi for construction, expansion, and improvement of the Savanna Street Wastewater Treatment Plant of the Municipality;

(e) the proportionate share of the principal of and interest on outstanding bonds of the Municipality which will mature and become due during such fiscal year issued for construction, expansion, and improvement of the Savanna Street Wastewater Treatment Plant

of the Municipality; if such bonds are, or have been, refunded, recovery will be on a proportionate share of the refunding bonds; and

(f) the proportionate share of the operation and maintenance expense of the Savanna Street Wastewater Treatment Plant.

The proportionate share allocable to Ridgeland under subparagraphs (a), (b), and (c) of Section 6.03 above shall be obtained by dividing the total metered volume of wastewater measured at metering points at or near the Hinds-Madison County line by the total volume of wastewater passing through individually metered segments of the West Bank Interceptor. Such meters shall be placed at the discretion of the Municipality, and the extra cost of obtaining, installing and maintaining such meters shall be the expense of the Ridgeland.

The proportionate share allocable to Ridgeland under subparagraphs (d), (e), and (f) of Section 6.03 above shall be obtained by dividing the total metered volume of wastewater from Ridgeland metered at or near the line dividing Madison and Hinds Counties, Mississippi, by the total volume of wastewater processed through the Municipality's Wastewater Treatment Facility in Hinds County.

Section 6.04. PAYMENTS BY RIDGELAND. Ridgeland hereby covenants and agrees to pay to Municipality during each Fiscal Year or part thereof from the revenues derived by Ridgeland from operation of the Ridgeland Water and Sewer System, or if necessary, from revenue derived from ad valorem tax collections to the extent allowed by Section 21-27-175 as existing on the effective date of this Agreement, at the time and in the manner hereinafter provided, an Annual Payment as defined in Section 6.03 hereof, commencing with execution of this agreement.

At the close of each Fiscal Year, the Municipality shall redetermine Ridgeland's Annual Payment based on Ridgeland's actual metered contributing volume of Wastewater to Municipality's System. The method to redetermine the Adjusted Annual Payment is as follows:

Divide Ridgeland's actual metered contributing volume of Wastewater by the estimated contributing volume of Wastewater, and then multiply by the Annual Payment.

ADJUSTED ANNUAL PAYMENT:

(a) Actual metered volume of Wastewater divided by estimated volume of Wastewater multiplied by Annual Payment ($). The difference between the Adjusted Annual Payment and the Annual Payment, if any, when determined, shall be applied as a credit or debit to Ridgeland's account with Municipality and shall be credited or debited on a prorated basis to each monthly payment of Ridgeland's next subsequent Annual Payment.

(b) Ridgeland's Annual Payment shall be made to the Municipality in twelve equal monthly installments, due and payable by the 10th day of each month of the Fiscal Year.

(c) The Annual Payment set forth in this Section shall be considered the basic charge for the service hereunder, and Ridgeland shall pay a surcharge if required by the Comprehensive Sewer Use Ordinance of the Municipality in the manner set forth therein.

(d) On or before August 1 of each year, the Municipality shall furnish Ridgeland with a schedule of the monthly payments to be made by Ridgeland to the Municipality for the following Fiscal Year. Said schedule shall be established by the Municipality in accordance with Section 6.03 hereof and shall constitute all charges by Municipality to Ridgeland based on prior years usage information. Ridgeland hereby agrees that it will make such payments to the Municipality on a current basis for the then present month on or before the 10th day of such month of such Fiscal Year. If complete payment has not been received by Municipality on the 15th day of each month, Municipality will assess interest at the rate of 1 ½ per month on any outstanding sums due and owing.

In the event Ridgeland is assessed a surcharge pursuant to the Comprehensive Sewer Use Ordinance of the Municipality, the Municipality will bill Ridgeland for such surcharge on or before the fifth day of the month following the determination of the surcharge and Ridgeland shall pay such surcharge on or before the tenth day of the month of receipt of any such bill.

ARTICLE VII
MUNICIPALITY'S ANNUAL BUDGET FOR MUNICIPALITY'S SYSTEM

Section 7.01. FILING WITH RIDGELAND.

(a) Not less than ninety (90) days subsequent to the effective date of this agreement, and not less than sixty (60) days before the commencement of each Fiscal Year thereafter while this agreement is in effect, Municipality shall cause to be prepared as herein provided its tentative budget solely for the operation of the Municipality's system for the following Fiscal Year.

The budget shall specifically identify both the revenue and expenses related to the Annual Payment, including the following:

(1) The operation and maintenance costs of the West Bank Interceptor.

(2) Principal and interest costs of outstanding bonds issued for the construction, expansion, or improvements to the West Bank Interceptor.

(3) Sales tax revenues withheld for repayment of grants or loans for the construction, expansion or improvements to the West Bank Interceptor.

(4) The operation and maintenance costs of the Wastewater Treatment Facility.

(5) Principal and interest costs of outstanding bonds issued for the construction, expansion, or improvements to the Wastewater Treatment Facility.

(6) Sales tax revenues withheld for repayment of grants or loans for the construction, expansion or improvements to the Wastewater Treatment Facility.

If Ridgeland does not protest or request a hearing on such tentative budget as presented by the Municipality within thirty (30) days after such filing, the tentative budget for the Municipality's system, when adopted by the Municipality, shall be considered for all purposes as the "Annual Payment" for the following Fiscal Year. If protest or request for a hearing is duly filed, it shall be the duty of the Municipality to fix the date and time for a hearing on the tentative budget and shall so advise Ridgeland in writing. The Municipality may adopt the budget or make such amendment thereof as to it may seem proper. The budget thus approved by the Municipality shall be the Annual Payment for the following Fiscal Year.

(b) For the period between the effective date of this Agreement and the commencement of the first budget period, Ridgeland will be billed at the existing Municipality rate according to the flow as metered at the points of entry.

(c) Ridgeland has an absolute duty to make payments pursuant to the budget so adopted. If Ridgeland deems it necessary and appropriate, it may request a refund or credit against future payments under the agreement from the Municipality for alleged overage sums. Municipality shall have a period of thirty (30) days to review the request and determine if a refund or credit will be issued and shall provide written notice of same to Ridgeland. If no refund or credit is issued, Ridgeland may pursue those remedies available under the terms of the Agreement.

ARTICLE VIII
GENERAL PROVISIONS

Section 8.01. CONSTRUCTION. Ridgeland and Municipality agree to proceed with due diligence to undertake the construction of all of the respective facilities necessary for the performance of their respective obligations hereunder. Municipality agrees that upon final completion of required

construction, Ridgeland may begin discharging wastewater to the Municipality subject to the terms and conditions of this agreement.

Section 8.02. ACQUISITION AND USE OF PUBLIC PROPERTY, EASEMENTS AND RIGHTS-OF-WAY:

(a) It is expressly understood that the Municipality is responsible for acquisition of all rights-of-way necessary for the West Bank Interceptor in Hinds County and Ridgeland is responsible for acquisition of all rights-of-way necessary for the Ridgeland-West Sewage Disposal System. All such acquisition shall be in conformity with Environmental Protection Agency Regulations. In the event of past acquisitions not in conformity with such regulations, the Municipality and Ridgeland shall be responsible for whatever corrective action is necessary within their respective counties. The Municipality and Ridgeland shall each be responsible for determining the conformity of past acquisitions with such regulations within their respective counties.

(b) Municipality and Ridgeland agree all rights-of-way necessary for construction of the Ridgeland-West Sewage Disposal System in Hinds County will be acquired by Ridgeland and that all rights-of-way for construction of Municipality's West Bank Interceptor in Madison County will be acquired by Ridgeland as an expense of Municipality. Ridgeland and Municipality agree to assist one another within the limits of their respective jurisdictions in obtaining said easements and rights-of-way necessary for the construction and operation and maintenance of the Municipality's West Bank Interceptor and Ridgeland's Ridgeland-West Sewage Disposal System through the use of their respective good offices and powers and authorities. All expenses incurred by Ridgeland under this section to acquire rights-of-way and easements in Madison County for the benefit of Municipality shall be deemed expenses of Municipality's System. All expenses incurred by Municipality under this section to acquire easements and rights-of-way in Hinds County for the benefit of Ridgeland shall be considered expenses of Ridgeland's Ridgeland-West Sewage Disposal System and not an expense of the Municipality.

Section 8.03. STATISTICAL DATA. Approximately thirty (30) days before the Municipality determines that its facilities for service will be available to Ridgeland and thereafter no less than annually Ridgeland shall furnish to Municipality under Certificate, the following information for the preceding unreported period: the number of active Domestic Wastewater connections, active commercial and business Wastewater connections, active industrial connections, and active educational institutions, hospitals or other similar, institutional connections, tributary to the Ridgeland-West Sewage Disposal System, together with the total measured waster and/or Wastewater volumes for each class enumerated used for billing by Ridgeland, to permit Municipality to accumulate statistical data which will enable it to render better service and facilitate plans for betterment and future facilities expansion.

Section 8.04. RIDGELAND'S CONTRACTS WITH OTHERS. Ridgeland shall have the right to enter into contracts with other persons outside the limits of Ridgeland, natural or corporate, private or public, to receive Wastewater from such persons provided it obtains consent of the Municipality prior to doing so and provided Ridgeland pays for the cost of any expansion necessary to accommodate the provision of service to the entity.

Section 8.05. MUNICIPALITY'S CONTRACTS WITH OTHERS. Municipality reserves the right to enter into service agreements with other persons natural or corporate, public or private, to perform services similar to those performed under this agreement or which vary from the agreement. Should the Municipality enter into service agreements with other persons natural or corporate, public or private, an obligation to pay the proportionate share of repair, replacement, or expansion will be imposed. Municipality covenants that if it enters into service agreements with others, its agreement will not impair its obligations to Ridgeland pursuant to the terms of this agreement.

Section 8.06. ANNUAL REPORT AND AUDIT OF MUNICIPALITY'S SYSTEM. The Municipality shall, at the close of each Fiscal Year, furnish to Ridgeland a copy of the Municipality's annual audit. If Ridgeland desires to have prepared at its own expense a more detailed or particular audit, the Municipality will cooperate in its preparation.

Section 8.07. PUBLICATION, REFERENCE WORK, GOVERNMENTAL REGULATIONS. In each instance herein where reference is made to a publication, reference work or Federal or State regulation, it is the intention of the parties that at any given time the then current edition of any such publication, reference work, or Federal or State regulation shall apply. If a publication or reference work is discontinued or ceases to be the generally accepted work in its field or if conditions change or new methods or processes are adopted by the Municipality, the Municipality reserves the right to adopt new standards, which new standards shall be promptly communicated to Ridgeland in writing.

ARTICLE IX
MISCELLANEOUS PROVISIONS

Section 9.01. FORCE MAJEURE. In case by reason of "Force Majeure," either party hereto shall be rendered unable wholly or in part to carry out its obligations under this agreement, then if such party shall give notice and full particulars of such "Force Majeure" in writing to the other party within a reasonable time after occurrence of the event or cause relied on, the obligation of the party giving such notice, so far as it is affected by such "Force Majeure," shall be suspended during the continuance of the inability then claimed, but for no longer period, and any such party shall endeavor to remove or overcome such inability with all reasonable dispatch. It is understood and agreed that the settlement of strikes and lockouts shall be entirely within the discretion of the party having the difficulty, and that the above requirement that any "Force Majeure" shall be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or parties when such settlement is unfavorable to it in the judgment of the party having the difficulty.

Section 9.02. EFFECTIVE DATE AND CONCLUSIVENESS OF AGREEMENT. This agreement shall become effective as of the date of execution by all parties. This Agreement shall constitute the sole and only agreement between Municipality and Ridgeland regarding wastewater disposal services for the Ridgeland-West Sewage Disposal System. Parole and/or extrinsic evidence may not be used to alter or vary the terms of the agreement.

Section 9.03. TERM OF AGREEMENT. This agreement shall be in force and effect from the effective date hereof for a period of twenty (20) years and shall continue from year-to-year thereafter. After the 20-year term, either party may terminate this agreement by giving not less than twelve (12) months notice in writing of its intent to not have the agreement continue in force.

Section 9.04. DEFAULT.

9.04(a). Default by Ridgeland. The following constitutes a default by Ridgeland pursuant to the terms of this agreement: (1) Failure to pay any amounts due pursuant to the terms of the agreement including interest and penalty payments within thirty (30) days of the due date; (2) Failure to observe any term or perform any obligation or condition required pursuant to the agreement, and the failure continues and is not remedied within 45 days after written notice of the default.

9.04(b). Default by City. The following constitutes a default by the Municipality under this agreement: (1) Failing to accept and treat Wastewater transported provided the Municipality has not suspended service pursuant to Provision 2.02 of this agreement; (2) Failure to observe any term or perform any obligation or condition required pursuant to the agreement, and the failure continues and is not remedied within 45 days after written notice of the default.

9.05 REMEDIES. In the event of default, the parties shall have the following rights and remedies:

9.05(a) Specific Performance. In addition to any other remedies available to the parties, the Municipality and Ridgeland agree and recognize that the rights and obligations set forth in this agreement are unique and of such a nature as to be inherently difficult to value monetarily. If one party does not perform in accordance with the specific wording of any of the provisions in this Agreement applicable to that party, defaults, or otherwise breaches the Agreement, an action at law for damages or other remedies at law would be wholly inadequate to protect the unique rights and interests of the party to the Agreement. Accordingly, any court controversy concerning the Agreement, Agreement's provisions, or any obligation arising pursuant to it may be enforceable by specific performance. The specific performance remedy is not exclusive and is in addition to any other remedy available to the parties.

9.05(b). Cumulative Rights and Remedies. The parties do not intend that any right or remedy given to a party on the default or breach of any provision under this Agreement be exclusive. Each right or remedy is cumulative and in addition to any other remedy provided in the Agreement

or otherwise available at law or in equity. If the non-breaching party fails to exercise or delays in exercising any right or remedy, the non-breaching party does not thereby waive that right or remedy. No single or partial exercise of any right, power, or privilege precludes any further exercise of a right, power, or privilege or the seeking of enforcement concerning same.

Section 9.06. DISTRIBUTION OF EXCESS FUNDS. Upon termination of this Agreement, each party shall receive any excess funds in accordance with the ratio that the total excess funds bears to the cumulative amount contributed by that party.

Section 9.07. GOVERNING LAW AND VENUE. This Agreement shall be construed under and in accordance with the laws of the State of Mississippi, and venue for any action at law or in equity shall be a court of competent jurisdiction in Hinds County, Mississippi.

Section 9.08. HEADINGS. The headings used in this Agreement have been included solely for ease of reference and shall not be considered in the interpretation or construction of this Agreement.

Section 9.09 WAIVER. No waiver or failure to insist on performance of a term or condition of this agreement shall be construed as a waiver of the term or condition absent a writing clearly stating that the condition is being waived. A written waiver shall be applicable only for the period or time stated and shall not be construed as a waiver of indefinite duration.

Section 9.10. SEVERABILITY. If an immaterial provision of this Agreement is held to be invalid, unenforceable, or unlawful by a court or tribunal of competent jurisdiction, then the immaterial provision will not operate to invalidate the agreement. The Agreement shall be continue in force and effect but for the immaterial provision and shall be construed accordingly.

Section 9.11. AUTHORITY TO CONTRACT AND EXECUTE. Each individual executing and signing this agreement warrants and represents that he/she has been authorized to execute the agreement on behalf of the parties to this agreement.

Section 9.12. NOTICE. Notices required or provided pursuant to the provisions of this Agreement shall be in writing and served either by personal delivery, mail, or fax to the parties as follows:

For Municipality: Mayor of City of Jackson, 219 South President Street, Post Office Box 17, Jackson, Mississippi 39205-0017, Facsimile: 601-960-2193

With a copy to City of Jackson, Office of City Attorney, 455 East Capitol Street, Post Office Box 2779, Jackson MS 39207-2779, Facsimile: 601-960-1756.

For Ridgeland: Mayor of City of Ridgeland, 304 Highway 51, Ridgeland MS 39157-3918, Facsimile:

Section 9.13. AMENDMENTS AND MODIFICATION. This agreement may not be modified or amendment absent the execution of a written instrument by duly authorized officials and or representatives of the parties. Amendments and Modification to the agreement shall effective as of the date set forth in the amendment or modification and shall not be retroactive.

Section 9.14. THIRD PARTY BENEFICIARY. Nothing in this agreement should be construed as conferring upon any individual, corporation, estate, or entity not a party to the agreement a right or benefit, and third parties shall not be afforded any standing to enforce the terms and conditions of this agreement.

Section 9.15. FURTHER ASSURANCES. The parties agree that each shall and will, upon reasonable request of the other, make, do, execute, or cause to be made, done, or executed, all such further and other lawful acts, deeds, things, devices, and assurances whatsoever for the better or more perfect and absolute performance of the terms and conditions of the Agreement for the treatment of wastewater from the Ridgeland-West Sewage Disposal System.

IN WITNESS WHEREOF, the parties hereto acting under authority of their respective governing bodies have caused this Agreement to be duly executed in several counterparts, each of which shall constitute an original, all as of the 26th day of November, 2008.

CITY OF JACKSON, MISSISSIPPI

By: _____
Frank E. Melton, Mayor 11/20/08

Attest: _____
City Clerk

CITY OF RIDGELAND, MISSISSIPPI

By: _____
Gene F. McGee, Mayor

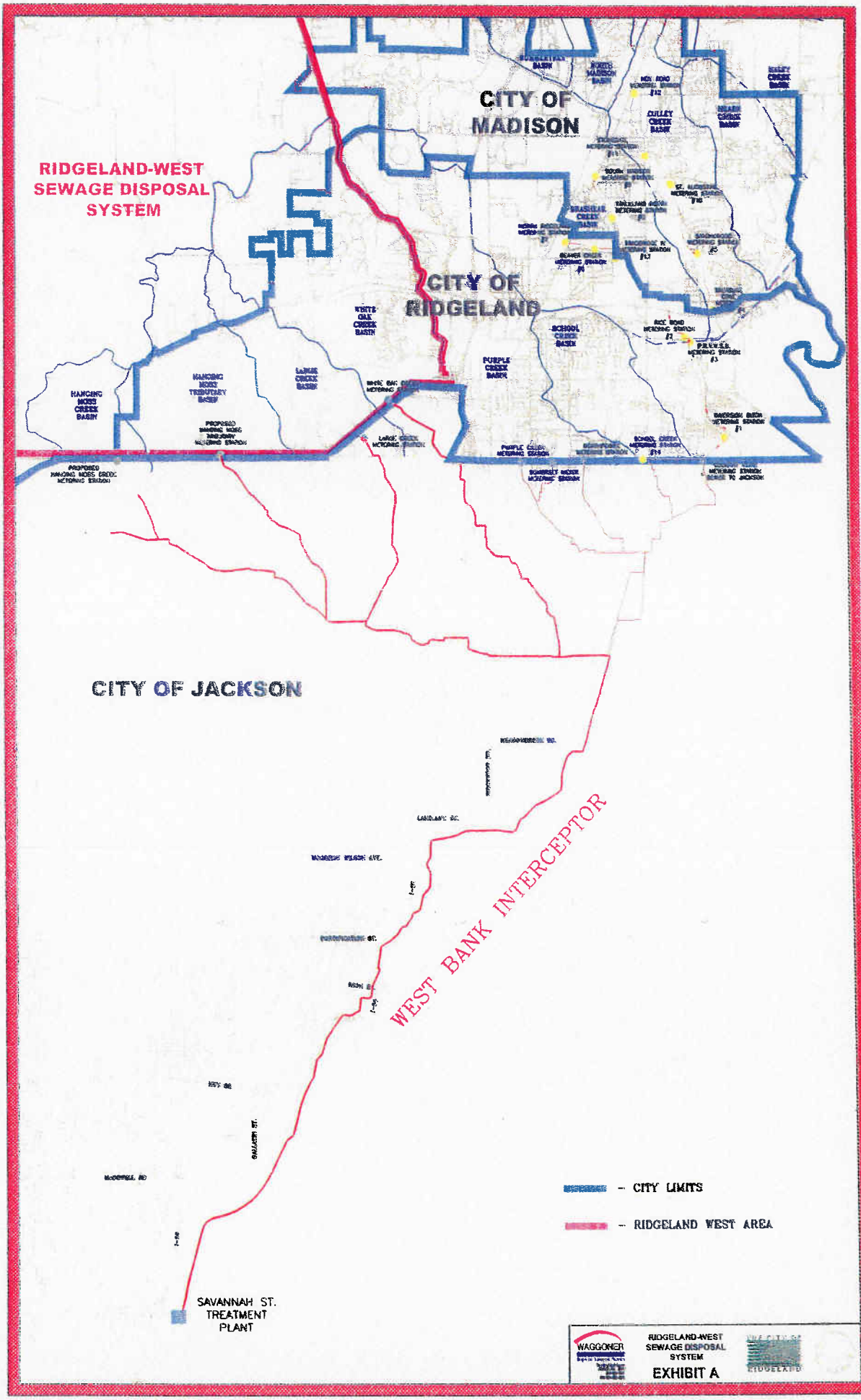
Attest: _____
David W. Overby, City Clerk

CITY OF RIDGELAND, MADISON COUNTY, MISS. CORPORATE 1899 SEAL

Exhibit A

MAP OF THE
RIDGELAND-WEST SEWAGE DISPOSAL SYSTEM

[Incorporated by Reference as if Copied Herein in its Entirety]


RIDGELAND-WEST
SEWAGE DISPOSAL
SYSTEM
CITY OF
MADISON
CITY OF
RIDGELAND
CITY OF JACKSON
WEST BANK INTERCEPTOR
SAVANNAH ST.
TREATMENT
PLANT
– CITY LIMITS
– RIDGELAND WEST AREA
WAGGONER
RIDGELAND-WEST
SEWAGE DISPOSAL
SYSTEM
EXHIBIT A

APPENDIX D: PRETREATMENT PERMITS IN SERVICE AREA

State of Mississippi

WATER POLLUTION CONTROL PERMIT

Permit to Operate Waste Disposal System in Accordance with National and State Pretreatment Standards

THIS CERTIFIES

Parker Hannifin Corporation, Fluidex Division
147 West Hoy Road
Madison, MS
Madison County

has been granted permission to discharge wastewater in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit. This permit is issued in accordance with the provisions of the Mississippi Water Pollution Control Law (Section 49-17-1 et seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder, and under authority granted pursuant to Section 402(b) of the Federal Water Pollution Control Act. The issuance of this permit does not relieve the permittee from complying with any requirements which Publicly Owned Treatment Works Authority may deem necessary as a prerequisite to the use of the Authority's sewage system and associated treatment works.

Mississippi Environmental Quality Permit Board

Mississippi Department of Environmental Quality

Issued/Modified: JUN 17 2011

Expires: MAY 31 2016

Permit No. MSP090823

Agency Interest # 4254

*** Official MDEQ Permit - Version 1.1 ***

State of Mississippi

WATER POLLUTION CONTROL PERMIT

Permit to Operate Waste Disposal System in Accordance with National and State Pretreatment Standards

THIS CERTIFIES

BFI Waste Systems of Mississippi LLC, Little Dixie Landfill
1716 North County Line Road
Ridgeland, MS
Madison County

has been granted permission to discharge wastewater in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit. This permit is issued in accordance with the provisions of the Mississippi Water Pollution Control Law (Section 49-17-1 et seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder, and under authority granted pursuant to Section 402(b) of the Federal Water Pollution Control Act. The issuance of this permit does not relieve the permittee from complying with any requirements which Publicly Owned Treatment Works Authority may deem necessary as a prerequisite to the use of the Authority's sewage system and associated treatment works.

Mississippi Environmental Quality Permit Board

Mississippi Department of Environmental Quality

Issued/Modified: DEC 0 9 2008

Expires: NOV 3 0 2013

Permit No. MSP090592

Agency Interest # 4702

*** Official MDEQ Permit - Version 1.1 ***

APPENDIX E: PRELIMINARY OPINION OF PROBABLE COST: WESTERN SEWER IMPROVEMENTS

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
APRIL 2013

HANGING MOSS CREEK SEWER IMPROVEMENTS

REACH #1

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	40,600	$	40,600
3	18" Sanitary Sewer Main (All Depths)	LF	1,800.0	$	83	$	149,400
4	15" Sanitary Sewer Main (All Depths)	LF	1,600.0	$	72	$	115,200
5	48" Manholes (All Depths)	EA	23.0	$	8,500	$	195,500
6	30" Steel Casing (Bored)	LF	120.0	$	700	$	84,000
7	Erosion Control	AC	8.0	$	4,000	$	32,000
	Subtotal					$	676,700
	Contingencies @ 15%					$	101,500
	Subtotal Opinion of Probable Construction Cost					**$**	**778,200**
	DEVELOPMENT						
	Design					$	57,900
	Construction Phase Services					$	59,400
	Plat & Description / Property Acquisition					$	51,000
	Subtotal Opinion of Probable Development Cost					**$**	**168,300**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**946,500**

REACH #2

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	50,000	$	50,000
2	Clearing and Grubbing	LS	1.0	$	23,700	$	23,700
3	8" Sanitary Sewer Main (All Depths)	LF	4,700.0	$	52	$	244,400
4	6" Service Line (All Depths)	LF	200.0	$	49	$	9,800
5	48" Manholes (All Depths)	EA	12.0	$	8,500	$	102,000
6	Asphalt Repair	LF	1,200.0	$	35	$	42,000
7	Erosion Control	AC	3.5	$	4,000	$	14,000
	Subtotal					$	485,900
	Contingencies @ 15%					$	72,900
	Subtotal Opinion of Probable Construction Cost					**$**	**558,800**
	DEVELOPMENT						
	Design					$	41,600
	Construction Phase Services					$	42,600
	Plat & Description / Property Acquisition					$	73,500
	Subtotal Opinion of Probable Development Cost					**$**	**157,700**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**716,500**

REACH #3

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	34,400	$	34,400
3	15" Sanitary Sewer Main (All Depths)	LF	2,700.0	$	72	$	194,400
4	12" Sanitary Sewer Main (All Depths)	LF	2,400.0	$	62	$	148,800
5	48" Manholes (All Depths)	EA	14.0	$	8,500	$	119,000
6	Erosion Control	AC	3.5	$	4,000	$	14,000
7	Rip Rap (200#) w/Filter Fabric	TN	200.0	$	48	$	9,600
	Subtotal					$	580,200
	Contingencies @ 15%					$	87,000
	Subtotal Opinion of Probable Construction Cost					**$**	**667,200**
	DEVELOPMENT						
	Design					$	49,700
	Construction Phase Services					$	50,900
	Plat & Description / Property Acquisition					$	76,500
	Subtotal Opinion of Probable Development Cost					**$**	**177,100**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**844,300**

REACH #4

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	20,300	$	20,300
3	8" Sanitary Sewer Main (All Depths)	LF	5,900.0	$	52	$	306,800
4	6" Service Line (All Depths)	LF	400.0	$	49	$	19,600
5	48" Manholes (All Depths)	EA	18.0	$	8,500	$	153,000
6	Erosion Control	AC	4.0	$	4,000	$	16,000
	Subtotal					$	575,700
	Contingencies @ 15%					$	86,400
	Subtotal Opinion of Probable Construction Cost					**$**	**662,100**
	DEVELOPMENT						
	Design					$	49,300
	Construction Phase Services					$	50,500
	Plat & Description / Property Acquisition					$	94,500
	Subtotal Opinion of Probable Development Cost					**$**	**194,300**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**856,400**

REACH #5

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	35,000	$	35,000
2	Clearing and Grubbing	LS	1.0	$	12,700	$	12,700
3	8" Sanitary Sewer Main (All Depths)	LF	3,400.0	$	52	$	176,800
4	6" Service Line (All Depths)	LF	100.0	$	49	$	4,900
5	48" Manholes (All Depths)	EA	9.0	$	8,500	$	76,500
6	16" Steel Casing (Bored)	LF	50.0	$	340	$	17,000
7	Erosion Control	AC	2.5	$	4,000	$	10,000
	Subtotal					$	332,900
	Contingencies @ 15%					$	49,900
	Subtotal Opinion of Probable Construction Cost					**$**	**382,800**
	DEVELOPMENT						
	Design					$	28,500
	Construction Phase Services					$	29,200
	Plat & Description / Property Acquisition					$	52,500
	Subtotal Opinion of Probable Development Cost					**$**	**110,200**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**493,000**

REACH #6

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	28,600	$	28,600
3	10" Sanitary Sewer Main (All Depths)	LF	1,800.0	$	56	$	100,800
4	8" Sanitary Sewer Main (All Depths)	LF	4,400.0	$	52	$	228,800
5	6" Service Line (All Depths)	LF	1,000.0	$	49	$	49,000
6	48" Manholes (All Depths)	EA	18.0	$	8,500	$	153,000
7	Erosion Control	AC	4.2	$	4,000	$	16,800
	Subtotal					$	637,000
	Contingencies @ 15%					$	95,600
	Subtotal Opinion of Probable Construction Cost					**$**	**732,600**
	DEVELOPMENT						
	Design					$	54,500
	Construction Phase Services					$	55,900
	Plat & Description / Property Acquisition					$	93,000
	Subtotal Opinion of Probable Development Cost					**$**	**203,400**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**936,000**

REACH #18

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	45,000	$	45,000
2	Clearing and Grubbing	LS	1.0	$	11,700	$	11,700
3	8" Sanitary Sewer Main (All Depths)	LF	3,200.0	$	52	$	166,400
4	48" Manholes (All Depths)	EA	18.0	$	8,500	$	153,000
5	18" Steel Casing (Bored)	LF	100.0	$	460	$	46,000
6	Erosion Control	AC	2.3	$	4,000	$	9,200
	Subtotal					$	431,300
	Contingencies @ 15%					$	64,700
	Subtotal Opinion of Probable Construction Cost					**$**	**496,000**
	DEVELOPMENT						
	Design					$	36,900
	Construction Phase Services					$	37,800
	Plat & Description / Property Acquisition					$	48,000
	Subtotal Opinion of Probable Development Cost					**$**	**122,700**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**618,700**

METERING STATIONS

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	10,000	$	10,000
2	Meter Station #17 - Hanging Moss	LS	1.0	$	76,700	$	76,700
	Subtotal					$	86,700
	Contingencies @ 15%					$	13,000
	Subtotal Opinion of Probable Construction Cost					**$**	**99,700**
	DEVELOPMENT						
	Design					$	7,400
	Construction Phase Services					$	7,600
	Plat & Description / Property Acquisition					$	-
	Subtotal Opinion of Probable Development Cost					**$**	**15,000**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**114,700**

HANGING MOSS SUMMARY

	CONSTRUCTION		
	Construction	$	3,806,400
	Contingencies @ 15%	$	571,000
	Subtotal Opinion of Probable Construction Cost	**$**	**4,377,400**
	DEVELOPMENT		
	Design	$	325,800
	Construction Phase Services	$	333,900
	Plat & Description / Property Acquisition	$	489,000
	Subtotal Opinion of Probable Development Cost	**$**	**1,148,700**
	TOTAL ALL HANGING MOSS PROJECTS	**$**	**5,526,100**

LARUE CREEK SEWER IMPROVEMENTS

REACH #7

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	41,900	$	41,900
3	18" Sanitary Sewer Main (All Depths)	LF	1,400.0	$	83	$	116,200
4	15" Sanitary Sewer Main (All Depths)	LF	1,900.0	$	72	$	136,800
5	12" Sanitary Sewer Main (All Depths)	LF	2,300.0	$	62	$	142,600
6	48" Manholes (All Depths)	EA	13.0	$	8,500	$	110,500
7	18" Steel Casing (Bored)	LF	100.0	$	460	$	46,000
8	Erosion Control	AC	5.2	$	4,000	$	20,800
	Subtotal					$	674,800
	Contingencies @ 15%					$	101,200
	Subtotal Opinion of Probable Construction Cost					**$**	**776,000**
	DEVELOPMENT						
	Design					$	57,800
	Construction Phase Services					$	59,200
	Plat & Description / Property Acquisition					$	84,000
	Subtotal Opinion of Probable Development Cost					**$**	**201,000**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**977,000**

REACH #8

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	31,100	$	31,100
3	10" Sanitary Sewer Main (All Depths)	LF	2,600.0	$	56	$	145,600
4	8" Sanitary Sewer Main (All Depths)	LF	1,800.0	$	52	$	93,600
5	6" Service Line (All Depths)	LF	200.0	$	49	$	9,800
6	48" Manholes (All Depths)	EA	16.0	$	8,500	$	136,000
7	18" Steel Casing (Bored)	LF	300.0	$	460	$	138,000
8	16" Steel Casing (Bored)	LF	60.0	$	340	$	20,400
9	Erosion Control	AC	3.0	$	4,000	$	12,000
	Subtotal					$	646,500
	Contingencies @ 15%					$	97,000
	Subtotal Opinion of Probable Construction Cost					**$**	**743,500**
	DEVELOPMENT						
	Design					$	55,300
	Construction Phase Services					$	56,700
	Plat & Description / Property Acquisition					$	69,000
	Subtotal Opinion of Probable Development Cost					**$**	**181,000**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**924,500**

REACH #9							
ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	40,000	$	40,000
2	Clearing and Grubbing	LS	1.0	$	17,400	$	17,400
3	8" Sanitary Sewer Main (All Depths)	LF	3,800.0	$	52	$	197,600
4	6" Service Line (All Depths)	LF	400.0	$	49	$	19,600
5	48" Manholes (All Depths)	EA	10.0	$	8,500	$	85,000
6	Asphalt Street Repair	LF	800.0	$	35	$	28,000
7	Erosion Control	AC	2.0	$	4,000	$	8,000
	Subtotal					$	395,600
	Contingencies @ 15%					$	59,300
	Subtotal Opinion of Probable Construction Cost					**$**	**454,900**
	DEVELOPMENT						
	Design					$	33,900
	Construction Phase Services					$	34,700
	Plat & Description / Property Acquisition					$	63,000
	Subtotal Opinion of Probable Development Cost					**$**	**131,600**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**586,500**

REACH #10

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	24,300	$	24,300
3	8" Sanitary Sewer Main (All Depths)	LF	5,300.0	$	52	$	275,600
4	6" Service Line (All Depths)	LF	800.0	$	49	$	39,200
5	48" Manholes (All Depths)	EA	37.0	$	8,500	$	314,500
6	Erosion Control	AC	2.0	$	4,000	$	8,000
	Subtotal					$	721,600
	Contingencies @ 15%					$	108,200
	Subtotal Opinion of Probable Construction Cost					**$**	**829,800**
	DEVELOPMENT						
	Design					$	61,800
	Construction Phase Services					$	63,300
	Plat & Description / Property Acquisition					$	91,500
	Subtotal Opinion of Probable Development Cost					**$**	**216,600**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,046,400**

LARUE CREEK SUMMARY

	CONSTRUCTION						
	Construction					$	2,438,500
	Contingencies @ 15%					$	365,700
	Subtotal Opinion of Probable Construction Cost					**$**	**2,804,200**
	DEVELOPMENT						
	Design					$	208,800
	Construction Phase Services					$	213,900
	Plat & Description / Property Acquisition					$	307,500
	Subtotal Opinion of Probable Development Cost					**$**	**730,200**
	TOTAL ALL LARUE CREEK PROJECTS					**$**	**3,534,400**

WHITE OAK CREEK PHASE 2 SEWER IMPROVEMENTS

REACH #12

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	50,000	$	50,000
2	Clearing and Grubbing	LS	1.0	$	18,800	$	18,800
3	8" Sanitary Sewer Main (All Depths)	LF	2,000.0	$	52	$	104,000
4	12" Service Line (All Depths)	LF	3,200.0	$	62	$	198,400
5	48" Manholes (All Depths)	EA	13.0	$	8,500	$	110,500
6	18" Steel Casing (Bored)	LF	50.0	$	460	$	23,000
7	Erosion Control	AC	3.7	$	4,000	$	14,800
	Subtotal					$	519,500
	Contingencies @ 15%					$	77,900
	Subtotal Opinion of Probable Construction Cost					**$**	**597,400**
	DEVELOPMENT						
	Design					$	44,500
	Construction Phase Services					$	45,600
	Plat & Description / Property Acquisition					$	78,000
	Subtotal Opinion of Probable Development Cost					**$**	**168,100**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**765,500**

REACH #13

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	70,000	$	70,000
2	Clearing and Grubbing	LS	1.0	$	42,600	$	42,600
3	8" Sanitary Sewer Main (All Depths)	LF	2,000.0	$	52	$	104,000
4	10" Service Line (All Depths)	LF	2,100.0	$	56	$	117,600
5	12" Service Line (All Depths)	LF	4,100.0	$	62	$	254,200
6	48" Manholes (All Depths)	EA	19.0	$	8,500	$	161,500
7	18" Steel Casing (Bored)	LF	50.0	$	460	$	23,000
8	Erosion Control	AC	4.8	$	4,000	$	19,200
	Subtotal					$	792,100
	Contingencies @ 15%					$	118,800
	Subtotal Opinion of Probable Construction Cost					**$**	**910,900**
	DEVELOPMENT						
	Design					$	67,800
	Construction Phase Services					$	69,500
	Plat & Description / Property Acquisition					$	123,000
	Subtotal Opinion of Probable Development Cost					**$**	**260,300**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,171,200**

REACH #16							
ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	80,000	$	80,000
2	Clearing and Grubbing	LS	1.0	$	39,600	$	39,600
3	8" Service Line (All Depths)	LF	700.0	$	52	$	36,400
4	10" Service Line (All Depths)	LF	1,600.0	$	56	$	89,600
5	12" Service Line (All Depths)	LF	3,000.0	$	62	$	186,000
6	15" Service Line (All Depths)	LF	3,000.0	$	72	$	216,000
7	48" Manholes (All Depths)	EA	24.0	$	8,500	$	204,000
8	18" Steel Casing (Bored)	LF	50.0	$	460	$	23,000
9	Erosion Control	AC	4.8	$	4,000	$	19,200
	Subtotal					$	893,800
	Contingencies @ 15%					$	134,100
	Subtotal Opinion of Probable Construction Cost					**$**	**1,027,900**
	DEVELOPMENT						
	Design					$	76,500
	Construction Phase Services					$	78,400
	Plat & Description / Property Acquisition					$	124,500
	Subtotal Opinion of Probable Development Cost					**$**	**279,400**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,307,300**

WHITE OAK CREEK PHASE 2 SUMMARY		
CONSTRUCTION		
Construction	$	2,205,400
Contingencies @ 15%	$	330,800
Subtotal Opinion of Probable Construction Cost	**$**	**2,536,200**
DEVELOPMENT		
Design	$	188,800
Construction Phase Services	$	193,500
Plat & Description / Property Acquisition	$	325,500
Subtotal Opinion of Probable Development Cost	**$**	**707,800**
TOTAL ALL WHITE OAK CREEK PHASE 2 PROJECTS	**$**	**3,244,000**

SUMMARY: SHORT TERM PROJECTS		Hanging Moss		LaRue Creek		White Oak Creek Phase 2		Total Short Term Projects
CONSTRUCTION								
Construction	$	3,806,400	$	2,438,500	$	2,205,400	$	8,450,300
Contingencies	$	571,000	$	365,700	$	330,800	$	1,267,500
Subtotal Opinion of Probable Construction Cost	**$**	**4,377,400**	**$**	**2,804,200**	**$**	**2,536,200**	**$**	**9,717,800**
DEVELOPMENT								
Design	$	325,800	$	208,800	$	188,800	$	723,400
Construction Phase Services	$	333,900	$	213,900	$	193,500	$	741,300
Plat & Description / Property Acquisition	$	489,000	$	307,500	$	325,500	$	1,122,000
Subtotal Opinion of Probable Development Cost	**$**	**1,148,700**	**$**	**730,200**	**$**	**707,800**	**$**	**2,586,700**
TOTAL OPINION OF PROBABLE PROJECT COST	**$**	**5,526,100**	**$**	**3,534,400**	**$**	**3,244,000**	**$**	**12,304,500**

LIMEKILN BASIN SEWER SYSTEM
LIMEKILN CREEK TRIB "B" INTERCEPTOR AND COLLECTION LINES
REACH #19

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	40,000	$	40,000
2	Clearing and Grubbing	LS	1.0	$	14,200	$	14,200
3	8" Sanitary Sewer Main (All Depths)	LF	3,900.0	$	52	$	202,800
4	48" Manholes (All Depths)	EA	15.0	$	8,500	$	127,500
5	18" Steel Casing (Bored)	LF	100.0	$	460	$	46,000
6	Erosion Control	AC	2.8	$	4,000	$	11,200
	Subtotal					$	441,700
	Contingencies @ 15%					$	66,300
	Subtotal Opinion of Probable Construction Cost					**$**	**508,000**
	DEVELOPMENT						
	Design					$	35,300
	Construction Phase Services					$	35,800
	Plat & Description / Property Acquisition					$	58,500
	Subtotal Opinion of Probable Development Cost					**$**	**129,600**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**637,600**

REACH #20

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	16,800	$	16,800
3	21" Sanitary Sewer Main (All Depths)	LF	4,600.0	$	95	$	437,000
4	48" Manholes (All Depths)	EA	17.0	$	8,500	$	144,500
5	Erosion Control	AC	3.3	$	4,000	$	13,200
	Subtotal					$	671,500
	Contingencies @ 15%					$	100,700
	Subtotal Opinion of Probable Construction Cost					**$**	**772,200**
	DEVELOPMENT						
	Design					$	53,700
	Construction Phase Services					$	54,400
	Plat & Description / Property Acquisition					$	69,000
	Subtotal Opinion of Probable Development Cost					**$**	**177,100**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**949,300**

REACH #21

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	18,300	$	18,300
3	18" Sanitary Sewer Main (All Depths)	LF	5,000.0	$	83	$	415,000
4	48" Manholes (All Depths)	EA	17.0	$	8,500	$	144,500
5	30" Steel Casing (Bored)	LF	110.0	$	700	$	77,000
6	Erosion Control	AC	3.6	$	4,000	$	14,400
	Subtotal					$	729,200
	Contingencies @ 15%					$	109,400
	Subtotal Opinion of Probable Construction Cost					**$**	**838,600**
	DEVELOPMENT						
	Design					$	58,300
	Construction Phase Services					$	59,100
	Plat & Description / Property Acquisition					$	75,000
	Subtotal Opinion of Probable Development Cost					**$**	**192,400**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,031,000**

REACH #22

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	17,800	$	17,800
3	15" Sanitary Sewer Main (All Depths)	LF	4,800.0	$	72	$	345,600
4	48" Manholes (All Depths)	EA	16.0	$	8,500	$	136,000
5	30" Steel Casing (Bored)	LF	100.0	$	700	$	70,000
6	Erosion Control	AC	3.5	$	4,000	$	14,000
	Subtotal					$	643,400
	Contingencies @ 15%					$	96,500
	Subtotal Opinion of Probable Construction Cost					**$**	**739,900**
	DEVELOPMENT						
	Design					$	51,400
	Construction Phase Services					$	52,200
	Plat & Description / Property Acquisition					$	72,000
	Subtotal Opinion of Probable Development Cost					**$**	**175,600**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**915,500**

REACH #23

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	40,000	$	40,000
2	Clearing and Grubbing	LS	1.0	$	12,200	$	12,200
3	12" Sanitary Sewer Main (All Depths)	LF	3,300.0	$	62	$	204,600
4	48" Manholes (All Depths)	EA	11.0	$	8,500	$	93,500
5	18" Steel Casing (Bored)	LF	150.0	$	460	$	69,000
6	Erosion Control	AC	2.4	$	4,000	$	9,600
	Subtotal					$	428,900
	Contingencies @ 15%					$	64,300
	Subtotal Opinion of Probable Construction Cost					**$**	**493,200**
	DEVELOPMENT						
	Design					$	34,300
	Construction Phase Services					$	34,800
	Plat & Description / Property Acquisition					$	49,500
	Subtotal Opinion of Probable Development Cost					**$**	**118,600**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**611,800**

REACH #24

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	40,000	$	40,000
2	Clearing and Grubbing	LS	1.0	$	15,200	$	15,200
3	10" Sanitary Sewer Main (All Depths)	LF	4,100.0	$	56	$	229,600
4	48" Manholes (All Depths)	EA	15.0	$	8,500	$	127,500
5	Erosion Control	AC	3.0	$	4,000	$	12,000
	Subtotal					$	424,300
	Contingencies @ 15%					$	63,600
	Subtotal Opinion of Probable Construction Cost					**$**	**487,900**
	DEVELOPMENT						
	Design					$	33,900
	Construction Phase Services					$	34,400
	Plat & Description / Property Acquisition					$	61,500
	Subtotal Opinion of Probable Development Cost					**$**	**129,800**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**617,700**

REACH #25

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	40,000	$	40,000
2	Clearing and Grubbing	LS	1.0	$	14,700	$	14,700
3	8" Sanitary Sewer Main (All Depths)	LF	4,000.0	$	52	$	208,000
4	48" Manholes (All Depths)	EA	13.0	$	8,500	$	110,500
5	18" Steel Casing (Bored)	LF	100.0	$	460	$	46,000
6	Erosion Control	AC	2.9	$	4,000	$	11,600
	Subtotal					$	430,800
	Contingencies @ 15%					$	64,600
	Subtotal Opinion of Probable Construction Cost					**$**	**495,400**
	DEVELOPMENT						
	Design					$	38,300
	Construction Phase Services					$	24,900
	Plat & Description / Property Acquisition					$	60,000
	Subtotal Opinion of Probable Development Cost					**$**	**123,200**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**618,600**

REACH #26

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	30,000	$	30,000
2	Clearing and Grubbing	LS	1.0	$	10,700	$	10,700
3	10" Sanitary Sewer Main (All Depths)	LF	2,900.0	$	56	$	162,400
4	48" Manholes (All Depths)	EA	10.0	$	8,500	$	85,000
5	Erosion Control	AC	2.1	$	4,000	$	8,400
	Subtotal					$	296,500
	Contingencies @ 15%					$	44,500
	Subtotal Opinion of Probable Construction Cost					**$**	**341,000**
	DEVELOPMENT						
	Design					$	23,700
	Construction Phase Services					$	24,000
	Plat & Description / Property Acquisition					$	43,500
	Subtotal Opinion of Probable Development Cost					**$**	**91,200**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**432,200**

REACH #27

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	25,400	$	25,400
3	8" Sanitary Sewer Main (All Depths)	LF	6,900.0	$	52	$	358,800
4	48" Manholes (All Depths)	EA	23.0	$	8,500	$	195,500
5	18" Steel Casing (Bored)	LF	100.0	$	460	$	46,000
6	Erosion Control	AC	5.0	$	4,000	$	20,000
	Subtotal					$	705,700
	Contingencies @ 15%					$	105,900
	Subtotal Opinion of Probable Construction Cost					**$**	**811,600**
	DEVELOPMENT						
	Design					$	56,400
	Construction Phase Services					$	57,200
	Plat & Description / Property Acquisition					$	103,500
	Subtotal Opinion of Probable Development Cost					**$**	**217,100**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,028,700**

REACH #28

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	40,000	$	40,000
2	Clearing and Grubbing	LS	1.0	$	14,700	$	14,700
3	8" Sanitary Sewer Main (All Depths)	LF	4,000.0	$	52	$	208,000
4	48" Manholes (All Depths)	EA	13.0	$	8,500	$	110,500
5	Erosion Control	AC	2.9	$	4,000	$	11,600
	Subtotal					$	384,800
	Contingencies @ 15%					$	57,700
	Subtotal Opinion of Probable Construction Cost					**$**	**442,500**
	DEVELOPMENT						
	Design					$	30,800
	Construction Phase Services					$	31,200
	Plat & Description / Property Acquisition					$	60,000
	Subtotal Opinion of Probable Development Cost					**$**	**122,000**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**564,500**

REACH #29

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	50,000	$	50,000
2	Clearing and Grubbing	LS	1.0	$	19,300	$	19,300
3	8" Sanitary Sewer Main (All Depths)	LF	5,300.0	$	52	$	275,600
4	48" Manholes (All Depths)	EA	18.0	$	8,500	$	153,000
5	Erosion Control	AC	3.8	$	4,000	$	15,200
	Subtotal					$	513,100
	Contingencies @ 15%					$	77,000
	Subtotal Opinion of Probable Construction Cost					**$**	**590,100**
	DEVELOPMENT						
	Design					$	41,000
	Construction Phase Services					$	41,600
	Plat & Description / Property Acquisition					$	79,500
	Subtotal Opinion of Probable Development Cost					**$**	**162,100**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**752,200**

REACH #30

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	70,000	$	70,000
2	Clearing and Grubbing	LS	1.0	$	27,900	$	27,900
3	8" Sanitary Sewer Main (All Depths)	LF	7,600.0	$	52	$	395,200
4	48" Manholes (All Depths)	EA	25.0	$	8,500	$	212,500
5	18" Steel Casing (Bored)	LF	200.0	$	460	$	92,000
6	Erosion Control	AC	5.5	$	4,000	$	22,000
	Subtotal					$	819,600
	Contingencies @ 15%					$	122,900
	Subtotal Opinion of Probable Construction Cost					**$**	**942,500**
	DEVELOPMENT						
	Design					$	65,500
	Construction Phase Services					$	66,400
	Plat & Description / Property Acquisition					$	114,000
	Subtotal Opinion of Probable Development Cost					**$**	**245,900**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,188,400**

REACH #31

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	50,000	$	50,000
2	Clearing and Grubbing	LS	1.0	$	15,200	$	15,200
3	12" Sanitary Sewer Main (All Depths)	LF	4,100.0	$	62	$	254,200
4	48" Manholes (All Depths)	EA	14.0	$	8,500	$	119,000
5	18" Steel Casing (Bored)	LF	200.0	$	460	$	92,000
6	Erosion Control	AC	3.0	$	4,000	$	12,000
	Subtotal					$	542,400
	Contingencies @ 15%					$	81,400
	Subtotal Opinion of Probable Construction Cost					**$**	**623,800**
	DEVELOPMENT						
	Design					$	43,400
	Construction Phase Services					$	44,000
	Plat & Description / Property Acquisition					$	61,500
	Subtotal Opinion of Probable Development Cost					**$**	**148,900**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**772,700**

REACH #32

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	55,000	$	55,000
2	Clearing and Grubbing	LS	1.0	$	20,300	$	20,300
3	10" Sanitary Sewer Main (All Depths)	LF	5,500.0	$	56	$	308,000
4	48" Manholes (All Depths)	EA	18.0	$	8,500	$	153,000
5	18" Steel Casing (Bored)	LF	100.0	$	460	$	46,000
6	Erosion Control	AC	4.0	$	4,000	$	16,000
	Subtotal					$	598,300
	Contingencies @ 15%					$	89,700
	Subtotal Opinion of Probable Construction Cost					**$**	**688,000**
	DEVELOPMENT						
	Design					$	47,800
	Construction Phase Services					$	48,500
	Plat & Description / Property Acquisition					$	82,500
	Subtotal Opinion of Probable Development Cost					**$**	**178,800**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**866,800**

REACH #33

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	40,000	$	40,000
2	Clearing and Grubbing	LS	1.0	$	15,200	$	15,200
3	8" Sanitary Sewer Main (All Depths)	LF	4,200.0	$	52	$	218,400
4	48" Manholes (All Depths)	EA	14.0	$	8,500	$	119,000
5	18" Steel Casing (Bored)	LF	100.0	$	460	$	46,000
6	Erosion Control	AC	3.0	$	4,000	$	12,000
	Subtotal					$	450,600
	Contingencies @ 15%					$	67,600
	Subtotal Opinion of Probable Construction Cost					**$**	**518,200**
	DEVELOPMENT						
	Design					$	36,000
	Construction Phase Services					$	36,500
	Plat & Description / Property Acquisition					$	63,000
	Subtotal Opinion of Probable Development Cost					**$**	**135,500**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**653,700**

REACH #34

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	35,000	$	35,000
2	Clearing and Grubbing	LS	1.0	$	11,700	$	11,700
3	8" Sanitary Sewer Main (All Depths)	LF	3,100.0	$	52	$	161,200
4	48" Manholes (All Depths)	EA	11.0	$	8,500	$	93,500
5	18" Steel Casing (Bored)	LF	50.0	$	460	$	23,000
6	Erosion Control	AC	2.3	$	4,000	$	9,200
	Subtotal					$	333,600
	Contingencies @ 15%					$	50,000
	Subtotal Opinion of Probable Construction Cost					**$**	**383,600**
	DEVELOPMENT						
	Design					$	26,700
	Construction Phase Services					$	27,000
	Plat & Description / Property Acquisition					$	46,500
	Subtotal Opinion of Probable Development Cost					**$**	**100,200**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**483,800**

PUMP STATIONS AND FORCE MAINS

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	250,000	$	250,000
2	Clearing and Grubbing	LS	1.0	$	190,000	$	190,000
3	Limekiln Trib B Pump Station - 500 gpm	LS	1.0	$	360,000	$	360,000
4	Robinson Springs Pump Station - 700 gpm	LS	1.0	$	455,000	$	455,000
5	10" Force Main	LF	52,500.0	$	42	$	2,205,000
6	18" Steel Casing (Bored)	LF	1,830.0	$	460	$	841,800
7	Erosion Control	AC	37.5	$	4,000	$	150,000
	Subtotal					$	4,451,800
	Contingencies @ 15%					$	667,800
	Subtotal Opinion of Probable Construction Cost					**$**	**5,119,600**
	DEVELOPMENT						
	Design					$	356,000
	Construction Phase Services					$	360,900
	Plat & Description / Property Acquisition					$	787,500
	Subtotal Opinion of Probable Development Cost					**$**	**1,504,400**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**6,624,000**

LIMEKILN CREEK TRIB "K" INTERCEPTOR AND COLLECTION LINES
REACH #35

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Mobilization	LS	1.0	$	60,000	$	60,000
2	Clearing and Grubbing	LS	1.0	$	21,300	$	21,300
3	8" Sanitary Sewer Main (All Depths)	LF	5,800.0	$	52	$	301,600
4	48" Manholes (All Depths)	EA	22.0	$	8,500	$	187,000
5	18" Steel Casing (Bored)	LF	80.0	$	460	$	36,800
6	Erosion Control	AC	4.2	$	4,000	$	16,800
	Subtotal					$	623,500
	Contingencies @ 15%					$	93,500
	Subtotal Opinion of Probable Construction Cost					**$**	**717,000**
	DEVELOPMENT						
	Design					$	49,900
	Construction Phase Services					$	50,500
	Plat & Description / Property Acquisition					$	87,000
	Subtotal Opinion of Probable Development Cost					**$**	**187,400**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**904,400**

LIMEKILN SUMMARY		
CONSTRUCTION		
Construction	$	13,489,700
Contingencies @ 15%	$	2,023,400
Subtotal Opinion of Probable Construction Cost	**$**	**15,513,100**
DEVELOPMENT		
Design	$	1,082,400
Construction Phase Services	$	1,083,400
Plat & Description / Property Acquisition	$	1,974,000
Subtotal Opinion of Probable Development Cost	**$**	**4,139,800**
TOTAL ALL LIMEKILN PROJECTS	**$**	**19,652,900**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
APRIL 2013

BIRD LANES SEWER SYSTEM

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Old Agency Rd Reach, 8" Sanitary Sewer	LF	1,950	$	80	$	156,000
2	Robinwood Ln Reach, 8" Sanitary Sewer	LF	1,940	$	80	$	155,200
3	Meadowlark Ln Reach, 8" Sanitary Sewer	LF	4,910	$	80	$	392,800
4	Whipporwill Ln Reach, 8" Sanitary Sewer	LF	2,530	$	80	$	202,400
	Subtotal					$	906,400
	Contingencies @ 15%					$	136,000
	Subtotal Opinion of Probable Construction Cost					**$**	**1,042,400**
	DEVELOPMENT						
	Design					$	107,000
	Construction Phase Services					$	120,000
	Plat & Description / Property Acquisition					$	25,000
	Subtotal Opinion of Probable Development Cost					**$**	**252,000**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,294,400**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
APRIL 2013

RICHARDSON ROAD AREA SEWER SYSTEM

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	Richardson & Steed Rd Reach, 8" Sanitary Sewer	LF	8,800	$	80	$	704,000
2	Lake Castle & Rolling Meadows Reach, 8" Sanitary Sewer	LF	5,340	$	80	$	427,200
3	Rolling Meadows South Reach, 8" Sanitary Sewer	LF	1,290	$	80	$	103,200
4	Rolling Meadows East Reach, 10" Sanitary Sewer	LF	910	$	90	$	81,900
	Subtotal					$	1,316,300
	Contingencies @ 15%					$	197,400
	Subtotal Opinion of Probable Construction Cost					**$**	**1,513,700**
	DEVELOPMENT						
	Design					$	148,000
	Construction Phase Services					$	153,000
	Plat & Description / Property Acquisition					$	25,000
	Subtotal Opinion of Probable Development Cost					**$**	**326,000**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,839,700**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
APRIL 2013

COLONY PARK BOULEVARD AREA SEWER SYSTEM

ITEM NO	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
	CONSTRUCTION						
1	East Frontage Road Reach, 8" Sanitary Sewer	LF	820	$	80	$	65,600
2	Colony Park Blvd. Reach, 8" Sanitary Sewer	LF	5,340	$	80	$	427,200
3	Colony Park Blvd. Reach,12" Sanitary Sewer	LF	3,450	$	100	$	345,000
4	Stokes Road Pump Station Abandonment	LS	1	$	8,000	$	8,000
5	Stokes Rd PS Interceptor, 8" Sanitary Sewer	LF	950	$	100	$	95,000
6	Matthews Road Pump Station Abandonment	LS	1	$	8,000	$	8,000
7	Matthews Rd PS Interceptor, 8" Sanitary Sewer	LF	1,210	$	100	$	121,000
	Subtotal					$	940,800
	Contingencies @ 15%					$	141,100
	Subtotal Opinion of Probable Construction Cost					**$**	**1,081,900**
	DEVELOPMENT						
	Design					$	148,000
	Construction Phase Services					$	111,000
	Plat & Description / Property Acquisition					$	25,000
	Subtotal Opinion of Probable Development Cost					**$**	**284,000**
	TOTAL OPINION OF PROBABLE PROJECT COST					**$**	**1,365,900**

SUMMARY

Project	Construction Cost	Development Cost	Total Cost
Hanging Moss Creek Sewer Improvements	$ 4,377,400	$ 1,148,700	$ 5,526,100
Larue Creek Sewer Improvements	$ 213,900	$ 307,500	$ 3,534,400
White Oak Creek Phase 2 Sewer Improvements	$ 193,500	$ 325,500	$ 3,244,000
Limekiln Basin Sewer System	$ 1,974,000	$ 4,139,800	$ 19,652,900
Bird Lanes Sewer System	$ 1,042,400	$ 252,000	$ 1,294,400
Richardson Road Area Sewer System	$ 1,513,700	$ 326,000	$ 1,839,700
Colony Park Boulevard Area Sewer System	$ 1,081,900	$ 284,000	$ 1,365,900

APPENDIX F: PRELIMINARY OPINION OF PROBABLE COST: FLOW METERING STATIONS

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
APRIL 2013

FLOW METERS

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Flow Metering Stations	EA	10	$ 22,200	$ 222,000
	Contingencies @ 15%				$ 33,300
	Subtotal Opinion of Probable Construction Cost				**$ 255,300**
	DEVELOPMENT				
	Design				$ 32,000
	Construction Phase Services				$ 47,000
	Subtotal Opinion of Probable Development Cost				**$ 79,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 334,300**

APPENDIX G: PRELIMINARY OPINION OF PROBABLE COST: PUMP STATION ABANDONMENT

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WEI #W011072
WASTEWATER FACILITIES PLAN
WEI #W011072
JULY 2013

SUMMARY: PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	CONSTRUCTION COST	DEVELOPMENT COST	TOTAL COST
1	Beaver Creek Pump Station Abandonment	$ 72,900	$ 29,000	$ 101,900
2	Ticos Pump Station Abandonment	$ 77,900	$ 69,000	$ 146,900
3	Rice Road Pump Station Abandonment	$ 107,200	$ 42,000	$ 149,200
4	M E A Pump Station Abandonment	$ 128,000	$ 53,000	$ 181,000
5	M & F Pump Station Abandonment	$ 196,600	$ 75,000	$ 271,600
6	Brame Road Pump Station Abandonment	$ 237,000	$ 88,000	$ 325,000
7	Jackson Street Pump Station Abandonment	$ 306,600	$ 91,000	$ 397,600
8	School Street Reconstruction: Salem Square Pump Station Abandonment	$ 489,100	$ 135,000	$ 624,100
TOTAL OPINION OF PROBABLE COST		**$ 1,615,300**	**$ 582,000**	**$ 2,197,300**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
APRIl 2013

BEAVER CREEK PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Mobilization/Demobilization	LS	1	$ 4,000	$ 4,000
2	Clearing & Grubbing	LS	1	$ 2,000	$ 2,000
3	8" Sanitary Sewer 0/8	LF	262	$ 30	$ 7,860
4	Design	LF	128	$ 40	$ 5,120
5	Stream Crossing	LF	50	$ 50	$ 2,500
6	Manholes 0/8	EA	1	$ 2,500	$ 2,500
7	Flow Meter Installation	EA	1	$ 23,000	$ 23,000
8	Connect to existing Manhole / Pump Station	EA	2	$ 2,000	$ 4,000
9	Remove pumps and control panel at existing lift station and fill station with concrete to invert of sewer line.	EA	1	$ 6,000	$ 6,000
10	Erosion Control	LS	1	$ 4,000	$ 4,000
11	Seeding & Fertilization	AC	0.1	$ 1,500	$ 150
12	Solid Sod	SY	440	$ 5.20	$ 2,288
	Subtotal				$ 63,418
	Design				$ 9,482
	Subtotal Opinion of Probable Construction Cost				**$ 72,900**
	DEVELOPMENT				
	Design				$ 10,000
	Construction Phase Services				$ 16,000
	Plat & Description / Property Acquisition				$ 3,000
	Subtotal Opinion of Probable Development Cost				**$ 29,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 101,900**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
APRIL 2013

TICOS PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Mobilization/Demobilization	LS	1	$ 3,000	$ 3,000
2	Clearing & Grubbing	LS	1	$ 10,000	$ 10,000
3	8" Sanitary Sewer 0/8	LF	488	$ 30	$ 14,640
4	8" Sanitary Sewer 8/12	LF	147	$ 40	$ 5,880
5	8" Sanitary Sewer 12/16	LF	202	$ 50	$ 10,100
6	Manholes 0/8	EA	1	$ 2,500	$ 2,500
7	Manholes 8/12	EA	1	$ 3,000	$ 3,000
8	Connect to existing Manhole / Pump Station	EA	2	$ 2,000	$ 4,000
9	Remove pumps and control panel at existing lift station and fill station with concrete to invert of sewer line.	EA	1	$ 6,000	$ 6,000
10	Erosion Control	LS	1	$ 8,000	$ 8,000
11	Seeding & Fertilization	AC	0.4	$ 1,500	$ 600
	Subtotal				$ 67,720
	Contingencies @ 15%				$ 10,180
	Subtotal Opinion of Probable Construction Cost				**$ 77,900**
	DEVELOPMENT				
	Design				$ 11,000
	Construction Phase Services				$ 18,000
	Plat & Description / Property Acquisition				$ 40,000
	Subtotal Opinion of Probable Development Cost				**$ 69,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 146,900**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WEI #W011072
WASTEWATER FACILITIES PLAN
WEI #W011072
JULY 2013

RICE ROAD PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Mobilization/Demobilization	LS	1	$ 3,500	$ 3,500
2	Clearing & Grubbing	LS	1	$ 3,000	$ 3,000
3	8" Sanitary Sewer 0/8	LF	1,300	$ 30	$ 39,000
4	16" Casing, Bore & Jack	LF	120	$ 200	$ 24,000
5	Manholes 0/8	EA	2	$ 2,500	$ 5,000
6	Connect to existing Manhole / Pump Station	EA	2	$ 2,000	$ 4,000
7	Remove pumps and control panel at existing lift station and fill station with concrete to invert of sewer line.	EA	1	$ 6,000	$ 6,000
8	Erosion Control	LS	1	$ 2,000	$ 2,000
9	Solid Sod	SY	1,300	$ 5.20	$ 6,760
	Subtotal				$ 93,260
	Contingencies @ 15%				$ 13,940
	Subtotal Opinion of Probable Construction Cost				**$ 107,200**
	DEVELOPMENT				
	Facilities Planning and Design				$ 15,000
	Construction Phase Services				$ 24,000
	Plat & Description / Property Acquisition				$ 3,000
	Subtotal Opinion of Probable Development Cost				**$ 42,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 149,200**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
MARCH 2013

M E A PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Mobilization/Demobilization	LS	1	$ 2,000	$ 2,000
2	Clearing & Grubbing	LS	1	$ 16,000	$ 16,000
	8" Sanitary Sewer 0/8	LF	487	$ 30	$ 14,610
3	8" Sanitary Sewer 8/12	LF	419	$ 40	$ 16,760
4	8" Sanitary Sewer 12/16	LF	223	$ 50	$ 11,150
	8" Sanitary Sewer 16/20	LF	206	$ 60	$ 12,360
5	Manholes 0/8	EA	1	$ 2,500	$ 2,500
	Manholes 8/12	EA	1	$ 3,000	$ 3,000
7	Manholes >20	EA	2	$ 4,500	$ 9,000
8	Connect to existing Manhole / Pump Station	EA	2	$ 2,000	$ 4,000
9	Remove pumps and control panel at existing lift station and fill station with concrete to invert of sewer line.	EA	1	$ 6,000	$ 6,000
10	Erosion Control	LS	1	$ 13,000	$ 13,000
11	Seeding & Fertilization	AC	0.6	$ 1,500	$ 900
	Subtotal				$ 111,280
	Contingencies @ 15%				$ 16,720
	Subtotal Opinion of Probable Construction Cost				**$ 128,000**
	DEVELOPMENT				
	Facilities Planning and Design				$ 15,000
	Construction Phase Services				$ 24,000
	Plat & Description / Property Acquisition				$ 14,000
	Subtotal Opinion of Probable Development Cost				**$ 53,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 181,000**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WEI #W011072
WASTEWATER FACILITIES PLAN
WEI #W011072
JULY 2013

M & F PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Mobilization/Demobilization	LS	1	$ 2,000	$ 2,000
2	Clearing & Grubbing	LS	1	$ 3,000	$ 3,000
3	8" Sanitary Sewer 0/8	LF	307	$ 30	$ 9,210
4	8" Sanitary Sewer 8/12	LF	294	$ 40	$ 11,760
5	8" Sanitary Sewer 12/16	LF	330	$ 50	$ 16,500
6	16" Casing, Open Cut	LF	814	$ 100	$ 81,400
7	Creek Crossing	Lf	125	$ 165	$ 20,625
8	Manholes 0/8	EA	1	$ 2,500	$ 2,500
9	Manholes 8/12	EA	1	$ 3,000	$ 3,000
10	Manholes 12/16	EA	1	$ 4,500	$ 4,500
11	Connect to existing Manhole / Pump Station	EA	2	$ 2,000	$ 4,000
12	Remove pumps and control panel at existing lift station and fill station with concrete to invert of sewer line.	EA	1	$ 6,000	$ 6,000
13	Erosion Control	LS	1	$ 6,000	$ 6,000
14	Seeding & Fertilization	AC	0.3	$ 1,500.00	$ 450
	Subtotal				$ 170,945
	Contingencies @ 15%				$ 25,655
	Subtotal Opinion of Probable Construction Cost				**$ 196,600**
	DEVELOPMENT				
	Facilities Planning and Design				$ 26,000
	Construction Phase Services				$ 39,000
	Plat & Description / Property Acquisition				$ 10,000
	Subtotal Opinion of Probable Development Cost				**$ 75,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 271,600**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
MARCH 2013

BRAME ROAD PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Mobilization/Demobilization	LS	1	$ 2,000	$ 2,000
2	Clearing & Grubbing	LS	1	$ 9,000	$ 9,000
3	8" Sanitary Sewer 0/8	LF	268	$ 30	$ 8,040
4	8" Sanitary Sewer 8/12	LF	82	$ 40	$ 3,280
5	8" Sanitary Sewer 12/16	LF	160	$ 50	$ 8,000
6	8" Sanitary Sewer 16/20	LF	252	$ 60	$ 15,120
7	8" Sanitary Sewer >20	LF	1,025	$ 70	$ 71,750
8	30" Casing, Bored	LF	100	$ 200	$ 20,000
9	Manholes 16/20	EA	1	$ 4,000	$ 4,000
10	Manholes >20	EA	3	$ 4,500	$ 13,500
11	6" Service Lines	LF	60	$ 35	$ 2,100
12	Reconnect existing service lines to new main	EA	2	$ 750	$ 1,500
13	Connect to existing Manhole / Pump Station	EA	2	$ 2,000	$ 4,000
14	Remove pumps and control panel at existing lift station and fill station with concrete to invert of sewer line.	EA	1	$ 6,000	$ 6,000
15	Erosion Control	LS	1	$ 18,000	$ 18,000
16	Solid Sod	SY	3,800	$ 5.20	$ 19,760
	Subtotal				$ 206,050
	Contingencies @ 15%				$ 30,950
	Subtotal Opinion of Probable Construction Cost				**$ 237,000**
	DEVELOPMENT				
	Facilities Planning and Design				$ 28,000
	Construction Phase Services				$ 42,000
	Plat & Description / Property Acquisition				$ 18,000
	Subtotal Opinion of Probable Development Cost				**$ 88,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 325,000**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WEI #W011072
WASTEWATER FACILITIES PLAN
WEI #W011072
JULY 2013

JACKSON STREET PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Construction per Attached Term Bid OPC	LS	1	$ 266,633	$ 266,633
	Contingencies @ 15%				$ 39,967
	Subtotal Opinion of Probable Construction Cost				**$ 306,600**
	DEVELOPMENT				
	Facilities Planning and Design				$ 53,000
	Construction Phase Services				$ 38,000
	Plat & Description / Property Acquisition				$ -
	Subtotal Opinion of Probable Development Cost				**$ 91,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 397,600**

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI

JACKSON STREET PUMP STATION ABANDONMENT

TERM BID

JUNE 2013

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
Clearing and Grubbing *(Not in Term Bid)*	LS	1.0	$ 4,000.00	$ 4,000.00
Seeding, Fertilizing, and Mulching	AC	1.00	$ 1,500.00	$ 1,500.00
Supply & Install Select Bedding	CY	50.0	$ 16.00	$ 800.00
Supply & Install Select Backfill	CY	150.00	$ 10.00	$ 1,500.00
200# Loose Rock Rip-Rap *(Not in Term Bid)*	SY	100.00	$ 55.00	$ 5,500.00
Ten Ton Dump Truck and Driver	HR	80.0	$ 54.00	$ 4,320.00
10" Sanitary Sewer (6' - 8' Cut, PVC)	LF	111.0	$ 14.50	$ 1,609.50
10" Sanitary Sewer (8' - 10' Cut, PVC)	LF	100.0	$ 16.50	$ 1,650.00
10" Sanitary Sewer (10' - 12' Cut, PVC)	LF	125.0	$ 19.50	$ 2,437.50
10" Sanitary Sewer (12' - 14' Cut, PVC)	LF	75.0	$ 23.00	$ 1,725.00
10" Sanitary Sewer (14' - 16' Cut, PVC)	LF	55.0	$ 26.50	$ 1,457.50
10" Sanitary Sewer (16' - 18' Cut, PVC)	LF	145.0	$ 36.00	$ 5,220.00
10" Sanitary Sewer (18' - 20' Cut, PVC)	LF	55.0	$ 42.00	$ 2,310.00
10" Sanitary Sewer (20' - 22' Cut, PVC)	LF	110.0	$ 46.00	$ 5,060.00
10" Sanitary Sewer (22' - 24' Cut, PVC) *(Not in Term Bid)*	LF	125.0	$ 64.00	$ 8,000.00
10" Sanitary Sewer (24' - 26' Cut, PVC) *(Not in Term Bid)*	LF	190.0	$ 90.00	$ 17,100.00
10" Sanitary Sewer Installed in Casing	LF	60.0	$ 31.00	$ 1,860.00
14" HDPE Pipe, DR 11, Directional Bored *(Not in Term Bid)*	LF	640.0	$ 240.00	$ 153,600.00
6" Sanitary Sewer Service Line	LF	28.0	$ 12.00	$ 336.00
18" Steel Casing, Bored & Jacked (6' - 8')	LF	40.0	$ 60.00	$ 2,400.00
18" Steel Casing, Bored & Jacked (8' - 10')	LF	20.0	$ 63.00	$ 1,260.00
48" Diameter Standard Manholes (6'-8')	EA	1.0	$ 1,800.00	$ 1,800.00
48" Diameter Standard Manholes (10'-12')	EA	1.0	$ 2,200.00	$ 2,200.00
48" Diameter Standard Manholes (16'-18')	EA	1.0	$ 2,600.00	$ 2,600.00
48" Diameter Standard Manholes (20'-22')	EA	2.0	$ 2,900.00	$ 5,800.00
48" Diameter Standard Manholes (22'-24') *(Not in Term Bid)*	EA	2.0	$ 4,200.00	$ 8,400.00
48" Diameter Standard Manholes (24'-26') *(Not in Term Bid)*	EA	1.0	$ 5,000.00	$ 5,000.00
Convert Existing Pump Station to Manhole *(Not in Term Bid)*	LS	1.0	$ 7,500.00	$ 7,500.00
Connection to Existing Manhole	EA	1.0	$ 800.00	$ 800.00
Removal of Existing Manhole *(Not in Term Bid)*	EA	1.0	$ 800.00	$ 800.00
			Construction Subtotal	*$ 258,545.50*
			10" PVC Pipe Material Only Cost by City (1,162 LF or 83 pipe joints)	*$ 8,087.52*
			Cost to Repair Perkins Street if Open-Cut Sewer Installation = $75,000	
			Jackson Street Pump Station Abandonment Total	**$ 266,633.02**

BLURTON, BANKS & ASSOC., INC.
ENGINEERS - SURVEYORS - CONSTRUCTORS
P.O. BOX 12448 • 6055 RIDGEWOOD ROAD, STE D
JACKSON, MISSISSIPPI 39211
PH. 601-957-2055 Fax 601-977-0442

May 13, 2013

Mr. Chris Bryson
The City of Ridgeland
P.O. Box 217
Ridgeland, MS 39157

RE: Jackson Street Pump Station Abandonment

Dear Chris:

We are pleased to offer you the following quote for work on the above referenced project.

We propose to install a new sewer line from manhole No. 8 to the Jackson Street pump station that will include 709 LF of 10" HDPE sewer bore for the following:

10" Sanitary Sewer (0-6)	27 LF	@$	12.50	$ 337.50
10"Sanitary Sewer (6-8)	28 LF	@$	14.50	406.00
10" Sanitary Sewer (8-10)	216 LF	@$	16.50	3,564.00
10" Sanitary Sewer (10-12)	125 LF	@$	19.50	2,437.50
10" Sanitary Sewer (12-14)	75 LF	@$	23.00	1,725.00
10" Sanitary Sewer (14-16)	25LF	@$	26.50	662.50
10" Sanitary Sewer (16-18)	176 LF	@$	36.00	6,336.00
10" Sanitary Sewer (18-20)	55 LF	@$	42.00	2,310.00
10" Sanitary Sewer (20-22)	110 LF	@$	46.00	5,060.00
10" Sanitary Sewer (22-24)	125 LF	@$	64.00	8,000.00
10" Sanitary Sewer (24-26)	190 LF	@$	90.00	17,100.00
Sewer Manhole (6-8)	1 EA	@$	1,800.00	1,800.00
Sewer Manhole (16-18)	1 EA	@$	2,600.00	2,600.00
Sewer Manhole (22-24)	2 EA	@$	4,200.00	8,400.00
Sewer Manhole (24-26)	1 EA	@$	5,000.00	5,000.00
10" Sewer HDPE Bore	709 LF	@$	240.00	170,160.00
Convert Pump Station to Manhole	LS			7,500.00
Select Fill	150 CY	@$	10.00	1,500.00
Dump Trucks	80 HRS	@$	54.00	4,320.00
Clearing & Grubbing	LS			4,000.00
				$253,218.50

Please do not hesitate to call if you have any questions.

Yours sincerely,
BLURTON, BANKS & ASSOC., INC.

Ed Blurton

EB:ks

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
MARCH 2013

SCHOOL STREET RECONSTRUCTION: SALEM SQUARE PUMP STATION ABANDONMENT

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	10" Sanitary Sewer 10/12	LF	761	$ 50	$ 38,050
2	8" Sanitary Sewer 6/8	LF	701	$ 30	$ 21,030
3	8" Sanitary Sewer 8/10	LF	429	$ 35	$ 15,015
4	8" Sanitary Sewer 10/12	LF	92	$ 45	$ 4,140
5	8" Ductile Iron Sewer 6/8	LF	193	$ 70	$ 13,510
6	6" Service Lines	LF	500	$ 35	$ 17,500
7	Reconnect existing service lines to new main	EA	30	$ 750	$ 22,500
8	Manholes 6/8	EA	2	$ 2,500	$ 5,000
9	Manholes 8/10	EA	2	$ 2,800	$ 5,600
10	Manholes 10/12	EA	3	$ 3,200	$ 9,600
11	Drop Manholes 8/10	EA	1	$ 3,400	$ 3,400
12	Drop Manholes 10/12	EA	1	$ 3,800	$ 3,800
13	Manhole installed on existing line 6/8	EA	1	$ 3,200	$ 3,200
14	Connect to existing Manhole	EA	1	$ 2,000	$ 2,000
15	Remove pumps and control panel at existing lift station and fill station with concrete to invert of sewer line.	EA	1	$ 6,000	$ 6,000
16	Asphalt Road Repair	TN	1,700	$ 150	$ 255,000
	Subtotal				$ 425,345
	Contingencies @ 15%				$ 63,755
	Subtotal Opinion of Probable Construction Cost				**$ 489,100**
	DEVELOPMENT				
	Facilities Planning and Design				$ 56,000
	Construction Phase Services				$ 79,000
	Plat & Description / Property Acquisition				$ -
	Subtotal Opinion of Probable Development Cost				**$ 135,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 624,100**

APPENDIX H: PRELIMINARY OPINION OF PROBABLE COST: TRANSFER SWITCHES

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
DECEMBER 2012

TRANSFER SWITCHES

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Transfer Switches	EA	3	$ 3,500	$ 10,500
	Contingencies @ 15%				$ 1,600
	Subtotal Opinion of Probable Construction Cost				**$ 12,100**
	DEVELOPMENT				
	Design				$ 2,300
	Construction Phase Services				$ 3,300
	Subtotal Opinion of Probable Development Cost				**$ 5,600**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 17,700**

APPENDIX I: PRELIMINARY OPINION OF PROBABLE COST: REHABILITATION PROJECTS

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
MAY 2013

SEWER SYSTEM EVALUATION SURVEY
SCHOOL CREEK AND PURPLE CREEK INTERCEPTORS

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Mobilization/Demobilization, Traffic Control, and Misc.	LS	1	$ 45,000.00	$ 45,000
2	Manhole Inspection	EA	132	$ 135.00	$ 17,820
3	Smoke Testing Sewer Lines	LF	43,000	$ 3.00	$ 129,000
4	Hydro Cleaning Sewer Lines, All Sizes	LF	6,500	$ 4.00	$ 26,000
5	Heavy Cleaning Sewer Lines, All Sizes	LF	1,500	$ 12.00	$ 18,000
6	TV Inspection, All Sizes	LF	8,500	$ 5.50	$ 46,750
7	Bypass Pumping Sewer Lines, All Sizes	EA	20	$ 300.00	$ 6,000
8	Locate &Uncover MH Under Ground or Pavement	EA	30	$ 75.00	$ 2,250
	Subtotal				$ 290,820
	Contingencies @ 15%				$ 43,680
	Subtotal Opinion of Probable Construction Cost				**$ 334,500**
	DEVELOPMENT				
	Design				$ 12,000
	Construction Phase Services				$ 20,000
	Subtotal Opinion of Probable Development Cost				**$ 32,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 366,500**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
MAY 2013

SEWER SYSTEM REHABILITATION
SCHOOL CREEK AND PURPLE CREEK INTERCEPTORS

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Mobilization/Demobilization, Traffic Control, and Misc.	LS	1	$ 20,000.00	$ 20,000
2	Raise Manholes	EA	40	$ 1,500.00	$ 60,000
3	Replace or Reseal Manhole Ring and Cover	EA	90	$ 600.00	$ 54,000
4	Point Repairs, All Sizes	EA	8	$ 4,500.00	$ 36,000
5	Cured In Place Pipe, All Sizes	LF	2,000	$ 105.00	$ 210,000
7	Heavy Cleaning Sewer Lines, All Sizes	LF	2,000	$ 6.00	$ 12,000
8	TV Inspection (All Sizes)	LF	2,000	$ 1.25	$ 2,500
9	Bypass Pump Setups	EA	4	$ 3,200.00	$ 12,800
10	Bypass Pumping Operation	HR	2,800	$ 60.00	$ 168,000
	Subtotal				$ 575,300
	Contingencies @ 15%				$ 86,300
	Subtotal Opinion of Probable Construction Cost				**$ 661,600**
	DEVELOPMENT				
	Design				$ 73,000
	Construction Phase Services				$ 90,000
	Subtotal Opinion of Probable Development Cost				**$ 163,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 824,600**

WAGGONER ENGINEERING

PRELIMINARY OPINION OF PROBABLE COST

CITY OF RIDGELAND, MISSISSIPPI
WASTEWATER FACILITIES PLAN
WEI #W011072
MAY 2013

SEWER SYSTEM REHABILITATION
CULLEY-BRASHEAR INTERCEPTOR SYSTEM

ITEM NO	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
	CONSTRUCTION				
1	Bypass Pump Seup	EA	4	$ 3,200.00	$ 12,800
2	Bypass Pumping Operatin	HR	5,544	$ 60.00	$ 332,640
3	Heavy Cleaning of 36" Sewer	LF	5,179	$ 22.00	$ 113,938
4	TV Inspection of 36" Sewer	LF	5,179	$ 5.50	$ 28,485
5	Cured in Place Pipe Liner, 36' x 15 mm	LF	5,179	$ 199.00	$ 1,030,621
6	48" Manhole Rehabilitation	VF	216	$ 470.00	$ 101,520
	Subtotal				$ 1,620,004
	Contingencies @ 15%				$ 242,996
	Subtotal Opinion of Probable Construction Cost				**$ 1,863,000**
	DEVELOPMENT				
	Design				$ 176,000
	Construction Phase Services				$ 179,000
	Subtotal Opinion of Probable Development Cost				**$ 355,000**
	TOTAL OPINION OF PROBABLE PROJECT COST				**$ 2,218,000**