The City of JACKSON

Capacity Assurance Program



Department of Public Works
Wastewater Consent Order Program

August 31, 2017
Approved
February 7, 2018

Department of Public Works

200 South President Street
Post Office Box 17
Jackson, Mississippi 39205-0017

March 7, 2018

Chief, Environmental Enforcement Section
Environment and National Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, DC 20044-7611
Re: DOJ No. 90-5-1-1-09841

Chief, Clean Water Enforcement Branch
Water Protection Division
U.S.E.P.A. Region 4
ATTN: Brad Ammons
61 Forsyth St., S.W.
Atlanta, GA 30303

Karl Fingerhood
Environmental Enforcement Section
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, DC 20044-7611

RE: City of Jackson, Mississippi, EPA Consent Decree
Wastewater Infrastructure Redevelopment Program
Interim Capacity Assurance Program

Dear Gentlemen,

Please find enclosed the Interim Capacity Assurance Program submitted by the City of Jackson for your review and records. The Interim Capacity Assurance Program has been modified to incorporate the revisions requested in your conditional approval letter dated February 7, 2018.

Due to a lack of financial resources, the city-wide hydraulic model was not completed by December 31, 2017, as the City had discussed with EPA staff in February 2017 and again in August 2017. Until the hydraulic model is completed and integrated into the CAP, the City will move forward with implementation of this interim submittal. After adequate funding is obtained and the city-wide hydraulic model is complete, the hydraulic model will be incorporated into the procedures outlined in this interim CAP. The CAP will be updated to include the hydraulic model during the 12-month period after completion of the city-wide hydraulic model.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such

information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Thank you for your participation and cooperation in this important program. If you have any questions, please contact me at (601)960-2091 or rmiller@jacksonms.gov.

Sincerely,

Robert K. Miller
Director, City of Jackson Department of Public Works

cc: Les Herrington, P.E., Mississippi Department of Environmental Quality
Chokwe Antar Lumumba, Mayor, City of Jackson
Sharon D. Gipson, City Attorney, City of Jackson
Terry Williamson, Legal Counsel, City of Jackson
Public Depository, Eudora Welty Public Library

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 07 2018

CERTIFIED MAIL 7017 1450 0000 7913 1305
RETURN RECEIPT REQUESTED

City of Jackson
c/o Mr. Robert Miller
Director
Department of Public Works
P.O. Box 17
Jackson, Mississippi 39205-0015

Re: Capacity Assurance Program
City of Jackson, Mississippi Consent Decree
Case No.: 3:12-cv-790 TSL-JMR

Dear Mr. Miller:

The U.S. Environmental Protection Agency Region 4 and the Mississippi Department of Environmental Quality has reviewed, and hereby conditionally approves, the City of Jackson's (the City) Capacity Assurance Program, dated August 31, 2017.

The City's CAP, at the top of page 17, states that "...credits are accrued on a one capacity credit per one gallon of I/I removal basis." Pursuant to Paragraph 33.(i)(vi), I/I credits are on a 3:1 ratio, or 1 gallon credit for every 3 gallons of I/I removed. The City shall modify the CAP to reflect the corrected ratio and submit the final CAP within 30 days of receipt of this letter.

If you have any questions, please contact Mr. Brad Ammons at (404) 562-9769 or via email at ammons.brad@epa.gov or Mr. Dennis Sayre at (404) 562-9756 or via email at sayre.dennis@epa.gov.

Sincerely,

Maurice L. Horsey, IV, Chief
Municipal & Industrial Enforcement Section
NPDES Permitting & Enforcement Branch

cc: Mr. Les Herrington, P.E.
Mississippi Department of Environmental Quality

Mr. Terry Williamson
City of Jackson

City of Jackson

Wastewater Collection and Treatment System

Capacity Assurance Program

August 31, 2017

Prepared by:

City of Jackson

Department of Public Works

P.O. Box 17

Jackson, MS 39205-0017

City of Jackson, Mississippi
Capacity Assurance Program

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Chokwe Antar Lumumba
Mayor

6/30/17
Date

Jerriot Smash
Interim Director of Public Works

30 AUG 17
Date

Capacity Assurance Program

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Acronyms and Abbreviations

ADF	Average Daily Flow
CMOM	Capacity, Management, Operations, and Maintenance
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
gpd	Gallons Per Day
I/I	Inflow and Infiltration
IMS	Information Management System
MDEQ	Mississippi Department of Environmental Quality
NPDES	National Pollutant Discharge Elimination System
MGD	Million Gallons Per Day
SSO	Sanitary Sewer Overflow
WWTP	Wastewater Treatment Plant

Definitions

Average Daily Flow (ADF) – The average daily flow at a wastewater treatment plant calculated using daily flow records from a 2-year period of influent flow data.

Peak Wet Weather Flow – The anticipated, calculated, or monitored maximum flow within the sewer system during an actual or synthetic rainfall event.

InfoWorks Collection Systems (CS) – Hydraulic modeling software developed by Wallingford Software used by the City of Jackson for collection system modeling.

Surcharge Condition – The condition within the sewer when the water surface level is less than two feet from the manhole rim elevation. If the sewer system is in a residential area with historical capacity-related backup complaints, then a surcharge condition is considered to be a water surface level within five feet of the manhole rim.

Capacity Credit Basin – Defined area of the sewer system where capacity assurance credits are tracked for the Credit Banking System.

1.0 Introduction

On March 1, 2013, the City of Jackson, Mississippi entered into a Consent Decree with U.S. EPA, U.S. D.O.J., and the Mississippi Department of Environmental Quality (MDEQ) to address inadequacies of the City's wastewater conveyance and treatment facilities. System capacity deficiencies have been identified as a major cause of sanitary sewer overflows (SSOs). Accordingly, in the Consent Decree, the City of Jackson (City) agreed to establish a ***Capacity Assurance Program*** (CAP) to ensure new connections to the sewer system do not cause or contribute to sewer overflows.

Development of the CAP includes the identification of sewersheds with insufficient capacity under both average and peak flow conditions. The CAP includes hydraulic modeling of the wastewater collection system to identify flow characteristics and SSO locations, together with an evaluation of the causes of SSOs for existing and proposed flows in the system and for prohibited bypasses at the wastewater treatment plants (WWTPs).

As was discussed with EPA staff in February 2017 and again in August 2017, the hydraulic model that will be used for this Capacity Assurance Plan will not be completed until the end of 2017. As such, this CAP should be considered an interim submittal. After completion of the hydraulic model, it will be incorporated into the procedures outlined in this CAP. The CAP will be updated during the 12-month period after completion of the hydraulic model.

1.1 CAP Objectives

Within the City of Jackson wastewater collection system, sanitary sewer overflows may occur in various locations when the sewer system is overloaded from rainfall. SSOs may also be caused by illicit connections to the system such as storm drains, sump pumps, roof drains, and foundation drains. New connections to the sanitary sewer system do not contribute to these root causes of sanitary sewer overflows. However, new connections generate additional flow that utilizes available capacity in the system.

An objective of the CAP is to enable the City to authorize new sewer service connections or increases in flow from existing sewer connections while making the needed system improvements to correct the identified capacity restrictions. Required improvements to the sewer system to accommodate system capacity will take years to implement. While these improvements are being implemented, developers, individual homeowners, and other entities continue making requests to add additional flows to the system.

As detailed in the plan, the City will assess the peak flow capacity of all major system components (collector sewers, interceptor sewers, pump stations and wastewater treatment plants) and create a process for review of requests to connect new sources of wastewater to the collection system. The CAP provides a means for evaluating these requests for new connections.

The CAP includes procedures for authorizing new sewer service connections, or increases in flow from existing connections, using a certification process that assures there is adequate

conveyance and treatment capacity in the system to accommodate the additional flow. The CAP establishes procedures for confirming available capacity of the collection system, pump stations, and WWTPs; creating capacity credits; identifying hydraulic constrictions; and proposing capacity improvements that support sewer system performance objectives. Capacity credits provide a mechanism for authorizing additional flows through capacity limited areas by removing infiltration and inflow from the system. The procedure for creating capacity credits is described in the report. This capacity credit banking through system rehabilitation is similar to approaches used in other cities.

Capacity assurance planning is a dynamic process that will require revision periodically. Changes and updates to the CAP may be needed as a result of continued system hydraulic modeling, mapping revisions, completion of capital improvement projects, and Consent Decree program implementation. A procedure for updating the CAP is described in the report.

1.2 CAP Program Elements

The following sections describe the information contained in the CAP report.

Section 2 provides an overview of the City of Jackson sewer system, more detail on the purpose of the Capital Assurance Program, and how the City's information management system (IMS) will be used to support the program objectives.

Section 3 describes the methodology for evaluating existing capacity in the collection system using the hydraulic model and wastewater flow monitoring results. Section 3 also establishes the capacity assessment procedures to be used for the wastewater collection system, wastewater pump stations, and the WWTPs.

Section 4 describes the certification process to be used in evaluating current, committed, and requested flow capacity to the system for both dry and wet weather flows. It includes procedures for estimating flow reduction from corrective actions, calculating capacity credits created from flow reduction, entering and tracking credits in the IMS, and the approval criteria for new sewer connection requests.

Section 5 describes the proposed capacity credit banking system and documents the standard procedures for calculating and tracking flow credits. It explains how the City will accumulate capacity credits through I/I removal projects, how credits are calculated from I/I removal, and how credits are tracked and distributed to new flow requests.

Section 6 summarizes the CAP implementation steps and provides a schedule for the 1-year implementation phase of the Capacity Assurance Program.

2.0 Wastewater System Capacity Planning

This section provides a brief description of the City of Jackson wastewater collection and treatment system. It also includes a more detailed discussion of the purpose of the Capacity Assurance Program together with the planned approach to CAP information management.

2.1 Jackson Wastewater System

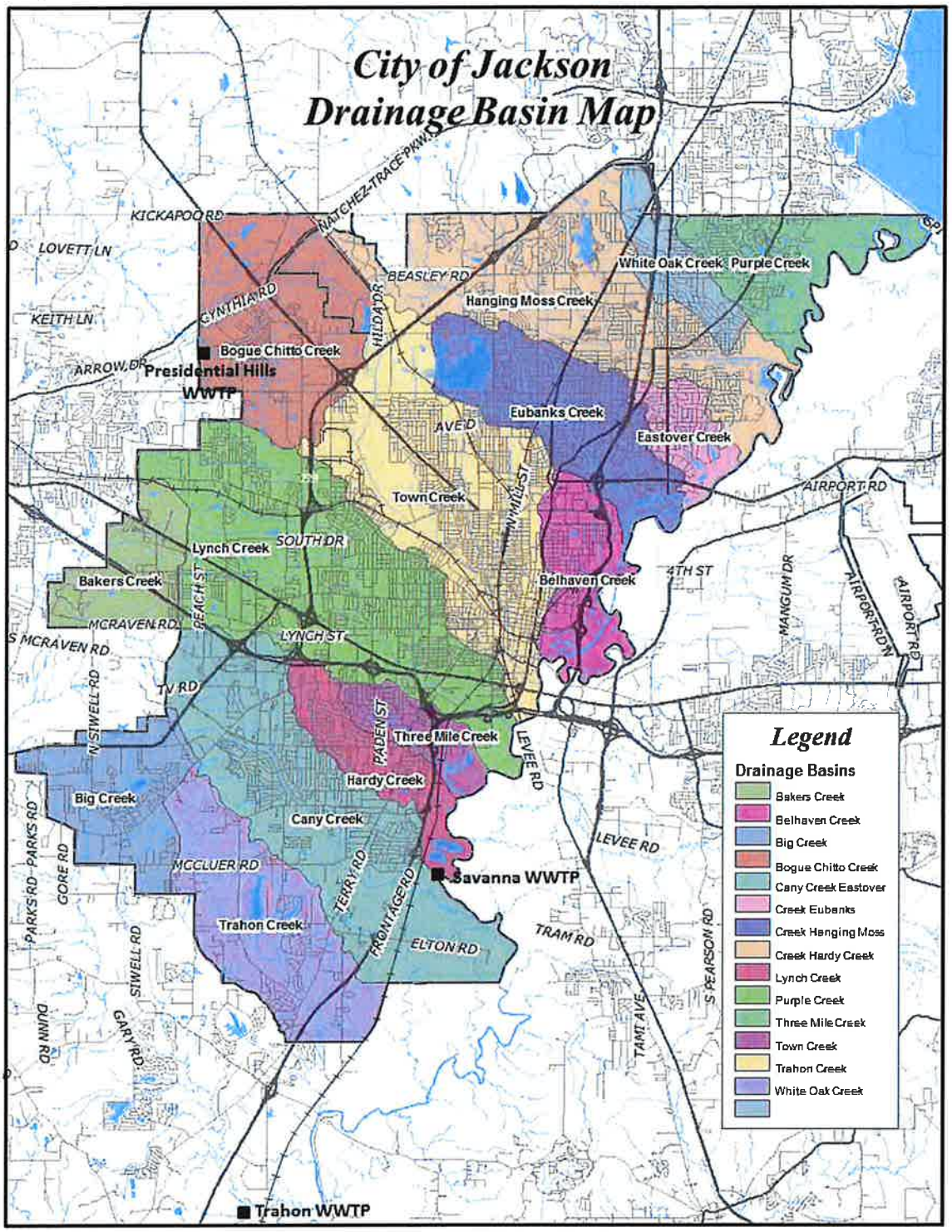
The City of Jackson WCTS consists of approximately 5.3 million feet of gravity sewer, which includes 69,400 feet (13.1 miles) of the West Bank Interceptor (WBI). The WBI runs along the west side of the Pearl River and receives flow from most of the sewersheds. It is the major north-south interceptor pipe that conveys wastewater to the Savanna WWTP and ranges in size from 48-in to 96-in diameter. The WCTS also includes 98 pump stations and their associated force mains. No combined sewers that receive both wastewater and stormwater are known to exist in the Jackson system.

The City of Jackson owns and operates three wastewater treatment plants. The largest is the 46 MGD Savanna WWTP serving most of the service area. The Savanna WWTP discharges to the Pearl River. The 4.5 MGD Trahon WWTP serves the southern service area and discharges to Big Creek which flows to the Pearl River. The 0.75 MGD Presidential Hills WWTP serves part of the far northwest portion of the city and discharges to Bogue Chitto Creek which flows to the Big Black River. The major Jackson sewersheds and locations of the wastewater treatment facilities are shown on **Figure 2-1**.

Most of the City's wastewater is conveyed by the West Bank Interceptor to the Savanna WWTP. Wastewater from the West Rankin Utility Authority which serves the western portions of Rankin County also discharges directly to the Savanna WWTP via a force main across the Pearl River. This plant also serves the southern portions of the City of Ridgeland and the East Madison County Sewage Disposal System, whose flows discharge to the city's West Bank Interceptor at the Madison County line on the north side of the city. The East Madison County Sewage Disposal System includes portions of east Madison County and the Pearl River Valley Water Supply District. In the south, flow from portions of Hinds County discharge to the southern service area of the City of Jackson. Total estimated population served by the City of Jackson is approximately 290,000. Of this population, approximately 170,000 is the City of Jackson and the remainder is comprised of the service populations of the regional customers.

A map of the City of Jackson wastewater collection system is provided on **Figure 2-2**. This map also shows the locations of the temporary and permanent flow monitors used to evaluate the severity of infiltration/inflow (I/I) within each sewer basin.

Figure 2-1
City of Jackson Major Sewersheds



2.2 Capacity Assurance Program Purpose

The CAP provides the basic decision-making criteria within each sewershed that affect system capacity. Providing wastewater collection, conveyance, and treatment that meet the expansion needs of the City's customers, while protecting the environment and meeting regulatory requirements, are top priorities of the City's facility improvement and sewer capacity review efforts.

Due to existing wet weather capacity limitations and the time required to implement system rehabilitation to correct SSOs, the CAP will enable the City to authorize new sewer service connections or increases in flow from existing sewer service connections while making planned system improvements. These improvements will increase available capacity by removing I/I through sewer rehabilitation performed in accordance with the ***Sewershed Prioritization Report*** issued in February 2017.

The CAP will be the basis for coordinating capacity decision criteria for each sewershed. The process includes a programmatic approach for: confirming capacity of plants, pump stations, and the conveyance system; identifying hydraulic restrictions; and proposing capacity improvements that support long-term system performance objectives. As part of the process, the City's current new connection protocols are being reviewed and modified, if necessary. Changes may also be needed to the plumbing permit procedures to ensure that capacity assurance is incorporated into the process. The proposed capacity certification component of the Capacity Assurance Program will be implemented to guide future sewer connection decisions. Documentation and tracking of capacity commitments will be managed by the IMS.

2.3 Capacity Assurance Information Management

The protocols and procedures described within the CAP require a significant amount of data management. Tracking this data along with process automation and standardization is necessary for the success of the capacity assurance program and will continue to be improved as the program evolves.

The capacity assurance program will utilize an information management system and the existing City GIS to track data and automate the processes outlined within the CAP. The City's current Computerized Maintenance Management System, Cityworks, the GIS, and other solutions are currently being evaluated for this purpose. Currently, tracking of existing, committed, and proposed flows as well as facilities and assets, capital projects, corrective actions (work orders), overflows and system deficiencies, and other data relevant to system capacity are tracked locally by Public Works staff. A separate asset management IMS, eRPortal, is used by the City's contract operator, Veolia North America, for the City's wastewater treatment plants and pump stations.

The selected CAP IMS will be used to track system capacity for the collection system and pump stations as well as capacity credits. These tools will be used in the proposed credit banking system, described in Section 5, to track both earned capacity credits from specific

rehabilitation and capital improvement projects, and credit expenditures from approved increases or additions in wastewater flows.

The hydraulic model of the wastewater collection system is currently being developed using the collection system module by InfoWorks. The hydraulic modeling results will be integrated with GIS to display current sewer capacity and system deficiencies. The major datasets that will be tracked and maintained within the IMS include:

- Hydraulic modeling results – sewer surcharging and deficiencies
- Sewer system flow monitoring data
- Designed, measured, and calculated capacities for sanitary sewer system assets
- Approved, committed, and pending requests for capacity
- Certification and approval documentation
- Sewer rehabilitation projects
- Capacity credits accounting system

Any other datasets determined to be needed will be added to the IMS in the future as CAP implementation proceeds.

3.0 Capacity Assessment Methodology

Although new sewer connections do not contribute to the root causes identified for existing sanitary sewer overflows, they do contribute additional flow that uses available capacity within the system and can worsen existing overflows. The Capacity Assurance Program is designed to ensure new connections do not cause or contribute to sanitary sewer overflows. The program includes generation of capacity credits through sewer system rehabilitation and other means.

This section outlines the protocol for determining the current peak wet weather capacities for the wastewater collection system, pump stations, and the wastewater treatment plants. These protocols, as well as associated data limitations, are discussed for each of the three system elements.

3.1 System Capacity Modeling and Monitoring

To analyze sewer system capacity, many complex factors must be evaluated for each type of facility or asset within a collection system under different scenarios. To accomplish this task, the City is developing a hydraulic model of its wastewater collection system using the InfoWorks Collection Systems modeling software. The objective of this effort is to provide a computer model that mimics the function of the actual sewer system, including sanitary flow and I/I contributions. The hydraulic model includes collector sewers, interceptors, pump stations, and hydraulic structures.

The hydraulic model is being developed using GIS data, as-built record drawings, survey data, and field data. The model is being calibrated and validated using flow monitoring and rainfall data collected from September 2014 to February 2015. Results of this flow monitoring program are described in the ***Sewershed Prioritization Report***. Within the flow monitoring period, dry weather intervals were used to develop average daily flows while wet weather events were used to analyze collection system response to wet weather and determine the impacts of inflow and infiltration. After calibration for dry and wet weather conditions, the model will be used to assess existing conditions, qualify and quantify deficiencies, and serve as a tool for future planning and capacity assurance reviews within the City service area.

For the purposes of the CAP, a 2-year, 24-hour storm event will be used as the minimum level of protection and applied to the InfoWorks CS hydraulic model to analyze system capacity. The model runs serve as the basis for analyzing current sewer capacity, supported by pump station testing, pump run time monitoring, and flow metering within the system. The following sections describe how modeling data will be used to evaluate capacity of the wastewater collection system, pump stations, and WWTPs.

3.2 Wastewater Collection System Capacity Evaluation

Certification of adequate collection system capacity is required to confirm that each gravity sewer through which proposed additional flow will pass has adequate capacity to convey

both the existing and proposed peak wet weather flows from all new and existing service connections, without causing an excess surcharge condition.

The InfoWorks CS hydraulic model will be used to calculate and evaluate the existing wet weather peak flow of the collection system using the design storm simulation. The model will indicate areas of surcharging during the design storm simulation. For the purposes of the CAP, a wet weather surcharge condition is defined as a water surface level within the sewer during the 1-hour peak flow which rises to an elevation greater than two (2) feet above the top of the pipe (excepting the West Bank Interceptor) or within three (3) feet from the manhole rim elevation. However, if the City has, pursuant to the CAP, identified pipe segments or manholes designed to operate under a pressure condition (such as siphons), then the capacity of these pipe segments or manholes shall be evaluated based on their design criteria.

The current design capacity of the collection system will be determined using the hydraulic model. Using standard design calculations, if adequate capacity to convey the proposed new flow is not available, the customer requesting capacity and the City must determine the measures needed to provide adequate capacity for the proposed new flow. If the sewers downstream of the capacity request have adequate design capacity, but display wet weather issues, I/I must be removed from the system to create capacity credits.

3.3 Pump Station and Force Main Capacity Evaluation

Certification of adequate pump station and force main capacity is also needed to confirm that each pump station and associated force main has adequate capacity to transmit the existing peak wet weather flow plus the proposed peak wet weather flow without causing a surcharge condition at the pump station, or within the collection system served by the pump station.

The existing peak wet weather flow at each pump station will be calculated and evaluated using the design storm simulation within the InfoWorks CS hydraulic model. The hydraulic model will contain information on the pump stations and force mains, which are obtained through a series of capacity measurements, pump run time analyses, and design data reviews. Using the hydraulic model to simulate pump station and force main capacity provides the City with a tool to dynamically evaluate all of the factors associated with pump station capacity, such as wet well and collection system storage, multiple pump configurations, and timing of peak wet weather flows.

Because capacity measurements, as determined from pump drawdown tests, are the most accurate and current information that can be obtained for pump stations, drawdown tests have been performed to measure capacity of the critical pump stations required for hydraulic modeling. The drawdown test consists of measuring the wet well volume pumped over a corresponding time coupled with a measurement of inflow rate to the wet well (volume added over a corresponding time). From these values, the average pump discharge is determined. A drawdown test is performed for each installed pump, and rate of discharge for each pump is averaged to yield the average capacity of the station. The drawdown test

results are compared to design data to identify pump stations that are not performing at design capacity.

For the purposes of the CAP, a wet weather surcharge condition at a pump station is defined as water surface level less than two (2) feet from the top of the pump station wetwell or at any manhole rim within the upstream collection system served by the pump station.

Adequate design capacity is determined by comparing the peak user flow against the pump station firm measured capacity found in InfoWorks CS. If the peak user flow is less than the firm measured capacity then the pump station has available capacity for additional proposed peaked flows. If adequate capacity is not available, the developer and the Public Works Department must determine the measures needed to provide adequate capacity for the proposed peak flow.[1]

Additional design capacity reviews required for pump stations include reviewing the capacity of each downstream pump station affected by the new flow. The total flow committed plus the firm measured capacity must not exceed the firm design capacity of any affected pump station.

3.4 Wastewater Treatment Plant Capacity Evaluation

Certification of adequate treatment plant capacity is needed to confirm that the new or increased flow will not result in bypasses or diversions prohibited by the National Pollutant Discharge Elimination System (NPDES) permits. Current peak treatment capacities and average daily flow (ADF) limits for the City's three WWTPs have been established. ADF limits for each facility are listed within each respective NPDES permit. The Savanna WWTP is currently operating at or above its permitted flow limit. For this facility, a detailed hydraulic analysis was performed as part of the Comprehensive Performance Evaluation required by the Consent Decree, which included determination of peak wet weather flow based on flow records. Peak wet weather flows to the smaller Trahon and Presidential Hills WWTPS, which currently operate at around half capacity or less, will be based on design values.

The existing wet weather flow at each WWTP will be calculated using the hydraulic model with the peak design wet weather capacities coded into the model. For the purposes of the CAP, a WWTP is determined to be at peak wet weather capacity when the hydraulic model shows a surcharge condition at the influent pump station or at manholes along the main interceptor leading to the treatment plant. A surcharge condition is defined as a water surface level less than two (2) feet from the top of the influent pump station wetwell or at a manhole (MH) rim along the main interceptor leading to the plant.

Current ADF will be calculated using a 2-year record of WWTP influent flow data and updated annually in the IMS. Between these updates, committed and requested capacity from new flow customers will be tracked within an IMS database. A WWTP is considered to

[1] For pump stations with unique designs or functions, specific capacity conditions may apply that fall outside of the pump station and force main capacity protocols outlined in this section. Capacity at these facilities will be determined based on factors most applicable to each unique situation.

be at ADF capacity when the calculated ADF plus the committed capacity equals or exceeds the permitted ADF. The City will also use the ADF data for future flow forecasting and planning of WWTP upgrades.

Design of new sewer infrastructure (collector sewers and small pump stations) is based on the MDEQ ***Guidance for the Design of Publicly Owned Wastewater Facilities***. An average daily design flow of 290 gpd per single-family equivalent (SFE) with 100 gpd x 2.9 people per SFE is used as the design basis. To calculate the credits needed to offset new flows upstream of capacity limited areas, this factor of 290 gpd/SFE is used to calculate flow from new residential additions. For commercial or industrial sources, the design flow is determined by the facility's design engineer which must be approved by the City.

4.0 Capacity Certification

The objective of capacity certification is to ensure that system capacity is available starting at the new flow entry point, downstream through the collection system, and ending at the wastewater treatment plant. Capacity availability must be verified using two different methods as summarized below.

4.1 Dry Weather Flow Verification

First, dry weather capacity for the new flow must be verified for the system downstream of the new capacity request estimations of peak dry weather flow as outlined in the MDEQ ***Guidance for the Design of Publicly Owned Wastewater Facilities***. In cases where the capacity request flows are large or the existing system is suspected to be close to capacity, an InfoWorks CS modeling simulation will be run to assess the impact on the downstream system.

If the system can convey this peak flow with no adverse effects, the capacity request will be approved. However, if the new flow will cause new problems in the system, including at the receiving WWTP, the City and the developer must determine remedial actions needed to mitigate this impact and allow the new flow into the system. If the applicant agrees to implement the remedial actions, the City will issue a conditional approval. If remedial action cannot be agreed upon, the capacity request will be denied.

4.2 Wet Weather Flow Verification

After the City verifies that peak dry weather capacity is available, a review must be performed to determine if wet weather SSOs occur downstream of the new flow location. If a documented overflow exists downstream of the proposed connection location, the City will be required to create capacity credits through system improvement and rehabilitation. Capacity credits will be created at a ratio of three credit gallons for every new gallon approved (3:1 ratio), assuming 290 gallons per single family equivalent.

Flow and Credit Planning and Tracking

The City will track credits and flows for two different purposes. One is to demonstrate that actual flow added to the system from approved capacity requests have been offset at the correct 3:1 ratio through completed system and rehabilitation efforts. The City's objective is to never allow a negative balance to develop between actual new flow in the system in relation to the capacity credit balance within each defined capacity credit sewershed. Periodically, the City will update the actual build out of active developments and the construction completion percentage of City rehabilitation or system improvement projects and update the flow to the credit balance sheet for each sewershed.

The City's second purpose for flow tracking and credit planning is to project flow build out for approved capacity requests upstream of known overflows, and then facilitating the planning and implementation of capital projects that will generate capacity credits before the new flow is discharged into the system.

For residential, commercial, and industrial capacity requests, the City will utilize the proposed sewer connection date of the capacity request for flow contribution. Utilizing these projections, the City can identify areas in which new rehabilitation or improvement projects must be completed to keep the 'actual' credit balance positive. Therefore, if the 'planned' flows exceed the 'planned' credits, the City will see that additional rehabilitation or improvement efforts are initiated in the appropriate sewersheds accordingly. In summary, the City's process for creating and tracking credits must ensure that, prior to new flow from a capacity request actually entering the system, a sufficient number of credits have been created through completed rehabilitation or system upgrades to maintain a positive flow credit sewershed balance.

Savanna Wastewater Treatment Plant

Until the Composite Correction Plan for the Savanna WWTP has been fully implemented and the hydraulic capacity of the plant has been increased, the City will only certify new flow requests from existing sewer service connections contributory to the Savanna WWTP in the following cases:

1. The City will certify new flow requests provided the new flow request certification is consistent with the City's Capacity Assurance Program procedures.

2. The City may certify a new flow request if, as a direct result of the project involving the new flow request, an equal or greater amount of flow from an existing sewer service connection is eliminated prior to certification of the new request with the purpose being to not increase the total flow to the Savanna WWTP. Additionally, the new flow request certification process should be consistent with the City's CAP procedures.

4.3 Special Conditions

Certification Exceptions

In some cases, the City may authorize a request for additional flow to the system even if adequate capacity cannot be certified and credits are not available at the anticipated time of flow initiation. These cases include the following:

- The request eliminates illicit discharges of wastewater or stormwater to the system.
- The request is made for an essential service facility. Essential services are defined as critical or essential facilities such as: healthcare facilities, public safety facilities, public schools, other government facilities, or in cases where a pollution or sanitary nuisance will be eliminated.
- A sewer connection request or City capital project that diverts existing flow from a sewershed that provides an environmental benefit.
- Approval of the connection request is essential to maintain the economic wellbeing of the City, and denial would create unacceptable harm to the City's efforts to increase economic development, create new jobs, renovate the City center, and reverse the ongoing population decline.

However, a subtraction shall be made from the credit bank in an amount equal to the average projected flow from the correction of the illicit wastewater discharge, essential service facility, diversion of flow, or other granted exception. Credits for these exceptions will be generated as quickly as feasible.

Redevelopment of Existing Facilities

In some instances, a request will be received requesting flow for a new structure replacing an existing structure that previously contributed flow to the sanitary sewer system. In these cases, the previous flow will be subtracted from the projected flow and the residual flow will be assessed according to the credit banking procedures.

A flow chart depicting the City of Jackson capacity certification and credit banking process is shown in **Figure 4-1**. The capacity credit banking process is described in Section 5.

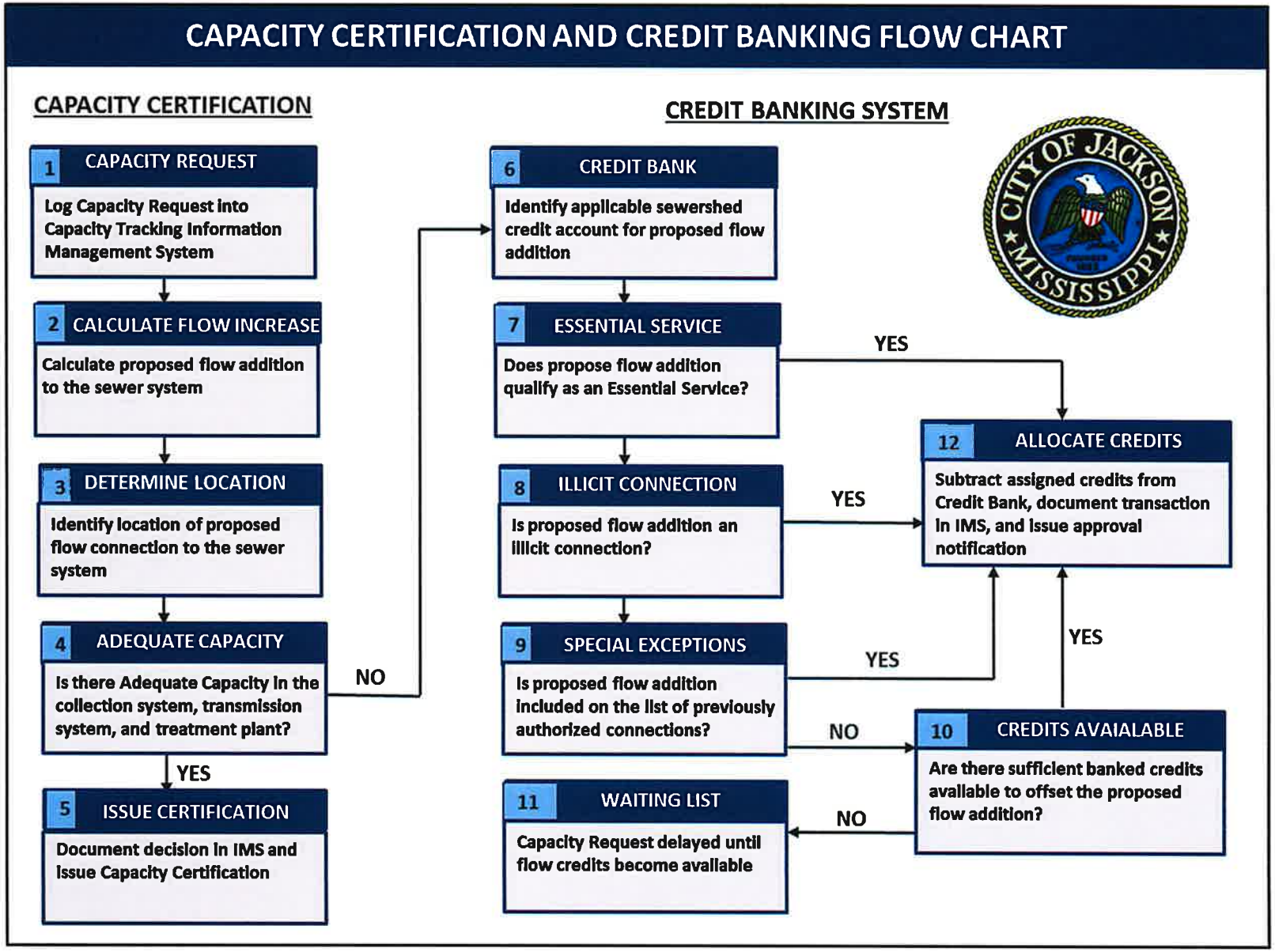
4.4 Information Management System Tracking

The System Capacity Assurance process requires utilization of the IMS to store, track, and analyze data related to system capacity. GIS layers and databases will be created in the IMS for analyzing system capacity. These will include:

- Documented SSOs
- Sanitary sewer collection lines
- Pump stations and force mains
- Wastewater treatment plants
- System flow monitoring locations
- Sewershed boundaries
- Hydraulic modeling results for surcharging and deficiencies

As the Public Works Department evaluates each new flow request, the IMS will be utilized to document the capacity assurance process and record the pertinent information from the review. Additionally, databases within the IMS will document the new flow customer location, system capacity requirements, and the capacities of the collection system, pump stations, and the WWTP downstream. When the system is incapable of conveying new flows, the IMS will track these deficient areas and the actions necessary to approve future new flow requests.

Figure 4-1


CAPACITY CERTIFICATION AND CREDIT BANKING FLOW CHART
CAPACITY CERTIFICATION
CREDIT BANKING SYSTEM
1 CAPACITY REQUEST
Log Capacity Request into Capacity Tracking Information Management System
2 CALCULATE FLOW INCREASE
Calculate proposed flow addition to the sewer system
3 DETERMINE LOCATION
Identify location of proposed flow connection to the sewer system
4 ADEQUATE CAPACITY
Is there Adequate Capacity in the collection system, transmission system, and treatment plant?
NO
YES
5 ISSUE CERTIFICATION
Document decision in IMS and issue Capacity Certification
6 CREDIT BANK
Identify applicable sewershed credit account for proposed flow addition
7 ESSENTIAL SERVICE
Does propose flow addition qualify as an Essential Service?
YES
8 ILLICIT CONNECTION
Is proposed flow addition an illicit connection?
YES
9 SPECIAL EXCEPTIONS
Is proposed flow addition included on the list of previously authorized connections?
YES
NO
10 CREDITS AVAIALABLE
Are there sufficient banked credits available to offset the proposed flow addition?
YES
NO
11 WAITING LIST
Capacity Request delayed until flow credits become available
12 ALLOCATE CREDITS
Subtract assigned credits from Credit Bank, document transaction in IMS, and issue approval notification
CITY OF JACKSON MISSISSIPPI

5.0 Capacity Credit Banking

The CAP requires a standard operating procedure to revise and implement processes to determine if capacity is available in the system. This section explains how the City will accumulate capacity credits through I/I removal projects and estimated flow reduction from these projects, how credits are calculated from I/I removal, and how credits are tracked and distributed to new flow requests within the IMS.

As described in the certification of capacity protocol, the City may authorize the contribution of additional flow to the system after it certifies that there is adequate collection system capacity, transmission capacity, and treatment plant capacity as described above.

Based on the evaluations of the collection, transmission, and treatment plant capacity that have been completed to-date, it is anticipated that, initially, many locations within the City's system will not meet the CAP certification requirements due to downstream capacity restrictions. This means that the City will only authorize those capacity requests via the Credit Banking procedures described below.

5.1 Credit Banking Process

The City may authorize additional flow to the system that could not previously be certified through a credit banking system. As the City completes capital or infrastructure projects that restore capacity by reducing peak wet weather flows or constructs additional capacity, the City will bank capacity credits in the system to be used for authorizing new flow.

The City will bank these credits upon completion of the capital or infrastructure projects. One gpd of credit will be banked for each gpd of peak flow removed or gallon of capacity added. Credits will be used to approve new capacity requests using a ratio of three capacity credits per one gallon of new flow (3:1). These credits must be in place within the appropriate sewershed prior to the time the proposed additional flow is introduced to the system.

As an example, a manhole rehabilitation project reduces peak flow by approximately 170,000 gpd in a CAP sewershed area. A credit of 170,000 gpd is then banked and added to the total credits within that CAP sewershed area. Subsequently, the estimated average flow from a new development of 100 single family homes of 29,000 gpd (100 SFE x 290 gpd/SFE) is introduced upstream of the project. The new sewer system discharging the average flow of 29,000 gpd may be expected to ultimately contribute a peak wet weather flow of three times the average amount, or approximately 87,000 gpd. Accordingly, upon project approval 87,000 gpd of capacity credits (29,000 x 3:1 offset) will be subtracted from the total available credits within the CAP sewershed area.

The City will perform quarterly reviews of estimated peak flow reductions or peak capacity additions as a result of completed projects and will adjust current available credits and future credits used, as appropriate.

As the City continues to repair, replace, and remediate the sewer system, credits are accrued on a one capacity credit per **three** gallons of I/I removal basis.[2] Calculations for estimating I/I removal from various types of repairs and remediation are explained in the following section.

5.2 Estimated Flow Reduction from System Rehabilitation

In order to calculate capacity credits for corrective actions, the flow reduction or added capacity from the corrective actions must be estimated. The following types of corrective actions are anticipated: mainline sewer rehabilitation; pump station rehabilitation and upgrades, new sewer conveyance construction, manhole rehabilitation, downspout connection removals, foundation drain (sump pump) connection removals, area drain connection removals, and rehabilitation of private sewer service laterals. The calculation of estimated flow reduction, or capacity increase, from each type of corrective action is discussed below. As the City continues to implement various system improvement projects and gathers I/I reduction data, the credit amounts listed below may be adjusted to reflect updated reduction projections. Such adjustments will include the appropriate technical documentation and will constitute a revision to the CAP document.

Manhole Rehabilitation

Primary repair mechanisms for manholes include chimney seals, frame and lid replacement, full lining, and mechanical or chemical treatment. The estimated peak flow reduction is determined by severity and number of defects identified during inspection, as well as the location of the manhole and its susceptibility to inundation by rainwater during wet weather as defined below.

- Paved Areas – Manholes in paved areas that do not meet the "along a stream" definition.
- Non-Paved Areas – Manholes in non-paved areas that do not meet the "along a stream" definition.
- Along a Stream - Manholes will be considered to be "along a stream" when they are located within 50-feet of a stream that flows all or most of the year, or within the floodway of a FEMA designated 100-year floodplain.

Table 5-1 through **Table 5-3** provide the typical peak flow reduction for manhole rehabilitation in paved areas, non-paved areas, and along a stream. (Source: American Society of Civil Engineers, Manual Practice No. 92)

[2] The City of Jackson has been performing rehabilitation and system improvements associated with the terms of the Consent Decree. To capture the credits earned as a result of these improvements the effective retroactive date for credit banking is March 1, 2013, the date the Consent Decree went into effect.

Table 5-1
Peak Flow Reduction for Manholes in Paved Areas

Manhole Section	Reduction Values in Gallons Per Day (gpd)			
	Minor I/I	Moderate I/I	Heavy I/I	Severe I/I
Frame Seal	78	156	311	622
Chimney	78	156	311	622
Cone	78	156	311	622
Wall	39	78	156	311
Pipe Seal	39	78	156	311
Bench	39	78	156	311
Channel	39	78	156	311
Full Rehab/Replacement	390	780	1557	3110

Table 5-2
Peak Flow Reduction for Manholes in Non-Paved Areas

Manhole Section	Reduction Values in Gallons Per Day (gpd)			
	Minor I/I	Moderate I/I	Heavy I/I	Severe I/I
Frame Seal	328	656	1313	2626
Chimney	328	656	1313	2626
Cone	328	656	1313	2626
Wall	164	328	656	1313
Pipe Seal	164	328	656	1313
Bench	164	328	656	1313
Channel	164	328	656	1313
Full Rehab/Replacement	1640	3280	6563	13,130

Table 5-3
Peak Flow Reduction for Manholes Near Stream/Waterway

Manhole Section	Reduction Values in Gallons Per Day (gpd)			
	Minor I/I	Moderate I/I	Heavy I/I	Severe I/I
Frame Seal	864	1728	3456	6912
Chimney	864	1728	3456	6912
Cone	864	1728	3456	6912
Wall	432	864	1728	3456
Pipe Seal	432	864	1728	3456
Bench	432	864	1728	3456
Channel	432	864	1728	3456
Full Rehab/Replacement	4320	8640	17,280	34,560

Removal of Illicit Connections

Illicit connections to the sanitary sewer system are direct stormwater inflow sources. Disconnection of these sources can provide significant increases in capacity. The following are estimated peak flow reductions due to the removal of typical illicit connections.

Area Drain or Storm Sewer	6,000 gpd
Downspout	4,000 gpd
Foundation Drain	4,000 gpd
Sump Pump	4,000 gpd

Rehabilitation of Deteriorated Mainline Sewers and Service Laterals

The estimated peak flow reductions for mainline sewer rehabilitation or replacement (including service laterals) are as follows in gpd per inch diameter-mile (IDM) of pipe rehabilitated:

Stream Inundation/High Groundwater	34,000 gpd/IDM
Non-Inundation/Low Groundwater	60 gpd/IDM

High groundwater is defined as a condition where the seasonal high groundwater level exceeds the flow line elevation of the sewer, with a low groundwater condition being all other times.

Pump Station Rehabilitation and Upgrades

Credits for pump station rehabilitation and upgrades will be calculated by measuring the pre-construction station capacity and post-construction station capacity. The credit amount will be equal to the difference of the two capacities.

New Sewer Conveyance and Storage

Credits for new sewer conveyance will be equal to the full pipe capacity of the new sewer line. Credits for any new storage provided in the system will be equal to the full storage basin capacity.

5.3 Interim Capacity Credit Procedure

The City has already implemented the capacity certification procedure described above that will remain in place until the final ***Capacity Assurance Program*** is approved. Further revisions will be made to the interim procedures if necessary as a result of changes to the final plan. The interim ***Flow Mitigation Through I/I Reduction*** procedures currently being followed by the City are included in **Appendix A**.

At present, new applications for sewer connections are reviewed by Public Works engineering to evaluate impacts of the proposed new flow on the system. The quantity of flow to be added is calculated by the applicant (generally the applicant's engineer). These

flow quantities are reviewed for correctness and accuracy and then used to assess the effect on system capacity at and downstream of the proposed point of connection. The City uses the standard MDEQ ***Information Regarding Proposed Wastewater Projects*** form for this purpose. An example is provided in **Appendix B**.

5.4 Credit Calculations

In order to accrue and track capacity credits for corrective actions, the estimated flow reduction or added capacity from the corrective actions must be calculated.

Figure 5-1 shows the proposed Rehabilitation Credits Calculation form. The Project Total Credits summarized at the bottom of the sheet are the credits applied to the sewershed(s) for credit banking purposes.

Figure 5-1
Rehabilitation Credits Calculation Sheet

System Capacity Assurance
Rehabilitation Credits Calculation Sheet

Project Name: _____
Project No.: _____
Anticipated Date: _____
Completed Date: _____
Sewershed: _____
Calculated by: _____
Checked by: _____

Removal of Illicit Connections to the Sanitary Sewer System

	Quantity		Credit		Total	
Downspouts	_____	x	4,000	x	_____	Gallons
Area Drains	_____	x	6,000	x	_____	Gallons
Foundation Drains	_____	x	4,000	x	_____	Gallons
Sump Pumps	_____	x	4,000	x	_____	Gallons

Rehabilitation of Mainline Sewers and Service Laterals

Total from Line Credits Calculation _____ Gallons

Manhole Rehabilitation

Total from Manhole Credits Calculation _____ Gallons

Project Total Credits _____ Gallons

5.5 Entering and Tracking Credits in IMS

The IMS will be used to enter credits from I/I removal or capacity restoration projects. A database in IMS will be created and used for tracking capacity credits. As the rehabilitation projects are completed, the associated credits will be added to the capacity credit ledger for each capacity credit sewershed. All system rehabilitation projects performed by the City will be reviewed on an annual basis and credits will be updated in sewersheds accordingly.

The IMS will also be used to track where each capacity credit is being used, and where the new flow request credits apply.

5.6 Capacity Credit Sewersheds and Credit Reporting

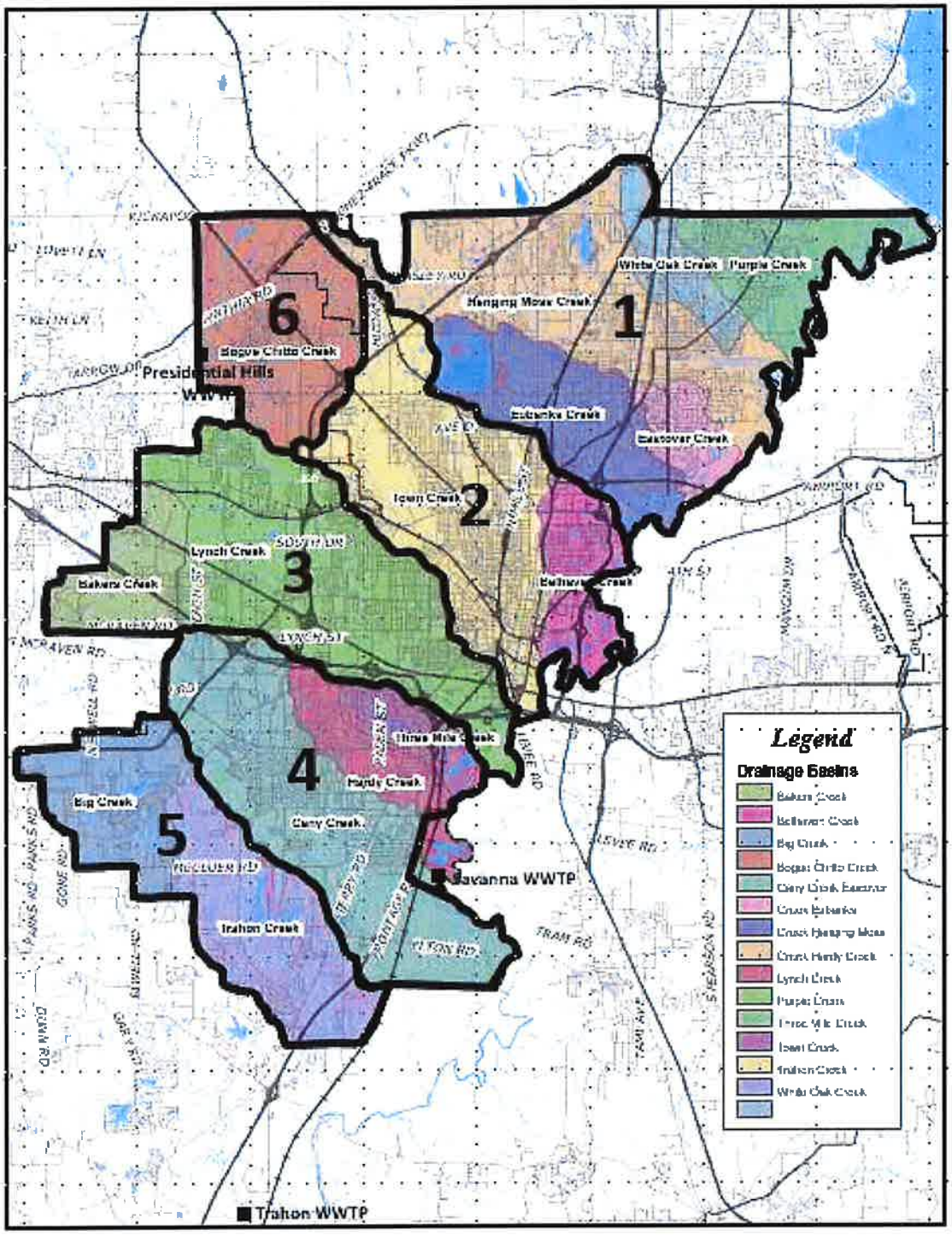
The City will track the quantity of new flow being added to the collection system versus the number of capacity credits available. The capacity credit balances will be tracked independently within each credit basin. The preliminary credit basins are listed on **Table 5-4**. A map of the credit basins is provided on **Figure 5-2**. The proposed credit basin configuration may be further adjusted during the implementation phase of the CAP.

In each Consent Decree Semiannual Report, the City will submit an updated capacity credit ledger per basin to demonstrate that sufficient credits were available as new flows from approved capacity requests actually begin discharging into the collection system.

Table 5-4
Jackson Capacity Credit Basins

Capacity Credit Basin	*Sewersheds*	*Basin Size (LF Sewer)*
1	Purple Creek	342,108
	White Oak Creek	212,187
	Hanging Moss Creek	534,548
	Eastover Creek	109,762
	Eubanks Creek	373,559
	Total Length	1,572,164
2	Town Creek	1,039,106
	Belhaven Creek	126,311
	Total Length	1,165,417
3	Bakers Creek/Lynch Creek	764,913
4	Three Mile Creek	135,836
	Hardy Creek	191,197
	Cany Creek	550,469
	Total Length	877,502
5	Big Creek/Trahon Creek	439,461
6	Bogue Chitto Creek	97,100

Figure 5-2
Capacity Credit Basins



6.0 Capacity Assurance Program Implementation

6.1 CAP Implementation Tasks

The City is currently operating under interim capacity procedures until the CAP plan is approved by EPA. The interim procedures are described in Section 5. Steps to be performed during the 1-year implementation phase of the program include:

- Complete GIS database of wastewater assets
- Complete development of hydraulic model
- Develop CAP Information Management System
- Adopt formal Capacity Certification policy
- Develop standard procedures for creating and tracking flow credits
- Establish Capacity Credit Bank
- Identify, assign, and train personnel needed to manage the CAP

6.2 CAP Responsibilities

The Consent Decree Program Manager will manage the implementation phase of the CAP. The Program Manager is developing the hydraulic model and is working with the City of Jackson Public Works Department to develop the Information Management System. The GIS database is largely complete and is being integrated into the hydraulic model and, subsequently, the IMS. The Program Manager will also assist in further developing and finalizing the capacity evaluation, project documentation and computation of capacity credits, and credit banking and tracking procedures required to fully implement the program.

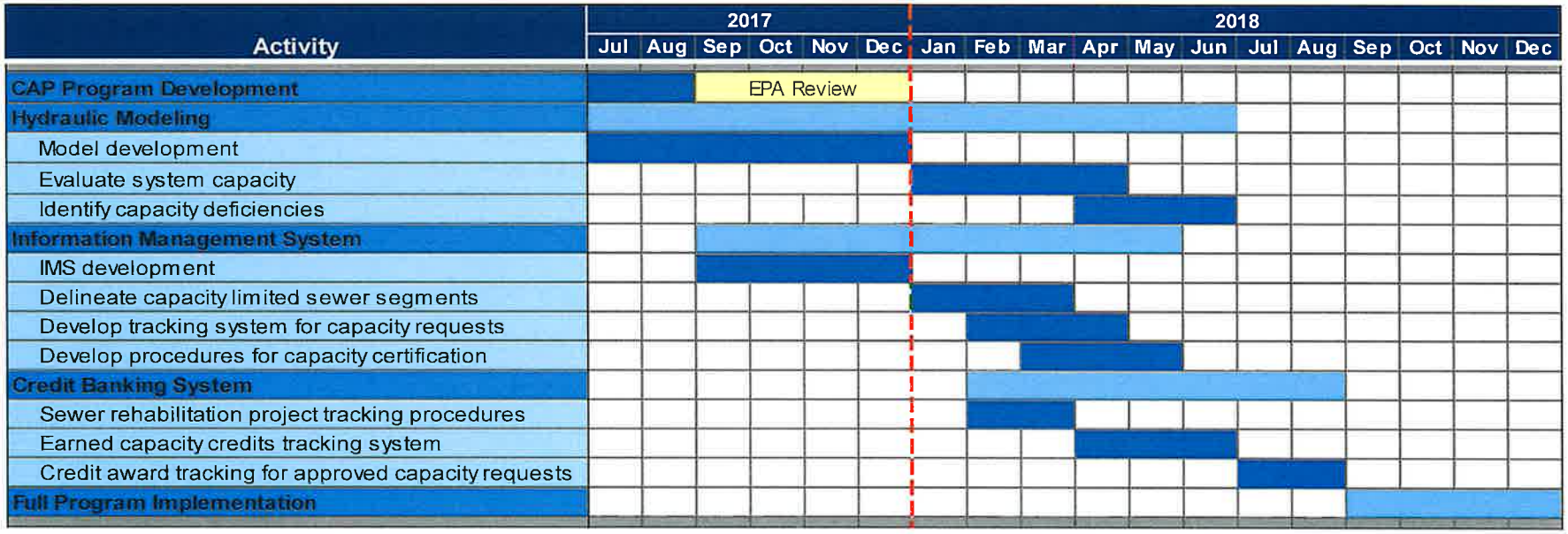
6.3 CAP Revisions

During implementation of the CAP, the City may recommend revisions to the proposed CAP procedures. Any revisions made to the CAP will be incorporated into a future update of this report and submitted to the EPA for review and written approval prior to implementing the revision.

6.4 Implementation Schedule

The proposed schedule for implementation of the City of Jackson Capacity Assurance Program is provided on **Figure 6-1**.

Figure 6-1
Capacity Assurance Program
Implementation Schedule



Appendix A

Current Jackson I/I Mitigation Procedure

City of Jackson Worksheet
Flow Mitigation Through I/I Reduction

As part of a settlement agreement with the US Environmental Protection Agency (USEPA), the City of Jackson will be required to implement a Capacity Assurance Plan (CAP) for new wastewater flows discharged into the City's collection system. Prior to the implementation of a fully developed CAP, the city is implementing an interim plan to guide businesses and developments needing new or increased wastewater flows. This policy will apply to all developments except for single-family residential

Calculation of Amount of I/I Removal Necessary

I/I must be reduced by a factor of 3 GPD I/I removed per 1 GPD average daily flow added.

Ex: A subdivision will add 10 homes.

945 GPD/home * 10 homes = 9450 GPD
3:1 Ratio means 28350 GPD of I/I must be removed

Your average daily flow: _____ GPD

x 3 =_____ GPD offset needed

Methods of I/I Removal

The City will work with the developer/business to identify existing defects in the sewage system that can be reasonably expected to be repaired in order to eliminate the quantity of the calculated offset. Upon approval by the City, the owner will employ a contractor and make the improvements needed.

There will be two primary ways to gain flow credits. Rehabilitation or replacement of manholes is one, and rehabilitation or replacement of sewer pipe is the other.

Manhole Rehabilitation

Primary repair mechanisms for manholes include chimney seals, full lining, and mechanical or chemical treatment. The estimated peak flow reduction is determined by severity and number of defects identified during inspection, as well as the location of the manhole and its susceptibility to inundation by rainwater during wet weather as defined below. The ASCE Manual of Practice No. 92 was used as the basis of classification.

Along a Stream - Manholes will be considered to be along a stream when they are located within 50-feet of a blue-line stream or within the floodway of a FEMA designated 1%-annual-chance (100-year) floodplain. If a 2-year floodplain boundary has been developed for a stream then manholes within the 2-year floodplain are also considered to be along a stream

Non-Paved Areas - Manholes in non-paved areas that do not meet the "along a stream" definition.

Paved Areas - Manholes in paved areas that do not meet the along a stream definition.

The following tables will be used to calculate the flow credits gained through manhole rehabilitation.

Reduction of Flow in Paved Areas

	Reduction Values in Gallons Per Day (GPD)			
Manhole Section	Minor I/I	Moderate I/I	Heavy I/I	Severe I/I
Frame Seal	78	156	311	622
Chimney	78	156	311	622
Cone	78	156	311	622
Wall	39	78	156	311
Pipe Seal	39	78	156	311
Bench	39	78	156	311
Channel	39	78	156	311
Full Rehab/Replace	390	780	1557	3110

Reduction of Flow in Non-Paved Areas

	Reduction Values in Gallons Per Day (GPD)			
Manhole Section	Minor I/I	Moderate I/I	Heavy I/I	Severe I/I
Frame Seal	328	656	1313	2626
Chimney	328	656	1313	2626
Cone	328	656	1313	2626
Wall	164	328	656	1313
Pipe Seal	164	328	656	1313
Bench	164	328	656	1313
Channel	164	328	656	1313
Full Rehab/Replace	1640	3280	6563	13130

Reduction of Flow Near Stream/Waterway				
	Reduction Values In Gallons Per Day (GPD)			
Manhole Section	Minor I/I	Moderate I/I	Heavy I/I	Severe I/I
Frame Seal	864	1728	3456	6912
Chimney	864	1728	3456	6912
Cone	864	1728	3456	6912
Wall	432	864	1728	3456
Pipe Seal	432	864	1728	3456
Bench	432	864	1728	3456
Channel	432	864	1728	3456
Full Rehab/Replace	4320	8640	17280	34560

Pipe Rehabilitation/Replacement

Flow credits may also be awarded based on pipe rehabilitation or replacement. The rehabilitation shall be complete, consisting of any process that forms a water-tight channel through which sewer can flow. Cured-in-place, slip-lining, or pipe-bursting are some of the methods that may be employed.

The flow credits will be calculated for gallons per day per inch-diameter-mile (GPD/IDM)

Stream Inundation/High Groundwater
34000 GPD/IDM

Non-Inundation/Low Groundwater
60 GPD/IDM

Ex:
Rehabilitation or Replacement of 500 feet of 12" sewer line in High Groundwater yields

$$34000 \times 12" \times \frac{500\ ft}{5280\ ft\ per\ mile} = 38636\ GPD$$

Appendix B

Jackson Application for Sewer Connection

REVISED 6/6/02

FOR OPC USE ONLY
AI NO. _____
PLA NO. _____

INFORMATION REGARDING PROPOSED WASTEWATER PROJECTS
TO: THE MISSISSIPPI OFFICE OF POLLUTION CONTROL

The CITY OF RICHLAND, MS,
(Name of Body Making Application, i.e. Individual, Corporation, Municipality, Developer, etc.)

whose mailing address is PO BOX 180609 (Street and Number), RICHLAND (City), MS (State), 39218 (Zip),

whose responsible official is MARK SCARBOROUGH (Name), MAYOR (Title),

and whose phone number is (601) 932 - 3000.

Herewith submits for consideration of the OPC plans, specifications, and other necessary data prepared by

ENGINEERING SERVICE
(Engineer or Firm)

R. ALLEN SCOTT, P.E.
(Firm's Project Contact Person, if applicable)

PO BOX 160429
(Mailing Address)

RICHLAND, MS 39218
(City, State, Zip)

(601) 939 - 8737
(Phone Number)

who is hereby authorized to represent the applicant in the engineering features of this project for the construction of WASTEWATER COLLECTION ADDITIONS - WALKER CIRCLE

(Clearly Describe Project: New System, Modification, Extension, Rehabilitation, Treatment, etc.)

to serve COMMERCIAL/INDUSTRIAL AREA IN NORTH RICHLAND
(Subdivision, Plant, School, Other)

located at NW 1/4 SEC 26 T5N, R1E, RANKIN COUNTY
(Approximate Location, Including Section, Township, and Range)

1

in or near the City of RICHLAND in the County of RANKIN, State of Mississippi, as required by the regulations of the OPC and herewith make application to the OPC for the approval of this project. We understand through the regulations of the OPC that this approval is required prior to the initiation of construction activities.

Upon construction, these facilities will be owned and maintained by CITY OF RICHLAND, MS

(Name of Utility Company, Municipality, Owner, Developer, etc.)

whose mailing address is PO BOX 180609 (Street and Number), RICHLAND (City), MS (State), 39218 (Zip).

NOTE: IF THIS PROJECT DOES NOT ADD ANY NEW CONNECTIONS OR ADDITIONAL FLOWS TO THE COLLECTION SYSTEM, YOU MAY OMIT SECTIONS A. THROUGH E. BELOW.

A. EXISTING SEWAGE COLLECTION SYSTEM

1. The facilities collecting the sewage from this proposed project are owned by 52 CITY OF RICHLAND, MS.
   (Utility Company, Municipality, etc.)
2. The number of connections existing are 2432.
3. The length of sanitary sewers existing are 278,450 lf.
4. The number of existing lift stations are 20.
5. Additional facilities that collect sewage from this proposed project, i.e. a regional wastewater authority, are owned by West Rankin Utility & City of Jackson

B. CERTIFICATION(S) FROM COLLECTION ENTITIES

The official(s) responsible for the wastewater collection facilities denoted in Section A. above, that will serve the proposed project, do hereby certify that we agree to transport the wastewater flows generated from the proposed project. We also hereby certify that we have determined that our collection system(s) have the capacity available to transport properly the wastewater flows generated from the proposed project.

Signature
WATER/SEWER MANAGER
Title
CITY OF RICHLAND
Entity

R. Bruce Stegall
Signature
EXEC. DIRECTOR.
Title
West Rankin Utility
Entity

C. EXISTING SEWAGE TREATMENT WORKS

1. The facilities responsible for treatment of the sewage from this proposed project are owned by City of Jackson.
   (Utility Company, Municipality, etc.)
2. The OPC Permit Number for this wastewater facility is MS0024295.
3. The capacity for this wastewater treatment facility is 46 MGD.
4. The treatment type of this wastewater treatment facility is Activated Sludge.
   (Activated Sludge, Aerated Lagoon, etc.)
5. The present population served by the treatment facility is 285,000.
6. The operator in charge will be VEOLIA NORTH AMERICA, who is a Class IV wastewater operator, holding certificate number WW4-00007809 ANTRENA TRIMBLE

D. CERTIFICATION FROM WASTEWATER TREATMENT ENTITY

The official responsible for the wastewater treatment facility denoted in Section C. above, that will serve the proposed project, does hereby certify that we agree to treat the wastewater flows generated from the proposed project. We also hereby certify that we have determined that our treatment facility has the capacity available to treat properly the wastewater flows generated from the proposed project.

Mary D Carter
Signature

WW Facilities Manager
Title

City of Jackson
Entity

E. PROPOSED PROJECT DETAILS

1. The ultimate population to be served by this proposed project is 52.
2. The number of connections to be added are 15.
3. Per capita discharge 20 gpcd: Infiltration 5 gpcd. (Estimate, if unknown)
4. Area Served in Acres 26 Design Population Per Acre 2
5. The area water is supplied by City of Richland
   (Name and Address of Water Utility)

6. Proposed Sewage Pumping Stations

Location or Number	Units Served	Pump Capacity (gpm)	Influent Flow (gpm)	
			Avg.	Peak

F. ADDITIONAL CLEARANCES

NOTE: APPROVAL OF THIS PROJECT SHALL NOT BE GRANTED UNTIL ALL THE MDEQ PERMITS, COVERAGES, AND APPROVALS DENOTED BELOW ARE SATISFACTORILY ADDRESSED.

1. The total area of ground disturbance by clearing, grading, and excavating for utilities, roadways, lots, etc. is 1 acres.

2. For construction projects disturbing five or more acres, have you applied to MDEQ or an MDEQ approved local authority for construction stormwater permit coverage?

   ☐ Yes ☑ Not applicable

   If not applicable, why? less than 5 acres disturbed

NOTE: IF YOU ARE DISTURBING MORE THAN ONE ACRE BUT LESS THAN FIVE ACRES AFTER MARCH 10, 2003, YOU MUST FOLLOW THE REQUIREMENTS OF MDEQ'S SMALL CONSTRUCTION STORM WATER GENERAL PERMIT. ALSO, AFTER MARCH 10, 2003, IF YOU ARE IN AN AREA THAT HAS AN MDEQ APPROVED LOCAL AUTHORITY YOU MUST APPLY FOR APPROVAL FOR 1-5 ACRE CONSTRUCTION PROJECTS. SOME LOCAL AUTHORITIES MAY REQUIRE APPROVAL FOR DISTURBANCE LESS THAN ONE ACRE.

3. Have determinations/authorizations been received from the Corps of Engineers regarding the need for a Section 404 Permit, General Permit or Nationwide Permit for stream or intermittent drain crossings, stream re-routing, or for placing fill material into wetlands?

   ☐ Yes ☐ Pending ☑ Not applicable

   If not applicable, why? _____

G. ADDITIONAL CERTIFICATIONS

We hereby certify that we are the applicants for this project, that we are familiar with the information contained in this form, and that, to the best of our knowledge and belief, such information is true, complete, and accurate.

X _____
Signature of Responsible Official for Body Making Application

Mark Scarborough, Mayor
Printed Name and Title of Above

I hereby certify that the engineering documents for this project were prepared by myself or under my direct supervision, that I am familiar with the information contained in this form, and that, to the best of my knowledge and belief, such information is true, complete, and accurate.

_____
Signature of Engineer Registered Under Mississippi Laws

R. Allen Scott, P.E. (MS 9118)
Typed Name and Registration Number

R. ALLEN SCOTT REGISTERED PROFESSIONAL ENGINEER # 9118 (Seal) STATE OF MISSISSIPPI

THE APPLICANTS AGREE THAT NO CHANGES IN OR DEVIATION FROM THE PLANS AND SPECIFICATIONS APPROVED BY THE OPC WILL BE MADE EXCEPT WITH THE PRIOR CONSENT AND APPROVAL OF THE OPC.

COMMENTS _____

_____

_____

_____

Figure 2-2
City of Jackson Wastewater Collection System