ALABAMA STATE EXPENDITURE PLAN (SEP)

Project #25: Fairhope Sewer Upgrade Phase I

Project Description/Summary

a) This project proposes the planning, engineering and design, and implementation of sewer system upgrades in the City of Fairhope. It will address the most urgent needs within the City of Fairhope sewer system by instituting major rehabilitation measures for the complete replacement of 4 main pump stations and rehabilitation of the major gravity outfall lines utilizing cost-effective and environmentally sensitive engineering solutions. The implementation of this project will protect the water quality of Mobile Bay by reducing the frequency of Sanitary Sewer Overflows (SSO's) that occur within the City of Fairhope's public sewer system.

   Activities also include the comprehensive administration of this grant, including, but not limited to, project development and oversight, contracting, and sub-recipient monitoring.

   a. **Need**: The City of Fairhope, Alabama's fastest growing city, experienced a 26% population growth in the last five years alone. Currently, the City's sanitary sewer system functions adequately during normal and dry-weather conditions, but during heavy rain events common to the area, sanitary sewer overflows (SSO's) occur, dumping untreated sewage into critical waterways. As the system continues to be strained by additional growth, these overflows will increase in the number of locations and amount of sewage discharged from the system, impairing water quality and causing public health and environmental hazards.

      The current system includes one Wastewater Treatment Plant, 175 miles of gravity collection and force main pipes, over 70 pumping stations, and over 2,000 manholes. Recent engineering studies have pinpointed the most urgent and critical rehabilitation needs within the entire system. There are four major pumping stations representing key drainage basins that are undersized and loaded beyond their design capacity. Most of the major gravity lines that further convey flow from these stations have also outlived their useful lives. The system has approximately 60 miles of old clay pipe that has not been inspected or rehabilitated. These disintegrated lines are allowing ground and storm water to enter the system, as well as allowing sewage to escape the system without proper treatment.

      The City of Fairhope is facing a significant landmark in the life of its sewer system. The major pump stations and gravity lines have reached the end of their useful life and need substantial upgrades to continue serving the residents of Fairhope. Alternatives explored would provide temporary relief, but more significant modifications are needed due to the high growth rate. Project engineers recommend the City make the critical infrastructure improvements to continue providing quality sewer service to its existing customers. Major pump stations and gravity lines need immediate attention. It is also recommended the City progress with a more aggressive Cured-In-Place-Pipe (CIPP) repair plan to reduce inflow and infiltration and protect

the aged infrastructure in the system. Investment in the sewer system is vital to extend its life. It is recommended the City develop its own team of professionals for closed-circuit television (CCTV), line inspection and point repairs, while outsourcing the lining of the pipe and manholes. The over 60 sewage pumping stations in the system create a complex system with a wide range of flows that must be conveyed appropriately to a treatment facility. Flow meters should be installed on gravity and pressure sewer lines and utilized with the existing Supervisory Control & Data Acquisition (SCADA) system to improve the data for evaluation. Such meters should be purchased and installed by the City or temporarily provided by a flow metering service. A Sewer Model is suggested where this data, along with rain gauge data, may provide improved insight into the sewer system. Water usage and projected water usage may be utilized within the model to create dynamic and accurate engineering solutions. The sewer model will then be used to create a Sewer Master Plan that meets all objectives of the City and provides avenues for growth.

Purpose: The implementation of this project will protect the water quality of Mobile Bay, an impaired body of water. The project will reduce the pollutant loading and improve discharges to Mobile Bay, by reducing the number and frequency of Sanitary Sewer Overflows (SSO's) that occur within the City of Fairhope's public sewer system. The proposed Phase I project will solve the most urgent problems existing within the system. Major rehabilitation measures to be funded with RESTORE Act include the complete replacement of the 4 main pump stations (North Section Street, South Section Street, Thompson Hall, and Doghouse Pumping Stations), and rehabilitation of the major gravity outfall lines utilizing cost-effective engineering solutions, having the least impact on the environment. The City will purchase all equipment necessary to develop its own assessment team for system mapping, videoing, line inspection and cleaning, and point repairs. The system's (SCADA) equipment will be upgraded to ensure system reliability, and portable generators will be purchased to provide continuous facility operations during power outages. The old clay collection lines will be rehabilitated with Cured-In-Place-Pipe Liner.

Objective: The objectives of this project include:

- Completion of initial assessment;
- Completion of engineering and design;
- Replacement of 4 major pump stations; and
- Completion of sewer system upgrades.

b. This activity is located in the Gulf Coast region and will be carried out in the Fairhope area in Baldwin County, Alabama.

c. This project is anticipated to begin 7/1/2019 and end 6/30/2024 (5 years).

d. The City of Fairhope will implement this project.

b) This project contributes to the overall economic and ecological recovery along the Gulf Coast by protecting the water quality of Mobile Bay, an impaired body of water. The project will also reduce the pollutant loading and improve discharges to Mobile Bay by reducing the number and frequency of sanitary sewer overflows that occur within the City of Fairhope's public sewer system.

Eligibility and Statutory Requirements

This activity is located in the Gulf Coast Region and is eligible for Spill Impact Component funding under Category #1 - Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches and coastal wetlands of the Gulf Coast region (primary). Secondary activities include Category #3 - Implementation of a federally approved marine, coastal, or comprehensive conservation management plan, including fisheries monitoring and Category #6 - Infrastructure projects benefiting the economy or ecological resources, including port infrastructure.

Comprehensive Plan Goals and Objectives

This project is consistent with the following Comprehensive Plan goals:

- Goal 2 - Restore Water Quality – Restore and protect water quality of the Gulf Coast region's fresh, estuarine, and marine waters.
- Goal 5 - Restore and Revitalize the Gulf Economy – Enhance the sustainability and resiliency of the Gulf economy.

This project supports the following Comprehensive Plan objective:

g) Objective 2: Restore, Improve, and Protect Water Resources – Restore, improve, and protect the Gulf Coast region's fresh, estuarine, and marine water resources by reducing or treating nutrient and pollutant loading; and improving the management of freshwater flows, discharges to and withdrawals from critical systems.

h) Objective 4: Restore and Enhance Natural Processes and Shorelines – Restore and enhance ecosystem resilience, sustainability, and natural defenses through the restoration of natural coastal, estuarine, and riverine processes, and/or the restoration of natural shorelines.

Major Milestones

a) Milestone 1: Complete procurement activities

b) Milestone 2: Purchase needed equipment

c) Milestone 3: Conduct preliminary engineering and design

d) Milestone 4: Obtain needed permits

e) Milestone 5: Final designs and specifications

f) Milestone 6: Construction

Success Criteria/Metrics/Outcomes

The anticipated outcome of the Fairhope Sewer Upgrade Phase I project will be:

- Complete sewer system upgrades to protect the water quality in surrounding waterways.

Table 26. Proposed Projects Success Criteria/Metrics/Outcomes

Activity	Anticipated Project Success Criteria/Metrics	Short-term outcome	Long-term outcome
Complete sewer system upgrades to protect the water quality in surrounding waterways	Completion one pre-construction assessment and report Completion of engineering and design Construction of sewer system upgrades Develop monitoring plan to assess water quality improvements	Reduced SSOs Supports continued community growth	Improved water quality Greater community resiliency

Additional success criteria capturing the ecological benefits of this project will be selected at the grant application stage.

Monitoring and Evaluation

a) Submission of engineering and design plan to ADCNR

b) Provide evidence to ADCNR that all required permits were obtained (including SHPO)

c) ADCNR will conduct periodic onsite reviews

d) Submission of quarterly and final reports

e) Post construction monitoring as required

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Best Available Science

Water Quality Samples taken throughout the City's watersheds between June 2017 and February 2018 showed significant levels of E Coli and/or Enterococcus bacteria (fecal pollution) in over 70 of the samples. In 2015, 16 different SSO events occurred, in 2016, 14 different SSO events occurred, and in 2017, over 26 SSOs were reported. This is an indication the sewer system fails at least once or twice a month spilling thousands of gallons of untreated raw sewage into nearby waterways. The water test results clearly show the dangerous implications of these system failures.

This project is consistent with the values and recommendations set forth in the MBNEP's Comprehensive Conservation and Management Plan 2013-2018, available on the MBNEP website.

Budget/Funding

a) Estimated cost of the project and amount to be requested from Spill Impact Component Funds: $10,300,000 (5-15% - Planning, 95-85% Implementation). While it is noted that funding available under a grant award cannot exceed the amount described in the SEP for this project, the percentages listed in this section are estimated and will be more clearly cultivated in the grant application.

b) No other funding sources are anticipated at this time.

Partnerships/Collaboration (if applicable)

Not applicable at this time.

Leveraged Resources (if applicable)

Not applicable at this time.

Funds Used As Non-Federal Match (if applicable)

Not applicable at this time.

Other

Not applicable at this time.

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Figure 25. The City of Fairhope Sewer Upgrades Phase I project will be implemented in the Fairhope area in Baldwin County.