# **Program Delivery Plan**

Sanitary Sewer Overflow (SSO) Control and Wastewater Facilities Program

> Prepared for City of Baton Rouge/East Baton Rouge Parish Department of Public Works

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Prepared by



In association with SIGMA Consulting Group, Inc.

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## **Acronyms and Abbreviations**

BOD	Biochemical Oxygen Demand
BPS	Booster Pump Station
BTRSSO	Baton Rouge Sanitary Sewer Overflow
CCTV	Closed Circuit Television
C-P	City of Baton Rouge, Parish of East Baton Rouge
DPW	Department of Public Works
IAP	Immediate Action Projects
I/I	inflow and infiltration
MG	Millions Gallons
mgd	million gallons per day
MH	manhole
NPDES	National Pollutant Discharge Elimination System
OandPA	Outreach and Public Awareness Program
PDP	Program Delivery Plan
PHF	peak hourly flow
PM	Project Manager
PMT	Program Management Team
PS	Pump Station
RDI	Rainfall Dependent Infiltration
RDII	Rain Dependent Inflow and Infiltration
RMAP1	Remedial Measures Action Plan 1
RMAP2	Remedial Measures Action Plan 2
SEP	Supplementary Environmental Projects
SSO	Sewer System Overflow
TF/SC	trickling filter/solids contact
TSS	Total Suspended Solids
VFD	Variable Frequency Drive
WWTP	Wastewater Treatment Plant

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## **Executive Summary**

### Overview

The City of Baton Rouge, Parish of East Baton Rouge (C-P) has contracted CH2M HILL to prepare a Program Delivery Plan (PDP) that summarizes the Sewer System Overflow (SSO) Control and Wastewater Facilities Program. This document is the first annual update of the original PDP that was published in January 2008.

The Program is divided into the following three wet weather components:

- Comprehensive rehabilitation projects
- Capacity improvement projects
- Wastewater treatment and storage improvements

This PDP describes a total of 92 wet weather projects to be constructed by December 31, 2014 at an estimated total program cost of **\$1.2 billion** in September 2007 dollars. These costs include construction, design engineering, construction engineering and management, and program management. Costs stated herein do not include costs of city staff participation and projects previously undertaken by the C-P, such as Remedial Measures Action Plan (RMAP1) projects.

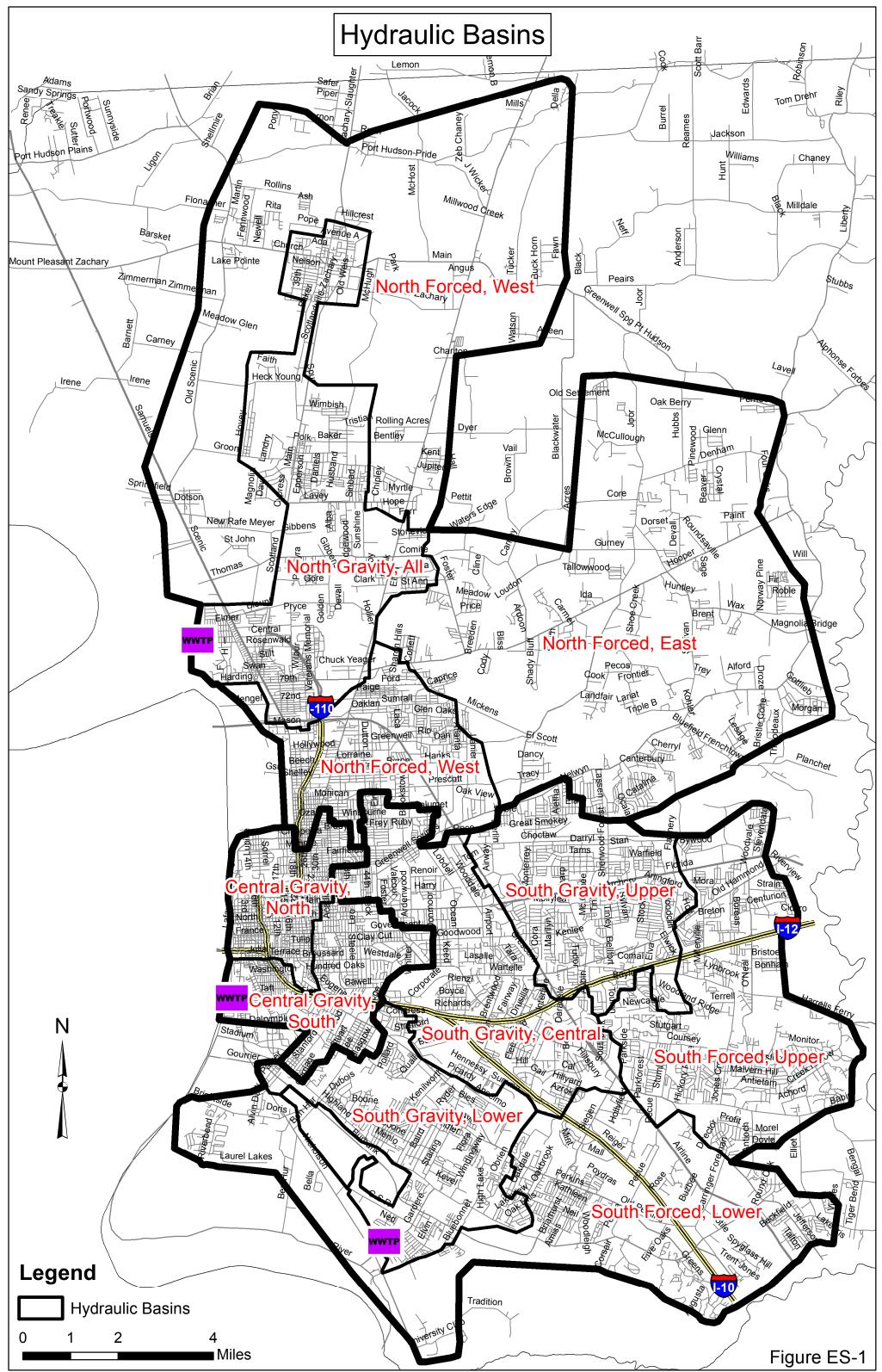
This PDP also describes two preliminary Master Plan projects that have an estimated total program cost of \$100 million. The preliminary Master Plan projects include the master plan portion of the South Wastewater Treatment Plant (WWTP) improvements and the emergency generator installation project.

The goals of the program are to:

- Reduce excess wet weather flows that cause SSOs
- Rehabilitate the collection system
- Increase the hydraulic capacity of the collection system
- Accommodate growth in project areas
- Comply with wastewater treatment plant National Pollutant Discharge Elimination System (NPDES) permit
- Comply with the terms of the Consent Decree

The Consent Decree, Civil Action 01-978-B-M3, United States of America and State of Louisiana versus City of Baton Rouge, Parish of East Baton Rouge states that the Collection System Remedial Program projects shall be completed by December 31, 2014.

In preparing this PDP, the locations of known overflows are given highest priority in order to reduce the frequency of these overflows. Areas of the collection system that were found to have excessive levels of infiltration or inflow are also identified for rehabilitation. Hydraulic capacity improvement projects are sized to accommodate the predicted designed peak wet weather flows and anticipated growth in the project areas. Peak wet weather flows were predicted based on the previously selected 2-year frequency, 12-hour duration design storm. Figure ES-1 shows the ten hydraulic basins used in the evaluation of the program. This page intentionally left blank.



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### **Program Description**

#### **Rehabilitation Projects**

Sewer system rehabilitation projects will be implemented to repair or replace components of the system that are defective and permit excessive infiltration and inflow.

The rehabilitation portion of the program consists of 26 construction projects located throughout the C-P. The first projects began in 2008, and the last project is scheduled for completion in 2014. Four to six projects will begin construction each year. Design and construction will be continuous through 2014. Approximately 5 million feet of the gravity sewer will be inspected in these rehabilitation projects.

The areas selected for rehabilitation are shown on Figure ES-2. Projects within these areas are described in detail in the body of this plan. The estimated total program cost of the rehabilitation projects is approximately **\$300 million** in September 2007 dollars.

#### **Capacity Improvement Projects**

Capacity improvement projects have been defined based on three factors:

- 1. Computer "InfoWorks Model" comparison of existing capacity to predicted peak wet weather flows
- 2. Physical evidence of inadequate capacity based on C-P Department of Public Works (DPW) records
- 3. Predicted growth in demand for wastewater capacity

Capacity projects include replacement of inadequately sized gravity sewers and force mains as well as rehabilitation or replacement of pump stations.

Projects located nearest to the wastewater treatment plants are, in general, scheduled for the earlier years in the program.

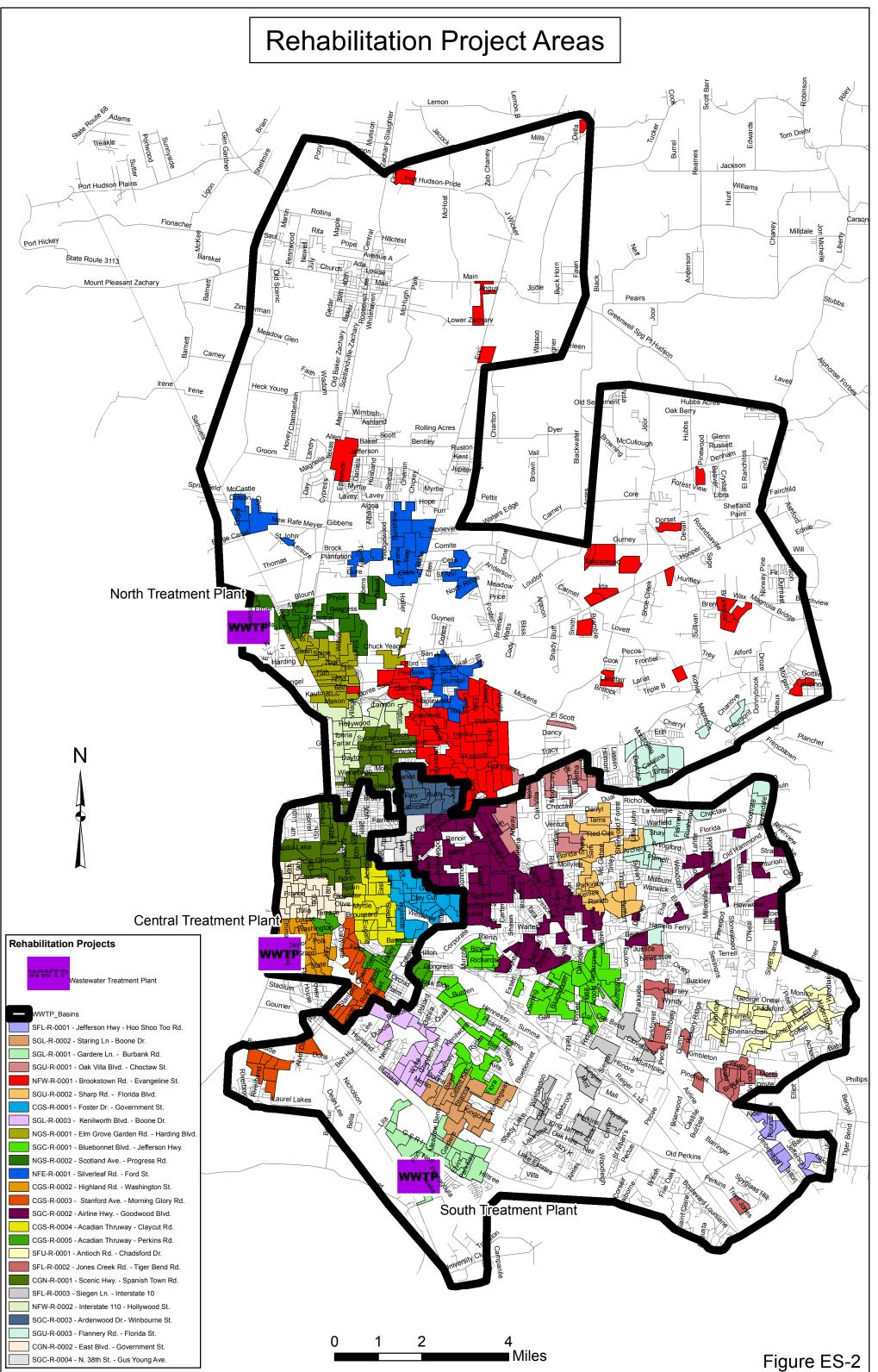
The capacity improvements portion of the program consists of 57 projects located throughout the C-P. The first projects started in 2007, and the last project is scheduled for completion in 2014. Seven to twelve projects will begin construction every year from 2008 through 2013, and design and construction will be continuous through 2014. Approximately 350,000 linear feet of gravity sewer, 670,000 linear feet of force main, and 140 pump stations (PSs) will be upgraded as a part of the capacity projects.

Figure ES-3 shows the location of the capacity improvement projects. Projects within these areas are described in detail in the body of this plan. The estimated total program cost of the capacity improvement projects is approximately **\$600 million** in September 2007 dollars.

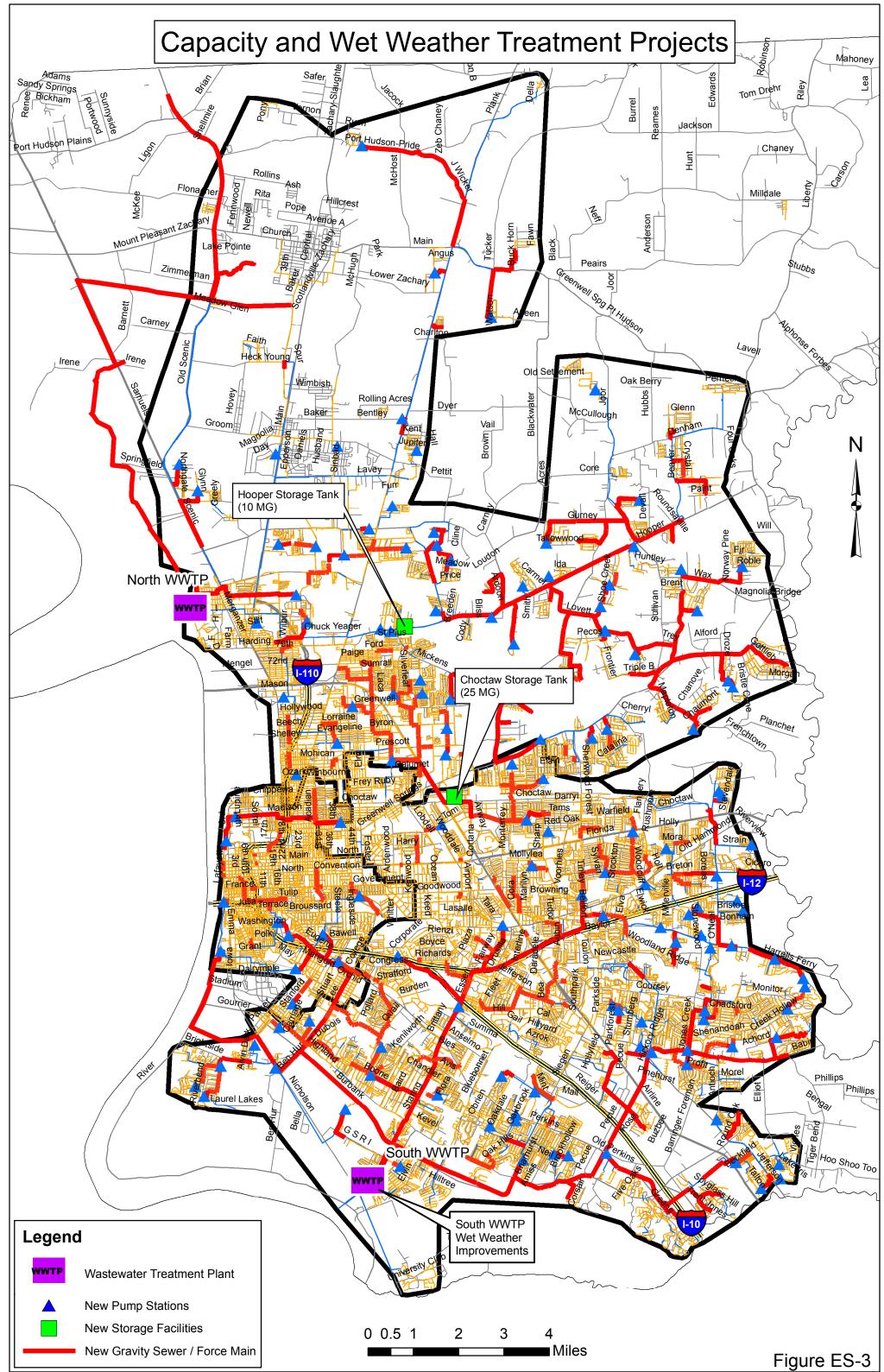
#### Wastewater Treatment Improvements/Storage Projects

The PDP includes four reservoir storage and repumping projects at three locations, as noted in Table ES-1. The cost of the Red Mud Lakes storage facility is accounted for under the capacity project above, since it is included in a project that also includes collection system capacity improvements.

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Location	Storage Volume
Choctaw Drive	25 MG
Hooper Road	10 MG
Red Mud Lakes	20 MG
South WWTP	64 MG

 TABLE ES-1

 Reservoir Storage and Repumping Projects

The wet weather treatment capacity of the South WWTP will be expanded to accommodate the predicted peak flow of 200 million gallons per day (mgd) after peak shaving storage and to accommodate wet weather flows from the Central WWTP, which will be consolidated with the South WWTP, per the technical memorandum entitled *Consolidation of South and Central Wastewater Treatment Plants in Baton Rouge (CH2M HILL, 2008).* The wet weather treatment capacity improvements will be accomplished in two projects. The South WWTP Phase 1 project includes wet weather storage, influent pumping, and preliminary treatment. The South WWTP Phase 2 project (PDP portion) includes wet weather improvements within the treatment process

In addition to the wet weather improvement and storage projects, five Immediate Action Projects have been undertaken at the South WWTP. The purpose of those projects is to assist the plant in complying with current discharge limits. These projects are described in the body of this report. Two of these Immediate Action Projects have been moved into another project (screenings improvements was moved to South WWTP Phase 1) or completed (Effluent Pumping Station project).

Design of the South WWTP immediate action projects began in 2007. These projects have been bid for construction, and a re-design is in progress to address some issues that were found during bidding. Construction of the immediate action projects is scheduled to begin in 2009. The South WWTP – Phase 1 and the Choctaw storage projects have started design in 2008, and construction should proceed in 2009. The Hooper Road storage project and South WWTP – Phase 2 projects are scheduled to begin design in 2009, with construction proceeding in 2010. The Red Mud Lakes project is currently under design and is scheduled to begin construction in 2010.

Storage and treatment locations are shown on Figure ES-3. The total estimated program cost for the PDP portion of wastewater treatment and storage projects (excluding Red Mud Lakes, as mentioned above) is **\$300 million** in September 2007 dollars.

#### **Preliminary Master Plan Projects**

The *Draft Master Plan* (CH2M HILL, 2008) outlined several improvements to the existing South WWTP facilities that are necessary to keep the plant in operation. These improvements are included in the South WWTP Phase 2 project (master plan portion). Due to the extended power outages experienced after Hurricane Gustav, the C-P desires to install emergency generators at each of the collection system pump stations and at each of the WWTPs as part of the preliminary master plan.

The total estimated program cost for the preliminary master plan is \$100 million in September 2007 dollars.

## List of Active Projects and Projects to be Appropriated for 2009

#### **Active Projects**

Table ES-2 shows the list of active projects, which includes projects currently under design and/or construction. These projects have already been appropriated for design and/or construction as shown in the table.

TABLE ES-2
List of Active Projects

Project Number/Name	Status (October 2008)	Appropriations
SFL-R-0001 (Jefferson Hwy - HooShooToo Road)	Construction	Design & Construction
SGL-R-0002 (Staring Lane - Boone Drive)	Design	Design & Construction
SGL-R-0001 (Gardere Lane - Burbank Road)	Design	Design & Construction
SGU-R-0001 (Oak Villa Blvd - Choctaw Street)	Design	Design & Construction
CGN-C-0001 (Capital Lake Drive - Gayosa Street)	Design	Design & Construction
NFE-C-0001 (Gurney Road - Joor Road)	Construction	Design & Construction
NFE-C-0002 (Multiple Pump Stations - Lovett Rd. Area)	Design	Design & Construction
NFE-C-0003 (Comite Road - Foster Road)	Design	Design & Construction
NFE-C-0004 (Foster Road - Hooper Road)	Design	Design & Construction
NFW-C-HWY61 (Red Mud Lakes)	Design	Design
CGN-C-0003 (South Boulevard - St. Joseph Street)	Design	Design & Construction
CGN-C-0004 (Downtown Area - PS59 Improvements)	Design	Design & Construction
CGN-C-0005 (Downtown Area - PS15, PS19, & PS60 Improvements)	Design	Design & Construction
CGS-C-0004 (Highland Road - Buchanan Street)	Design	Design & Construction
SGC-C-PS119 (Citiplace/Essen Area - PS119 & Forcemain Improvements)	Design	Design & Construction
Group Project 1A (Veterans Memorial Parkway - Gravity Mains)	Design	Design & Construction
Group Project 1B (Veterans Memorial Parkway - PS and FM)	Design	Design
SFL-C-0004 - Group Project 2 - Small Pump Stations	Design	Design
SFL-C-0005 (Highland Road - Burbank Drive)	Design	Design
SGC-C-PS58FM-A (Staring Lane FM A - Burbank to Highland)	Design	Design
SGC-C-PS58FM-B (Staring Lane FM B - Highland to Perkins)	Design	Design
NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, & FMs & return pipe)	Design	Design
STP-C-0001 (South WWTP - Phase 1)	Design	Design
SSO Odor Control NWWTP (07-TP-BD-0030)	Bid for Construction	Design & Construction

Project Number/Name	Status (October 2008)	Appropriations
SWWTP Screening Improvements (06-WT-TP- 0059)	Moved to STP-C-0001 (South WWTP – Phase 1)	Design & Construction
SWWTP Primary Treatment Improvements (06-WT-TP-0060)	Bid for Construction/Re-design	Design & Construction
SWWTP Trickling Filter Improvements (06-WT-TP-0061)	Bid for Construction/Re-design	Design & Construction
SWWTP Effluent Pumping Improvements (06-WT- TP-0062)	Study Completed	Study
SWWTP Sludge Handling Improvements (06-WT- TP-0063)	Bid for Construction/Re-design	Design & Construction
RMAP1 – Kleinpeter	Bid for Construction	Design & Construction
RMAP1 – Industriplex	Design Completed	Design & Construction
RMAP1 – PS 136	Design Completed	Design & Construction

#### Projects for 2009

Table ES-3 shows the list of projects that are to be appropriated for design and/or construction in 2009. Some projects in Table ES-2 above will be active in 2009 (going from design to construction), so if they are appropriated for design & construction in Table ES-2, they are not included in Table ES-3 below, although they will be active in 2009. For instance CGN-C-0001 (Capitol Lake Drive – Gayosa Street) is under design in 2008 and will begin construction in 2009, but it is fully appropriated for design and construction, so it is included in Table ES-2 only.

TABLE ES-3 List of Projects for 2009

Project Number/Name	Appropriations
NGS-R-0002 (Scotland Avenue - Progress Road)	Design & Construction
NGS-R-0001 (Elm Grove Garden Road - Harding Blvd)	Design & Construction
SGU-R-0002 (Sharp Road - Florida Blvd)	Design & Construction
SGL-R-0003 (Kenilworth Blvd - Boone Drive)	Design & Construction
CGS-R-0001 (Foster Drive - Government Street)	Design & Construction
NFE-R-0001 (Silverleaf Road - Ford Street)	Design
NFW-R-0001 (Brookstown Road - Evangeline Street)	Design
SGC-R-0001 (Bluebonnet Blvd - Jefferson Hwy)	Design
CGS-R-0002 (Highland Road - Washington Street)	Design
Group Project 2 (SFL-C-0002 - Small Pump Stations)	Construction
SFL-C-0005 (Highland Road - Burbank Drive)	Construction
SFL-C-0002 (Perkins/Old Perkins Area - Booster Pump Station 514 Improvements)	Design
SFL-C-0006 (Nicholson Dr - Highland Rd - Perkins Rd)	Design
SGL-C-0005 (Perkins Road - Dahlia Street)	Design

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#### TABLE ES-3 List of Projects for 2009

Project Number/Name	Appropriations
CGN-C-0002 (25th Street - North Acadian Thruway)	Design
CGS-C-0006 (Government St - South Acadian Thruway)	Design
NGS-C-0002 (Plank Road - Kleinpeter Road)	Design
SFU-C-0005 (O'Neal Lane - Jones Creek Road)	Design
SFU-C-0006 (O'Neal Lane - Tiger Bend Road)	Design
SFL-C-0001 (Multiple PS - Nicholson Dr - Brightside Dr)	Design
SGC-C-PS58A (PS 58A Overflow Pump Station)	Design
SGC-C-PS58FM-A (Staring Lane FM A - Burbank to Highland)	Construction
SGC-C-PS58FM-C (Staring Lane FM C - Perkins to PS 58)	Design
SFU-C-0001 (Multiple PS - Jefferson Hwy - Park Forest Dr)	Design
SGC-C-0002 (Airline Highway - Jefferson Highway)	Design
SGC-C-0003 (Essen Lane - Interstate 12)	Design
SGL-C-0002 (Multiple PS - Highland Road - Kenilworth Parkway)	Design
CC-WWTP-PS (Central Consolidation - new Central WWTP PS)	Design
CC-East-PS (Central Consolidation - PS 2, 3, 4, 5, 6, 7, & 10)	Design
CC-WWTP-FM (Central Consolidation - new Central WWTP FM)	Design
CC-East-FM (Central Consolidation FM from PS 2, 3, 7, 10, & 5)	Design
NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, & FMs)	Construction
NFW-C-0004 (Hooper Storage)	Design
STP-C-0001 (South WWTP - Phase 1)	Construction
STP-C-0002 (South WWTP - Phase 2 - PDP & MP)	Design
Sewer System Backup Power Program	Construction

### 1.1 Background

The purpose of the Sanitary Sewer Overflow (SSO) Control and Wastewater Facilities Program is to reduce sanitary sewer overflows while planning for the future. The City of Baton Rouge, East Baton Rouge Parish (C-P) entered into a Consent Decree (Civil Action 01-978-B-M3, United States of America and State of Louisiana versus C-P) with the United States Environmental Protection Agency (EPA) and the State of Louisiana to take remedial actions in the collection system to reduce SSOs by December 31, 2014. The Consent Decree details requirements for several components, including the following:

- Supplementary Environmental Projects (SEP)
- Remedial Measures Action Plan 1 (RMAP1)
- Remedial Measures Action Plan 2 (RMAP2)
- Preventive Maintenance
- Sewer Rehabilitation and Inspection
- Outreach and Public Awareness (O&PA) Program

This document constitutes a revised RMAP2. Other portions of the Consent Decree are addressed in other documents. This document is considered an update of the Program Delivery Plan (PDP) that was published in January 2008.

### 1.2 Major Program Goals

The major goals of the program are to:

- Reduce excess wet weather flows that cause SSOs
- Rehabilitate the collection system
- Increase the hydraulic capacity of the collection system
- Accommodate growth in project areas
- Comply with wastewater treatment plant National Pollutant Discharge Elimination System (NPDES) permit
- Comply with the terms of the Consent Decree

The Consent Decree states that the remedial measures must be complete by December 31, 2014. The preparation of the PDP considered the locations of known overflows to assure that the projects defined would reduce the frequency of these overflows. Areas of the collection system found to have defects were also identified for rehabilitation.

### 1.3 Program Description

The three types of projects identified for implementation are designated comprehensive rehabilitation projects, capacity improvement projects, and wastewater treatment improvement/storage projects. The following paragraphs define each project type.

#### 1.3.1 Comprehensive Rehabilitation Projects

Areas targeted for sewer pipe rehabilitation work are those in which flow monitoring has indicated the highest levels of inflow and infiltration (I/I). Comprehensive rehabilitation projects will proceed using a process developed and implemented by the Program Management Team (PMT) in association with Department of Public Works (DPW) technical staff. The I/I reduction plan for these projects has the following goals:

- Identify and reduce stormwater inflow sources into sanitary sewers
- Identify and reduce Rainfall Dependent Infiltration (RDI) sources in sanitary sewers
- Reduce overflow events
- Increase the sewer system useful life
- Minimize public inconvenience

The process chosen for rehabilitation and/or reconstruction is generally referred to as "Find and Fix." As the process description suggests, there are two phases to the process. The first is to find or identify areas that require rehabilitation or reconstruction, and the second is to determine the best engineering solution to fix the problem. After the "Find" phase, some portions of the system may not require rehabilitation. In those portions of the system, the Engineer will recommend No Action. The overall approach to the Rehabilitation program is to complete the following tasks:

- 1. Obtain basin data and perform basin field observations.
- 2. Perform I/I testing and inspection, including
  - Flow monitoring assessment
  - Smoke testing
  - Manhole inspection
  - Closed circuit television inspection
- 3. Prepare I/I reduction plan.
- 4. Prepare plans, specifications, and cost estimates.
- 5. Implement I/I reduction construction.
- 6. Evaluate I/I reduction results. Compare to pre-rehabilitation flow monitoring.
- 7. Implement additional I/I reduction, if goals are not met.

Flow monitoring is an integral part of the overall rehabilitation and reconstruction portion of the program and will be an ongoing process. Pre-construction flow monitoring is required to establish existing conditions. Post-construction flow data will gauge the effectiveness of the rehabilitation and reconstruction. Flow monitoring will continue for the duration of the program to calibrate the rehabilitation progress.

#### 1.3.2 Capacity Improvement Projects

Capacity improvement projects will reduce hydraulic bottlenecks in the system and convey wet weather flows to new upstream storage facilities and ultimately to the wastewater treatment plants (WWTPs). These projects will include installation of larger pipes or constructing parallel pipes to increase conveyance capacity, as well as replacement of pump stations to handle future wet weather peak flows.

#### 1.3.3 Wastewater Treatment Improvement/Storage Projects

Design and construction of WWTP wet weather improvement projects will occur early in the program to store and treat wet weather flows. Wastewater treatment projects at the South WWTP include the following:

- Immediate Action Projects (IAPs) for dry weather permit compliance
- Consolidation with the Central WWTP (Refer to the *Consolidation of South and Central Wastewater Treatment Plants in Baton Rouge TM; CH2M HILL, 2008*)
- Wet weather flow capacity increases to 200 million gallons per day (mgd) with hydraulic peak shaving
- Master Plan improvements

The South WWTP immediate action projects and treatment projects are included in this document and are part of the new RMAP2. Master plan projects are described in a separate document (*Draft Master Plan; CH2M HILL, 2008*).

Storage projects will be designed and constructed early in the program to store wet weather flows upstream in the basins and then release flows back into the system after the wet weather event has passed. Storage facilities will be sized to store the peak flow from a two-year frequency, 12-hour duration storm event, assuming rehabilitation projects are complete.

### 1.4 Project Delivery Summary

The projects have been scheduled for both design and construction activities based on funding considerations, and placed into a resource-loaded schedule shown in Table 1-1 and depicted graphically as Figure 1-1. Figure 1-2 presents the schedule for pre-construction and construction activities for all the program projects.

Note: Financial analysis and funding schedules are prepared by the C-P DPW and are not a part of this document.

### 1.5 Report Contents

The content of this report includes the following.

- Section 2, Planning Description, presents the process used to define the projects in this document.
- Section 3, South Basin Projects, describes the projects located in the South Basin. GIS maps that show locations of the work included in each project are located at the end of each project summary. The South Basin is the collection system that collects and conveys flow to the South WWTP.

- Section 4, Central Basin Projects, describes projects that are located in the Central Basin and collect and convey flow to the Central WWTP.
- Section 5, North Basin Projects, details projects that are located in the North Basin and collect and convey flow to the North WWTP.
- Section 6, Emergency Generators, describes the stand-by engine/generators that are to be located at each C-P pump station and the two WWTPs.

Comprehensive Behabilitation Brainsta											
Comprehensive Rehabilitation Projects		2007	2008	2009	2010	2011	2012	2013	2014		
		2007	2000	2005	2010	2011	2012	2015	2014		
Project Description										Est	imated Cost
SFL-R-0001 (Jefferson Hwy - HooShooToo Road)											
	Estimated Find Work		\$ -							\$	-
	Estimated Survey		\$ -							\$	-
	Estimated Design Engineering		\$ -							\$	-
	Estimated Construction		\$ 2,250,000							\$	2,250,000
	Estimated SDC		\$ -							\$	
	Project Sub-Total	\$ -	\$ 2,250,000	\$ -	\$	- \$	- \$	- \$	- \$	- \$	2,250,000
SGL-R-0002 (Staring Lane - Boone Drive)											
	Estimated Find Work		\$ -							\$	
	Estimated Survey		\$ -							\$	
	Estimated Design Engineering		\$ -							\$	
	Estimated Construction		\$ 5,600,000							\$	5,600,000
	Estimated SDC		\$ 500,000							\$	500,000
	Project Sub-Total	\$ -	\$ 6,100,000	\$ -	\$	- \$	- \$	- \$	- \$	- \$	6,100,000
SGL-R-0001 (Gardere Lane - Burbank Road)											
	Estimated Find Work		\$ -							\$	
	Estimated Survey		\$ -							\$	
	Estimated Design Engineering		\$ -							\$	
	Estimated Construction		\$ 5,100,000							\$	5,100,000
	Estimated SDC		\$ 460,000							\$	460,000
	Project Sub-Total	\$ -	\$ 5,560,000	\$ -	\$	- \$	- \$	- \$	- \$	- \$	5,560,000
SGU-R-0001 (Oak Villa Blvd - Choctaw Street)											
	Estimated Find Work		\$ -							\$	
	Estimated Survey		\$ -							\$	
	Estimated Design Engineering		\$ -							\$	
	Estimated Construction		\$ 5,600,000							\$	5,600,000
	Estimated SDC		\$ 500,000							\$	500,000
	Project Sub-Total	\$-	\$ 6,100,000	\$-	\$	- \$	- \$	- \$	- \$	- \$	6,100,000
NGS-R-0002 (Scotland Avenue - Progress Road)											
	Estimated Find Work			\$ 620,000						\$	620,000
	Estimated Survey			\$ 38,000						\$	38,000
	Estimated Design Engineering			\$ 430,000						\$	430,000
	Estimated Construction			\$ 7,400,000						\$	7,400,000
	Estimated SDC			\$ 670,000						\$	670,000
	Project Sub-Total	\$ -	\$ -	\$ 9,158,000	\$	- \$	- \$	- \$	- \$	- \$	9,158,000
NGS-R-0001 (Elm Grove Garden Road - Harding Blvd)											
	Estimated Find Work			\$ 720,000						\$	720,000
	Estimated Survey			\$ 38,000						\$	38,000
	Estimated Design Engineering			\$ 490,000						\$	490,00
	Estimated Construction			\$ 8,600,000						\$	8,600,000
	Estimated SDC			\$ 770,000						\$	770,000
	Project Sub-Total	\$-	\$	\$ 10,618,000	\$	- \$	- \$	- \$	- \$	- \$	10,618,000

		2007		2008	2009	201	0	2011		2012		2013	2014		
Project Description														Est	imated Cost
SGU-R-0002 (Sharp Road - Florida Blvd)															
	Estimated Find Work				\$ 670,000									\$	670,000
	Estimated Survey				\$ 38,000									\$	38,000
	Estimated Design Engineering				\$ 460,000									\$	460,000
	Estimated Construction				\$ 8,000,000									\$	8,000,000
	Estimated SDC				\$ 720,000									\$	720,000
	Project Sub-Total	\$	- \$	-	\$ 9,888,000	\$	- \$		- \$		- \$	- \$		- \$	9,888,000
SGL-R-0003 (Kenilworth Blvd - Boone Drive)															
	Estimated Find Work				\$ 450,000									\$	450,000
	Estimated Survey				\$ 38,000									\$	38,000
	Estimated Design Engineering				\$ 310,000									\$	310,000
	Estimated Construction				\$ 5,400,000									\$	5,400,000
	Estimated SDC	¢	۴		\$ 490,000	•	۴		۴		- \$	¢		\$	490,000
	Project Sub-Total	\$	- \$	-	\$ 6,688,000	Þ	- \$		- \$		- ֆ	- \$		- \$	6,688,000
CGS-R-0001 (Foster Drive - Government Street)					* <u>500.000</u>									•	
	Estimated Find Work				\$ 580,000									ን ድ	580,000
	Estimated Survey Estimated Design Engineering				\$									¢ ¢	38,000 400,000
	Estimated Design Engineering Estimated Construction				\$									ф Ф	6,900,000
	Estimated Construction				\$									ф ¢	620,000
		\$	- \$	_	\$ 8,538,000		- \$		- \$		- \$	- \$		Ψ _ \$	8,538,000
NFE-R-0001 (Silverleaf Road - Ford Street)		Ψ	Ψ		ψ 0,000,000 (	P	Ψ		Ψ		Ψ	Ψ		Ψ	0,000,000
	Estimated Find Work				\$ 890,000									¢	890,000
	Estimated Find Work				\$ 38,000									Ψ ¢	38,000
	Estimated Design Engineering				\$ 610,000									Ψ ¢	610,000
	Estimated Construction				φ 010,000	\$ 11	,000,000							Ψ ¢	11,000,000
	Estimated Construction				9		,000,000 990,000							Ψ ¢	990,000
		\$	- \$	-	\$ 1,538,000		,990,000 \$		- \$		- \$	- \$		- \$	13,528,000
NFW-R-0001 (Brookstown Road - Evangeline Street)		Ŷ	Ψ		¢ 1,000,000 (	r 11	,000,000 ¢		Ψ		Ŷ	Ŷ		Ψ	10,020,000
	Estimated Find Work				\$ 1,900,000									\$	1,900,000
	Estimated Survey				\$ 110,000									\$	110,000
	Estimated Design Engineering				\$ 1,300,000									ŝ	1,300,000
	Estimated Construction				φ 1,000,000 9	<b>5</b> 23	,000,000							\$	23,000,000
	Estimated SDC				9		,100,000							\$	2,100,000
	Project Sub-Total	\$	- \$	-	\$ 3,310,000		,100,000 \$		- \$		- \$	- \$		- \$	28,410,000
SGC-R-0001 (Bluebonnet Blvd - Jefferson Hwy)		+	¥		¢ 0,010,000 4		,,		Ŷ		¥	+		¥	20,110,000
	Estimated Find Work				\$ 1,200,000									\$	1,200,000
	Estimated Survey				\$ 110,000									ŝ	110,000
	Estimated Design Engineering				\$ 800,000									ŝ	800,000
	Estimated Construction				÷ 000,000	5 14	,000,000							ŝ	14,000,000
	Estimated Construction				9		,300,000							ŝ	1,300,000
		\$	- \$	_	\$ 2,110,000		,300,000 \$		- \$		- \$	- \$		- \$	17,410,000

		2007		2008		2009	2010	2011	2012	2013	2	014	
Project Description													Estimated Cost
CGS-R-0002 (Highland Road - Washington Street)													
	Estimated Find Work				\$	700,000						\$	700,000
	Estimated Survey				\$	38,000						\$	38,000
	Estimated Design Engineering				\$	480,000						\$	480,000
	Estimated Construction				·	\$	8,400,000					\$	8,400,000
	Estimated SDC					\$	760,000					\$	760,000
	Project Sub-Total	\$	- \$	-	\$	1,218,000 \$	9,160,000 \$	- \$		- \$	- \$	- \$	10,378,000
CGS-R-0003 (Stanford Avenue - Morning Glory Road)	•				-			·		·	·	· · · ·	,
	Estimated Find Work					\$	600,000					\$	600,000
	Estimated Survey					\$	38,000					\$	38,000
	Estimated Design Engineering					\$	410,000					\$	410,000
	Estimated Construction					\$	7,200,000					\$	7,200,000
	Estimated SDC					\$	650,000					\$	650,000
		\$	- \$	-	\$	- \$	8,898,000 \$	- \$		- \$	- \$	- \$	8,898,000
SGC-R-0002 (Airline Highway - Goodwood Blvd)	•					·	, , ,	·		·	·	· · · ·	
	Estimated Find Work					\$	2,100,000					\$	2,100,000
	Estimated Survey					\$	110,000					\$	110,000
	Estimated Design Engineering					\$	1,400,000					\$	1,400,000
	Estimated Construction						\$	25,000,000				\$	25,000,000
	Estimated SDC						\$	2,300,000				\$	2,300,000
	Project Sub-Total	\$	- \$	-	\$	- \$	3,610,000 \$	27,300,000 \$		- \$	- \$	- \$	30,910,000
CGS-R-0004 (Acadian Thruway - Claycut Road)													
	Estimated Find Work					\$	650,000					\$	650,000
	Estimated Survey					\$	38,000					\$	38,000
	Estimated Design Engineering					\$	440,000					\$	440,000
	Estimated Construction						\$	7,800,000				\$	7,800,000
	Estimated SDC						\$	700,000				\$	700,000
	Project Sub-Total	\$	- \$	-	- \$	- \$	1,128,000 \$	8,500,000 \$		- \$	- \$	- \$	9,628,000
CGS-R-0005 (Acadian Thruway - Perkins Road)													
	Estimated Find Work					\$	340,000					\$	340,000
	Estimated Survey					\$	38,000					\$	38,000
	Estimated Design Engineering					\$	230,000					\$	230,000
	Estimated Construction						\$	4,100,000				\$	4,100,000
	Estimated SDC						\$	370,000				\$	370,000
	Project Sub-Total	\$	- \$	-	\$	- \$	608,000 \$	4,470,000 \$		- \$	- \$	- \$	5,078,000

		2007		2008	2009		2010	2011	2012	2013	2014	
Project Description												Estimated Cost
SFU-R-0001 (Antioch Road - Chadsford Drive)												
	Estimated Find Work					\$	680,000				\$	680,000
	Estimated Survey					\$	38,000				\$	38,000
	Estimated Design Engineering					\$	470,000				\$	470,000
	Estimated Construction						\$	8,100,000			\$	8,100,000
	Estimated SDC						\$	730,000			\$	730,000
	Project Sub-Total	\$	- \$		- \$	- \$	1,188,000 \$	8,830,000 \$	- \$	- \$	5 - \$	10,018,000
SFL-R-0002 (Jones Creek Road - Tiger Bend Road)												
	Estimated Find Work						\$	450,000			\$	450,000
	Estimated Survey						\$	38,000			\$	38,000
	Estimated Design Engineering						\$	310,000			\$	310,000
	Estimated Construction						\$	5,400,000			\$	5,400,000
	Estimated SDC						\$	490,000			\$	490,000
	Project Sub-Total	\$	- \$	-	- \$	- \$	- \$	6,688,000 \$	- \$	- \$	s - \$	6,688,000
CGN-R-0001 (Scenic Highway - Spanish Town Road)												
	Estimated Find Work						\$	1,500,000			\$	1,500,000
	Estimated Survey						\$	110,000			\$	110,000
	Estimated Design Engineering						\$	1,000,000			\$	1,000,000
	Estimated Construction							\$	18,000,000		\$	18,000,000
	Estimated SDC							\$	1,600,000		\$	1,600,000
	Project Sub-Total	\$	- \$		- \$	- \$	- \$	2,610,000 \$	19,600,000 \$	- \$	; - \$	22,210,000
SFL-R-0003 (Siegen Lane - Interstate 10)												
	Estimated Find Work						\$	530,000			\$	530,000
	Estimated Survey						\$	38,000			\$	38,000
	Estimated Design Engineering						\$	360,000			\$	360,000
	Estimated Construction							\$	6,400,000		\$	6,400,000
	Estimated SDC							\$	580,000		\$	580,000
	Project Sub-Total	\$	- \$		- \$	- \$	- \$	928,000 \$	6,980,000 \$	- \$	; - \$	7,908,000
NFW-R-0002 (Interstate 110 - Hollywood Street)												
	Estimated Find Work						\$	530,000			\$	530,000
	Estimated Survey						\$	38,000			\$	38,000
	Estimated Design Engineering						\$	360,000			\$	360,000
	Estimated Construction							\$	6,300,000		\$	6,300,000
	Estimated SDC							\$	570,000		\$	570,000
	Project Sub-Total	\$	- \$		- \$	- \$	- \$	928,000 \$	6,870,000 \$	- \$	s - \$	7,798,000
SGC-R-0003 (Ardenwood Drive - Winboume Street)												
	Estimated Find Work						\$	410,000			\$	410,000
	Estimated Survey						\$	38,000			\$	38,000
	Estimated Design Engineering						\$	280,000			\$	280,000
	Estimated Construction							\$	4,900,000		\$	4,900,000
	Estimated SDC							\$	440,000		\$	440,000
	Project Sub-Total	\$	- \$	-	- \$	- \$	- \$	728,000 \$	5,340,000 \$	- \$	s - \$	6,068,000

		2007		2008	2	2009	2010	2011		2012	2013	2014	
Project Description													Estimated Cost
SGU-R-0003 (Flannery Road - Florida Blvd)													
	Estimated Find Work								\$	690,000			\$ 690,000
	Estimated Survey								\$	38,000			\$ 38,000
	Estimated Design Engineering								\$	470,000			\$ 470,000
	Estimated Construction								\$	8,300,000			\$ 8,300,000
	Estimated SDC								\$	750,000			\$ 750,000
	Project Sub-Total	\$	- \$	-	\$	- \$	- 9	- 5	\$	10,248,000 \$	- \$	-	\$ 10,248,000
CGN-R-0002 (East Boulevard - Government Street)													
	Estimated Find Work								\$	870,000			\$ 870,000
	Estimated Survey								\$	38,000			\$ 38,000
	Estimated Design Engineering								\$	600,000			\$ 600,000
	Estimated Construction									\$	10,000,000		\$ 10,000,000
	Estimated SDC									\$	900,000		\$ 900,000
	Project Sub-Total	\$	- \$	-	\$	- \$	- 9	5 -	\$	1,508,000 \$	10,900,000 \$	-	\$ 12,408,000
SGC-R-0004 (North 38th Street - Gus Young Avenue)	-												
(	Estimated Find Work								\$	320,000			\$ 320,000
	Estimated Survey								\$	38,000			\$ 38,000
	Estimated Design Engineering								\$	220,000			\$ 220,000
	Estimated Construction									\$	3,800,000		\$ 3,800,000
	Estimated SDC									\$	340,000		\$ 340,000
	Project Sub-Total	\$	- \$	-	\$	- \$	- 5	- 6	\$	578,000 \$	4,140,000 \$	-	
Rehab Engineering Retainer Contracts		·				•				, ,	, , ,		
	Estimated Design Engineering		\$	1,500,000									\$ 1,500,000
	Estimated Construction		+	.,000,000									\$ .,000,000
	Estimated SDC												\$ 
	Project Sub-Total	\$	- \$	1,500,000	\$	- \$	- 9	- 5	\$	- \$	- \$	-	\$ 1,500,000
WWCS Evaluation & Management Project (06-WC-AR-0064)		Ŧ	Ŧ	.,,	Ť	Ψ		r	Ŧ	Ŷ	Ŷ		.,,
	Estimated Design Engineering												\$
	Estimated Design Engineering		\$	2,056,430									\$         2,056,430
	Estimated SDC		\$										\$
	Project Sub-Total	\$	- \$	2,056,430	\$	- \$	- 9		\$	- \$	- \$	-	\$ 2,056,430
		Ŧ	Ψ	_,300,100	Ť	Ψ		<del>,</del>	Ψ	Ψ	Ψ		- 2,000,400
Comprehensive Rehabilitation Estimated Total Project Cost		\$	- \$	23,600,000	\$	53,100,000 \$	77,000,000	61,000,000	\$	51,100,000 \$	15,000,000 \$	-	\$ 280,800,000
Estimated Program Management for Comprehensive Rehab		\$	- \$	3,280,000	\$	3,830,000 \$	3,400,000	2,700,000	\$	2,300,000 \$	700,000 \$	-	\$ 16,210,000
Comprehensive Rehabilitation Estimated Total Program Cost		\$	- \$	26,900,000	\$	56,900,000 \$	80,400,000	63,700,000	¢	53,400,000 \$	15,700,000 \$	-	\$ 297,000,000
Comprehensive Renabilitation Estimated Total Frogram Cost		Ψ	- Ý	20,300,000	Ψ	50,500,000 ¢	00,400,000	03,700,000	Ψ		13,700,000 \$	•	φ <u>291,000,000</u>

		2007		2008	2009	2010	2011	2012	2013	2014		
Project Description											Fst	imated Cost
CGN-C-0001 (Capital Lake Drive - Gayosa Street)											200	
	Estimated Design Engineering	\$ 680,0	000								\$	680,000
	Estimated Construction	•,			\$ 2,100,000						\$	2,100,000
	Estimated SDC				\$ 130,000						\$	130,000
	Project Sub-Total	\$ 680,0	000 \$	-	\$ 2,230,000 \$	- \$	- \$	- \$	-	\$	- \$	2,910,000
NFE-C-0001 (Gurney Road - Joor Road)	•	· · · · ·				· · · ·	· · ·	· · · · ·				· · ·
	Estimated Design Engineering	\$ 360,0	000								\$	360,000
	Estimated Construction		\$	1,700,000							\$	1,700,000
	Estimated SDC		\$	100,000							\$	100,000
	Project Sub-Total	\$ 360,0	000 \$	1,800,000	\$-\$	- \$	- \$	- \$	-	\$	- \$	2,160,000
NFE-C-0002 (Multiple Pump Stations - Lovett Rd. Area)	ž											
	Estimated Design Engineering	\$ 450,0	000								\$	450,000
	Estimated Construction	. ,	\$	3,000,000							\$	3,000,000
	Estimated SDC		\$	180,000							\$	180,000
	Project Sub-Total	\$ 450,0	000 \$	3,180,000	\$-\$	- \$	- \$	- \$	-	\$	- \$	3,630,000
NFE-C-0003 (Comite Road - Foster Road)	-											
	Estimated Design Engineering	\$ 280,0	000								\$	280,000
	Estimated Construction		\$	2,800,000							\$	2,800,000
	Estimated SDC		\$	170,000							\$	170,000
	Project Sub-Total	\$ 280,0	000 \$	2,970,000	<b>\$</b> - \$	- \$	- \$	- \$	-	\$	- \$	3,250,000
NFE-C-0004 (Foster Road - Hooper Road)												
	Estimated Design Engineering	\$ 390,0	000								\$	390,000
	Estimated Construction		\$	6,500,000							\$	6,500,000
	Estimated SDC		\$	390,000							\$	390,000
	Project Sub-Total	\$ 390,0	000 \$	6,890,000	<b>\$</b> - \$	- \$	- \$	- \$	-	\$	- \$	7,280,000
NFW-C-HWY61 (Red Mud Lakes)												
	Estimated Design Engineering		\$	4,100,000							\$	4,100,000
	Estimated Construction				\$	58,000,000					\$	58,000,000
	Estimated SDC				\$	3,500,000					\$	3,500,000
	Project Sub-Total	\$	- \$	4,100,000	<b>\$</b> - \$	61,500,000 \$	- \$	- \$	-	\$	- \$	65,600,000
CGN-C-0003 (South Boulevard - St. Joseph Street)												
	Estimated Design Engineering		\$	320,000							\$	320,000
	Estimated Construction				\$ 4,500,000						\$	4,500,000
	Estimated SDC				\$ 270,000						\$	270,000
	Project Sub-Total	\$	- \$	320,000	\$ 4,770,000 \$	- \$	- \$	- \$	-	\$	- \$	5,090,000
CGN-C-0004 (Downtown Area - PS59 Improvements)												
	Estimated Design Engineering		\$	360,000							\$	360,000
	Estimated Construction				\$ 5,200,000						\$	5,200,000
	Estimated SDC				\$ 310,000						\$	310,000
	Project Sub-Total	\$	- \$	360,000	\$ 5,510,000 \$	- \$	- \$	- \$	-	\$	- \$	5,870,000

Capacity Improvement Projects	2007	2008		2009	2010	2011	2012	2013	2014	
Project Description										Estimated Cost
CGN-C-0005 (Downtown Area - PS15, PS19, & PS60 Improvements)										
Estimated Design Engineering		\$ 380,000	0						\$	380,000
Estimated Construction			\$	5,400,000					\$	5,400,000
Estimated SDC			\$	320,000					\$	320,000
	\$-	\$ 380,000	) <b>\$</b>	5,720,000 \$	- \$	- \$	- \$	- \$	- \$	6,100,000
CGS-C-0004 (Highland Road - Buchanan Street)										
Estimated Design Engineering		\$ 380,000	)						\$	380,00
Estimated Construction			\$	2,800,000					\$	2,800,000
Estimated SDC			\$	170,000					\$	170,000
Project Sub-Total	\$ -	\$ 380,000	) \$	2,970,000 \$	- \$	- \$	- \$	- \$	s - \$	3,350,000
SGC-C-PS119 (Citiplace/Essen Area - PS119 & Forcemain Improvements)										
Estimated Design Engineering		\$ 340,000	0						\$	340,000
Estimated Construction			\$	2,800,000					\$	2,800,000
Estimated SDC			\$	170,000					\$	170,000
	\$ -	\$ 340,000	) <b>\$</b>	2,970,000 \$	- \$	- \$	- \$	- \$	5 - \$	3,310,000
Group Project 1A (Veterans Memorial Parkway - Gravity Mains)										
Estimated Design Engineering		\$ 2,460,000	)						\$	2,460,000
Estimated Construction				\$	35,100,000				\$	35,100,000
Estimated SDC	•	•		\$	2,110,000	•	•		\$	2,110,000
•	\$ -	\$ 2,460,000	)\$	- \$	37,210,000 \$	- \$	- \$	- \$	5 - \$	39,670,000
Group Project 1B (Veterans Memorial Parkway - PS and FM)		•								
Estimated Design Engineering		\$ 950,000	)	•					\$	950,000
Estimated Construction				\$	13,600,000				\$	13,600,000
Estimated SDC	•	• • • • • • • • •		\$	820,000	•	•		\$	820,000
	\$ -	\$ 950,000	5	- \$	14,420,000 \$	- \$	- \$	- \$	5 - \$	15,370,000
SFL-C-0002 (Perkins/Old Perkins Area - Booster Pump Station 514 Improvements)									•	
Estimated Design Engineering			\$	760,000	10,000,000				\$	760,000
Estimated Construction Estimated SDC				\$	10,900,000				\$	10,900,000
	¢	¢	¢	ې ۲۵۵ ۵۵۵ ۴	650,000	¢	- \$	- 9	۵ 	650,000
	\$ -	\$	- >	760,000 \$	11,550,000 \$	- \$	- \$	- 3	- >	12,310,000
SFL-C-0004 - Group Project 2 - Small Pump Stations		¢ 440.000							•	440.00
Estimated Design Engineering Estimated Construction		\$ 410,000	, •	5,900,000					\$	410,000
			¢						\$	5,900,000
Estimated SDC Project Sub-Total	\$ -	\$ 410,000	<b>þ</b>	350,000 6,250,000 \$	- \$	- \$	- \$	- \$	\$ 5 - \$	350,000
SFL-C-0005 (Highland Road - Burbank Drive)	φ -	φ 410,000	φ	0,200,000 \$	- \$	- >	- \$	- 3	- >	6,660,000
		¢ 4 000 000	<u>,</u>						<b>^</b>	4 000 000
Estimated Design Engineering Estimated Construction		\$ 1,300,000	, t	13,400,000					\$	1,300,000
			¢						\$	13,400,000
Estimated SDC Project Sub-Total	\$ -	\$ 1,300,000	a a	800,000 14,200,000 \$	- \$	- \$	- \$	- \$	\$ •	800,000 15,500,000
Project Sub-Total	φ -	φ 1,300,000	φ	14,200,000 \$	- ⊅	- ⊅	- ⊅	- 1	- >	15,500,00

		2007		2008	2009	2010	2011	2012		2013	2014	
Project Description												Estimated Cost
SFL-C-0006 (Nicholson Dr - Highland Rd - Perkins Rd)												
<b>3 1 1 1 1</b>	Estimated Design Engineering				\$ 850,000							\$ 850,00
	Estimated Construction					\$	12,200,000					\$ 12,200,00
	Estimated SDC					\$	730,000					\$ 730,00
	Project Sub-Total	\$	- \$	-	\$ 850,000 \$	- \$	12,930,000 \$		- \$	- \$	-	\$ 13,780,00
SGL-C-0005 (Perkins Road - Dahlia Street)												
	Estimated Design Engineering				\$ 480,000							\$ 480,00
	Estimated Construction					\$	6,900,000					\$ 6,900,00
	Estimated SDC					\$	410,000					\$ 410,00
	Project Sub-Total	\$	- \$	-	\$ 480,000 \$	- \$	7,310,000 \$		- \$	- \$	-	\$ 7,790,00
CGN-C-0002 (25th Street - North Acadian Thruway)												
	Estimated Design Engineering				\$ 400,000							\$ 400,00
	Estimated Construction				\$	4,600,000						\$ 4,600,00
	Estimated SDC				\$	280,000						\$ 280,00
	Project Sub-Total	\$	- \$	-	<b>\$</b> 400,000 <b>\$</b>	4,880,000 \$	- \$		- \$	- \$	-	\$ 5,280,00
CGS-C-0006 (Government St - South Acadian Thruway)												
	Estimated Design Engineering				\$ 290,000							\$ 290,00
	Estimated Construction					\$	4,200,000					\$ 4,200,00
	Estimated SDC					\$	250,000					\$ 250,00
	Project Sub-Total	\$	- \$	-	<b>\$</b> 290,000 <b>\$</b>	- \$	4,450,000 \$		- \$	- \$	-	\$ 4,740,00
NGS-C-0002 (Plank Road - Kleinpeter Road)												
	Estimated Design Engineering				\$ 550,000							\$ 550,00
	Estimated Construction					\$	7,800,000					\$ 7,800,00
	Estimated SDC					\$	470,000					\$ 470,00
	Project Sub-Total	\$	- \$	-	<b>\$</b> 550,000 <b>\$</b>	- \$	8,270,000 \$		- \$	- \$	-	\$ 8,820,00
SFU-C-0005 (O'Neal Lane - Jones Creek Road)												
	Estimated Design Engineering				\$ 660,000							\$ 660,00
	Estimated Construction					\$	9,400,000					\$ 9,400,00
	Estimated SDC					\$	560,000					\$ 560,00
	Project Sub-Total	\$	- \$	-	\$ 660,000 \$	- \$	9,960,000 \$		- \$	- \$	-	\$ 10,620,00
SFU-C-0006 (O'Neal Lane - Tiger Bend Road)												
	Estimated Design Engineering				\$ 740,000							\$ 740,00
	Estimated Construction					\$	10,500,000					\$ 10,500,00
	Estimated SDC					\$	630,000					\$ 630,00
	Project Sub-Total	\$	- \$	-	<b>\$</b> 740,000 <b>\$</b>	- \$	11,130,000 \$		- \$	- \$	-	\$ 11,870,00
SFL-C-0001 (Multiple PS - Nicholson Dr - Brightside Dr)												
	Estimated Design Engineering				\$ 410,000							\$ 410,00
	Estimated Construction					\$	5,900,000					\$ 5,900,00
	Estimated SDC					\$	350,000					\$ 350,00
	Project Sub-Total	\$	- \$	-	<b>\$</b> 410,000 <b>\$</b>	- \$	6,250,000 \$		- \$	- \$	-	\$ 6,660,00
SGC-C-PS58A (PS 58A Overflow Pump Station)												
	Estimated Design Engineering				\$ 760,000							\$ 760,00
	Estimated Construction				\$	10,900,000						\$ 10,900,00
	Estimated SDC				\$	650,000						\$ 650,00
	Project Sub-Total	\$	- \$	-	<b>\$</b> 760,000 \$	11,550,000 \$	- \$		- \$	- \$	-	\$ 12,310,00

Capacity Improvement Projects		2007		2008	Т	2009	2010	2011	2012	2013	2014		
											-•••		
Project Description												Est	imated Cost
SGC-C-PS58FM-A (Staring Lane FM A - Burbank to Highland)	Estimated Design Engineering		\$	1,260,000								¢	1,260,00
	Estimated Design Engineering Estimated Construction		φ	1,200,000	¢	4,200,000						φ ¢	4,200,000
	Estimated Construction Estimated SDC				ф ¢	240,000						ዋ ድ	4,200,000
		\$	- \$	1,260,000	¢	4,440,000 \$	- \$	- \$	- \$	- 9		-\$	5,700,00
SGC-C-PS58FM-B (Staring Lane FM B - Highland to Perkins)		Ψ	Ψ	1,200,000	Ψ	4,440,000 φ	Ψ	Ψ	Ψ		,	Ψ	0,100,00
	Estimated Design Engineering		\$	-								\$	
	Estimated Construction		÷			\$	14,000,000					\$	14,000,000
	Estimated SDC					\$	800,000					\$	800,00
		\$	- \$	-	\$	- \$	14,800,000 \$	- \$	- \$	- 5	5	- \$	14,800,000
SGC-C-PS58FM-C (Staring Lane FM C - Perkins to PS 58)	•		· ·			*	, , <sub>T</sub>	*	Ť			· · ·	, ,
	Estimated Design Engineering				\$	700,000						\$	700,00
	Estimated Construction					\$	10,000,000					\$	10,000,000
	Estimated SDC					\$	600,000					\$	600,00
	Project Sub-Total	\$	- \$	-	\$	700,000 \$	10,600,000 \$	- \$	- \$	- 9	5	- \$	11,300,000
SFU-C-0001 (Multiple PS - Jefferson Hwy - Park Forest Dr)													
	Estimated Design Engineering				\$	640,000						\$	640,00
	Estimated Construction						\$	9,200,000				\$	9,200,00
	Estimated SDC						\$	550,000				\$	550,00
	Project Sub-Total	\$	- \$	-	\$	640,000 \$	- \$	9,750,000 \$	- \$	- 9	6	- \$	10,390,00
SGC-C-0002 (Airline Highway - Jefferson Highway)													
	Estimated Design Engineering				\$	830,000						\$	830,00
	Estimated Construction							\$	11,800,000			\$	11,800,000
	Estimated SDC							\$	710,000			\$	710,00
	Project Sub-Total	\$	- \$	-	\$	830,000 \$	- \$	- \$	12,510,000 \$	- (	6	- \$	13,340,00
SGC-C-0003 (Essen Lane - Interstate 12)													
	Estimated Design Engineering				\$	470,000						\$	470,00
	Estimated Construction							\$	6,700,000			\$	6,700,00
	Estimated SDC	•	•			(70.000 *	•	\$	400,000			\$	400,00
COL C 0000 (Multiple DC Llippland Deed Kerihuarth Derlause)	Project Sub-Total	\$	- \$	-	\$	470,000 \$	- \$	- \$	7,100,000 \$	- 9	)	- \$	7,570,00
SGL-C-0002 (Multiple PS - Highland Road - Kenilworth Parkway)	Estimated Desire Engineering				<b>*</b>	400.000						¢	100.00
	Estimated Design Engineering				\$	490,000		\$	7 000 000			ን ድ	490,00
	Estimated Construction Estimated SDC							+	7,000,000 420,000			¢	7,000,00
		\$	- \$		\$	490,000 \$	- \$	\$ - \$	420,000 7,420,000 \$	- 5		э - \$	420,000 7,910,000
SGU-C-0001 (Multiple PS - Florida Blvd - Sherwood Forest Blvd)	Project Sub-Total	φ	-φ	-	φ	<b>490,000</b> \$	-	- 9	7,420,000 \$	- (	)	- <b>φ</b>	7,910,000
300-0-0001 (IVIUILIPIE FS - FIOLIUA DIVU - SHELWOOU FOLEST BIVU)	Estimated Design Engineering						\$	710,000				¢	710.00
	Estimated Design Engineering Estimated Construction						φ	710,000 \$	10,200,000			ዋ ድ	10,200,000
	Estimated Construction Estimated SDC							э \$	610,000			φ \$	610,000
		\$	- \$		1.	- \$	- \$	ۍ 710,000 \$	10,810,000 \$	- 9		-\$	11,520,000

		2007	2	2008	2009		2010	2011	2012	2013	2014	
Project Description											E	stimated Cost
NGS-C-0003 (Multiple PS - Plank Road - Thomas Road)												
	Estimated Design Engineering						\$	370,000			\$	370,000
	Estimated Construction							\$	5,300,000		\$	5,300,000
	Estimated SDC							\$	320,000		\$	320,000
	Project Sub-Total	\$	- \$	-	\$	- \$	- \$	370,000 \$	5,620,000 \$	- \$	- \$	5,990,000
NGS-C-0004 (Multiple PS - Plank Road - Harding Boulevard)												
	Estimated Design Engineering						\$	470,000			\$	470,000
	Estimated Construction							\$	6,700,000		\$	6,700,000
	Estimated SDC	•	•		•	•	•	\$	400,000	•	\$	400,000
	Project Sub-Total	\$	- \$	-	<b>Þ</b>	- \$	- \$	470,000 \$	7,100,000 \$	- \$	- \$	7,570,000
NFW-C-0009 (Multiple PS - Highway 61 - Plank Road)	Followed and Decision Francisco						•	000 000			•	000.000
	Estimated Design Engineering Estimated Construction						\$	680,000 ¢	9,700,000		\$	680,000 9,700,000
	Estimated Construction Estimated SDC							\$	9,700,000 580,000		¢	9,700,000 580,000
		\$	- \$		¢	- \$	- \$	ۍ 880,000 \$	10,280,000 \$	- \$	¢ ¢	10,960,000
SFU-C-0002 (Multiple PS - Jones Creek Rd - Tiger Bend Rd)		Ψ	- ψ		Ψ	- ψ	- ψ	000,000 φ	10,200,000 ψ	- ψ	- ψ	10,300,000
Si 0-0-0002 (Multiple PS - Jones Cleek Ru - Tiger Benu Ru)	Estimated Design Engineering						\$	510,000			¢	510,000
	Estimated Design Engineering						Ψ	\$ 10,000	7,300,000		Ψ S	7,300,000
	Estimated SDC							\$	440,000		\$	440,000
		\$	- \$	-	\$	- \$	- \$	510,000 \$	7,740,000 \$	- \$	- \$	8,250,000
SGU-C-0002 (Airline Highway - Interstate 12)		•	+		•	+	•		.,	· · · · ·	•	-,,
	Estimated Design Engineering						\$	780,000			\$	780,000
	Estimated Construction						Ŧ	\$	11,100,000		\$	11,100,000
	Estimated SDC							\$	670,000		\$	670,000
	Project Sub-Total	\$	- \$	-	\$	- \$	- \$	780,000 \$	11,770,000 \$	- \$	- \$	12,550,000
SGU-C-0003 (Florida Boulevard - Sherwood Forest Boulevard)	-											
	Estimated Design Engineering							\$	250,000		\$	250,000
	Estimated Construction								\$	3,600,000	\$	3,600,000
	Estimated SDC								\$	220,000	\$	220,000
	Project Sub-Total	\$	- \$	-	\$	- \$	- \$	- \$	250,000 \$	3,820,000 \$	- \$	4,070,000
SGU-C-0004 (Goodwood Boulevard - South Flannery Road)												
	Estimated Design Engineering						\$	460,000			\$	460,000
	Estimated Construction								\$	6,500,000	\$	6,500,000
	Estimated SDC								\$	390,000	\$	390,000
	Project Sub-Total	\$	- \$	-	\$	- \$	- \$	460,000 \$	- \$	6,890,000 \$	- \$	7,350,000
NFW-C-0001 (Joor Road - Greenwell Springs Road)												
	Estimated Design Engineering							\$	340,000		\$	340,000
	Estimated Construction								\$	4,800,000	\$	4,800,000
	Estimated SDC	•	•						\$	290,000	\$	290,000
	Project Sub-Total	\$	- \$	-	\$	- \$	- \$	- \$	340,000 \$	5,090,000 \$	- \$	5,430,000

Capacity Improvement Projects												
		2007	2008	2009		2010	2011	2012	2013	2014		
Project Description											Esti	imated Cost
NFW-C-0007 (Plank Road - Port Hudson Pride Road)												
	Estimated Design Engineering						\$	340,000			\$	340,000
	Estimated Construction							\$	4,900,000		\$	4,900,000
	Estimated SDC							\$	290,000		\$	290,000
	Project Sub-Total	\$-	\$	- \$	- \$	- \$	- \$	340,000 \$	5,190,000 \$		- \$	5,530,000
SGL-C-0003 (Essen Lane - Highland Road)												
	Estimated Design Engineering					\$	670,000				\$	670,000
	Estimated Construction							\$	9,500,000		\$	9,500,000
	Estimated SDC							\$	570,000		\$	570,000
	Project Sub-Total	\$-	\$	- \$	- \$	- \$	670,000 \$	- \$	10,070,000 \$		- \$	10,740,000
SGU-C-0005 (Oak Villa Boulevard - Monterey Boulevard)												
	Estimated Design Engineering					\$	580,000				\$	580,000
	Estimated Construction						,	\$	8,300,000		\$	8,300,000
	Estimated SDC							\$	500,000		\$	500,000
	Project Sub-Total	\$-	\$	- \$	- \$	- \$	580,000 \$	- \$	8,800,000 \$		- \$	9,380,000
NFE-C-0006 (Lovett Road - Greenwell Springs Road)	· · · · · ·											
	Estimated Design Engineering					\$	1,040,000				\$	1,040,000
	Estimated Construction						\$	14,800,000			\$	14,800,000
	Estimated SDC						\$	890,000			\$	890,000
	Project Sub-Total	\$-	\$	- \$	- \$	- \$	1,040,000 \$	15,690,000 \$	- \$		- \$	16,730,000
SGL-C-0004 (Highland Road - Lee Drive)	· · · · · ·											
( )	Estimated Design Engineering						\$	520,000			\$	520,000
	Estimated Construction							\$	7,400,000		\$	7,400,000
	Estimated SDC							\$	440,000		\$	440,000
	Project Sub-Total	\$-	\$	- \$	- \$	- \$	- \$	520,000 \$	7,840,000 \$		- \$	8,360,000
NFE-C-0005 (Multiple PS - Hooper Rd - Greenwell Springs Rd)	•	·	·			· ·	· ·	· · ·	· · ·		· · · · ·	· · · ·
···· = • ••••• (·······	Estimated Design Engineering					\$	270,000				\$	270,000
	Estimated Construction						- ,	\$	3,900,000		\$	3,900,000
	Estimated SDC							\$	230,000		\$	230,000
	Project Sub-Total	\$-	\$	- \$	- \$	- \$	270,000 \$	- \$	4,130,000 \$		- \$	4,400,000
NFE-C-0007 (Multiple Booster PS - Hooper Rd - Lovett Rd)	•	•	•				, ,	·	, , , ,			
	Estimated Design Engineering				\$	560,000					\$	560.000
	Estimated Construction				Ŧ	\$	8,000,000				\$	8,000,000
	Estimated SDC					\$	480,000				\$	480,000
		\$ -	\$	- \$	- \$	560,000 \$	8,480,000 \$	- \$	- \$		- \$	9,040,000
NFW-C-0010 (Multiple PS - Prescott Rd - Greenwell Springs Rd)				*	Ŧ	, <b>4</b>	-, - <i>2</i> , Ψ	Ŷ	Ŷ			
	Estimated Design Engineering					\$	300,000				\$	300,000
	Estimated Construction					Ψ	\$	4,300,000			ŝ	4,300,000
	Estimated SDC						Ψ S	260,000			\$	260,000
		\$-	\$	- \$	- \$	- \$	300,000 \$	4,560,000 \$	- \$		- \$	4,860,000
	. 10,000 000 1000	٣	*	Ψ	Ψ	Ψ	000,000 ψ	1,000,000 ψ	Ψ		<u> </u>	1,000,000

		2007		2008	2	009	2010	2011	2012	2013	2014	
Project Description												Estimated Cost
SFU-C-0003 (Multiple PS - O'Neal Ln - Interstate 12)												Estimated 00st
Estimated Desig	in Engineering						\$	420,000			\$	420,000
-	Construction						Ŧ	\$	6,000,000		\$	6,000,000
	Estimated SDC							\$	360,000		\$	360,000
		\$	- \$	-	\$	- \$	- \$	420,000 \$	6,360,000 \$	- \$	- \$	
SFU-C-0004 (Multiple PS - O'Neal Ln - S. Harrells Ferry Rd)		·					·	, ,	, , ,	·	•	
Estimated Desig	n Engineering						\$	550,000			\$	550,000
Estimated	d Construction							\$	7,800,000		\$	7,800,000
E	Estimated SDC							\$	470,000		\$	470,000
Pro	ject Sub-Total	\$	- \$	-	\$	- \$	- \$	550,000 \$	8,270,000 \$	- \$	- \$	8,820,000
SGC-C-0001 (Airline/Florida Boulevard Area - PS 30 Improvements & New PS)												
Estimated Desig	n Engineering					\$	320,000				\$	320,000
Estimated	d Construction							\$	4,600,000		\$	4,600,000
E	Estimated SDC							\$	280,000		\$	280,000
	ject Sub-Total	\$	- \$	-	\$	- \$	320,000 \$	- \$	4,880,000 \$	- \$	- \$	5,200,000
SFL-C-0003 (Multiple PS - Burbank Drive - Siegen Lane)												
Estimated Desig	n Engineering						\$	280,000			\$	280,000
Estimated	d Construction							\$	4,000,000		\$	4,000,000
	Estimated SDC							\$	240,000		\$	240,000
Pro	ject Sub-Total	\$	- \$	-	\$	- \$	- \$	280,000 \$	4,240,000 \$	- \$	- \$	4,520,000
CC-WWTP-PS (Central Consolidation - new Central WWTP PS)												
Estimated Desig	n Engineering				\$	480,000					\$	480,000
Estimated	d Construction					\$	6,900,000				\$	6,900,000
E	Estimated SDC					\$	410,000				\$	410,000
	oject Sub-Total	\$	- \$	-	\$	480,000 \$	7,310,000 \$	- \$	- \$	- \$	- \$	7,790,000
CC-East-PS (Central Consolidation - PS 2, 3, 4, 5, 6, 7, & 10)												
Estimated Desig	n Engineering				\$	1,080,000					\$	1,080,000
Estimated	d Construction					\$	15,400,000				\$	15,400,000
	Estimated SDC					\$	920,000				\$	920,000
	ject Sub-Total	\$	- \$	-	\$	1,080,000 \$	16,320,000 \$	- \$	- \$	- \$	- \$	17,400,000
CC-WWTP-FM (Central Consolidation - new Central WWTP FM)												
Estimated Desig	n Engineering				\$	1,170,000					\$	1,170,000
Estimated	d Construction					\$	16,700,000				\$	16,700,000
E	Estimated SDC					\$	1,000,000				\$	1,000,000
	ject Sub-Total	\$	- \$	-	\$	1,170,000 \$	17,700,000 \$	- \$	- \$	- \$	- \$	18,870,000
CC-East-FM (Central Consolidation FM from PS 2, 3, 7, 10, & 5)												
Estimated Desig					\$	480,000					\$	480,000
	d Construction					\$	6,800,000				\$	-,,
	Estimated SDC					\$	410,000				\$	-,
Pro	ject Sub-Total	\$	- \$	-	\$	480,000 \$	7,210,000 \$	- \$	- \$	- \$	- \$	7,690,000
Capacity Improvement Estimated Total Project Cost		\$ 2,200,0	000 \$	27,100,000	\$ 6	61,300,000 \$	215,900,000 \$	86,600,000 \$	125,800,000 \$	51,800,000 \$	- \$	570,800,000
Estimated Program Management for Capacity Improvement		\$ 3,060,0	000 \$	3,280,000	\$	3,830,000 \$	9,700,000 \$	3,900,000 \$	5,700,000 \$	2,300,000 \$	- \$	31,770,000
Capacity Improvement Estimated Total Program Cost		\$ 5,300,0		30,400,000		5,100,000 \$	225,600,000 \$	90,500,000 \$	131,500,000 \$	54,100,000 \$	- \$	602,600,00

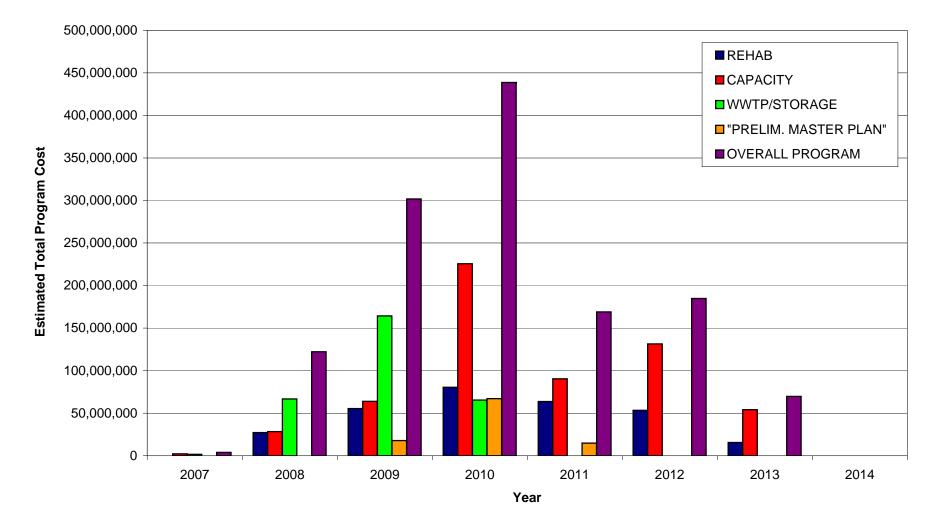
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	20	007	2008	2009	2010	2011	2012	2013	2014		
Project Description										E	stimated Cost
NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, & FMs)											
Estimated Design Engineering		\$	3,500,000							\$	3,500,000
Estimated Construction				\$ 51,518,720						\$	51,518,720
Estimated SDC				\$ 3,000,000						\$	3,000,000
Project Sub-Total	\$	- \$	3,500,000	<b>\$</b> 54,518,720 <b>\$</b>	- \$	- \$		- \$	- \$	- \$	58,018,720
NFW-C-0004 (Hooper Storage)											
Estimated Design Engineering				\$ 1,100,000						\$	1,100,000
Estimated Construction				\$	16,300,000					\$	16,300,000
Estimated SDC				\$	1,000,000					\$	1,000,000
Project Sub-Total	\$	- \$	-	\$ 1,100,000 \$	17,300,000 \$	- \$		- \$	- \$	- \$	18,400,000
STP-C-0001 (South WWTP - Phase 1)											
Estimated Design Engineering		\$	6,300,000							\$	6,300,000
Estimated Construction				\$ 90,000,000						\$	90,000,000
Estimated SDC				\$ 5,400,000						\$	5,400,000
Project Sub-Total	\$	- \$	6,300,000	\$ 95,400,000 \$	- \$	- \$		- \$	- \$	- \$	101,700,000
STP-C-0002 (South WWTP - Phase 2 - PDP)											
Estimated Design Engineering				\$ 6,300,000						\$	6,300,000
Estimated Construction				\$	40,000,000					\$	40,000,000
Estimated SDC				\$	5,400,000					\$	5,400,000
Project Sub-Total	\$	- \$	-	\$ 6,300,000 \$	45,400,000 \$	- \$		- \$	- \$	- \$	51,700,000
SSO Odor Control NWWTP (07-TP-BD-0030)											
Estimated Design Engineering	\$	100,610								\$	100,610
Estimated Construction		\$	2,756,120							\$	2,756,120
Estimated SDC										\$	· · ·
Project Sub-Total	\$	100,610 \$	2,756,120	\$-\$	- \$	- \$		- \$	- \$	- \$	2,856,730
SWWTP Primary Treatment Improvements (06-WT-TP-0060)			, ,	· ·	·			·	·		, ,
Estimated Design Engineering	\$	430,000								\$	430,000
Estimated Construction	+	\$	7,666,000							\$	7,666,000
Estimated SDC		\$	-							\$	.,000,000
Project Sub-Total	\$	430,000 \$	7,666,000	\$-\$	- \$	- \$		- \$	- \$	- \$	8,096,000
SWWTP Trickling Filter Improvements (06-WT-TP-0061)	Ŧ	¥	.,,	· · · · · · · · · · · · · · · · · · ·	•	Ŷ		Ŧ	Ŧ	Ŧ	-,,000
Estimated Design Engineering	\$	600,000								\$	600,000
Estimated Design Engineering Estimated Construction	Ψ	\$	37,800,000							\$	37,800,000
Estimated SDC		Ψ S								\$	07,000,000
Project Sub-Total	\$	600,000 \$	37,800,000	\$-\$	- \$	- \$		- \$	- \$	Ψ	38,400,000

		2007		2008		2009		2010		2011		2012		2013	2014		
Project Description																	Estimated Cost
SWWTP Effluent Pumping Improvements (06-WT-TP-0062)/Screening Improvements (06-WT-TP-0059)																	
Estimated Design Engineering	\$	155,000														\$	155,00
Estimated Construction			\$	1,793,000												\$	1,793,00
Estimated SDC			\$	-												\$	
Project Sub-Total	\$	155,000	\$	1,793,000	\$	-	\$	-	\$	- \$		-	\$	-	\$	- \$	1,948,00
SWWTP Sludge Handling Improvements (06-WT-TP-0063)																	
Estimated Design Engineering	\$	332,000														\$	332,00
Estimated Construction			\$	5,302,000												\$	5,302,00
Estimated SDC			\$	-												\$	
Project Sub-Total	\$	332,000	\$	5,302,000	\$	-	\$	-	\$	- \$		-	\$	-	\$	- \$	5,634,00
WW Treatment/Storage Estimated Total Project Cost	\$	1,700,000	\$	65,100,000	\$	157,300,000	\$	62,700,000	\$	- \$		-	\$	-	\$	- \$	286,800,00
Estimated Program Management for WW Treatment/Storage	\$	3,060,000	\$	3,280,000	\$	3,830,000	\$	2,800,000	\$	- \$		-	\$	- :	\$	- \$	12,970,00
WW Treatment/Storage Estimated Total Program Cost	\$	4,800,000	\$	68,400,000	\$	161,100,000	\$	65,500,000	\$	- \$		-	\$	-	\$	- \$	299,800,00
Total Estimated Wet Weather Program Cost (Sept. 2007 Dollars)	\$	10,100,000	\$	125,700,000	\$	283,100,000	\$	371,500,000	\$	154,200,000 \$	: 1	84,900,000	\$	69,800,000	\$	- \$	1,199,400,00
	Ψ	10,100,000	Ψ	120,100,000	Ψ	200,100,000	Ψ	011,000,000	Ψ	10-1,200,000 ψ		01,000,000	Ψ	00,000,000	Ψ	Ψ	1,100,400,00
Total Estimated Wet Weather Program Cost (Considering 3% Per Year Inflation Rate)	\$	10,100,000	\$	125,700,000	\$	283,100,000	\$	382,600,000	\$	163,600,000 \$	2	202,000,000	\$	78,600,000	\$	- \$	1,245,700,00

### "Preliminary Master Plan"

		2007	2008	2	009	2010	2011	2012	2013	2014	
Project Description											Estimated Cost
STP-C-0002 (South WWTP - Phase 2 - MP)											
Estimated Design Engineer	ing			\$	-						\$ -
Estimated Construct	ion				\$	50,000,000					\$ 50,000,000
Estimated S	DC				\$	-					\$ -
Project Sub-T	otal \$	- \$	-	\$	- \$	50,000,000 \$	- \$	- \$	- \$	-	\$ 50,000,000
Sewer System & WWTP Backup Power Program											
Estimated Design Engineer	ring			\$	-						\$ -
Estimated Construct	ion			\$	10,100,000 \$	10,000,000 \$	13,000,000 \$	7,200,000 \$	400,000		\$ 40,700,000
Estimated S	DC			\$	610,000 \$	600,000 \$	780,000 \$	430,000 \$	20,000		\$ 2,440,000
Project Sub-T	otal \$	- \$	-	\$	10,710,000 \$	10,600,000 \$	13,780,000 \$	7,630,000 \$	420,000 \$	-	\$ 43,140,000
"Preliminary Master Plan" Total Project Cost	\$	- \$	-	\$	10,800,000 \$	60,600,000 \$	13,800,000 \$	7,600,000 \$	400,000 \$	-	\$ 93,100,000
······································	•	Ŧ		Ť		, +		• ,• • • • • •	,		• • • • • • • • • • • • • • • • • • • •
Estimated Program Management for "Preliminary Master Plan"	\$	- \$	-	\$	- \$	2,700,000 \$	600,000 \$	300,000 \$	- \$	-	\$ 3,600,000
"Preliminary Master Plan" Estimated Total Program Cost	\$	- \$	-	\$	10,800,000 \$	63,300,000 \$	14,400,000 \$	7,900,000 \$	400,000 \$	-	\$ 96,700,000
Program Management Total	\$	6,120,000 \$	9,830,000	\$	11,500,000 \$	18,500,000 \$	7,100,000 \$	8,300,000 \$	3,000,000 \$	-	\$ 64,550,000
	Ŷ	ο,	0,000,000	Ť	φ	φ	.,φ	ο,οοο,οοο φ	2,000,000 φ		- 0.,000,000
Total Estimated Program Cost (Sept. 2007 Dolla	ars) \$	10,100,000 \$	125,700,000	\$ 2	93,900,000 \$	434,800,000 \$	168,600,000 \$	192,800,000 \$	70,200,000 \$	-	\$ 1,296,100,000
Total Estimated Brogram Cost (Considering 20/ Day Very Inflation D	eta) ¢	10 100 000 ¢	405 700 000	¢ 7	02 000 000 ¢	447 900 000 ¢	478 000 000 ¢	240 700 000 ¢	70.000.000 ¢		¢ 4 346 400 000
Total Estimated Program Cost (Considering 3% Per Year Inflation R	atej 🄉	10,100,000 \$	125,700,000	ې ک	93,900,000 \$	447,800,000 \$	178,900,000 \$	210,700,000 \$	79,000,000 \$	-	\$ 1,346,100,000



### FIGURE 1-1 Program Funding Schedule *Program Delivery Plan*

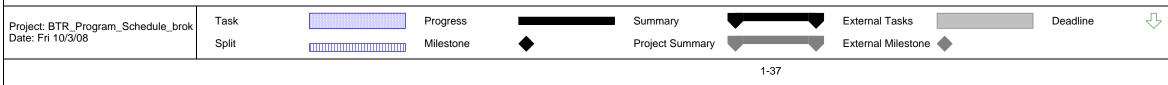
GNV31013363288.xls/073550009

### FIGURE 1-2 Program Schedule Program Delivery Pla

0	Task Name	2008         2009         2010         2011         2012         2013         2014           Out 2         Out 3         Out 4         Out 4         Out 4
	SFL-R-0001 (Jefferson Hwy - HooShooToo Road) - pre-construction	Qtr 3       Qtr 4       Qtr 2       Qtr 3       Qtr 4       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 4       Qtr 3       Qtr 4       Qtr 4 <th< td=""></th<>
	SFL-R-0001 (Jefferson Hwy - HooShooToo Road) - construction	
	SGL-R-0002 (Staring Lane - Boone Drive) - pre-construction	
	SGL-R-0002 (Staring Lane - Boone Drive) - construction	
	SGL-R-0001 (Gardere Lane - Burbank Road) - pre-construction	
	SGL-R-0001 (Gardere Lane - Burbank Road) - construction	
	SGU-R-0001 (Oak Villa Blvd - Choctaw Street) - pre-construction	
	SGU-R-0001 (Oak Villa Blvd - Choctaw Street) - construction	
	NGS-R-0002 (Scotland Avenue - Progress Road) - pre-construction	
	NGS-R-0002 (Scotland Avenue - Progress Road) - construction	
	NGS-R-0001 (Elm Grove Garden Road - Harding Blvd) - pre-construction	
	NGS-R-0001 (Elm Grove Garden Road - Harding Blvd) - construction	
	SGU-R-0002 (Sharp Road - Florida Blvd) - pre-construction	
	SGU-R-0002 (Sharp Road - Florida Blvd) - construction	
	SGL-R-0003 (Kenilworth Blvd - Boone Drive) - pre-construction	
	SGL-R-0003 (Kenilworth Blvd - Boone Drive) - construction	
	CGS-R-0001 (Foster Drive - Government Street) - pre-construction	
	CGS-R-0001 (Foster Drive - Government Street) - construction	
	NFE-R-0001 (Silverleaf Road - Ford Street) - pre-construction	
	NFE-R-0001 (Silverleaf Road - Ford Street) - construction	
	NFW-R-0001 (Brookstown Road - Evangeline Street) - pre-construction	
	NFW-R-0001 (Brookstown Road - Evangeline Street) - construction	
	SGC-R-0001 (Bluebonnet Blvd - Jefferson Hwy) - pre-construction	
	SGC-R-0001 (Bluebonnet Blvd - Jefferson Hwy) - construction	
	CGS-R-0002 (Highland Road - Washington Street) - pre-construction	
	CGS-R-0002 (Highland Road - Washington Street) - construction	
	CGS-R-0003 (Stanford Avenue - Morning Glory Road) - pre-construction	
	CGS-R-0003 (Stanford Avenue - Morning Clory Road) - construction	
	SGC-R-0002 (Airline Highway - Goodwood Blvd) - pre-construction	
	SGC-R-0002 (Airline Highway - Goodwood Blvd) - construction	
	CGS-R-0004 (Acadian Thruway - Claycut Road) - pre-construction	
	CGS-R-0004 (Acadian Thruway - Claycut Road) - pre-construction	
	CGS-R-0004 (Acadian Thruway - Claycut Road) - construction CGS-R-0005 (Acadian Thruway - Perkins Road) - pre-construction	
	CGS-R-0005 (Acadian Thruway - Perkins Road) - construction	
	SFU-R-0001 (Antioch Road - Chadsford Drive) - pre-construction	
	SFU-R-0001 (Antioch Road - Chadsford Drive) - construction	
	SFL-R-0002 (Jones Creek Road - Tiger Bend Road) - pre-construction	
	SFL-R-0002 (Jones Creek Road - Tiger Bend Road) - construction	
	CGN-R-0001 (Scenic Highway - Spanish Town Road) - pre-construction	
	CGN-R-0001 (Scenic Highway - Spanish Town Road) - construction	
	SFL-R-0003 (Siegen Lane - Interstate 10) - pre-construction	
	SFL-R-0003 (Siegen Lane - Interstate 10) - construction	
	ogram Schodulo brol Task Progress	Summary External Tasks Deadline
BTR_Pr ri 10/3/08	Solit Milostopo	Project Summary External Milestone

## FIGURE 1-2 Program Schedule

•	Task Name		2008		2	009		2010	2011	2012	2013	2014	
•		Qtr 3 Qtr 4	Qtr 1 (	Qtr 2 Qtr 3	3   Qtr 4   Q	tr 1   Qtr 2   Qtr 3	3 Qtr 4	Qtr 1 Qtr 2 Qtr 3	Qtr 4 Qtr 1 Qtr 2	Qtr 3 Qtr 4 Qtr 1 Qtr	2 Qtr 3 Qtr 4 Qtr 1 Qtr	2 Qtr 3 Qtr 4 Qtr 1 Qt	tr 2 Qtr 3 Qtr 4
												· · · · ·	
												· · · · ·	
	SGC-R-0004 (North 38th Street - Gus Young Avenue) - pre-construction												
	SGC-R-0004 (North 38th Street - Gus Young Avenue) - construction												
	m Deliver	Image: NFW-R-0002 (Interstate 110 - Hollywood Street) - pre-construction         Image: NFW-R-0002 (Interstate 110 - Hollywood Street) - construction         Image: SGC-R-0003 (Ardenwood Drive - Winboume Street) - pre-construction         Image: SGC-R-0003 (Ardenwood Drive - Winboume Street) - construction         Image: SGC-R-0003 (Ardenwood Drive - Winboume Street) - construction         Image: SGU-R-0003 (Flannery Road - Florida Blvd) - pre-construction         Image: SGU-R-0003 (Flannery Road - Florida Blvd) - construction         Image: SGU-R-0003 (Flannery Road - Florida Blvd) - construction         Image: SGU-R-0003 (Flannery Road - Florida Blvd) - construction         Image: SGU-R-0003 (Flannery Road - Florida Blvd) - construction         Image: SGU-R-0003 (Flannery Road - Florida Blvd) - construction         Image: SGU-R-0003 (Flannery Road - Florida Blvd) - construction         Image: SGU-R-0002 (East Boulevard - Government Street) - pre-construction         Image: SGC-R-0004 (North 38th Street - Gus Young Avenue) - pre-construction	Image: Delivery Plan         Image: Task Name       Qtr 3 Qtr 4         Image: NFW-R-0002 (Interstate 110 - Hollywood Street) - pre-construction       Qtr 3 Qtr 4         Image: NFW-R-0002 (Interstate 110 - Hollywood Street) - construction       NFW-R-0002 (Interstate 110 - Hollywood Street) - construction         Image: SGC-R-0003 (Ardenwood Drive - Winboume Street) - pre-construction       SGC-R-0003 (Ardenwood Drive - Winboume Street) - construction         Image: SGU-R-0003 (Ardenwood Drive - Winboume Street) - construction       SGU-R-0003 (Flannery Road - Florida Blvd) - pre-construction         Image: SGU-R-0003 (Flannery Road - Florida Blvd) - pre-construction       SGU-R-0003 (Flannery Road - Florida Blvd) - construction         Image: SGU-R-0002 (East Boulevard - Government Street) - pre-construction       SGC-R-0002 (East Boulevard - Government Street) - construction         Image: SGC-R-0004 (North 38th Street - Gus Young Avenue) - pre-construction       SGC-R-0004 (North 38th Street - Gus Young Avenue) - pre-construction	Delivery Plan         Image: Task Name       Qtr 3       Qtr 4       Qtr 1       Qtr 3       Qtr 4       Qtr 1       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 4       Qtr 1       Qtr 4       Qtr	Delivery Plan         Image: Sector	Image: Delivery Plan       Task Name       2008       21         Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4 </td <td>Delivery Plan       2008       2009         Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3       Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3         Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Sectement of the state 110 - Hollywood Street) - 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110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street - Gus Young Avenue) - pre-construction       Image: Sectement of the state 110 - Hollywood Street - Gus Young Ave</td> <td>Image: Delivery Plan       2008       2009         Image: Task Name       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       <t< td=""><td>Delivery Plan       2008       2019         Task Name       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4</td><td>Delivery Plan         Task Name       2008       2010       2011         Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 4       Qtr 1</td><td>Delivery Plan         Task Name       2008       2019       2011       2012         Otr 3       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 3       Qtr 4</td><td>Delivery Plan         Task Name       2008       2019       2011       2012       2013       2014       2014       2014       2013       2013       2013       2013       2014       2014       2013       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       20</td><td>m Delivery Plan         Task Name       2008       2019       2011       2012       2013       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014</td></t<></td>	Delivery Plan       2008       2009         Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3       Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3         Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       Image: Sectement of the state 110 - Hollywood Street) - pre-construction       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Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4 <t< td=""><td>Delivery Plan       2008       2019         Task Name       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4</td><td>Delivery Plan         Task Name       2008       2010       2011         Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 4       Qtr 1</td><td>Delivery Plan         Task Name       2008       2019       2011       2012         Otr 3       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 3       Qtr 4</td><td>Delivery Plan         Task Name       2008       2019       2011       2012       2013       2014       2014       2014       2013       2013       2013       2013       2014       2014       2013       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       20</td><td>m Delivery Plan         Task Name       2008       2019       2011       2012       2013       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014</td></t<>	Delivery Plan       2008       2019         Task Name       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 4	Delivery Plan         Task Name       2008       2010       2011         Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 2       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 4       Qtr 4       Qtr 1	Delivery Plan         Task Name       2008       2019       2011       2012         Otr 3       Qtr 3       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 4       Qtr 1       Qtr 2       Qtr 3       Qtr 4       Qtr 1       Qtr 3       Qtr 4	Delivery Plan         Task Name       2008       2019       2011       2012       2013       2014       2014       2014       2013       2013       2013       2013       2014       2014       2013       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       20	m Delivery Plan         Task Name       2008       2019       2011       2012       2013       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014       2014   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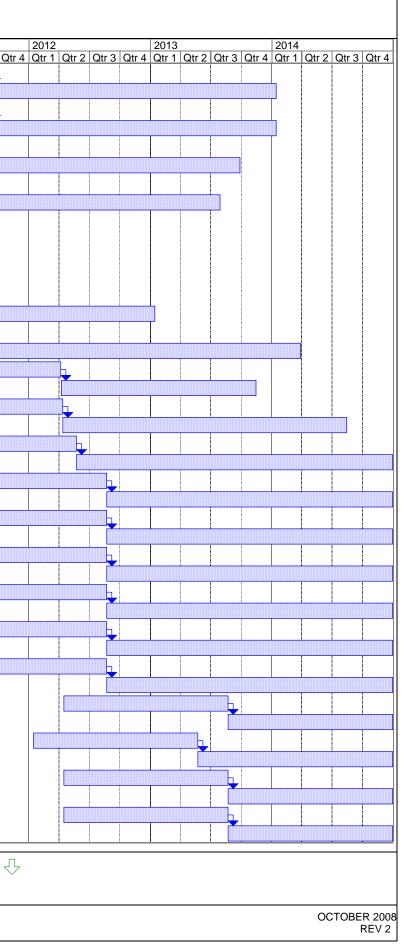


#### FIGURE 1-2 Program Schedule Program Delivery Pl

ID 🕕	Task Name				2008 Qtr 3 Qtr 4 Qtr 1	Qtr 2 Qtr 3	2009 2tr 4 Qtr 1	Qtr 2 Qtr 3 Qt	2010 tr 4 Qtr 1 Qtr 2	Qtr 3 Qtr 4	2011 Qtr 1 Qtr		2012 2tr 1 Qtr 2	Qtr 3 Qtr	2013 4 Qtr 1 Qtr	2 Qtr 3 Qt	2014 r 4 Qtr 1 Qtr 2 Qtr 3 Qtr
53	CGN-C-0001 (Capital	Lake Drive - Gayosa S	treet) - pre-construction	1													
54	CGN-C-0001 (Capital	Lake Drive - Gayosa S	treet) - construction					l l	I i	1 1							
55	NFE-C-0001 (Gurney	Road - Joor Road) - pre	e-construction														
56	NFE-C-0001 (Gurney	Road - Joor Road) - co	nstruction				1										
57	NFE-C-0002 (Various	Pump Stations - Lovett	t Rd. Area) - pre-constru	uction						Ī							
58	NFE-C-0002 (Various	Pump Stations - Lovett	t Rd. Area) - constructio	on					i								
59	NFE-C-0003 (Comite	Road - Foster Road) - p	pre-construction														
60 🛅	NFE-C-0003 (Comite	Road - Foster Road) - c	construction						Ii	1 1	1						
61 🛅	NFE-C-0004 (Foster F	Road - Hooper Road) - I	pre-construction														
62	NFE-C-0004 (Foster F	Road - Hooper Road) - (	construction					- I I		<b>i</b> i							
63	NFW-C-HWY61 (Red	Mud Lakes) - pre-const	truction						ł :								
64	NFW-C-HWY61 (Red	Mud Lakes) - construct	tion								1	<u> </u>			I !	- <b>-</b>	
65	CGN-C-0003 (South E	Boulevard - St. Joseph S	Street) - pre-constructio	n													
66	CGN-C-0003 (South E	Boulevard - St. Joseph S	Street) - construction							1 1	1 i	ii					
	CGN-C-0004 (Downto	own Area - PS59 Improv	vements) - pre-construc	tion													
	CGN-C-0004 (Downto	own Area - PS59 Improv	vements) - construction							<u> </u>	<u> </u>	1 1 1	I				
69	CGN-C-0005 (Downto	own Area - PS15, PS19	, & PS60 Improvements	s) - pre-construction			1										
70	CGN-C-0005 (Downto	own Area - PS15, PS19	, & PS60 Improvements	s) - construction						1 1	1	<u> </u>	!	<u> </u>			
	CGS-C-0004 (Highlan	nd Road - Buchanan Str	eet) - pre-construction				1										
	CGS-C-0004 (Highlan	nd Road - Buchanan Str	eet) - construction							<u> </u>							
	SGC-C-PS119 (PS119	9 & Forcemain Improve	ments) - pre-construction	on		1											
	SGC-C-PS119 (PS119	9 & Forcemain Improve	ments) - construction							1 1	<u> </u>						
	Group Project 1A (Vet	terans Memorial Parkwa	ay - Gravity Mains) - pre	e-construction					<u> </u>								
	Group Project 1A (Vet	terans Memorial Parkwa	ay - Gravity Mains) - co	nstruction						1 1	<u>      </u>		I	<u>                                      </u>			
	Group Project 1B (Vet	terans Memorial Parkwa	ay - PS and FM) - pre-c	construction				i									
	Group Project 1B (Vet	terans Memorial Parkwa	ay - PS and FM) - const	truction						1	1		!	<u> </u>			
	SFL-C-0002 (Booster	Pump Station 514 Impr	rovements) - pre-constr	uction													
80	SFL-C-0002 (Booster	Pump Station 514 Impr	ovements) - construction	on							1	<u> </u>	i	<u> </u>			
81	Group Project 2 - Sma	all Pump Stations (SFL-	C-0004) - pre-construct	tion													
82	Group Project 2 - Sma	all Pump Stations (SFL-	C-0004) - construction							<u>i i</u>	. I	<u>i</u> i	i	i <u>     i      </u>			
	SFL-C-0005 (Highland	d Road - Burbank Drive	) - pre-construction														
	SFL-C-0005 (Highland	d Road - Burbank Drive	) - construction							<u>i i</u>	<u>i</u>	<u>i i</u> 1					
	SFL-C-0006 (Nicholso	on Dr - Highland Rd - Pe	erkins Rd) - pre-constru	iction					<u>, :</u>	<u> </u>							
	SFL-C-0006 (Nicholso	on Dr - Highland Rd - Pe	erkins Rd) - construction	n									!	<u> </u>		-1	
	SGL-C-0005 (Perkins	Road - Dahlia Street) -	pre-construction							1	1						
	SGL-C-0005 (Perkins	Road - Dahlia Street) -	construction										i	II	_	-1	
	CGN-C-0002 (25th Str	treet - North Acadian Th	ruway) - pre-constructio	on													
	CGN-C-0002 (25th Str	treet - North Acadian Th	ruway) - construction								1	I	i.				
	CGS-C-0006 (Govern	ment St - South Acadia	n Thruway) - pre-const	ruction							1 :						
	CGS-C-0006 (Govern	ment St - South Acadia	n Thruway) - constructi	on									<u> </u>				
	NGS-C-0002 (Plank R	Road - Kleinpeter Road)	- pre-construction							1	1						
	NGS-C-0002 (Plank R	Road - Kleinpeter Road)	- construction														
Project: RTP Pro	ogram_Schedule_brok	Task		Progress	Summary			External Tasks	3		Deadline	Ţ					
Date: Fri 10/3/08	gram_oonedule_blok	Split		Milestone	Project Summary	·		External Miles				~					
					 	4 00	٣										OCTOBER 200
						1-39											OCTOBER 200 REV

### FIGURE 1-2 Program Schedule *Program Delivery Plan*

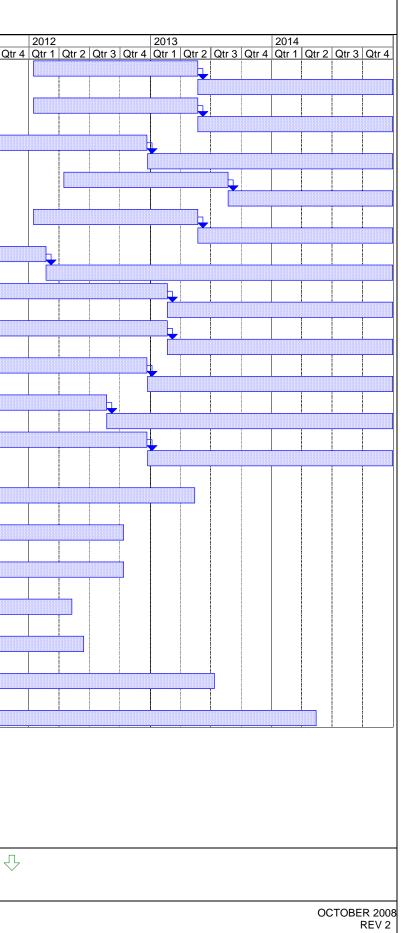
	0	Task Name		2008 Qtr 1 Qtr 2	Qtr 3 C	2009 2tr 4 Qtr	9 1 Qtr 2 Qtr 3 Qtr 4	2010 4 Qtr 1 Qt	r 2 Qtr 3 Qtr	2011 4 Qtr 1 Qtr 2	Qtr 3	Qtr
		SFU-C-0005 (O'Neal Lane - Jones Creek Road) - pre-construction						- I	<b>.</b> .			
		SFU-C-0005 (O'Neal Lane - Jones Creek Road) - construction										
7		SFU-C-0006 (O'Neal Lane - Tiger Bend Road) - pre-construction										
		SFU-C-0006 (O'Neal Lane - Tiger Bend Road) - construction										
		SFL-C-0001 (Various PS - Nicholson Dr - Brightside Dr) - pre-construction										
		SFL-C-0001 (Various PS - Nicholson Dr - Brightside Dr) - construction										
		SGC-C-PS58A (PS 58A Overflow Pump Station) - pre-construction						· ·				
		SGC-C-PS58A (PS 58A Overflow Pump Station) - construction										
		SGC-C-PS58FM-A (Staring Lane FM Project A - Burbank to Highland) - pre-construction				L						
		SGC-C-PS58FM-A (Staring Lane FM Project A - Burbank to Highland) - construction				· ·						
		SGC-C-PS58FM-B (Staring Lane FM B - Highland to Perkins) - pre-construction										
5		SGC-C-PS58FM-B (Staring Lane FM B - Highland to Perkins) - construction					• • •	- i - i	· .			
		SGC-C-PS58FM-C (Staring Lane FM C - Perkins to PS 58) - pre-construction						- <b>i</b> - i				
		SGC-C-PS58FM-C (Staring Lane FM C - Perkins to PS 58) - construction										
		SFU-C-0001 (Various PS - Jefferson Hwy - Park Forest Dr) - pre-construction										
		SFU-C-0001 (Various PS - Jefferson Hwy - Park Forest Dr) - construction	-								1	
		SGC-C-0002 (Airline Highway - Jefferson Highway) - pre-construction	-					_ <b> </b>	<u> </u>	i •••••••		
		SGC-C-0002 (Airline Highway - Jefferson Highway) - construction										
		SGC-C-0003 (Essen Lane - Interstate 12) - pre-construction	-					1 1	<b>I</b>		1	
		SGC-C-0003 (Essen Lane - Interstate 12) - construction	-									
		SGL-C-0002 (Various PS - Highland Road - Kenilworth Parkway) - pre-construction	-									
		SGL-C-0002 (Various PS - Highland Road - Kenilworth Parkway) - construction	-									
		SGU-C-0001 (Various PS - Florida Blvd - Sherwood Forest Blvd) - pre-construction	-								1	
		SGU-C-0001 (Various PS - Florida Blvd - Sherwood Forest Blvd) - construction	-									
		NGS-C-0003 (Various PS - Plank Road - Thomas Road) - pre-construction	-									
		NGS-C-0003 (Various PS - Plank Road - Thomas Road) - construction	-									
		NGS-C-0004 (Various PS - Plank Road - Harding Boulevard) - pre-construction	-									
		NGS-C-0004 (Various PS - Plank Road - Harding Boulevard) - construction	-									
		NFW-C-0009 (Various PS - Highway 61 - Plank Road) - pre-construction	-									
	111	NFW-C-0009 (Various PS - Highway 61 - Plank Road) - construction	-									
		SFU-C-0002 (Various PS - Jones Creek Rd - Tiger Bend Rd) - pre-construction	-									_
		SFU-C-0002 (Various PS - Jones Creek Rd - Tiger Bend Rd) - construction	-									
		SGU-C-0002 (Airline Highway - Interstate 12) - pre-construction	-									
		SGU-C-0002 (Airline Highway - Interstate 12) - construction	-									
		SGU-C-0003 (Florida Boulevard - Sherwood Forest Boulevard) - pre-construction	-									
		SGU-C-0003 (Florida Boulevard - Sherwood Forest Boulevard) - construction	-									
		SGU-C-0004 (Goodwood Boulevard - South Flannery Road) - pre-construction	-									
		SGU-C-0004 (Goodwood Boulevard - South Flannery Road) - construction	-									
		NFW-C-0001 (Joor Road - Greenwell Springs Road) - pre-construction	-									
		NFW-C-0001 (Joor Road - Greenwell Springs Road) - construction	-									
		NFW-C-0007 (Plank Road - Port Hudson Pride Road) - pre-construction	-									
_		NFW-C-0007 (Plank Road - Port Hudson Pride Road) - construction	-									
:t: E	3TR_Pro	gram_Schedule_brok Task Progress	Summary	V			External Tasks			Deadline		$\sqrt[n]{}$
	10/3/08	Split Milestone	Project Sun	nmary 🔳			External Milesto	ne 🔶				
		······································		*		*		*				



### FIGURE 1-2 Program Schedule Program Delivery Plan

D         Task Name         2008         2009         2010         2011           13         SGL-C-0003 [Easen Lase - Highted Raud): pre-construction         dt 3 (dt 4 (dt 1 (dt 2 (dt 3 (dt 4 (dt 1 (dt 4 (dt 1 (dt 4 (dt 1 (dt 4 (dt 4 (dt 1 (dt 4 (dt 4 (dt 4 (dt 1 (dt 4 (	Ŭ	-												
137       III. Solit-Colour (Essen Lame - Highen Rout) - pre-construction         138       III. Solit-Colour (Essen Lame - Highen Rout) - construction         139       III. Solit-Colour (Essen Lame - Highen Rout) - construction         131       III. Solit-Colour (Essen Lame - Highen Rout) - construction         132       III. Solit-Colour (Rout - Generoul Esping Rout) - construction         141       III. NEE-Colour (Lower Rout - Generoul Esping Rout) - pre-construction         142       III. Solit-Colour (Highen Rout - Lew Pre- Docate Line)         143       III. Solit-Colour (Highen Rout - Lew Pre- Docate Line)         144       III. Solit-Colour (Highen Rout - Lew Pre- Docate Line)         144       III. NEE-Colour (Various Router PS - Houge Rd - Lover Rd) - pre-construction         145       III. NEE-Colour (Various Router PS - Houge Rd - Lover Rd) - construction         146       III. NEE-Colour (Various Router PS - Houge Rd - Lover Rd) - construction         147       III. SPL-Colour (Various Router PS - Houge Rd - Lover Rd) - pre-construction         148       III. SPL-Colour (Various Router PS - Houge Rd - Construction         149       III. NEE-Colour (Various PS - Construction         149       III. SPL-Colour (Various PS - Construction         141       III. SPL-Colour (Various PS - Construction         142       III. SPL-Colour (Various PS - Constal Lin - Essenstruction <td>ID</td> <td>0</td> <td>Task Name</td> <td>Otr 2 Otr</td> <td></td> <td></td> <td>Otr 2</td> <td></td> <td></td> <td></td> <td>Otr 2 Otr 2</td> <td></td> <td>Otr 2 Ot</td> <td></td>	ID	0	Task Name	Otr 2 Otr			Otr 2				Otr 2 Otr 2		Otr 2 Ot	
<ul> <li>138 g. SSL C-0003 (Essen Lane - Highware Roade) - construction</li> <li>139 g. SSL C-0003 (Skure Badeward - Monterry Badeward) - construction</li> <li>140 g. SSL C-0003 (Julki Badeward - Monterry Badeward) - construction</li> <li>141 g. NPE-C-0003 (Love Road - Generwell Springs Rod) - construction</li> <li>142 g. NPE-C-0003 (Valki Badeward - Monterry Badeward) - construction</li> <li>143 g. SSL C-0004 (Highward Road - Lee Phwell Springs Rod) - construction</li> <li>144 g. SSL C-0004 (Highward Road - Lee Phwell Springs Rod) - construction</li> <li>145 g. NPE-C-0003 (Value Road - Cenerwell Springs Rd) - pre-construction</li> <li>146 g. SPL C-0004 (Highward Road - Lee Phwell Springs Rd) - construction</li> <li>147 g. NPE-C-0007 (Values Booter PS - Hooper Rd - Cenerwell Springs Rd) - construction</li> <li>148 g. NPE-C-0007 (Values Booter PS - Hooper Rd - Cenerwell Springs Rd) - construction</li> <li>149 g. NPW-C-0010 (Values Booter PS - Hooper Rd - Lovert Rd) - pre-construction</li> <li>150 g. SPU-C-0003 (Values PS - Orbeat L - Interstate 10) - construction</li> <li>151 g. SFU-C-0004 (Values PS - Orbeat L - Starelis Frem Rd) - pre-construction</li> <li>152 g. SFU-C-0004 (Values PS - Orbeat L - Starelis Frem Rd) - pre-construction</li> <li>153 g. SFU-C-0003 (Values PS - Orbeat L - Starelis Frem Rd) - pre-construction</li> <li>154 g. SFU-C-0004 (Values PS - Orbeat L - Starelis Frem Rd) - pre-construction</li> <li>155 g. SCC -0001 (Value PS - Storet Rd - Cenerwell Springs Rd) - construction</li> <li>156 g. SCC -0000 (Values PS - Orbeat L - Starelis Frem Rd) - pre-construction</li> <li>157 g. SFU-C-0002 (Values PS - Orbeat L - Network Springs Rd) - construction</li> <li>158 g. SFU-C-0003 (Values PS - Butants Dure - Siegen Lane) - construction</li> <li>159 g. Central Consolidation - new Central WVTP PS, PS 2, 3, 4, 5, 0, 7, 40 - creatization</li> <li>150 mice and Consolidation - new Central WVTP PS, PS 2, 3, 4, 5, 0, 7, 40 - creatization</li> <li>151 Central Consolidation - new Central WVTP PS, PS 2, 3, 4, 5, 0</li></ul>	137	_	SGL-C-0003 (Essen Lane - Highland Road) - pre-construction		4 0.0		QIIS							
<ul> <li>Selu-Codo Goak Ville Businer Monterey Bookyman - pre-construction</li> <li>Selu-Codo Goak Ville Businer Monterey Bookyman - construction</li> <li>WFE-Codo (Lovet Road - Greenvel Springs Road) - pre-construction</li> <li>SGL-Codo (Highland Road - Lee Drive) - pre-construction</li> <li>WFE-Codo (Various PS - Hooper Rd - Creenvel Springs Rd) - pre-construction</li> <li>WFE-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>WFE-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>WFE-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>WFE-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>WFE-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>WFE-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Hooper Rd - Creenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Hooper Rd - Corenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Hooper Rd - Corenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Hooper Rd - Corenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Hooper Rd - Corenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Hooper Rd - Corenvel Spring Rd) - pre-construction</li> <li>SFU-Codo (Various PS - Surian Chreis Signa Lane) - construction</li> <li>SFU-Codo (Various PS - Surian Chreis Signa Lane) - construction</li> <li>SFU-Codo (Various Spring PS - Struction PM - Pre-construction</li> <li>SFU-Codo (Various Spring PS - Struction PM - Pre-construction</li> <li>SFU-Codo (Various Sprin</li></ul>	138		SGL-C-0003 (Essen Lane - Highland Road) - construction											
<ul> <li>H40 and SUL-Coold Clau Ville Balaward - Monterey Balaward) - construction</li> <li>H41 and NFE-Coold (Lowett Road - Greenwell Springs Road) - construction</li> <li>H42 and NFE-Coold (Lowett Road - Greenwell Springs Road) - construction</li> <li>H44 and SGL-Coold (Highland Road - Lee Dire) - pre-construction</li> <li>H45 and NFE-Coold (Covert Road - Greenwell Springs Rob) - pre-construction</li> <li>H46 and NFE-Coold (Various PS - Hooper Rd - Greenwell Springs Rob) - pre-construction</li> <li>H47 and NFE-Coold (Various PS - Hooper Rd - Covernet Rob - construction</li> <li>H47 and NFE-Coold (Various PS - Hooper Rd - Covernet Rob - pre-construction</li> <li>H48 and NFE-Coold (Various PS - Hooper Rd - Covernet Rob - construction</li> <li>H49 and NFC-Coold (Various PS - Hooper Rd - Covernet Rob - construction</li> <li>H49 and NFV-Coold (Various PS - Hooper Rd - Covernet Rob - pre-construction</li> <li>H49 and NFV-Coold (Various PS - Hooper Rd - Covernet Rob - pre-construction</li> <li>H49 and NFV-Coold (Various PS - Hooper Rd - Covernet Rob - pre-construction</li> <li>H49 and NFV-Coold (Various PS - Nealer Rd - Greenvell Spring Rd) - pre-construction</li> <li>H49 and NFV-Coold (Various PS - Nealer Rd - Greenvell Spring Rd) - pre-construction</li> <li>H49 and NFV-Coold (Various PS - Nealer Rd - SB 3) improvements &amp; Nev PS) - pre-construction</li> <li>H49 and NFV-Coold (Various PS - Nealer Rd - SB 3) improvements &amp; Nev PS) - pre-construction</li> <li>H49 and NFV-Coold (Various PS - Subark Drive - SBigen Lane) - pre-construction</li> <li>H40 and NFV-Coold (Various PS - Subark Drive - SBigen Lane) - pre-construction</li> <li>H40 and NFV-Coold (Various PS - Subark Drive - SBigen Lane) - pre-construction</li> <li>H40 and NFV-Coold (Various PS - Subark Drive - SBigen Lane) - pre-construction</li> <li>H40 and NFV-Coold (Various PS - Subark Drive - SBigen Lane) - construction</li> <li>H41 and Consolidation - new Central WVTP PS, PS 3, A, 5, 6, 7, 8 10 - pre-construction</li> <li>H41 and Consolidation - new Central W</li></ul>	139		SGU-C-0005 (Oak Villa Boulevard - Monterey Boulevard) - pre-construction											
441       Image: MPEC-0008 (Lovelt Road - Greenwell Springs Road - construction         442       Image: Sub-Coold Highland Road - Lee Drive) - construction         443       Image: Sub-Coold Highland Road - Lee Drive) - construction         444       Image: Sub-Coold Highland Road - Lee Drive) - construction         445       Image: Sub-Coold Highland Road - Lee Drive) - construction         446       Image: Sub-Coold Highland Road - Lee Drive) - construction         447       Image: Sub-Coold Highland Road - Lee Drive) - construction         448       Image: Sub-Coold Highland Road - Lee Drive) - construction         448       Image: Sub-Coold Highland Road - Lee Drive) - construction         448       Image: Sub-Coold Highland Road - Lee Drive) - construction         449       Image: Sub-Coold Highland Road - Lee Drive) - construction         449       Image: Sub-Coold Highland Road - Sub-Road - Pre-construction         541       Image: Sub-Coold Highland Road - Sub-Road - Pre-construction         542       Image: Sub-Coold Highland Road - PS - Hooper Rob - construction         543       Image: Sub-Coold Highland Road - PS - Hooper Rob - construction         544       Image: Sub-Coold Highland Road - PS - Hooper Rob - construction         545       Image: Sub-Coold Highland Road - PS - Hooper Rob - construction         546       Image: Sub-Coold Highland Highland PS - Sub-Rob Rob - PS	140		SGU-C-0005 (Oak Villa Boulevard - Monterey Boulevard) - construction											
142         iii NFE: Cool (Lovet Rod - Construction           143         iii SciCool (Highian Rod - Le Diwe) - construction           144         iii SciCool (Highian Rod - Le Diwe) - construction           145         iii NFE: Cool (Vision Be - Hooper Rd - Corrent Byrings Rd) - pre-construction           146         iii NFE: Cool (Vision Be - Hooper Rd - Corrent Byrings Rd) - pre-construction           147         iii NFE: Cool (Vision Be - Hooper Rd - Lovet Rd) - pre-construction           148         iii NFE: Cool (Vision Be SP - Hooper Rd - Corrent Byrings Rd) - pre-construction           149         iii NFE: Cool (Vision Be SP - Hooper Rd - Corrent Byrings Rd) - pre-construction           148         iii NFE: Cool (Vision Be SP - Hooper Rd - Corrent Byrings Rd) - pre-construction           150         iii NFU: Cool (Vision Be SP - Hooper Rd - Corrent Byrings Rd) - pre-construction           151         iii SFU: Cool (Vision Be SP - Hooper Rd - Corrent Byrings Rd) - pre-construction           152         iii SFU: Cool (Vision Be SP - Hooper Rd - Corrent Byrings Rd) - pre-construction           153         iii SFU: Cool (Vision Be SP - Hooper Rd - Corrent Byrings Rd) - pre-construction           154         iii SFU: Cool (Vision Be SP - Hooper Rd - Corrent Byring Rd - PB a) In pre-construction           155         iii SGC: Cool (Vision Rd - Highway/Florid Byrd - PB a) In pre-construction           156         iii SFU: Cool (Vision Rd - Highway/Florid Byrd	141		NFE-C-0006 (Lovett Road - Greenwell Springs Road) - pre-construction											ļ.
143       Image: SCL-Coool (Highland Read - Lee Drive) - pre-construction         144       Image: SCL-Coool (Highland Read - Lee Drive) - construction         145       Image: SCL-Coool (Highland Read - Lee Drive) - construction         146       Image: SCL-Coool (Highland Read - Lee Drive) - construction         147       Image: SCL-Coool (Highland Read - Lee Drive) - construction         148       Image: SCL-Coool (Highland Read - Lee Drive) - construction         148       Image: SCL-Coool (Hoghland Read - Lee Drive) - construction         148       Image: SCL-Coool (Hoghland Read - Lee Drive) - pre-construction         149       Image: SCL-Coool (Hoghland Read - Lee Drive) - pre-construction         148       Image: SCL-Coool (Hoghland Read - SCL-Coool (Hoghland Read - SCL-Coool (Hoghland Read - SCL-Coool (Hoghland SFL-Greenwell Springs Rd) - pre-construction         151       Image: SCL-Coool (Hoghland SFL-Greenwell Springs Rd) - pre-construction         153       Image: SCL-Coool (Hoghland SFL-Greenwell Springs Rd) - pre-construction         154       Image: SCL-Coool (Hoghland SFL-Greenwell Springs Rd) - pre-construction         155       Image: SCL-Coool (Hoghland Read - SCL Brandla Ferry Rd) - pre-construction         156       Image: SCL-Coool (Hoghland Read - SCL Brandla Hoge - Segon Lane) - pre-construction         157       Image: SCL-Coool (Hoghland Read - SCL Brandla Hoge - Segon Lane) - pre-construction         158	142		NFE-C-0006 (Lovett Road - Greenwell Springs Road) - construction											
144       III       SCL-Coold (Highand Read - Lee Drive) - construction         145       III       NFE-Coold (Values PS - Hooper Rd - Greenwell Springs Rd) - pre-construction         146       III       NFE-Coold (Values PS - Hooper Rd - Lovett Rd) - pre-construction         147       III       NFE-Coold (Values DS - Hooper Rd - Lovett Rd) - construction         148       III       NFE-Coold (Values Boster PS - Hooper Rd - Lovett Rd) - construction         149       III       NFE-Coold (Values BS - Prescott Rd - Greenwell Springs Rd) - construction         150       III       SFU-Coold (Values PS - Prescott Rd - Greenwell Springs Rd) - construction         151       III       SFU-Coold (Values PS - Neal Ln - Interstate 10) - construction         152       IIII       SFU-Coold (Values PS - ONeal Ln - Interstate 10) - construction         153       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	143		SGL-C-0004 (Highland Road - Lee Drive) - pre-construction											
145         III         NFE-Coools (Various PS - Hooper R4 - Greenwell Springs R4) - construction           146         III         NFE-Coools (Various Boster PS - Hooper R4 - Lovett Rd) - pre-construction           147         III         NFE-Coools (Various Boster PS - Hooper R4 - Lovett Rd) - construction           148         III         NFE-Coools (Various Boster PS - Hooper R4 - Lovett Rd) - construction           149         III         NFE-Coools (Various Boster PS - Hooper R4 - Lovett Rd) - construction           149         III         NFE-Coools (Various PS - Prescott R4 - Greenwell Springs R4) - pre-construction           151         III         SFU-Coools (Various PS - ONeal Ln - Interstate 10) - pre-construction           152         IIII         SFU-Coools (Various PS - ONeal Ln - S. Harrells Ferry R4) - construction           153         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	144													
146       Image: MFE-Coood (Various PS - Hooper R4 - Greenwell Springs Rd) - construction         147       Image: MFE-Coood (Various Booster PS - Hooper R4 - Lovett Rd) - pre-construction         148       Image: MFE-Coood (Various Booster PS - Hooper R4 - Lovett Rd) - pre-construction         149       Image: MFE-Coood (Various Booster PS - Hooper R4 - Lovett Rd) - pre-construction         149       Image: MFE-Coood (Various PS - Presont R4 - Greenwell Springs Rd) - construction         150       Image: SFU-Coood (Various PS - Oneal Ln - Interstate 10) - pre-construction         152       Image: SFU-Coood (Various PS - Oneal Ln - Interstate 10) - construction         153       Image: SFU-Coood (Various PS - Oneal Ln - S. Harrells Farry Rd) - construction         154       Image: SFU-Coood (Various PS - Oneal Ln - S. Harrells Farry Rd) - pre-construction         155       Image: SFU-Coood (Various PS - Subark Drive - Slegen Lane) - pre-construction         156       Image: SFU-Coood (Various PS - Burbark Drive - Slegen Lane) - pre-construction         157       Image: SFU-Coood (Various PS - Burbark Drive - Slegen Lane) - construction         158       Image: SFU-Coood (Various PS - Burbark Drive - Slegen Lane) - construction         159       Image: SFU-Coood (Various PS - Burbark Drive - Slegen Lane) - construction         150       Image: SFU-Coood (Various PS - Burbark Drive - Slegen Lane) - construction         151       Image: SFU-Coood (Various PS -	145		NFE-C-0005 (Various PS - Hooper Rd - Greenwell Springs Rd) - pre-construction											
147       III       NFE-Co007 (Various Booster PS - Hooper Rd - Lovett Rd) - construction         148       III       NFE-C-0007 (Various Booster PS - Hooper Rd - Lovett Rd) - construction         149       III       NFE-C-0007 (Various PS - Prescont Rd - Greenwell Springs Rd) - construction         150       III       NFW-C-0010 (Various PS - Prescont Rd - Greenwell Springs Rd) - construction         151       IIII       SFU-C-0003 (Various PS - Nead Ln - Interstate 10) - pre-construction         153       IIII       SFU-C-0004 (Various PS - ONeal Ln - S. Harrells Ferry Rd) - pre-construction         154       IIIII       SFU-C-0004 (Various PS - ONeal Ln - S. Harrells Ferry Rd) - construction         155       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	146		NFE-C-0005 (Various PS - Hooper Rd - Greenwell Springs Rd) - construction											
148       Image: MFE-Cool/Charlow SPS-Presont Rd - Covert Rd) - construction         148       Image: MFW-Cool/Charlow SPS-Presont Rd - Greenwell Springs Rd) - pre-construction         151       Image: SFU-Cool/Charlow SPS-ONeal Ln - Interstate 10) - pre-construction         152       Image: SFU-Cool/Charlow SPS-ONeal Ln - Interstate 10) - pre-construction         153       Image: SFU-Cool/Charlow SPS-ONeal Ln - S. Harrells Ferry Rd) - pre-construction         154       Image: SFU-Cool/Charlow SPS-ONeal Ln - S. Harrells Ferry Rd) - pre-construction         155       Image: SFU-Cool/Charlow SPS-ONeal Ln - S. Harrells Ferry Rd) - construction         156       Image: SFU-Cool/Charlow SPS-ONeal Ln - S. Harrells Ferry Rd) - pre-construction         157       Image: SFU-Cool/Charlow SPS-ONeal Ln - S. Harrells Ferry Rd) - pre-construction         158       Image: SFU-Cool/Charlow SPS-ONeal Ln - S. Harrells Ferry Rd) - pre-construction         158       Image: SFU-Cool/Charlow SPS - SPS SI A, S, G, R, S 10 - pre-construction         158       Image: SFU-Cool/Charlow SPS - Burbank Drive - Siegen Lane) - pre-construction         158       Image: SFU-Cool/Charlow SPS - SPS SI A, S, G, R, S 10 - pre-construction         158       Image: Central Consolidation - new Central WUTP PS, PS 2, 3, 4, 5, G, R 10 - pre-construction         158       Image: Central Consolidation - new Central WUTP FS, PS 2, 3, 4, 5, G, R 10 - pre-construction         158       Image: Central Con	147		NFE-C-0007 (Various Booster PS - Hooper Rd - Lovett Rd) - pre-construction										<u> </u>	ļ
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152       II       SFU-C-0003 (Various PS - ONeal Ln - Interstate 10) - construction         153       ISFU-C-0004 (Various PS - ONeal Ln - S. Harrells Ferry Rd) - pre-construction         154       II       SFU-C-0004 (Various PS - ONeal Ln - S. Harrells Ferry Rd) - construction         155       II       SCC-0001 (Various PS - ONeal Ln - S. Harrells Ferry Rd) - construction         156       II       SCC-0001 (Various PS - ONeal Ln - S. Harrells Ferry Rd) - construction         156       III       SCC-0001 (Various PS - Burbank Drive - Siegen Lane) - pre-construction         158       III       Central Consolidation - new Central WVTP PS, PS 2, 3, 4, 5, 6, 7, & 10 - pre-construction         160       III       Central Consolidation - new Central WVTP PS, PS 2, 3, 4, 5, 6, 7, & 10 - pre-construction         161       Central Consolidation - new Central WVTP PS, PS 2, 3, 4, 5, 6, 7, & 10 - construction         162       Central Consolidation - new Central WVTP PM - pre-construction         164       Central Consolidation FM from PS 2, 3, 7, 10, & 5 - pre-construction         164       Central Consolidation FM from PS 2, 3, 7, 10, & 5 - construction         164       NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51A, RS 4 return pipe) - pre-construction         166       NFW-C-0004 (Hooper Storage) - pre-construction         168       NFW-C-0004 (Hooper Storage) - pre-construction         170														
153       Image: SFU-C-0004 (Various PS - O'Neal Ln - S. Harrells Ferry Rd) - pre-construction         154       Image: SFU-C-0004 (Various PS - O'Neal Ln - S. Harrells Ferry Rd) - construction         155       Image: SGC-C-0001 (Airline Highway/Florid abd - PS 30 Improvements & New PS) - pre-construction         156       Image: SGC-C-0001 (Airline Highway/Florid abd - PS 30 Improvements & New PS) - construction         156       Image: SGC-C-0001 (Airline Highway/Florid abd - PS 30 Improvements & New PS) - construction         157       Image: SGC-C-0001 (Airline Highway/Florid abd - PS 30 Improvements & New PS) - construction         158       Image: SGC-C-0001 (Airline Highway/Florid abd - PS 30 Improvements & New PS) - construction         158       Image: SGC-C-0001 (Airline Highway/Florid abd - PS 30 Improvements & New PS) - construction         158       Image: SGC-C-0001 (Airline Highway/Florid abd - PS 30 Improvements & New PS) - construction         160       Image: Central Consolidation - new Central WWTP PS, PS 2, 3, 4, 5, 6, 7, & 10 - pre-construction         161       Image: Central Consolidation FM from PS 2, 3, 7, 10, & 5 - pre-construction         162       Image: Central Consolidation FM from PS 2, 3, 7, 10, & 5 - pre-construction         163       Image: Central Consolidation FM from PS 2, 3, 7, 10, & 5 - pre-construction         164       Image: Central Consolidation FM from PS 2, 3, 7, 10, & 5 - pre-construction         165       Image: NFW-C-0002 (Choctaw Strage, PS 5	152		SFU-C-0003 (Various PS - O'Neal Ln - Interstate 10) - construction											
154       ISPU-C-0004 (Various PS - O'Neal Ln - S. Harrells Ferry Rd) - construction         155       ISGC-C-0001 (Airline Highway/Florida Blvd - PS 30 Improvements & New PS) - pre-construction         156       ISGC-C-0001 (Airline Highway/Florida Blvd - PS 30 Improvements & New PS) - construction         157       ISGC-C-0003 (Various PS - Burbank Drive - Siegen Lane) - pre-construction         158       ISFL-C-0003 (Various PS - Burbank Drive - Siegen Lane) - pre-construction         159       ISCC-Conosildation - new Central WWTP PS, PS 2, 3, 4, 5, 6, 7, 8 10 - pre-construction         161       ISC-Central Consolidation - new Central WWTP FM - pS PS 2, 3, 4, 5, 6, 7, 8 10 - construction         162       Central Consolidation - new Central WWTP FM - construction         163       Central Consolidation - new Central WWTP FM - pre-construction         164       Central Consolidation FM from PS 2, 3, 7, 10, & 5 - pre-construction         165       NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, & FMs & return pipe) - pre-construction         166       NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, & FMs & return pipe) - construction         168       NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, & FMs & return pipe) - construction         168       NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, W and W a return pipe) - construction         168       NFW-C-0002 (South WWTP - Phase 1) - pre-construction         170       STP-C-0	153		SFU-C-0004 (Various PS - O'Neal Ln - S. Harrells Ferry Rd) - pre-construction											Į
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156       ISGC-C-0001 (Airline Highway/Florida Blvd - PS 30 Improvements & New PS) - construction         157       ISFL-C-0003 (Various PS - Burbank Drive - Siegen Lane) - pre-construction         158       ISFL-C-0003 (Various PS - Burbank Drive - Siegen Lane) - construction         159       ISEL-C-0003 (Various PS - Burbank Drive - Siegen Lane) - construction         160       Central Consolidation - new Central WWTP PS, PS 2, 3, 4, 5, 6, 7, 8 10 - pre-construction         161       Central Consolidation - new Central WWTP PS, PS 2, 3, 4, 5, 6, 7, 8 10 - pre-construction         162       Central Consolidation - new Central WWTP PF. Proconstruction         163       Central Consolidation - new Central WWTP PS 2, 3, 7, 10, 8 5 - pre-construction         164       Central Consolidation FM from PS 2, 3, 7, 10, 8 5 - pre-construction         165       NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51A, 8 k return pipe) - pre-construction         166       NFW-C-0004 (Hooper Storage) - pre-construction         168       NFW-C-0004 (Hooper Storage) - construction         169       STP-C-0001 (South WWTP - Phase 1) - pre-construction         170       STP-C-0002 (South WWTP - Phase 2 - PDP) - pre-construction	155		SGC-C-0001 (Airline Highway/Florida Blvd - PS 30 Improvements & New PS) - pre-construction											I
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159       Image: Central Consolidation - new Central WWTP PS, PS 2, 3, 4, 5, 6, 7, & 10 - construction         160       Central Consolidation - new Central WWTP PS, PS 2, 3, 4, 5, 6, 7, & 10 - construction         161       Central Consolidation - new Central WWTP FM - pre-construction         162       Central Consolidation - new Central WWTP FM - construction         163       Central Consolidation FM from PS 2, 3, 7, 10, & 5 - pre-construction         164       Central Consolidation FM from PS 2, 3, 7, 10, & 5 - construction         164       Central Consolidation FM from PS 2, 3, 7, 10, & 5 - construction         165       NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51A, & FMs & return pipe) - pre-construction         166       NFW-C-0004 (Hooper Storage) - pre-construction         167       NFW-C-0004 (Hooper Storage) - construction         168       NFW-C-0001 (South WWTP - Phase 1) - pre-construction         170       STP-C-0001 (South WWTP - Phase 2 - PDP) - pre-construction         171       STP-C-0002 (South WWTP - Phase 2 - PDP) - pre-construction														
160       Central Consolidation - new Central WWTP PS, PS 2, 3, 4, 5, 6, 7, & 10 - construction         161       Central Consolidation - new Central WWTP FM - pre-construction         162       Central Consolidation - new Central WWTP FM - construction         163       Central Consolidation - new Central WWTP FM - construction         164       Central Consolidation FM from PS 2, 3, 7, 10, & 5 - pre-construction         165       NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, & FMs & return pipe) - pre-construction         166       NFW-C-0004 (Hooper Storage) - pre-construction         168       NFW-C-0004 (Hooper Storage) - construction         169       STP-C-0001 (South WWTP - Phase 1) - pre-construction         170       STP-C-0002 (South WWTP - Phase 2 - PDP) - pre-construction         171       STP-C-0002 (South WWTP - Phase 2 - PDP) - pre-construction	159		Central Consolidation - new Central WWTP PS, PS 2, 3, 4, 5, 6, 7, & 10 - pre-construction							_ <u> </u>				
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167       Image: NFW-C-0004 (Hooper Storage) - pre-construction         168       NFW-C-0004 (Hooper Storage) - construction         169       STP-C-0001 (South WWTP - Phase 1) - pre-construction         170       STP-C-0001 (South WWTP - Phase 1) - construction         171       STP-C-0002 (South WWTP - Phase 2 - PDP) - pre-construction	166		NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, & FMs & return pipe) - construction									i	i	į
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169       STP-C-0001 (South WWTP - Phase 1) - pre-construction         170       STP-C-0001 (South WWTP - Phase 1) - construction         171       STP-C-0002 (South WWTP - Phase 2 - PDP) - pre-construction	168		NFW-C-0004 (Hooper Storage) - construction										I	<u>i</u>
170         STP-C-0001 (South WWTP - Phase 1) - construction           171         STP-C-0002 (South WWTP - Phase 2 - PDP) - pre-construction	169		STP-C-0001 (South WWTP - Phase 1) - pre-construction							<u> </u>				
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172         Image: STP-C-0002 (South WWTP - Phase 2 - PDP) - construction	171		STP-C-0002 (South WWTP - Phase 2 - PDP) - pre-construction								• • •	<u> </u>		
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## 2.1 Planning Overview

This section describes the process used to define the projects outlined in this report. This planning was necessary to meet the goals of the C-P for a sewer system rehabilitation and replacement program for SSO reduction.

## 2.2 Comprehensive Rehabilitation Planning

Rainfall dependent infiltration/inflow (RDII) is the major cause of wet weather related capacity deficiencies. Previously conducted concurrent monitoring of flow and rainfall throughout the wastewater collection system during several rainfall events of different magnitudes was used to characterize RDII and predict the system's wet weather response to rainfall.

The collected data were then used to set up and calibrate a computational BTRSSO hydraulic model of the Baton Rouge collection and transmission system. Each subcatchment or drainage area was evaluated to establish the share of the rainfall that is predicted to enter the sewer system. Sub-catchments in which the RDII was excessive are scheduled for rehabilitation.

The sub-catchments selected for rehabilitation were then arranged into 26 projects. Sections 3, 4, and 5 of this report describe the comprehensive rehabilitation projects.

The sub-catchments selected for rehabilitation will undergo a review of the rehabilitation work already completed by the DPW. Portions of the sub-catchments that have been previously rehabilitated will be deleted from the individual rehabilitation projects.

## 2.3 Capacity Improvement Planning

Capacity improvement planning for the Program is based on evaluating and replacing those facilities in the collection system where the Program hydraulic modeling and field information indicate that the existing collection or transmission system is inadequate to handle the future peak wet weather flows appropriately.

For this analysis, the C-P was divided into ten hydraulically independent basins in order to separate the collection and transmission systems for analysis. The Program Management Team (PMT) developed a process for evaluating the hydraulic model and analyzing its output. The PMT utilized planning and design criteria as a basis for the process overview.

The PMT prepared and used a 12-step hydraulic basin analysis method throughout the planning process. The 12-step process included the following components:

- 1. Dynamic model runs for evaluation of the capacity of existing pipes with predicted postrehabilitation flows
- 2. Steady state calculations for evaluation of required pipe capacity
- 3. Dynamic models runs for evaluation of existing pipes with future flows added to postrehabilitation flows
- 4. Steady state calculations for evaluation of required pipe capacity with future flows
- 5. Test of the revised model for its ability to handle future wet weather flows
- 6. Evaluation of the model output for acceptable design criteria and physical evidence of overflows
- 7. Documentation of project list
- 8. DPW endorsement
- 9. Prioritization of projects
- 10. Development of planning level cost estimates
- 11. Determine projects for reduction of existing SSOs
- 12. Definition of projects

Based on these steps, the projects, described in Sections 3, 4, and 5 of this report, were developed.

## 2.4 Wastewater Treatment/Storage Planning

The wastewater treatment planning process began in 2006 and concluded development of the Master Plan. The following documents describe the planning efforts:

- Technical Memorandum entitled, Addressing Existing Noncompliance Issues and Future Wet-weather Flow Management Requirements for the South Wastewater Treatment Plant: Summary of Findings and Recommendations (CH2M HILL, 2006).
- South Wastewater Treatment Plant Immediate Action Plan Basis of Design Report (CH2M HILL, 2007).
- Wastewater Master Plan (Draft, May 2008).
- Central Consolidation memo.

This document describes the immediate action projects and wet weather capacity project for the South WWTP only. **No wet weather capacity projects are required at the North WWTP.** Other improvements at the treatment plants are not a part of this plan, since they are included in the Master Plan (Draft, May 2008).

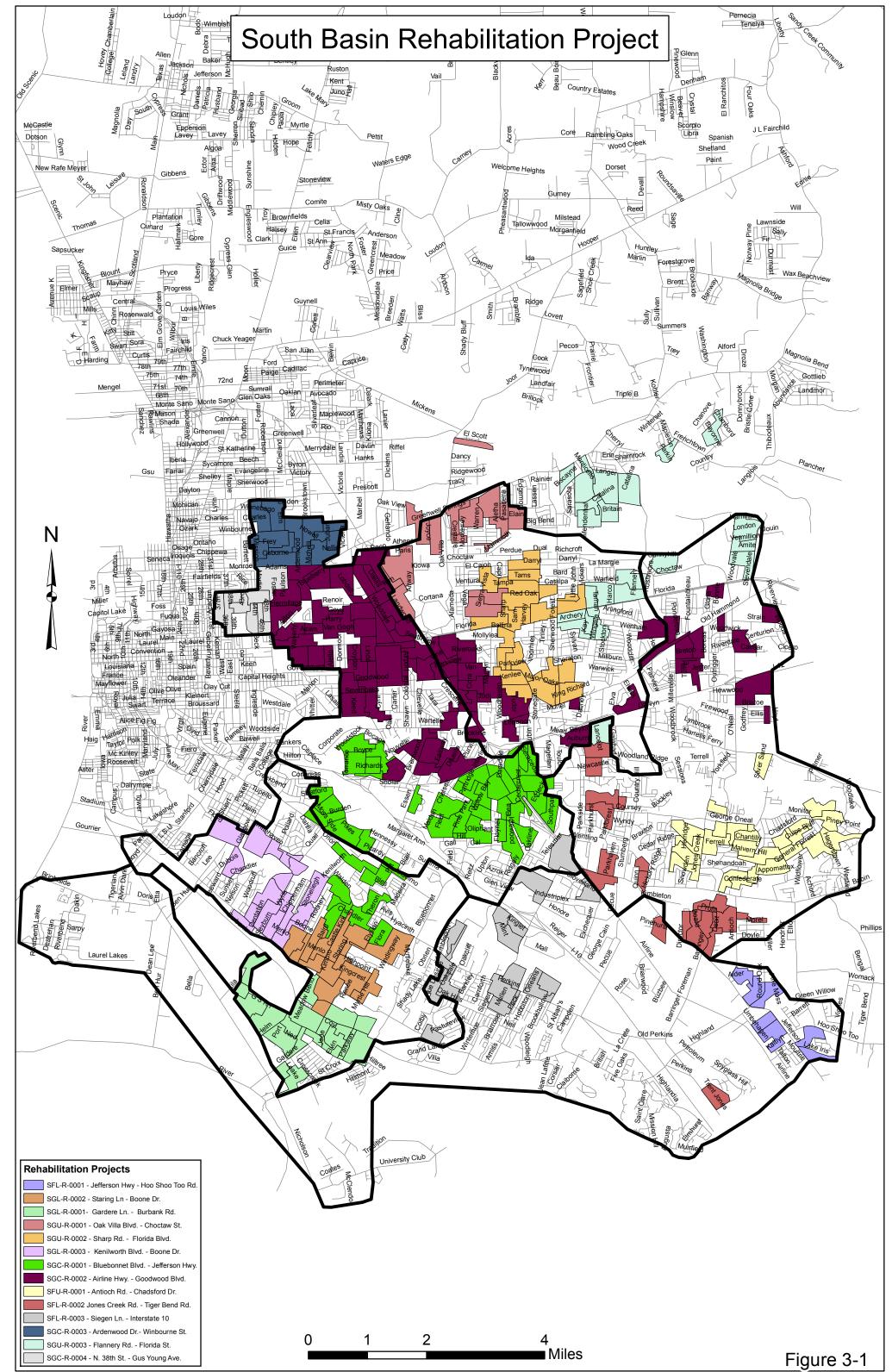
This document also describes additional improvements that will be necessary at the South WWTP in order to consolidate the Central WWTP with the South WWTP. These improvements include additional influent pumping and storage at the South WWTP to accommodate future wet weather peak flows from the Central WWTP.

Storage for shaving of peak hydraulic flows in the system is employed to reduce the scope and cost of downstream capacity projects and treatment plant capacity. Storage facilities are reservoirs that retain wet weather flows for a short time until the wet weather period is past. At the end of the wet weather period, the flow is returned to the collection system for transport and treatment. Each storage facility is sized for the 2-year frequency, 12-hour duration event. The storage facilities will be used in any significant rain event in the future. This page intentionally left blank.

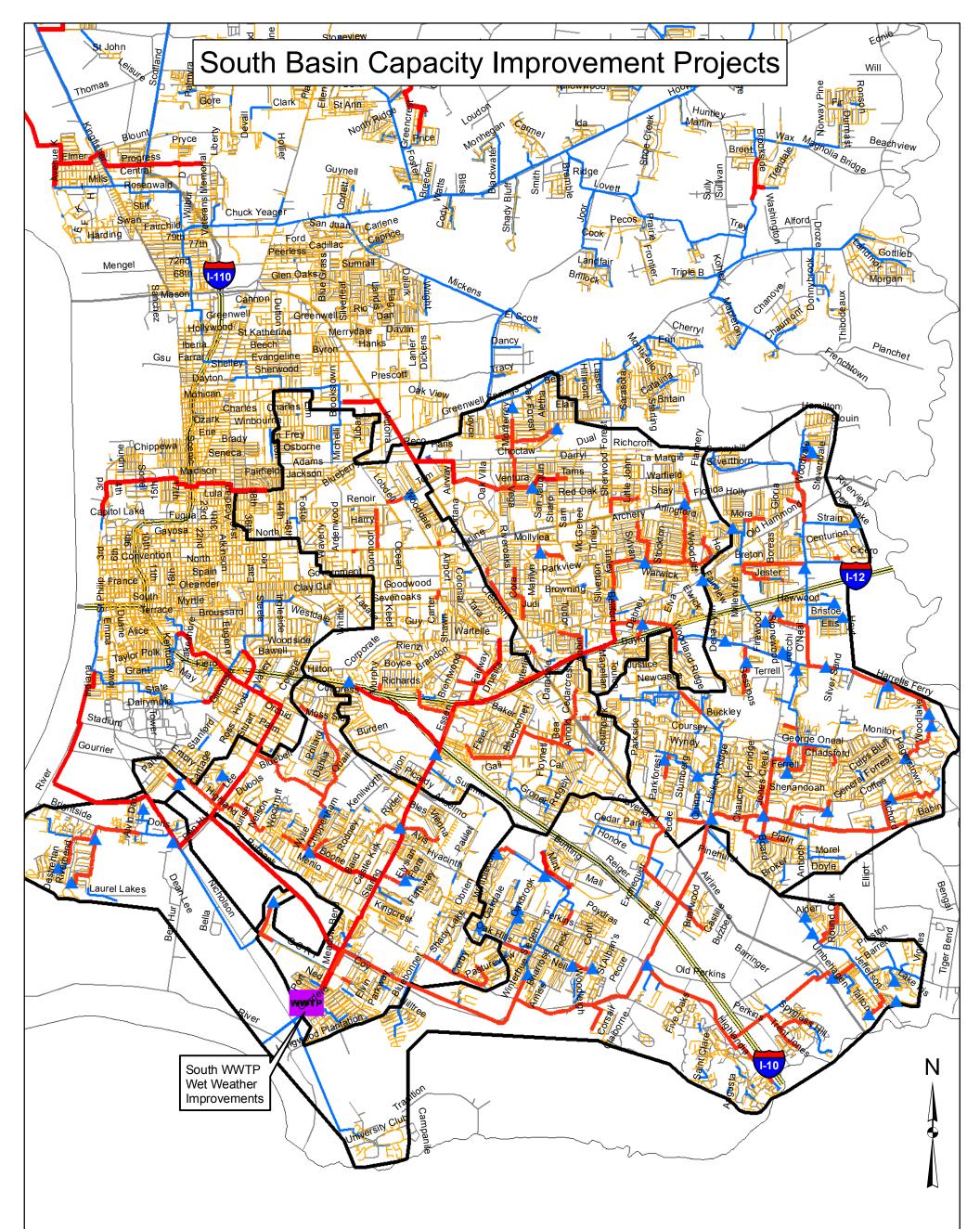
# South Basin Projects

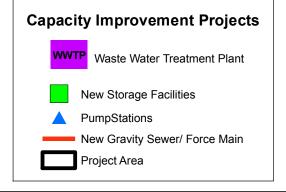
Section 3 presents summaries of the South Gravity System Comprehensive Rehabilitation Projects, the South Gravity System Capacity Improvement Projects, the South Forcemain System Comprehensive Rehabilitation Projects, the South Forcemain System Capacity Improvement Projects, and the South WWTP Projects. These projects are shown on Figures 3-1 and 3-2.

The project summaries presented herein represent the information available during this first annual update period. The PDP will be revisited on an annual basis and revised as necessary based on results of additional hydraulic wastewater modeling, immediate needs, DPW and public input, and other factors. This page intentionally left blank.



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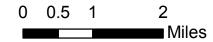


Figure 3-2

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# 3.1 South Gravity System Comprehensive Rehabilitation Projects

3.1.1 SGC-R-0001, SGC-R-0002, SGC-R-0003, SGC-R-0004, SGL-R-0001, SGL-R-0002, SGL-R-0003, SGU-R-0001, SGU-R-0002, SGU-R-0003

#### Project Description

The sanitary sewer system comprehensive rehabilitation projects consist of improvements to various components of the collection system to reduce the amount of I/I that enter into the system.

#### Purpose

The purpose of comprehensive sewer rehabilitation is to correct defects in the system such as offset pipe joints, collapsed pipe sections, leaking manholes, and direct inflow sources. The water that enters the system through the defects is a major contributor to sanitary sewer overflows. Comprehensive rehabilitation of the collection system will contribute to alleviating sanitary sewer overflows by reducing infiltration and inflow.

#### Location

There are ten projects located primarily within the South Gravity Basin. The location of the projects is shown on the maps following this section.

#### Scope of Project

The first phase of comprehensive rehabilitation projects will be the physical inspection of the pipes and manholes including closed circuit television (CCTV) inspection of all pipes. Smoke testing will also be included in the physical inspection phase.

The data collected by the physical inspection contractor will be analyzed and, based on that analysis, a listing of recommended repairs with associated construction costs will be generated.

An engineering firm will then complete preparation of construction documents for project bidding.

The construction of comprehensive rehabilitation projects will typically include the following components.

- Replacement of pipes
- Point repair of pipes
- Rehabilitation of pipes by cured in place liners
- Rehabilitation or replacement of sewer manholes
- Repair of sewer laterals to the property line

Cost

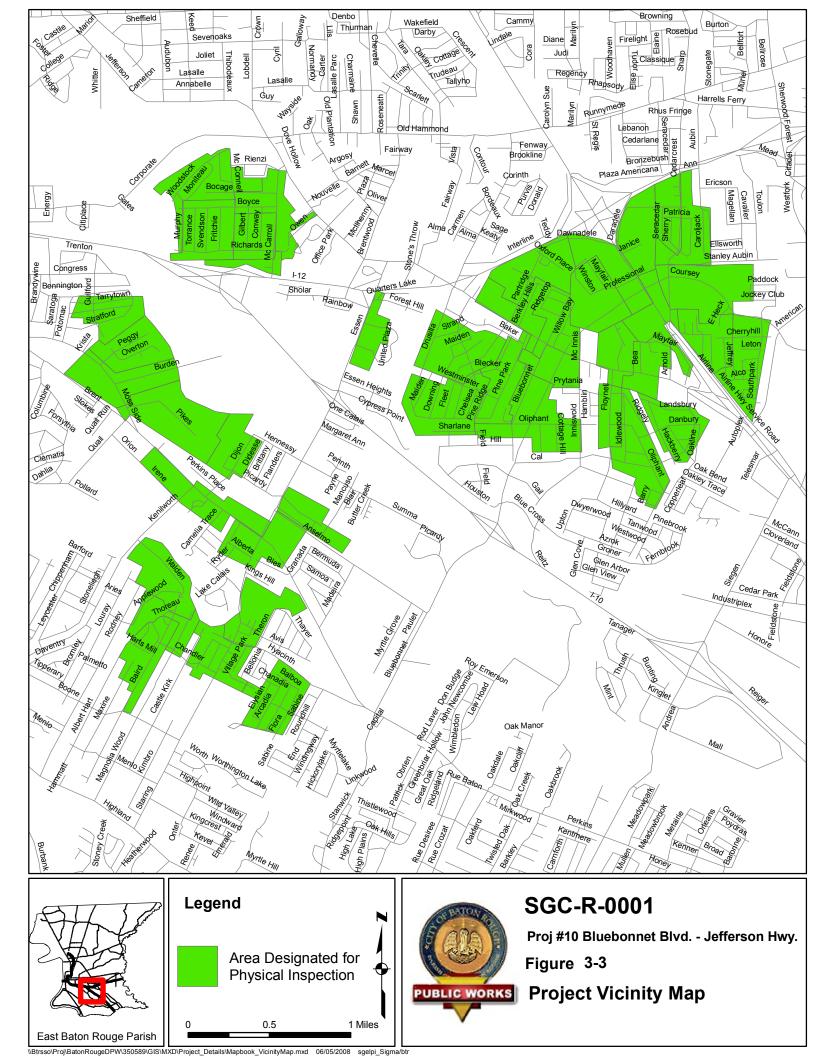
The estimated construction cost for each project is presented in Table 3-1. These costs are based on preliminary estimates of the amounts of each component of the system that will require repair or replacement. During the physical inspection phase, the actual condition of

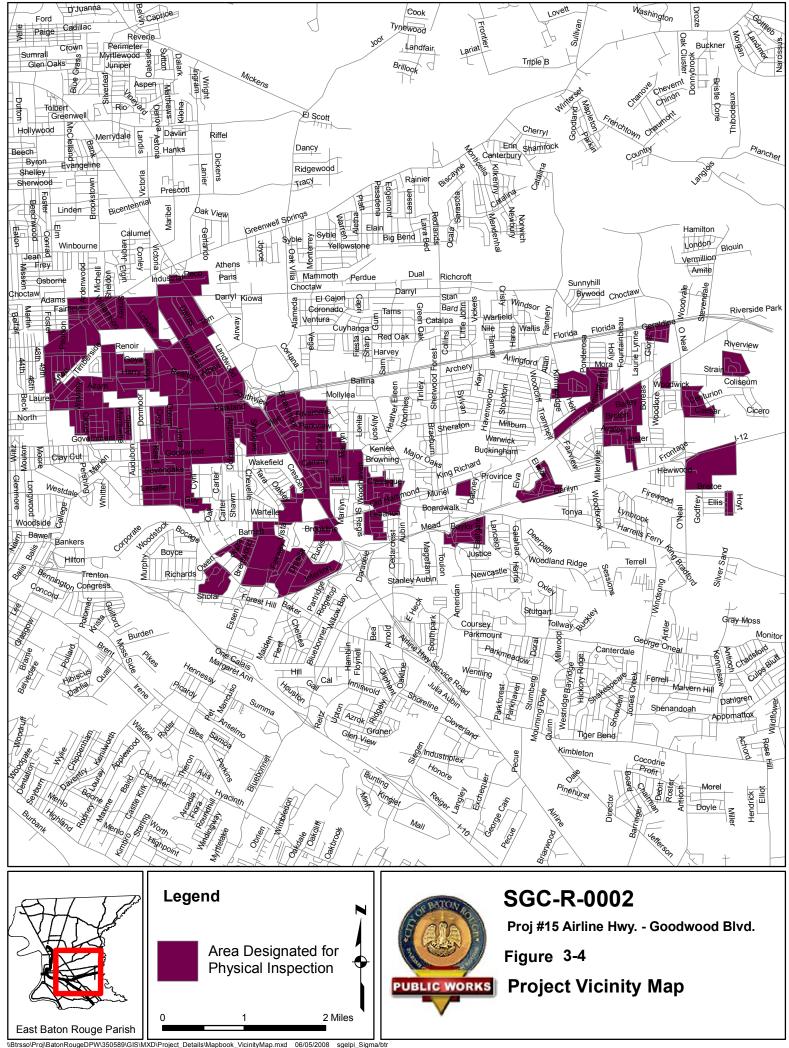
the components will be assessed and appropriate methods recommended. At that time, the cost estimate for each project will be revised.

TABLE 3-1

Estimated Construction Costs for South Gravity System Comprehensive Rehabilitation Projects

Project Description	Estimated Construction Cost	Scheduled Design Appropriation Year	Scheduled Construction Appropriation Year
SGC-R-0001 Bluebonnet Boulevard-Jefferson Highway	\$14,000,000	2009	2010
SGC-R-0002 Airline Highway-Goodwood Boulevard	\$25,000,000	2010	2011
SGC-R-0003 Ardenwood Drive-Winbourne	\$4,900,000	2011	2012
SGC-R-0004 North 38 <sup>th</sup> Street-Gus Young Avenue	\$3,800,000	2012	2013
SGL-R-0001 Gardere Lane- Burbank Road	\$5,100,000	2008*	2008*
SGL-R-0002 Staring Lane- Boone Drive	\$5,600,000	2008*	2008*
SGL-R-0003 Kenilworth Boulevard-Boone Drive	\$5,400,000	2009	2009
SGU-R-0001 Oak Villa Boulevard-Choctaw Street	\$5,600,000	2008*	2008*
SGU-R-0002 Sharp Road- Florida Boulevard	\$8,000,000	2009	2009
SGU-R-0003 Flannery Road-Florida Boulevard	\$8,300,000	2012	2012
*Appropriations already made	for these projects (design and	l/or construction, as mar	ked)



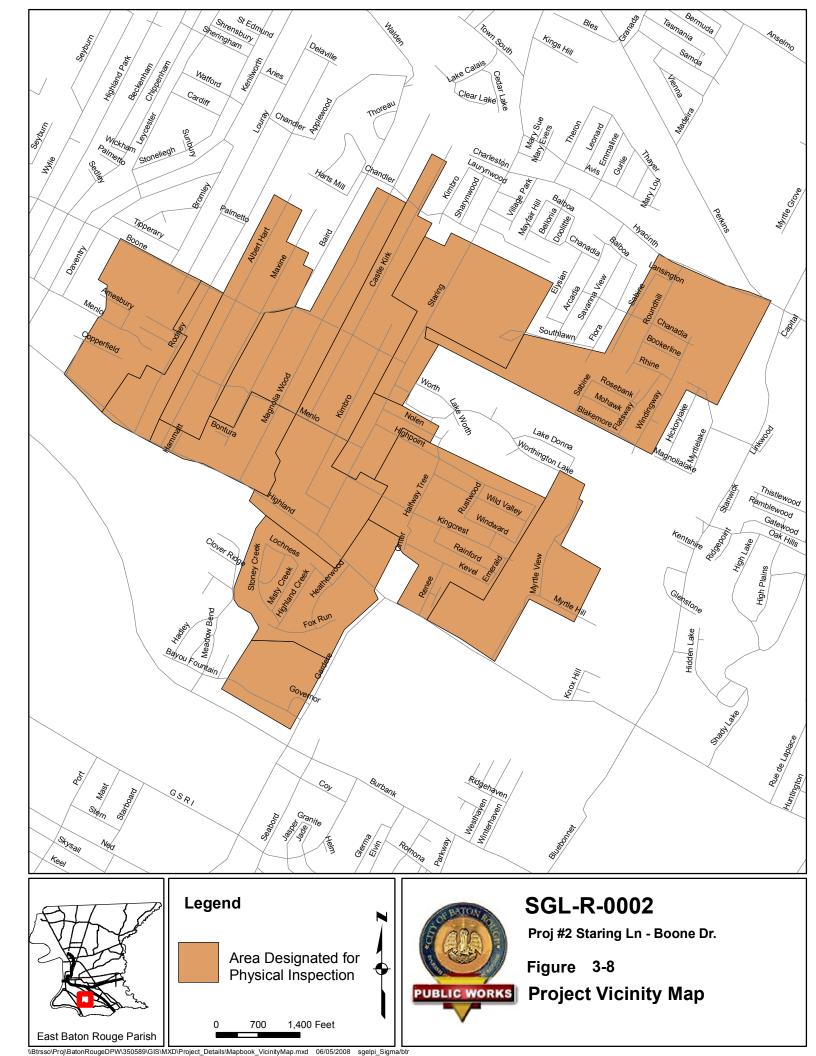


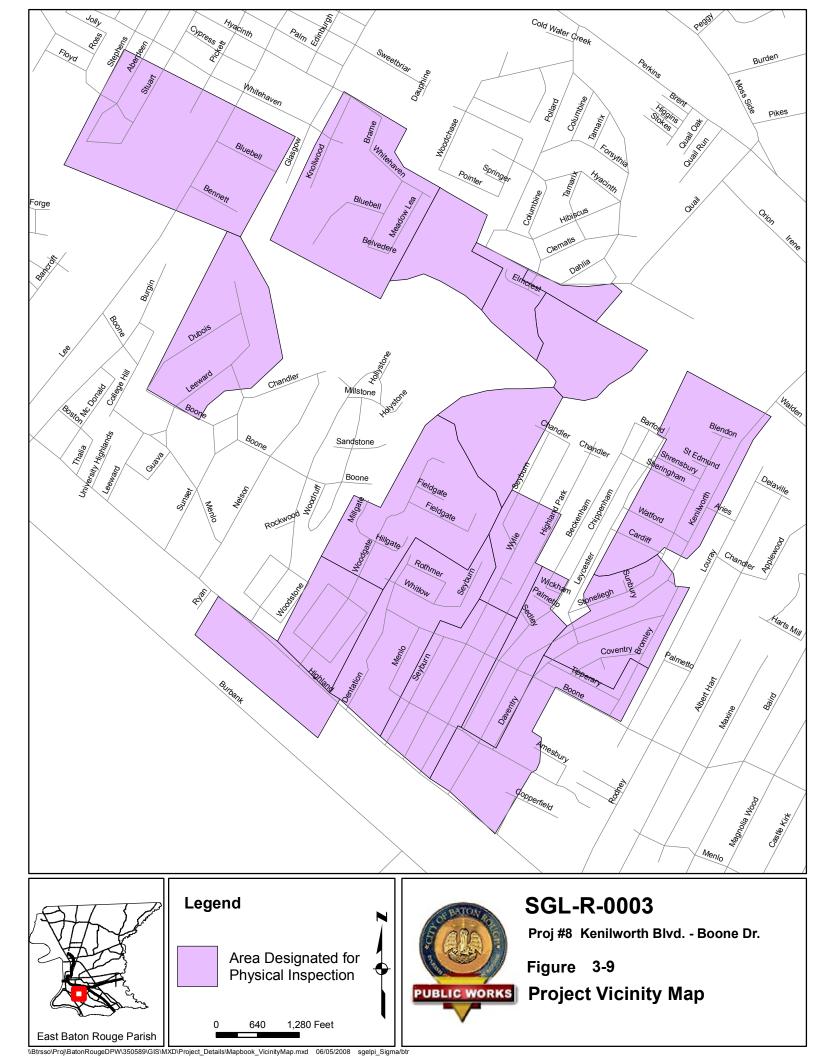


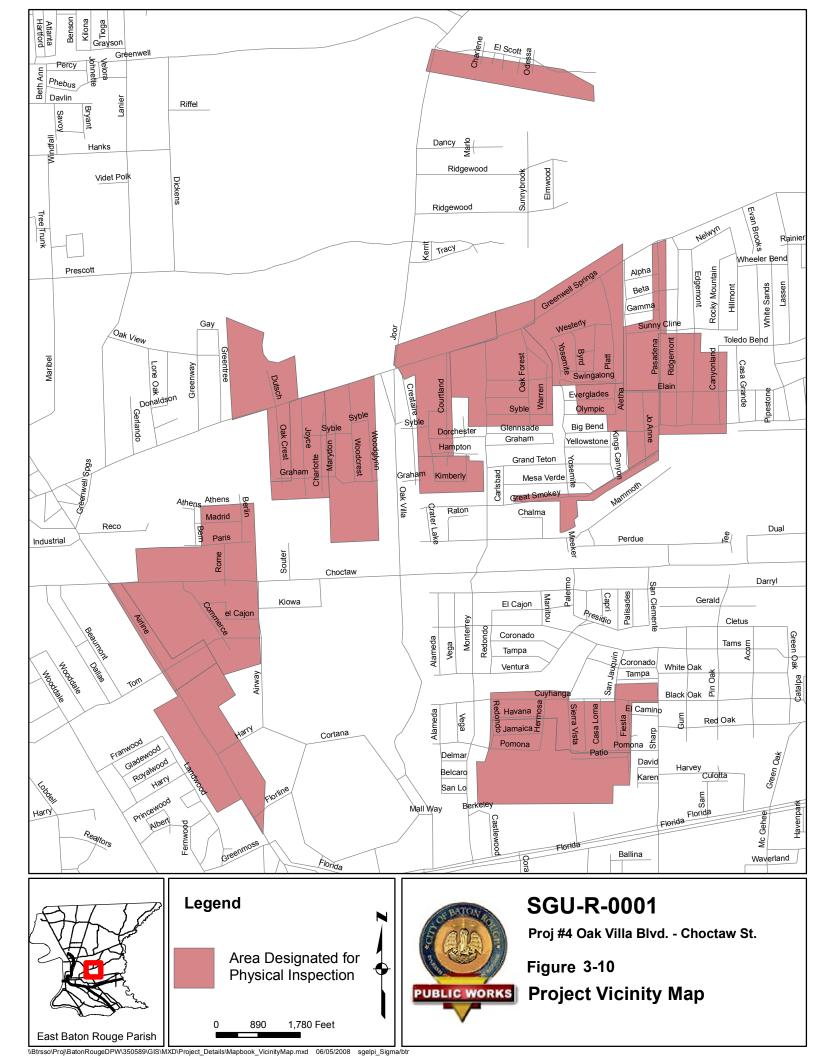


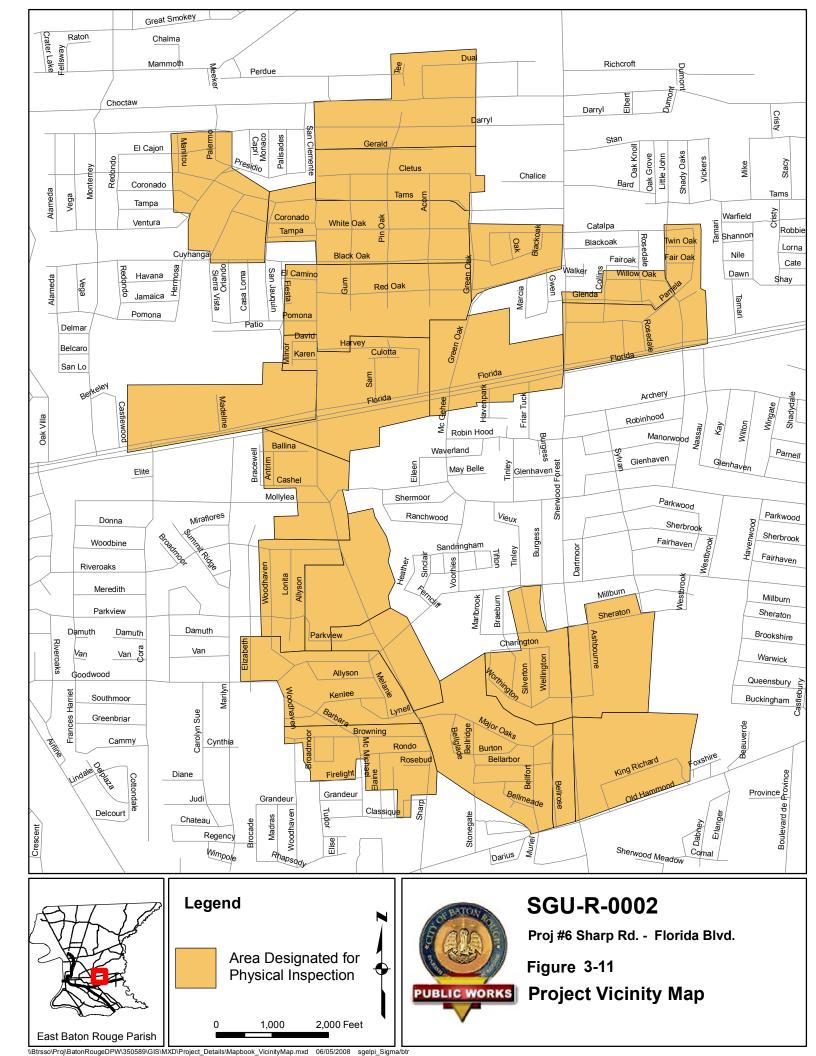
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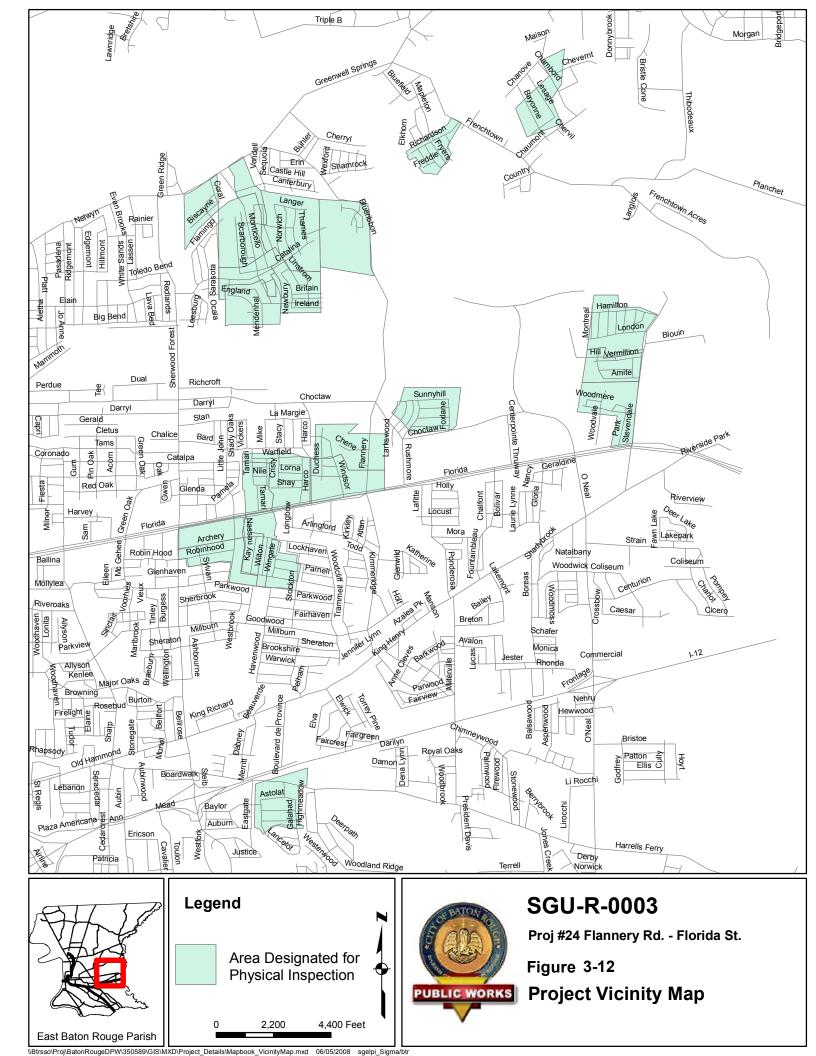












# 3.2 South Gravity System Capacity Improvements Projects

### 3.2.1 SGU-C-0001 (Multiple Pump Stations - Florida Blvd - Sherwood Forest Blvd)

#### Project Description

#### Purpose of the Project / Project Background

Project SGU-C-0001 (Multiple PS – Florida Blvd. – Sherwood Forest Blvd.) includes upgrades of PS 13, PS 16, PS 18, PS 21, PS 31, PS 50, and PS 66 to alleviate SSOs at and near the PS as well as in their respective upstream basins. PS 51, which was originally part of this project, was moved to the Choctaw Storage and Pumping Project, described in Section 5 of this plan. The BTRSSO hydraulic model also predicts that these pump stations will exceed their existing capacities at the predicted future peak wet weather flows.

#### Location

The locations of the pump stations are given in Table 3-2.

#### Scope

This project includes the replacement of seven pump stations in the South Gravity Upper Basin, as outlined in Table 3-2.

Pump Station No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS13	Intersection of Elizabeth Drive and River Oaks Drive	1,042	1,389
PS16	Intersection of Great Smokey Ave. and JoAnne Drive	972	1,319
PS18	Intersection of Moterrey Ave. and Swingalong Ave.	625	833
PS21	Near Florida Blvd. at the Intersection of Shelby Drive	1,389	2,257
PS31	Goodwood Blvd., near Havenwood Blvd.	2,083	7,500
PS50	Intersection of Major Oaks Rd and Sherwood Forest Blvd.	7,291	22,568
PS66	Comal Drive, near intersection of Erlanger Drive	833	3,055

TABLE 3-2

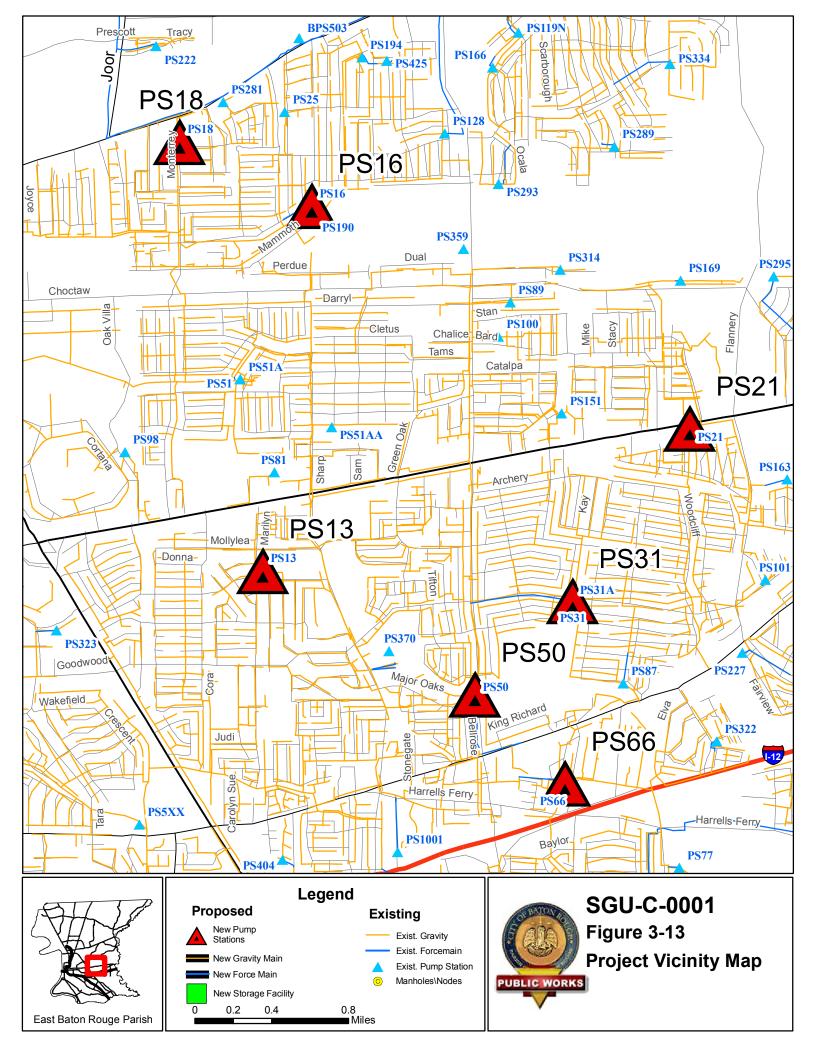
SGU-C-0001 (Multiple Pump Stations – Florida Blvd. – Sherwood Forest Blvd.)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$10,200,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



# 3.2.2 SGU-C-0002 (Airline Highway - Interstate 12)

#### **Project Description**

#### Purpose of the Project / Project Background

The SGU-C-0002 (Airline Highway – Interstate 12) project includes the upsizing of gravity sewers upstream of pump stations 58 and 66 and construction of new forcemains at PS66 and PS50 to address upstream SSOs. Due to hydraulic modeling improvements and more information on existing SSOs, several hundred feet of gravity sewer upstream of PS 58 were added and several hundred feet of gravity sewer upstream of PS 58 were deleted from this project when compared to the January 2008 PDP.

#### Location

The gravity portions of the SGU-C-0002 project are located near the intersections of Airline Highway with Old Hammond Highway and Interstate 12.

Gravity segment 066-00006 to 066-00001A starts on the south side of Interstate 12 near Eastgate Drive, crosses Interstate 12, and travels north to PS66 near Comal Drive and Erlanger Drive intersection.

Gravity segment 066-00147 to 066-00088 starts at Woodland Ridge Boulevard. The line travels north, crossing Interstate 12, and next traveling west to Boulevard de Providence. Segment 066-00088 to PS 66 travels west from Boulevard de Providence to PS 66.

Gravity segment 058-00016E to 058-00011E starts at the end of the PS66 forcemain and travels south until reaching 058-00014E. The segment travels west until reaching 058-00011E, located northeast of Sherwood Forest Blvd. and North Harrells Ferry intersection. Segment 058-00011E to 058-02653 starts east of Sherwood Forest Blvd. The gravity segment travels west until reaching 058-00005E. The line travels north until reaching 058-00002E. The line travels west to 058-00001E and north until reaching 058-02653, located west of Sherwood Forest Blvd. and Old Hammond Hwy. intersection.

Gravity segment 058-01868 to 058-01862 starts northeast of Airline Hwy. (North) and North Parkview Dr. intersection. The gravity line travels southwest until reaching 058-01866, southeast until reaching 058-01865, and southwest crossing Airline Hwy. (North) until reaching 058-01864. The gravity line travels southeast until reaching 058-01862, located near Airline Hwy. (North) and South Parkview Dr. intersection.

Gravity segment 058-02851 to 058-02833 starts northwest of Parkview Drive and Cora Drive intersection, traveling south, parallel to Cora Drive, until reaching 058-02833. Segment 058-02833 to 058-02677 starts northwest of Goodwood Blvd. and Cora Dr. The gravity segment travels south, parallel to Cora Dr., until reaching 058-0281. The line travels east until reaching 058-02701. The line travels south until reaching 058-02677, located near the end of Carolyn Sue Dr.

Gravity segment 058-02478 to 058-02475 starts on Airline Highway near Gwenadele Avenue intersection. The gravity segment travels northwest along Airline Highway until reaching 058-02475, located near Airline Highway and Commonwealth Boulevard intersection.

Gravity segment 058-02571 to 058-01395 starts on Bronzebush Avenue near Cedarcrest Avenue. The segment travels north and then turns west to manhole 058-02478 on Old Hammond Highway near Silverest Avenue. Gravity segment 058-01859 to 058-01851A starts on Airline Hwy. (North) between its intersections with South Parkview Dr. and Goodwood Blvd. The gravity line travels southeast until reaching 058-1851A, located near Lindale Ave. and Airline Hwy. intersection.

Gravity segment 058-01851A to 058-01850 starts near Lindale Ave. and Airline Hwy. intersection. The gravity line travels southeast until reaching 058-01850, located near Delcourt Ave. and Airline Hwy. intersection.

Gravity segment 058-01850 to 058-01850A starts northeast of Delcourt Ave. and Airline Hwy. intersection. The gravity segment travels southeast, towards Delcourt Ave, until reaching 058-01850A.

The PS 66 forcemain runs from the upgraded PS 66, described in Project SGU-C-0001 (Multiple PS – Florida Blvd. – Sherwood Forest Blvd.) on Comal Drive westward to the termination of the forcemain at manhole 058-00016E on Sherwood Meadow Drive.

Project SGU-C-0002 (Airline Highway – Interstate 12) includes the construction of a new forcemain from the upgraded PS 50, upgraded as described in Project SGU-C-0001 (Multiple PS – Florida Blvd. – Sherwood Forest Blvd.). The segment of forcemain to be built under this project starts at PS 50 at the corner of Sherwood Forest Boulevard and Major Oaks Drive, travels southerly along Sherwood Forest Boulevard, and terminates at the manifold with the new PS forcemain near Jefferson Highway and Interstate 12. The new PS forcemain and the continuation of the forcemain are described in SGC-C-0003 (Essen Lane – Interstate 12).

#### Scope

This project includes approximately 6,800 feet of 15-inch, 18-inch, and 21-inch gravity sewer upstream of PS 66, approximately 15,400 feet of 12-inch, 15-inch, 18-inch, 21-inch, and 24-inch gravity sewer upstream of PS 58, a new 12-inch force main from PS 66 to replace the existing forcemain, and a new 42-inch force main from PS 50 to the junction of the new aforementioned forcemain.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
066-00006	066-00001A	1610	8	15	Interstate 12 crossing
066-00147	066-00088	3434	10 & 12	18	Interstate 12 crossing
066-00088	PS66	1729	12	21	
058-00011E	058-02653	1406	12 and 15	24	
058-00016E	058-00011E	737	12	21	
058-01868	058-01862	839	8	12	
058-02851	058-02833	1138	8	15	
058-02833	058-02677	3873	15	21	
058-02478	058-02475	825	8	12	
058-02571	058-01395	3523	8	15	

#### TABLE 3-3

SGU-C-0002 (Airline Highway – Interstate 12)

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
058-01850	058-01850A	78	15	18	
058-01851A	058-01850	795	15	18	
058-01859	058-01851A	2229	15	18	
PS 66		1,280	8	12	Forcemain Replacement
NEW FM (PS 50)		16,810	New	42	New forcemain, Need to coordinate with SGC-C- 0003 (Essen Lane – Interstate 12)

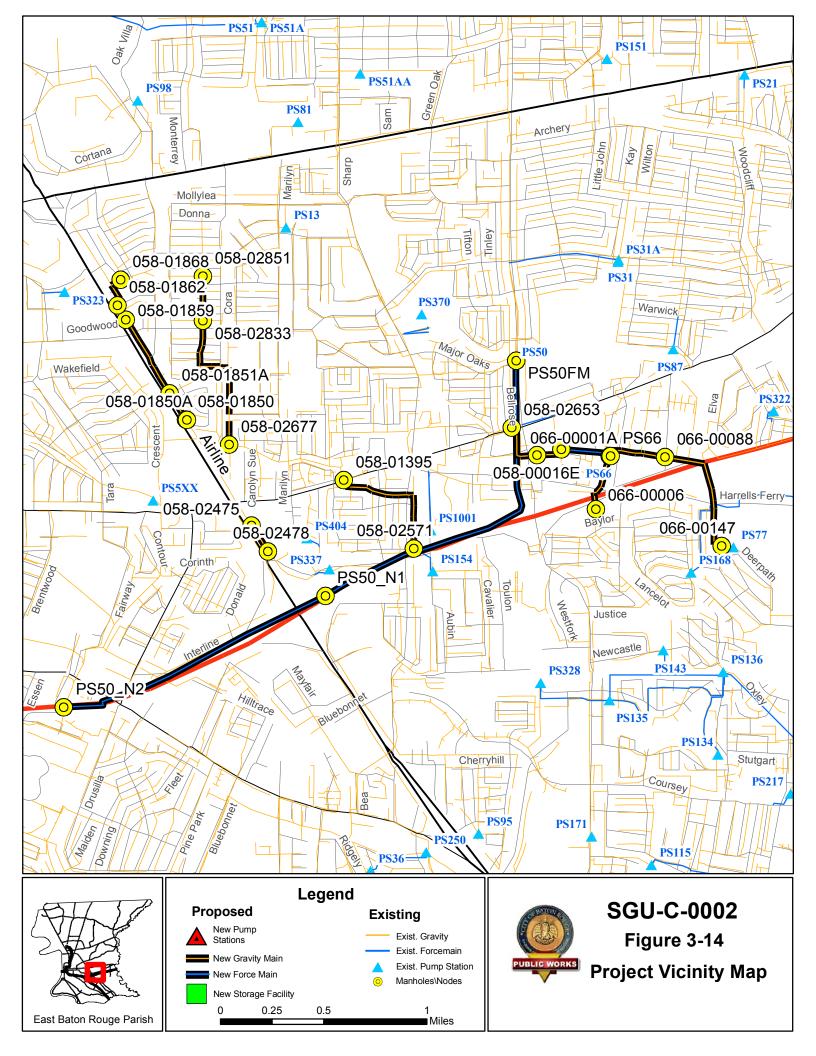
TABLE 3-3	
SGU-C-0002	(Airline Highway – Interstate 12)

Note: The existing pipe sizes and lengths and new pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$11,100,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



## 3.2.3 SGU-C-0003 (Florida Blvd. - Sherwood Forest Blvd.)

#### **Project Description**

#### Purpose of the Project / Project Background

The SGU-C-0003 (Florida Blvd. – Sherwood Forest Blvd.) project includes the upgrade of gravity sewers upstream of PS13 and PS50 to alleviate SSOs. Due to improved hydraulic modeling, several hundred feet of gravity sewer upstream of PS50 was deleted from the project from the January 2008 PDP.

#### Location

The gravity sewer replacements that comprise this project are located near the intersections of Florida Boulevard and Sherwood Forest Drive.

Gravity segment 050-00619 to 050-00682 starts on Sharp Lane near the Tams Drive intersection. The gravity segment travels north and turns east at Tams Drive. The line continues east until reaching 050-00682, located on Tams Drive between the Gum St. and Pin Oak St. intersections.

Gravity segment 050-00480 to 050-00924 starts near Elizabeth Dr. and South Riveroaks Dr. intersection. The gravity segment travels west until 050-00150, south until 050-00168, and east parallet to Riveroaks Dr. The gravity line travels southeast at 050-00909 and continues until reaching 050-00924, located near Sharp Rd.

Gravity segment 050-00203 to 050-00837 starts on Goodwood Boulevard between Westbrook Dr. and Sylvan Dr. intersections. The gravity line travels west along Goodwood Boulevard until reaching 050-00837, located near Sherwood Forest Drive and Goodwood Boulevard intersection.

Gravity segment 050-00392 to 050-00280 starts on Pamela Drive. The gravity line travels southwest until reaching 050-00390, northwest until reaching 050-00388, and west until reaching 050-00280, located northwest of the Glenda Drive and Sherwood Forest Boulevard intersection.

Gravity segment 050-00280 to 050-00272 starts northwest of Glenda Drive and Sherwood Forest Boulevard intersection. The gravity line travels south until reaching 050-00272, located northwest of the Florida Blvd. and North Sherwood Forest Drive intersection

Gravity segment 013-00002 to 013-00001 starts north of the intersection of Elizabeth Drive with River Oaks Drive. The gravity line travels west until reaching 013-00001, located near PS 13.

Gravity segment 013-00049 to PS 13 starts near Marilyn Drive and Mollylea Drive intersection. The gravity segment travels south until reaching 013-00012 and then traveling east until reaching PS 13. PS 13 will be upgraded as part of the SGU-C-0001 (Multiple PS – Florida Blvd. – Sherwood Forest Blvd.) project.

#### Scope

The scope of this project is shown in Table 3-4. This project includes construction of approximately 8,400 feet of 15-inch, 21-inch, 24-inch, and 42-inch gravity sewer upstream of PS 50 and approximately 950 feet of 12-inch and 15-inch gravity sewer upstream of PS13.

<u>SGU-C-0003 (FI</u>		,	Existing Diameter	Proposed Diameter	
US Node	DS Node	Length (ft)	(in)	(in)	Comments
050-00619	050-00682	1,000	15	24	
050-00480	050-00924	2,000	8 and 12	15	
050-00203	050-00837	1,800	18	42	
050-00392	050-00280	2,400	12	21	
050-00280	050-00272	1,200	15 or 18	24	
013-00002	013-00001	150	8	12	
013-00049	PS13	800	8 and 10	15	PS Replacement under SGU-C-0001 (Multiple PS – Florida Blvd. – Sherwood Forest Blvd.)

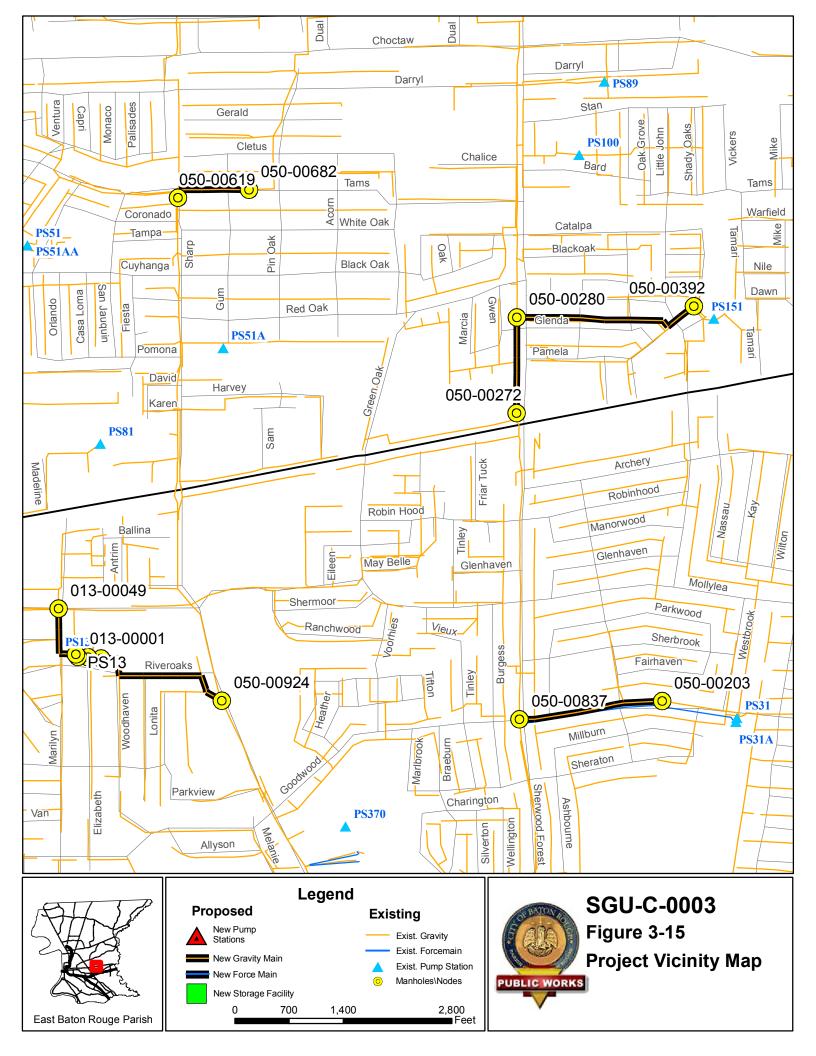
TABLE 3-4	
SGU-C-0003 (	Florida Blvd. – Sherwood Forest Blvd)

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

#### Total Estimated Construction Cost is \$3,600,000.

#### Scheduled Design Appropriation Year is 2012.

Scheduled Construction Appropriation Year is 2013.



## 3.2.4 SGU-C-0004 (Goodwood Blvd. - South Flannery Road)

#### **Project Description**

#### Purpose of the Project / Project Background

The SGU-C-0004 (Goodwood Blvd. – South Flannery Road) project includes the upgrade of gravity sewers upstream of PS 21, PS 31, and PS 101 to alleviate SSOs in the vicinity. Several hundred feet of gravity sewer were added to this project from the January 2008 PDP as a result of improved hydraulic modeling and additional information on existing SSOs.

#### Location

The gravity sewer replacements that comprise the SGU-C-0004 project are located between Florida Boulevard and Old Hammond Highway, and to the east and west, Sherwood Forest Drive and Flannery Road.

Gravity segment 021-00009 to PS 21 starts southwest of Warfield Avenue and Windsor Drive intersection. The gravity segment travels southeast, crossing Florida Boulevard until reading 021-00001F. The gravity line continues west until reaching PS 21, located near the Florida Boulevard and Shelby Drive intersection.

Gravity segment 101-00024 to PS 101 starts south of Darwin Avenue and South Flannery Road intersection. The gravity segments travels west until reaching 101-00018, southeast until reaching 101-00016, east until reaching 101-00014, and then southeast along Brinwood Avenue until reaching PS 101. PS 101 is located northeast of the Goodwood Boulevard and Brinwood Avenue intersection.

Gravity segment 031-00035 to 031-00030 starts southwest of Robinhood Drive and Little John Drive intersection. The gravity segment travels east until reaching 031-00033 and then southwest parallel to Little John Drive until reaching 031-00030. The segment ends near northwest of the Little John Drive and Mollyea Drive intersection.

Gravity segment 031-00030 to PS 31 starts northeast of Little John Drive and Mollyea Drive intersection. The gravity segment travels southeast until reaching 031-00006 and then travels south along the canal parallel to Westbrook Drive until reaching PS 31. PS 31 is located southeast of the Goodwood Boulevard and Westbrook Drive intersection.

Gravity segment 031-00378 to 031-00006 starts southwest of East Glenhaven Drive and Wilton Drive intersection. The gravity line travels southwest until reaching 031-00006, located northeast of the Westbrook Drive and Mollylea Drive intersection.

Gravity segment 031-00442 to 031-00435 starts northwest of Goodwood Boulevard and Brinwood Avenue intersection. The gravity line travels southwest until reaching 031-00435, located northeast of the Goodwood Boulevard and South Flannery Road intersection.

Gravity segment 031-00435 to 031-00237 starts northeast of South Flannery. The gravity line travels west until reaching 031-00434, south until reaching 031-00433, and then northwest until reaching 031-00237. The segment ends northeast of the Goodwood Boulevard and Trammell Drive intersection.

Gravity segment 031-00237 to 031-00132 starts northeast of Trammell Drive and Goodwood Boulevard intersection. The gravity line travels northwest until reaching 031-00132, located west of the Trammell Drive and Camelot Avenue intersection.

Gravity segment 031-00132 to 031-00112 is located west of Trammell Drive and Camelot Avenue intersection. The gravity line travels northwest until reaching 031-00131, north until reaching 031-00129, and west until reaching 031-00112. The gravity segment ends southeast of the Fairhaven Drive and Woodcliff Drive intersection.

Gravity segment 031-00112 to PS 31 starts southeast of Fairhaven Drive and Woodcliff Drive intersection. The gravity line travels west until reaching 031-00102, south until reaching 031-00102A, and then southwest until reaching PS 31. PS 31 is located southeast of the Westbrook Drive and Goodwood Boulevard intersection.

Gravity segment 031-00270 to 031-00112 starts northeast of East Robinhood Drive and Woodcliff Drive intersection. The gravity segment travels south until reaching 031-00112, located southeast of the Fairhaven Drive and Woodcliff Drive intersection.

Gravity segment 031-00299 to 031-00289 starts southeast of Arlingford Avenue and. Shelby Drive intersection The gravity line travels south until reaching 031-00289, located northeast of the Archery Drive and Woodcliff Drive intersection.

Gravity segment 031-00330 to 031-00299 starts east of Norma Court and Shelby Drive intersection. The gravity line travels south until reaching 031-00299, located southeast of the Arlingford Avenue and Shelby Drive intersection.

Gravity segment 031-00330A to 031-00330 starts southeast of Shelby Drive and Florida Boulevard intersection. The gravity line travels south until reaching 031-00330, located east of the Norma Court and Shelby Drive intersection.

Forcemain segment PS21FM to 031-00330A starts near Florida Boulevard. The forcemain segment travels south until reaching 031-00330A, located southeast of the Shelby Drive and Florida Boulevard intersection.

#### Scope

This project includes construction of approximately 2,100 feet of 18-inch gravity sewer upstream of PS 21, approximately 2,000 feet of 10-inch gravity sewer upstream of PS 101, and approximately 13,800 feet of 10-inch, 12-inch, 15-inch, 18-inch, 21-inch, 24-inch, and 42-inch gravity sewer upstream of PS 31. The scope of this project is shown in Table 3-5.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
					Crosses Florida Boulevard; PS will be upgraded in SGU-C-0001 (Multiple PS – Florida Blvd. – Sherwood Forest
021-00009	PS21	2,100	12 and 15	18	Blvd.)
101-00024	PS101	2,000	8	10	
031-00035	031-00030	1,100	8	15	
					PS upgraded in SGU-C- 0001 (Multiple PS – Florida Blvd. – Sherwood
031-00030	PS 31	2,600	8 to 12	21	Forest Blvd.)
031-00378	031-00006	80	8	12	Crosses drainage canal
031-00442	031-00435	670	8	10	
031-00435	031-00237	930	8 and 12	12	
031-00237	031-00132	260	10	15	
031-00132	031-00112	550	10 to 12	18	
031-00112	PS31	3,400	21	42	
031-00270	031-00112	2,600	18	24	
031-00299	031-00289	317	15	18	
031-00330	031-00299	674	15	18	
031-00330A	031-00330	341	15	18	
PS21FM	031-00330A	313	8	10	Forcemain

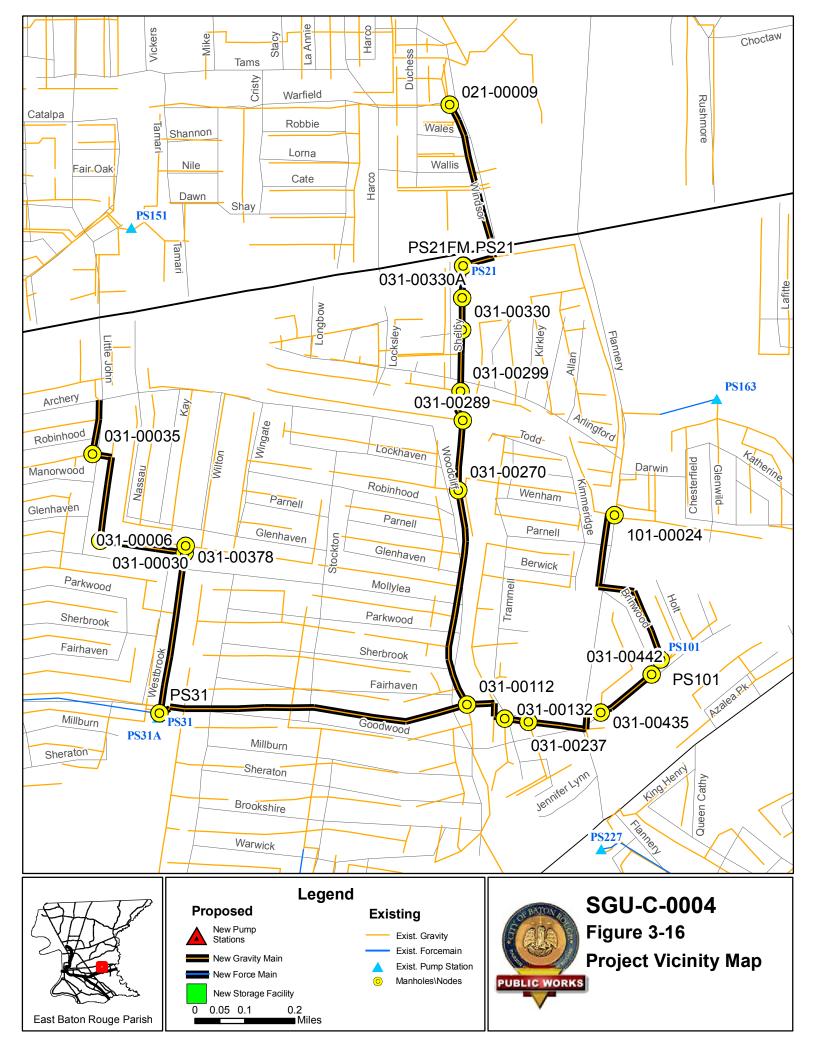
# TABLE 3-5 SGU-C-0004 (Goodwood Blvd. – South Flannery Road)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$6,500,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2013.



## 3.2.5 SGU-C-0005 (Oak Villa Blvd. - Monterey Blvd.)

#### **Project Description**

#### Purpose of the Project / Project Background

The SGU-C-0005 (Oak Villa Blvd. – Monterey Blvd.) project includes the upsizing of the gravity sewer upstream of PS 16, PS 50, and PS 51 and the forcemain from PS 16, which is being upgraded as part of the SGU-C-0001 (Multiple PS – Florida Blvd. – Sherwood Forest Blvd.) project. In the January 2008 PDP, this project included the forcemain from PS 51 to the Choctaw Storage. This forcemain has been moved to the Choctaw Storage and Pumping Project, as described in Section 5 of this plan.

#### Location

The gravity sewer replacements that comprise the SGU-C-0005 project are located northeast of Airline Highway and Florida Boulevard, and along Sherwood Forest Boulevard south of Florida Boulevard.

Gravity segment 051-00222 to 051-00196 starts southeast of the Kimberly Drive and Kimberly Way intersection. The gravity segment travels east until reaching 051-00196, located northwest of the Monterrey Drive and Great Smokey Avenue intersection.

Gravity segment 016-00002 to PS16 starts southwest of the Jo Anne Drive and Big Bend Avenue intersection. The gravity line travels south until reaching PS16, located northeast of the Jo Anne Drive and Great Smokey Avenue intersection.

Gravity segment 051-00469 to 051-00196 starts southeast the Syble Drive and Monterrey Drive intersection. The gravity line travels south until reaching 051-00196, located northwest of the Great Smokey Avenue and Monterrey Drive intersection.

Gravity segment 051-00196 to 051-00169 starts northwest of the Great Smokey Avenue and Monterrey Drive intersection. The gravity line travels south until reaching 051-00169, located northwest of the Great Smokey Avenue and Monterrey Drive intersection.

Gravity segment 051-00169 to 051-00168 starts northwest of the Great Smokey Avenue and Monterrey Drive intersection. The gravity line travels south until reaching 051-00168, located northwest of the Mammoth Avenue and Monterrey Drive intersection.

Gravity segment 051-00168 to 051-00070 starts northwest of the Mammoth Avenue and Monterrey Driver intersection. The gravity line travels east until reaching 051-00070, located near Mammoth Avenue between its intersections with Monterrey Drive and Needham Drive.

Gravity segment 051-00070 to PS 51 starts near Mammoth Avenue between its intersections with Monterrey Drive and Needham Drive. The gravity line travels east along the north side of the drainage channel until reaching PS 51, located north of Cuyhanga Parkway and Sierra Vista Drive intersection.

Gravity segment DS16 to 051-00169 starts at the intersection of Kings Canyon Drive and Great Smokey Avenue. The segment travels south behind the row of houses on the south side of Great Smokey Avenue, heading northeast behind four houses before it doubles back on its same path and goes southwest and then straight west behind the houses south of Great Smokey Avenue. It ends at manhole 051-00169 on Monterrey Drive.

Gravity segment 051-00364B to 051-00070 starts north of a drainage canal near Cortana Place. The gravity segment travels southeast until reaching 051-00077, and then east until

reaching 051-00070. The gravity segment ends south of the Ventura Drive and North Redondo Drive intersection.

Gravity segment 051-0007369 to 051-00364B starts above the drainage canal near Airway Drive. The gravity segment travels east until reaching 051-00364B, located north of Cortana Place.

Gravity segment 050-00837 to 050-00300A starts near Sherwood Forest Boulevard and Goodwood Boulevard intersection. The gravity line travels south along Sherwood until reaching 051-00300, and then west until reaching 050-00300A. The segment ends northwest of the Sherwood Forest Boulevard and Major Oaks Drive intersection.

The SGU-C-0005 (Oak Villa Blvd. – Monterey Blvd.) project also includes the replacement of the PS16 forcemain. This forcemain is located along Great Smokey Drive near JoAnne Drive. The forcemain travels southwest along Great Smokey Avenue until reaching DS16, located near the King Canyon Drive and Great Smokey Avenue intersection.

#### Scope

This project includes construction of approximately 380 feet of 18-inch gravity sewer upstream of PS 16, approximately 2,600 feet of 42-inch gravity sewer upstream of PS 50, and approximately 16,700 feet of 18-inch, 21-inch, 24-inch, 30-inch, and 42-inch gravity sewer upstream of PS 51. This project also includes approximately 950 feet of 8-inch forcemain from PS 16. The full scope of this project is shown in Table 3-6.

		Length	Existing Diameter	Proposed Diameter	
US Node	DS Node	(ft)	(in)	(in)	Comments
051-00222	051-00196	1,400	12	18	
	5040		4.0	10	Influenced by the SGU-C-0001 project
016-00002	PS16	380	10	18	in which PS 16 will be upgraded
051-00467	051-00196	1,500	12	18	
051-00196	051-00169	260	15	21	
051-00169	051-00168	680	15	24	
051-00168	051-00070	3,300	15	30	
					Crosses Choctaw Dr. and the railway just north of Choctaw Dr. This segment will need to be coordinated with the PS51 upgrade as part of the
051-00070	PS51	1,500	18	42	SGU-C-0001 Project
DS16	051-00169	3,200	10	18	
051-00364B	051-00070	3,300	15	24	
051-00369	051-00364B	1,600	15	21	
050-00837	050-00300A	2,600	24	42	
PS16	DS16	950	6	8	Forcemain

#### TABLE 3-6

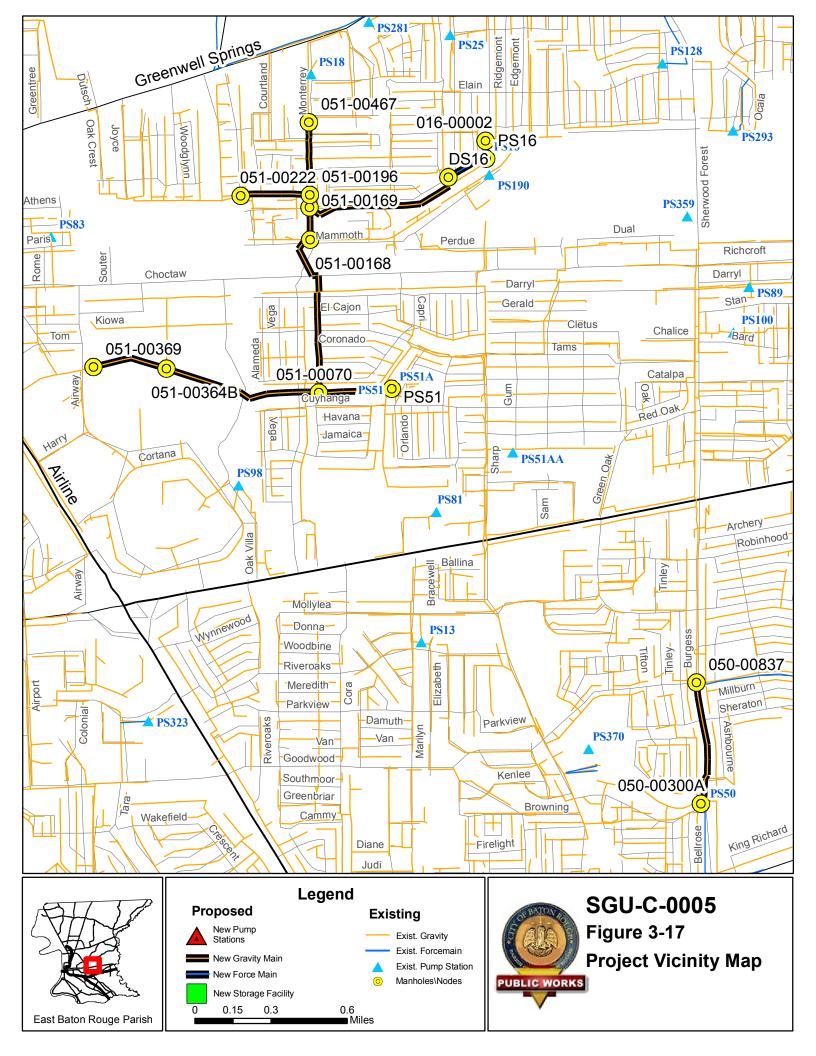
SGU-C-0005 (Oak Villa Blvd. – Monterey Blvd.)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$8,300,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2013.



# 3.2.6 SGC-C-0001 (Airline Highway/Florida Blvd. – PS 30 Improvements & New Pump Station)

#### **Project Description**

#### Purpose of the Project / Project Background

The SGC-C-0001 (Airline Highway/Florida Blvd. – PS 30 Improvements & New Pump Station) project includes the upgrade of PS 30 and the construction of a new PS to alleviate SSOs in their upstream basins. The Program hydraulic model shows a future wet weather peak flow that exceeds the existing maximum capacity of PS 30. The overall scope of this project has not changed from the January 2008 PDP, although the future peak wet weather flows for the two pump stations have changed slightly due to improved hydraulic modeling.

#### Location

The locations for the two pump stations are presented in Table 3-7.

#### Scope

The scope of this project is noted in Table 3-7. PS 30 will be replaced to alleviate overflows at and near this PS. The new PS will be located at manhole 058-01106, conveying all flow from the gravity system upstream directly to PS 58 through a new 30-inch forcemain will be constructed as part of project SGC-C-0003 (Essen Lane – Interstate 12). This new pump station and forcemain will be constructed to alleviate peak wet weather flow exceedances in the gravity system downstream of the new pump station.

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 30	Tom Drive, near intersection of Dallas Drive	624	1,111	
New PS (PS 5xx)	North of Tara Blvd. and Old Hammond Highway	New	19,554	Located at MH 058-01106

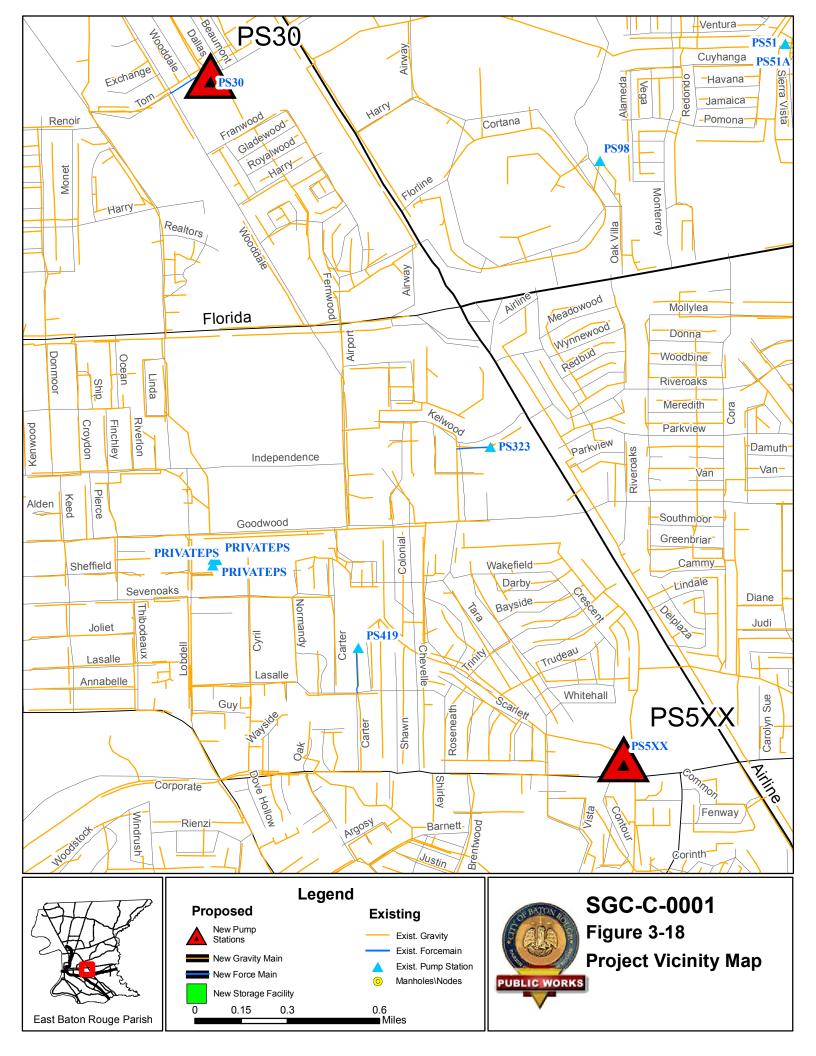
TABLE 3-7 SGC-C-0001 (Airline Highway/Florida Boulevard - PS30 Improvements & New Pump Station)

**Note:** The existing maximum capacity for the existing PS 30 was obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$ 4,600,000.

Scheduled Design Appropriation Year is 2010.

Scheduled Construction Appropriation Year is 2012.



# 3.2.7 SGC-C-0002 (Airline Highway - Jefferson Highway)

#### **Project Description**

#### Purpose of the Project / Project Background

The SGC-C-0002 (Airline Highway – Jefferson Highway) project includes the upsizing of gravity sewer upstream of PS 58 to alleviate SSOs in the vicinity of the gravity sewer and pump station.

#### Location

The gravity sewers to be replaced under the SGC-C-0002 project are located near the intersection of highways Interstate 10 and Interstate 12 and north toward Airline Highway.

Gravity segment 058-00034 to 058-00015 starts northeast of McCarroll Drive and Interstate 12. The gravity segment travels south crossing Interstate 12 until reaching 058-00029. The gravity segment then travels southeast until reaching 058-00020, and southwest along Essen Lane until reaching 058-00015, located northeast of the North Essen Heights Court and Essen Lane intersection.

Gravity segment 058-00586 to 058-00523 starts near the intersection of South Seracedar Street and Cedarcrest Avenue and travels south on Cedarcrest Avenue until reaching 058-00523. The gravity segment ends northeast of the Cedarcrest Avenue and Airline Highway Service Road intersection.

Section 058-00523 to 058-00501 starts northeast of Cedarcrest Avenue and Airline Highway Service Road intersection. The gravity segment travels southwest until reaching 058-00501, located west of the Airline Highway and Cedarcrest Avenue intersection.

Section 058-00501 to 058-00479 starts west of the Airline Highway and Cedarcrest Avenue. intersection. The gravity segment travels southwest until reaching 058-00430, south along Bea Drive until reaching 058-00440 near Jefferson Highway, west until reaching 058-00446, and south until reaching 058-00479, at Landsbury Avenue.

Gravity segment PS250DS to 058-00479 starts east of Landsbury Avenue and Hackberry Drive intersection. The gravity segment travels northwest until reaching 058-00479, located east of the Idlewood Drive and Ridgely Road intersection.

Gravity segment 058-00479 to 058-00490 starts east of the Idlewood Drive and Ridgely Road intersection. The gravity line travels northwest along a drainage canal until reaching 058-00490, located south of the Inniswold Road and Jefferson Highway intersection.

Segment 058-00490 to 05800017 starts south of the Inniswold Road and Jefferson Highway intersection. The gravity line travels northwest crossing Bluebonnet Boulevard and travels along the canal. At 058-00499, the gravity segment travels southwest along Bluebonnet Road until reaching 058-00215. At the intersection of Oliphant Road and Bluebonnet Road, the segment travels west to the drainage canal west of Drusilla Drive. The segment then travels north along the canal, crosses the canal, and ends at 058-00017 near North Essen Heights Court and East Essen Heights Court intersection.

Gravity segment 058-01316 to 058-01310 starts west of North Donmore Avenue between intersections with Goya Avenue and Cezanne Avenue. The gravity segment travels south along Donmore Avenue until reaching 058-01310 located west of North Donmore Avenue between intersections with Rembrandt Avenue and Harry Avenue.

Gravity segment 058-01318 to 058-01316 starts west of North Donmore Avenue between intersections with Renoir Avenue and Cezanne Avenue. The gravity segment travels south

along Donmore until reaching 058-01316, located west of North Donmore Avenue between intersections with Goya Avenue and Cezanne Avenue.

Gravity segment 058-03110 to 058-03116 starts near the Wooddale Boulevard and Tom Drive intersection. The gravity segment travels southwest until reaching 058-03116, located east of the Tom Drive and Lobdell Boulevard intersection.

Gravity segment 058-03116 to 058-03117 starts east of the Tom Drive and Lobdell Boulevard intersection. The gravity segment travels northwest until reaching 058-03117.

Gravity segment 058-03117 to 058-03118 starts east of the Tom Drive and Lobdell Boulevard intersection. The gravity segment travels west until reaching 058-03118.

Gravity segment 058-03118 to 058-03124 starts at the Tom Drive and Lobdell Boulevard intersection. The gravity segment travels west until reaching 058-03124, located west of Tom Drive and Lobdell Boulevard intersection.

Gravity segment 058-04039 to 058-04041A starts near the cul-de-sac of W E Heck Court and travels west through an industrial area to manhole 058-04041A, which is located near the intersection of Cedarcrest Avenue and Airline Highway.

Gravity segment 250-00026 to PS250 starts on a drainage path southeast of the intersection of Jefferson Highway and Auto Plex Drive, near an apartment complex. The segment then parallels Jefferson Highway along the drainage path to PS 250, which is located just south of the intersection of Jefferson Highway and Cal Road.

#### Scope

This project includes approximately 25,800 feet of 15-inch, 18-inch, 21-inch, 24-inch, 27-inch, 36-inch, and 42-inch gravity sewer upstream of PS 58, and approximately 880 feet of 12-inch gravity sewer upstream of PS 250, as detailed in Table 3-8.

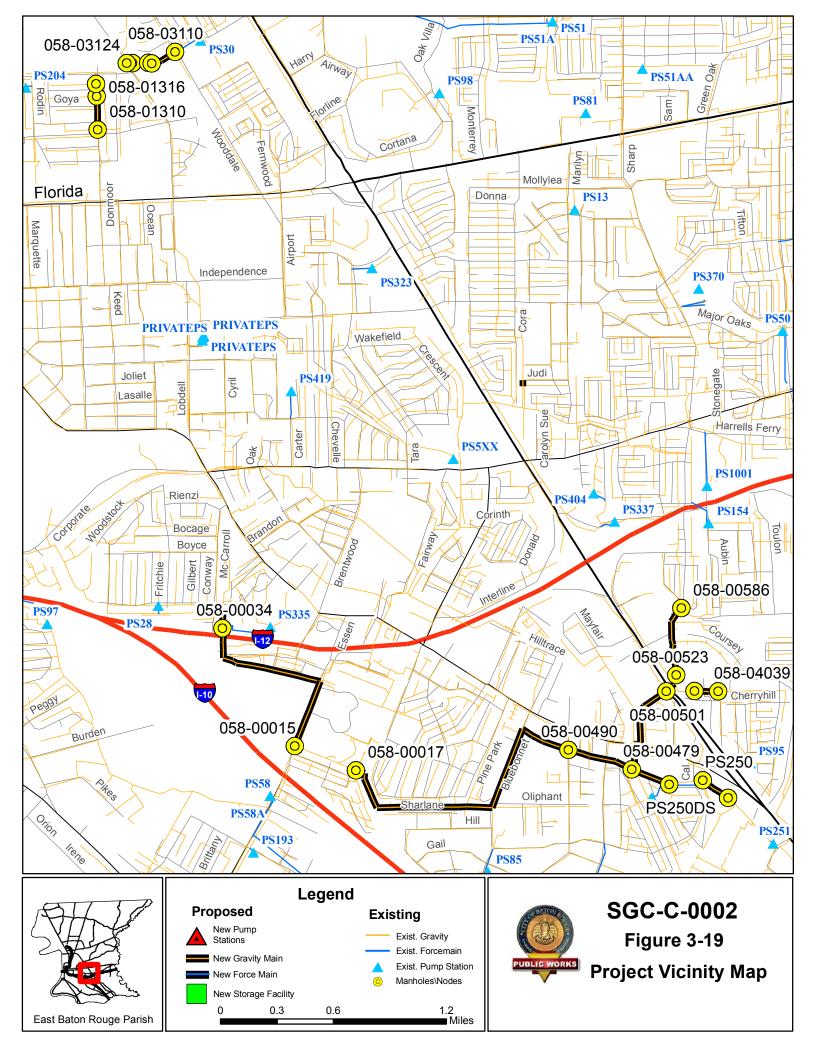
		Length	Existing	Proposed	0
US Node	DS Node	(ft)	Diameter (in)	Diameter (in)	Comments
058-00034	058-00015	6,300	18	24	Segment crosses Interstate 12
058-00586	058-00523	1,900	12	18	
058-00523	058-00501	640	12 and 15	21	
058-00501	058-00479	2,700	15	27	
PS250DS	058-00479	1,100	8 and 15	18	
058-00479	058-00490	1,900	15 and 18	36	
					Segment has a canal crossing near
058-00490	058-00017	8,200	18 and 24	42	Drusilla Drive
058-01316	058-01310	881	10	15	
058-01318	058-01316	349	10	15	
058-03110	058-03116	722	12	15	
058-03116	058-03117	121	12	15	
058-03117	058-03118	419	12	15	
058-03118	058-03124	74	12	15	
058-04039	058-04041A	546	12	15	
250-00026	PS250	884	10	12	

#### TABLE 3-8

SGC-C-0002 (Airline Highway - Jefferson Highway)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$11,800,000. Scheduled Design Appropriation Year is 2009. Scheduled Construction Appropriation Year is 2012.



### 3.2.8 SGC-C-0003 (Essen Lane - Interstate 12)

### **Project Description**

### Purpose of the Project / Project Background

The SGC-C-0003 (Essen Lane – Interstate 12) project includes the upsizing of gravity sewer upstream of PS 58. The gravity sewer upsizing is being completed to alleviate SSOs upstream of PS 58.

This project also includes the construction of a new forcemain from the new pump station, described in SGC-C-0001 (Airline Highway/Florida Blvd. – PS 30 Improvements & New Pump Station), to the manifold point with the new forcemain from PS 50, described in SGU-C-0002 (Airline Highway – Interstate 12). This project also includes the new forcemain from the manifold point to PS 58. The new forcemains are being included in this project to alleviate SSOs upstream of PS 58.

### Location

Gravity segment 058-01310 to 058-00935 starts at Harry Drive and Donmoor Avenue and travels south along Donmoor Avenue until reaching 058-00935 The gravity segment ends north of the Florida Boulevard and Donmore Avenue intersection.

Gravity segment 058-01830 to 058-01826 starts on the west side of Fernwood Avenue. The gravity line travels south along Fernwood Avenue until 058-01826, located near the Florida Boulevard and Fernwood Avenue intersection.

Gravity segment 058-01335 to 058-00890 starts north of Lils Court and Sevenoaks Avenue intersection. The gravity line travels north past the end of Lils Court at 058-01337, then travels southeast until reaching 058-00890, located near the north end of Carter Avenue.

Gravity segment 058-00890 to 058-01132 starts south of Thurman Drive, just north of the drainage canal. The segment travels north on Thurman Drive until reaching 058-01132, located south of the Thurman Drive and Goodwood Boulevard intersection.

Gravity segment 058-05074 to 058-05006 starts on Murphy Drive north of Murphy Drive and Richards Drive intersection. The gravity line travels south until reaching 058-05005, located south of the Murphy Drive and Richard Drive intersection.

Gravity segment 058-05006 to 058-00349 starts south of Murphy Drive and Richards Drive intersection. The gravity line travels south until reaching 058-00349, located near the north side of Interstate 12.

Gravity segment 058-00369 to 058-00004B starts northeast of Marcel Avenue and Plaza Drive intersection. The segment travels east down Marcel Avenue, and then southeast across a golf course, terminating just east of Fairway Drive at 058-00004B.

Gravity segment 058-01171 to 058-01159 starts on Brentwood Drive at the edge of a golf course. The gravity line travels east across a golf course and crossing Fairway Drive until reaching 058-01157. The line continues north until reaching 058-01157.

Gravity segment 058-00497 to 058-00499 starts along Bluebonnet Road between intersections with Jefferson Highway and French Village Avenue. The gravity line travels south along Bluebonnet Road until reaching 058-00499.

Gravity segment 058-00481 to 058-00483 starts near the Floynell Drive and Ridgely Road intersection. The gravity line travels north until reaching 058-00483 near the drainage canal.

Gravity segment 058-00172 to 058-00173 starts south of the Florida Boulevard and Marquette Avenue intersection. The gravity line travels west, parallel to Florida Boulevard, until reaching 058-00173.

Gravity segment 058-00173 to 058-00940A starts southwest of the Florida Boulevard and South Carrollton Avenue intersection. The gravity line travels north, crossing Florida Boulevard, until reaching 058-00940A, located north of Florida Boulevard between intersections with Marquette Avenue and South Carrollton Avenue.

The forcemain from the new pump station (described in SGC-C-0001 (Airline Highway/Florida Blvd. – PS 30 Improvements & New Pump Station) project) starts at Tara Boulevard north of Old Hammond Highway and runs south down Fairway Drive. The forcemain then manifolds with the forcemain built in the SGU-C-0002 (Airline Highway – Interstate 12) project on the north side of Jefferson Highway and Interstate 12. The forcemain from the manifold site to PS58 starts near the intersection of Jefferson Highway and Interstate 12, goes west along the Interstate 12 ROW, and travels southerly down the ROW of Essen Lane to the wet well of PS58 on Essen Lane.

### Scope

This project includes construction of approximately 10,100 feet of 10-inch, 12-inch, 15-inch, 18-inch, 21-inch, and 24-inch gravity sewer upstream of PS 58 and two new forcemains, as noted in Table 3-9.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
058-01310	058-00935	2,000	10	18	
058-01830	058-01826	530	10 and 15	21	
058-01335	058-00890	460	8 and 10	15	
058-00890	058-01132	450	12	18	Includes a drainage cancel crossing
058-05074	058-05006	370	8	15	
058-05006	058-00349	270	12	18	
					Portion of these gravity
058-00369	058-00004B	2,900	18	24	segments go through a golf course.
058-01171	058-01159	1,800	8	12	
058-00497	058-00499	520	8	12	
058-00481	058-00483	290	8	12	
058-00172	058-00173	330	8	10	
058-00173	058-00940A	130	8	12	Includes a crossing under Florida Boulevard

### TABLE 3-9

SGC-C-0003 (Essen Lane – Interstate 12)

# TABLE 3-9 SGC-C-0003 (Essen Lane – Interstate 12)

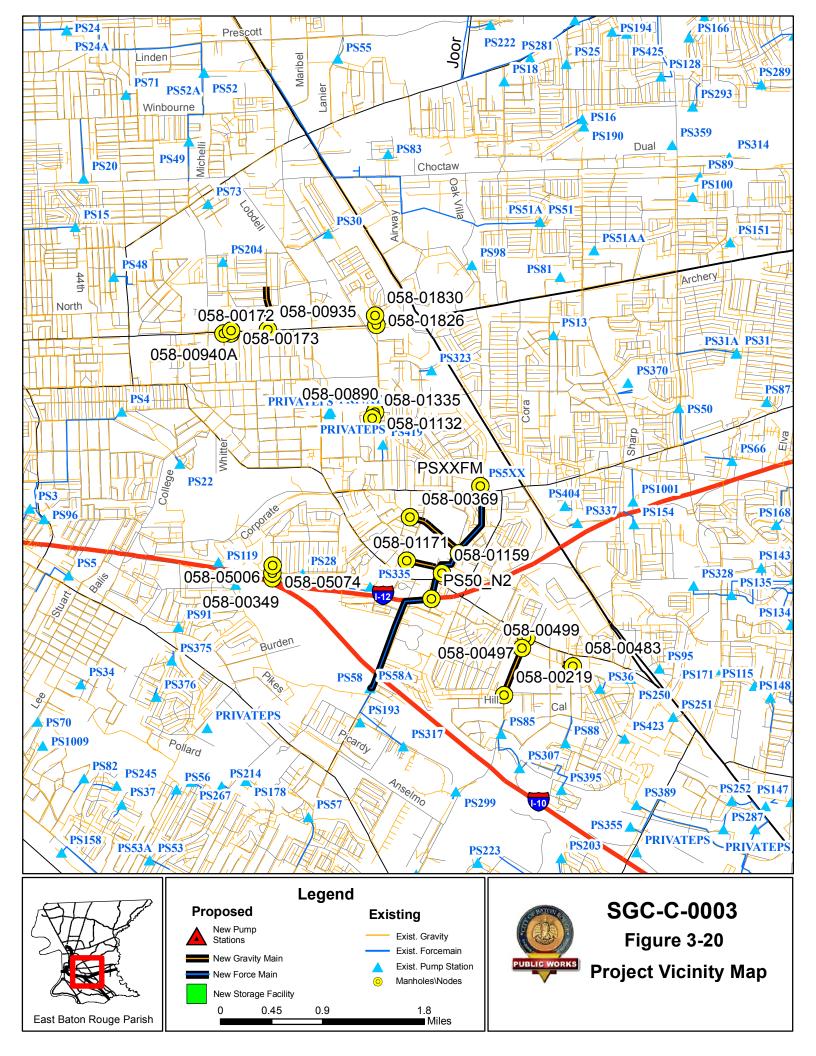
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
New PS (described in SGC-C-0001 (Airline Highway/Florida Blvd. – PS 30 Improvements & New PS)	Manifold Pt w/ new FM from PS 50	6,500	New	30	forcemain
Manifold Pt w/ new FM from PS 50	PS58	5,600	New	48	forcemain; Crosses both Interstate 12 and Interstate 10

Note: The pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$6,700,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2012.



### 3.2.9 SGC-C-PS58A (Staring Lane – Overflow Pump Station)

### **Project Description**

### Purpose of the Project / Project Background

The SGC-C-PS58A (Staring Lane – Overflow Pump Station) includes the construction of a new overflow pump station for PS 58 (PS 58A), which will pump flow directly to the South WWTP. The purpose of this project is to relieve SSOs at PS58 as well as in the respective upstream basins. This project is related to SGC-C-PS58FM-A (Staring Lane FM-A – Highland to Burbank), SGC-C-PS58FM-B (Staring Lane FM B – Perkins to Highland), and SGC-C-PS58FM-C (Staring Lane FM C – PS 58 to Perkins), which involve the construction of the forcemain from the new PS 58 overflow pump station to the South WWTP.

### Location

The location of the new PS 58A is given in Table 3-10.

### Scope

The current PS 58 will not have enough pumping capacity to handle the predicted future wet weather peak flow. Rather than replace the entire PS 58, an overflow pump station (PS 58A) is proposed in the scope shown in Table 3-10.

#### TABLE 3-10

SGC-C-PS58A (Staring Lane - Overflow Pump Station)

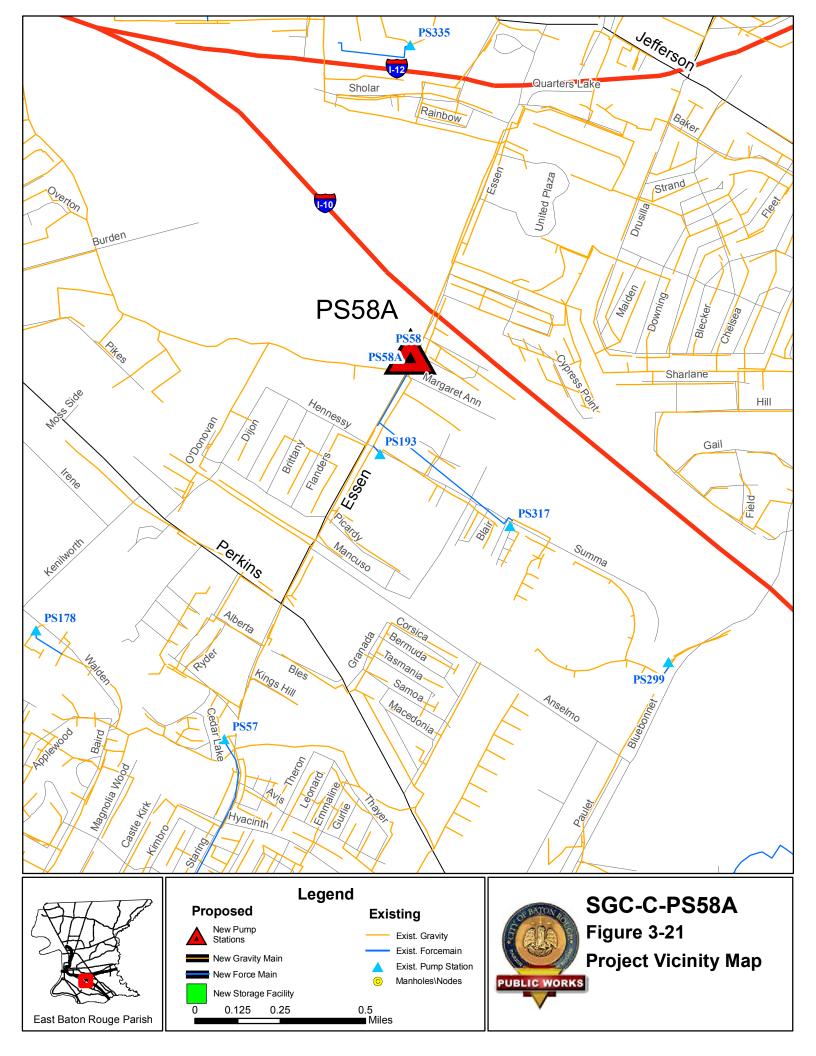
PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS58A	Intersection of Essen Lane and Essen Park	New	61,107

Note: The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$10,900,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2010.



### 3.2.10 SGC-C-PS58FM-A (Staring Lane FM-A – Highland to Burbank)

### **Project Description**

### Purpose of the Project / Project Background

The SGC-C-PS58FM-A (Staring Lane FM-A – Highland to Burbank) project includes the construction of a portion of the new forcemain from the PS 58A overflow pump station to the South WWTP. The purpose of this project is to relieve SSOs at PS58 as well as in the respective upstream basins. The construction of the direct forcemain between PS 58A and the South WWTP alleviates the existing downstream gravity pipe, and allows the capacity needed for future flows in the Staring Lane area.

This portion of the new forcemain is being coordinated with the Green Light Program (GLP) project for the Staring Lane Extension.

### Location

This portion of the new forcemain runs along Staring Lane Extension from Highland Road to Burbank Road (to the South WWTP).

### Scope

The scope of this project is shown in Table 3-11.

#### TABLE 3-11

SGC-C-PS58FM-A (Staring Lane FM-A - Highland to Burbank)

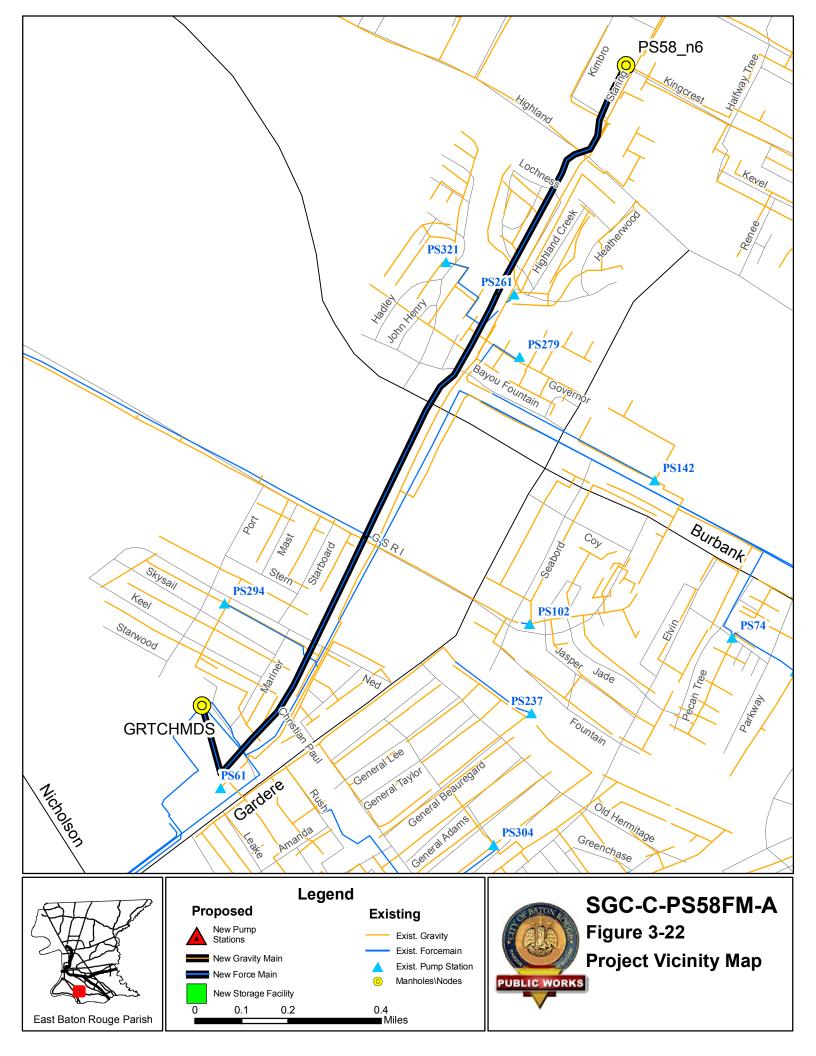
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
Highland Road	South WWTP	2960	New	64	Coordinated under GLP

Note: The pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$4,200,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2009.



### 3.2.11 SGC-C-PS58FM-B (Staring Lane FM-B – Perkins to Highland)

### **Project Description**

### Purpose of the Project / Project Background

The SGC-C-PS58FM-B (Staring Lane FM-B – Perkins to Highland) project includes the construction of a portion of the new forcemain from the PS 58A overflow pump station to the South WWTP. The purpose of this project is to relieve SSOs at PS58 as well as in the respective upstream basins. The construction of the direct forcemain between PS 58A and the South WWTP alleviates the existing downstream gravity pipe, and allows the capacity needed for future flows in the Staring Lane area.

This portion of the new forcemain is being coordinated with the Green Light Program project for improvements to Staring Lane.

### Location

This portion of the new forcemain from PS58 to the South WWTP runs along Staring Lane from Perkins Road to Highland Road.

### Scope

The scope of the project is shown in Table 3-12. The forcemain increases in size at Boone Drive due to the addition of flow at this point from a new overflow pump station at PS 53, described in Project SGL-C-0002 (Multiple Pump Stations – Highland Road – Kenilworth Parkway).

#### TABLE 3-12

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
Boone	Highland	3320	New	64	Coordinated under GLP
Perkins	Boone	7180	New	60	Coordinated under GLP

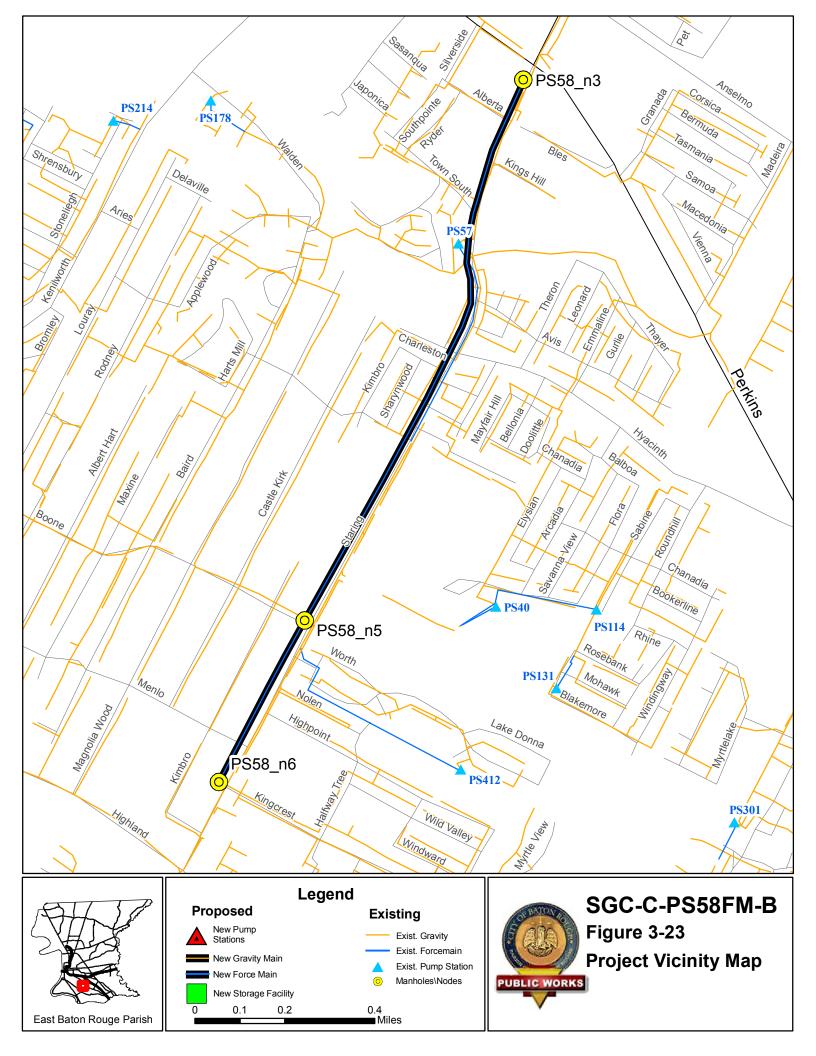
SGC-C-PS58FM-B (Staring Lane FM-B - Perkins to Highland)

**Note:** The pipe lengths were obtained from the BTRSSO hydraulic model.

#### Total Estimated Construction Cost is \$14,000,000.

Design is appropriated with SGC-C-PS58FM-A (Staring Lane FM A – Burbank to Highland).

Scheduled Construction Appropriation Year is 2010.



### 3.2.12 SGC-C-PS58FM-C (Staring Lane FM-C – PS 58 to Perkins)

### **Project Description**

### Purpose of the Project / Project Background

The SGC-C-PS58FM-C (Staring Lane FM-C – PS 58 to Perkins) project involves the construction of a portion of the new forcemain from the PS 58A overflow pump station to the South WWTP. The purpose of this project is to relieve SSOs at PS 58 as well as in the respective upstream basins. The construction of the direct forcemain between PS 58A and the South WWTP alleviates the existing downstream gravity pipe, and allows the capacity needed for future flows in the Staring Lane area.

### Location

This portion of the new forcemain starts at the intersection of Essen Lane and Essen Park and goes in a southerly direction along Essen Lane to Perkins Road.

### Scope

The scope of this project is shown in Table 3-13.

TABLE 3-13

SGC-C-PS58FM-C (Staring Lane FM-C - PS 58 to Perkins)

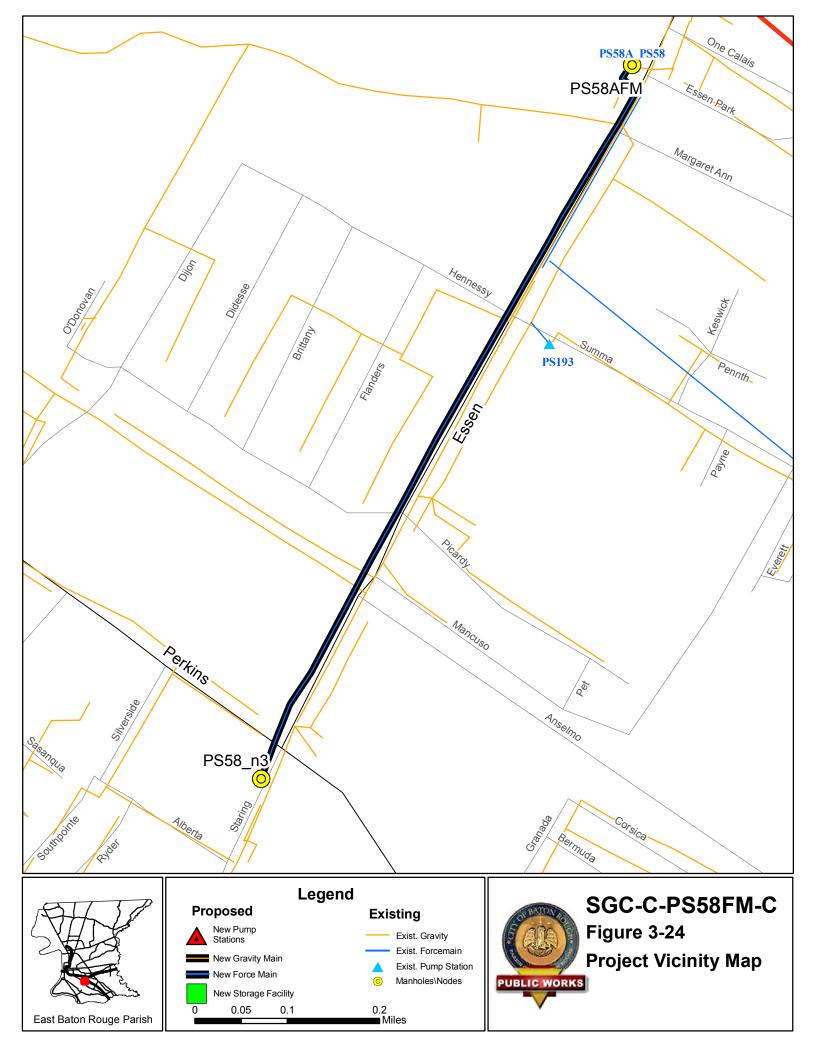
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS58	Perkins	4240	New	60	

Note: The pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$10,000,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2010.



### 3.2.13 SGC-C-PS119 (Citiplace/Essen Area PS 119 Forcemain Improvements)

### **Project Description**

### Purpose of the Project / Project Background

The SGC-C-PS119 (Citiplace/Essen Area PS 119 Forcemain Improvements) project includes the construction of a new 10,500 foot-long force main from PS 119 to PS 58. Due to the much longer forcemain, PS 119 needs to be upgraded, even though the future peak wet weather flow is less than the existing maximum capacity.

### Location

PS 119 is located on the north side of Highway I-10 on the western side of the creek near the movie theater and Citiplace Drive.

The new forcemain from PS 119 to PS 58 starts on the west side of the creek north of I-10, then goes easterly parallel to Interstate 10. The force main then runs southeasterly underneath both lanes of Interstate 12, and under the exit ramp from Interstate 10 westbound to Interstate 12 eastbound. The new force main then travels southeasterly parallel to Interstate 10. The force main crosses under Interstate 10 through an existing tunnel underneath the highway, then follows Essen Lane to PS 58, which is located at Essen Lane and Essen Park.

### Scope

The scope of the project is shown in Table 3-14 and Table 3-15.

#### TABLE 3-14

SGC-C-PS119 (Citiplace/Essen Area PS 119 Forcemain Improvements) – Pump Station Scope

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	
PS 119	Citiplace Drive near the movie theater	2,430	1561	

TABLE 3-15

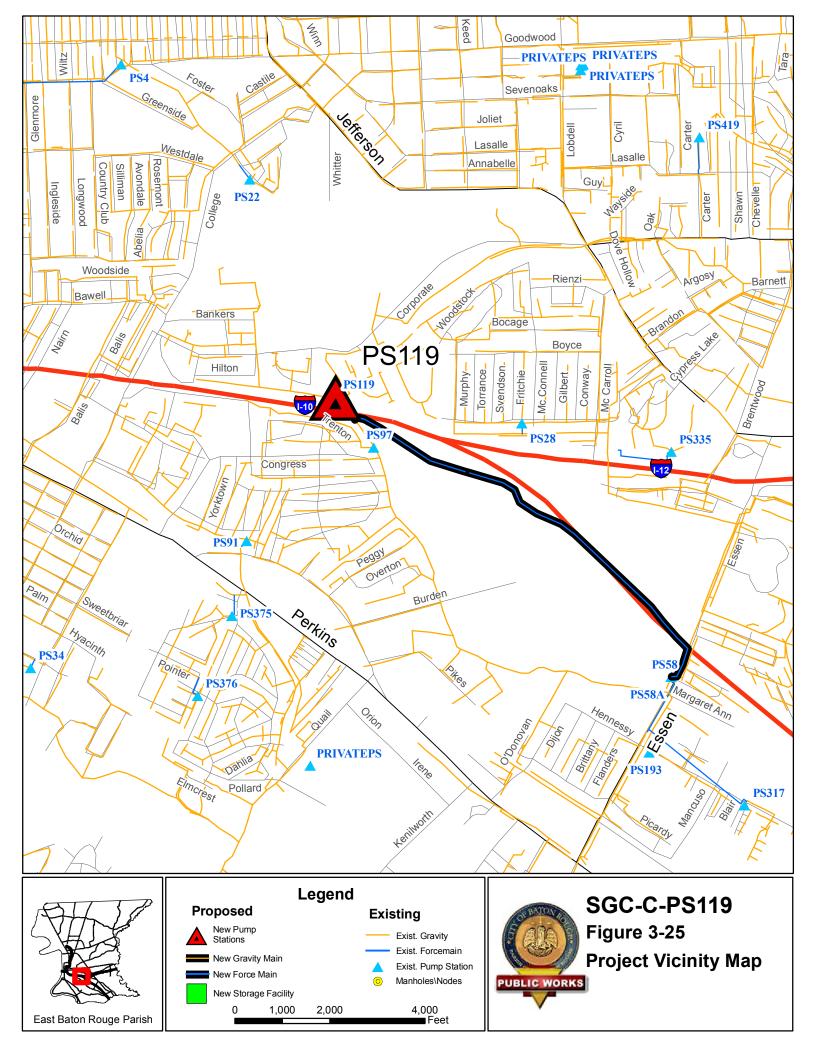
US Node			Comments		
PS119	PS58	10,500	New	12	New forcemain segment

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model. The pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$2,800,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2009 (already appropriated).



### 3.2.14 SGL-C-0001 (Essen/Staring Area PS 57 Improvements)

### **Project Description**

This project has been deleted from the PDP due to improved hydraulic modeling.

# 3.2.15 SGL-C-0002 (Multiple Pump Stations – Highland Road – Kenilworth Parkway)

### **Project Description**

### Purpose of the Project / Project Background

The SGL-C-0002 (Multiple Pump Stations – Highland Road – Kenilworth Parkway) project includes the upsizing of PS 120, PS 329, PS 40, PS 53A, PS 56, PS 68, and PS 102 to alleviate SSOs at and near the pump stations and in their respective upstream basins. The BTRSSO hydraulic model also predicts that these pump stations will exceed their existing capacities at the predicted future peak wet weather flows. PS 102 was originally slated as a master plan pump station but was added to this PDP. The future peak wet weather flows in this PDP compared to the January 2008 PDP have changed due to improved hydraulic modeling.

### Location

The locations of the pump stations are shown in Table 3-16.

### Scope

The scope of the project is shown in Table 3-16. All pump stations except PS 53A are replacements of existing pump stations. PS 53 A is anew overflow pump station for PS 53, which will alleviate upstream overflows and not require PS 53 to be upsized. PS 53A will have a dedicated forcemain, described in SGL-C-0003 (Essen Lane – Highland Road), through which it will pump to the manifold with the new forcemain from PS 58A, described in SGC-C-PS58FM-B (Staring Lane FM-B – Perkins to Highland).

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS 120	Helvetia Drive, near int of Bancroft Way	417	507
PS 329	Kenilworth Parkway, near int of Burbank Drive	903	1,180
PS 40	Southlawn Drive, near int of Arcadia Drive	833	799
PS 53A	Boone Ave, near int of Chippenham Drive	6,041	11,458
PS 56	Chandler Drive, near int of Highland Park Drive	1,250	6,423
PS 68	Burbank Drive, near int of Jennifer Jean Drive	833	1,132
PS 102	GSRI Ave, near int of Jasper Ave.	400	833

TABLE	3-16

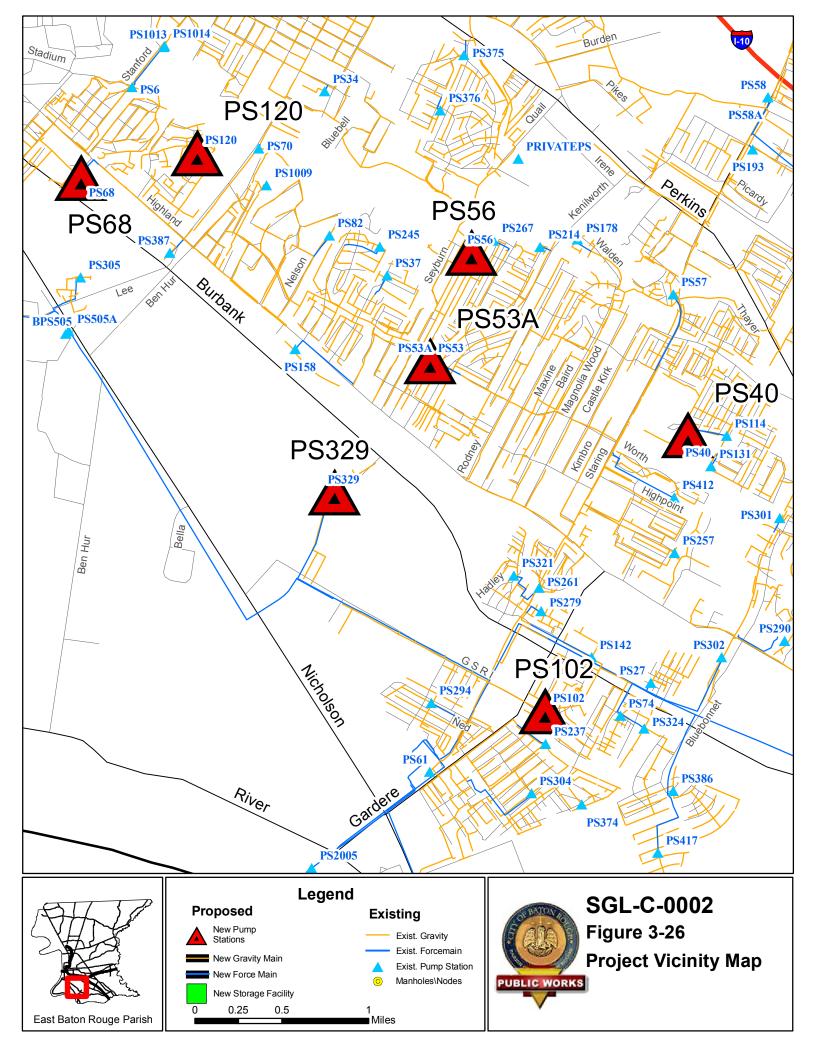
SGL-C-0002 (Multiple PS at Highland Road and Kenilworth Parkway)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$7,000,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2012.



### 3.2.16 SGL-C-0003 (Essen Lane – Highland Road)

### **Project Description**

### Purpose of the Project / Project Background

The SGL-C-0003 (Essen Lane – Highland Road) project includes the upsizing of gravity sewers upstream of PS 57, PS 61, PS 302, PS 329, and PS 40. This project also includes upsizing of the forcemain from PS 329. A new forcemain from PS 53A, described in SGL-C-0002 (Multiple Pump Stations – Highland Road – Kenilworth Parkway), to the manifold point with the new PS 58A forcemain, described in SGC-C-PS58FM-B (Staring Lane FM-C – Perkins to Highland) is also included in this project.

### Location

The SGL-C-0003 project is roughly bound by I-10 in the north, Nicholson Drive in the south, Winterhue Drive in the east, and Wylie Drive in the west.

Gravity segment 057-00117 to 057-00080 starts south of the Thoreau Drive and Baird Drive intersection, and goes north along Baird Drive and back over the water channel. This segment bends east along the water channel, then travels north, parallel to Walden Road. Gravity segment 057-00080 to 057-00003 starts southeast of the intersection of Walden Road and Applewood Road and travels in an easterly direction over a drainage canal toward Lake Calais Court. The gravity segment then runs parallel to Clear Lake Avenue south of the houses on that street and next travels in an easterly direction to the west side of Staring Lane. Segment 057-00003 to 057-00001 runs northerly along Staring Lane to PS57.

Gravity segment 057-00330 to 057-05069 starts east of Madeira Drive between Perkins Road and Vienna Avenue. The gravity segment travels southeast to the back of nearby houses that are along Madeira Drive. The segment then turns southwest and ends just north of Perkins Road. Segment 057-05069 to 057-00367 starts north of Perkins Road and travels southwest to the southern side of Perkins Road. Gravity segment 057-00367 to 057-00368 runs northwest from Perkins Road on the north side of a drainage canal. Gravity segments 057-00368 to 057-00495, 057-00495 to 057-00371D, 057-00371D to 057-00371E, and 057-00371E to 057-00003 follow the northern side of the drainage canal west and north to Staring Lane.

Gravity segment 040-00012 to PS 40 is located west of Elysian Drive and goes in a southwesterly direction past Southlawn Drive until reaching 040-00002. The segment then travels southeast to PS 40, located southwest of Southlawn Drive and Arcadia Drive intersection.

Gravity segments 329-00016 to 329-00008 and 329-00008 to PS 329 are located in a wooded area off GSRI Avenue. 329-00016 to 329-00008 runs northerly from Tracy Lee Drive. Segment 329-00008 to PS 329 runs northerly to PS 329.

Gravity segment PS102DS to 061-00364 is located along GSRI Road, starting at Seaboard Drive and running northwesterly past Gardere Lane.

Gravity segment 302-05073 to 302-05052 runs down Lakeview Drive and heads in a southeasterly direction to the corner of Lakeview Drive and Oak Hills Parkway. Segment 302-05052 to 302-05031 starts at Lakeview Drive and Oak Hills Parkway and heads in a southerly direction down Oak Hills Parkway, cutting southwesterly to Pastureview Drive. The segment continues southeasterly past Pastureview Drive to Willow End Drive, which it follows easterly to Mossy Oak Avenue. It then turns southerly and ends at Highland Road.

Segment 302-05031 to 302-05010 goes westerly along Highland Road to manhole 302-05010, which is halfway between Huntington Drive and Grand Lakes Drive. Segment 302-05010 to 302-05007A runs along Highland Road to the intersection of highland Road and Rue de Laplace. Segment 302-05007A to 302-05004 starts at Rue de Laplace and heads up Highland Road westerly to Shady Lake Place. Segment 302-05004 to 302-05002 runs along Highland Road between Shady Lake Place and Bluebonnet Boulevard.

Gravity segment 061-00102 to 061-00407 is located on Boone Avenue between the first manhole southeast of Daventry Drive and Staring Lane.

Gravity segment 061-00351 to 061-00302 starts south of the cul-de-sac of Southlawn Drive and heads westward to Staring Lane.

Gravity segment 061-00365C to 061-00384 begins southeast of the intersection of Burbank Road and Gardere Lane and heads northwest to the intersection. Gravity segments 061-00384 to 061-00382 and 061-00382 to 061-00378 head roughly south parallel to Gardere Lane and turn roughly west to intersect with the existing interceptor sewer near the intersection of Gardere Lane and GSRI Road.

The PS 329 forcemain will be replaced under this project. This forcemain starts at PS 329, which is located in a wooded area in a northerly direction from GSRI Avenue, then runs south to GSRI Avenue, and turns easterly on GSRI Avenue to Gulf South Parkway.

The PS 53A forcemain is a new forcemain from PS 53 to the manifold with the new PS 58A forcemain, as described above. This forcemain begins at PS 53A, which will be located near the intersection of Boone Avenue and Chippenham Drive, and runs southeasterly along Boone Avenue to Staring Lane.

### Scope

This project includes construction of approximately 6,800 feet of 15-inch, 18-inch, 21-inch, 27-inch, 30-inch, 36-inch, and 42-inch gravity sewer upstream of PS 57, approximately 1,200 feet of 15-inch gravity sewer upstream of PS 40, approximately 2,000 feet of 15-inch and 18-inch gravity sewer upstream of PS 329, approximately 7,800 feet of 12-inch, 15-inch, 18-inch, 24-inch, and 27-inch gravity sewer upstream of PS 302, and approximately 4,100 feet of 15-inch, 18-inch, and 36-inch gravity sewer upstream of PS 61. This project also includes construction of approximately 4,300 feet of 10-inch forcemain from PS 329 to replace the existing forcemain. A new forcemain from PS 53A, as described above, is also included in this project. Table 3-17 shows the detailed scope of this project.

			Existing	Proposed	
US Node	DS Node	Length (ft)	Diameter (in)	Diameter (in)	Comments
					This segment goes underneath a water
057-00117	057-00080	710	10 and 12	18	channel.
057-00080	057-00003	2,200	12	21	
057-00003	057-00001	180	24	42	Segment includes crossing of a drainage canal.
057-00330	057-05069	460	8	15	
057-05069	057-00367	170	10	15	
057-00367	057-00368	190	10	18	
057-00368	057-00495	700	10	21	
057-00495	057-00371D	1,345	12	27	
057-00371D	057-00371E	230	12	30	
057-00371E	057-00003	664	12	36	
					PS 40 will be upgraded under SGL-C-0002
					(Multiple PS – Highland Road – Kenilworth
040-00012	PS 40	1,200	8	15	Parkway)
329-00016	329-00008	1,700	10	15	
					PS 329 will be upgraded under SGL-C- 0002 (Multiple PS – Highland Road –
					Kenilworth Parkway) – forcemain
329-00008	PS 329	300	10	18	replacement described below.
PS102DS	061-00364	930	8	15	
302-05073	302-05052	660	8	12	
302-05052	302-05031	1,700	8	15	
302-05031	302-05010	1,800	15 to 18	18	
302-05010	302-05007A	950	18	24	
302-05007A	302-05004	1,200	18	24	
302-05004	302-05002	1,500	18	27	
061-00351	061-00302	1,500	12	18	
061-00365C	061-00384	131	30	36	
061-00384	061-00382	390	24	36	
061-00382	061-00378	1146	24	36	
					Forcemain – PS 329 replacement is
PS 329	PS329DS	4,300	8	10	described in SGL-C-0002 (Multiple PS – Highland Road – Kenilworth Parkway)
10020	Manifold point	7,000	5		rightere road roamworth artway)
	with Staring				New forcemain from new PS 53A, which is
	Lane FM (PS	0040	New	04	described in SGL-C-0002 (Multiple PS –
PS 53A	58A FM)	6216	New	24	Highland Road – Kenilworth Parkway)

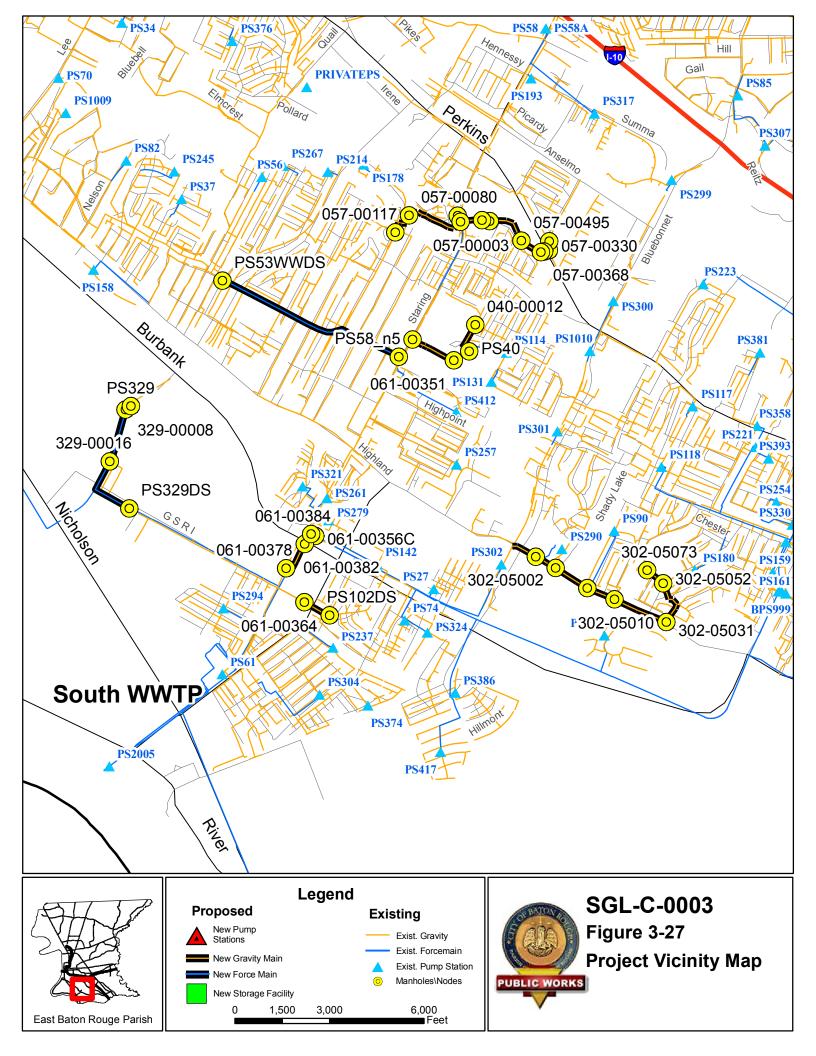
#### TABLE 3-17 SGL-C-0003 (Essen Lane - Highland Road)

Note: The existing pipe sizes and lengths and new pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$9,500,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2013.



### 3.2.17 SGL-C-0004 (Highland Road – Lee Drive)

### **Project Description**

### Purpose of the Project / Project Background

The SGL-C-0004 (Highland Road – Lee Drive) project includes the upsizing of gravity sewers upstream of PS 53, which will assist with alleviating upstream SSOs. This project also includes the forcemain from PS 56. PS 56 is also being upsized to alleviate overflows, so the forcemain needs to be upsized to reduce the head conditions at the increased flows. PS 56 is described in SGL-C-0002 (Multiple Pump Stations – Highland Road – Kenilworth Parkway).

### Location

The SGL-C-0004 project includes upgrades of gravity sewers near Highland Road between Bromley Road in the east and Delgado Drive in the west.

Gravity segment PS56DS to 053-00003 is located between Wylie Drive and Highland Park Drive. The northern boundary of this line is Chandler Avenue and the southern boundary is Boone Avenue.

Gravity segments 053-00177 to 053-00168 and 053-00168 to 053-00144 starts near the intersection of Leycster Drive and Kenilworth Parkway and runs southwest behind houses between Kenilworth Parkway and Chippenham Drive to Boone Avenue

Gravity segment 053-00168 to 053-00144 runs behind houses between Kenilworth Parkway and Chippenham Drive between Leycester Drive and Boone Avenue.

Gravity segment 053-00421 to 053-00407 starts on Highland Road between Henry Adams Road and Clara Drive and runs in a southeasterly direction down Highland Road to manhole 053-00407, which is just past Lee Drive. Segment 053-00407 to 053-00316 starts on Highland Road just past Lee Drive and runs in a southeasterly direction to Burgin Avenue. At Burgin Avenue, this segment goes in a northeasterly direction. At Boston Street, it turns southeasterly again. At McDonald Avenue, the line turns to go northeasterly, then turns again southeasterly onto Menlo Drive. The segment goes down Menlo Drive to manhole 053-00316, which is halfway between Leeward Drive and Sunset Boulevard.

Gravity segments 053-00316 to 053-00016 and gravity segment 053-00016 to 053-00014 starts on Menlo Drive halfway between Leeward Drive and Sunset Boulevard and travels southeasterly along Menlo Drive past the intersection of Nelson Drive with Menlo Drive. The segment continues past the end of Menlo Drive behind a line of houses, and then the segment turns northerly to manhole 053-00014, which is northwest of Woodstone Drive.

Gravity segment 053-00010A to 053-00003 starts northwest of the Woodgate Boulevard and North Woodgate Court intersection and travels southeasterly direction along a drainage canal between Woodgate Court and Millgate Place to manhole 053-00003, which is located on Boone Avenue halfway between Wylie Drive and Highland Park Drive.

Gravity segment 053-00429 to 053-00410 runs parallel to Bancroft Way, set off southeasterly half a block. The segment starts northeast of Timbercove Street and ends at Highland Road.

Gravity segment 068-00050 to PS 68 begins near the cul-de-sac on the northern end of Jennifer Jean Drive and follows a servitude east in between Highland Road and Burbank

Drive to PS 68, which is located just south of the intersection of Highland Road and Delgado Drive

The forcemain from PS 56 begins at PS 56, which is roughly located at the intersection of Highland Park Drive with Chandler Drive, and continues along Highland Park Drive for approximately 540 feet.

### Scope

This project includes construction of approximately 18,000 feet of 18-inch, 21-inch, 24-inch, 27-inch, 30-inch, and 36-inch gravity sewer upstream of PS 53 as well as the forcemain from PS 56. Table 3-18 shows the detailed scope for this project.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS56DS	053-00003	2.000	10	24	This segment includes a canal
		2,900	18		crossing.
053-00177	053-00168	325	10	18	
053-00168	053-00144	1,600	10	21	
053-00421	053-00407	3,500	12	18	
053-00407	053-00316	3,500	12 or 18	24	
053-00316	053-00016	1,800	18	27	
053-00016	053-00014	470	18	30	
			•		This segment includes a canal
053-00010A	053-00003	2,400	24	36	crossing.
053-00429	053-00410	1,800	12	18	
068-00050	PS68	1,211	10	18	
PS56FM	PS56DS	540	12	18	Forcemain from PS 56 (see Project SGL-C-0002 (Multiple PS – Highland Road – Kenilworth Parkway) for PS description)

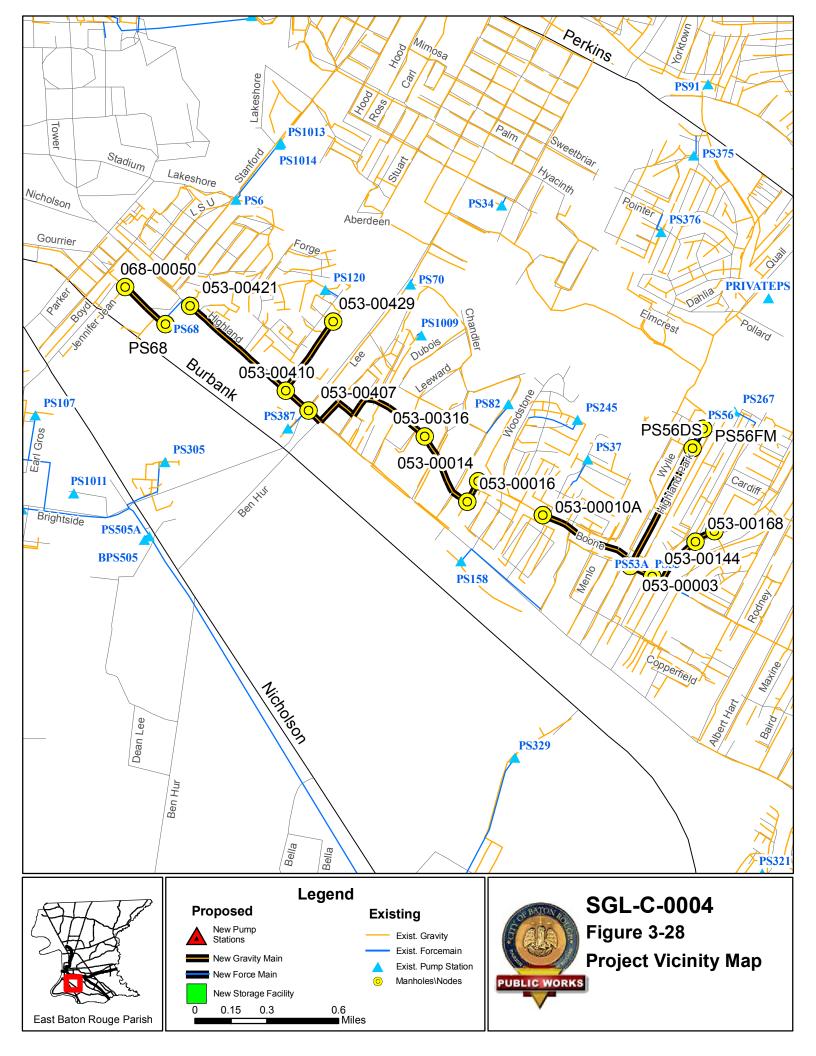
TABLE 3-18 SGL-C-0004 (Highland Road - Lee Drive)

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$7,400,000.

Scheduled Design Appropriation Year is 2012.

Scheduled Construction Appropriation Year is 2013.



### 3.2.18 SGL-C-0005 (Perkins Road – Dahlia Street)

### **Project Description**

### Purpose of the Project / Project Background

The SGL-C-0005 (Perkins Road – Dahlia Street) project includes the upsizing of gravity sewer upstream of PS 56 and PS 91 to alleviate upstream SSOs.

### Location

The SGL-C-0005 project includes gravity sewer replacements in the area of Perkins Road and Burbank Drive.

Gravity segment 056-00133H to 056-00153 is located in a wooded area, starting south of Belvedere Drive and progressing in an easterly direction through the woods south of Elmcrest Drive and Pollard Parkway.

Segment 056-00208 to 056-00133H starts at Lee Drive south of Bennett Drive. The segment travels in a northeasterly direction, then goes easterly on Bluebell Drive. This segment continues easterly beyond the end of Bluebell Drive through a wooded area to manhole 056-00133H, which is south of Belvedere Drive.

Gravity segment 056-00148 to PS 56 starts in the wooded area north of Chandler Drive and heads in a southeasterly direction to PS 56, which is located off Chandler Drive west of its intersection with Highland Park Drive. Gravity segment 056-00153 to 056-00148 starts south of the Christian Life Academy off Quail Drive and continues in a southwesterly direction to manhole 056-00148 in a wooded area.

Gravity segment PS70DS to 056-00208 is located along Lee Drive north of the drainage canal north of PS 70.

Segment 056-00011 to 056-00153 starts near the intersection of Pollard Parkway and Quail Drive and heads southwest to manhole 056-00153. This segment goes through the Christian Life Academy complex.

Gravity segment 056-00052C to 056-00018 starts at the intersection of Perkins Road and Pollard Parkway and parallels the drainage canal to the northeast of Dahlia Avenue as the segment goes in a southeasterly direction to manhole 056-00031.

Segment 056-00052G to 056-00052C starts downstream of the PS 91 forcemain near the corner of Moss Point Drive and Moss Side Lane, then continues southeasterly on the south side of the drainage canal to the north side of Perkins Road.

Segment 056-00152 to 056-00011 is located just south of the intersection of Pollard Parkway with Quail Drive.

Gravity segment 091-00004 to 091-00001 is located along Concord Avenue between Yorktown Drive and Brandywine Drive. Segment 091-00074 to 091-00006 begins on Valley Creek Drive and continues southeasterly through a wooded area to the intersection of Concord Avenue and Congress Boulevard.

### Scope

This project includes construction of approximately 17,500 feet of 18-inch, 21-inch, 24-inch, 30-inch, and 36-inch gravity sewer upstream of PS 56 and approximately 2,000 feet of 15-

inch and 18-inch gravity sewer upstream of PS 91. Table 3-19 shows the detailed scope of this project.

			Existing Diameter	Proposed Diameter	
US Node	DS Node	Length (ft)	(in)	(in)	Comments
056-00133H	056-00153	3,800	15	24	
056-00208	056-00133H	4,200	12 to 15	21	Includes a crossing of a drainage canal
056-00148	PS56	970	18	36	PS 56 will be upgraded in Project SGL-C-0002
056-00153	056-00148	700	15 or 18	30	
PS70DS	056-00208	790	12	18	
056-00011	056-00153	1,300	15	30	
056-00052C	056-00018	4,600	12 or 15	21	Includes a crossing of Perkins Road
056-00052G	056-00052C	830	12	18	
056-00152	056-00011	330	15	24	
091-00004	091-00001	700	12	18	
091-00074	091-00006	1,300	10	15	

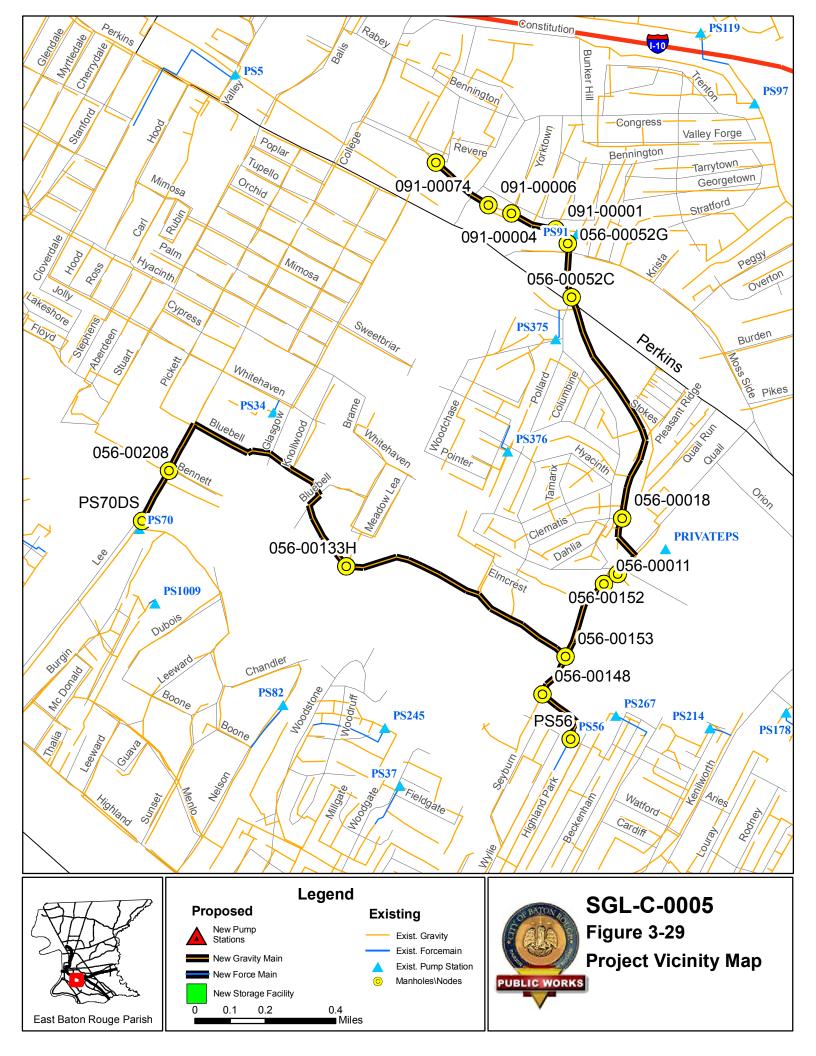
#### TABLE 3-19 SGL-C-0005 (Perkins Road - Dahlia Street)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction is \$6,900,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2011.



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# 3.3 South Forcemain System Comprehensive Rehabilitation Projects

### 3.3.1 SFL-R-0001, SFL-R-0002, SFL-R-0003, AND SFU-R-0001

### Project Description

The sanitary sewer system comprehensive rehabilitation projects consist of improvements to various components of the sewer collection system to reduce the amount of rainwater and groundwater that leak into the system.

### Purpose

The purpose of the comprehensive sewer rehabilitation is to correct defects in the system such as offset pipe joints, collapsed pipe sections, leaking manholes, and direct inflow sources. The water that enters the system through the defects can contribute to sanitary sewer overflows. Comprehensive rehabilitation of the collection system will contribute to alleviating sanitary sewer overflows by reducing I/I.

### Location

There are four projects located primarily within the South Forcemain Basin. The locations of the projects are shown on the attached maps.

### **Scope of Project**

The first phase of comprehensive rehabilitation projects will be the physical inspection of the pipes and manholes including closed circuit television inspection of all pipes. Smoke testing may also be included in the physical inspection phase.

The data collected by the physical inspection contractor will be analyzed and based on that analysis, a listing of recommended repairs with associated construction costs will be generated.

An engineering firm will then complete detailed design and preparation of construction documents for project bidding.

The construction of rehabilitation projects will typically include the following components.

- Replacement of pipes
- Point repair of pipes
- Rehabilitation of pipes by cured in place liners
- Rehabilitation or replacement of sewer manholes
- Repair of sewer laterals to the property line

### Cost

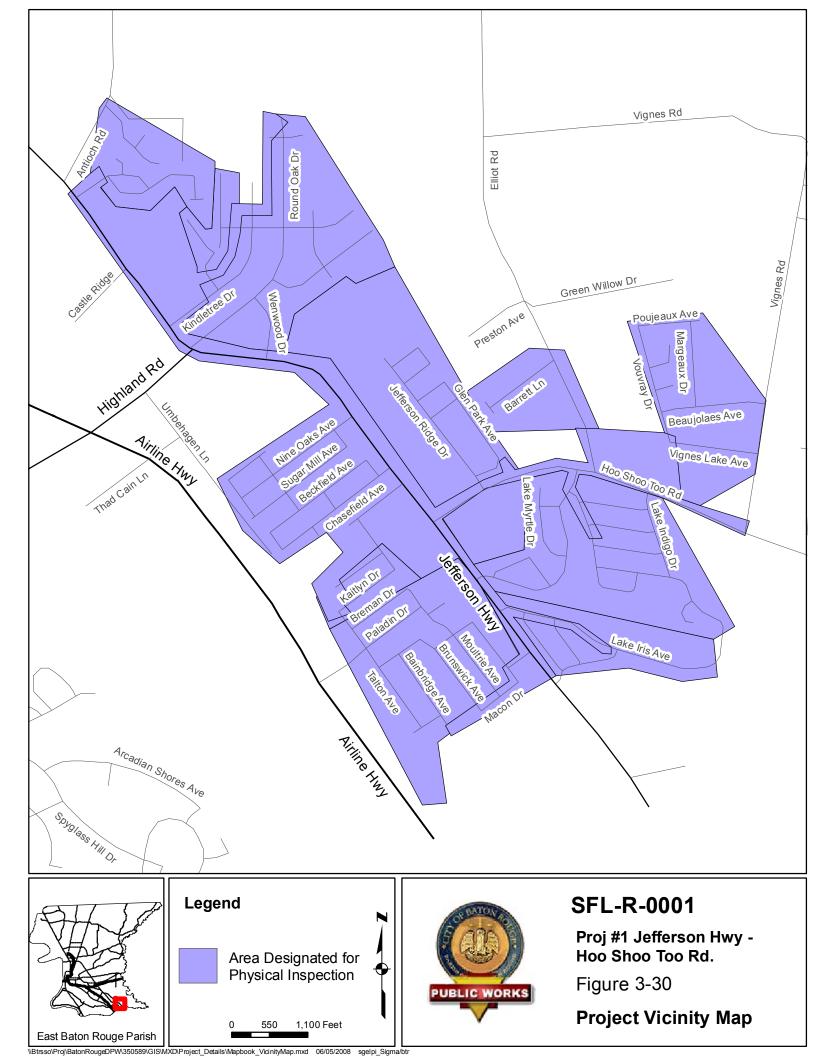
The estimated construction cost for each project is presented in Table 3-20. These costs are based on preliminary estimates of the amounts of each component of the system that will require repair or replacement. During the physical inspection phase, the actual condition of the components will be assessed and appropriate methods recommended. At that time, the cost estimate for each project will be revised.

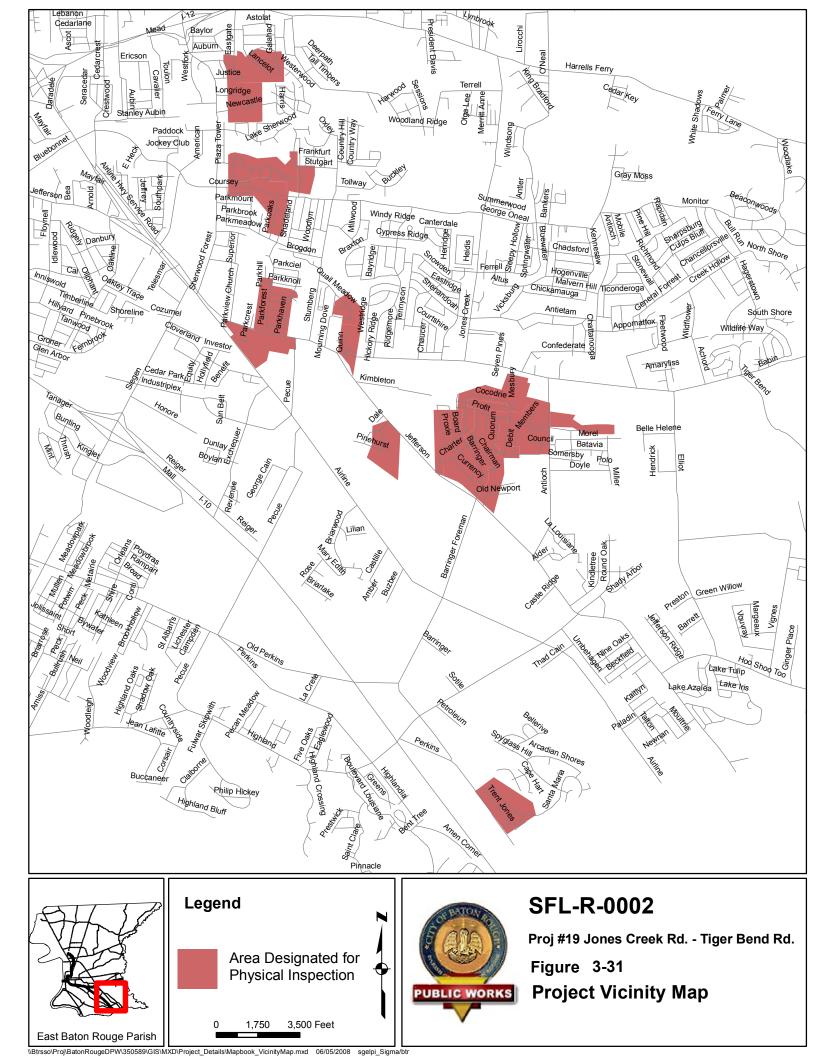
#### TABLE 3-20

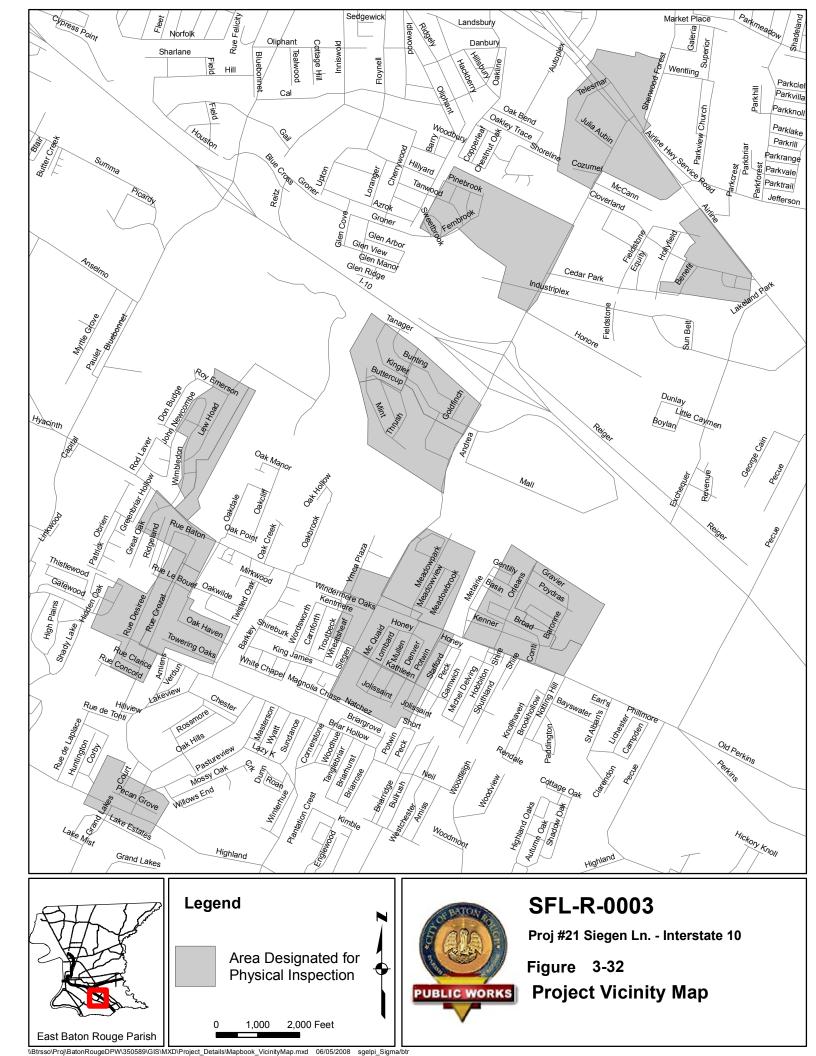
Estimated Construction Costs for South Forcemain System Comprehensive Rehabilitation Projects

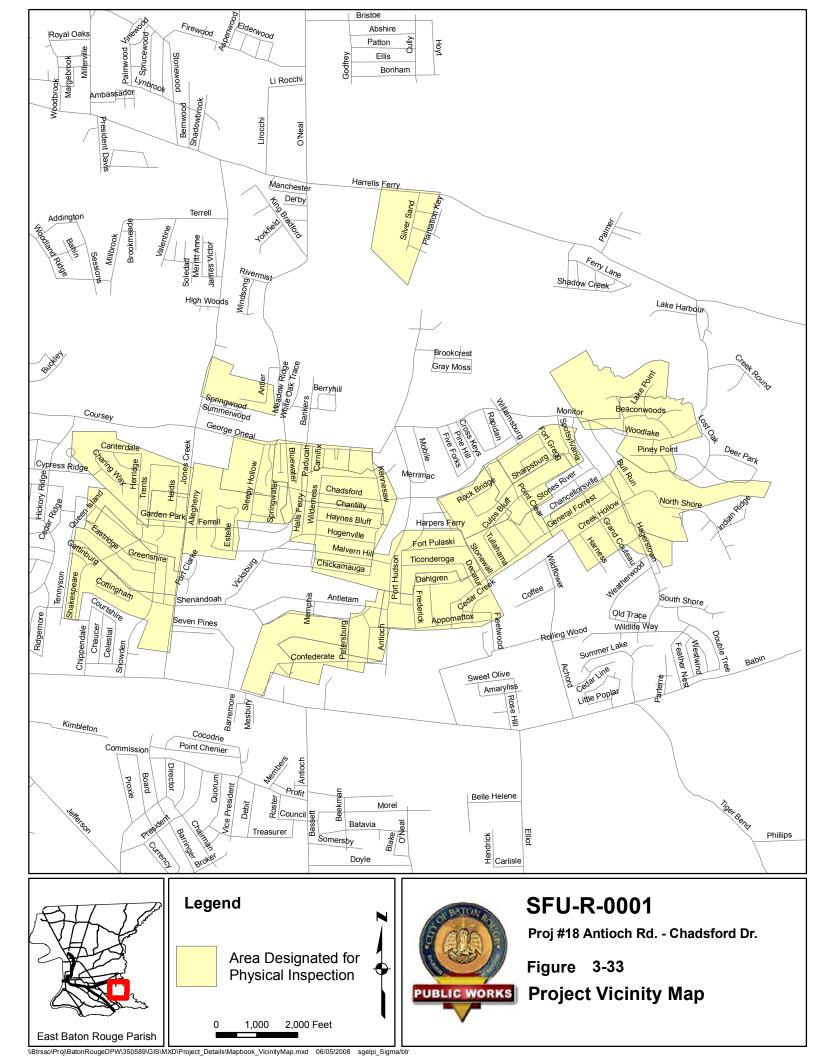
Project Description	Construction Cost	Scheduled Design Appropriation Year	Scheduled Construction Appropriation Year
SFU-R-0001-Antioch Road-Chadsford Drive	\$8,100,000	2010	2011
SFL-R-0001-Jefferson Highway-Hoo Shoo Too Road	\$2,250,000	2008*	2008*
SFL-R-0002-Jones Creek Road-Tiger Road	\$5,400,000	2011	2011
SFL-R-0003-Siegen Lane-Interstate 10	\$6,400,000	2011	2012

\*Appropriations already made for these projects (design and/or construction, as marked). SFL-R-0001 (Jefferson Highway – Hoo Shoo Too Road) project has already bid for construction.









# 3.4 South Forcemain System Capacity Improvements Projects

### 3.4.1 SFL-C-0001 (Multiple PS – Nicholson Drive – Brightside Drive)

### Project Description

### Purpose of the Project / Project Background

The project includes replacement of PS 236, PS 336, PS 311, PS 107, Booster Pump Station (BPS) 505, and BPS 505A. The new pump stations will work in conjunction with forcemain upgrades in other South Forced Lower Basin projects to alleviate chronic SSOs at and near these pump stations.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. One pump station, PS 311, in this project has predicted future wet weather flows that is near its existing maximum capacity, but it is predicted to have head issues based on the future BTRSSO hydraulic model, so it may have to be replaced, although it is possible that it could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

### Location

The locations of the pump stations are shown in Table 3-21.

### Scope

This project includes construction of the pump stations shown in Table 3-21. BPS 505 and BPS 505A are related, in that BPS 505A is an overflow pump station for BPS 505. BPS 505 is an existing in-line booster pump station that will be converted to a wet well pump station. Since BPS 505 will be converted to a wet well, it is possible that rather than building two new pump stations, BPS 505 and BPS 505A could share a divided wet well and have separate valve vaults, with one piped to the existing forcemain (BPS 505) and one piped to the new forcemain that will intersect with the Central Consolidation forcemain (BPS 505A). The Central Consolidation forcemain is described in the Central Consolidation – New Central WWTP FM Project, as described in Section 4 of this plan.

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 236	Brightside Rd, near Riverbend Rd.	625	4,930	
PS 336	Nicholson Rd, near Riverbend Rd.	417	972	
PS 311	Twelve Oaks Rd, near Riverbend Rd.	556	1,250	Not in model
PS 107	Brightside Rd, near Earl Gross	833	903	
BPS 505	Intersection of Oleson Rd and Brightside Rd.	5,000	6,388	Will be converted from in-line to wet well.
BPS 505A	Intersection of Oleson Rd and Brightside Rd.	New	2,916	

 TABLE 3-21

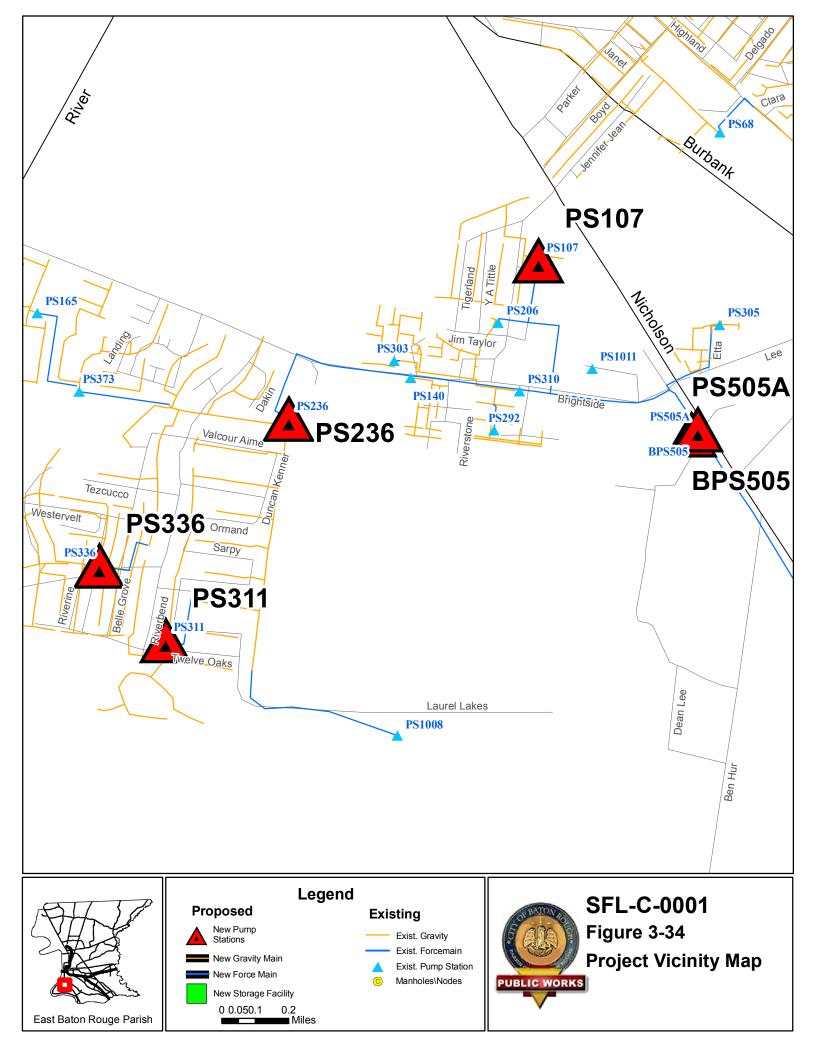
 SFL-C-0001 (Multiple PS - Nicholson Drive - Brightside Drive)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$5,900,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2011.



### 3.4.2 SFL-C-0002 (Perkins/Old Perkins Area BPS514 Improvements)

### Project Description

### Purpose of the Project / Project Background

The purpose of this project is to upgrade BPS514 to handle revised flow and head requirements. The existing BPS 514 has a capacity that is less than the predicted future peak wet weather flow.

### Location

The location of BPS 514 is given in Table 3-22.

#### Scope

The scope of the project is noted in Table 3-22. BPS 514 will be converted from an in-line booster pump station to a wet well pump station as part of this project.

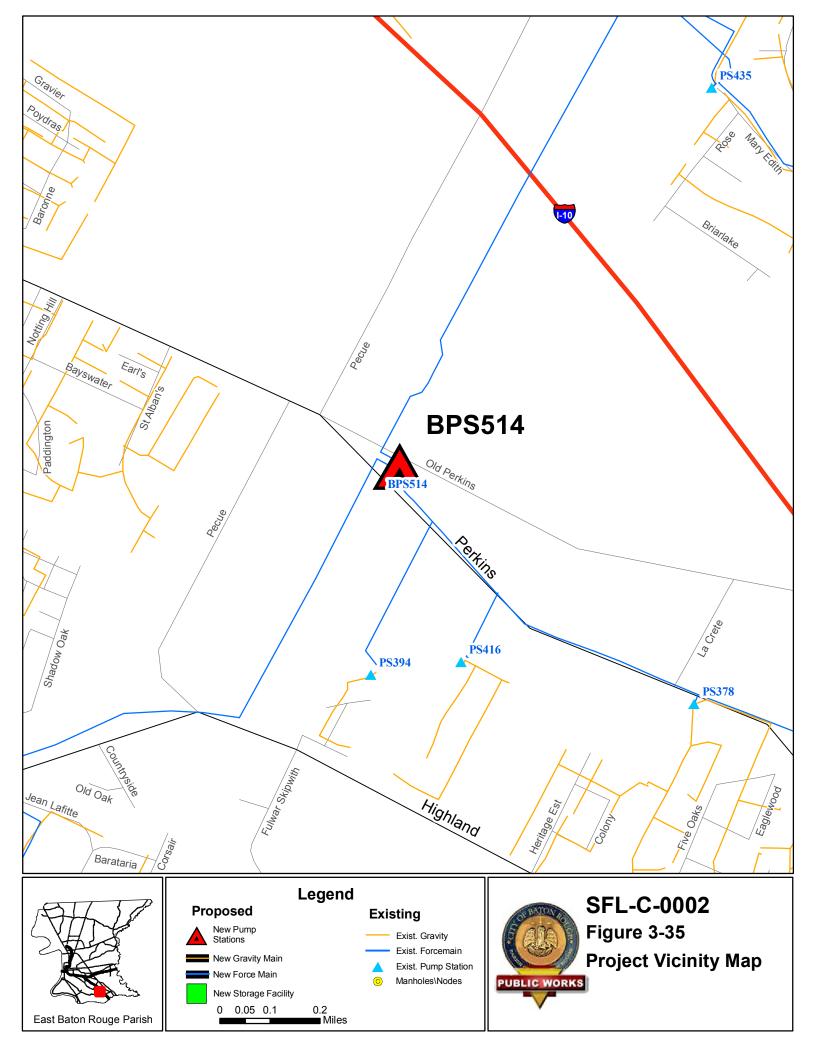
**TABLE 3-22** SFL-C-0002 (Perkins/Old Perkins Area BSP514 Improvements) **Future Peak Existing Max.** Capacity Wet Weather PS No. Location (GPM) Flow (GPM) Comments Will be converted from in-**BPS 514** Int of Pecue and Old Perkins Rd 50,830 24,000 line to wet well.

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

#### Total Estimated Construction Cost is \$10,900,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2010.



## 3.4.3 SFL-C-0003 (Multiple Pump Stations - Burbank Drive – Siegen Lane)

#### **Project Description**

#### Purpose of the Project / Project Background

The following pump stations will be replaced in this project: PS 118, PS 221, PS 358, BPS 999, PS 239, and PS 229. The new pump stations will work in conjunction with forcemain upgrades in other South Forced Lower Basin projects to alleviate chronic SSOs at and near these pump stations.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. Two pump stations in this project have predicted future wet weather flows that are at or near their existing maximum capacities, but they are predicted to have head issues based on the future Program hydraulic model, so they may have to be replaced, although it is possible that they could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

#### Location

The locations of the pump stations are shown in Table 3-23.

#### Scope

The scope of the pump station replacements is shown in Table 3-23. BPS 999 will be converted from an in-line booster pump station to a wet well pump station.

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 118	Near Rue Crozet and Rue Desiree	417	854	
PS 221	Near Barkley and Mirkwood	694	1042	
PS 358	Old Perkins Rd, near Oakbrook Rd	208	278	
BPS 999	Siegen Rd, near Quail Ridge	6250	8749	Will be converted from in-line to wet well.
				wen.
PS 239	Near Siegen Rd. and Woodleigh	69	139	
PS 229	Near Cottage Oak	278	625	

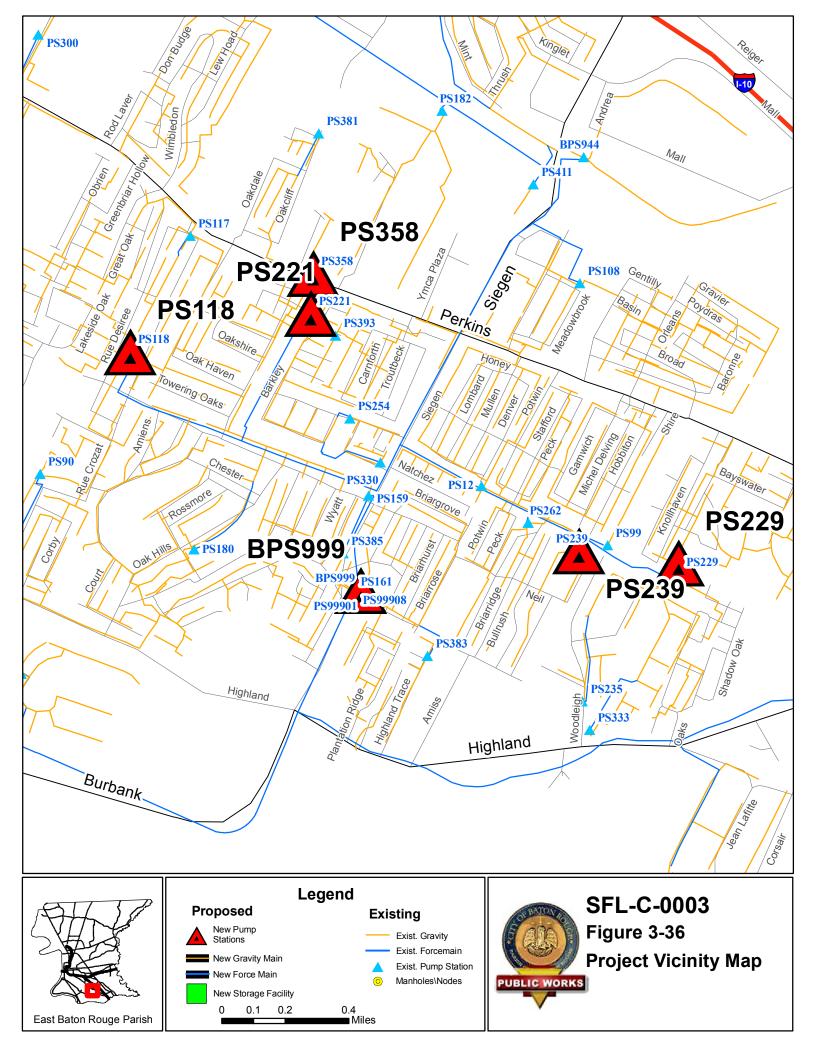
 TABLE 3-23
 SFL-C-0003 (Multiple Pump Stations - Burbank Drive - Siegen Lane)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump* Station Maintenance reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$4,000,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



# 3.4.4 SFL-C-0004 (Group Project 2 – Small Pump Stations)

#### **Project Description**

#### Purpose of the Project / Project Background

The following pump stations will be replaced in this project: PS 182, PS 223, PS 431, PS 327, PS 353, PS 278, PS 372, and PS 365. The new pump stations will work in conjunction with forcemain upgrades in other South Forced Lower Basin projects to alleviate chronic SSOs at and near these pump stations.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. Two pump stations in this project have predicted future wet weather flows that are at or near their existing maximum capacities, but they are predicted to have head issues based on the future BTRSSO hydraulic model, so they may have to be replaced, although it is possible that they could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

#### Location

Table 3-24 shows the locations of the pump stations in this project. These pump stations are generally located in the area of Jefferson Highway and Highland Road.

#### Scope

Table 3-24 shows the detailed scope of this project.

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 182	Near YMCA Plaza Drive	208	417	
PS 223	Int of Don Budge Ave. and Backcourt Drive	278	764	
PS 327	Int of Alder Drive and Crepe Myrtle Drive	278	347	
PS 353	Int of Azalea Lakes Ave. and Lake Iris Ave.	486	486	
PS 278	Near Bainbridge Ave.	347	764	
PS 372	Int of West Lake Terrace Drive and Lake Tulip Ave.	278	417	
PS 365	Int of Sugar Mill Ave. and Umbehagen Lane	1528	3403	

#### TABLE 3-24

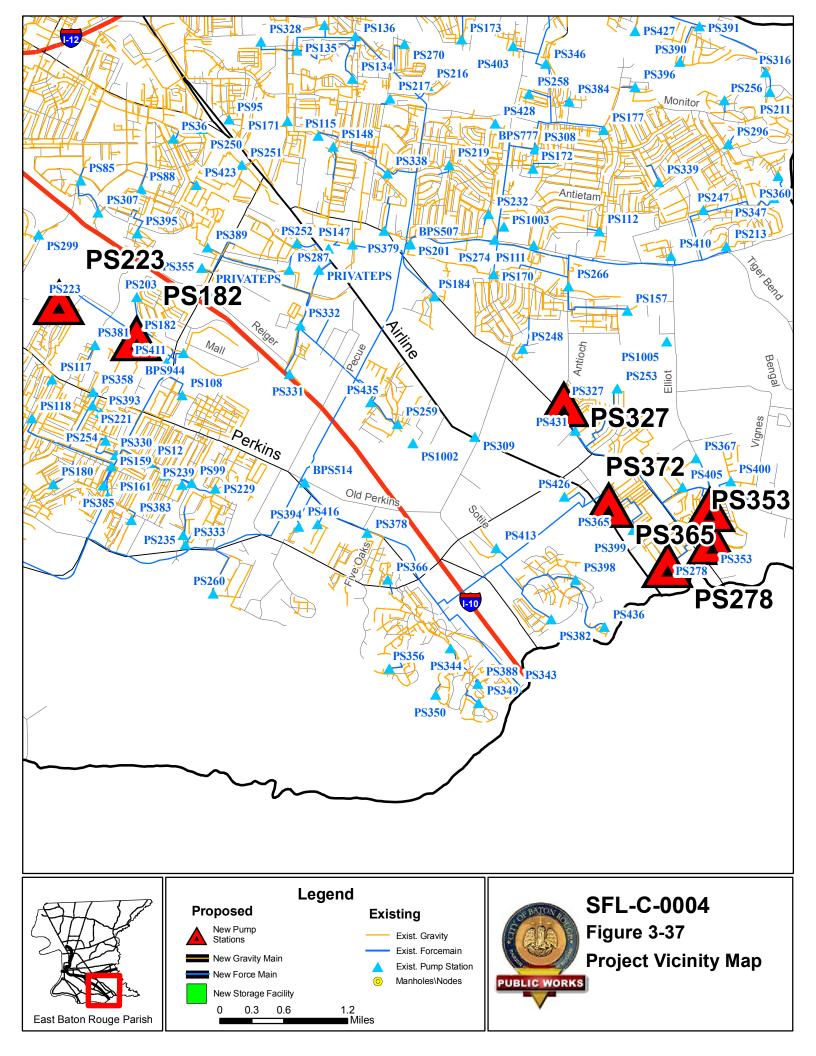
SFL-C-0004 (Group Project 2 – Small Pump Stations)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

#### Total Estimated Construction Cost is \$5,900,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2009.



## 3.4.5 SFL-C-0005 (Highland Road – Burbank Drive)

#### **Project Description**

#### Purpose of the Project / Project Background

The SFL-C-0005 (Highland Road – Burbank Drive) project consists of forcemain upgrades in the South Forced Lower Basin. This project includes the upsizing of forcemain in an area that extends north to the intersection of Jefferson Highway and Tiger Bend Road and continues south to the South WWTP on Gardere Lane. The upgrades are designed to alleviate chronic SSOs at the pump stations and increase the forcemain capacity. The upgrades range in size from 48-inchto 60-inch diameter.

#### Location

The first segment of forcemain from node SS271 to BPS 514 begins at node SS271 near the intersection of Kimbleton Avenue and Jefferson Highway, at BPS 507. Upon leaving the pump station the forcemain travels south through a servitude along the east edge of the Briarwood Golf Club for approximately 2,800 feet before turning slightly east. At this point, the forcemain crosses the golf club for approximately 1,300 feet before crossing Airline Highway. After crossing Airline Highway, the forcemain continues south parallel to Pecue Lane, crosses I-10 and the railroad, and continues south to BPS 514.

The forcemain resumes downstream of BPS 514 and continues south to Highland Road, follows Highland Road west to Burbank Drive, and follows Burbank Drive south then west to Gardere Lane. From this intersection, the forcemain continues to the South WWTP.

#### Scope

SFL-C-0005 (Highland Road – Burbank Drive) includes construction of approximately 10,500 feet of 48-inch forcemain, approximately 31,000 feet of 54-inch forcemain, and approximately 3,700 feet of 60-inch forcemain downstream of BPS 507 and BPS 514. Table 3-25 shows the detailed scope of this project.

US Node	DS Node	Lengt h (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
TAP408-8	GRTCHMUS	733	48	60	
SS428	TAP408-8	2,976	48	60	
SS98	SS428	7,980	48	54	
					Approx. 570 feet of existing forcemain that crosses under Highland Road will remain – total length of this segment is
SS467	SS98	10,010	48	54	approx. 10,580 feet.
SS479	SS467	6,803	42	54	
BPS 514	SS479	6,254	42	54	
SS369	BPS 514	106	42	48	
					Approx. 2,190 feet of existing forcemain that crosses under I-10 and the RR will remain – total length of this
SS340 (no I-10/RR)	SS369	3,774	42	48	segment is approx. 5,965 feet.
SS271	SS340	6,612	42	48	

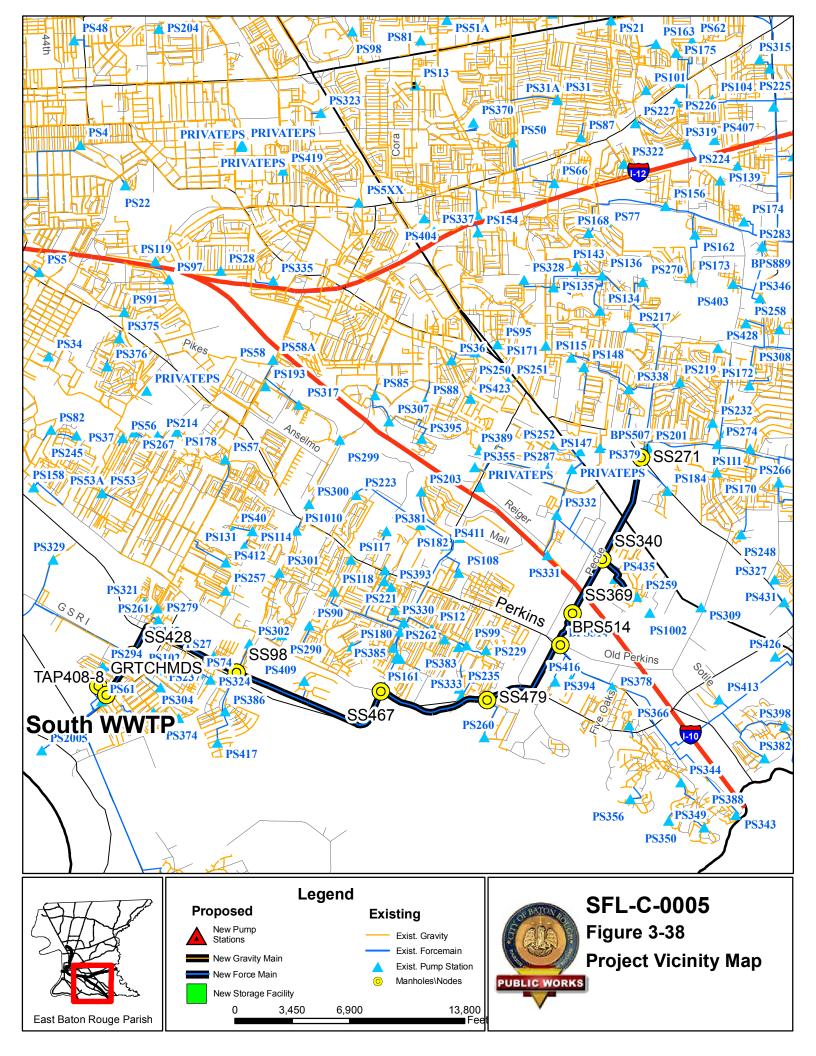
#### TABLE 3-25 SEI -C-0005 (Highland Road - Burbank Drive)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$13,400,000.

#### Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2009.



# 3.4.6 SFL-C-0006 (Nicholson Drive – Highland Road – Perkins Road)

#### **Project Description**

#### Purpose of the Project / Project Background

The SFL-C-0006 project consists of forcemain and gravity upgrades in the South Forced Lower Basin. This project includes the upsizing of forcemain and gravity mains in an area that extends north to the intersection of Jefferson Highway and Tiger Bend Road and continues south to the South WWTP on Gardere Lane. The upgrades are designed to alleviate chronic SSOs at the pump stations and increase the gravity main capacity. The upgrades range in size from 6-inch to 24-inch diameter. Several hundred feet of piping was added to this project when compared to the January 2008 PDP because of improved hydraulic modeling and more information on existing SSOs. The forcemain from BPS 505 was deleted from this project due to Central Consolidation.

This project involves the replacement of portions of the South Forced Lower forcemain and gravity systems. A majority of the contributing flows are from residential areas. The upgrades can be broken into the following segments:

Forcemain segment PS 252FM to SS325 starts near the intersection of Cloverland Drive and Benefit Drive at PS 252, travels to Airline Highway, and continues in a southeasterly direction along Airline Highway to Lakeland Park Boulevard. At Lakeland Park Boulevard, the forcemain turns in a southerly direction and follows Lakeland Park Boulevard/Exchequer Drive to the intersection of Exchequer Drive and Little Caymen Drive, which is node SS325.

Forcemain segment PS 332FM to SS340 begins at PS 332, located on Exchequer Drive south of its intersection with Industriplex Boulevard, and follows a servitude in a southeasterly direction to node SS340, which is located on Pecue Lane in between Industriplex Boulevard and Interstate 10.

Forcemain segment PS 259 to SS340 starts at PS 259, near the intersection of Thistle Ridge Drive and Martin Ridge Drive. From PS 259, the forcemain continues in a northwesterly direction through the subdivision and through empty lots, following a servitude/drainage path to Pecue Lane, where node SS340 is located.

Forcemain segment PS278FM to SS549 starts at PS278, which is located near the intersection of Bainbridge Avenue and Newman Drive. The forcemain continues in a generally northeasterly direction through the subdivision to Jefferson Highway, intersecting with Jefferson Highway near Pecan Creek Lane. At Jefferson Highway, the forcemain follows the highway in a northwesterly direction to node SS459, which is on Jefferson Highway between Lake Iris Road and Lake Azalea Drive.

Gravity segment 278-00029 to 278-00028 starts at manhole 278-00029, which is on Brunswick Avenue and travels in a southeasterly direction to manhole 278-00028, which is at the intersection of Macon Drive and Brunswick Avenue.

Gravity segment 365-01007 to 365-00001Z starts at manhole 365-01007, which is on Jefferson Highway between Chasefield Avenue and Nine Oaks Avenue, and travels in a southerly direction between Beckfield Avenue and Sugar Mill Avenue to manhole 365-00001Z, which is next to PS365.

Forcemain segment PS 365FM to SS 471 starts at PS 365, which is on Umbehagen Lane near Sugar Mill Avenue, follows Umbehagen Lane for approximately 600 feet, crosses Airline Highway, and continues in a southwesterly direction to node SS449. From node SS449, the forcemain travels in a southwesterly direction parallel to Highland Road to node SS471, which is north of a drainage path that is south of Bellerive Court.

Forcemain segment PS382FM to SS507 starts at PS 382, which is at the intersection of Santa Marie Avenue and Trent Jones Drive. The forcemain continues in a northwesterly direction following Trent Jones Drive and paralleling Perkins Road to a servitude near Petroleum Drive. The forcemain then continues in a southwesterly direction to node SS507, on Highlandia Drive off Highland Road.

Forcemain segment PS 398 to SS502 starts at the cul-de-sac on Arcadian Shores Drive and continues in a southwesterly direction along Arcadian Shores Drive and Spyglass Hill Drive to node SS502, which is roughly located near the end of Spyglass Hill drive, near a drainage path.

Forcemain segment SS516 to SS507 starts southeast of North Lakeway Avenue and Elmhurst Avenue intersection. The forcemain segment travels northwest until reaching SS513. The forcemain travels southwest , crossing Highlandia Drive until reaching SS512. The forcemain then travels northwest until reaching SS507, located northwest of Highlandia Drive and Lavo Lane intersection.

Forcemain segment SS426 to SS458 starts near Perkins Road, southeast of its intersection with Pecue Lane. The forcemain travels southeast until reaching SS458, located near La Crete Lane and Perkins Road intersection.

Forcemain segment PS260FM to SS479 starts at PS 260, which is located Segment 7 consists of a forcemain that starts at node SS479, which is at the intersection of Highland Road and Jean Lafitte Avenue, the forcemain follows Jean Lafitte Avenue to PS 260FM.

Gravity segment 108-00047 to 108-00008 starts at manhole 108-00047, which is at the corner of Meadowbrook Avenue and Meadowmere Drive, and travels in a southerly direction along Meadowbrook Avenue to the corner of Meadowbrook and Meadowlane Drive. The gravity line turns westerly along Meadowlane Drive to manhole 108-00008, which is between Meadowlane Drive and Perkins Road.

Forcemain segment PS 223 to SS312 starts at PS 223, which is at the intersection of Roy Emerson Drive and Don Budge Avenue, and travels overland to node SS312, which is on the corner of Lew Hoad Avenue.

Forcemain segment PS 236 to SS286 starts at PS 236, which is between Brightside Drive and Valcour Aime Avenue, turns northerly and travels easterly along Brightside Drive to node SS286, which is at the corner of Brightside Drive and Brightside View Drive.

Forcemain segment PS 253FM to SS370 starts at PS 253, which is at the end of Round Oak Drive, turns southerly along Round Oak Drive, turns westerly along Waterleaf Avenue, and travels southerly along Kindletree Drive to node SS370, which is at the intersection of Jefferson Highway and Kindletree Drive.

Forcemain segment PS 229FM to SS400 begins at PS 229, which is at the end of Brookhollow Drive and travels in a northwesterly direction to node SS400, which is at the end of Scotland Court.

Forcemain segment SS371 to SS385 begins at node SS371, which is at corner of Twisted Oak Lane and Oak Hills Parkway, and travels along Oak Hills Parkway to node SS385, which is at Siegen Lane.

Forcemain segment PS 99908 to SS467 starts at BPS 999, which is located near the intersection of Siegen Lane and Lazy K Avenue, and travels southerly along Siegen Lane to node SS467, which is located at the intersection of Siegen Lane and Highland Road.

Gravity segment 236-00032 to PS 236 starts northwest of the Riverbend Boulevard and Robillard Avenue intersection. The gravity segment travels north until reaching 236-00020 and then east until reaching 236-00002. The gravity line travels northeast until reaching PS 236, located near the end of Dakin Avenue.

Gravity segment 236-00091 to 236-00002 starts southeast of Three Oaks Avenue and Covington Drive intersection. The gravity segment travels north until reaching 236-00002, located southeast of Dakin Avenue cul-de-sac.

Gravity segment 944-01006 to PS 944 begins near the intersection of Mint Drive and Buttercup Drive and runs east along a drainage path to PS 944, located near the intersection of Andrea Drive and S. Mall Drive.

Forcemain segment PS 311FM to PS 311DS starts at PS 311, located on Twelve Oaks Road, near its intersection with Riverbend Road. The forcemain travels east and then north until reaching PS 311DS, located southeast of Riverbend Road and Three Oaks Avenue intersection.

#### Scope

This project includes construction of approximately 270 feet of 12-inch gravity sewer upstream of PS 278, approximately 2,200 feet of 24-inch gravity sewer upstream of PS 365, approximately 1,500 feet of 12-inch gravity sewer upstream of PS 108, approximately 7,600 feet of 15-inch, 18-inch, and 24-inch gravity sewer upstream of PS 236, and approximately 1,900 feet of 10-inch gravity sewer upstream of PS 944. The project also includes the construction of approximately 76,300 feet of forcemain in the South Forced Lower Basin. Table 3-26 shows the detailed scope of this project.

SFL-C-0006 (I	Nicholson Drive –	Highland Road	d – Perkins Roa	d)	
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS252FM	SS325	6,000	8	12	•
PS332FM	SS518	9,200	10	14	
SS518	SS340	3,600	12	14	
PS 259	SS340	3,400	6	8	
PS278FM	SS459	2,600	5	8	
278-00029	278-00028	270	8	12	Gravity sewer
365-01007	365-00001Z	2,200	18	24	Gravity sewer
PS365FM	SS444	40	10	14	
SS444	SS471	4,700	14	16	
PS382FM	SS502	2,000	4	6	
SS502	SS489	1,900	8	12	

#### TABLE 3-26

SFL-C-0006 (	Nicholson Drive –	Highland Roa	d – Perkins Roa	d)	
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
SS489	SS507	3,900	16	18	
PS 398	SS502	3,100	8	10	
SS516	SS507	5,708	12	16	
SS426	SS458	9,300	18	24	
PS260FM	SS479	2,800	4	6	
108-00047	108-00001	42	8	12	Gravity sewer
108-00001	108-00003	508	8	12	Gravity sewer
108-00003	108-00005	557	8	12	Gravity sewer
108-00008	108-0005	438	8	12	Gravity sewer
PS223	SS312	1,800	6	8	
PS236	SS272	1,000	10	16	
SS272	SS286	3,600	14	16	
PS253FM	SS370	4,100	6	8	
PS229FM	SS400	1,700	6	8	
SS371	SS385	2,400	10	12	
PS99908	SS467	2,400	18	24	
236-00032	236-00025	1458	12	15	Gravity sewer
236-00025	236-00020	1268	12	15	Gravity sewer
236-00020	236-00006	470	12	15	Gravity sewer
236-00006	236-00004	636	12	18	Gravity sewer
236-00004	236-00002	485	12	18	Gravity sewer
236-00002	PS 236	259	12	24	Gravity sewer
236-00091	236-00085	469	12	15	Gravity sewer
236-00085	236-00064	1444	12	15	Gravity sewer
236-00064	236-00055	570	12	18	Gravity sewer
236-00055	236-00002	505	12	18	Gravity sewer
944-01006	PS944	1,917	8	10	Gravity sewer
PS311FM	PS311DS	1030	6	10	

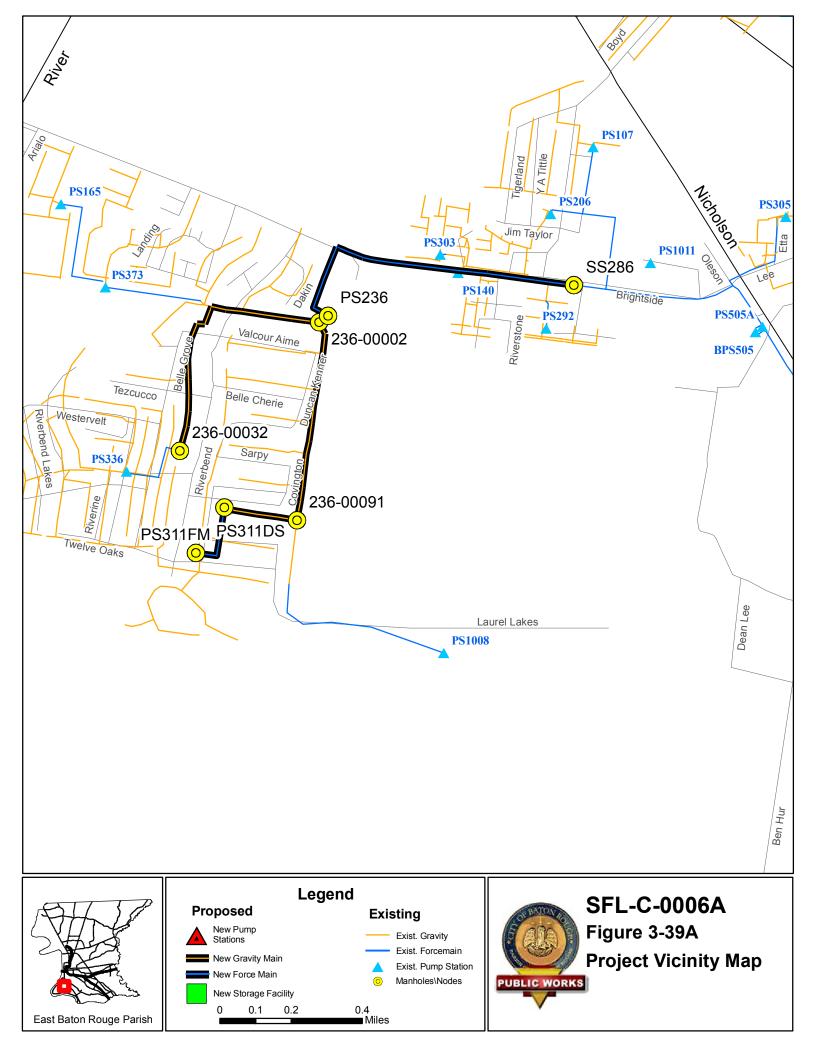
TABLE 3-26	
SEL-C-0006 (Nicholson Drive – Highland Road – Perkins Road)	

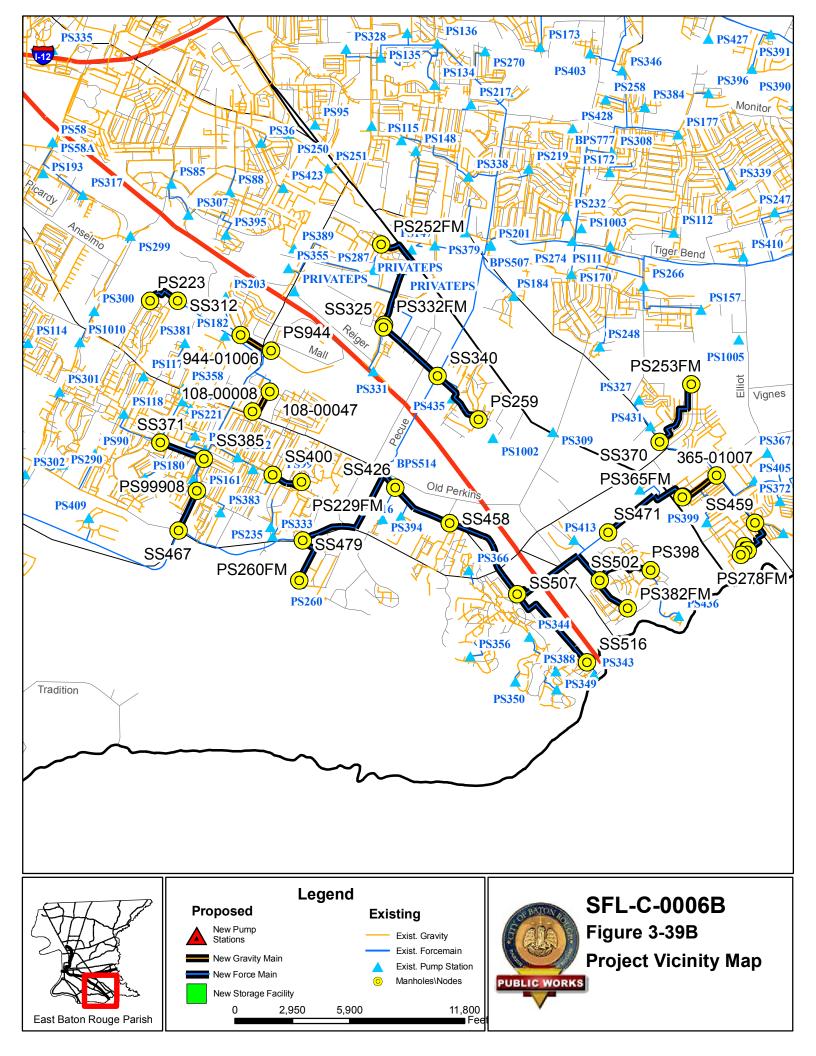
**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$12,200,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2011.





# 3.4.7 SFU-C-0001 (Multiple Pump Stations – Jefferson Highway – Park Forest Drive)

#### **Project Description**

#### Purpose of the Project / Project Background

The pump stations to be replaced in this project consist of the following: PS 115, PS 148, PS 338, PS 379, PS 201, and BPS 507. The upgrades will work in conjunction with forcemain upgrades in other South Forced Upper Basin projects to alleviate chronic SSOs at and near these pump stations.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. Three pump stations in this project have wet weather flows that are at or near (one is even less than) their existing maximum capacities, but they are predicted to have head issues based on the future BTRSSO hydraulic model, so they may have to be replaced, although it is possible that they could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

#### Location

The location of each PS is shown in Table 3-27.

#### Scope

Table 3-27 shows the detailed scope of this project, which includes the replacement of six pump stations in the South Forced Upper basin. BPS 507 will be converted from an in-line booster station to a wet well pump station as part of this project.

SFU-C-00	01 (Multiple Pump Stations - Jefferson Highw	ay - Park Forest Driv	e)	
PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 115	Parkmeadow Ave, near Parkhollow Drive	556	356	
PS 148	Parkforest Drive, near Parkmeadow Ave.	417	556	
PS 338	Near int of Quail Meadow Drive and Golden Pheasant Court	764	972	
PS 379	Jefferson Hwy, near int of Tiger Bend	208	208	
PS 201	Near Tiger Bend and the int of Jefferson Hwy.	556	1,111	
BPS 507	Located near PS 201	20,138	38,886	Will be converted from in-line booster to wet well pump station

#### TABLE 3-27

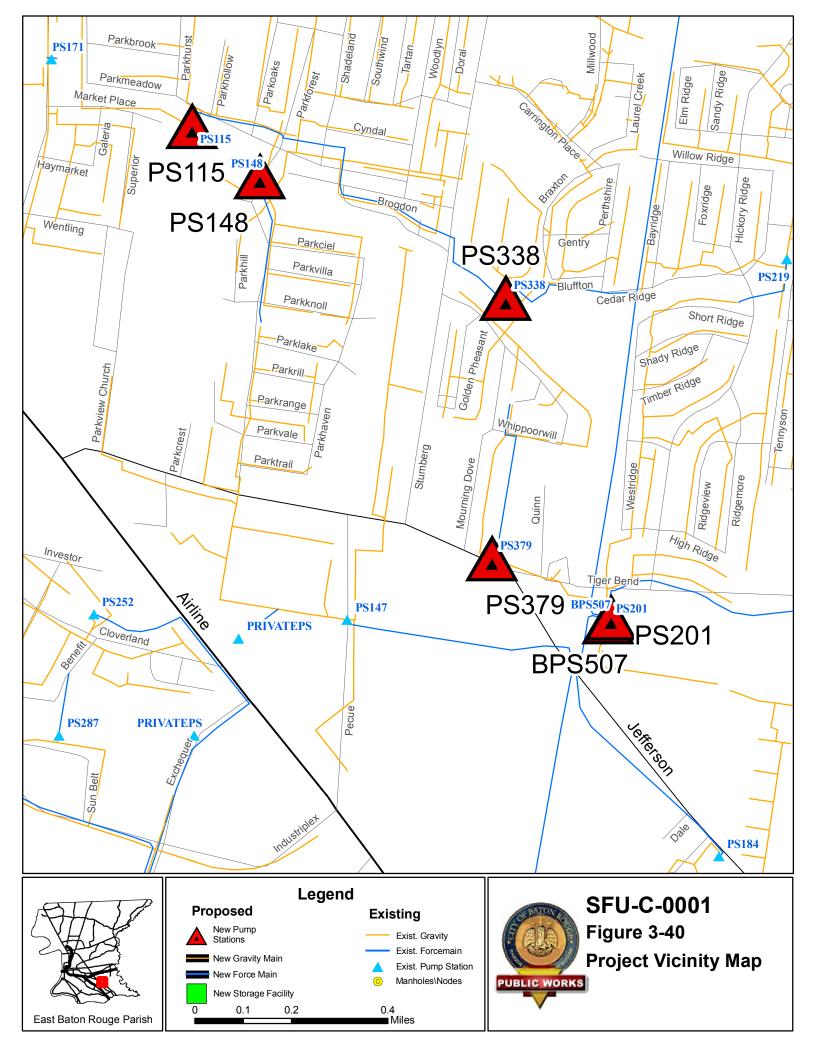
SFU-C-0001 (Multiple Pump Stations - Jefferson Highway - Park Forest Drive)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$9,200,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2011.



# 3.4.8 SFU-C-0002 (Multiple Pump Stations – Jones Creek Road – Tiger Bend Road)

#### **Project Description**

#### Purpose of the Project / Project Background

The following pump stations will be upgraded in this project: BPS 777, PS 172, PS 112, PS 274, and PS 170. The upgrades will work in conjunction with forcemain upgrades in other South Forced Upper Basin projects to alleviate chronic SSOs at and near these pump stations.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. One pump station, PS 172, in this project has predicted future wet weather flows that is near its existing maximum capacity, but it is predicted to have head issues based on the future hydraulic model, so it may have to be replaced, although it is possible that it could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

#### Location

The locations of the pump stations included in this project are given in Table 3-28.

#### Scope

Table 3-28 shows the detailed scope of this project, which includes replacement of 5 pump stations. BPS 777 will be converted from an in-line booster station to a wet well pump station as part of this project.

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
BPS 777	Located near PS 308	14,582	21,526	Will be converted from in-line booster to wet well pump station
PS 172	Near the intersection of Ferrell Ave. and Guymon Ave.	278	347	
PS 112	Near the intersection of Confederate Ave. and Chattanooga Drive	694	1,389	
PS 274	Near the intersections of Jones Creek Rd and Tiger Bend Rd	417	1,875	
PS 170	Near the intersection of Barrington Rd and Point Chenier Ave.	139	4,514	

#### TABLE 3-28

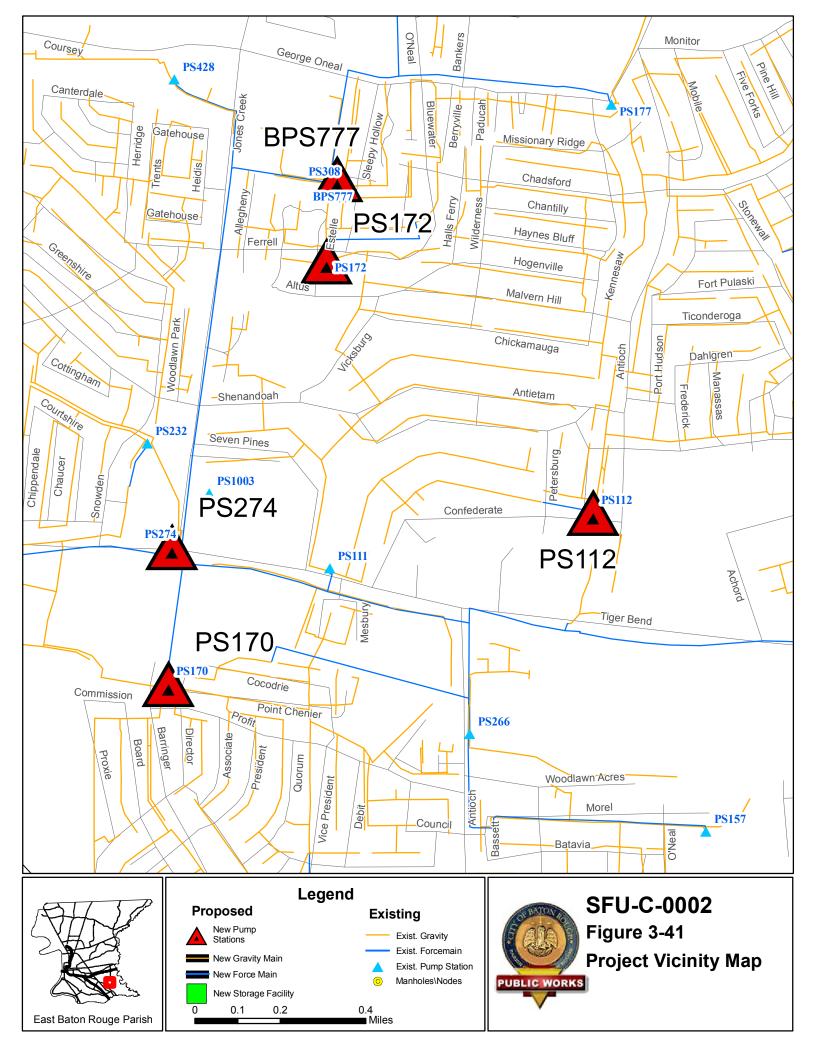
SFU-C-0002 (Multiple Pump Stations - Jones Creek Road - Tiger Bend Road)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$7,300,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



## 3.4.9 SFU-C-0003 (Multiple Pump Stations – O'Neal Lane – Interstate 10)

#### Project Description

#### Purpose of the Project / Project Background

The following pump stations will be upgraded in this project: BPS 889, PS 402, PS 174, PS 162, PS 224, PS 139, PS 345, and PS 149. The upgrades will work in conjunction with forcemain upgrades in other South Forced Upper Basin projects to alleviate chronic SSOs at and near these pump stations.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. Four pump stations in this project have wet weather flows that are at or near (three are even less than) their existing maximum capacities, but they are predicted to have head issues based on the future hydraulic model, so they may have to be replaced, although it is possible that they could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

#### Location

A description of the location of each pump station is given in Table 3-29.

#### Scope

**TABLE 3-29** 

This project includes replacement of 8 pump stations in the South Forced Upper Basin, as shown in Table 3-29. The replacement pump station for BPS 889 will be a wet well pump station, rather than an in-line booster station, as is the existing pump station.

31 0-0-000	3 (Multiple PS - O Near Larie – Interstate	10)		
PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
				Will be converted from in-
BPS 889	Near end of King Bradford Drive	11,110	17,221	line booster to wet well pump station
PS 402	South Harrell's Ferry Rd, near the intersection of O'Neal Lane	833	208	
PS 174	Berrybrook Drive	417	278	
PS 162	Intersection of General Prentiss Ave. and President Davis Drive	417	903	
PS 224	Banyanwood Ave, near the intersection of Balsawood Drive	764	1,528	
PS 139	Firewood Drive, near the intersection of Stonewood Drive	208	278	
PS 345	Physicians Park Drive	417	278	
PS 149	Near the intersection of Hoyt Drive and Bristoe Ave.	486	625	

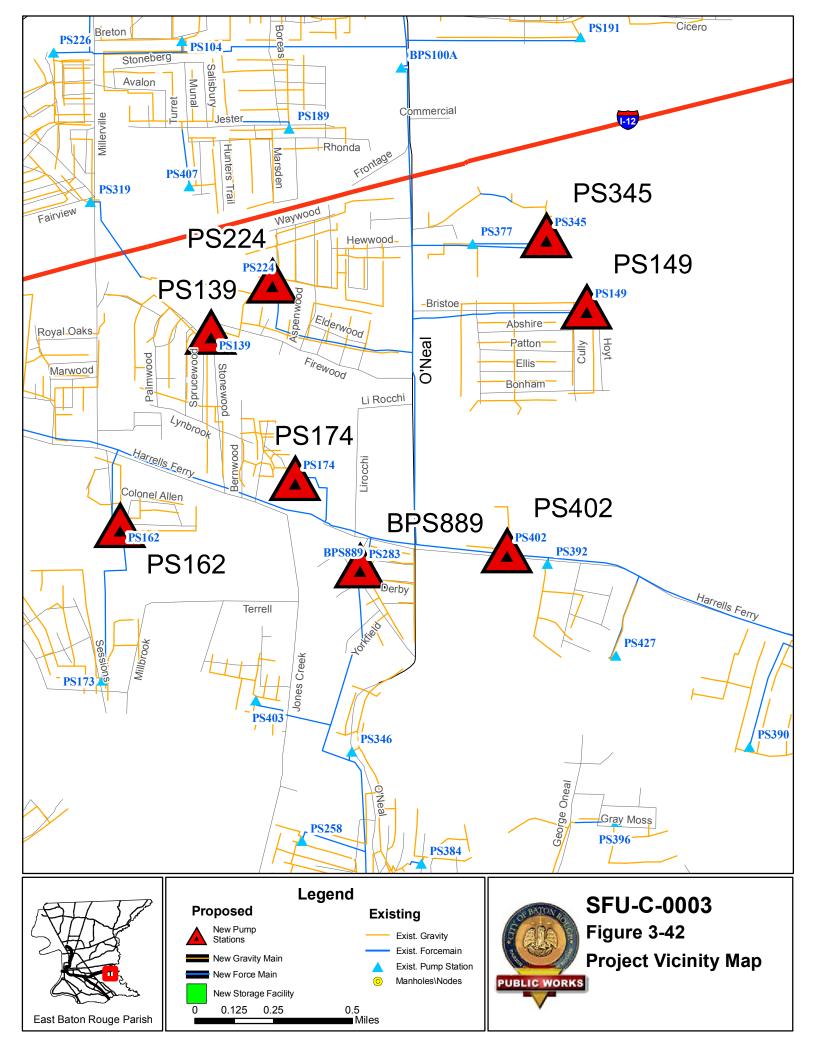
#### SFU-C-0003 (Multiple PS - O'Neal Lane - Interstate 10)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$6,000,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



# 3.4.10 SFU-C-0004 (Multiple Pump Stations – O'Neal Lane – South Harrell's Ferry Road)

#### **Project Description**

#### Purpose of the Project / Project Background

The following pump stations will be upgraded in this project: PS 247, PS 391, PS 316, PS 211, PS 296, PS 156, BPS 100A, PS 227, PS 175, PS 326, PS 153, and PS 41. The upgrades will work in conjunction with forcemain upgrades in other South Forced Upper Basin projects to alleviate chronic SSOs at and near these pump stations.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. Four pump stations in this project have wet weather flows that are at or near (one is even less than) their existing maximum capacities, but they are predicted to have head issues based on the future BTRSSO hydraulic model, so they may have to be replaced, although it is possible that they could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

#### Location

A description of the location of each pump station is given in Table 3-30.

#### Scope

Twelve pump stations will be replaced as part of this project, as shown in Table 3-30. BPS 100A, which is now an in-line booster station, will be replaced with a wet well pump station.

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 247	Harness Rd	417	1,528	
PS 391	Near int of South Harrell's Ferry Rd and White Shadow Drive	139	347	
PS 316	Woodlake Drive, near int of South Harrell's Ferry Rd	486	2,639	
PS 211	Woodlake Drive, near int of Creek Round Ave.	694	2,361	
PS 296	Near int of North Shore Drive and Bull Run Drive	556	1,180	
PS 156	Near int of Woodbrook Drive and South Harrell's Ferry Rd	556	556	
BPS 100A	O'Neal Lane, near int of Commercial Ave.	5,555	9,652	Will be converted from in-line booster to wet well pump station
PS 227	Near int of Old Hammond Hwy. and South Flannery Rd	278	389	

#### TABLE 3-30

SFU-C-0004 (Multiple Pump Stations - O'Neal Lane - South Harrell's Ferry Road)

PS No.	Location	Existing Max. Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 175	Near Lafitte Street Park	208	903	
PS 326	Near Lake Park Ave.	208	278	
PS 153	Woodvale Drive, near cul-de-sac	139	625	
PS 41	Near int of West Amite Drive and South Amite Drive	486	417	

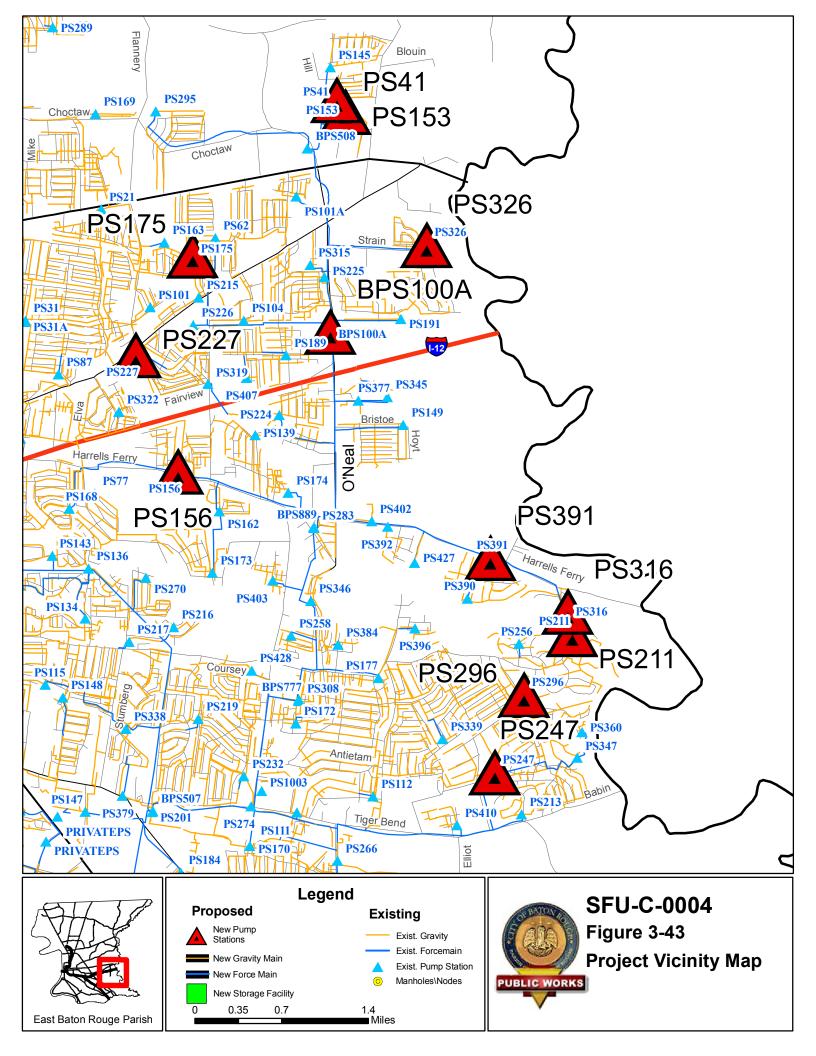
TABLE 3-30	
SFU-C-0004 (Multiple Pump Stations - O'Neal Lane - South Harrell's Ferry	(Road)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$7,800,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



# 3.4.11 SFU-C-0005 (O'Neal Lane – Jones Creek Road)

#### **Project Description**

#### Purpose of the Project / Project Background

Project SFU-C-0005 (O'Neal Lane – Jones Creek Road) consists of gravity main upgrades in the South Forced Upper Basin. This project includes the upsizing of gravity main in an area that extends north of Florida Boulevard to the Monticello Subdivision and continues south to include the Shenandoah and Old Jefferson areas of East Baton Rouge Parish. The upgrades are designed to alleviate chronic SSOs at PSs and increase the gravity main capacity.

#### Location

This project involves the replacement of portions of the South Forced Upper gravity main system. A majority of the contributing flows are from residential areas. The gravity main upgrades can be broken into the following segments:

Gravity segment 062-00064 to PS 62 starts at 062-00064, located near the intersection of Bonnie Drive and Marjorie Drive. From this location, the gravity main travels westerly for approximately 650 feet near Marjorie Drive. At this point, the main turns northwest and continues for approximately 380 feet before turning south near Nancy Drive. The main then continues generally west for approximately 1,000 feet before joining PS 62, which is located in a servitude north of the intersection of Patricia Dale Drive and Laurie Lynn Drive.

Gravity segment 146-00031 to PS 104 starts at manhole 146-00031, which is in a servitude located east of Rhonda Avenue, near Outrigger Drive. The gravity sewer then travels west in the servitude fro approximately 1,200 feet before turning north for about 500 feet, where it then turns west in a servitude that is located in between Schafer Avenue and Schnebelen Avenue. The gravity sewer then travels north into a servitude located southeast of the intersection with Boreas Drive and Woodlore Drive for approximately 200 feet, where it then turns west in an east/west servitude to PS 104, which is located in a servitude west of the intersection of Woodlong Drive and Riverdale Avenue East.

Gravity segment 189-00022 to PS 189 starts north of Rhonda Avenue at manhole 189-00022 and travels west in a servitude that parallels Rhonda Avenue to PS 189, which is located north of Rhonda Avenue near Outrigger Avenue.

Gravity segment 191-00065 to 191-00001 starts at manhole 191-00065 near the intersection of Catiline Place and Caesar Avenue and travels east for approximately 530 feet before reaching manhole 191-00001 in a servitude where it connects to another gravity main.

Gravity segment 224-00091 to PS 224 starts at manhole 224-00091 and continues approximately 500 feet east to PS 224. This main is located west of the cul-de-sacs for Banyanwood Avenue and Westwood Court.

Gravity segment 224-00063 to 224-00057 starts at manhole 224-00063, which is located near the intersection of Firewood Drive and Stonewood Drive. The main then travels north and then east for approximately 1,300 feet to manhole 224-00057 where it combines with gravity segment 224-00091 to PS 224.

Gravity segment 211-00051 to PS 211 starts at manhole 211-00051, which is located near the intersection of Lost Oak Drive and West Piney Point Avenue. From this location, the gravity main travels generally north for approximately 970 feet before reaching manhole 211-00057

near Woodlake Drive. The main upsize continues along Woodlake Drive to PS 211, which is located on Woodlake Drive north of its intersection with Creek Round Avenue.

Gravity segment 177-00180 to 177-00021 starts southeast of Kennesaw Drive and Chadsford Avenue intersection The gravity segment travels east until reaching 177-00027, and then north. The gravity segment ends at 177-00021, located near Missionary Ridge Court.

Gravity segment 177-00282 to 177-00257 starts at manhole 177-00282 located in a servitude between Ferrell Avenue and Harrell's Ferry Drive. From this location, it continues northerly for approximately 1,600 feet before turning east. From this point, the main continues approximately 1,200 feet to manhole 177-00257.

Gravity segment 112-00013 to PS 112 starts southwest of the Antioch Boulevard and Antietam Avenue intersection. The gravity line travels southwest until reaching PS 112, located northeast of the Confederate Avenue and Chattanooga Drive intersection.

Gravity segment PS211DS to PS 111 starts northeast of the Confederate Avenue and Chattanooga Drive intersection. The gravity line travels northwest until reaching 110-00108, southwest until reaching 110-00102, northwest until reaching 110-00094, and then southwest , crossing Shenandoah Country Club, until reaching 110-00088. The gravity line travels west until reaching PS 111, located near Tiger Bend Drive, between its intersections with Seven Pines Avenue and Sugar Springs Drive.

Gravity segment 274-00002 to PS 274 starts south of the Jones Creek Road and Shenandoah View Court intersection. The gravity segment travels south, along Jones Creek Road. The gravity segment ends at PS 274, located at the Tiger Bend Road and Jones Creek Road intersection.

Gravity segment 274-00009 to 274-00003 begins at manhole 274-00009 near the intersection of Greenshire Avenue and North Snowden Avenue. From this point, the gravity main heads south and continues for approximately 1,300 feet to manhole 274-00005. From this point, the gravity main heads south and east for approximately 450 feet to manhole 274-00003, which is located in a servitude between Snowden Avenue and Jones Creek Road.

Gravity segment 170-00015 to 170-00002 begins at manhole 170-00015, which is located near the south end of Chaucer Street. From there, it continues south for approximately 1,300 feet and crosses Tiger Bend Road before turning east near Kimbleton Avenue. After turning east, the gravity main travels approximately 1,550 feet east and south to manhole 170-00002 near PS 170.

Gravity segment 170-00167 to 170-00001 begins at manhole 170-00167 near the north end of Board Road. From there, it continues approximately 750 feet north and east to node 170-00001 near PS 170.

Gravity segment 170-00110 to PS 170 begins at manhole 170-00110 near the intersection of Vice President and Profit Avenue and continues north for approximately 150 feet before reaching manhole 170-00039. From this node, the main turns west and continues west before ending at PS 170.

Gravity segment 148-00038 to 148-00034 begins at manhole 148-00056 east Park Meadow Avenue and Parkforest Drive intersection. The gravity segment travels west for approximately 70 feet before turning south and then back north as it generally follows a drainage feature toward manhole 148-00034, which feeds into PS 148 near the intersection of Parklawn Avenue and Parkforest Drive.

#### Scope

This project includes construction of approximately 2,100 feet of 12-inch, 15-inch, and 18inch gravity sewer upstream of PS 62, approximately 4,700 feet of 15-inch and 18-inch gravity sewer upstream of PS 146, approximately 210 feet of 18-inch gravity sewer upstream of PS 189, approximately 540 feet of 12-inch gravity sewer upstream of PS 191, approximately 2,300 feet of 18-inch gravity sewer upstream of PS 224, approximately 3,400 feet of 18-inch, 21-inch, and 24-inch gravity sewer upstream of PS 211, approximately 4,000 feet of 12-inch, 15-inch, and 21-inch gravity sewer upstream of PS 177, approximately 1,000 feet of 15-inch and 18-inch gravity sewer upstream of PS 112, approximately 3,900 feet of 15inch, 18-inch, and 24-inch gravity sewer upstream of PS 110, approximately 2,300 feet of 18inch, and 21-inch gravity sewer upstream of PS 110, approximately 2,300 feet of 18inch, and 21-inch gravity sewer upstream of PS 110, approximately 2,300 feet of 18inch, and 21-inch gravity sewer upstream of PS 170, and approximately 5,500 feet of 12-inch, 18inch, and 21-inch gravity sewer upstream of PS 170, and approximately 690 feet of 12-inch sewer upstream of PS 148. Table 3-31 shows the detailed scope for this project.

TABLE 3-31 SFU-C-0005 (O'Neal Lane - Jones Creek Road)

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
062-00064	062-00048	470	10	12	
062-00048	062-00002	1,400	10	15	
062-00002	PS62	190	12	18	
146-00031	146-00018	920	10	15	
146-00018	146-00001	2,200	10	18	
146-00001	PS104	1,600	12	18	
189-00022	PS189	210	8	18	
191-00065	191-00001	540	8	12	
224-00091	224-00057	504	8	18	
224-00057	224-00001	445	8	18	
224-00001	PS224	12	12	18	
224-00063	224-00060	688	8	18	
224-00060	224-00057	661	8	18	
211-00051	211-00047	970	12	18	
211-00047	211-00039	460	10	18	
211-00039	211-00038	150	12	24	
211-00038	211-00037	260	12	18	
211-00037	211-00001	1,500	12	21	
211-00001	PS211	66	10	21	
177-00180	177-00179	50	8	15	
177-00179	177-00025	630	8	15	
177-00025	177-00021	400	15	21	
177-00282	177-00257	2,900	10	12	
112-00013	112-00002	830	10	18	
112-00002	PS112	200	10	15	

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS211DS	110-00094	2,250	10	18	
110-00094	110-00088	1,300	10	18	
110-00088	110-00001	240	10	15	
110-00001	PS111	70	10	24	
274-00002	PS274	570	12	18	
274-00009	274-00005	1,280	10	18	
274-00005	274-00004	90	10	18	
274-00004	274-00003	380	10	21	
170-00015	170-00005	2,100	10	15	
170-00005	170-00002	750	10	15	
170-00167	170-00001	600	10	18	
170-00110	170-00039	150	8	15	
170-00039	170-00037	700	8	18	
170-00037	170-00036	330	10	18	
170-00036	170-00001	770	10	21	
170-00001	PS170	60	15	21	
148-00038	148-00034	690	8	12	

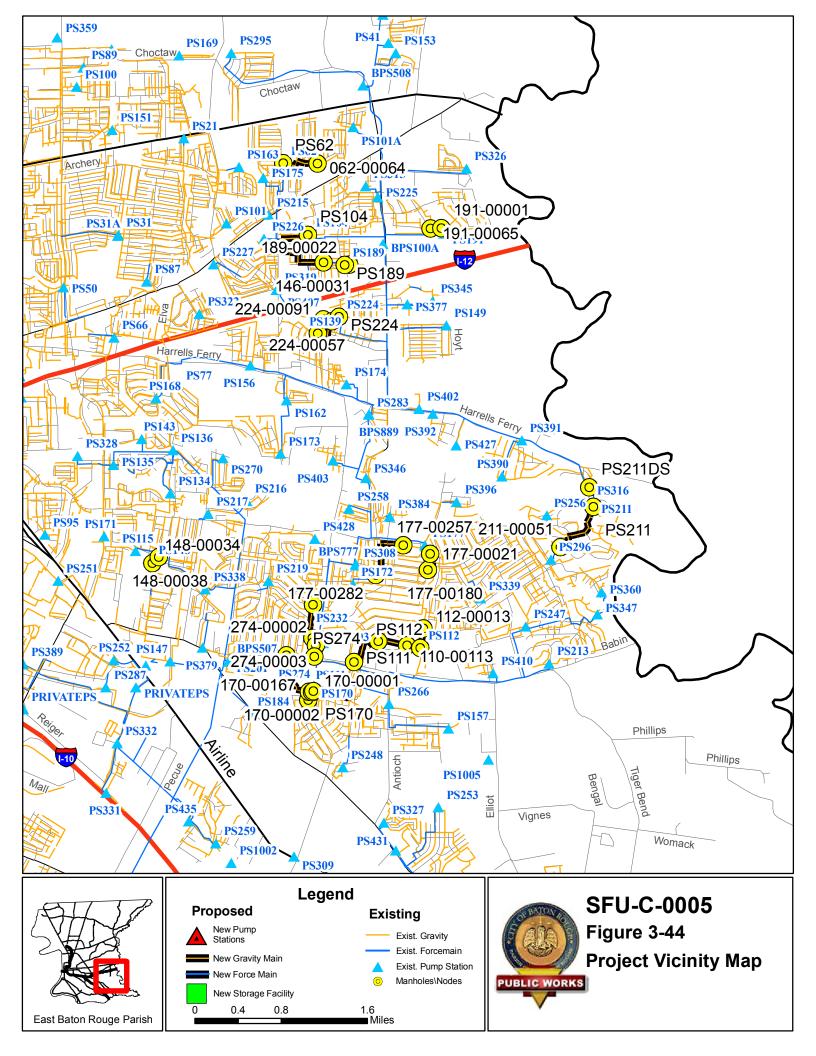
#### TABLE 3-31 SFU-C-0005 (O'Neal Lane - Jones Creek Road)

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$9,400,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2011.



# 3.4.12 SFU-C-0006 (O'Neal Lane – Tiger Bend Road)

#### **Project Description**

#### Purpose of the Project / Project Background

The SFU-C-0006 (O'Neal Lane – Tiger Bend Road) project consists of forcemain upgrades in the South Forced Upper Basin. This project includes the upsizing of forcemain in an area that extends north of Florida Boulevard to the Monticello Subdivision and continues south to include the Shenandoah and Old Jefferson areas of East Baton Rouge Parish. The upgrades are designed to alleviate chronic SSOs at the pump stations and increase the forcemain capacity.

#### Location

This project involves the replacement of portions of the South Forced Upper manifolded forcemain system.

Forcemain segment PS 153 to SS11 starts outside the property boundary of PS 153. Upon leaving the pump station, the forcemain travels southwest for approximately 800 feet along Woodvale Drive to the intersection of Woodvale Drive and Mockingbird Lane where it then travels 545 feet to the west, where it enters a manifold intersection with an existing 12-inch forcemain at node SS11.

Forcemain segment PS 101A to SS32 starts outside the property boundary of PS 101A. Upon leaving the pump station, the forcemain travels southeast until reaching SS32, located at Old Hammond Highway and O'Neal Lane.

Forcemain segment SS24 to SS36 starts west of South Choctaw Drive, above Florida Boulevard. The forcemain travels southwest, crossing Florida Boulevard near O'Neal Lane intersection and crossing O'Neal Lane. The forcemain segment ends at SS36 and is located near the O'Neal Lane and Strain Rd intersection.

Forcemain segment PS 104 to SS64 starts outside the property boundary of PS 104. Upon leaving the pump station, the forcemain travels south for approximately 200 feet to node SS68 and enters a servitude where it turns east and follows the servitude for approximately 3,800 feet to node SS64, where it intersects a manifold forcemain at O'Neal Lane.

Forcemain segment BPS 100A to SS75 begins outside the property boundary of BPS 100A. Upon leaving the pump station, the forcemain travels east for approximately 200 feet to node SS75 where it intersects a manifold forcemain at O'Neal Lane.

Forcemain segment PS 224 to SS129 begins outside the property boundary of PS224. Upon leaving PS 224, the forcemain travels south for approximately 900 feet before reaching Firewood Drive. At Firewood Drive, the forcemain turns east and follows the ROW for approximately 2,300 feet to the intersection of O'Neal Lane where it manifolds with node SS96. From node SS96, the forcemain continues south along O'Neal Lane for approximately 3,200 feet to node SS129, where it intersects a manifold forcemain at Harrell's Ferry Road.

Forcemain segment SS135 to SS139 travels along South Harrell's Ferry Road in an easterly direction from node SS135 for approximately 2,250 feet to node SS 129.

Forcemain segment PS 173 to PS 173DS starts outside the property boundary of PS 173, east of Sessions Drive. The forcemain travels west to PS 173FM, then north until reaching PS 173DS, located southwest of Colonel Allen Court and General Prentiss Avenue intersection.

Forcemain segment PS 162 to SS109 starts at PS 162, which is located at the intersection of General Prentiss Avenue and President Davis Drive. Upon leaving PS 162, the forcemain travels generally north for approximately 2,800 feet before reaching node SS130 where it continues approximately 300 feet north to PS162. The forcemain upsize continues north of PS162 and travels approximately 1500 feet north to the intersection of Harrell's Ferry Road where it manifolds with node SS109.

Forcemain segment BPS 889 to SS48 starts at BPS 889 and continues approximately 120 feet south to node SS148.

Forcemain segment PS 211 to 316-00001 starts outside the property boundary of PS 211. Upon leaving PS 211, the forcemain travels approximately 1,100 feet north along Woodlake Drive to manhole 316-00001 near PS 316.

Forcemain segment PS 316 to SS147 outside the northern property boundary of PS 316. Upon leaving PS 316, the forcemain travels north along Woodlake Drive for approximately 2,000 feet to node SS 173 and the intersection of South Harrell's Ferry Road. At South Harrell's Ferry Road, the forcemain turns west and continues for approximately 5,600 feet to node SS147 where it ties into a larger forcemain, which continues along South Harrell's Ferry Road.

Forcemain segment PS 296 to 211-00051 starts outside the property boundary of PS 296. Upon leaving PS 296, the forcemain travels approximately 400 feet north and east where it crosses West Piney Point Avenue. It then continues approximately 500 feet further north and east to manhole 211-00051 where it discharges into a gravity main.

Forcemain segment PS 347 to 247-00001 starts outside the property boundary of PS 347. Upon leaving PS 347, the forcemain travels approximately 500 feet west between South Shore Drive and Double Tree Drive and into a servitude. At this point, the forcemain continues approximately 500 feet along the servitude and then heads southwest toward the intersection of Double Tree Drive and Feather Nest Lane. The forcemain continues approximately 400 feet into another servitude located between Double Tree Drive and Wildlife Way Drive and then turns northwest. The forcemain follows the servitude for approximately 450 feet to a point located between Hagerstown Drive and Double Tree Drive. The forcemain then continues west in a servitude, crossing Hagerstown Drive, for approximately 2,400 feet to manhole 247-00001, which then ties into PS 247.

Forcemain segment PS 247 to SS274 continues outside the property boundary of PS 247. Upon leaving PS 247, the forcemain travels approximately 800 feet west in a servitude to East Achord Road. At East Achord Road, the forcemain turns south and travels approximately 2,100 feet to node SS274 where it ties into a larger manifold forcemain, which continues along Tiger Bend Road.

Forcemain segment PS 213 to SS274 begins outside the property boundary of PS213. Upon leaving PS 213, the forcemain travels approximately 250 feet south to Tiger Bend Road where it then turns west and continues approximately 1,200 feet to node SS274.

Forcemain segment SS274 to SS248 begins at node SS274 and continues west along Tiger Bend Road for approximately 1,500 feet to node SS282 where it receives flow from a 4-inch forcemain and increases in size. From node SS282, the forcemain continues west along Tiger Bend Road for approximately 6,200 feet to the intersection of Antioch Road where it turns south and then continues approximately 250 feet to node SS275. From SS275, the forcemain turns west again and continues approximately 1,800 feet in a servitude to node SS265 where it receives flow from a 10-inch forcemain and increases in size. From SS265 the forcemain continues approximately 1,900 feet west to node SS248 near PS274.

Forcemain segment PS 274 to SS268 resumes outside the property boundary of PS 274. Upon leaving the pump station, the forcemain travels approximately 100 feet south to SS241. From SS241, the forcemain increases in size and continues approximately 4,600 feet west to BPS507. From BPS507, Segment 9 resumes and continues approximately 200 feet west before turning south and continuing approximately 800 feet to node SS268 near Jefferson Highway.

Forcemain segment PS 112 to 110-00113 begins at PS 112 and continues west to manhole110-00113 near Shenandoah Avenue.

Forcemain segment SS 196 to SS 243 begins at node SS196 located at George O'Neal Road and approximately 170 feet east of the intersection of Cumberland Cove Drive. The forcemain continues west for approximately 650 feet before turning south into a servitude. The forcemain then continues south for approximately 1,500 feet before entering the property boundary of BPS777. The forcemain then continues approximately 1,200 feet west to node SS 522 near Jones Creek Road. From node SS 522, the forcemain turns south and continues approximately 4,800 feet to node SS 243 where it ties into a larger manifold forcemain near PS 274.

Forcemain segment PS 258 to SS192 begins outside the property boundary of PS 258. Upon leaving the PS, the forcemain travels approximately 50 feet north before turning east into a servitude and continuing for approximately 1,200 feet to node SS192 where it intersects a manifold forcemain in a servitude between Springwood Avenue and Charleston Villa Drive.

Forcemain segment SS 168 to SS 186 begins at node SS 168 near PS 136 and continues approximately 2,700 feet southeast in a servitude to node SS 186 where it joins a forcemain.

Forcemain segment PS 172 to PS 172DS begins outside the boundary of PS 172. Upon leaving the pump station, the forcemain travels approximately 300 feet north and across Ferrell Avenue before turning east into a servitude located between Stillwater Avenue and Ferrell Avenue. The forcemain continues in the servitude for approximately 900 feet before turning north. The forcemain continues north for approximately 300 feet to manhole PS 172DS where it joins a forcemain.

Forcemain segment PS 170 to SS248 begins outside the property boundary of PS 170. Upon leaving the pump station, the forcemain travels northeast until reaching SS 248, located southeast of Tiger Bend Road and Jones Creek Road.

Forcemain segment PS 148FM to 147-00057A begins outside the boundary of PS 148 at node PS 148FM, east of the intersection of Parkview Church Road and Superior Drive. From that location, the forcemain travels approximately 1,500 feet south and east to node 147-00057A where it joins a manifold forcemain.

Forcemain segment PS 147 to SS 268 includes a forcemain that begins outside the property boundary of PS 147. Upon leaving the pump station, the forcemain travels approximately 3,000 feet south and west to node SS 268 where it joins a manifold forcemain near Jefferson Highway.

#### Scope

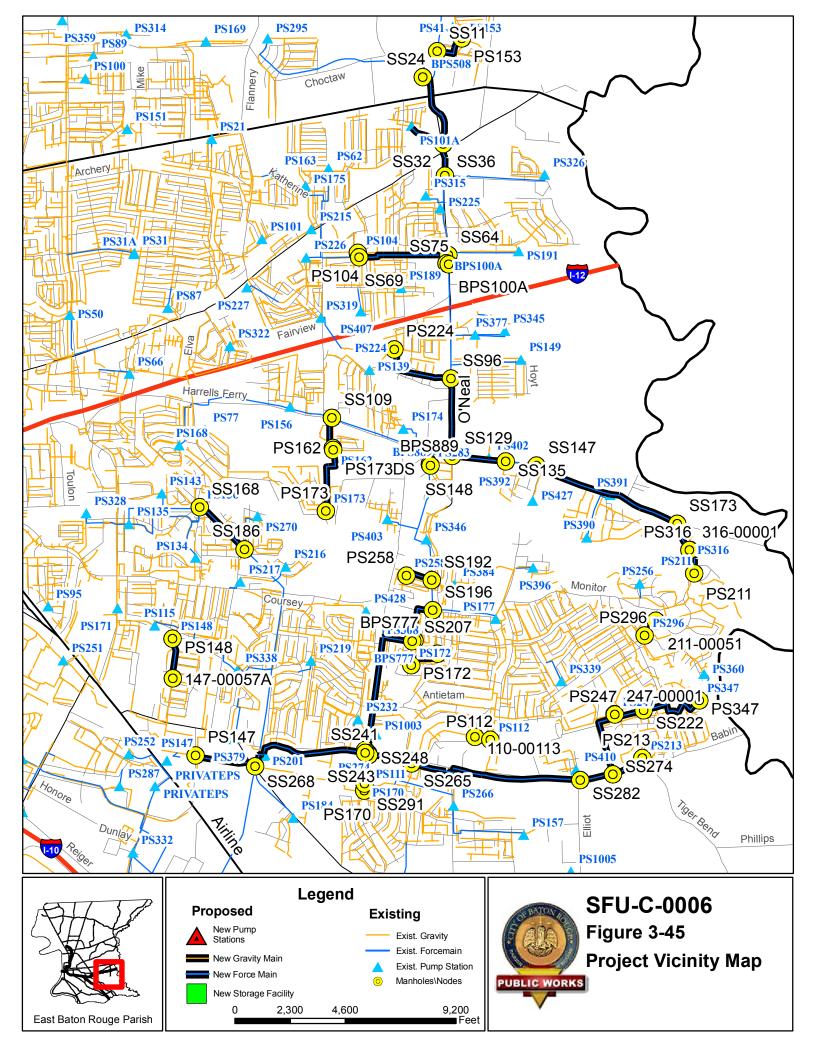
This project includes approximately 80,000 feet of 6-inch, 8-inch, 10-inch, 12-inch, 14-inch, 16-inch, 18-inch, 20-inch, 24-inch, 30-inch, 36-inch, and 42-inch forcemain in the South Forced Upper Basin. Table 3-32 shows the detailed scope of this project.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS 153	SS11	1,300	4	6	
PS 101A	SS32	1,700	6	8	
SS24	SS32	3,220	14	18	
SS32	SS36	1,300	16	20	
PS 104	SS69	220	10	16	
SS69	SS64	3,800	16	24	
BPS 100A	SS75	200	18	24	
PS 224	SS96	3,300	10	12	
SS96	SS129	3,200	24	30	
SS135	SS129	2,300	14	16	
PS173	PS173DS	3,100	4	6	
PS162	SS109	1,500	6	8	
BPS 889	SS148	120	24	30	
PS 211	316-00001	1,100	6	14	
PS 316	SS173	1,300	8	14	
SS173	SS147	6,300	10	14	
PS 296	211-00051	880	6	8	
PS 347	SS222	3,100	4	8	
SS222	247-00001	1,100	6	8	
PS 247	SS274	3,100	8	12	
PS 213	SS274	1,400	4	6	
SS274	SS282	1,600	10	12	
SS282	SS265	7,300	12	16	
SS265	SS248	1,900	16	24	
PS 274	SS241	110	8	12	
SS241	SS268	5,600	36	42	
PS 112	110-00113	600	6	10	
SS196	BPS 777	2,100	30	36	
BPS 777	SS207	100	24	36	
SS207	SS243	6,000	30	36	
PS 258	SS192	1,200	4	6	
SS168	SS186	2,700	14	16	
PS 172	PS172DS	1,500	4	6	
PS 170	SS291	200	10	14	
SS291	SS248	1,370	10	14	
PS148FM	147-00057A	1,500	4	6	
PS 147	SS268	3,000	8	10	

TABLE 3-32
SEU-C-0006 (O'Neal Lane - Tiger Bend Road)

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$10,500,000. Scheduled Design Appropriation Year is 2009. Scheduled Construction Appropriation Year is 2011.



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# 3.5 South WWTP Projects

## 3.5.1 STP - C- 0001 South WWTP - Phase 1

#### Project Description

**Purpose of the Project / Background Information**: Existing unit processes at the South WWTP have been designed and constructed to process a peak hydraulic capacity of 119 mgd. The predicted future peak hydraulic flow to this facility after improvements to collection and conveyance infrastructure is 266 mgd. The C-P is also planning to consolidate the Central WWTP and the South WWTP, with all flow being diverted to the South WWTP for treatment. The predicted future peak wet weather flow from the Central WWTP is 90 mgd. Therefore, the total predicted wet weather peak flow to the South WWTP after the Central Consolidation is 356 mgd. To treat and accept either of the above noted flows, several wet weather improvements must be constructed at the South WWTP. These improvements will be achieved in two projects, specifically STP-C-0001 South WWTP – Phase 1 and STP-C-0002 South WWTP – Phase 2.

**Location**: The South WWTP is located at 2850 South Gardere Lane, and its outfall is located at geographical coordinates of latitude 30° 20′ 27″ north and longitude 91° 08′ 52″ west.

**Scope**: The South WWTP will be upgraded to process wet-weather flows up to 356 mgd. Influent flows will be equalized to allow not more than a 200 mgd maximum flow to the treatment facilities. Sixty-four (64) million gallons of equalization storage will be provided for this purpose.

The existing gravity pump station at the South WWTP will be modified as part of this project to pump to a new headworks. An additional new raw sewage/equalization pump station will also be constructed to convey flows from the forcemain (existing South Suburban Transportation Network [STN]; new Pump Station 58A; and Central Consolidation) system. This pump station will have the capability to pump either to the headworks or to the storage facilities. This pump station will also accept flow from the storage facilities when flow is allowed to be returned after a wet weather storage event.

Raw sewage pumped from the modified gravity pump station and the new forcemain pump station to the process train will be directed into a new headworks facility sized to process 200 mgd. Both of the existing headworks facilities will be demolished and replaced by this single system. The proposed headworks will screen and degrit the influent wastewater.

This project also includes odor control facilities for the influent pump stations, storage facilities, and headworks. A new electrical substation is also included in this project.

The remainder of the South WWTP improvements are described in STP-C-0002 South WWTP – Phase 2. All of the proposed Phase 1 improvements are shown on the site plan given in Figure 3-46. Principal Phase 1 project elements are:

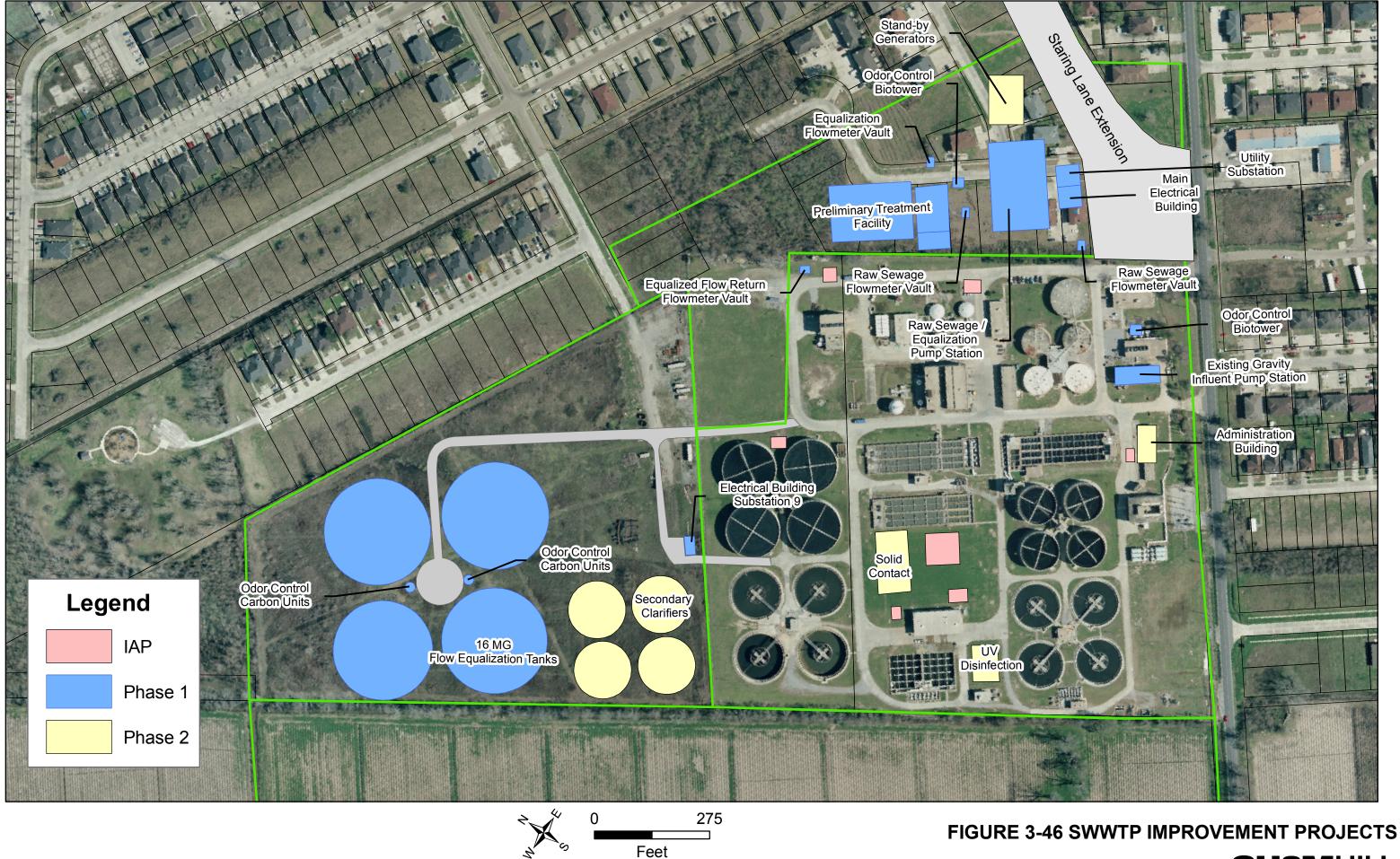
- Modify existing gravity pump station to pump to new headworks
- Construct a new raw sewage (130 mgd)/equalization (156 mgd) pump station and force main system

- Below-grade concrete wet well-type structure. No building.
- Submersible pumps operating from variable frequency drives (VFDs)
- Electrical building to house electrical systems and controls
- Facility includes discharge flow meters
- Facility is covered and includes odor control provisions
- Construct covered storage for flows in excess of 200 mgd
  - Circular lined above-ground tanks (4 at 16 MG each)
  - Bottom slab contains channels to convey return flow to forcemain system raw sewage pump station
  - Facility is mixed and cleaned by water cannons
  - Odor control facilities included
- Construct 200 mgd headworks
  - Elevated facility, constructed of cast in place concrete
  - Facility contains both screening and grit removal equipment
  - Six screening channels assumed
  - Six gravity vortex grit units are assumed
  - Odor control facilities included.
  - A splitter box is constructed on the end of the headworks structure to split plant flow between the dry-weather and wet-weather process trains during wet-weather events. Structure splits flow at 119-mgd to dry-weather train, and 81-mgd to wetweather train.
- Construction of new electrical substation.
- Yard piping
- Site work
- Demolition

Total Estimated Construction Cost is \$90,000,000.

Scheduled Design Appropriation Year is 2008 (already appropriated)

Scheduled Construction Appropriation Year is 2009.



# **CH2MHILL**

### 3.5.2 STP – C- 0002 South WWTP – Phase 2

### **Project Description**

**Purpose of the Project / Background Information**: Existing unit processes at the South WWTP have been designed and constructed to process a peak hydraulic capacity of 119 mgd. The predicted future peak hydraulic flow to this facility after improvements to collection and conveyance infrastructure is 266 mgd. The C-P is also planning to consolidate the Central WWTP and the South WWTP, with all flow being diverted to the South WWTP for treatment. The predicted future peak wet weather flow from the Central WWTP is 90 mgd. Therefore, the total predicted wet weather peak flow to the South WWTP after the Central Consolidation is 356 mgd. To treat and accept either of the above noted flows, several wet weather improvements must be constructed at the South WWTP. These improvements will be achieved in two projects, specifically STP-C-0001 South WWTP – Phase 1 and STP-C-0002 South WWTP – Phase 2.

**Location**: The South WWTP is located at 2850 South Gardere Lane, and its outfall is located at geographical coordinates of latitude 30° 20′ 27″ north and longitude 91° 08′ 52″ west.

**Scope**: The South WWTP will be upgraded to process wet-weather flows up to 356 mgd. The STP-C-0001 South WWTP Phase 1 project includes influent pumping, equalization storage, and headworks facilities. This project begins after the headworks, and includes additional wet weather treatment improvements at the South WWTP. This project has two portions to it, since some of the improvements are required due to wet weather and some are required from the *Draft Wastewater Master Plan (CH2M HILL, May 2008)*.

### Wet Weather Improvements

From the headworks, preliminary treated wastewater up to 119 mgd will flow by gravity to the existing primary clarifiers. Flows in excess of 119 mgd (up to 81 mgd) will flow from the headworks to new solids contact basins. Under this scenario, up to 119 mgd of preliminary treated wastewater will flow from the headworks through the existing primary clarifiers and the existing trickling filters. The upgraded secondary treatment process will contain both TFs and SC basins. Normally, flows up to 119 mgd will be pumped into the TFs and then be pumped into the SC basins. Trickling Filter recirculation is part of the ongoing IAP projects at the plant

Additional final settling tanks must also be provided to manage the 200 mgd wet-weather flow condition. The existing disinfection system will be converted from chlorination to ultraviolet light (UV) disinfection. The existing effluent pump station and outfall piping will require expansion. These improvements are shown on Figure 3-46. Principal project elements include the following:

- Construct Solids Contact Basin (200 mgd)
  - Above grade rectangular concrete structure
  - Aeration blowers located near the solids contact basin.
  - Fine bubble diffused aeration system
  - Return activated and waste activated sludge pump stations for sludge return from the final settling tanks to the solids contact basins, and for sludge wasting to the gravity thickeners

- A splitter box is constructed on the end of the solids contact basins to distribute the flow between the existing and proposed final settling tanks. The splitter box splits 70-mgd to the force-main final settling tanks, 50-mgd to the gravity-train final settling tanks, and the remaining 81-mgd of wet-weather flow to the proposed final settling tanks (four at 120-foot diameter).
- Construct four additional final clarifiers at 160-foot diameter each.
- Conversion of disinfection to UV disinfection
- Construction of an expanded effluent PS (120 mgd  $\rightarrow$  200 mgd)
  - Existing PS will continue to be used to discharge the 120 mgd dry weather flow
  - New PS will be constructed adjacent to, and contiguous with the new chlorine contact basin
  - PS will consist of vertical turbine pumps mounted on a concrete slab. Discharge piping and flow metering will be above grade.
- Construction of parallel effluent pipeline and river outfall structure
- Construction of odor control for the primary clarifiers effluent weirs and the existing solids processing building.
- Yard piping
- Site work
- Demolition
  - Methane storage/power conversion facilities
  - Miscellaneous yard piping and electrical

#### Preliminary Master Plan Improvements

The Master Plan improvements, as outlined in the *Draft Wastewater Master Plan* (*CH2M HILL, May 2008*), include the following principle project elements.

- Secondary source consisting of on-site engine/generators
- Additional solids dewatering facilities
- Fixup and repair of existing anaerobic digesters
- Rehabilitation of existing buildings
- Construction of a plant SCADA system
- Construction of a new lab, new administration building, and a new warehouse facility.

#### Total Estimated Construction Cost for the Wet Weather Improvements is \$40,000,000.

# Total Estimated Construction Cost for the Preliminary Master Plan Improvements is \$50,000,000.

Total Estimated Construction Cost for the entire project is \$90,000,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2010.

### 3.5.3 South WWTP Immediate Action Projects

### **Project Description**

**Purpose of the Project/Project Background:** The South WWTP is under consent decree due to NPDES Permit violations related to total suspended solids (TSS) and biochemical oxygen demand (BOD). The WWTP is presently required to maintain a 30-mg TSS/L and 30-mg BOD/L monthly average and 45-mg TSS/L and 45-mg BOD/L weekly average discharge standard.

A number of improvement projects will be implemented to assist the plant in complying with its effluent permit limits. These improvements will be implemented early in the program to bring the plant into compliance as soon as possible.

The screenings improvements project that was formerly in this project has been moved to STP-C-0001 (South WWTP Phase 1). The effluent pumping station project has been completed.

Location: The South WWTP is located at 2850 South Gardere Lane.

**Scope:** The improvement projects have been grouped together for their implementation. A description of each grouping of projects follows.

### **Primary Treatment Improvements**

Primary treatment improvements will be implemented to improve the reliability of the primary settling tanks and consistently meet BOD and TSS effluent limits.

The first project element includes the addition of ferric chloride and polymer injection systems for enhanced BOD/TSS removal. This element includes installation of chemical storage and feed systems on both the gravity and forcemain trains of the plant.

The second project element includes various improvements to the primary settling tanks to improve their mechanical reliability. There are six existing tanks. Several of these tanks currently experience significant down time due to issues with mechanical reliability. DPW operations staff also experience difficulty in removing sludge from the clarifiers, which could be associated with issues such as improper collector mechanism speed, pump capacities, pump cycle times, or a combination thereof. The following improvements have been identified for enhanced operational reliability:

- **Repair/Replace clarifier mechanisms and components**. Improvements include replacement of boards, wear strips, sprockets, drives, and expansion joints. Some clarifiers may require new chain. Evaluate appropriateness of mechanism speed. Some of this work will have electrical system impacts which require design.
- **Replace existing sludge pumps**. The current piston pumps have significant maintenance problems. New pumps will be installed. Pump capacities and cycle times will be evaluated to ensure sludge removal design criteria are met.
- **Replace large inlet plug valves on clarifiers 1, 2, 3, and 4.** Existing valves (32 valves total) are maintenance intensive. These valves will be replaced.

The third project element includes the addition of flow control/flow measurement devices at several splitter boxes. The plant has several structures designed to split the flow between

process trains, and between discrete basins. These flow splits occur by gravity flow over weir gates. Currently, there is no means to monitor or control the flow splits, or determine proper distribution to downstream facilities. To improve this, weir gate electric actuators and level (flow) elements will be installed at splitter boxes No. 1 and 2.

### **Trickling Filter Improvements**

The secondary treatment process consists of two separate trickling filter, final settling tank, and effluent PS trains. An upstream splitter box receives flow from the primary clarifiers, and splits it to the two secondary trains. The following improvements have been identified to assist in achieving permit compliance.

- Trickling Filter Recirculation PS, Electrical Building, Piping Interconnection, and Flow Control. A new recirculation pump station is required to maintain proper wetting rates on the trickling filters. The PS will intercept trickling filter effluent, and pump it to the primary effluent pump station where it will be combined with primary effluent and fed to the trickling filters through the trickling filter splitter box. A preliminary estimate of the pump station capacity indicates a required flow range of 20 to 100 mgd. In addition to the new recirculation pump station and hydraulic and process improvements require that the two final settling tank complexes be interconnected with piping so that they are all available for use in receiving trickling filter effluent from both the gravity and the force main sides of the plant. In order to achieve this interconnectivity and flow control, a dynamic hydraulic evaluation needs to be performed to determine specific piping layout and the type of flow control to be implemented. Preliminary investigations indicate that a flow control and flow meter valve vault (or similar flow control/splitting scheme) may need to be installed upstream of each final settling tank complex. The required hydraulic evaluation will determine how the system will be controlled and tied into the remainder of the plant system.
- **Primary Effluent Pump Stations Improvements**. There are two existing primary effluent pump stations, with two separate wet wells. The wet wells are hydraulically connected by an existing pipe. The pumps operate off various wet well levels to pump primary effluent to the trickling filter splitter box. The new trickling filter recirculation pump station will discharge into the primary effluent pump stations' wet wells. A hydraulic, electrical, and control system evaluation is required for this entire system to determine required modifications to the pump stations. The hydraulic evaluation needs to be comprehensive in nature, and include trickling filter recirculation pump station, primary effluent pump stations, and final settling tank flow control elements as a comprehensive hydraulic system.

### **Sludge Handling Improvements**

Recommended improvements to the sludge handling systems are as follows:

• **Gravity Thickeners and Thickened Sludge Pump Station Rehabilitation**. The gravity thickener complex has not been in service for many years. The complex needs to be rehabilitated so that primary and secondary sludge can be evacuated in a timely manner from process facilities, and allow for thickening prior to anaerobic digestion. The thickened sludge will enhance the digestion unit process. In addition, a persistent flooding problem has rendered much of the equipment inoperable. Recommended improvements include replacing gravity thickeners, rehabilitating/replacing sludge

pump station components, and improving site grading to reduce the potential of flooding.

• **Final Settling Tank Sludge Withdrawal Improvements**. Sludge pumps from each settling tank complex discharge through a common header. DPW believes that the pumps do not have significant capacity to pump against the resulting head, resulting in sludge buildup in the settling tanks. The sludge pumping hydraulics will be evaluated and improvements made to improve sludge withdrawal.

Total Estimated Construction Cost is \$54,600,000.

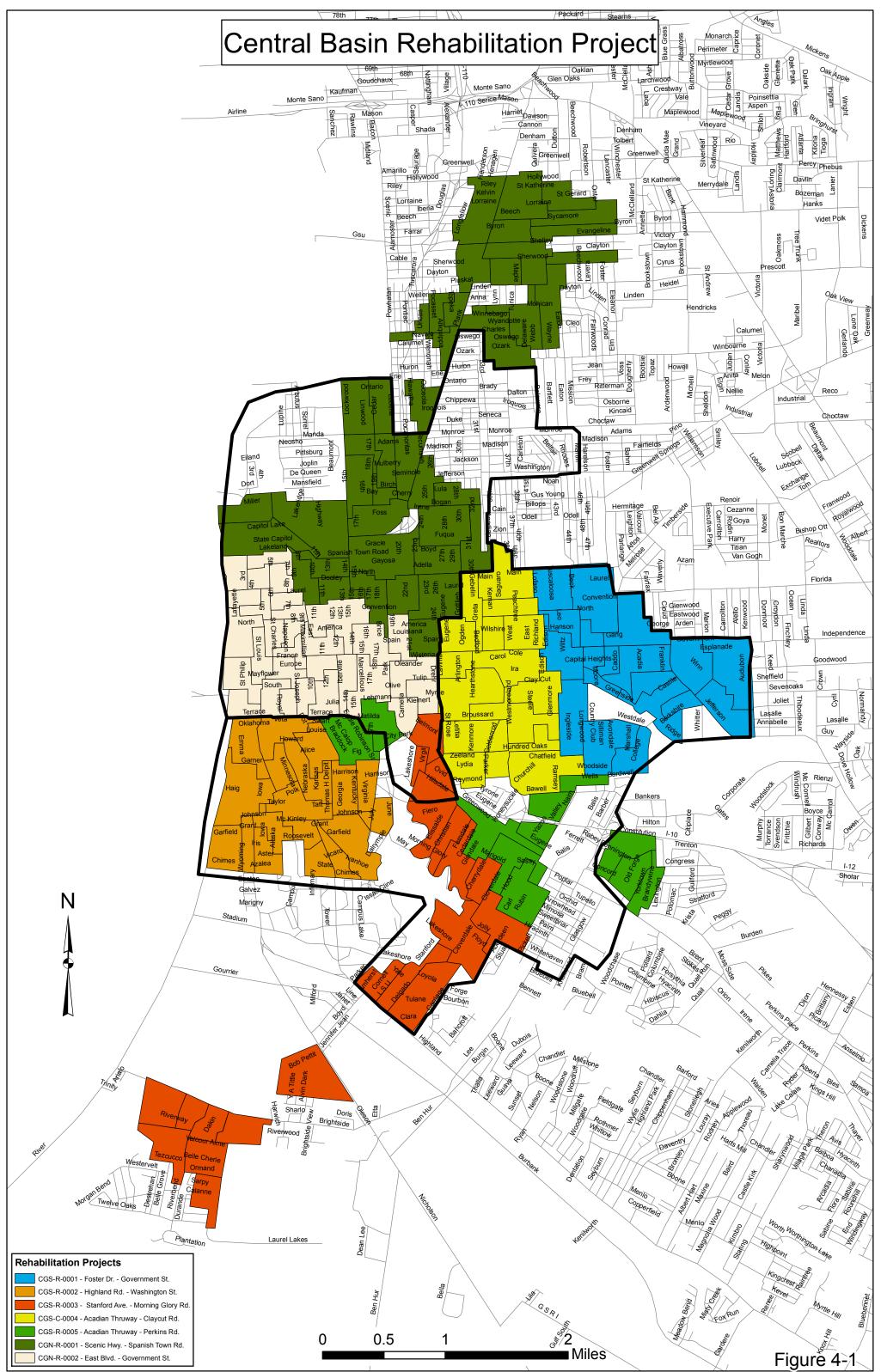
Scheduled Construction Appropriation Year (Design is complete) is 2008 (already appropriated).

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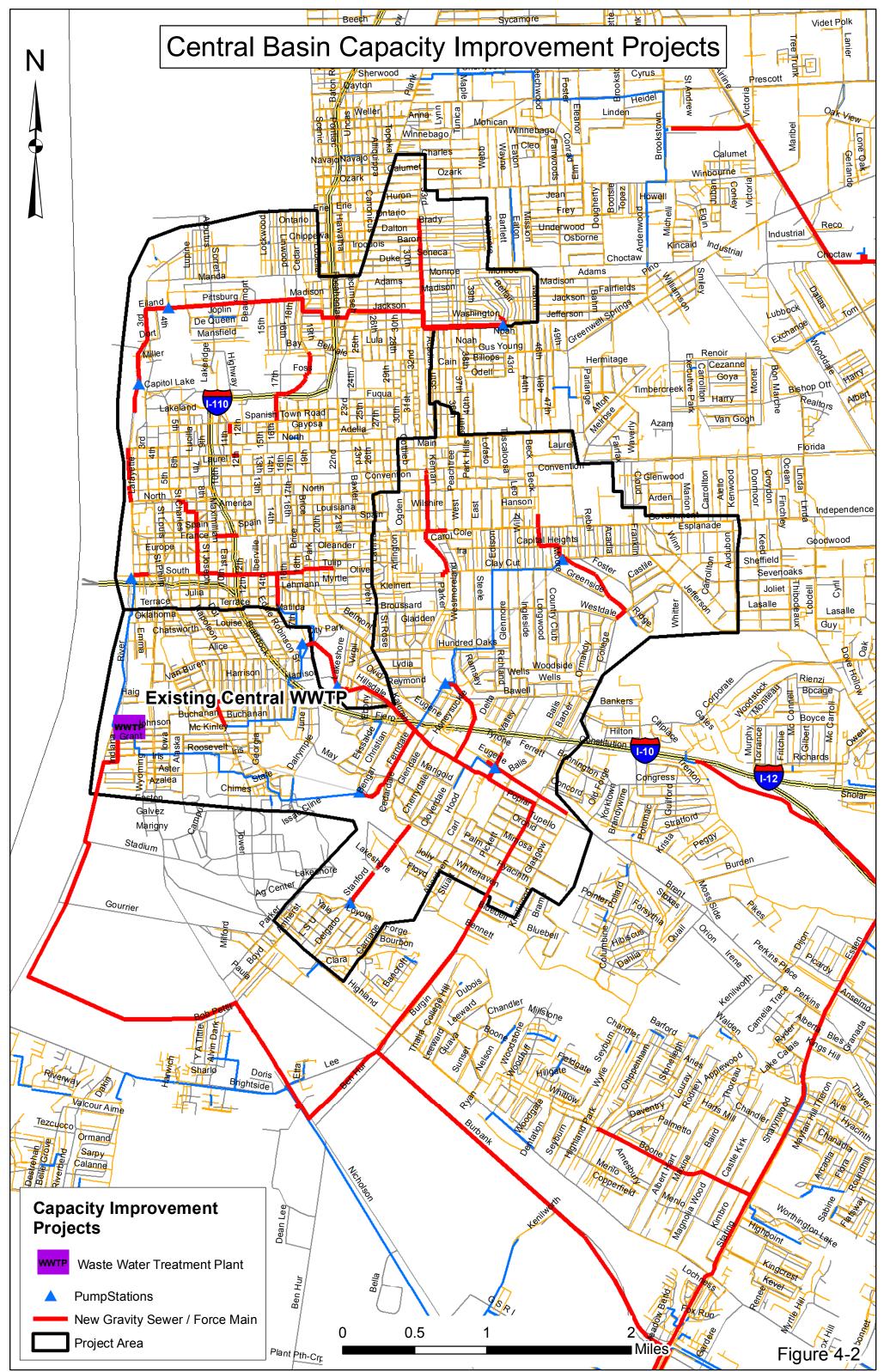
## SECTION 4 Central Basin Projects

Section 4 presents summaries of the Central Gravity System Comprehensive Rehabilitation Projects, the Central Gravity System Capacity Improvement Projects, and the Central Consolidation Projects. These projects are shown on Figures 4-1 and 4-2.

The project summaries presented herein represent the information available during this first annual update period. The PDP will be revisited on an annual basis and revised, as necessary, based on results of additional hydraulic wastewater modeling, immediate needs, DPW and public input, and other factors. This page intentionally left blank.



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## 4.1 Central Gravity System Comprehensive Rehabilitation Projects

### 4.1.1 CGS-R-0001, CGS-R-0002, CGS-R-0003, CGS-R-0004, CGS-R-0005, CGN-R-0001 AND CGN-R-0002

### **Project Description**

The sanitary sewer system comprehensive rehabilitation projects consist of improvements to various components of the collection system to reduce the amount of infiltration and inflow that enter the system.

### Purpose

The purpose of comprehensive rehabilitation is to correct defects in the system such as offset pipe joints, collapsed pipe sections, leaking manholes, and direct inflow sources. The water that enters the system through the defects is a major contributor to SSOs. Comprehensive rehabilitation of the collection system will contribute to alleviating SSOs.

### Location

There are seven rehabilitation projects located within the Central Gravity Basin. The locations of the projects are shown on the attached maps.

### Scope of Project

The first phase of comprehensive rehabilitation projects will consist of the physical inspection of the pipes and manholes including CCTV inspection. Smoke testing may also be included in the physical inspection phase.

The data collected by the physical inspection contractor will be analyzed and, based on that analysis, a listing of recommended repairs with associated construction costs will be generated.

An engineering firm will then complete detailed design and preparation of construction documents for project bidding.

The construction of comprehensive rehabilitation projects will typically include the following components:

- Replacement of pipes
- Point repair of pipes
- Rehabilitation of pipes by cured in place pipe liners
- Rehabilitation or replacement of manholes
- Repair of sewer laterals to the property line

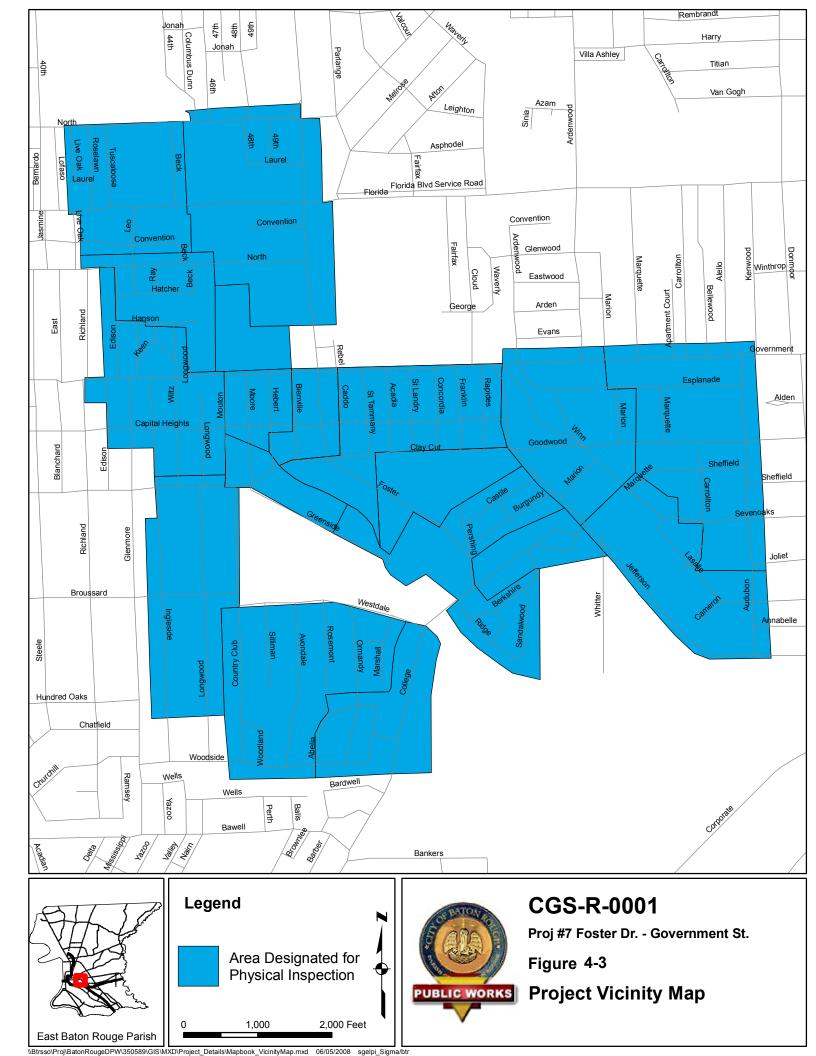
### Cost

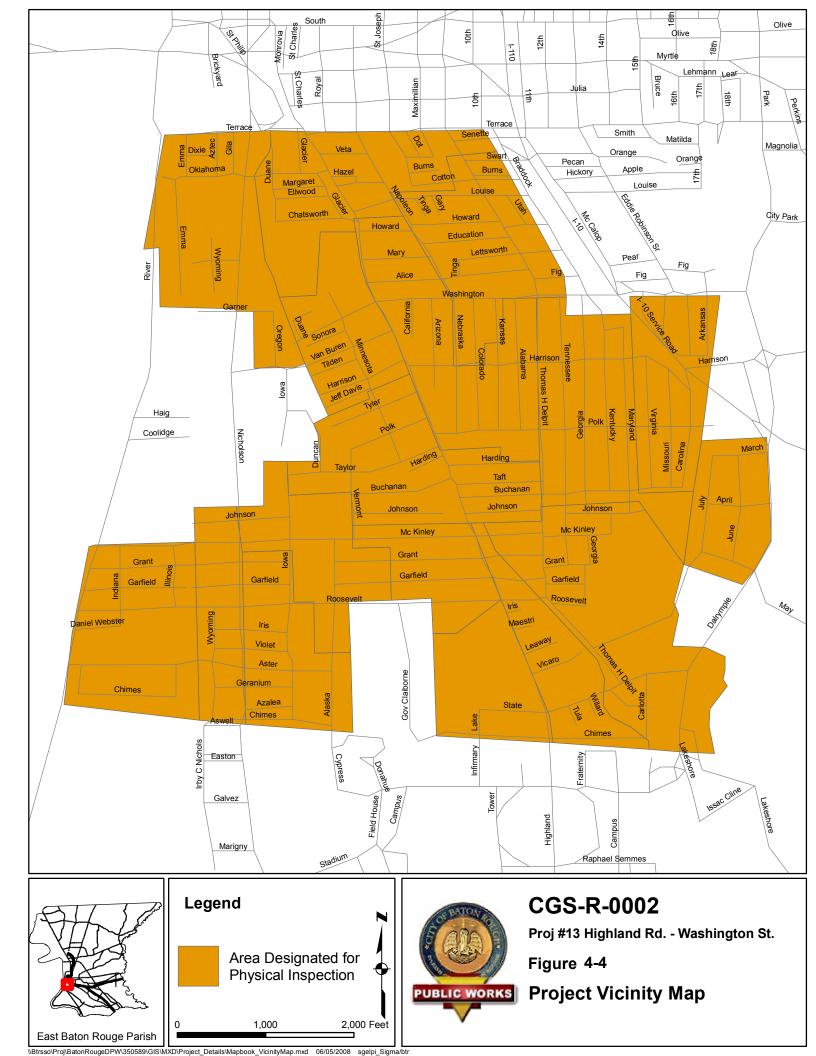
The estimated construction cost for each project is presented in Table 4-1. These costs are based on preliminary estimates of the amounts for each component of the system that will require repair or replacement. During the physical inspection phase, the actual condition of the components will be assessed and appropriate methods recommended. At that time, the cost estimate for each project will be revised.

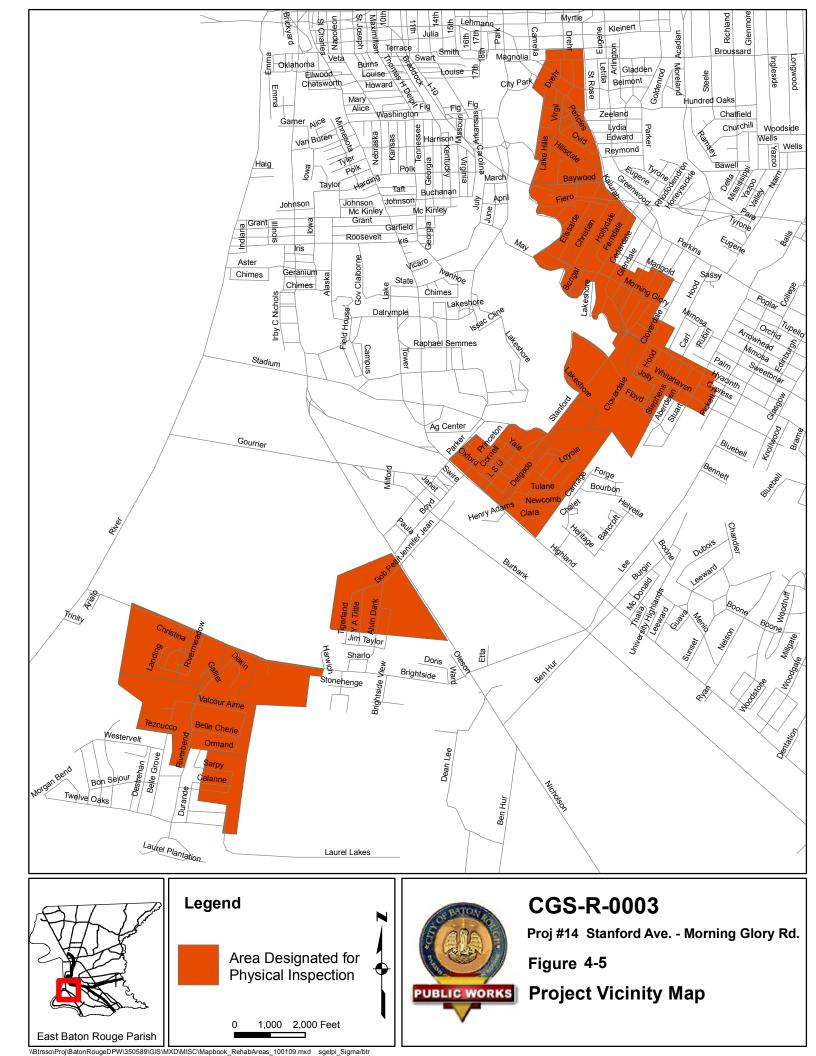
### TABLE 4-1

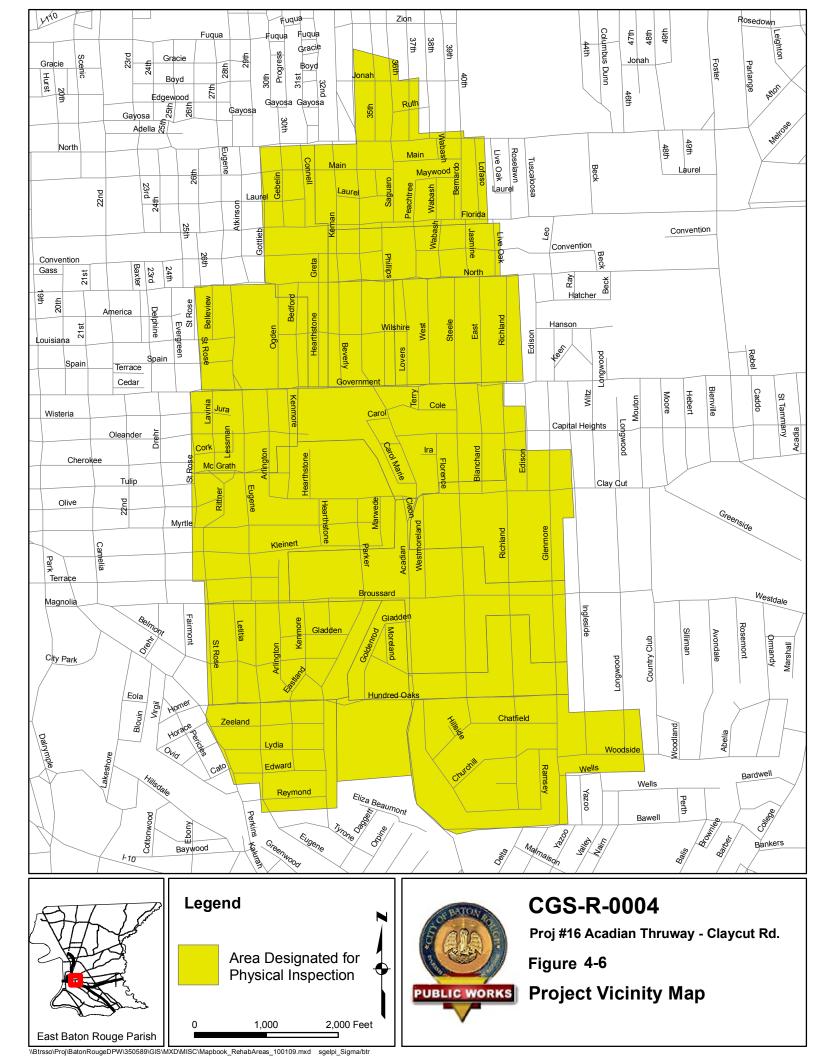
Estimated Construction Costs for Central Gravity System Comprehensive Rehabilitation Projects

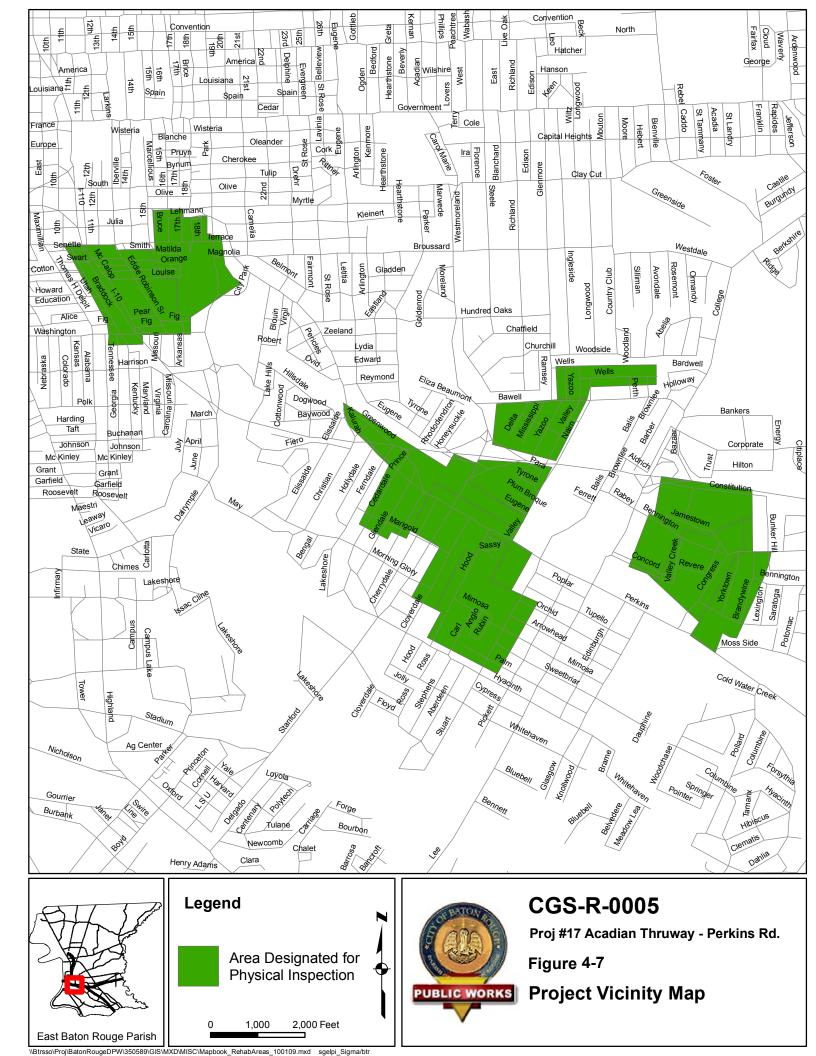
Project Description	Construction Cost	Scheduled Design Appropriation Year	Scheduled Construction Appropriation Year
CGS-R-0001-Foster Drive-Government Street	\$6,900,000	2009	2009
CGS-R-0002-Highland Road-Washington Street	\$8,400,000	2009	2010
CGS-R-0003-Stanford Avenue-Morning Glory Road	\$7,200,000	2010	2010
CGS-R-0004-Acadian Thruway-Claycut Road	\$7,800,000	2010	2011
CGS-R-0005-Acadian Thruway-Perkins Road	\$4,100,000	2010	2011
CGN-R-0001-Scenic Highway-Spanish Town Road	\$18,000,000	2011	2012
CGN-R-0002- East Boulevard-Government Street	\$10,000,000	2012	2013

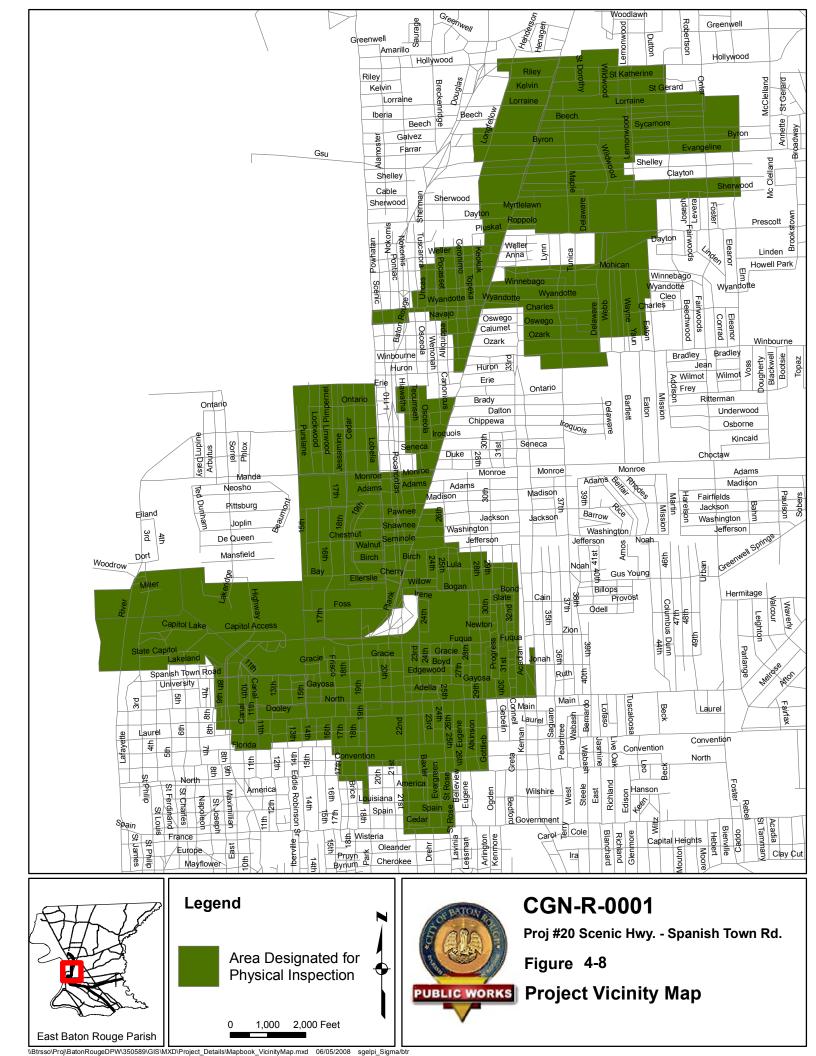


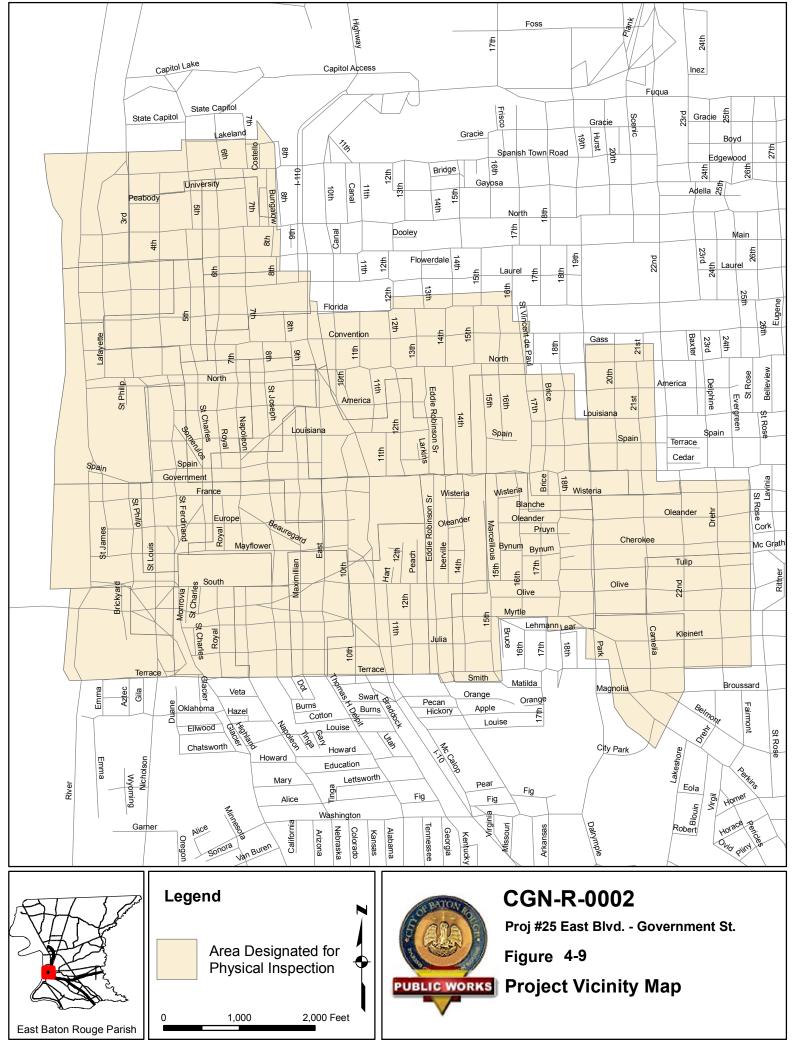












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## 4.2 Central Gravity System Capacity Improvements Projects

### 4.2.1 CGN-C-0001 (Capital Lake Drive – Gayosa Street)

### Project Description

### Purpose of the Project / Background Information

The purpose of this project is to re-route flow from PS 15 and PS 19 so that they directly pump through a common forcemain to PS 60 to increase the capacity of the system and to avoid large gravity sewer upgrades upstream of PS 60 that were originally part of this project in the January 2008 PDP.

### Location

Forcemain segment PS 15FM to PS 15DS starts south of the Washington Ave and West Belfair Drive. intersection. The forcemain travels west until reaching PS 15DS.

Forcemain segment PS 19FM to PS 15DS starts on Eiland Drive near the intersection of 4th Street. The forcemain travels west until reaching PS 15DS.

Forcemain segment PS 15DS to PS 60 travels west until reaching River Rd and then travels south to PS 60.

### Scope

The entire CGN-C-0001 (Capital Lake Drive – Gayosa Street) project consists of approximately 2,900 feet of 21-inch and 24-inch sewer and approximately 17,500 feet of 18-inch and 20-inch force main, as outlined below in Table 4-2

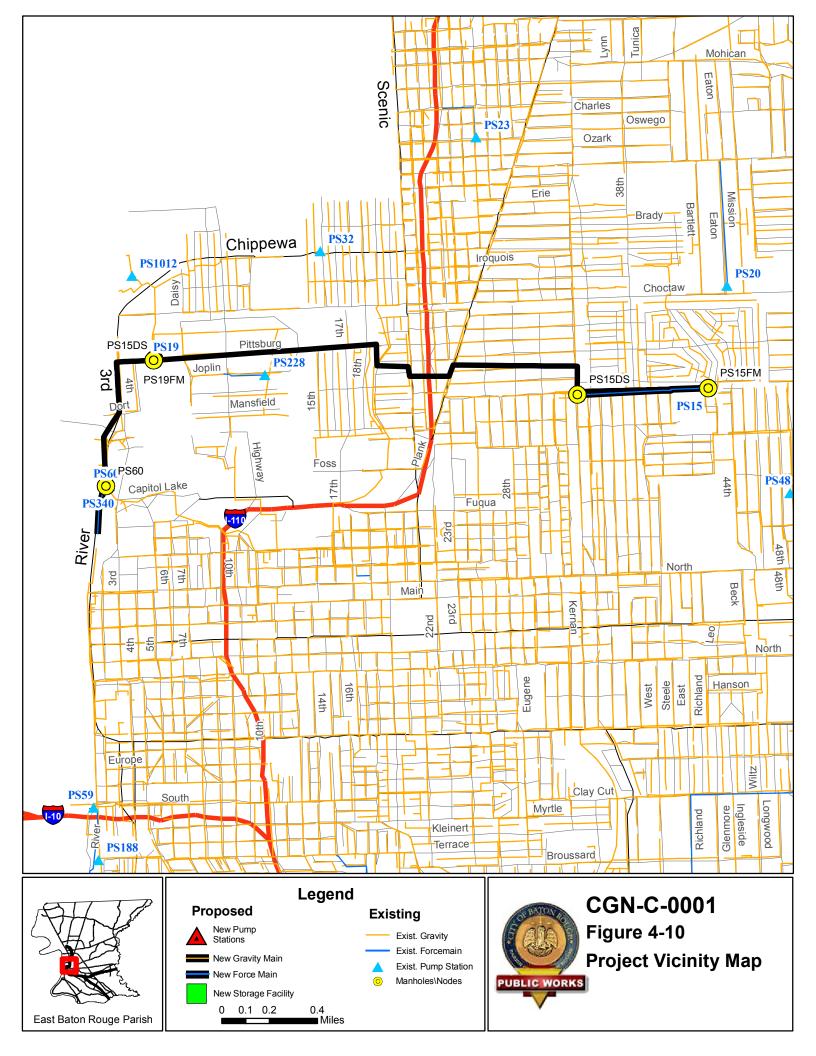
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS15FM	PS15DS	13700	New	18	
PS19FM	PS15DS	122	New	18	
PS15DS	PS60	3600	New	20	

TABLE 4-2 CGN-C-0001 (Capital Lake Drive – Gayosa Street)

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$2,100,000.

Design was appropriated in 2007.



### 4.2.2 CGN-C-0002 (25th Street – North Acadian Thruway)

### **Project Description**

### Purpose of the Project / Background Information

The purpose of the CGN-C-0002 (25th Street – North Acadian Thruway) project is to increase the capacity of the gravity trunk sewer upstream of PS 60, PS 15, and PS 59 to alleviate SSOs. Several hundred feet of large gravity trunk sewer were deleted from this project upstream of PS 60 due to the change in project CGN-C-0001 (Capital Lake Drive – Gayosa Street). Several hundred feet of gravity sewer upstream of PS 60 and PS 59 were added to this project due to hydraulic modeling adjustments.

### Location

Gravity segment 060-07642 to 060-07619 starts northeast of the N Acadian Thruway W and Ontario St intersection. The gravity segment travels until reaching 060-07619, near N Acadian Thruway and Baron St intersection.

Gravity segment 060-07619 to 060-07544 travels south until reaching 060-07544 located near N Acadian Thruway and Fairfields Ave intersection.

Gravity segment 060-07544 to 060-07486 travels south until reaching 060-07486 located near N Acadian Thruway and Jefferson Ave intersection. Gravity segment 060-07486 to 060-07970 travels east until reaching 060-07970, located west of 38th St.

Gravity segment 060-07970 to PS 15 travels east until reaching PS 15, located below Washington Ave and Belfair Dr intersection.

Gravity segment 015-05119 to PS 15 starts northwest of Washington Avenue and Belfair Drive intersection. The gravity segment travels southwest until reaching 015-05117. At 015-05117, the gravity segment travels south east until reaching 015-05116. The gravity segment continues south until reaching 015-05115. At 015-05115, the gravity segment travels west until reaching PS 15.

Gravity segment 059-06287 to 059-06282 starts northwest Government Street and 11th Street intersection. The gravity segment travels west, running parallel to Government Street, until reaching 059-06282 near Government and East Blvd.

Gravity segment 059-06527 to 059-06532 starts northwest of Terrace Avenue and S 15th Street intersection. The gravity segment travels north, running parallel to S 15th Street, until reaching 059-06532 near South Street.

Gravity segment 060-06987 to 060-06935 starts west of Main Street and N 12th Street intersection. The gravity segment travels southwest until reaching 060-06935 located east of Main Street and N 11th Street intersection.

Gravity segment 060-07038 to 060-06953A starts north of North Street between Canal Street and N 11th Street. The gravity segment travels north until reaching 060-06953A near Spanish Town Road.

Gravity segment 060-07735 to 060-07735I starts northeast of Foss Street and N 19th Street intersection. The gravity segment travels southwest until reaching 060-07735I, crossing both Foss Street and N 19th Street.

Gravity segment 060-07735I to 060-07735J travels west, parallel to Foss St, until reaching 060-07735J, located south of Foss Street.

Gravity segment 060-07735J to 060-07734 travels southeast until reaching 060-07734, located west of N 19th Street.

Gravity segment 060-7741 to 060-07737 starts west of Scenic Highway between Bay Street and Ellerslie Drive. The gravity segment travels southeast until reaching 060-07737 near Ellerslie Drive. Gravity segment 060-07737 to 060-07736 travels southwest towards Foss St. Gravity segment 060-07736 to 060-07735 travels southwest ending at 060-07735 near Foss St.

Gravity segment 059-05872A to 059-05871 starts west of River Road between its Florida Street and Convention Street intersections. The gravity segment travels south until reaching 059-05871 near River Road and Convention Street intersection.

Gravity segment 059-05871 to 059-05870 travels south until reaching 059-05870 near River Rd and North Blvd intersection.

Gravity segment 059-05879 to 059-05878 starts west of River Road and North Street intersection. The gravity segment travels south until reaching 059-05878 located southwest of the River Road and North Blvd intersection.

### Scope

Project CGN-C-0002 (25th Street – North Acadian Thruway) includes construction of approximately 8,600 feet of 15-inch, 18-inch, 21-inch, and 24-inch gravity sewer upstream of PS 60, approximately 500 feet of 18-inch gravity sewer upstream of PS 15, and approximately 2,700 feet of 15-inch and 36-inch gravity sewer upstream of PS 59. The entire scope of the project is shown in Table 4-3.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
060-07642	060-07619	950	12 & 10	18	
060-07619	060-07544	2100	18, 15, & 12	21	
060-07544	060-07486	900	18	24	
060-07486	060-07970	1100	New	21	
060-07970	PS15	1850	New	24	
015-05119	PS 15	500	10	18	
059-06287	059-06282	823	10	15	
059-06527	059-06532	1191	10	15	
060-06987	060-06935	283	10	15	
060-07038	060-06953A	364	18	24	
060-07735	060-077351	81	18	24	
060-077351	060-07735J	67	18	24	

#### TABLE 4-3 CGN-C-0002 (25<sup>th</sup> Street – North Acadian Thruway)

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
060-07735J	060-07734	167	18	24	
060-07741	060-07736	399	18	24	
060-07736	060-07735	345	18	24	
059-05872A	059-05871	159	30	36	
059-05871	059-05870	431	33	36	
059-05879	059-05878	91	30	36	

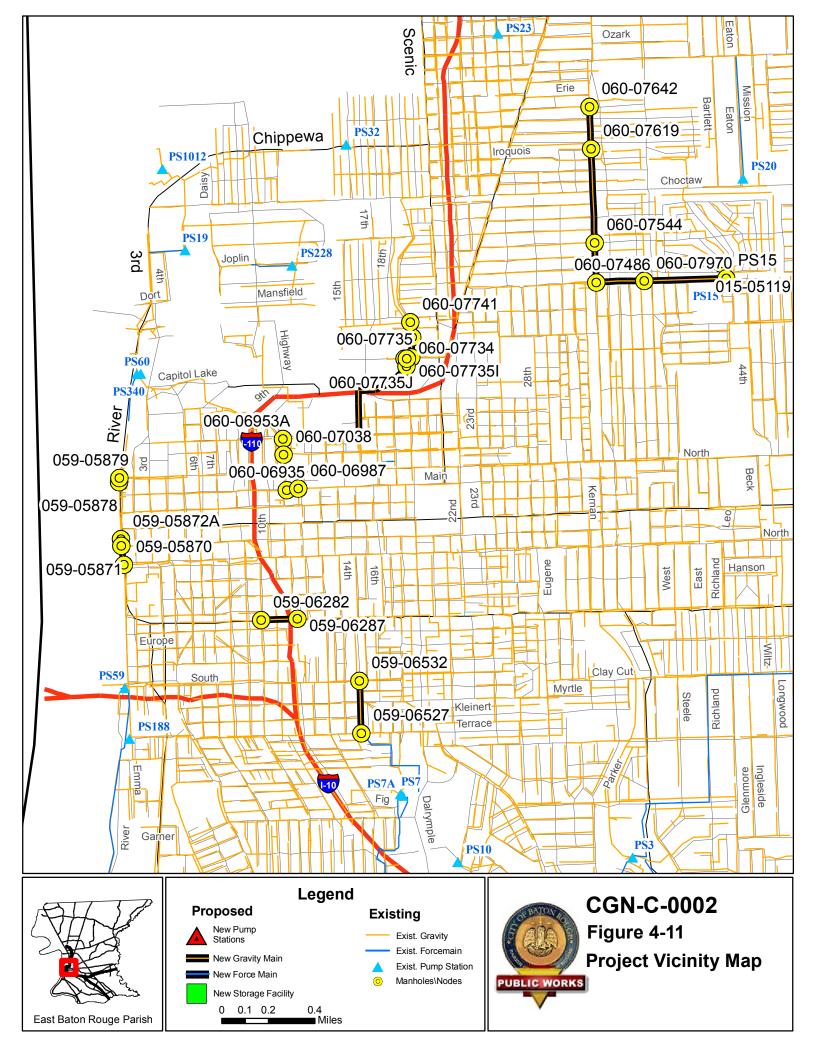
TABLE 4-3	
CGN-C-0002 (	25 <sup>th</sup> Street – North Acadian Thruway)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$4,600,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2010.



### 4.2.3 CGN-C-0003 (South Boulevard – St. Joseph Street)

### **Project Description**

### Purpose of the Project / Background Information

The purpose of this project is to increase the capacity of the gravity sewers upstream PS 59. Nearly 3,000 feet of gravity sewer and the forcemain from PS 10 were deleted from this project due to hydraulic modeling updates.

### Location

Gravity segment 059-06088 to 059-05857 starts northeast of St Philip Street and South Blvd intersection. The gravity segment travels west until reaching 059-05855. The line travels north until reaching 059-05857 located near the River Road and South Blvd intersection.

Gravity segment 059-06445 to 059-06532 starts northwest of the Camellia Avenue and Tulip Street intersection. The gravity segment travels west, turning south at 059-06575A. The gravity segment turns west at 059-06574, continuing until reaching 059-06532.

Gravity segment 059-06532 to 059-06045 starts west of Marcellious Lane and South Street. The gravity segment travels west along South St, crossing I-110 and continuing until reaching 059-06621. The line travels north, turning west at 059-06614. The line continues west until reaching 059-06045 located northwest of the St Joseph Street and South Blvd intersection.

Gravity segment 059-06140 to 059-06236 starts near the North Blvd and N 6th Street intersection. The gravity segment travels south until reaching 059-06139. The line travels east until reaching 059-06229. The gravity segment travels south until reaching 059-06230. The line travels east until reaching 059-06236, located near the America Street and St Joseph Street intersection.

Gravity segment 059-6236 to 059-06128 starts southwest of the America Street and St Joseph Street intersection. The gravity segment travels south until reaching 059-06128, located near the Government Street and St Joseph Street intersection.

Gravity segment 059-06128 to 059-06045 starts near the Government Street and St Joseph Street intersection. The gravity segment travels south until reaching 059-06045, located near the South Blvd and St Joseph St intersection.

Gravity segment 059-05878 to 059-05872 starts southwest of North St and River Rd intersection. The gravity segment travels south until reaching 059-05872, located near the Florida Blvd and River Rd intersection.

### Scope

The entire CGN-C-0003 (South Boulevard – St. Joseph Street) project consists of approximately 10,200 feet of gravity sewer upstream of PS 59. Table 4-4 below shows the scope of this project.

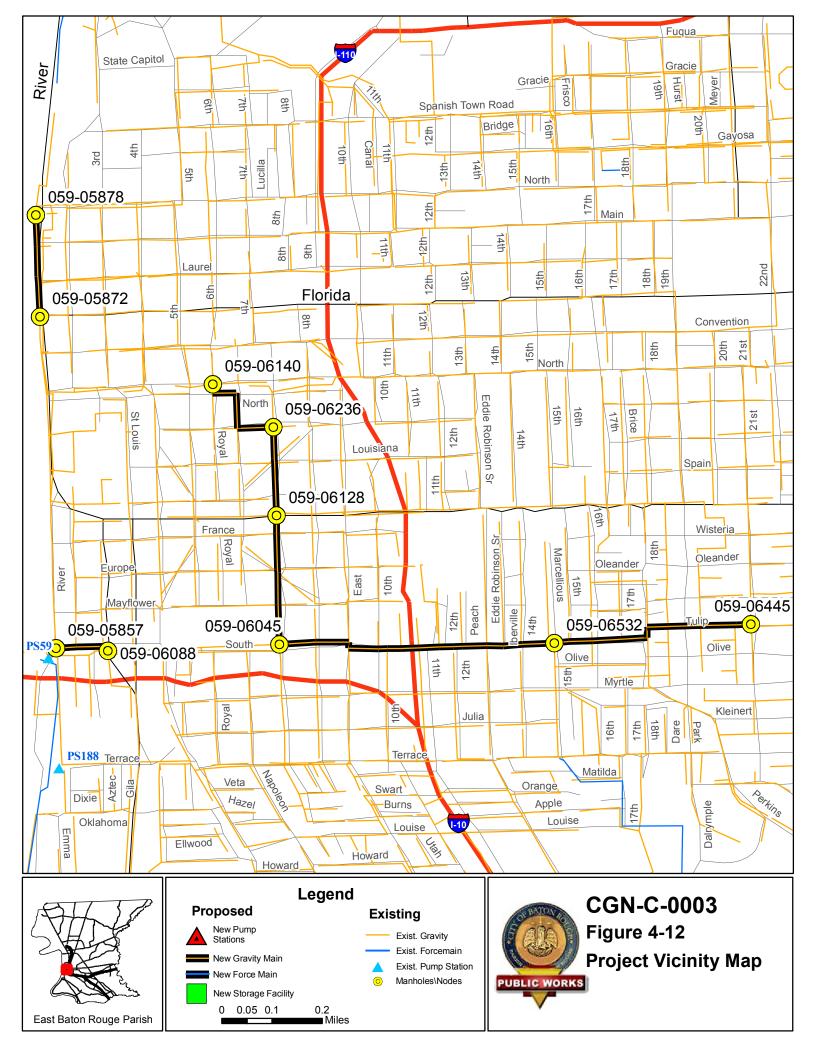
CGN-C-0003 (So	outh Boulevard – St	. Joseph Stree	t)		
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
059-06088	059-05857	560	24	36	
059-06445	059-06532	2200	12 & 10	21	
059-06532	059-06045	3000	12 & 10	24	
059-06140	059-06236	1100	10	15	Reduced Segment
059-06236	059-06128	940	18	24	
059-06128	059-06045	1300	21 & 15	27	
059-05878	059-05872	1100	36, 30, & 27	42	

TABLE 4-4	
CGN-C-0003	(South Boulevard – St. Joseph Street)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$4,500,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).



### 4.2.4 CGN-C-0004 (Downtown Area – PS 59 Improvements)

### Project Description

### Purpose of the Project / Project Background

Project CGN-C-0004 (Downtown Area – PS 59 Improvements) includes the upgrade of PS 59 to alleviate SSOs at and near the pump station as well as in their respective upstream basins. The BTRSSO hydraulic model also predicts a pump station capacity exceedance for the future peak wet weather flow. PS 10, which was originally part of this project, was moved to the Central Consolidation project.

### Location

The location of PS 59 is shown in Table 4-5.

### Scope

The scope of this project is shown in Table 4-5.

TABLE 4-5

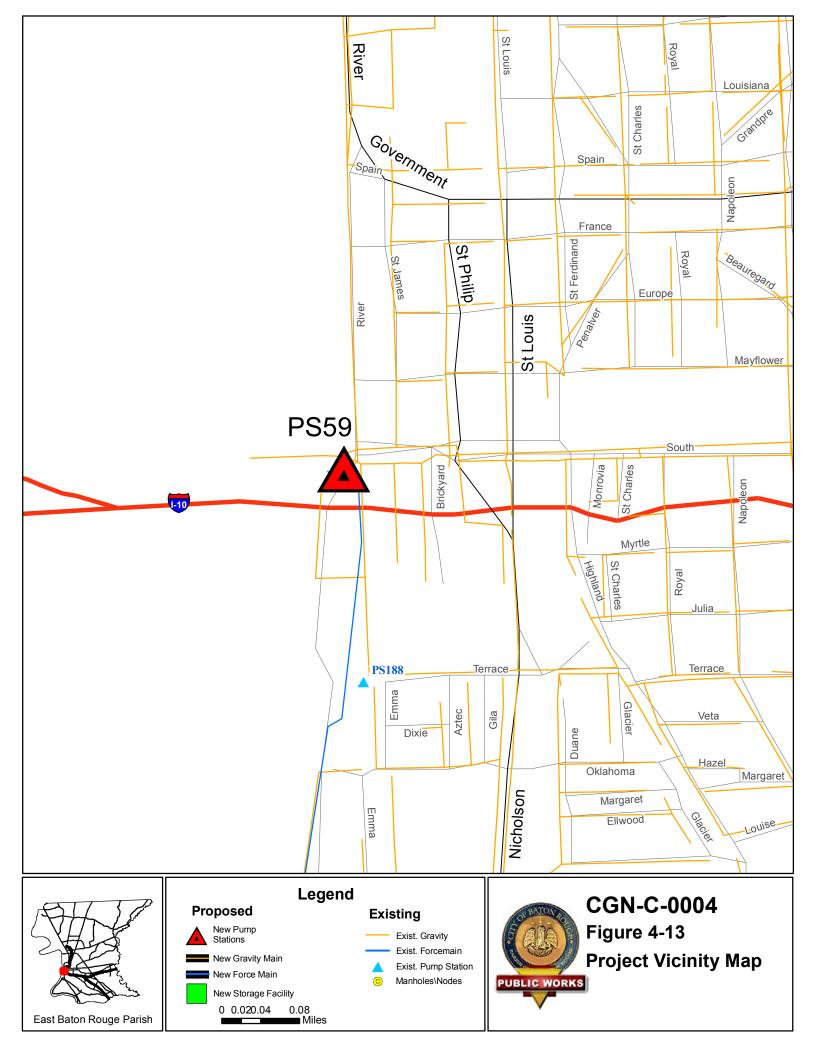
CGN-C-0004 (Downtown Area - PS59 Improvements)

PS	Location	Existing Max Capacity	Future Peak Wet Weather
NO.		(GPM)	Flow (GPM)
PS 59	Near the intersection of River Road and South Blvd.	7,777	26,665

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$5,200,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).



### 4.2.5 CGN-C-0005 (Downtown Area – PS 15, PS 19, and PS 60 Improvements)

### **Project Description**

### Purpose of the Project / Project Background

The CGN-C-0005 (Downtown Area –PS 15, PS 19, and PS 60 Improvements) project includes the upgrade of PS 15, PS 19, and PS 60 to alleviate SSOs at and near the PSs as well as in their respective upstream basins. The BTRSSO hydraulic model also predicts a PS capacity exceedance for the future peak wet weather flow. PS 15 and PS 19 will utilize the new forcemains outlined in project CGN-C-0001 (Capital Lake Drive – Gayosa Street).

### Location

The locations of PS 15, PS 19, and PS 60 are given in Table 4-6.

### Scope

The scope of this project is shown in Table 4-6.

#### TABLE 4-6

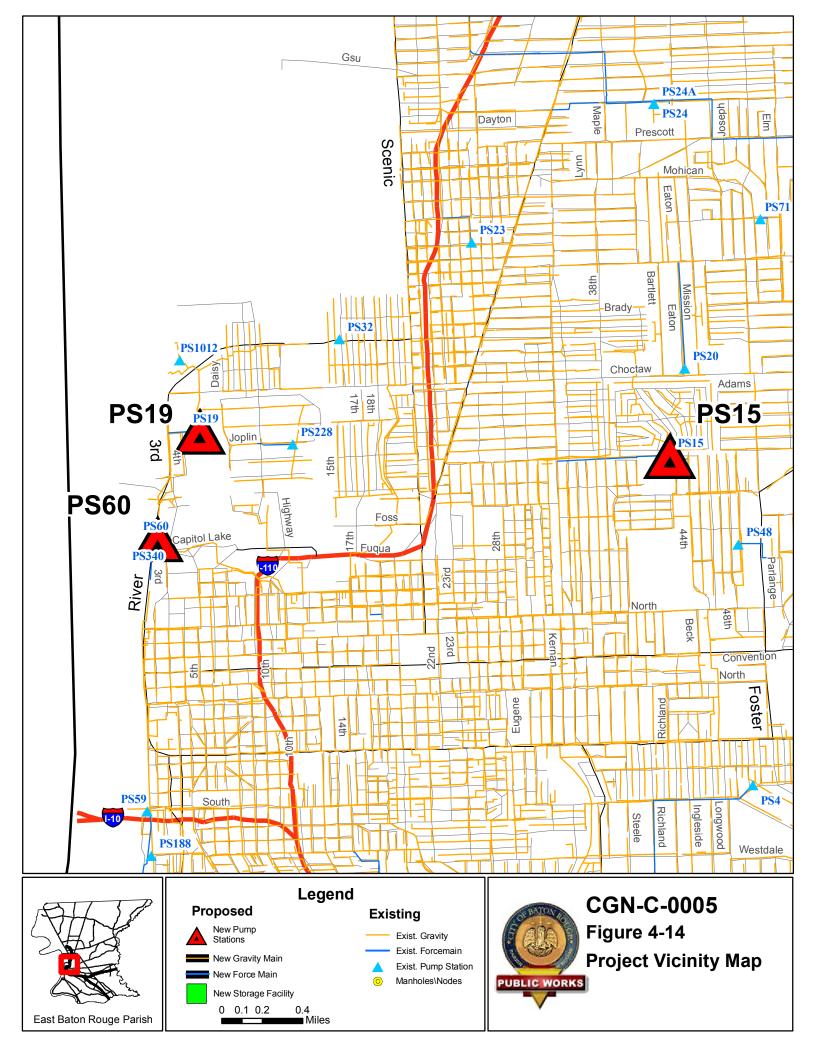
CGN-C-0005 (Downtown Area - PS 15, PS 19, and PS 60 Improvements)

PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS 15	Washington Street, near intersection of West Belfair Drive	694	4,014
PS 19	Eiland Drive, near intersection of 4th Street	417	1,493
PS 60	River Road North, near State Capitol Drive	4,583	16,249

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$5,400,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).



# 4.2.6 CGS-C-0001 (Roosevelt Street Area – PS 1 Improvements)

#### Project Description

This project was deleted due to the Central Consolidation. PS 1 no longer needs improvements due to the Central Consolidation projects.

## 4.2.7 CGS-C-0002 (University Lake Area – PS2, PS5, and PS6 Improvements)

#### **Project Description**

This project was deleted due to the Central Consolidation. PS 2, PS 5, and PS 6 will all be part of the Central Consolidation – PS 2, PS 3, PS 4, PS 5, PS 6, PS 7, & PS 10 project.

## 4.2.8 CGS-C-0003 (Acadian/Clay Cut Area – PS3 and PS4 Improvements)

#### **Project Description**

This project was deleted due to the Central Consolidation. PS 3 and PS 4 will be part of the Central Consolidation – PS 2, PS 3, PS 4, PS 5, PS 6, PS 7, & PS 10 project.

# 4.2.9 CGS-C-0004 (Highland Road – Buchanan Street)

#### **Project Description**

#### Purpose of the Project / Project Background

The CGS-C-0004 (Highland Road – Buchanan Street) project includes the upgrade of approximately 7,400 feet of open cut gravity sewer located upstream of PS 1, PS 2, PS 5, and PS 6 and approximately1,400 feet of forcemain from PS 6 to alleviate SSOs in the Central Gravity South basin. The original project from the January 2008 PDP had several hundred feet of gravity sewer deleted from it due to Central Consolidation, so it was combined with the CGS-C-0005 (Stanford Avenue – Ferndale Avenue) project.

#### Location

Gravity segment 001-00425A to 001-00425 starts on East Polk Street between Colorado Street and Nebraska Street. The gravity segment travels west until reaching 001-00425 located on East Polk Street between Nebraska Street and Highland Road.

Gravity segment 001-00425 to 001-00293 starts on East Polk Street between Nebraska Street and Highland Road. The gravity segment travels west on Polk Street, then southeasterly along Highland Road, ending at Johnson Street.

Gravity segment 002-01393 to 002-01390 starts northeast of the Stanford Avenue and West Lakeshore Drive intersection. The gravity segment travels northeast until reaching 002-1391. The line travels north until reaching 002-01390 near the Stanford Avenue and South Lakeshore Drive intersection.

Gravity segment 002-01390 to 002-01361 starts near the Stanford Avenue and South Lakeshore Drive intersection. The gravity segment travels northeast along Stanford Ave until reaching 002-01361, located southwest of the Stanford Avenue and East Lakeshore Drive intersection

Gravity segment 005-04061 to 005-03800 starts at the Perkins Road and Glasgow Avenue intersection. This location is near a railroad. The gravity line travels northwest, nearly parallel to Perkins Rd along the railroad until reaching 005-3800 near the Perkins Road and Valley Street intersection.

Gravity segment 005-03915 to 005-03914 starts southwest of the Eugene Street and Valley Street intersection. The gravity segment travels southeast until reaching 005-3914, located near the railroad crossing at Valley Street.

Gravity segment 005-03808 to 005-03800 starts at the Nairn Drive and Valley Street intersection. The gravity segment travels southwest until reaching 005-03802. The line travels southeast until reaching 005-03801. The gravity line travels southwest until reaching 005-03800 , located near Valley St and Pump Station 5.

Gravity segment 006-04250 to PS 6 starts southeast of the West Lakeshore Drive and Stanford Drive intersection. The gravity segment travels northwest until reaching PS 6.

Forcemain segment PS6FM to PS6DS starts southeast of West Lakeshore Drive and Stanford Drive intersection. The forcemain travels northeast, parallel to Stanford Drive until reaching PS6DS near the South Lakeshore Drive and Stanford Drive intersection.

#### Scope

Project CGS-C-0004 (Highland Road - Buchanan Street) includes approximately 1,100 feet of 10-inch and 15-inch gravity sewer upstream of PS 1, approximately 2,000 feet of 21-inch and 24-inch gravity sewer upstream of PS 2, approximately 4,200 feet of 12-inch, 18-inch, and 21inch gravity sewer upstream of PS 5, approximately 40 feet of 21-inch gravity sewer upstream of PS 6 and approximately 1,400 feet of 12-inch forcemain downstream of PS 6, as shown in Table 4-7.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
001-00425A	001-00425	14	8	10	
001-00425	001-00293	1100	8 & 10	15	
002-01393	002-01390	1200	15 & 18	21	
002-01390	002-01361	800	18	24	
005-04061	005-03800	3100	12 & 15	21	
005-03915	005-03914	400	8	12	
005-03808	005-03800	670	10	18	
006-04250	PS6	40	10	21	
PS6	PS6DS	1400	8	12	Forcemain

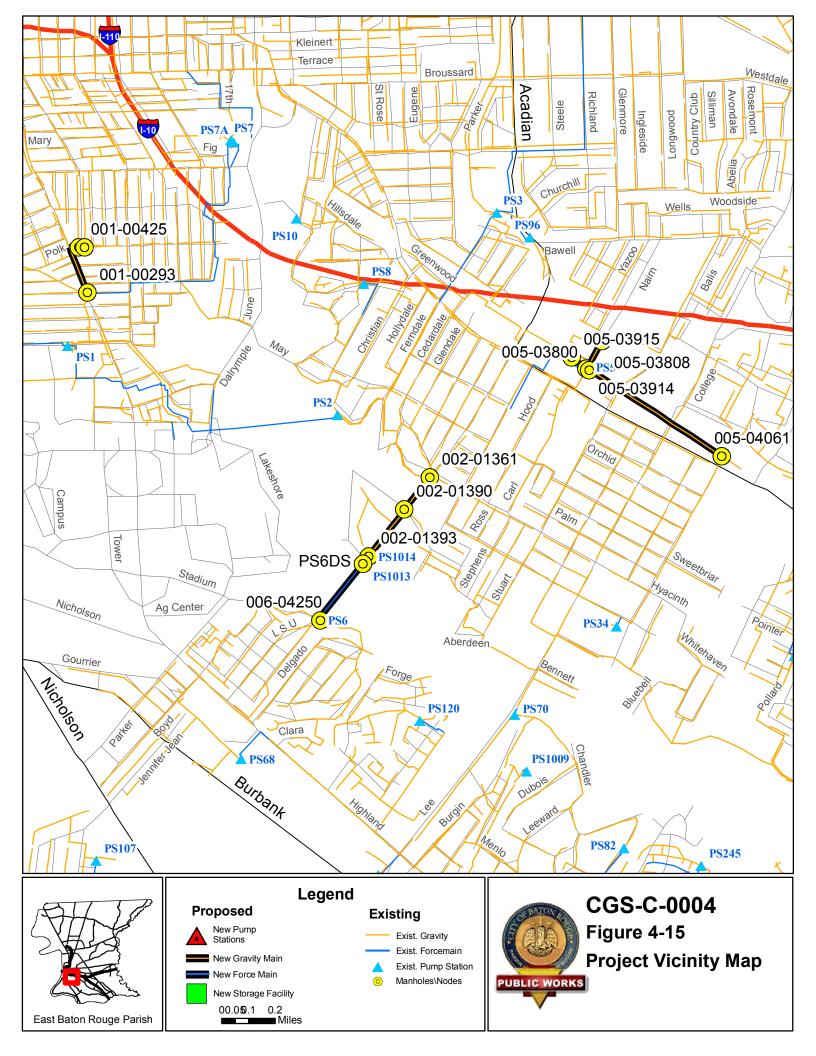
#### TABLE 4-7 CC C 0001 (11:~hia

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$2,800,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2009 (already appropriated).



# 4.2.10 CGS-C-0005 (Stanford Avenue – Ferndale Avenue)

#### **Project Description**

This project was combined with project CGS-C-0004 (Highland Road – Buchanan Street) due to deletion of large gravity sewer because of the Central Consolidation projects.

# 4.2.11 CGS-C-0006 (Government Street – South Acadian Thruway)

#### **Project Description**

#### Purpose of the Project / Project Background

Project CGS-C-0006 includes the upgrade of gravity sewers upstream of PS 3 and PS 4 to alleviate SSOs in the vicinity. Sections of gravity sewer that were to be upgraded as part of this project in the January 2008 PDP have been deleted due to improved hydraulic modeling.

#### Location

Gravity segment 004-03201 to 004-03199 starts nears Westdale Drive and College Drive. The gravity line travels northeast until reaching 004-03199, located northwest of the South Ridge Drive and College Drive intersection. Gravity segment 004-03199 to 004-03269 starts northwest of the South Ridge Drive and College Drive intersection. The gravity line travels northwest until reaching 004-03269 near Greenside Lane. Gravity segment 004-03269 to 004-03279 starts northwest of the South Ridge Drive and College Drive intersection, near Greenside Lane. The gravity line travels northwest, parallel to South Foster Drive, until reaching 004-03279 is located southwest of the Claycut Road and South Foster Drive intersection.

Gravity segment 004-03027 to 004-03006 starts southeast of the Hanson Street and Wiltz Drive intersection. The gravity line travels south until reaching 004-03006, located northeast of the Government Street and Longwood Drive intersection. Gravity segment 004-03006 to 004-02951 starts on Government Street just west of Mouton Street. The line then goes south to Capitol Heights Avenue, then travels east on Capital Heights Avenue to Bienville Street and follows Bienville Street south to manhole 004-02951. Gravity segment 004-02951 to PS 4 then follows Bienville Street south to Clay Cut Road and turns west at Clay Cut Road Avenue to PS 4, which is located just west of the intersection.

Gravity segment 003-02286 to 003-02203 starts near Florida Blvd and Kernan Avenue intersection. The gravity line travels south until reaching 003-02203, located near the Government Street and Beverly Drive intersection.

Gravity segment 003-02203 to 003-02084 starts near Government Street and Beverly Drive intersection. The gravity line travels west until reaching 003-02084 located below Government Street between the Hearthstone Drive and Beverly Drive intersections.

Gravity segment 003-02084 to 003-02039 starts below Government Street between the Hearthstone Drive and Beverly Drive intersections. The gravity line travels south until reaching 003-02039, located southwest of the Government Street and Beverly Drive intersection.

Gravity segment 003-02039 to 003-02035 starts southwest of the Government Street and Beverly Drive intersection. The gravity line travels southeast, parallel to Carol Marie Drive, until reaching 003-02035, located west of the Marie Drive and Carol Marie Drive intersection. Gravity segment 003-02203B to 003-02203 starts near the Westmoreland Drive and Government Street intersection. The gravity line travels until west reaching 003-02033, located near the Beverly Drive and Government Street intersection.

Gravity segment 003-02035 to 003-01927 starts west of the Marie Drive and Carol Marie Drive intersection. The gravity line travels southeast until reaching 003-01927, located on Clay Cut Road between the Marwede Avenue and South Cleon Avenue intersections.

Gravity segment 003-01929 to 003-01927 starts north of the Myrtle Avenue and Marwede Avenue intersection. The gravity line travels north until reaching 003-01928. The gravity line travels east until reaching 003-01927, located on Clay Cut Road between the Marwede Avenue and South Cleon Avenue intersection.

#### Scope

Project CGS-C-0006 includes approximately 5,800 feet of 21-inch, 24-inch, and 27-inch gravity sewer construction upstream of PS 4 and approximately 5,200 feet of gravity sewer construction upstream of PS 3, as shown in Table 4-8.

#### TABLE 4-8

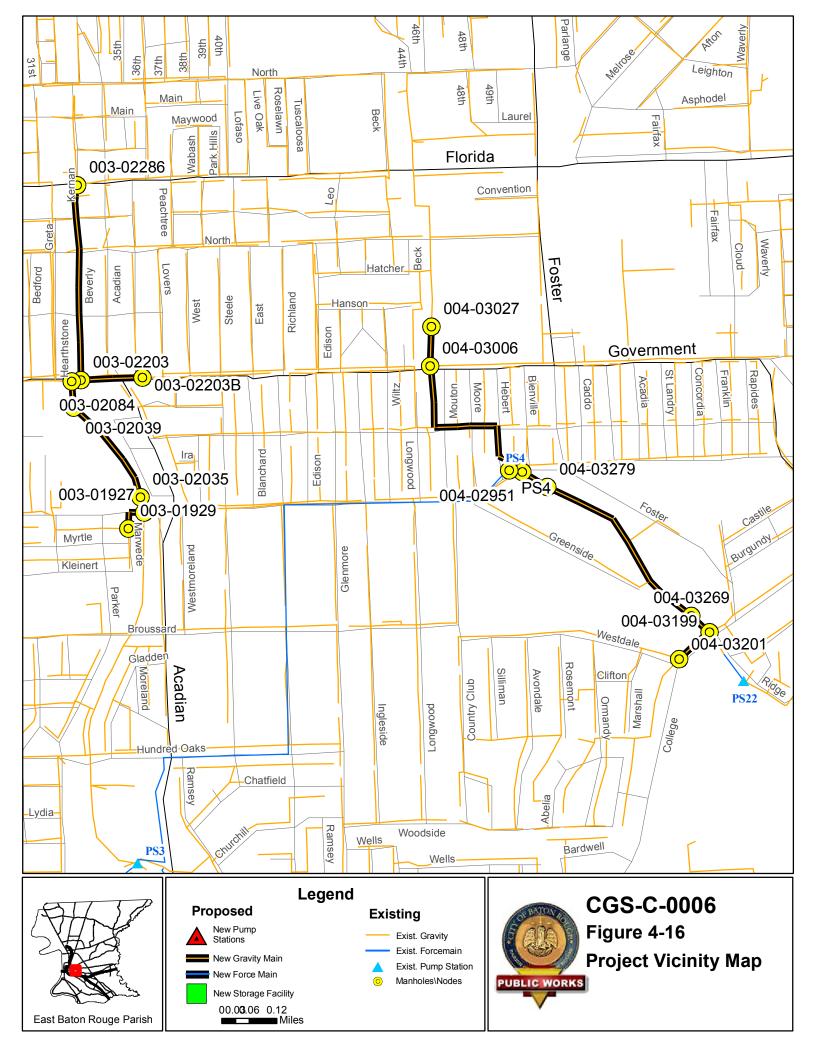
CGS-C-0006	(Government S	Street -	South	Acadian	Thruway)
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US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
004-03201	004-03199	470	18	21	
004-03199	004-03269	290	15 & 18	21	
004-03269	004-03279	2300	15 & 18	27	
004-03027	004-03006	500	12	21	
004-03006	004-02951	2100	15	24	
004-02951	PS 4	170	15	27	
003-02286	003-02203	2300	8 & 10	15	
003-02203	003-02084	230	12	18	
003-02084	003-02039	400	18	24	
003-02039	003-02035	1200	18	27	
003-02203B	003-02203	680	8	12	
003-02035	003-01927	250	18	27	
003-01929	003-01927	180	10	12	

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$4,200,000.

#### Scheduled Design Appropriation Year is 2009.



# 4.2.12 CGS-C-0007 (Central Storage/Equalization)

#### **Project Description**

This project has been deleted from the PDP due to the Central Consolidation. The storage at the Central WWTP is no longer needed, although the storage volume required at the South WWTP has been increased due to Central Consolidation.

# 4.2.13 Central Consolidation – New Central WWTP PS

#### **Project Description**

#### Purpose of the Project / Project Background

This project has been added as part of this updated PDP, due to the Central Consolidation Plan. It includes a new pump station at the location of the Central WWTP. The new pump station located at the Central WWTP site is required to pump the flow from PS 1, PS 59, and the LSU pump station to the South WWTP. The Central WWTP pump station will pump through the new forcemain describe in the project entitled *Central Consolidation – New Central WWTP FM*.

#### Location

The locations of the pump stations are given in Table 4-9.

#### Scope

The scope of this project is shown in Table 4-9.

#### TABLE 4-9

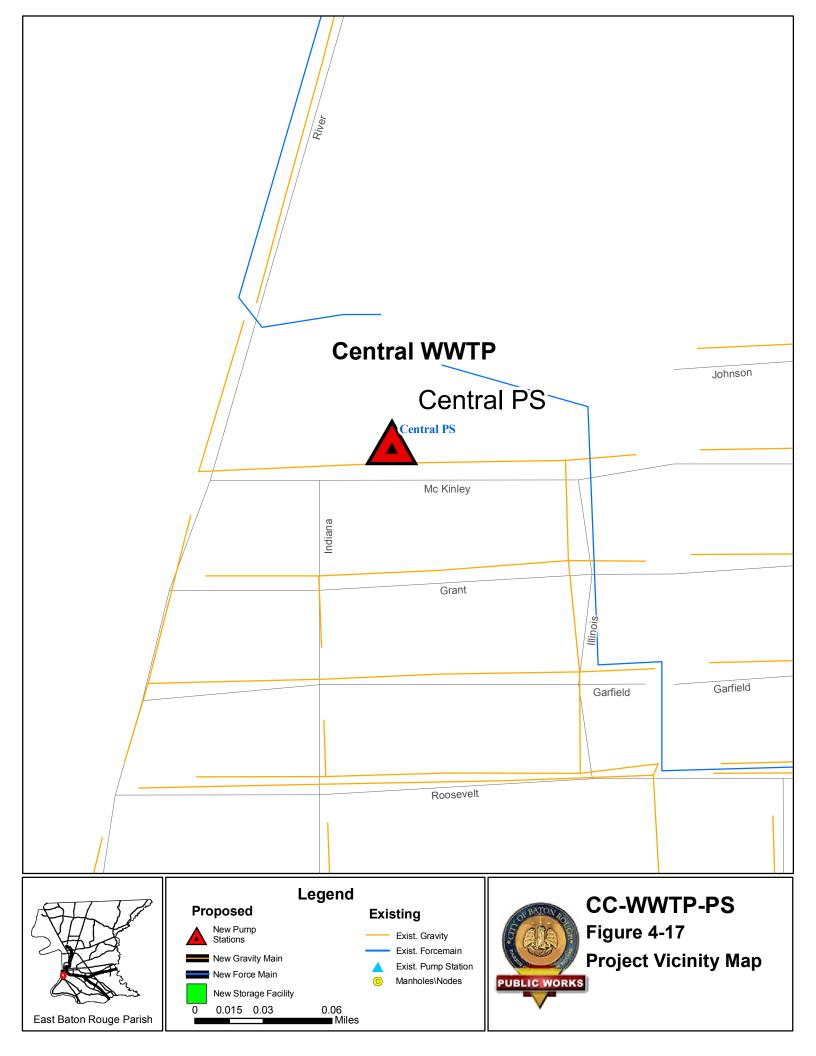
Central Consolidation – New Central WWTP PS

PS NO.	LOCATION	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
CWWWTP PS	Central WWTP site (River Road South, near West McKinley Street)	New	33,331

Note: The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$6,900,000.

Scheduled Design Appropriation Year is 2009.



# 4.2.14 Central Consolidation – PS 2, PS 3, PS 4, PS 5, PS 6, PS 7, and PS 10

#### Project Description

#### Purpose of the Project / Project Background

This project has been added as part of this updated PDP, due to the Central Consolidation Plan. It includes replacement of PS 2, PS 3, PS 4, PS 5, PS 6, PS 7, and PS 10. The pump station upgrades to PS 2, PS 3, PS 4, PS 5, PS 6, and PS 7 are required due to SSOs in the vicinity of the pump station as well as an indication from the hydraulic model that the inflow at each of these pump stations will exceed the existing maximum capacity in the future. PS 2, PS 3, PS 5, PS 7, and PS 10 will all pump through a new force main that is described in the project entitled *Central Consolidation – FM from PS 2, PS 3, PS 7, PS 10, and PS 5*.

#### Location

The locations of the pump stations are given in Table 4-10.

#### Scope

The scope of this project is shown in Table 4-10.

#### TABLE 4-10

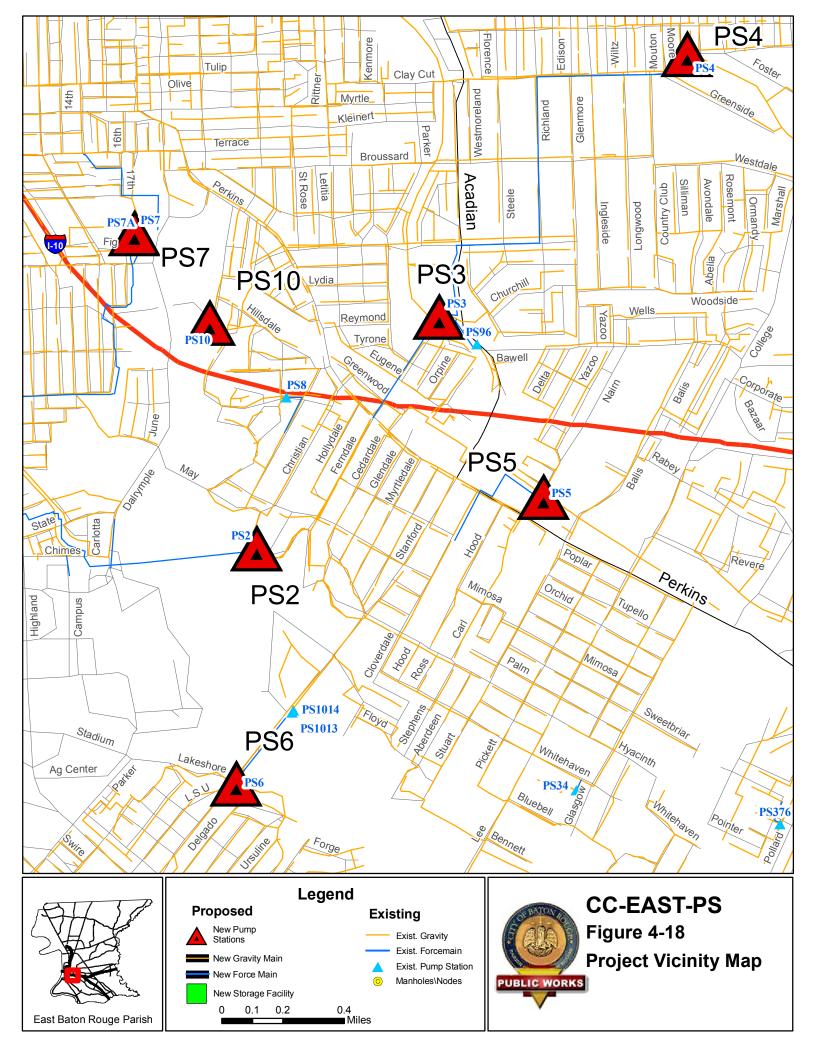
Central Consolidation – PS 2, PS 3, PS 4, PS 5, PS 6, PS 7, and PS 10

PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS2	Clay Cut Bayou	3,819	6,458
PS5	Valley Street	903	29,720
PS6	Stanford Ave	347	1,805
PS3	Acadian Thruway, near Bawell Street	3,958	16,436
PS4	Clay Cut Road near the intersection at Bienville Street	3,819	8,055
PS 7	Dalrymple Dr, near the intersection at E Washington St	720	1,180
PS10	East Lakeshore Drive, near southeastern corner of City Park	500	1,479

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$15,400,000.

Scheduled Design Appropriation Year is 2009.



# 4.2.15 Central Consolidation – New Central WWTP FM

#### **Project Description**

#### Purpose of the Project / Project Background

This project has been added as part of this updated PDP, due to the Central Consolidation Plan. It includes a new forcemain that travels from the Central WWTP to the South WWTP. The Central WWTP, described in the project entitled *Central Consolidation – New Central WWTP PS, PS 2, PS 3, PS 4, PS 5, PS 6, PS 7, and PS 10,* will pump flow through this force main.

#### Location

The forcemain will start out as a 42-inch pipe from the new Central WWTP pump station and will roughly follow River Road South to an un-named road on the LSU campus, where it will turn roughly east. The forcemain will continue roughly along this road and then over land to Nicholson Drive, where it will then follow Nicholson Drive roughly southeast. As it follows Nicholson Drive, the 42-inch forcemain will intersect with the 12-inch forcemain from BPS 505A, which is an overflow pump station for BPS 505, near Dean Lee Drive. At Ben Hur Road, the forcemain will increase in size to 54-inch due to the forcemain from the "Eastside" (PS 2, PS 3, PS 7, PS 10, and PS 5) pump stations joining this forcemain at this point. The 54-inch forcemain will follow Ben Hur Road north to Burbank Road, where it will follow Burbank Drive roughly east to Gardere Lane, where it will follow Gardere Lane roughly south to the South WWTP.

#### Scope

The scope of this project is shown in Table 4-11.

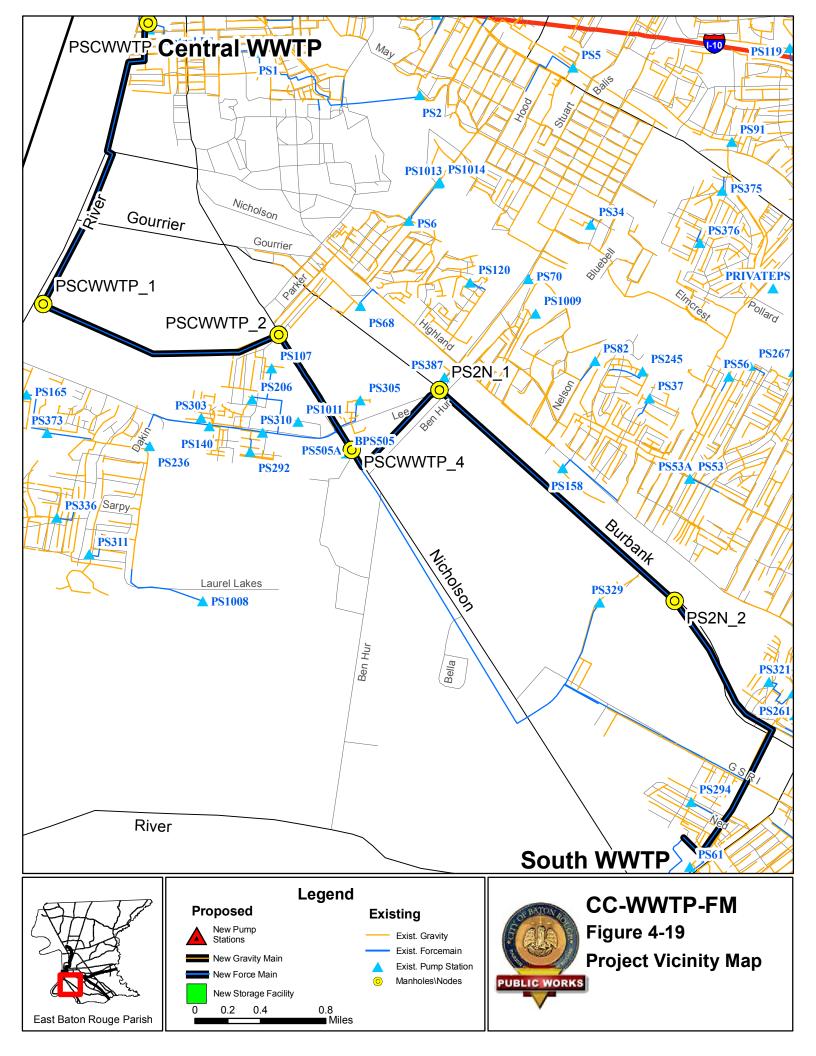
Central WWTP FM					
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
Central WWTP PS	2N-1	New	42	22,700	Includes 600 feet of tunneling
	ZIN-1	INCW	72	22,700	turnenng
2N-1	South WWTP	New	54	26,900	

# TABLE 4-11 Central Consolidation – New

**Note:** The pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$16,700,000.

Scheduled Design Appropriation Year is 2009.



# 4.2.16 Central Consolidation – New FM from PS 2, PS 3, PS 7, PS 10, and PS 5

#### Project Description

#### Purpose of the Project / Project Background

This project has been added as part of this updated PDP, due to the Central Consolidation Plan. It includes a new force main that collects flow from PS 2, PS 3, PS 7, PS 10, and PS 5 and runs from PS 5 to the junction with the new Central WWTP FM, described above. This project also includes a new force main from BPS 505 overflow pump station to the new Central WWTP FM.

#### Location

Gravity segment 010-04925 to PS 10 begins at manhole 010-04925, which is located near the intersection of Hillsdale Drive and Cottonwood Avenue, and runs over-land to PS 10, which is located on East Lakeshore Drive, near Dalrymple Drive.

The main "Eastside" force main will start out as an 8-inch pipe at PS 7, located near the intersection of Dalrymple Drive and Washington Street, and run southeast to PS 10, near Dalrymple Drive and East Lakeshore Drive. At PS 10, it will increase to a 12-inch pipe and continue east to Perkins Road and follow Perkins Road southeast, where it intersect with the new forcemain from PS 2 and become a 24-inch pipe that will follow Perkins Road southeast until it intersects with the new forcemain from PS 3 and continue southeast along Perkins Road as a 42-inch pipe to PS 5, located near the intersection of Perkins Road and Valley Street. At PS 5, the 42-inch force main will continue on Perkins Road to Lee Drive, where it will intersect with the Central WWTP FM at Ben Hur Extension.

The new forcemain from PS 2 to its intersection with the main "Eastside" forcemain is a 16inch pipe that follows Lakeshore Drive east to Ferndale Avenue and Ferndale Avenue north to Perkins Road. The new forcemain from PS 3 to its intersection with the main "Eastside" forcemain is a 36-inch pipe that follows Orpine Avenue south to Perkins Road.

The new forcemain from BPS 505A (overflow pump station) is a 12-inch line that generally follows Dean Lee Drive to Nicholson Drive, where it intersects with the 42-inch Central WWTP FM.

#### Scope

The scope of this project is shown in Table 4-12.

Central Consolidation East FM New Pipes-Central to South							
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments		
010- 04925	PS 10	520	10	18	Gravity sewer		
PS7	PS10DS	1900	New	8			
PS10DS	PS2DS	3500	New	12	Includes 500 feet of tunneling under I-10		

# TABLE 4-12

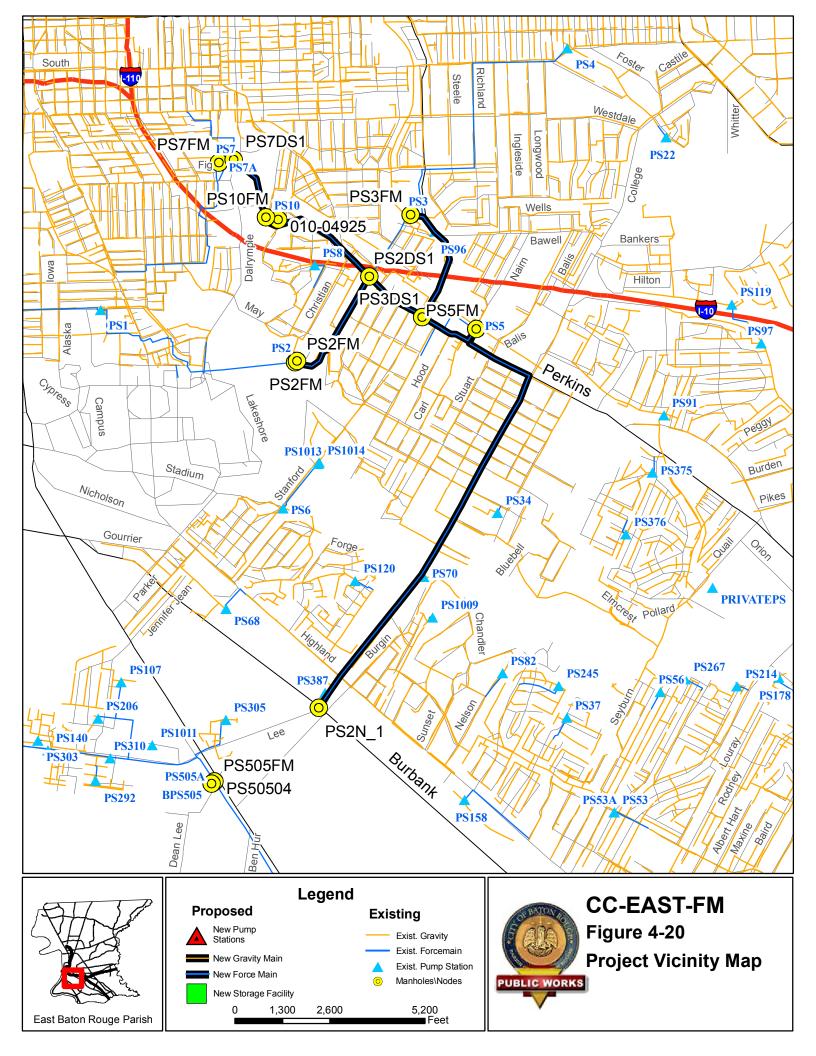
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS2	PS2DS	3400	New	16	
PS2DS	PS3DS	1800	New	24	
					Includes 500 feet of tunneling under I-
PS3	PS3DS	3500	New	36	10
PS3DS	PS5US	1800	New	42	
PS5US	2N-1	13000	New	42	
BPS505A	CWWTP-FM	100	New	12	Near Nicholson Drive & Ben Hur Road

TABLE 4-12
Central Consolidation East FM New Pipes-Central to South

Note: The pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$6,800,000.

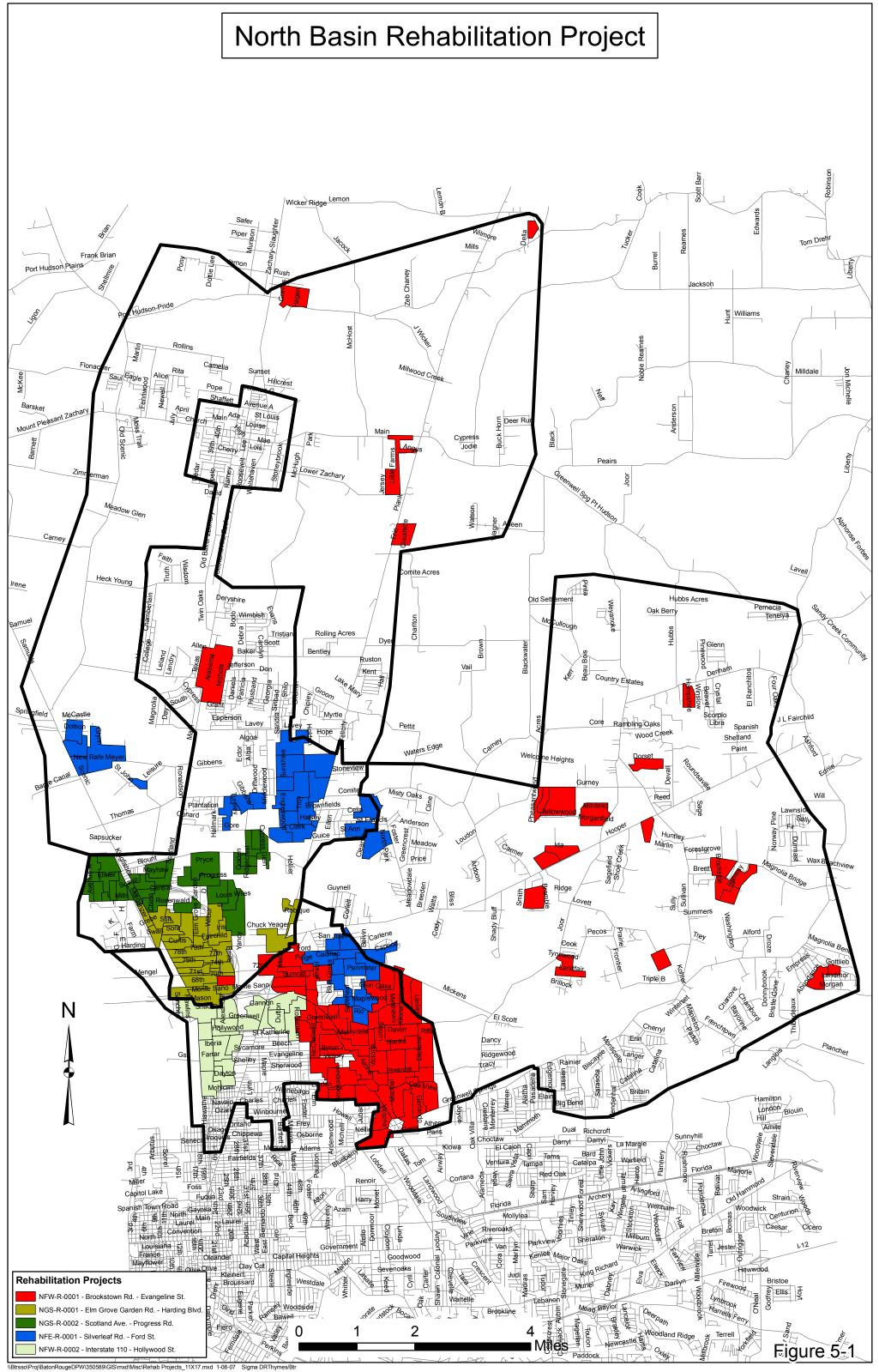
Scheduled Design Appropriation Year is 2009.



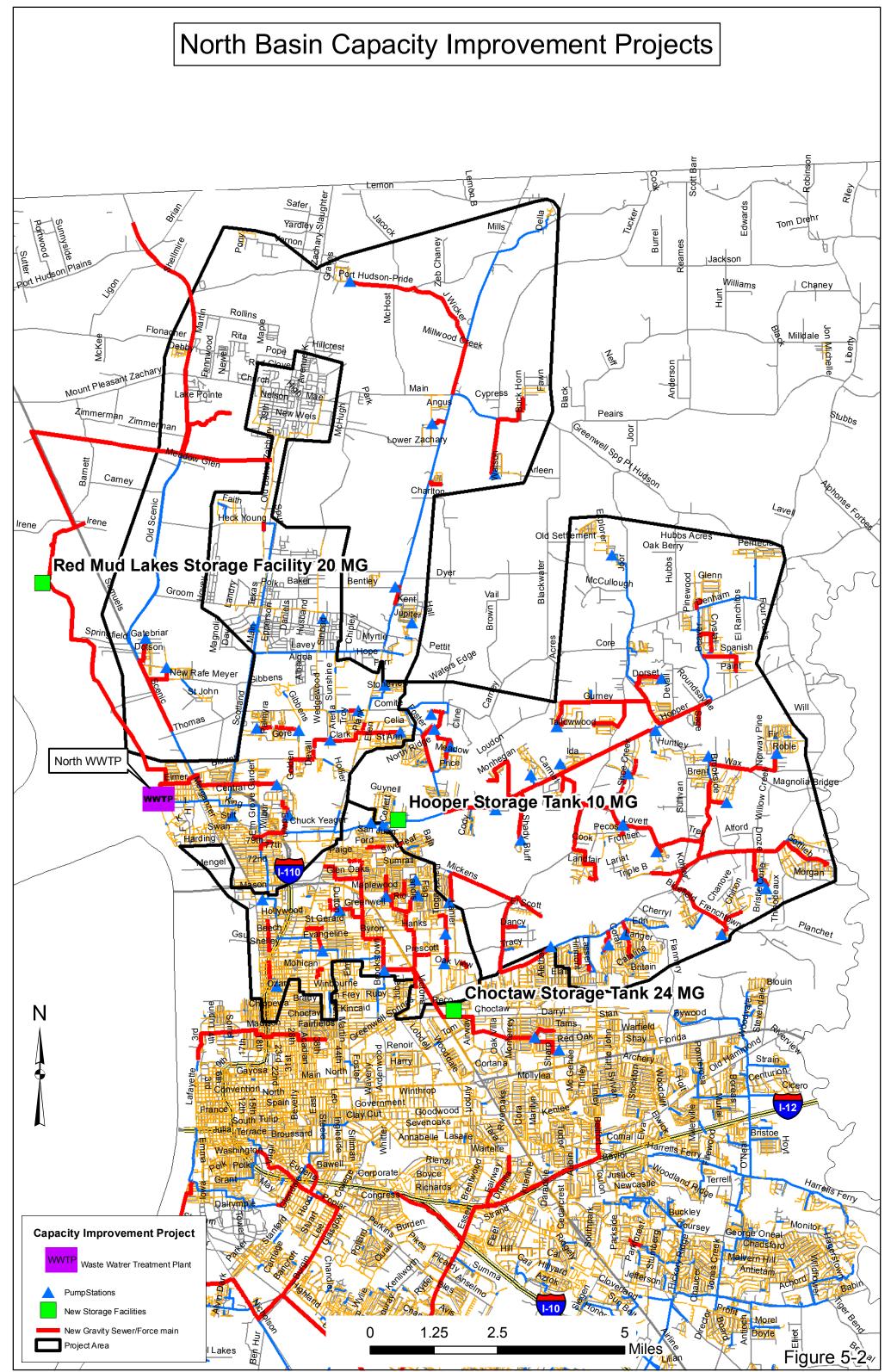
# **North Basin Projects**

Section 5 presents summaries of the North Gravity System Comprehensive Rehabilitation Projects, the North Gravity System Capacity Improvements, the North Forcemain System Rehabilitations Projects, and the North Forcemain Capacity Improvement Projects. These projects are shown on Figures 5-1 and 5-2.

The project summaries presented herein represent the information available during this first annual update period. The PDP will be revisited on an annual basis and revised as necessary based on results of additional hydraulic wastewater modeling, immediate needs, DPW and public input, and other factors. This page intentionally left blank.



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# 5.1 North Gravity System Comprehensive Rehabilitation Projects

## 5.1.1 NGS-R-0001 AND NGS-R-0002

#### Project Description

The comprehensive sewer rehabilitation projects consist of improvements to various components of the sewer collection system to reduce the amount of rainwater and groundwater that leak into the system.

#### Purpose

The purpose of the comprehensive sewer rehabilitation projects is to correct defects in the system such as offset pipe joints, collapsed pipe sections, leaking manholes, and direct inflow sources. The water that enters the system through the defects is a major contributor to SSOs. Comprehensive rehabilitation of the collection system will assist in alleviating SSOs.

#### Location

There are two projects located within the North Gravity Basin. The attached maps show the project locations.

#### Scope of Project

The first phase of comprehensive rehabilitation projects will be the physical inspection of the pipes and manholes including CCTV inspection. Smoke testing may also included in the physical inspection phase.

The data collected by the physical inspection contractor will be analyzed and, based on that analysis, a listing of recommended repairs with associated construction costs will be generated.

An engineering firm will then complete detailed design and preparation of construction documents for project bidding.

The construction of rehabilitation projects will typically include the following components:

- Replacement of pipes
- Point repair of pipes
- Rehabilitation of pipes by cured in place pipe liners
- Rehabilitation or replacement of manholes
- Repair of sewer laterals to the property line

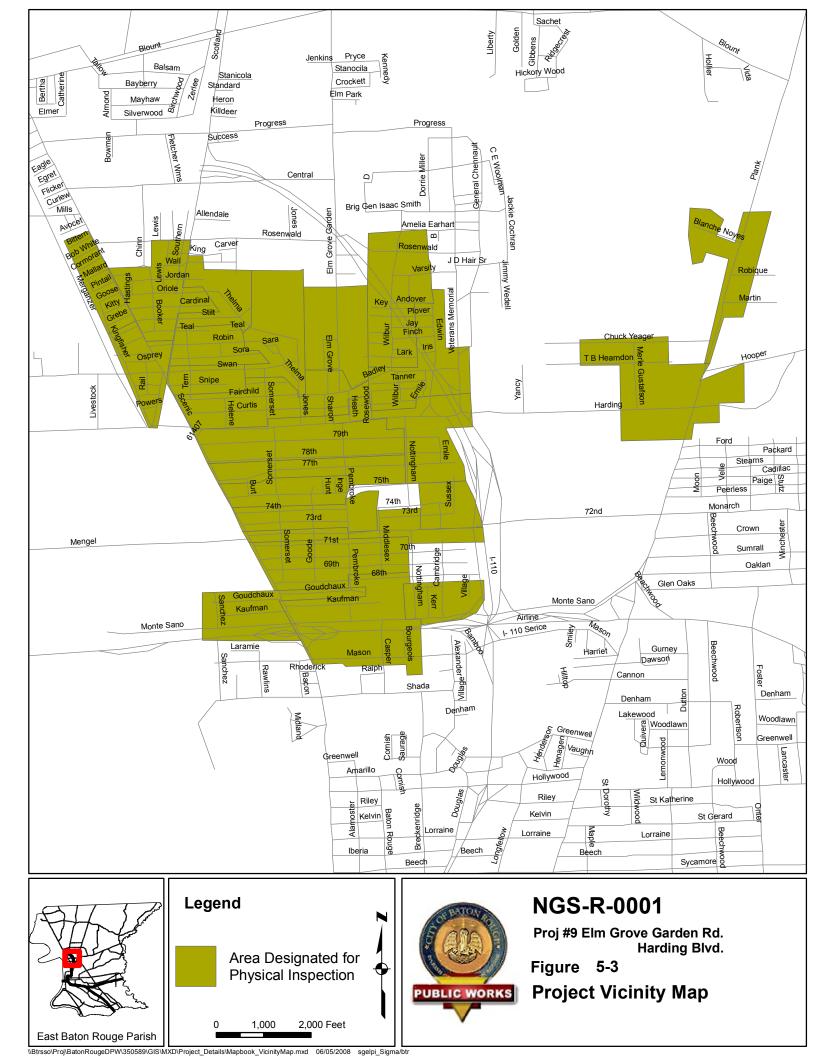
#### Cost

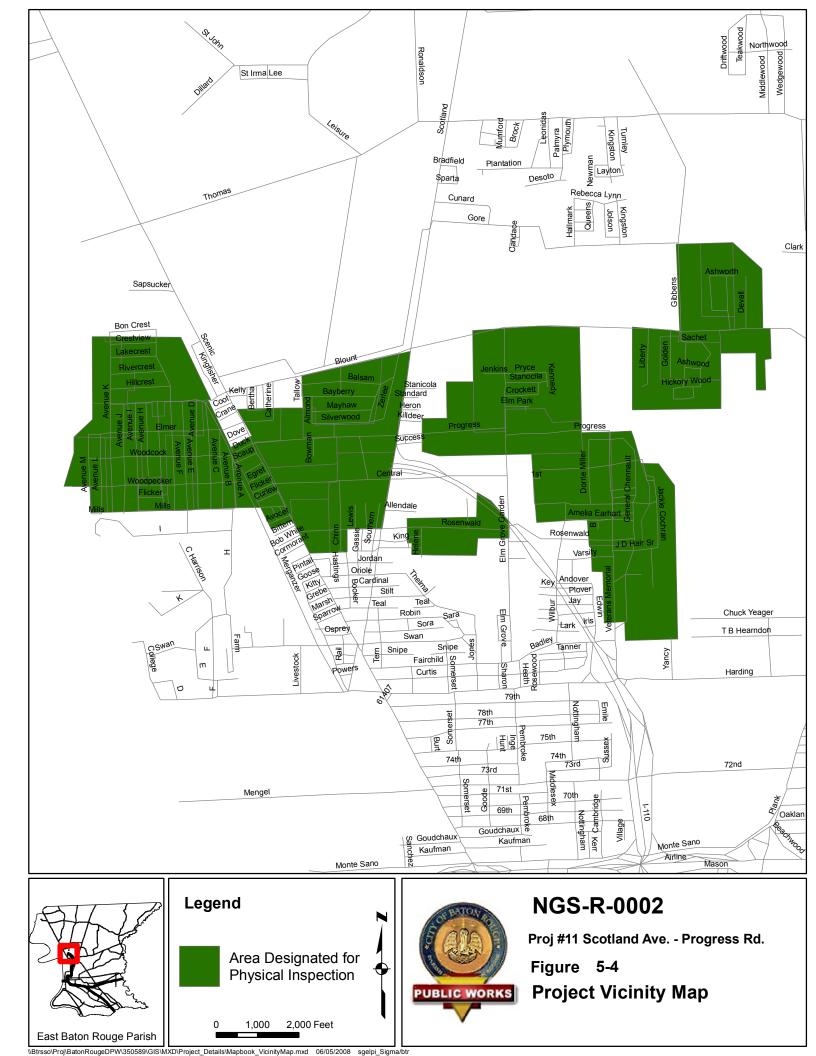
The estimated construction costs for each project are presented in Table 5-1. These costs are based on preliminary estimates of the amounts of each component of the system that will require repair or replacement. During the physical inspection phase, the actual condition of the components will be assessed and appropriate methods recommended. At that time, the cost estimate for each project will be revised.

#### TABLE 5-1

Estimated Construction Costs for the North Gravity System Comprehensive Rehabilitation Projects

Project Description	Construction Cost	Scheduled Design Appropriation Year	Scheduled Construction Appropriation Year
NGS-R-0001 –Elm Grove Garden Road-Harding Boulevard.	\$8,600,000	2009	2009
NGS-R-0002 –Scotland Avenue- Progress Road	\$7,400,000	2009	2009





# 5.2 North Gravity System Capacity Improvements Projects

# 5.2.1 NGS-C-0001 (Progress Road – Baton Rouge Metro Airport)

#### Project Description

#### Purpose of the Project / Background Information

This project has been deleted and consolidated with Group Project 1A and Group Project 1B, which are described in the North Forcemain System section.

# 5.2.2 NGS-C-0002 (Plank Road – Kleinpeter Road)

#### **Project Description**

#### Purpose of the Project / Background Information

The purpose of the NGS-C-0002 (Plank Road – Kleinpeter Road) is to upsize gravity sewers upstream of PS 45, PS 127, PS 44, and PS 244 as well as forcemains exiting PS 240, PS 38, PS 45, PS 65, PS 244, and PS 63, which will alleviate chronic SSOs in the gravity

#### Location

Gravity segment 045-00026 to PS 45 begins near the intersection of Newsom Drive and Kleinpeter Road and travels west along Klienpeter Road to its intersection with Nimitz Street. The segment then turns south and follows Nimitz Street to its intersection with Clark Street. The segment then turns west and follows Clark Street to PS 45, which is near the intersection of Clark Street and Granberry Drive.

Gravity segment 045-00043 to 045-00020 begins at manhole 045-00043, located near the intersection of Plank Road and Brownfields Drive, and follows Plank Road southwest to manhole 045-00020, located near the intersection of Plank Road and Kleinpeter Road.

Gravity segment PS 38DS to PS 127 begins at manhole PS 38DS, located near the intersection of Rebecca Lynn Avenue and Hallmark Drive, and runs east, following Rebecca Lynn Avenue and then going through an open space, to PS 127, which is located on Gibbens Drive, north of its intersection with Gore Road.

Gravity segment 044-00342 to 044-00322 starts at manhole 044-00342, located near the intersection of 78<sup>th</sup> Avenue and Pembroke Street, and follows Pembroke Street north to Harding Boulevard, where it then follows Harding Boulevard east to manhole 044-00322, located near the intersection of Harding Boulevard and Nottingham Street.

Gravity segment 244-00029 to 244-00004 begins at manhole 244-00029, located near the intersection of Lt. Gen. Ben Davis Jr. Avenue and Veterans Memorial Boulevard, and follows Veterans Memorial Boulevard south to its intersection with Amelia Earhart Avenue, where it then follows Amelia Earhart Avenue east to a drainage path, where it then follows the drainage path south to manhole 244-00004, located near PS 244 on General Chennault Drive, near the Baton Rouge Metropolitan Airport.

Forcemain segment PS 240 to PS 240DS begins at PS 240, located on Thomas Road, just west of its intersection with Plank Road, and follows Thomas Road in a westerly direction for approximately 1,200 feet to manhole PS 240DS.

Forcemain segment PS 38 to PS 38DS runs from PS 38, located at the south end of Constance Street, in an easterly direction through a servitude that parallels Desoto Drive to manhole PS 38DS, located near the intersection of Rebecca Lynn Avenue and Hallmark Drive.

Forcemain segment PS 45 to PS 45DS begins at PS 45, located near the intersection of Clark Street and Granberry Drive, and parallels Clark Street in a westerly direction, continues west through a servitude until it is perpendicular with Devall Lane, then turns south to manhole PS 45DS, which is located at the corner of Devall Lane .

Forcemain segment PS 65 to PS 65DS runs south on Twin Oaks Road, beginning at PS 65, located north of the intersection of Twin Oaks Road and Heck Young Road, for approximately 1,100 feet.

Forcemain segment PS 244FM to PS 244DS begins at PS 244, located on General Chennault Drive, near the Baton Rouge Metropolitan Airport, and follows General Chennault Drive and Veterans Memorial Boulevard south to Badley Road. At Badley Road, the forcemain turns west to follow Badley Road and terminates at manhole PS 244DS, located near the intersection of Badley Road and Jones Street.

Forcemain segment PS 63FM to PS 63DS starts at PS 63, located on Georgia Street, in between Groom Road and Harding Street, and runs south along Georgia Street for approximately 115 feet to its termination point at manhole PS 63DS.

This project includes approximately 6,200 feet of 12-inch, 24-inch, 27-inch, 30-inch, and 42inch gravity sewer upstream of PS 45, approximately 2,600 feet of 12-inch, 15-inch, and 21inch gravity sewer upstream of PS 127, approximately 2,200 feet of 12-inch and 24-inch gravity sewer upstream of PS 44, and approximately 1,500 feet of 12-inch and 15-inch gravity sewer upstream of PS 244. This project also includes replacement of forcemains from PS 240, PS 38, PS 45, PS 65, PS 244, and PS 63. Table 5-2 shows the detailed scope of this project.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
045-00026	045-00024	90	12	24	
045-00024	045-00020	750	18	24	
045-00020	045-00007	2600	18	27	
045-00007	045-00001	1500	18	30	
045-00001	PS 45	65	18	42	
045-00043	045-00020	1200	8	12	
PS38DS	127-00020	100	8	12	
127-00020	127-00015A	970	8 & 12	15	
127-00015A	PS 127	1500	12	21	
044-00342	044-00274	557	8	12	
044-00274	044-00325	1068	10	18	

#### TABLE 5-2

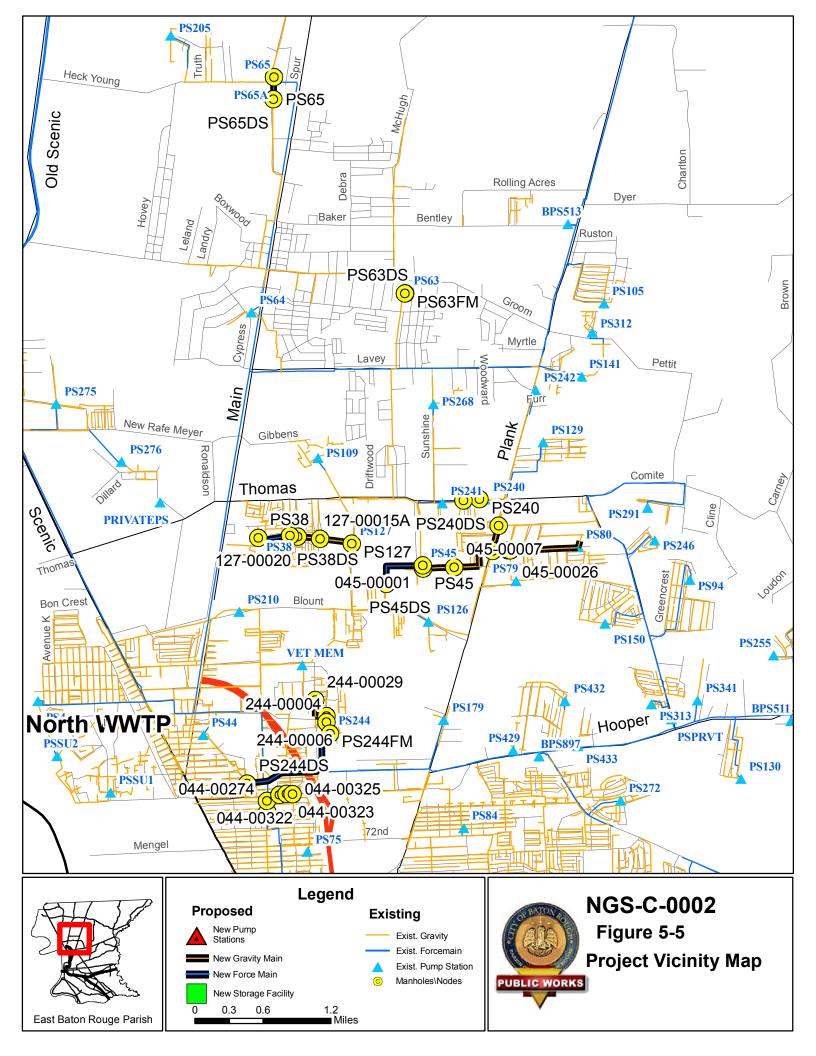
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
044-00325	044-00323	336	18	24	
044-00323	044-00322	320	18	24	
244-00029	244-00006	1261	10	12	
244-00006	244-00004	264	10	15	
PS 240	PS240DS	1200	8	10	Forcemain
PS 38	PS38DS	1700	6	8	Forcemain
PS 45	PS45DS	2500	20	30	Forcemain
PS 65	PS65DS	1100	12	16	Forcemain
PS244FM	PS244DS	5570	8	12	Forcemain
PS63FM	PS63DS	115	18	24	Forcemain

TABLE 5-2 NGS-C-0002 (Plank Road – Kleinpeter Road)

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$7,800,000.

Scheduled Design Appropriation Year is 2009.



# 5.2.3 NGS-C-0003 (Multiple Pump Stations – Plank Road – Thomas Road)

#### **Project Description**

#### Purpose of the Project / Project Background

Project NGS-C-0003 (Multiple Pump Stations – Plank Road – Thomas Road) includes the replacement of PS 127, PS 129, PS 240, PS 38, PS 63, and PS 64 to alleviate SSOs at and near the pump stations as well as in their respective upstream basins.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. Three pump stations in this project have wet weather flows that are less than their existing maximum capacities, but they are predicted to have head issues based on the future BTRSSO hydraulic model, so they may have to be replaced, although it is possible that they could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

#### Location

The locations of the pump stations are given in Table 5-3.

#### Scope

This project includes the replacement of the 6 pump stations shown in Table 5-3.

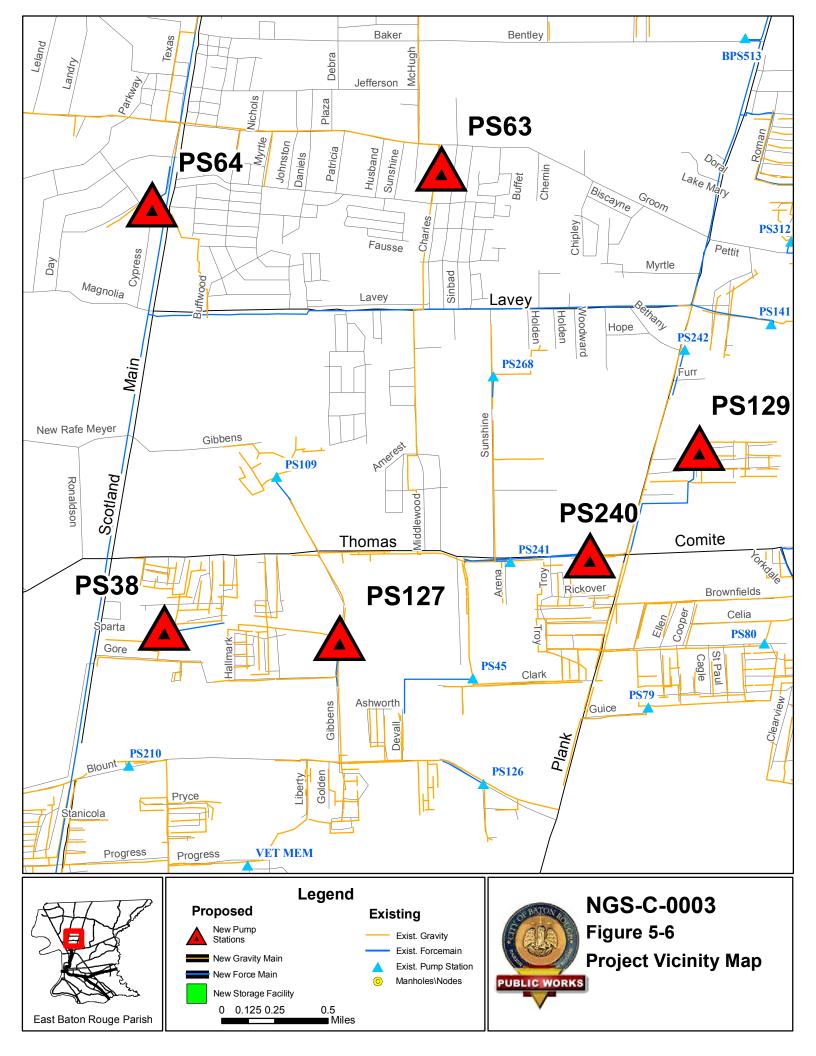
NGS-C-0003 (Multiple PS – Plank Road – Thomas Road)

PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS 127	Gibbens Rd, near int of Gore Rd	1,805	903
PS 129	Near int of Wynell Drive and Lebrent Ave	417	278
PS 240	Near int of Comite Street and Plank Rd	972	1,319
PS 38	Desoto Drive, near Clifford Seymour Senior Park	1,389	486
PS 63	Near int of Groom Rd and Georgia Street	7,152	12,638
PS 64	Near int of Cypress Street and South Street	1,319	1,639

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$5,300,000.

Scheduled Design Appropriation Year is 2011.



# 5.2.4 NGS-C-0004 (Multiple Pump Stations – Plank Road – Harding Boulevard)

#### Project Description

#### Purpose of the Project / Project Background

Project NGS-C-0004 (Multiple Pump Stations – Plank Road – Harding Boulevard) includes the upgrade of PS 244, PS 44, PS 45, PS 75, and PS 80. The pump station upgrades will work in conjunction with the forcemain and gravity sewer upgrades in the North Gravity Basin projects to alleviate chronic SSOs at the pump stations and in the gravity basins upstream of the pump stations.

The upgrades will also allow the pump stations to handle future peak wet weather flows that are predicted by the model to exceed the existing maximum capacities. Two pump stations in this project have wet weather flows that are at or near (one is even less than) their existing maximum capacities, but they are predicted to have head issues based on the future BTRSSO hydraulic model, so they may have to be replaced, although it is possible that they could be rehabbed to include higher head pumps instead of an entirely new pump station. This possibility should be investigated during design.

#### Location

The locations of the pump stations are given in Table 5-4.

#### Scope

TABLE 5-4

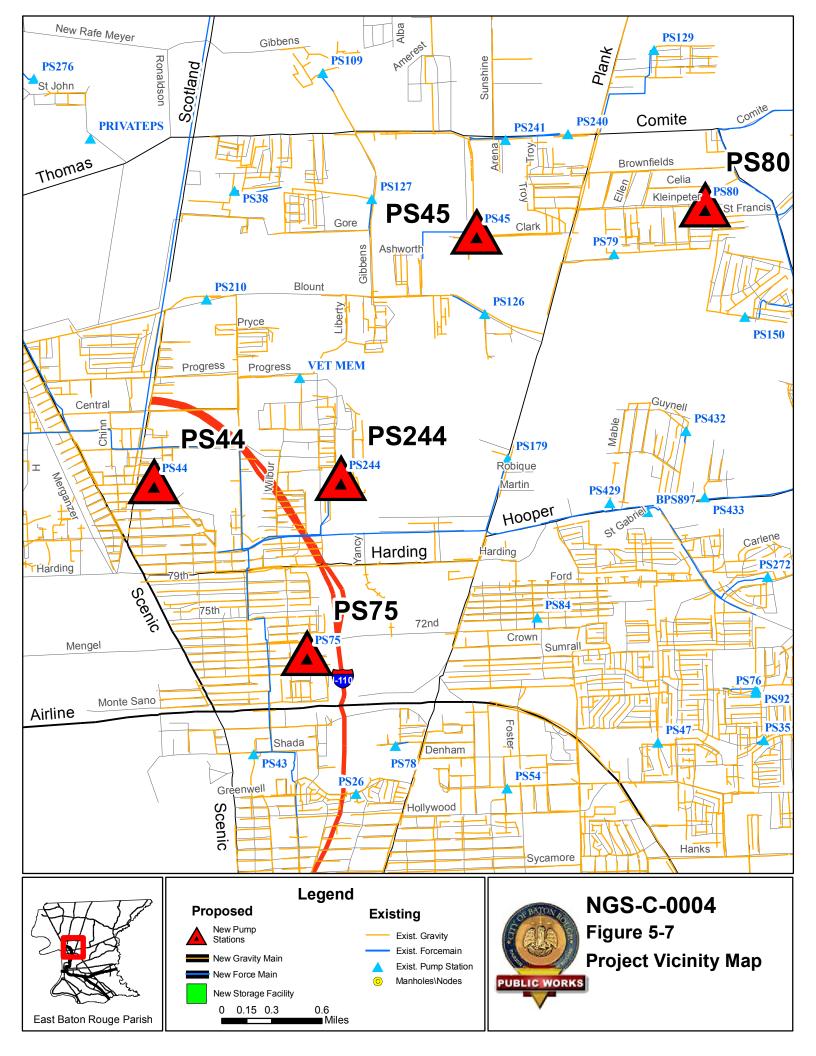
Table 5-4 shows the scope of this project, which includes replacement of 5 pump stations.

NGS-C-0004			
PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS 244	Near int of Captain Ryan Drive and General Chennault Drive	972	1,667
PS 44	Near int of Oriole Street and Thelma Street	11,180	8,888
PS 45	Near int of Granberry Street and Clark Street	9,652	15,485
PS 75	Near int of 72nd Ave and Yorkshire Street	278	278
PS 80	Near int of St. Peter Ave and Kleinpeter Road	417	764

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

#### Total Estimated Construction Cost is \$6,700,000.

Scheduled Design Appropriation Year is 2011.



# 5.3 North Forcemain System Comprehensive Rehabilitation Projects

## 5.3.1 NFW-R-0001, NFW-R-0002, AND NFE-R-0001

#### Project Description

The sanitary sewer system comprehensive rehabilitation projects consist of improvements to various components of the sewer collection system to reduce the amount of rainwater and groundwater that leak into the system.

#### Purpose

The purpose of the comprehensive sewer rehabilitation is to correct defects in the system such as offset pipe joints, collapsed pipe sections, leaking manholes, and direct inflow sources. The water that enters the system through the defects is a major contributor to SSOs. Comprehensive rehabilitation of the collection system will contribute to alleviating SSOs.

#### Location

There are three projects located within the North Forcemain Basin. The attached maps show the locations of the projects.

#### Scope of Project

The first phase of comprehensive rehabilitation projects will be the physical inspection of the pipes and manholes including CCTV inspection of pipes. Smoke testing may also be included in the physical inspection phase.

The data collected by the physical inspection contractor will be analyzed and based on that analysis a listing of recommended repairs with associated construction costs will be generated.

An engineering firm will then complete detailed design and preparation of construction documents for project bidding.

The construction of rehabilitation projects will typically include the following components.

- Replacement of pipes
- Point repair of pipes
- Rehabilitation of pipes by cured in place pipe liners
- Rehabilitation or replacement of manholes
- Repair of sewer laterals to the property line

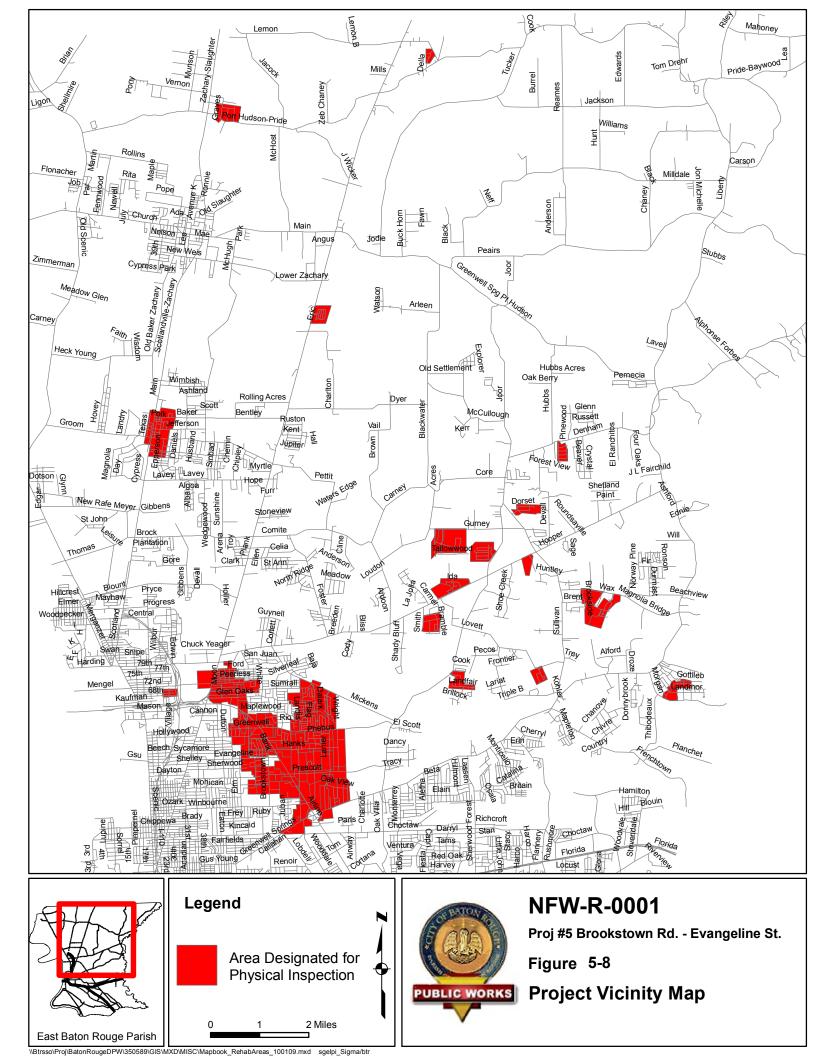
#### Cost

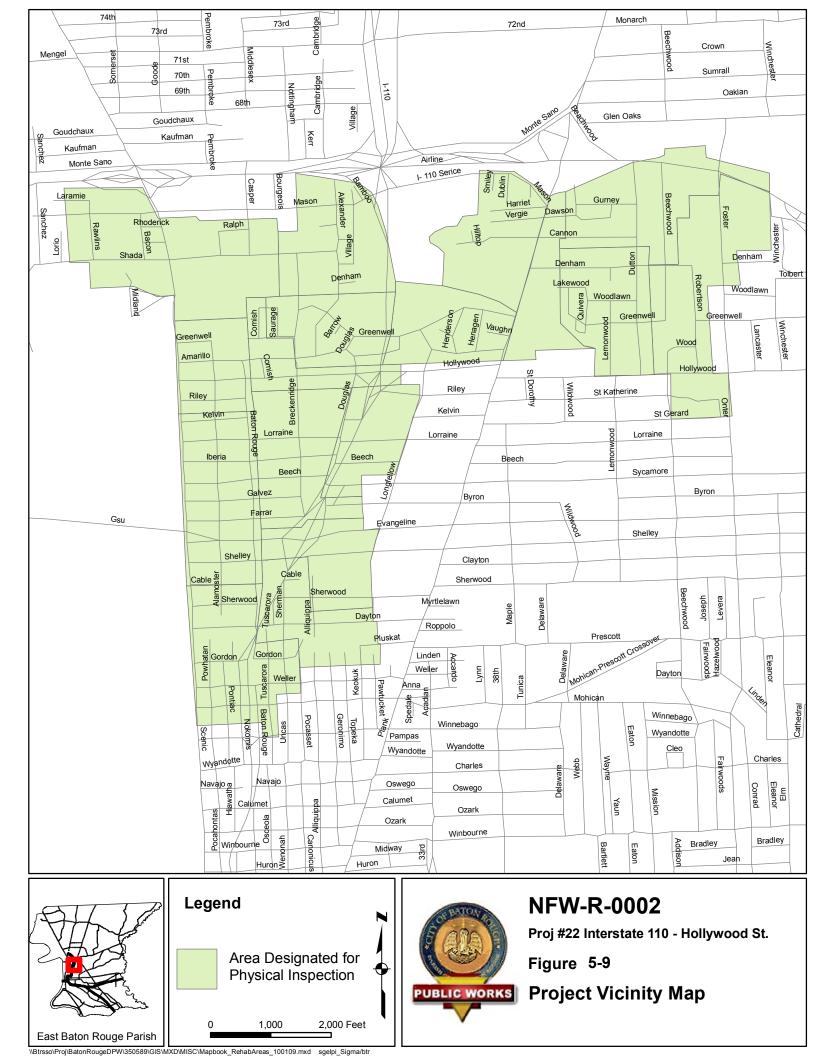
The estimated costs for each project are presented in Table 5-5. These costs are based on preliminary estimates of the amounts of each component of the system that will require repair or replacement. During the physical inspection phase, the actual condition of the components will be assessed and appropriate methods recommended. At that time, the cost estimate for each project will be revised.

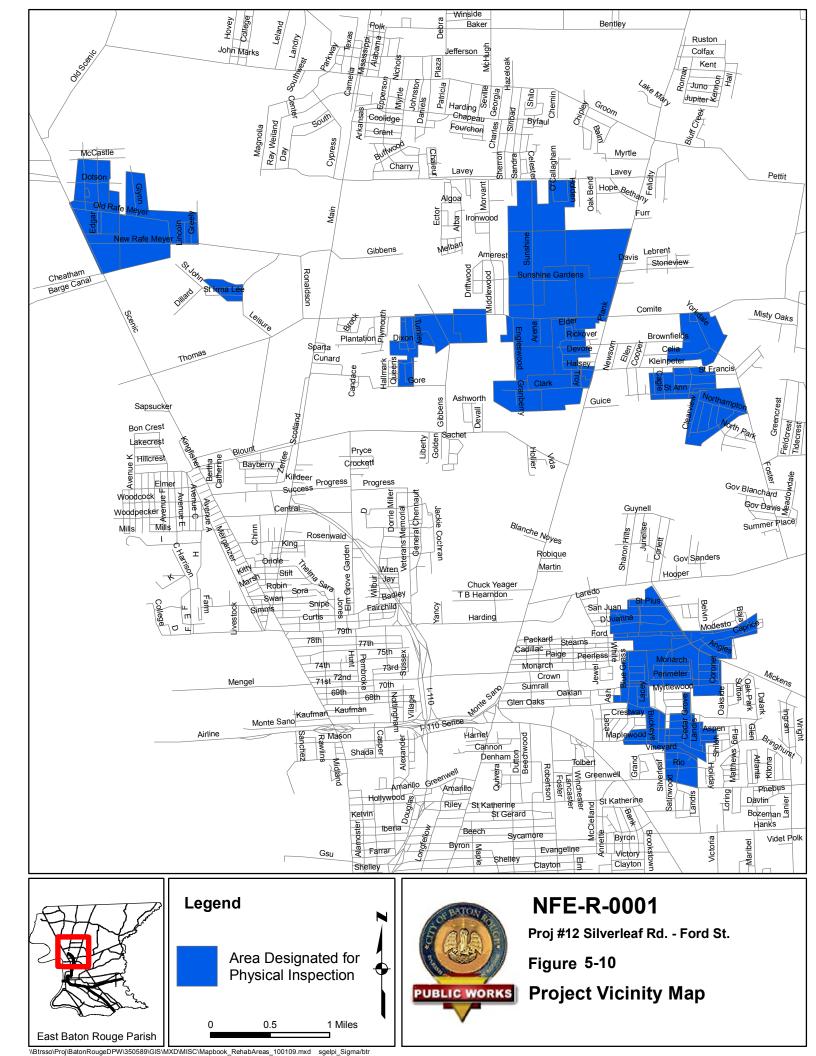
## TABLE 5-5

Estimated Construction Costs for North Forcemain System Comprehensive Rehabilitation Projects

Project Descriptions	Construction Cost	Scheduled Design Appropriation Year	Scheduled Construction Appropriation Year
NFW-R-001-Brookstown Road- Evangeline Street	\$23,000,000	2009	2010
NFW-R-002-Interstate 110- Hollywood Street	\$6,300,000	2011	2012
NFE-R-001-Silverleaf Road- Ford Street	\$11,000,000	2009	2010







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# 5.4 North Forcemain System Capacity Improvements Projects

# 5.4.1 NFE-C-0001 (Gurney Road – Joor Road)

## Project Description

## Purpose of the Project/ Project Background

The purpose of Project NFE-C-0001 (Gurney Road – Joor Road) is to replace PS176 to alleviate SSOs at and near the pump station. The forcemains exiting PS 176 and PS 284 will also be upsized. In addition, future wet weather peak flow at PS 176 is predicted by the BTRSSO model to be greater than the existing maximum capacity of the pump station. This project is currently under design and will advertise for construction in September 2008.

## Location

The location of PS 176 is described in Table 5-6.

Forcemain segment PS 176 to NS 6157 begins at PS 176, located on Tallowwood Avenue, between Pheasantwood Drive and Partridgewood Drive, travels north on Partridgewood Drive to Gurney Road, follows Gurney Road east, and terminates at node NS6157, near the intersection of Gurney Road with Sullivan Road.

Gravity segment 176-00001 to PS 176 begins at manhole 176-00001, which is located near the pump station, which is on Tallowwood Avenue between Pheasantwood Drive and Partridgewood Drive, and travels to PS 176.

Forcemain segment PS 284 to NS6156 begins at PS 284, located at the cul-de-sac on Fairmead Drive, travels down a servitude that parallels to the north of Arrowood Avenue, proceeds up Joor Road and terminates at node NS 6156, which is located at the intersection of Joor Road and Gurney Road.

## Scope

This project includes replacement of one pump station as well as approximately 14,500 feet of 8-inch, 10-inch, 12-inch, and 14-inch forcemain and approximately 100 feet of 15-inch gravity sewer. Tables 5-6 and 5-7 show the detailed scope of the project.

PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 176	Tallowwood Ave, between the intersection of Pheasantwood Drive and Patridgewood Drive	417	1,187	

TABLE 5-6 NFE-C-0001 (Gurney Road – Joor Road) – Pump Stations

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS 176	NS6172	1800	6	10	
NS6172	NS6158	75	8	10	
NS6158	NS6156	3400	10	12	
NS6156	NS6157	2500	10	14	
176-00001	PS176	100	8	15	Gravity segment
PS 284	NS6156	6700	6	8	

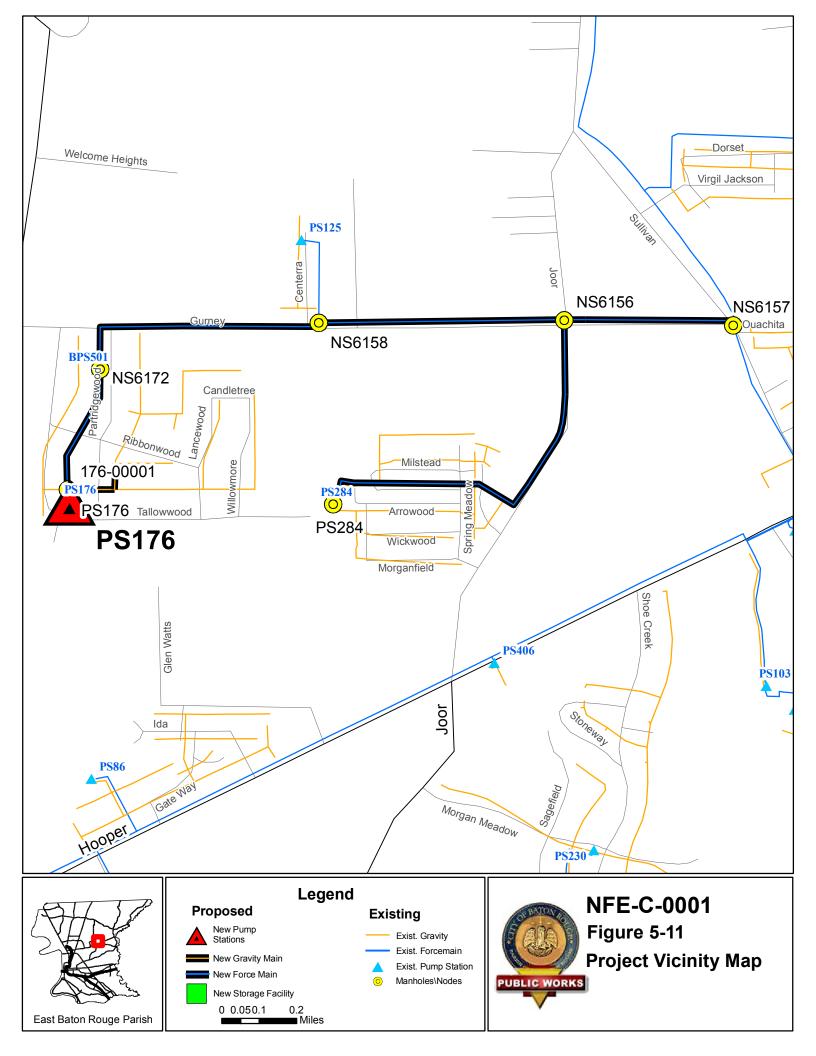
TABLE 5-7
NFF-C-0001 (Gurney Road – Joor Road) - Pipelines

**Note:** The existing maximum capacities for the pump stations were obtained from the DPW Field Pump Station Maintenance reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model. The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$1,700,000.

Design was appropriated in 2007.

Scheduled Construction Appropriation Year is 2008 (already appropriated).



# 5.4.2 NFE-C-0002 (Multiple PS – Lovett Road Area)

## **Project Description**

## Purpose of the Project/Project Background

The purpose of Project NFE-C-0002 (Multiple Pump Stations – Lovett Road Area) is to replace PS 230, PS 282, and PS 187 to alleviate SSOs at and near the pump stations. This project also includes the upsizing of the forcemains from the three pump stations as well as the gravity sewer that feeds PS 230. This project is currently under design and will be advertised for construction in the first quarter of 2009.

## Location

The locations of the pump stations is described in Table 5-8.

Gravity segment 230-00009 to PS 230 begins at manhole 230-0009, which is located near the intersection of Sagebrush Avenue and Shoe Creek Drive, and travels south along Shoe Creek Drive to Morgan Meadow Avenue, where it then parallels Morgan Meadow Avenue in a westerly direction to PS 230, which is located on Morgan Meadow Avenue in between its intersection with Shoe Creek Drive and Sagefield Drive.

Forcemain segment PS 230 to PS230DS begins at PS 230, describe above, and follows Morgan Meadow Avenue in a westerly direction to its intersection with Sagefield Drive, where it then parallels Sagefield Drive in a southerly direction to its termination point at manhole PS 230DS, which is located on Sagefield Drive, approximately halfway in between Morgan Meadow Avenue and Conwood Avenue.

Forcemain segment PS 187 to NS6402 begins at PS 187, located near the intersection of Clear Oak Avenue and Oak Meadow Drive, goes east down Clear Oak Avenue then turns north on Woods Edge Drive and terminates at node NS6402, located near the intersection of Woods Edge Drive and Lovett Road.

Forcemain segment PS 282 to NS6305 begins at PS 282, located near the intersection of Regent Avenue and Trendale Drive, goes west through a wooded area crossing an unnamed channel, then turns north and follows the channel bank and terminates at node NS6305, near the intersection of Brookside Drive and Brighton Avenue.

## Scope

The scope of this project includes three pump station replacements, approximately 4,200 feet of 6-inch and 8-inch forcemain, and approximately 2,100 feet of 12-inch gravity sewer. The detailed scope is shown in Tables 5-8 and 5-9.

PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
PS 230	Morgan Meadow Ave, near the intersection of Shoe Creek Drive	417	1,229	
PS 282	Regent Ave, near the intersection of Trendale Drive	127	924	
PS 187	Clear Oak Ave, near the intersection of Oak Meadow Drive	139	382	

#### TABLE 5-7 NFE-C-0002 (Multiple Pump Stations – Lovett Road Area)

#### TABLE 5-8 \_NFE-C-0002 (Multiple Pump Stations – Lovett Road Area)

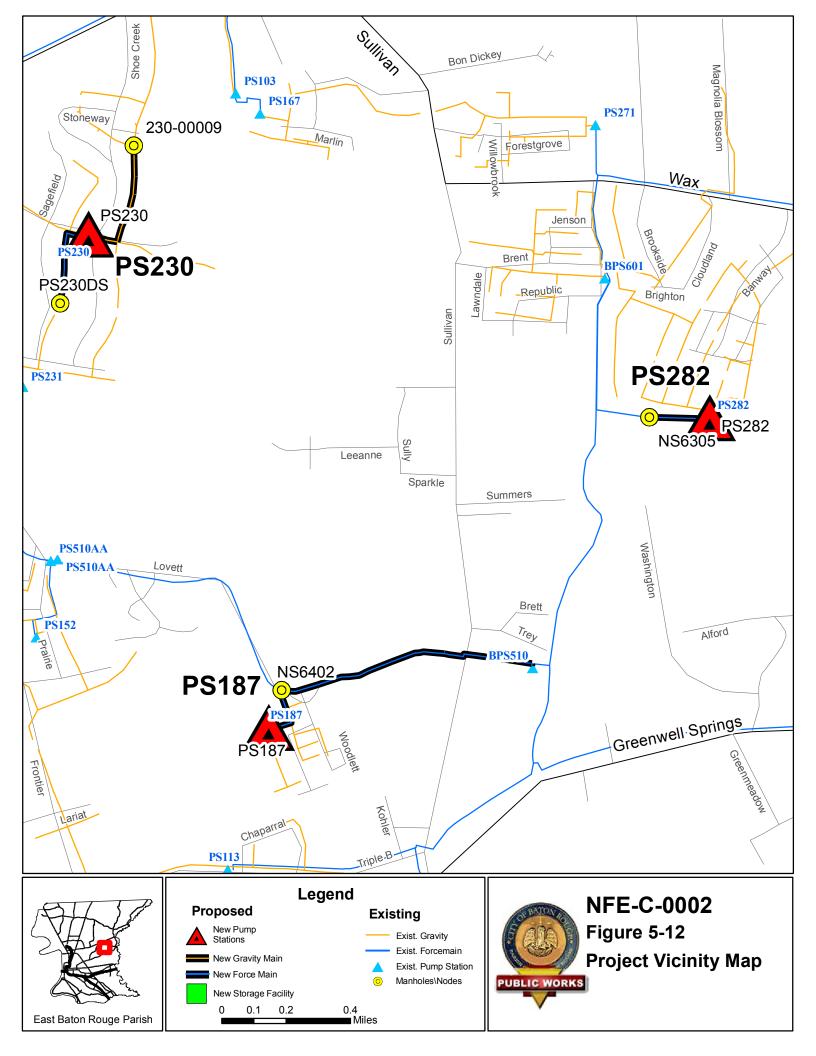
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
230-00009	PS230	2100	8	12	Gravity segment
PS230	PS230DS	1200	6	8	
PS187	NS6402	1100	4	6	
PS282	NS6305	1900	4	8	

**Note:** The existing maximum capacities for the PSs were obtained from the DPW Field Pump Station Maintenance reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model. The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

#### Total Estimated Construction Cost is \$3,000,000.

#### Design was appropriated in 2007.

Scheduled Construction Appropriation Year is 2008 (already appropriated).



# NFE-C-0003 (Comite Road – Foster Road)

## **Project Description**

## Purpose of the Project/Project Background

The purpose of the NFE-C-0003 (Comite Road – Foster Road) project is to replace PS 291, PS 246, and PS 94 to alleviate SSOs at and near the PS. The forcemains exiting these pump stations will also be upsized. In addition, the future peak wet weather flow at the pump stations is predicted by the BTRSSO model to exceed the existing maximum capacity. This project is currently under design and will advertise for construction in the 3rd quarter of 2009.

## Location

The locations of the pump stations is given in Table 5-9.

Forcemain segment PS 291 to NS6393 begins at PS 291, located near the intersection of Misty Oaks Avenue and Lazy Oak Drive, and goes east on Misty Oaks Avenue to Lazy Oak Drive, where it then follows Laky Oak Drive south to its cul-de-sac, and then continues south overland to node NS6393, which is located just downstream of PS 246, located near the intersection of Green Gate Drive and Holly Fern Avenue.

Forcemain segment NS6193 to NS6251 begins at node NS6193, located near the intersection of Green Gate Drive and Holly Fern Avenue, runs southeast along Green Gate Drive to Foster Road, where it then follows Foster Road south to its termination at node NS6251, located near the intersection of Windcrest Avenue and Foster Road.

Forcemain segment PS 94 to NS6193 begins at PS 94, located near the intersection of Fieldcrest Drive and Meadow Avenue, and travels.

## Scope

This project includes the replacement of three pump stations and the upsizing of approximately 12,000 feet of 6-inch and 8-inch forcemain. The detailed scope of the project is presented in Tables 5-9 and 5-10.

#### Existing Max **Future Peak** Wet Weather Capacity PS No. (GPM) Location Flow (GPM) Comments Misty Oaks Ave, near the intersection PS 291 69 208 of Lazy Oak Drive Holly Fern Ave, near the intersection PS 246 278 of Green Gate Drive 69 Fieldcrest Dr. near the intersection of PS 94 Meadow Ave 278 764

TABLE 5-9

NFE-C-0003 (Comite Road – Foster Road)

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS291	NS6193	3340	4	8	New routing of existing FM to PS 246
NS6193	NS6251	5600	4	10	
PS94	NS6193	3140	6	8	

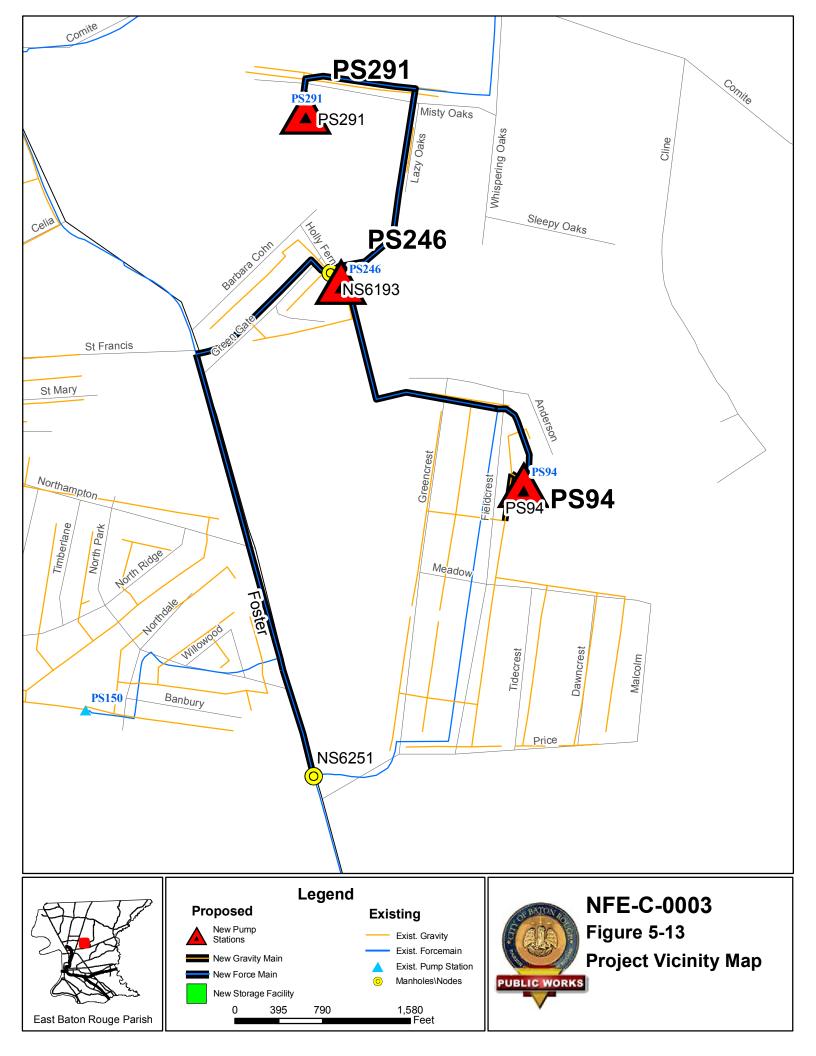
TABLE 5-10	
NFE-C-0003	(Comite Road – Foster Road)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW Field Pump Station Maintenance reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model. The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$2,800,000.

Design was appropriated in 2007.

Scheduled Construction Appropriation Year is 2008 (already appropriated).



# 5.4.4 NFE-C-0004 (Foster Road – Hooper Road)

## **Project Description**

## Purpose of the Project / Background Information

The purpose of Project NFE-C-0004 (Foster Road – Hooper Road) is to increase the capacity of the STN forcemain system and the manifold forcemains along Foster Road and Hooper Road to assist in transferring high flows to the main STN forcemain along Hooper Road.

## Location

Forcemain segment PS 255 to NS6289 begins at PS 255, which is located at the end of the culde-sac at Loch Fyne Avenue, and goes east on Loch Fyne Avenue to Ardoon Drive, turns north/northwest on Ardoon Drive to Monhegan Avenue, turns northeast on Monhegan Avenue to Blackwater Road, turns south onto Blackwater Road and terminates at node NS6289, located at the intersection of Blackwater Road and Hooper Road.

Forcemain segment PS 196 to NS 6281 begins at PS 196, which is located near the intersection of Shady Bluff Drive and Shady Knoll Place, and goes north along Shady Bluff Drive to node NS 6281, which is located at the intersection of Shady Bluff Dive and Hooper Road.

Forcemain segment BPS 509 to NS 6247 begins at BPS 509, located near the intersection of Hooper Road and Lazy Lake Drive, and follows Hooper Road southwest until it reaches node NS 6247, located approximately 600 feet east of the intersection of Hooper Road and Lovett Road.

Forcemain segment BPS 511 to NS6334 starts at BPS 511, located in between Hooper Road and Blackwater Road, and travels west along Hooper Road to node NS 6334, located near the intersection of Hooper Road and Foster Road.

Forcemain segment NS6306 to NS6334 starts at node NS 6306, located on Foster Road south of its intersection with Summer Place Avenue and goes south along Foster Road to node NS6334, located near the intersection of Hooper Road and Foster Road.

## Scope

This project includes the construction of approximately 26,000 feet of 6-inch, 8-inch, 14-inch, 24-inch, and 36-inch forcemain in the North Forced Basin. The detailed scope of this project is presented in Table 5-11.

			Eviating	Drepeed	
US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS 255	NS6289	7600	6	8	
PS 196	NS6281	5200	4	6	
BPS 509	NS6247	6500	20	24	
BPS 511	NS6326	2700	24	36	
NS6326	NS6334	3000	30	36	
NS6306	NS6334	1200	12	14	

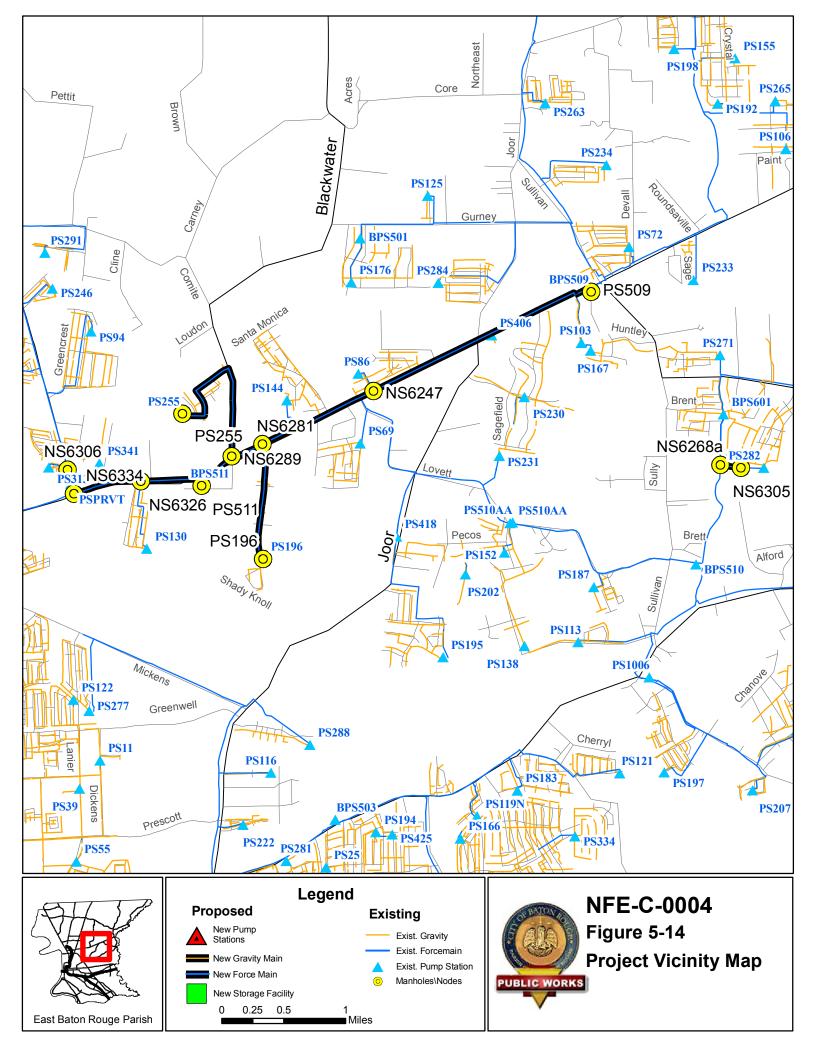
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TABLE 5-11
NFE-C-0004 (Foster Road – Hooper Road)
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Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$6,500,000.

Design was appropriated in 2007.

Scheduled Construction Appropriation Year is 2008 (already appropriated).



# 5.4.5 NFE-C-0005 (Multiple Pump Stations – Hooper Road – Greenwell Springs Road)

## **Project Description**

## Purpose of the Project / Background Information

The purpose of the NFE-C-0005 (Multiple Pump Stations – Hooper Road – Greenwell Springs Road) project is to replace PS 313, PS 144, PS 86, PS 234, PS 218, PS 271, PS 249, PS 164, PS 285, PS 196, PS 231, and PS 207 to alleviate SSOs. In addition, the BTRSSO model predicts that the future peak wet weather flow will be greater than the existing maximum capacity for each of these pump stations.

## Location

The locations of the pump stations is described in Table 5-12 below.

## Scope

The detailed scope of this project is given in Table 5-12

TABLE 5-12

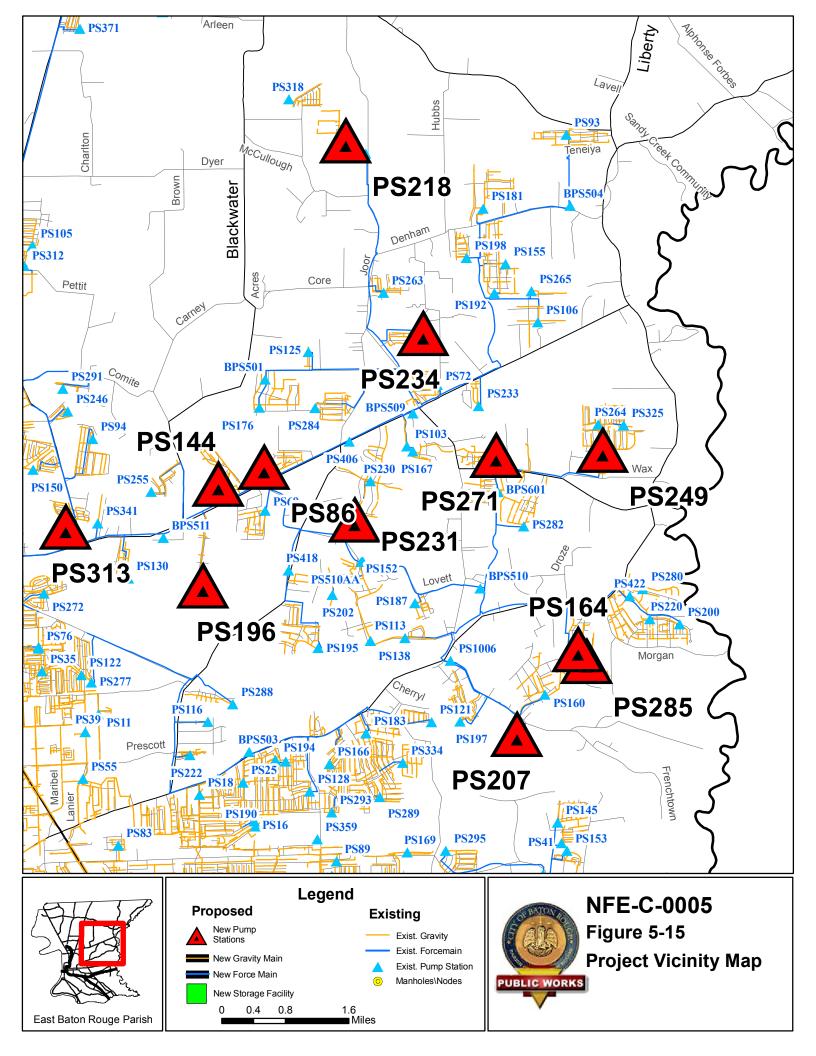
PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS 313	Summer Place Ave off Foster Rd	69	111
PS 144	La Jolla Court off Carmel Drive	417	556
PS 86	Hooper Rd bw Lovett Rd and Allena Drive	347	486
PS 234	Dorset Ave off Farnham Ave	139	486
PS 218	Weyanoke Drive off Solitude Lane	208	431
PS 271	Central Place Drive off Central Woods Ave	278	486
PS 249	Durmast Drive off Way Rd	625	1,083
PS 164	Stoneridge Drive off Donnybrook Ave	278	694
PS 285	Bristle Cone Court off Evergreen Hills Ave	69	417
PS 196	Shady Bluff Drive off Hooper Rd	278	417
PS 231	Shoe Creek Drive off Morgan Creek Ave	278	1,528
PS 207	Red Maple Drive off West Post Oak Court	139	403

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$3,900,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2013.



# 5.4.6 NFE-C-0006 (Lovett Road – Greenwell Springs Road)

## **Project Description**

## Purpose of the Project / Background Information

The purpose of the NFE-C-0006 (Lovett Road – Greenwell Springs Road) project is to increase the capacity of the forcemain system in the North East Forcemain Basin to assist in transferring peak flows to the main STN sewer along Hooper Road and to increase the capacity of the gravity sewer systems upstream of PS 155, PS 195, PS 200, and PS 231. The gravity sewer replacement will work to alleviate chronic SSOs in the gravity basins upstream of these pump stations.

## Location

Gravity segment 155-00037 to PS 155 begins at manhole 155-00037, located near the intersection of Crystal Drive and Libra Avenue and heads north along Crystal Drive to its termination point at PS 155, located near the intersection of Crystal Drive and Taurus Avenue.

Gravity segment 195-00004 to PS 195 begins at manhole 195-00004, located east of the intersection of Suncrest Avenue and Bretshire Drive, and heads generally east through a servitude in a forested area to PS 195, which is located just south of the south end of Stoneshire Drive.

Gravity segment 200-00011 to PS 200 starts at manhole 200-00011, located east of the intersection of Keystone Avenue and Bridgeport Drive, and heads east along Keystone Avenue to PS 200, located on Keystone Avenue, in between Teah Drive and Tarrora Drive.

Gravity segment 231-00015 to PS 231 begins at manhole 231-00015, located on Sagefield Drive, in between Cornwood Avenue and Morgan Meadow Avenue, and heads south along Sagefield Drive to PS 231, located near the intersection of Sagefield Avenue and Cornwood Avenue.

Forcemain segment PS 181 to NS6088 starts at PS 181, located off of Pinewood Drive, in between Arceneaux Avenue and Denham Avenue, and follows the access road from the pump station to Pinewood Drive, and then follows Pinewood Drive south to node NS6088, located near the intersection of Pinewood Drive and Denham Avenue.

Forcemain segment PS 155 to NS6103 begins at PS 155, located near the intersection of Crystal Drive and Taurus Avenue, and follows Taurus Avenue west to node NS6103, located near the intersection of Taurus Avenue and West Beaver Drive.

Forcemain segment PS 106 to NS6128 begins at PS 106, located near the intersection of Palomino Drive and Paint Avenue, heads north along Palomino Drive, turns west on Shetland Avenue, and terminates at node NS6128, which is located in an open area, just south of the intersection of Libra Avenue and Crystal Drive.

Forcemain segment PS 233 to NS6189 begins at PS 233, located at the south end of Sage Drive, heads north along Sage Drive and Cimmaron Drive, turns southwest at Hooper Road, and terminates at node NS6189, located at the intersection of Hooper Road and Sullivan Road.

Forcemain segment PS 234 to NS 6189 starts at PS 234, located at the intersection of Dorset Avenue and York Road, heads west on Dorset Avenue, turns southeast on Sullivan Road, and terminates at node NS6189, located at the intersection of Hooper Road and Sullivan Road.

Forcemain segment PS 249 to NS 6239 starts at PS 249, located near the intersection of Durmast Drive and Roble Avenue, heads south along Durmast Drive, turns west on Wax Road, and terminates at node NS6239, located near the intersection of Wax Road and Brookside Road.

Forcemain segment NS 6268A to NS 6393 begins at new node NS 6268A, located just southwest of the intersection of Regent Avenue and Overwood Drive, and follows a drainage path roughly south to node NS6393, located on Greenwell Springs Road, in between Greenmeadow Drive and Sullivan Road.

Forcemain segment PS 200 to NS 6391 starts at PS 200, located on Keystone Avenue, in between Teah Drive and Tarrora Drive, follows Gottlieb Road and a drainage path generally northwest, turns southwest on Greenwell Springs Road, and follows Greenwell Springs Road to NS6391, located on Greenwell Springs Road in between Greenmeadow Drive and Sullivan Road.

Forcemain segment PS 285 to NS 6406 begins at PS 285, located on Bristlecone Court, just north of its intersection with Evergreen Hills Avenue, and follows a servitude to the northwest to PS 164, located at the eastern end of Stoneridge Drive. From PS 164, the forcemain follows Stoneridge Drive west, turns north at Donnybrook Avenue, and terminates at node NS6406, located near the intersection of Donnybrook Avenue and Greenwell Springs Road.

Forcemain segment PS 113 to NS 6431 starts at PS 113, located near the intersection of Triple B Road and Chapparal Place, heads east along Triple B Road, and terminates at node NS6431, located near the intersection of Triple B Road and Sullivan Road.

Forcemain segment PS 160 to NS 6419, begins at PS 160, located near the intersection of Chambord Drive and Chaumont Avenue, heads southwest along Chaumont Avenue, turns northwest on Frenchtown Road, turns northeast on Greenwell Springs Road, and follows Greenwell Springs Road to node NS6419, located near the drainage path that is in between Sullivan Road and Greenmeadow Drive.

Forcemain segment PS 207 to NS 6489 begins at PS 207, located near the intersection of Red Maple Place and Post Oak Court, heads north along Post Oak Court, turn east on Country Road, turns northwest on Frenchtown Road, and terminates at node NS 6489, located near the intersection of Frenchtown Road and Chaumont Road.

Forcemain segment PS 152 to NS 6377 starts at PS 152, located just southwest of the intersection of Pecos Avenue and Prairie Drive, heads east to Prairie Drive, turns north on Prairie Drive, and terminates at node NS 6377, located near the intersection of Prairie Drive and Lovett Road.

Forcemain segment PS 231 to NS 6328 begins at PS 231, located near the intersection of Sagefield Avenue and Cornwood Avenue, heads south through a wooded area, and terminates at node NS 6328, located on Lovett Road, approximately 3,500 feet east of its intersection with Joor Road.

Forcemain segment PS 195 to NS 6308 begins at PS 195, located just south of the south end of Stoneshire Drive, goes north along Stoneshire Road, turns west on Landfair Road, turns north on Burtcliff Drive, turns west on Tynwood Avenue, turns north on Joor Road, and terminates at node NS 6308, located at the intersection of Joor Road and Lovett Road.

Forcemain segment PS 69 to NS 6257 starts at PS 69, located in between the eastern ends of Tanglewood Drive and Rustling Oaks Drive, heads north on Tanglewood Road, and terminates at node NS 6257, located near the intersection of Tanglewood Drive and Lovett Road.

Forcemain segment BPS 510 to NS 6252 begins at BPS 510, which will be abandoned as part of project NFE-C-0007 (Multiple BPS – Hooper Road – Lovett Road), located near the intersection of Sullivan Road and Lovett Road. From BPS 510, the forcemain follows Lovett Road west and north to node NS 6252, located near the intersection of Lovett Road and Hooper Road.

## Scope

This project includes construction of approximately 5,200 feet of 10-inch, 12-inch, and 15inch gravity sewer upstream of PS 155, PS 195, PS 200, and PS 231. This project also includes construction of approximately 113,000 feet of 6-inch, 8-inch, 10-inch, 12-inch, 14-inch, 16inch, 18-inch, 24-inch, and 30-inch forcemain in the North Forced East Basin. The detailed scope of the project is shown in Table 5-13.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
155-00037	155-00031	706	8	10	Gravity segment
155-00031	155-00013	1230	8	12	Gravity segment
155-00013	PS155	419	10	15	Gravity segment
195-00004	PS 195	939	8	12	Gravity segment
200-00011	PS 200	369	8	12	Gravity segment
231-00015	231-00013	503	8	12	Gravity segment
231-00013	PS 231	1039	8	15	Gravity segment
PS181	NS6088	1838	6	10	
PS155	NS6103	1894	8	10	
PS106	NS6134	2455	6	10	
NS6134	NS6128	3095	8	10	
PS233	NS6165	2059	4	6	
NS6165	NS6183	2988	18	24	
NS6183	NS6189	1448	18	24	
PS234	NS6150	3391	4	8	
NS6150	NS6157	2317	10	16	
NS6157	NS6189	3037	14	24	
PS249	NS6239	9100	8	10	
NS6268A	NS6393	4406	12	16	

#### TABLE 5-13

NFE-C-0006	(Lovett Road – C	Greenwell S	prings Road)

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS200	NS6404	4263	8	10	
NS6404	NS6395	971	8	10	
NS6395	NS6406	3598	10	12	
NS6406	NS6419	5947	12	16	
NS6419	NS6393	1752	14	18	
NS6393	NS6391	378	18	30	
PS285	PS164	1300	6	8	
PS164	NS6406	3961	6	8	
PS113	NS6419	3165	6	8	
NS6419	NS6431	2682	12	14	
PS160	NS6489	2514	6	10	
NS6489	NS6472	2543	8	12	
NS6472	NS6419	6106	10	14	
PS207	NS6489	1591	4	6	
PS152	NS6381	501	4	6	
NS6381	NS6377	501	4	6	
PS231	NS6328	1715	6	12	
PS195	NS6575	7835	8	14	
NS6575	NS6308	2917	8	14	
PS69	NS6257	1509	6	8	
PS510	NS6402	4280	10	30	
NS6402	NS6351	4891	20	30	
NS6351	NS6328	2200	20	24	
NS6328	NS6308	2926	20	30	
NS6308	NS6257	4337	24	30	
NS6257	NS6252	595	24	30	

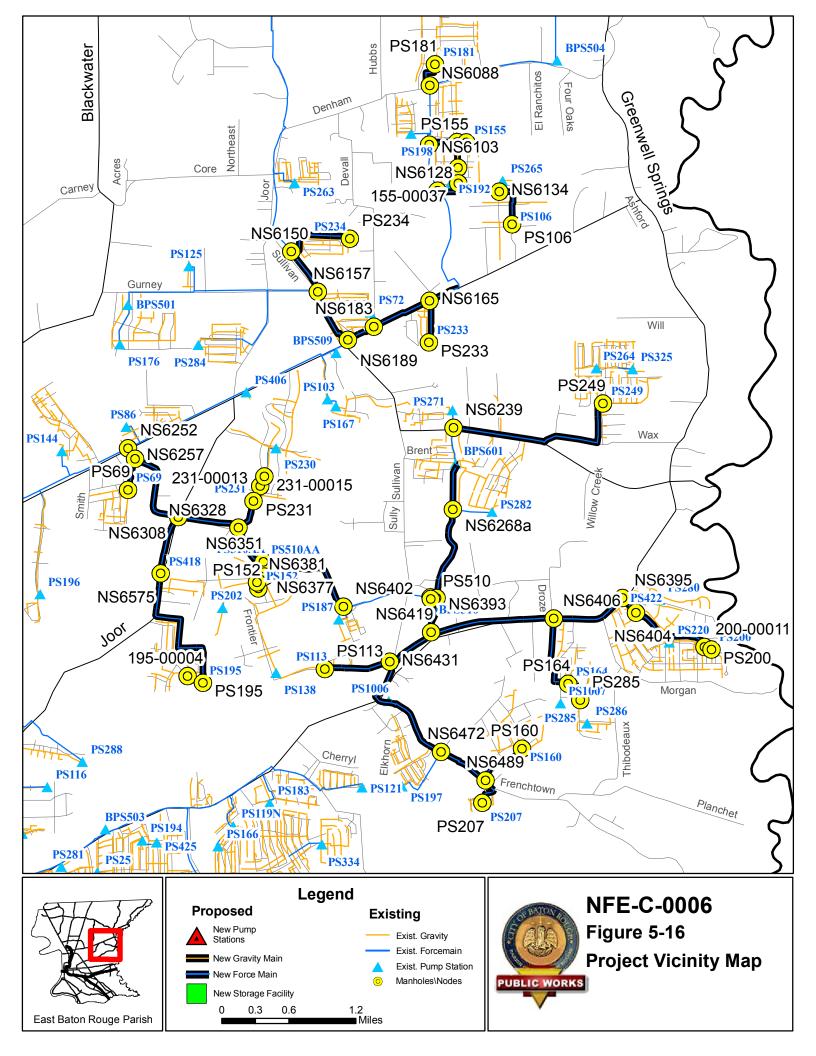
TABLE 5-13
NFE-C-0006 (Lovett Road – Greenwell Springs Road)

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$14,800,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



# 5.4.7 NFE-C-0007 (Multiple BPS – Hooper Road – Lovett Road)

## **Project Description**

## Purpose of the Project / Background Information

The purpose of the NFE-C-0007 (Multiple BPS – Hooper Road – Lovett Road) project is to replace BPS 509 and BPS 511, and construct BPS510AA to alleviate SSOs. This project will also require the abandonment of BPS510.

## Location

The locations of the pump stations is given in Table 5-14. BPS 510AA will replace the existing BPS510, which is currently located at the end of Lovett Road east of Sullivan Road.

## Scope

**TABLE 5-14** 

The detailed scope of this project is shown in Table 5-14.

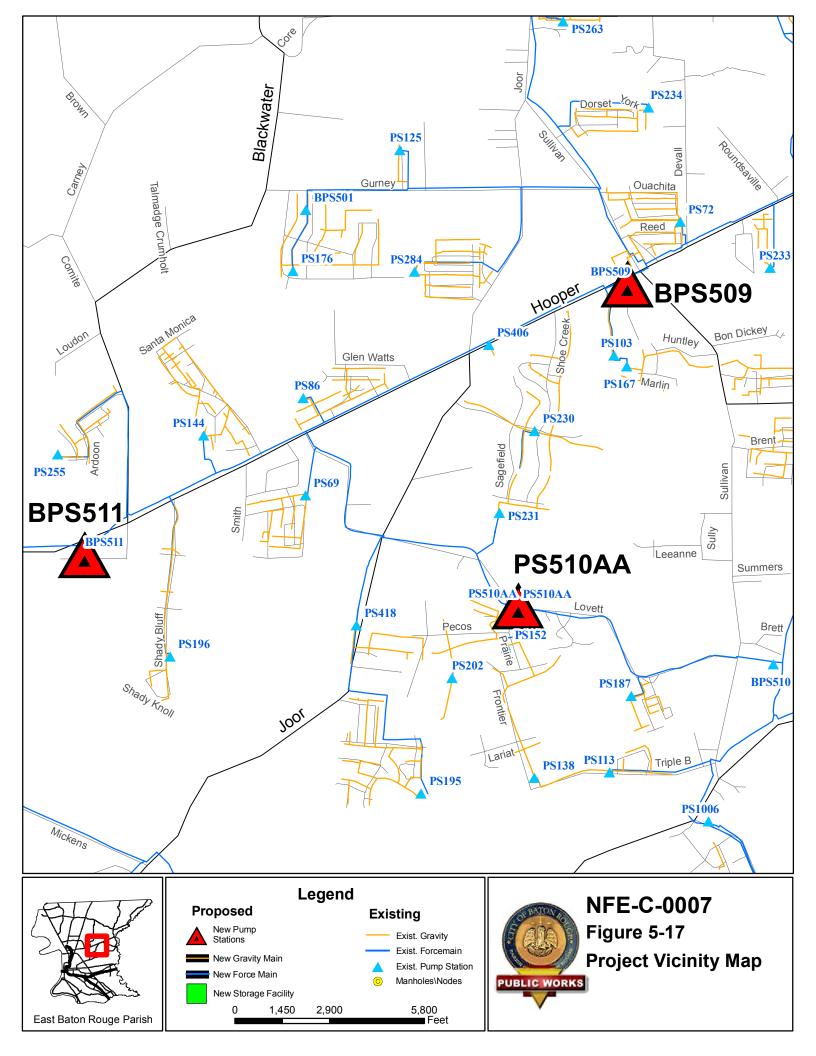
NFE-C-0007 (Multiple BPS – Hooper Road – Lovett Road) **Future Peak** Existing Max Capacity Wet Weather PS No. (GPM) Location Flow (GPM) **BPS 509** Hooper Rd bw Sullivan Rd and Lazy Lake Drive 4,861 7,638 **BPS 511** Hooper Rd bw Hickcock Drive and Blackwater Rd. 8,888 20,346 End of Lovett Road off of Hooper Rd **BPS 510AA** 3,541 7,986

**Note:** The existing maximum capacities for the PSs were obtained from the DPW Field Pump Station Maintenance reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

## Total Estimated Construction Cost is \$8,000,000.

Scheduled Design Appropriation Year is 2010.

Scheduled Construction Appropriation Year is 2011.



# 5.4.8 NFW-C-0001 (Joor Road – Greenwell Springs Road)

## **Project Description**

## Purpose of the Project / Background Information

The NFW-C-0001 project involves the design and construction of forcemain upgrades in the North Forced West Basin. This project includes the upsizing of approximately 24,000 feet of forcemain in the Shamrock Gardens and Bryan Estates areas. The upgrades are designed to alleviate chronic SSOs at the pump stations and increase the forcemain capacity. The upgrades range in size from 6 to 24-inch diameter.

## Location

This project involves the replacement of portions of the North Forced West manifold forcemain system as well as replacement of some gravity segments in the same area as the forcemain segments.

Forcemain segment PS 183 to NS 6485 begins outside the property boundary of PS 183. Upon leaving the PS, the forcemain travels north for approximately 50 feet before reaching Canterbury Drive. At Canterbury Drive, the forcemain turns east and follows the road for approximately 225 feet to the intersection of Canterbury Drive and Greenforrest Drive. At Greenforrest Drive, the forcemain turns northward and follows the road for approximately 1,500 feet to the intersection of Greenforrest Drive and Highway 37. At this point, the forcemain travels under Highway 37 and manifolds into a larger forcemain at node NS 6485.

Forcemain segment PS 119N to NS 6509 begins outside the property boundary of PS 119. Upon leaving the pump station, the forcemain travels west for approximately 50 feet before reaching Sarasota Drive. At Sarasota Drive, the forcemain turns north and follows the road for approximately 1,000 feet to the intersection of Sarasota Drive and Coral Drive. At Coral Drive, the forcemain turns northward and follows the road for approximately 500 feet to the intersection of Coral Drive and Highway 37. At this point, the forcemain travels under Highway 37 and manifolds into a larger forcemain at node NS 6509.

Forcemain segment BPS 503 to NS 6438 begins outside the property boundary of BPS 503 and travels south for approximately 150 feet before reaching Highway 37. At Highway 37, the forcemain turns west and follows the north ROW for approximately 6,000 feet to the intersection of Highway 37 and Joor Road. At Joor Road, the forcemain turns north and follows the east ROW for approximately 7,600 feet to the intersection of Joor Road and Mickins Road. At the intersection of Joor Road and Mickens Road (node NS6438), the forcemain travels northwest along Mickens Road for approximately 7,000 feet to node NS6438, located at the intersection of Mickens Road and Lanier Drive.

Forcemain segment PS 288 to NS 6461 begins outside the property boundary of PS 288. Upon leaving PS 288, the forcemain travels northwest along an electrical servitude for approximately 2,650 feet to its intersection with Joor Road. At Joor road, the forcemain turns south for approximately 250 feet to node NS 6461, located near the intersection of Mickens Road and Joor Road.

Forcemain segment NS 6499 to NS 6500 begins at node NS 6499, located near the end of the cul-de-sac on Dancy Avenue, and follows Dancy Avenue west to node NS6500, located near the intersection of Dancy Avenue and Joor Road.

Gravity segment 119N-00039 to PS 119N starts at manhole 119-00039, located near the intersection of Daytona Avenue and Flamingo Drive, runs northeast along Flamingo Drive, and turns north on Sarasota Drive to PS 119N, located on Sarasota Drive in between Flamingo Drive and Biscayne Drive.

Gravity segment 183-00009 to 183-00001Z begins at manhole 183-00009, located near the intersection of Cardigan Avenue and Kilkenny Drive, and follows Kilkenny Drive north to manhole 183-00001Z, which is located near the intersection of Kilkenny Drive and N. Salem Drive.

Gravity segment 128-00041A to PS 128 starts at manhole 128-00041A, located near the intersection of Toledo Bend Avenue and Redlands Drive, and heads south to PS 128, located on Redlands Drive, in between Cedar Bend Avenue and Elaine Drive.

#### Scope

The scope of this project includes construction of approximately 1,700 feet of 10-inch and 12inch gravity sewer upstream of PS 119N and PS 128 and approximately 2,600 feet of 21-inch gravity sewer upstream of PS 183. This project also includes construction of 29,800 feet of 4inch, 6-inch, 10-inch, 16-inch, and 24-inch forcemain in the North Forced West basin. The detailed scope of this project is given in Table 5-15.

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)	Comments
PS 183	NS6512	160	14	16	
NS6512	NS6485	1600	14	16	
PS 119N	NS6509	2150	8	10	
BPS503	NS6550	8500	14	24	
NS6550	NS6500	2300	18	24	
NS6500	NS6438	10200	14	24	
PS288	NS6461	3400	4	6	
NS6499	NS6500	1500	3	4	
119N-00039	PS119N	985	8	10	Gravity segment
183-00009	183-00001Z	2592	12, 15, & 16	21	Gravity segment
128-00041A	128-00040A	355	10	12	Gravity segment
128-00040A	128-00001Z	320	10	12	Gravity segment
128-00001Z	PS128	83	10	12	Gravity segment

### TABLE 5-15

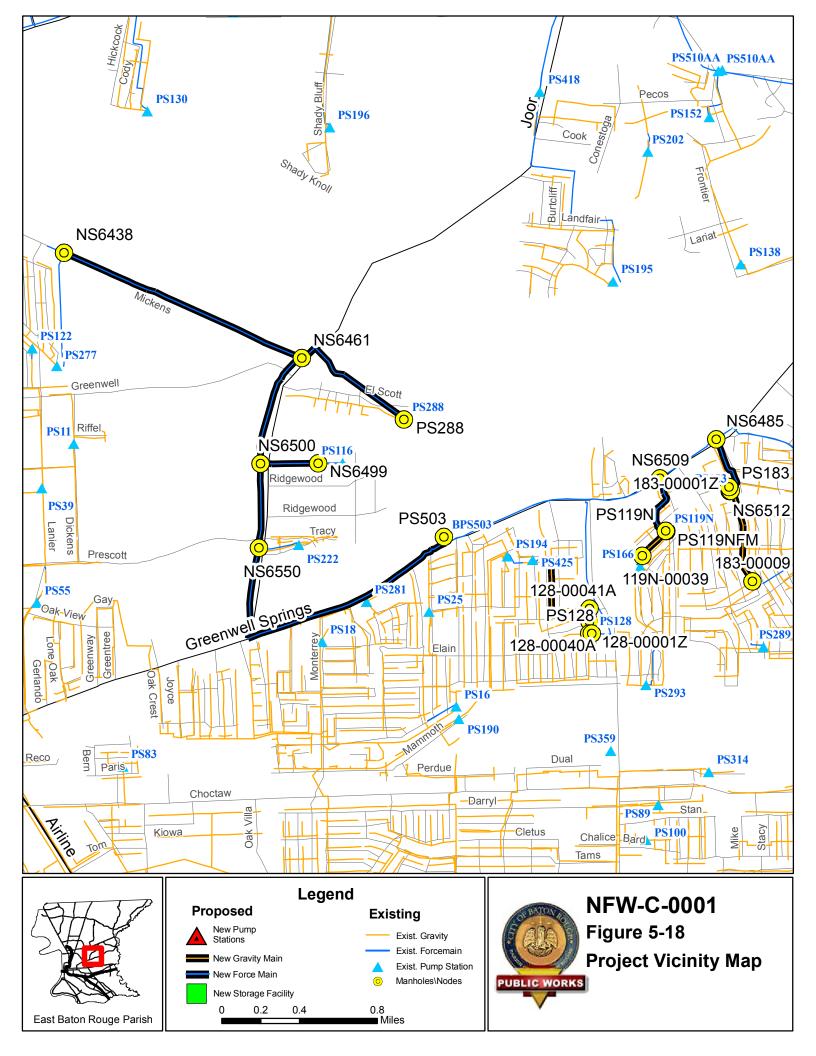
NFW-C-0001 (Joor Road – Greenwell Springs Road)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$4,800,000.

Scheduled Design Appropriation Year is 2012.

Scheduled Construction Appropriation Year is 2013.



# 5.4.9 NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, & FMs)

## Project Description

## Purpose of the Project / Background Information

The NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, and FMs) project involves the design and construction of a 25-MG storage facility (Choctaw Storage Facility) in west-central Baton Rouge Parish. This project also includes the construction of an overflow pump station for Pump Station 52 (PS 52A), and overflow pump station for PS 51 (PS 51A), a gravity trunk line overflow pump station (PS 51AA), the forcemains to convey the flow from the pump stations to the storage facility, and the pipe that will allow flow to return from the Choctaw Storage Facility to PS 52. The purpose of this facility is to detain peak wet weather flows during a storm event, and release them back into the collection system when demand is lower.

Construction of the storage facility will eliminate approximately 6.5 miles of pipe replacement, reduce the overall pipe diameter for the remaining sewer projects, and eliminate the need to increase the capacity of the North WWTP.

## Location

The location of the 24 MG storage facility is near the northeast corner of the intersection of Airline Highway and South Choctaw Drive. The C-P already owns the parcel of land. The locations of the pump stations are given in Table 5-16.

The force main from PS 52A to the storage facility will follow a 36-inch gravity trunk sewer east to the intersection of Airline Highway and Hurricane Creek. It will then head southeast along Airline Highway to the intersection with Choctaw Drive. Finally, it will bear east along Choctaw Drive to the storage facility.

The force main from PS 51A to the storage facility will run west along an existing 15-inch and 18-inch gravity sewer which follows Jones Creek. Once it reaches North Airway Drive, it will head north to the intersection with Choctaw Drive where it will head west to the storage facility. The forcemain from PS 51AA to the manifold point with the forcemain from PS 51A (node PS51WW1) will begin near the intersection of Red Oak Drive and Sharp Lane and head north along Sharp Lane to the intersection with Cuyhanga Parkway. From this point, the force main heads west along Cuyhanga Parkway to the intersection with Sierra Vista Drive. It then runs north to intersect with the force main from PS 51A.

## Scope

This project includes the construction of two 12 million gallon (MG) storage tanks at the Choctaw Storage Facility and their associated piping, valving, controls, and appurtenances. The pump stations and forcemains are detailed in Table 5-16 and Table 5-17.

TABLE 5-16		
NFW-C-0002	Choctaw Storage, PS 52A, PS 51A, PS 51A	A)

PS No.	L	ocation	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS51A	Sierra Vista Dr, north of the intersection with Cuyhanga Pkwy.		New	8,333
PS51AA	Near the intersection Sharp Lane	n of Red Oak Drive and	New	3,125
PS52A	Choctaw Storage	10100	New	36
PS51A	PS51WW1	130	New	21
PS51WW1	Choctaw Storage	10380	New	24
PS51AA	PS51WW1	2833	New	15

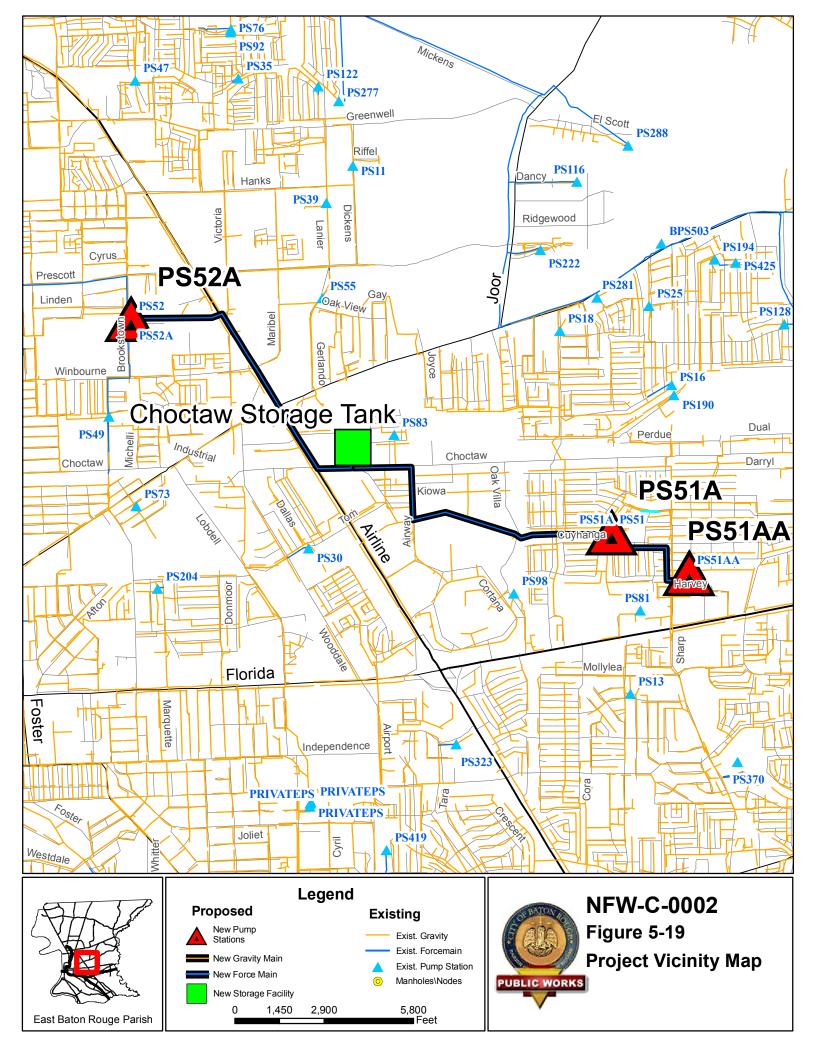
**Note:** The future peak wet weather flow was obtained from the BTRSSO hydraulic model. The new pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$50,300,000.

Total Storage Facility Land Acquisition Cost is \$1,218,720 (already acquired).

Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2009.



# 5.4.10 NFW-C-0003 (Choctaw Storage Pump Station)

## **Project Description**

This project has been deleted and combined with NFW-C-0002 (Choctaw Storage, PS 52A, PS 51A, PS 51AA, forcemains, and return pipe).

# 5.4.11 NFW-C-0004 (Hooper Storage)

## **Project Description**

## Purpose of the Project / Background Information

The NFW-C-0004 (Hooper Storage) project involves the design and construction of a 10-MG storage facility (Hooper Storage Facility) in northwest Baton Rouge Parish. The purpose of this facility is to detain peak wet weather flows during a storm event, and release them back into the collection system when demand is lower.

Construction of the storage facility will eliminate the need for approximately 13,200 feet of pipe replacement, reduce the overall pipe diameter for the remaining sewer projects, and eliminate the need to increase the capacity of the North WWTP.

## Location

The proposed location of the storage facility is near the northwest corner of the intersection of Hooper Drive (Highway 408) and Mickens Road. The storage facility location may move slightly; however, according to the modeled flows, this is generally the ideal location. The city does not own the land at this location.

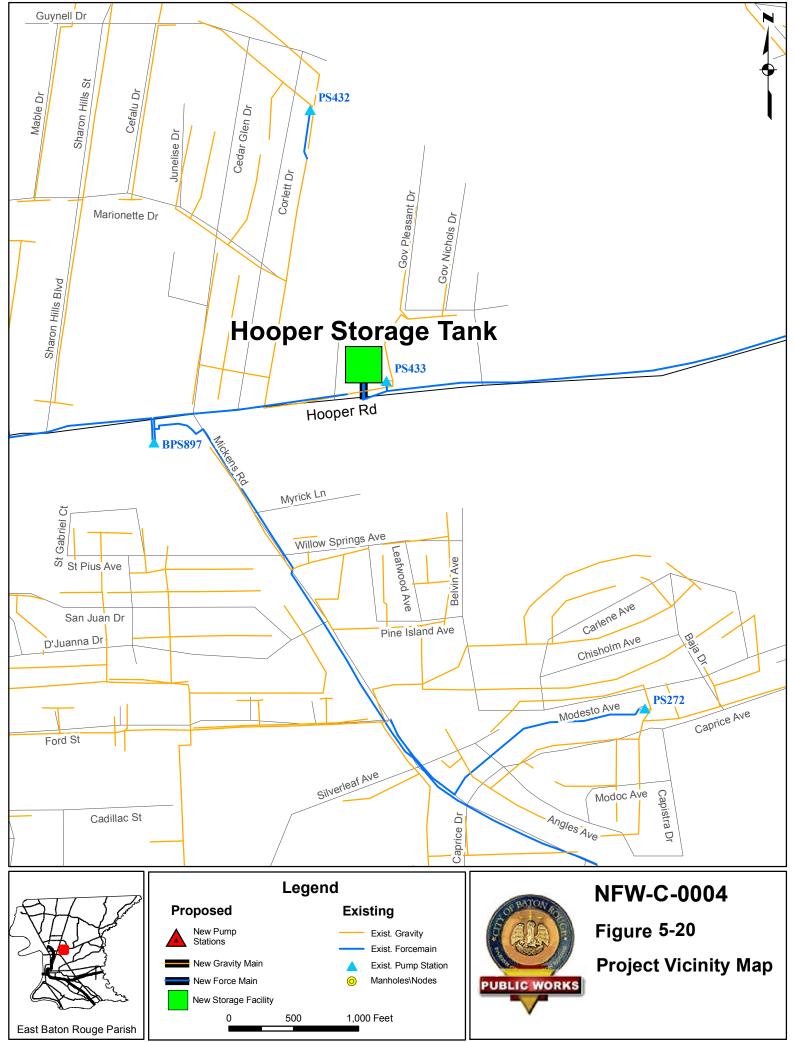
## Scope

The project scope includes the design and construction of the storage facility and associated pumping systems to transfer flows in and out of the facility.

Total Estimated Construction Cost is \$16,300,000.

Scheduled Design Appropriation Year is 2009.

Scheduled Construction Appropriation Year is 2010.



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06/05/2008 sgelpi\_Sigma/btr

# 5.4.12 Group Project 1A (Veterans Memorial Parkway – Gravity Mains)

## Project Description

## Purpose of the Project / Project Background

The Group Project 1A (Veterans Memorial Parkway – Gravity Mains) project involves the design and construction of upgrades to the collection system in the North Forced West Basin and the North Gravity Basin. This project includes upgrading portions of the gravity collection system located in the areas served by PS 46, PS 55, PS 39, PS 52, PS47, PS 54, PS 24, and PS 43. The upgrades are designed to alleviate chronic SSOs in the collection system and at the pump stations, as well as increase the system capacity. This project includes gravity sewers from the following projects in the January 2008 PDP: NGS-C-0001 (Progress Road – Baton Rouge Metro Airport), NFW-C-0005 (Airline Highway – Victoria Drive), and NFW-C-0006 (McClelland Drive).

## Location

This project involves the replacement of portions of the gravity collection system.

Gravity segment 046-00060 to New Veterans Memorial PS (current manhole 046-00044) begins at the intersection of Devall Lane and Blount Road, runs west along Blount Road, turns south on Liberty Road and continues to the fence line of the Baton Rouge Metropolitan Airport.

Gravity segment 055-00105B to 055-00034 begins at manhole 055-00105B located west of the intersection of Gay Drive and Greentree Drive. From this point, the gravity line travels northwest and follows the drainage canal for approximately 1,500 feet to manhole 055-00034. The inverts along this segment are approximately 10 feet to 15 feet deep.

Gravity segment 039-00035 to PS 39 begins at manhole 039-00035 located at Phebus Drive. From this point, the gravity line travels east for approximately 850 feet to manhole 039-00008. At manhole 039-00008, the gravity line connects with a larger trunk line. The trunk line runs south for approximately 2600 feet along an existing servitude to PS 39. The inverts along this segment are approximately 10 feet to 15 feet deep.

Gravity segment PS35DS to PS 52 begins at manhole PS35DS located north of the drainage canal near the intersection of Maplewood Drive and East Fairlane Drive. From this point, the gravity line travels south along an existing drainage canal for approximately 1,200-feet to manhole 52-00280 located near the intersection of the drainage canal and Greenwall Street. At manhole 052-00280, the gravity line turns west and follows Greenwall Street for approximately 500-feet to manhole 52-00268, located near the intersection of Greenwall Street and Landis Drive. At manhole 052-00268 the gravity line turns south and follows Landis Drive for approximately 2,000 feet before turning east on Hanks Drive. At the intersection of Landis Drive and Hanks Drive, the gravity line turns east and follows Hanks Drive for approximately 800 feet to manhole 052-00245, located at the intersection of Hanks Drive and Victoria Drive. At manhole 052-00245 the gravity line turns south and follows Victoria Drive for approximately 4,100 feet as the road turns west under Airline Highway and follows and existing servitude. The line continues west on the servitude for approximately 2,700 to PS 52. The inverts along this segment are approximately 10 feet to 20 feet deep.

Gravity segment 052-00168 to 052-00161 begins near of the intersection of Prescott Road and Maribel Drive. The gravity line travels west along Prescott Road to the intersection of Victoria Drive.

Gravity segment 052-00019 to 052-00012 begins at manhole 052-00019 south of the intersection of Victoria Drive and Windborne Avenue. From this point, the Gravity line travels north for approximately 1,500 feet to manhole 052-00014, located near the intersection of Victoria Drive and Airline Highway. At manhole 52-00014, the gravity line turns northwest and follows Airline Highway for approximately 550 feet to manhole 052-00012. The inverts along this segment are approximately 15 feet to 20 feet deep.

Gravity segment 052-00582 to 052-00400 begins at manhole 052-00582 located west of intersection of Monarch Avenue and Stutz Street. From this point, the gravity line travels west and follows an existing servitude for approximately 1,300 feet to an existing drainage canal. At this point, the gravity line turns south and follows the drainage canal to McClelland street where the line continues south for approximately 8,500 feet to the intersection of McClelland Street and Evangeline Street. At Evangeline Street, the line turns east and follows the roadway for approximately 2,100 feet to the manhole 052-00145 which is located at the intersection of Evangeline Street and East Brookstown Drive. At manhole 052-00145, the gravity line turns south and follows East Brookstown Drive for approximately 4,000 feet to 052-00400. The inverts along this segment are approximately 10 feet to 20 feet deep.

Gravity segment 052-00881 to 052-00556D begins at manhole 052-00881 which is west of intersection of Plank Road and Crown Avenue. From this point, the gravity line travels southwest along Crown Avenue approximately 1,100 feet to manhole 052-00541, located at the intersection of Crown Avenue and Beachwood Drive. At manhole 052-000541 the gravity turns south and travels along Beachwood Drive for approximately 1,100 feet to manhole 052-00757, located in an existing servitude south of Glenn Oaks Drive. At manhole 052-000757 the gravity turns east and travels along the servitude for approximately 2,600 feet before joining a larger trunk line at manhole 052-00556D. The inverts along this segment are approximately 10 feet to 15 feet deep.

Gravity segment 052-00700 to 052-00521 begins at manhole 052-00700, located on Greenwall Street, and travels east along Greenwall Street to manhole 052-000710, located near the intersection of Greenwall Street and Winchester Avenue. At manhole 054-00710, the gravity line turns south and follows Winchester Avenue to the intersection of Winchester Avenue and Hollywood Street. At this point, the gravity turns east and travels along the Hollywood Street for approximately 950 feet before joining a larger trunk line at manhole 052-00521. The inverts along this segment are approximately 15 feet to 20 feet deep.

Gravity segment 052-00329 to 052-00268 begins on Vineyard Drive, south of PS47 and travels east to Silverleaf Avenue. The gravity line turns south and follows Silverleaf Avenue to Greenwell Street. The gravity line turns east and follows Greenwell Street to manhole 052-00268 located at Greenwell Street and Landis Drive.

Gravity segment 052-00214 to 052-00204 begins near the intersection of Videt Polk Drive and Lanier Drive and travels south along Lanier Drive to the intersection of Lanier Drive and Prescott Road.

Gravity segment 047-00014 to PS 47 begins adjacent to an existing drainage canal north of Glen Oaks Drive. The gravity line travels south along the existing drainage channel to North Grand Court.

Gravity segment 047-00263 to 047-00043 begins east of Mickens Road. The gravity line travels west to Mickens Road. The gravity line turns south and follows Mickens Road to Ford Street. The gravity line turns west to manhole 047-00043. The inverts along this segment are approximately 5 feet to 10 feet deep.

Gravity segment 047-00428 to 047-00029 begins at the intersection of Packard Street and White Street. The gravity line travels north along White Street to Ford Street. The gravity line turns east and follows Ford Street to manhole 047-00029.

Gravity segment PS92DS to 047-00460 begins at manhole PS92DS located at near the intersection of Landis Drive and Glen Oaks Drive. From this point, the gravity line travels west for approximately 130-feet to manhole 047-00556. At manhole 047-00556, the gravity line generally runs south along an existing drainage canal for approximately 1,900 feet as the line generally curves to the west before reaching manhole 047-00474. At manhole 047-00556, the gravity line runs generally west for approximately 2,250 feet before reaching 047-00460. During this stretch the lines crosses the drainage canal several times to pick up flows from adjacent neighborhoods. The inverts along this segment are approximately 10 feet to 15 feet deep.

Gravity segment 054-00027 to 054-00001A begins at manhole 054-00027 located south of Cannon Street. From this point, the gravity line travels south for approximately 1,200-feet to manhole 054-00009, located near Greenwell Street. At manhole 054-00009, the gravity line turns east and follows Greenwell Street to manhole 054-00001A, which is adjacent to PS 54. The inverts along this segment are approximately 10 feet to 15 feet deep.

Gravity segment 024-00186 to 024-00011 begins at manhole 024-00186, which is located east of the intersection of Plank Road and Beech Street. At this point, the gravity line travels east along Beech Street for approximately 2,400 feet to manhole 024-000182, located near the intersection of Beech Street and an existing servitude. At manhole 24-000182, the gravity line turns south and follows the servitude and then Wildwood Parkway for approximately 2,000-feet to manhole 024-00011. The inverts along this segment are approximately 15 feet to 20 feet deep.

Gravity segment 024-00192 to 024-00182 begins at manhole 024-00192 which is located west of the intersection of Beech Street and Lemonwood Drive. At this point, the gravity line travels west along Beech Street for approximately for approximately 850 feet to manhole 24-000182, located near the intersection of Beech Street and Lemonwood Avenue. The inverts along this segment are approximately 15 feet to 20 feet deep.

Gravity segment 024-00528 to 024-00502 begins at manhole 024-000528 which is located west of the intersection of Wyandotte Street and North Acadian Throughway. At this point, the gravity line travels west along Wyandotte Street for approximately for approximately 1,200 feet to the intersection of Wyandotte Street and Delaware Street. At this point, the gravity line turns north and follows the Delaware Street for approximately 850-feet to manhole 024-000514, located near Delaware Street and Mohican Street. At manhole 024-000514, the gravity line turns west and follows Mohican Street to manhole 024-00502. The inverts along this segment are approximately 15 feet to 20 feet deep. Gravity segment 043-00095 to 043-00073 begins north of Interstate 110, near Baton Rouge Avenue. The gravity line travels north along Baton Rouge Avenue to the intersection of Baton Rouge Avenue and Hollywood Street.

Gravity segment PS23DS to 043-00190 begins near the intersection of Wyandotte Street and Baton Rouge Avenue. The gravity line travels north along Baton Rouge Avenue to Gordon Street.

#### Scope

The detailed scope of this project is shown in Table 5-18.

US Node	<u>terans Memorial Parkway – G</u> DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)
046-00060	046-00056	1139	52	48
046-00056	046-00053	411	36	48
046-00053	046-00050A	129	42	48
046-00050A	046-00045	1816	36	48
046-00045	046-00044 (New Veterans Memorial PS)	355	42	48
055-00105B	055-00105	763	8	12
055-00105	055-00034	700	10	12
039-00035	039-00008	847	10	15
039-00008	039-00007	299	10	18
039-00007	039-00006	268	10	18
039-00006	039-00003	1436	10	21
039-00003	PS39	599	12	21
PS35DS	052-00299	27	8	15
052-00299	052-00292	863	8	21
052-00292	052-00284	469	8	21
052-00284	052-00280	414	8	21
052-00280	052-00269	397	12	21
052-00269	052-00268	120	12	21
052-00268	052-00264	511	30	48
052-00264	052-00262	352	30	48
052-00262	052-00261	400	30	48
052-00261	052-00245	1496	30	48
052-00245	052-00240	1452	30	48
052-00240	052-00239	361	30	48
052-00239	052-00163	399	30	48

**TABLE 5-18** 

Group Project 1A (Veterans Memorial Parkway – Gravity Mains)

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)
052-00163	052-00161	404	30	48
052-00161	052-00105	290	30	48
052-00105	052-00100	367	30	54
052-00100	052-00098	321	30	54
052-00098	052-00051	575	36	54
052-00051	052-00012	152	36	54
052-00012	052-00011	380	36	60
052-00011	052-00010	363	33	60
052-00010	052-00006	265	36	60
052-00006	052-00004	616	36	60
052-00004	052-00003	435	36	60
052-00003	052-00001	712	36	60
052-00001	PS52	69	48	66
052-00168	052-00161	1673	24	42
052-00019	052-00014	1462	12	18
052-00014	052-00012	754	15	18
052-00582	052-00581	286	12	18
052-00581	052-00580	310	12	18
052-00580	052-00576	772	12	18
052-00576	052-00562	603	12	18
052-00562	052-00784	487	15	24
052-00784	052-00556D	584	15	24
052-00556D	052-00553	807	18	36
052-00553	052-00552	293	18	36
052-00552	052-00540	1370	18	36
052-00540	052-00533	362	18	36
052-00533	052-00532	285	18	36
052-00532	052-00528	290	18	36
052-00528	052-00521	581	18	36
052-00521	052-00518	714	30	48
052-00518	052-00606	2243	30	48
052-00606	052-00604	752	30	48

#### TABLE 5-18

Group Project 1A (Veterans Memorial Parkway – Gravity Mains)

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)
052-00604	052-00603	363	27	48
052-00603	052-00144	357	30	48
052-00144	052-00143	306	30	48
052-00143	052-00152A	441	30	48
052-00152A	052-00152	118	30	48
052-00152	052-00115	959	30	48
052-00115	052-00113	700	30	48
052-00113	052-00107	311	30	48
052-00107	052-00106	261	30	48
052-00106	052-00400	98	36	48
052-00881	052-00880	285	8	12
052-00880	052-00792	298	8	21
052-00792	052-00451	438	8	21
052-00451	052-00768	455	8	21
052-00768	052-00765	371	12	21
052-00765	052-00764	166	12	21
052-00764	052-00758	375	12	21
052-00758	052-00757	18	15	21
052-00757	052-00756	256	15	21
052-00756	052-00556L	758	15	21
052-00556L	052-00556J	94	15	21
052-00556J	052-00556D	1532	15	21
052-00700	052-00710	1277	18	27
052-00710	052-00716	289	18	27
052-00716	052-00745	816	18	27
052-00745	052-00755	235	18	30
052-00755	052-00521	499	18	42
052-00329	052-00268	3170	24	36
052-00214	052-00209	1173	12	15
052-00209	052-00205	586	12	18
052-00205	052-00204	301	15	18
047-00014	047-00012	146	24	36

#### **TABLE 5-18**

Group Project 1A (Veterans Memorial Parkway – Gravity Mains)

US Node	Veterans Memorial Parkway DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)
047-00012	047-00011	243	24	36
047-00011	047-00008	273	24	36
047-00008	047-00005	896	24	36
047-00005	047-00004	352	24	36
047-00004	047-00003	154	24	42
047-00003	PS47	209	24	42
047-00263	047-00043	507	8	15
047-00428	047-00418	221	10	21
047-00418	047-00417	313	12	21
047-00417	047-00029	1602	12	18
PS92DS	047-00556	129	8	12
047-00556	047-00557	135	8	15
047-00557	047-00474	1957	8	18
047-00474	047-00472	150	8	18
047-00472	047-00469	137	12	18
047-00469	047-00465	693	12	21
047-00465	047-00460	854	12	21
054-00027	054-00026	246	8	18
054-00026	054-00009	966	15	21
054-00009	054-00008	233	15	24
054-00008	054-00006	530	15	24
054-00006	054-00001A	177	15	24
024-00186	024-00182	1373	10	21
024-00182	024-00110	323	15	21
024-00110	024-00101	301	15	21
024-00101	024-00088	332	18	21
024-00088	024-00067	349	18	24
024-00067	024-00064	365	18	27
024-00064	024-00030	338	21	27
024-00030	024-00011	347	21	27
024-00192	024-00182	673	8	21
024-00528	024-00513	1027	10	21

#### **TABLE 5-18**

Group Project 1A (Veterans Memorial Parkway – Gravity Mains)

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)
024-00513	024-00514	419	10	21
024-00514	024-00502	313	15	21
024-00502	024-00496	310	18	21
043-00095	043-00093	357	15	24
043-00093	043-00085	1198	15	24
043-00085	043-00076	1311	15	24
043-00076	043-00075	339	15	24
043-00075	043-00073	315	15	24
PS23DS	043-00135	451	12	15
043-00135	043-00141	257	12	15
043-00141	043-00132	265	12	15
043-00132	043-00190	912	12	15

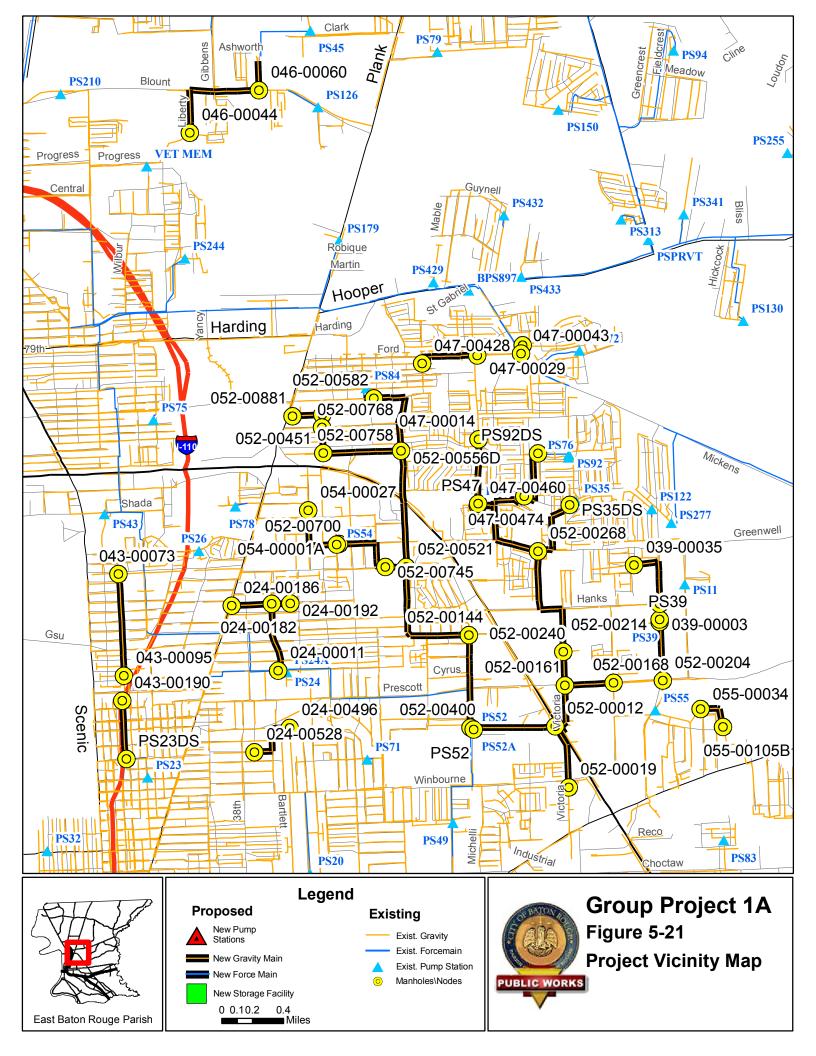
TABLE 5-18	
Group Project 1A	Veterans Memorial Parkway – Gravity Mains)

**Note:** The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$35,100,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2010.



# 5.4.13 Group Project 1B (Veterans Memorial Parkway – Pump Station and Forcemain)

# **Project Description**

# Purpose of the Project / Background Information

Group Project 1B (Veterans Memorial Parkway – Pump Station and Forcemain) involves the design and construction of forcemain upgrades in the North Forced West Basin and the North Gravity System. This project includes forcemains from the following projects in the January 2008 PDP: NGS-C-0001 (Progress Road – Baton Rouge Metro Airport), NFW-C-0005 (Airline Highway – Victoria Drive), and NFW-C-0006 (McClelland Drive). Also included in this project are the pump stations from project NFW-C-0008 (Multiple Pump Stations – Airline Highway – Greenwell Street). One notable addition to this project is the new Veterans Memorial PS and forcemain. This PS and forcemain have been added to this project in order to eliminate several hundred feet of large, deep gravity sewer upstream of PS 46 that was originally included in NGS-C-0001 (Progress Road – Baton Rouge Metro Airport).

# Location

The locations of the pump stations are given in Table 5-19.

Forcemain Segment Veterans Memorial Pump Station to the North WWTP proposed routing begins at the new Veterans Memorial pump station located on Progress Road near the Baton Rouge Metropolitan Airport. Upon leaving the pump station, the forcemain travels west to the intersection of Progress Road and Elm Grove Garden Drive. The forcemain turns north on Elm Grove Garden Drive and west on Progress Road. The forcemain continues along Progress Road, crossing Scotland Avenue and turns north on Canada Street. The forcemain then turns west on Kelly Street, crosses Scenic Highway and travels west on Coot Street continuing to Avenue C. The forcemain then turns south on Avenue C, then west on Elmer Avenue. The forcemain continues west on Elmer Avenue and turns south on Avenue M and continues south to the North WWTP.

Forcemain segment PS 277 to NS 6438 starts outside the property boundary of PS 277. Upon leaving the PS, the forcemain travels north along Wright Drive for approximately 2,600 feet before traveling northwest through an open field for 500 feet to Node NS6438, located west of the intersection of Lanier Drive and Mickens Road.

Forcemain segment PS 55 to P S55DS starts at PS 55, located on Lanier Drive, between Oak View Drive and Prescott Road. Upon leaving the pump station, the forcemain travels north to the intersection of Prescott Road and Lanier Drive.

Forcemain segment PS 275FM to NS 6140AA starts at PS 275, located at Glynn Road and Old Rafe Meyer Road. Upon leaving the pump station, the forcemain travels west along Old Rafe Meyer Road to a new node, NS 6140AA, located at the intersection of Old Rafe Meyer Road and Highway 61.

Forcemain segment PS54FM to PS54DS starts at PS54, located near Greenwell Street, in between North Foster Drive and Beechwood Drive. Upon leaving the pump station, the forcemain travels north to manhole PS54DS, located on Greenwell Street, near its intersection with Robertson Avenue.

# Scope

This project includes the construction of a new Veterans Memorial PS, as well as replacement of PS 47, PS 92, PS 35, PS 39, PS 55, PS 54, and PS 23. This project also includes the replacement of the forcemains from PS 277, PS 55, PS 275, and PS 55 and the construction of a new forcemain from the Veterans Memorial PS to PS 46. Tables 5-19 and Table 5-20 show the detailed scope of this project.

TABLE 5-19

Group Project 1B (Veterans Memorial Highway – Pump Stations)

PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)	Comments
Veterans Memorial PS	Existing MH 046-00044, located at Progress Road, near Baton Rouge Metropolitan Airport	New	17,985	Eliminates need for deep gravity sewer upstream of PS 46
PS47	Vineyard Drive bw Grand Drive and W Rio Drive	7,152	8,958	
PS92	Glen Oaks Drive bw Landis Drive and Pontotoc Street	486	486	
PS35	Maplewood Drive bw East Fairlane Court and Flag Street	694	1,687	
PS39	Lanier Drive bw Hanks Drive and Prescott Drive	625	2,083	
PS55	Lanier Drive bw Oak View Drive and Prescott Drive	1,805	2,222	
PS54	Greenwell Street bw North Foster Drive and Beechwood Drive	1,042	3,715	
PS23	Canonicus Street bw Calumet Street and Navajo Street	1,528	1,569	

#### TABLE 5-20

Group Project 1B (Veterans Memorial Parkway – Forcemains)

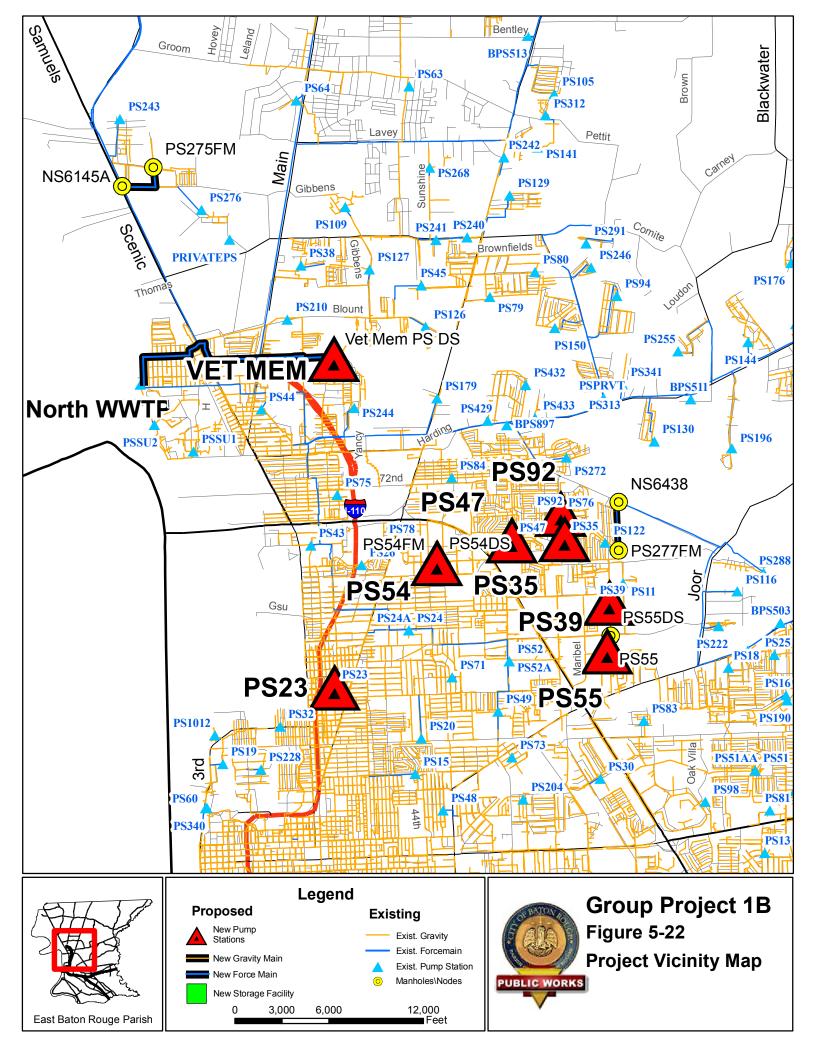
US	DS	Length (ft)	Existing (in)	Proposed (in)
VET PSFM	North WWTP	13300	New	30
PS277FM	NS6438	3124	6	8
PS55	PS55DS	1100	8	10
PS275FM	NS6140AA (new node)	3400	8	12
PS54FM	PS54DS	60	8	15

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model. The existing pipe sizes and all pipe lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$13,600,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2010.



# 5.4.14 NFW-C-0007 (Plank Road – Port Hudson Pride Road)

# **Project Description**

# Purpose of the Project / Background Information

The NFW-C-0007 (Plank Road – Port Hudson Pride Road) project involves the design and construction of forcemain upgrades in the North Forced West Basin. This project includes the upsizing of approximately 36,000 feet of forcemain in East Baton Rouge Parish. The upgrades are designed to alleviate chronic SSOs at the pump stations and increase the forcemain capacity. This project needs to be coordinated with piping and pump station upgrades that are part of Group Project 1B (Veterans Memorial Parkway – Pump Station and Forcemain).

# Location

This project involves the replacement of portions of the North Forced West manifold forcemain system.

Forcemain segment BPS 513 to NS 6087 starts outside the property boundary of BPS 513. Upon leaving the pump station, the forcemain travels east for approximately 400 feet along Bentley Drive to the intersection of Bentley Drive and Plank Road At Plank Road, the forcemain turns southwest and follows the road for approximately 1,800 feet to node NS 6087, located near the intersection of Plank Road and Kent Drive.

Forcemain segment PS 371 to NS 6049 starts outside the property boundary of PS371. Upon leaving the pump station, the forcemain travels north for approximately 50 feet west before reaching Danielle Avenue. At Danielle Avenue, the forcemain turns west and follows the road for approximately 1,000 feet to the intersection of Danielle Avenue and Eric Drive. At Eric Drive, the forcemain turns northward and follows the road for approximate 50 feet to the intersection of Eric Drive and an existing servitude. At this point the forcemain travels west for approximately 500 feet to manhole NS6049, located on the west side of Plank Road, and manifolds into the larger forcemain which runs along Plank Road.

Forcemain segment PS OXLF to NS 6037 starts at PS OXLF, located near the intersection of Hereford Avenue and Little Farms Drive, and travels east along a servitude to node NS6307, which is located on Plank Road.

Forcemain segment PS 123 to NS 6033 starts outside the property boundary of PS 123. Upon leaving the PS, the forcemain travels west for approximately 50 feet before reaching Tucker Road. At Tucker Road, the forcemain turns north and follows the road for approximately 5,600 feet to node NS6033, located near the intersection of Tucker Road and Zachary Deerford Road.

Forcemain segment PS 124 to NS 6025 starts outside the property boundary of PS 124. Upon leaving PS 124, the forcemain travels south for approximately 50 feet before reaching Port Hudson Pride Road. At Port Hudson Pride Road, the forcemain turns east and follows the roadway for approximately 6,600 feet to node NS 6015, which is located south of the intersection of Port Hudson Pride Road and WJ Wicker Road. At WJ Wicker Road the forcemain turns southeast and follows the roadway for approximately 8,500 feet to node NS6022, located near the intersection of WJ Wicker Road and Plank Road. At node NS 6022, the forcemain turns south and follows Plank Road to node NS 6025, located near the intersection of Plank Road and Main Street/Zachary Deerford Road. Forcemain segment PS 320 to NS 6035 begins outside the property boundary of PS 320. Upon leaving PS 320, the forcemain travels west for approximately 50 feet before reaching Buckhorn Drive. At Buckhorn Drive forcemain turns south and follows the roadway for approximately 1,600 feet as Buckhorn Drive turns to the west and intersects with Deercreek Drive. At Deercreek Drive, the forcemain turns south and follows roadway for approximately 1,000 feet to the intersection of Deercreek Drive and Greenwell Spring Point Road. At Greenwell Spring Point Road the forcemain turns west and follows the road for approximately 2,000 feet to manhole NS 6035, located near the intersection of Tucker Road and Greenwell Spring Point Road.

Forcemain segment PS35FM to PS35DS begins at PS 35, located on Maplewood Drive between East Fairlane Court and Flag Street, and follows a drainage path to the southwest of Maplewood Drive for approximately 240 feet to manhole PS 35DS. PS 35 is being replaced in Group Project 1B (Veterans Memorial Parkway – Pump Station and Forcemain).

Forcemain segment PS39FM to PS39DS starts at PS 35, located on Lanier Drive between Hanks Drive and Prescott Drive, and follows Lanier Drive south for approximately 35 feet to manhole PS39DS. PS 39 is being replaced in Group Project 1B (Veterans Memorial Parkway – Pump Station and Forcemain).

Forcemain segment PS 47FM to PS 47DS begins at PS 47, located on Vineyard Drive between Grand Drive and W Rio Drive, and follows Vineyard Drive east for approximately 75 feet to manhole PS47DS. PS 47 is being replaced in Group Project 1B (Veterans Memorial Parkway – Pump Station and Forcemain).

Forcemain segment NS6140AA to NS6204 begins at new node NS6140AA, located at the intersection of Old Rafe Meyer Road and Highway 61 and follows Highway 61 to node NS6204, located north of the intersection of Highway 61 and Thomas Road.

Forcemain segment PS243FM to NS6140 starts at PS 243, located at the northern end of Northgate Drive, and travels south along Northgate Drive to node NS 6140, located at the intersection of Northgate Drive and Old Rafe Meyer Road. This forcemain will tie into the forcemain from PS 275, which is part of Group Project 1B (Veterans Memorial Parkway – PS and FM).

# Scope

The detailed scope of this project, which includes construction of forcemains in the North Forced West Basin, is shown in Table 5-21

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)
BPS 513	NS6087	2500	18	20
PS 371	NS6049	1600	4	6
PS OXLF	NS6037	1500	6	10
PS123	NS6033	3000	6	8
PS124	NS6011	30	6	8
NS6011	NS6022	15000	10	12
NS6022	NS6025	5800	10	14
PS320FM	NS6035	3000	6	8
PS35FM	PS35DS	240	6	8
PS39FM	PS39DS	35	8	10
PS47FM	PS47DS	75	16	21
NS6140AA	NS6204	6050	14	16
PS243FM	NS6140	3340	8	12

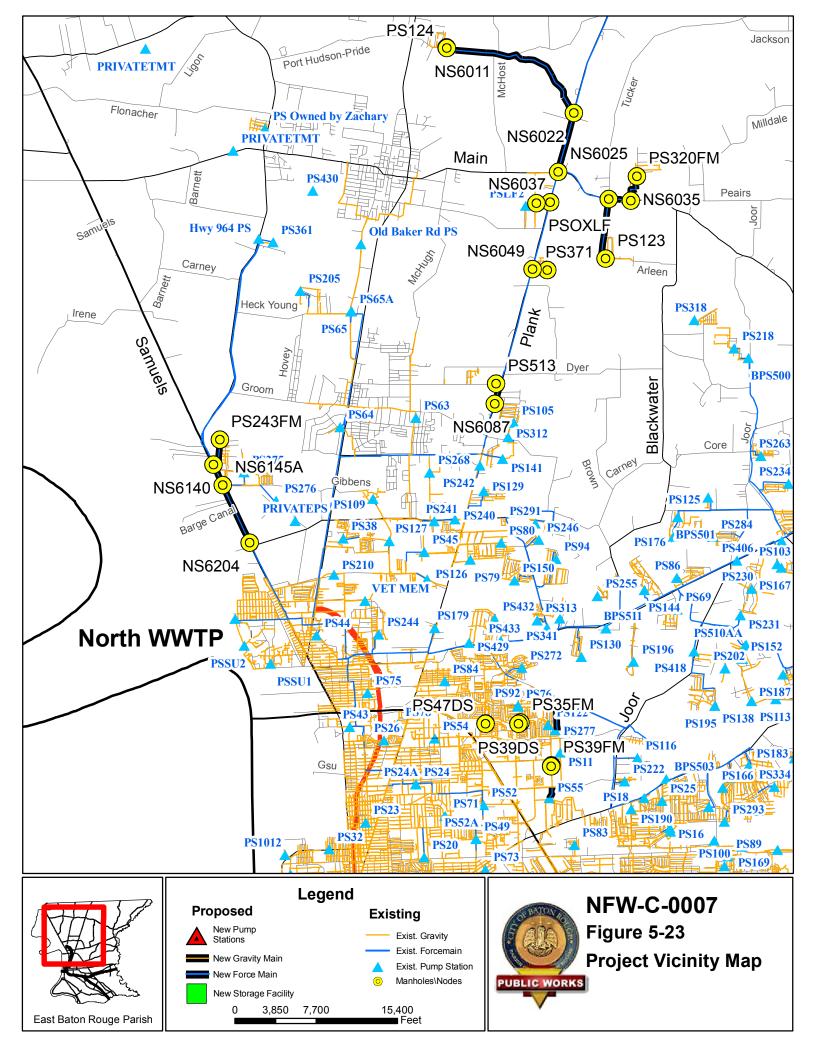
TABLE 5-21	
NFW-C-0007 (	(Plank Road – Port Hudson Pride Road)

Note: The existing pipe sizes and lengths were obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$4,900,000.

Scheduled Design Appropriation Year is 2012.

Scheduled Construction Appropriation Year is 2013.



# 5.4.15 NFW-C-0009 (Multiple Pump Stations – Highway 61 – Plank Road)

# Project Description

# Purpose of the Project / Project Background

Project NFW-C-0009 (Multiple Pump Stations – Highway 61 – Plank Road) includes the upgrade of PS 243, PS 275, PS 105, BPS 513, PS OXLF, PS 123, PS 124, PS 429, PS 897, and PS 43. These upgrades are required to alleviate SSOs at and near the pump stations as well as in their respective upstream basins.

# Location

The locations of the pump stations are given in Table 5-22.

# Scope

This project includes the replacement of the pump stations shown in Table 5-22. Two of the pump stations in this project have future wet weather peak flows that are less than the existing maximum capacity. Two of these pump stations, BPS 513 and PS 897, are being replaced so that they will become wet well pump stations, rather than in-line booster stations. The other pump stations that are near or below their existing maximum capacity in the future are likely being replaced due to head conditions that have changed, causing the pump station to no longer work as designed.

PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS 243	Northgate Drive	625	1,139
PS 275	Int of Old Rafe Meyer Road and Glynn Road	694	1,604
PS 105	Jupiter Drive off Roman Drive	833	167-306
BPS 513	Bentley Drive off Plank Road	7,430	3,125
PS OXLF	Int of Little Farms Drive and Jersey Drive	Not Available	1,319
PS 123	Arleen Ave	139	347
PS 124	Int of Hudson Pride Road and Hagen Drive	208	833-903
PS 429	Hooper Ridge Blvd	Not Available	14
PS 897	Hooper Road bw McClelland Drive and Mickens Rd	15,416	15,971
PS 43	Int of Ralph Street and Shada Ave	7,083	9,215

#### TABLE 5-22

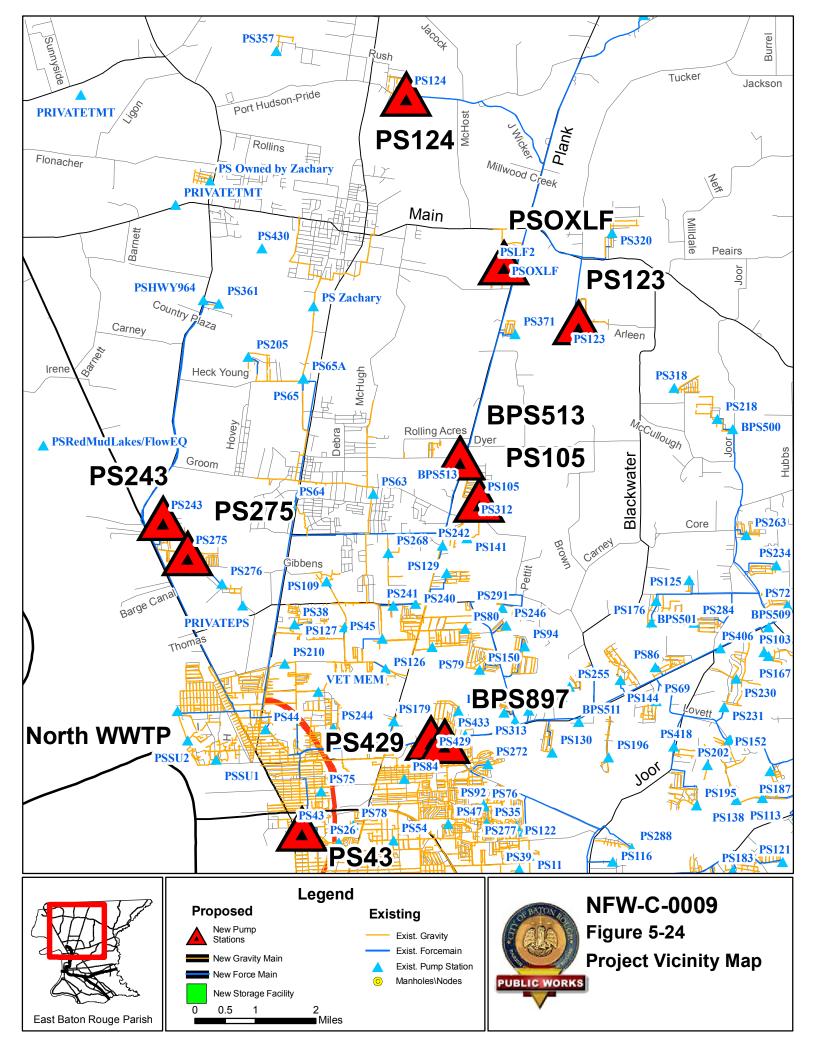
NFW-C-0009 (Multiple Pump Stations - Highway 61 - Plank Road)

**Note:** The existing maximum capacities for the PSs were obtained from the DPW *Field Pump Station Maintenance* reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

Total Estimated Construction Cost is \$9,700,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



# 5.4.16 NFW-C-0010 (Multiple Pump Stations – Prescott Road – Greenwell Springs Road)

# **Project Description**

# Purpose of the Project / Project Background

The NFW-C-0010 (Multiple Pump Stations – Prescott Road – Greenwell Springs Road) project includes the upgrade of PS 24, PS 24A, PS 503, PS 119N, PS 277, and PS 183. These upgrades are required to alleviate SSOs at and near the PSs as well as in their respective upstream basins.

# Location

The locations of the pump stations are shown in Table 5-23.

# Scope

This project includes the replacement of pump stations as outlined in Table 5-23. Again, several pump stations in this project have future wet weather peak flows that are less than their existing maximum capacities, but the pump stations need to be replaced due to changing head conditions that cause the pump station to need replacement.

NFW-C-0010 (Multiple Pump Stations - Prescott Road - Greenwell Springs Road)

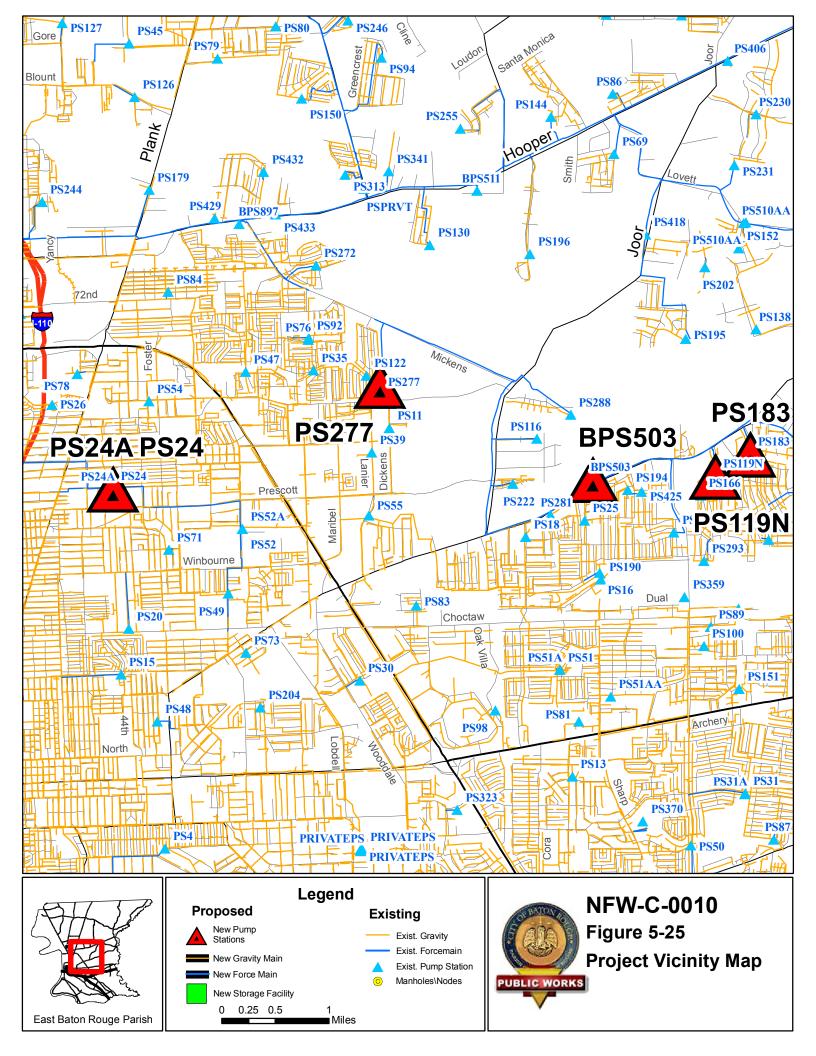
PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
PS 24	Sherwood Street bw Wildwood Parkway and Lemonwood Drive	4,028	3,819
PS 24A	Sherwood Street bw Wildwood Parkway and Lemonwood Drive	5,902	3,264
PS 503	Greenwell Springs Road bw int Aletha Drive and Pasadena Drive	2,847	4,083
PS 119N	Sarasota Drive bw Biscayne Drive and Flamingo Drive	417	847
PS 277	End of Wright Drive	208	660
PS 183	Canterbury Drive bw int of Greenforest Drive and Monticello Blvd	1,528	2,194

**Note:** The existing maximum capacities for the PSs were obtained from the DPW Field Pump Station Maintenance reference guide. The future peak wet weather flow was obtained from the BTRSSO hydraulic model.

#### Total Estimated Construction Cost is \$4,300,000.

Scheduled Design Appropriation Year is 2011.

Scheduled Construction Appropriation Year is 2012.



# 5.4.17 NFW-HWY61 (Red Mud Lakes)

# **Project Description**

# Purpose of the Project / Project Background

The purpose of the NFW-C-HWY61 project is to address inadequate capacity in the Baker/Zachary contributing area and to divert flow from the Baker/Zachary contributing area around the Comite Diversion Canal to the North WWTP. This project also includes conversion of the Red Mud Lakes facility into a permanent storage facility, which will reduce the peak flows to the North WWTP from the Baker/Zachary area.

# Scope

The NFW-C-HWY61 construction of pump stations, forcemains, and an equalization basin/storage facility to serve the Baker/Zachary area north of the Comite Diversion Canal. The forcemains, shown in Figure 5-26, begin at the northern border of East Baton Rouge Parish and follow Highway 964 southward to its intersection with the Entergy transmission main right-of-way. This forcemain will increase in size as it runs southward, from a 16-inch to a 30-inch, since it will receive flow from this area as it develops. The existing Copper Mill pump station (PS 430) will pump through its existing 16-inch forcemain to the intersection of the Entergy right-of-way and Highway 964. A new pump station (Old Baker Road PS), located west of the intersection of Plank Road with the Entergy right-of-way, will capture all sewage from the Old Baker Road gravity main and pump through a 24-inch forcemain westward to Highway 964 along the Entergy right-of-way.

A pump station (Hwy 964 PS) will be located at Highway 964 and the Entergy right-of-way to collect the flow from the 30-inch forcemain from the north, the existing 16-inch Copper Mill forcemain, and the new 24-inch Old Baker Road forcemain. This pump station will pump through a 48-inch forcemain westward along the Entergy right-of-way to Highway 61, where a connection point will be constructed to allow for future connection from the Highway 61 corridor. The 48-inch forcemain will then follow Highway 61 southeast to the Red Mud Lakes Equalization Facility.

The 20 million gallon (MG) equalization facility will be built inside the existing Red Mud Lakes facility that the C-P purchased from Kaiser Aluminum in 2004. The equalization basin will be utilized for storage during wet weather when flows in the forcemain exceed 20 mgd. A pump station with a capacity of 20 MGD, constructed on the Red Mud Lakes site, will pump the flow from the equalization facility to the North WWTP through a 30-inch forcemain that travels southeasterly along an existing servitude that is located to the west of Highway 61.

Table 5-24 below shows the capacities of each of the pump stations. Table 5-25 shows the sizes and lengths of the forcemains.

PS No.	Location	Existing Max Capacity (GPM)	Future Peak Wet Weather Flow (GPM)
Old Baker Road PS	West of intersection of Plank Road with Entergy Right-of-Way	New	10,188
Hwy 964 PS	Intersection of Highway 964 and Entergy Right-of- Way	New	27,257
Red Mud Lakes PS	Red Mud Lakes Equalization Facility, near East Baton Rouge Parish Landfill	New	13,899

#### TABLE 5-24 NFW-C-HWY61 (Red Mud Lakes) – Pump Stations

#### TABLE 5-25

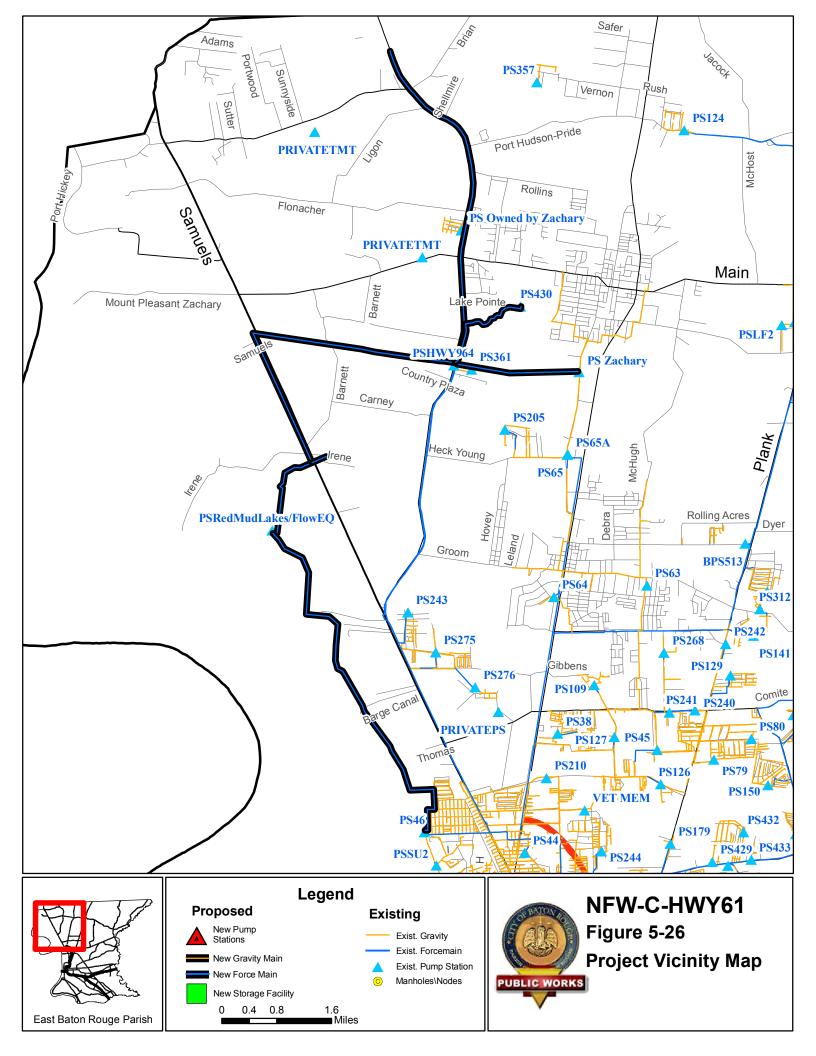
#### NFW-C-HWY61 (Red Mud Lakes) - Forcemains

US Node	DS Node	Length (ft)	Existing Diameter (in)	Proposed Diameter (in)
Old Baker PS	Hwy 964 PS	10500	New	24
Northern Parish Boundary	Hwy 964 PS	3100	New	16
		8852	New	20
		2000	New	24
		11633	New	30
Hwy 964 PS	Red Mud Lakes EQ Facility	33901	New	48
Red Mud Lakes EQ Facility	North WWTP	32750	New	30

Total Estimated Construction Cost \$58,000,000.

Scheduled Design Appropriation Year is 2008 (already appropriated).

Scheduled Construction Appropriation Year is 2010.



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# SECTION 6 Emergency Generators

# 6.1 Background

The C-P does not currently have emergency/standby power generators at any of its pump stations in the collection system or at the WWTPs. Recently, Hurricane Gustav caused power outages throughout much of the C-P for the majority of a week. During this time, the collection system was not able to convey flows to the WWTPs due to lack of power at the pump stations in the system, and the WWTPs were not able to operate.

To address this issue, the C-P will install emergency generators at the combined South/Central WWTP, the North WWTP, and all the pump stations in the collection system. This project utilizes existing information for those pump stations that will not be upgraded as part of the Program.

The wastewater projected flows and loads for the combined South/Central and North WWTP were used to determine the projected electrical demands for each plant. The facilities at the North WWTP that need to be upgraded as part of the *Draft Master Plan (CH2M HILL, 2008)* that has been developed for the C-P are not included in this updated PDP. However, the costs for the generators needed at the North WWTP (and identified in the Draft Master Plan) are included in this updated PDP.

# 6.2 Collection System Pump Stations

To determine how many and what size of generators will be needed at each of the collection system pump stations, the stations were first divided into existing and PDP pump stations. Each station's pumped flow and head were then determined with the resulting hydraulic horsepower calculated. The horsepower of the motors were then determined and ultimately generator units were selected and installed costs were determined.

A list of 299 existing operational pump stations and 21 ejector stations were developed based on C-P information (see Table 6-1). These stations will not be modified as part of the Program.

 TABLE 6.1

 Summary of Generator Units

 Existing Pump Stations (not impacted by the PDP)

Generator Unit Size (KW)	Number of Units	Unit Installed Cost	Total Installed Cost 2007
10	264	\$ 25,480	\$ 6,726,720
20	26	\$ 31,200	\$ 811,200
35	2	\$ 37,050	\$ 74,100
42	3	\$ 39,650	\$ 118,950
60	3	\$ 43,550	\$ 130,650

TABLE 6.1
Summary of Generator Units
Existing Pump Stations (not impacted by the PDP)

Generator Unit Size (KW)	Number of Units	Unit Installed Cost	Total Installed Cost 2007
85	5	\$ 55,900	\$ 279,500
100	5	\$ 59,800	\$ 299,000
125	4	\$ 66,950	\$ 267,800
150	2	\$ 85,150	\$ 170,300
215	1	\$ 165,100	\$ 165,100
325	1	\$ 274,300	\$ 274,300
500	1	\$ 406,900	\$ 406,900
880	1	\$ 653,900	\$ 653,900
1250	2	\$ 1,105,000	\$ 2,210,000
1400	1	\$ 1,027,000	\$ 1,027,000
	TOTAL 321		\$ 13,615,420

Total Estimate: \$13,600,000 Existing Stations (not expanded)

Note 1. Table 6-1 numbers include 21 ejector stations (10KW each) which result in an estimated construction cost of 0.6 M

Note 2: For each category, a natural gas generator, automatic transfer switch, enclosure equipment pad, and other accessories were sized with a resulting estimated installed construction cost.

Note 3: See Appendix A for the detailed information concerning each of the existing stations and their respective generator requirements

The 144 C-P pump stations that are to be added or modified as part of the Program are identified in Table 6-2.

## TABLE 6.2

Summary of Generator Units

PDP Pump Stations			
Generator Unit Size (KW)	Number of Units	Unit Installed Cost	Total Installed Cost 2007
10	23	\$ 25,480	\$ 586,040
14	15	\$ 26,780	\$ 401,700
20	14	\$ 31,200	\$ 436,800
35	30	\$ 37,050	\$ 1,111,500
42	6	\$ 39,650	\$ 237,900
60	6	\$ 43,550	\$ 261,300
70	4	\$ 46,150	\$ 184,600
85	2	\$ 55,900	\$ 111,800
100	7	\$ 59,800	\$ 418,600
125	4	\$ 67,340	\$ 269,360
150	3	\$ 85,150	\$ 255,450
185	4	\$ 148,850	\$ 595,400
215	3	\$ 165,100	\$ 495,300
250	3	\$ 193,700	\$ 581,100

Generator Unit Size (KW)	Number of Units	Unit Installed Cost	Total Installed Cost 2007
280	1	\$ 204,100	\$ 204,100
325	2	\$ 274,300	\$ 548,600
500	3	\$ 406,900	\$ 1,220,700
575	3	\$ 477,100	\$ 1,431,300
625	1	\$ 516,100	\$ 516,100
680	3	\$ 555,100	\$ 1,665,300
750	1	\$ 586,300	\$ 586,300
880	2	\$ 653,900	\$ 1,307,800
1250	3	\$ 1,105,000	\$ 3,315,000
1400	3	\$ 1,027,000	\$ 3,081,000
2000	1	\$ 1,371,500	\$ 1,371,500
	TOTAL 147		\$ 21,194,550

TABLE 6.2 Summary of Generator Units PDP Pump Stations

Total Estimate: \$21,200,000 Existing Stations (not expanded)

Note 1: Some of the large pump stations require more than one installed generator unit.

Note 2: See Appendix B for the detailed information concerning each of the PDP stations and their respective generator requirements

Note 3: For each category, a natural gas generator, automatic transfer switch, enclosure equipment pad, and other accessories were sized with a resulting estimated installed construction cost.

# 6.3 Wastewater Treatment Plants

For the North and South/Central WWTPs, the generation capacity needed was estimated based on the future estimated total flows and loads seen at each of the plants. Once the information was determined, the electrical requirements were estimated and the natural gas generators were selected with an automatic transfer switch, equipment pad, enclosure, and other accessories. Finally, the generator costs were estimated on an installed basis.

The North WWTP estimated generator installed cost is \$5.5 M for 7.5 MW of generation capacity, which is now included in this PDP update

The South/Central WWTP estimated installed cost is \$11.0 M, for 15 MW of generation capacity. This cost is already included in the estimated construction cost for the Phase 2 expansion project (STP-C-0002, South WWTP Phase 2 – Master Plan Portion).

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Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
1	4+1 VTSH	4550	4	125	205	225	900	878	880
8	2	500	1	50	9	10	10	10	10
9	2	5500	1	50	99	100	100	98	100
11	AIR	40	AIR	-	-	5	5	5	10
12	2	727	1	50	13	15	15	15	20
13	2	550	1	50	10	10	10	10	10
14	2	400	1	50	7	10	10	10	10
17	2	100	1	50	2	3	3	3	10
20	2	125	1	50	2	3	3	3	10
22	2	115	1	50	2	3	3	3	10
25	AIR	100	AIR	-	-	5	5	5	10
26	2	200	1	50	4	5	5	5	10
27	2	382	1	50	7	7.5	7.5	7	10
28	2	300	1	50	5	5	5	5	10
29	2	300	1	50	5	5	5	5	10
32	2	200	1	50	4	5	5	5	10
33	2	3500	1	50	63	75	75	73	85
34	AIR	60	AIR	-	-	5	5	5	10
36	2	500	1	50	9	10	10	10	10
37	2	100	1	50	2	3	3	3	10
40	2	400	1	50	7	7.5	7.5	7	10
42	CTP		CTP	-	-	0	0	0	0
46	NTP		NTP	-	-	0	0	0	0
48	3	2380	2	75	64	75	150	146	150
49	4	2380	3	100	86	100	300	293	325
51	2	2000	1	50	36	40	40	39	42
52	4	4022	3	100	145	150	450	439	500
53	3	2000	2	75	54	60	120	117	125
57	5	6325	4	125	285	300	1200	1170	1250
58	5	6000	4	125	271	300	1200	1170	1250
61	STP		STP	-	-	0	0	0	0
62	2	781	1	50	14	15	15	15	20
65	3	700	2	75	19	20	40	39	42
67	2	3772	1	50	68	75	75	73	85
69	2	282	1	50	5	5	5	5	10

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
70	2	350	1	50	6	7.5	7.5	7	10
71	2	300	1	50	5	5	5	5	10
72	3	332	2	75	9	10	20	20	20
73	2	150	1	50	3	3	3	3	10
74	2	568	1	50	10	10	10	10	10
76	AIR	100	AIR	-	-	5	5	5	10
77	2	350	1	50	6	7.5	7.5	7	10
78	2	200	1	50	4	5	5	5	10
79	2	200	1	50	4	5	5	5	10
81	2	100	1	50	2	3	3	3	10
82	2	100	1	50	2	3	3	3	10
83	AIR	65	AIR	-	-	5	5	5	10
84	2	450	1	50	8	10	10	10	10
85	3	500	2	75	14	15	30	29	35
87	AIR	150	AIR	-	-	5	5	5	10
88	2	250	1	50	5	5	5	5	10
89	AIR	150	AIR	-	-	5	5	5	10
90	2	292	1	50	5	5	5	5	10
91	2	500	1	50	9	10	10	10	10
93	2	438	1	50	8	10	10	10	10
95	2	100	1	50	2	3	3	3	10
96	2	150	1	50	3	3	3	3	10
97	AIR	100	AIR	-	-	5	5	5	10
98	2	500	1	50	9	10	10	10	10
99	AIR	70	AIR	-	-	5	5	5	10
100	2	200	1	50	4	5	5	5	10
101	2	200	1	50	4	5	5	5	10
103	2	176	1	50	3	3	3	3	10
104	2	664	1	50	12	15	15	15	20
106	2	287	1	50	5	5	5	5	10
108	2	1140	1	50	21	25	25	24	35
109	2	200	1	50	4	5	5	5	10
110	2	500	1	50	9	10	10	10	10
111	2	1015	1	50	18	20	20	20	20
113	2	190	1	50	3	3	3	3	10

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
114	2	260	1	50	5	5	5	5	10
116	3	33	2	75	1	2	4	4	10
117	2	100	1	50	2	3	3	3	10
121	2	184	1	50	3	3	3	3	10
122	2	122	1	50	2	3	3	3	10
126	2	300	1	50	5	5	5	5	10
128	2	631	1	50	11	15	15	15	20
130	2	109	1	50	2	3	3	3	10
131	2	100	1	50	2	3	3	3	10
132	2	202	1	50	4	5	5	5	10
133	2	13	1	50	0	1	1	1	10
134	2	600	1	50	11	15	15	15	20
135	2	400	1	50	7	7.5	7.5	7	10
136	2	932	1	50	17	20	20	20	20
137	OFF LINE		OFF LINE	-	-	0	0	0	0
138	2	70	1	50	1	2	2	2	10
140	2	369	1	50	7	7.5	7.5	7	10
141	2	139	1	50	3	3	3	3	10
142	2	250	1	50	5	5	5	5	10
143	2	500	1	50	9	10	10	10	10
145	2	524	1	50	9	10	10	10	10
146	OFF LINE		OFF LINE	-	-	0	0	0	0
147	2	613	1	50	11	15	15	15	20
150	2	436	1	50	8	10	10	10	10
151	2	175	1	50	3	3	3	3	10
152	2	234	1	50	4	5	5	5	10
154	2	763	1	50	14	15	15	15	20
155	2	663	1	50	12	15	15	15	20
157	2	278	1	50	5	5	5	5	10
158	AIR	80	AIR	-	-	5	5	5	10
159	2	144	1	50	3	3	3	3	10
160	2	300	1	50	5	5	5	5	10
161	2	594	1	50	11	15	15	15	20
163	AIR	125	AIR		-	5	5	5	10
165	OFF LINE		OFF LINE	-	-	0	0	0	0

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
166	2	400	1	50	7	7.5	7.5	7	10
167	2	84	1	50	2	3	3	3	10
168	2	344	1	50	6	7.5	7.5	7	10
169	2	100	1	50	2	3	3	3	10
171	2	300	1	50	5	5	5	5	10
173	2	150	1	50	3	3	3	3	10
177	2+2	1000	3	100	36	40	120	117	125
178	AIR	20	AIR	-	-	5	5	5	10
179	2	100	1	50	2	3	3	3	10
180	2	83.8	1	50	2	3	3	3	10
181	2	274	1	50	5	5	5	5	10
184	2	142	1	50	3	3	3	3	10
185	2	178	1	50	3	3	3	3	10
186	OFF LINE		OFF LINE	-	-	0	0	0	0
188	5	6750	4	125	304	350	1400	1365	1400
189	2	360	1	50	6	7.5	7.5	7	10
190	2	160	1	50	3	3	3	3	10
191	2	367	1	50	7	7.5	7.5	7	10
192	2	100	1	50	2	3	3	3	10
193	2	110	1	50	2	3	3	3	10
194	2	170	1	50	3	3	3	3	10
195	2	395	1	50	7	7.5	7.5	7	10
197	2	329	1	50	6	7.5	7.5	7	10
198	2	263	1	50	5	5	5	5	10
199	2	700	1	50	13	15	15	15	20
200	2	481	1	50	9	10	10	10	10
202	AIR	30	AIR	-	-	5	5	5	10
203	2	187	1	50	3	3	3	3	10
204	2	183	1	50	3	3	3	3	10
205	2	154	1	50	3	3	3	3	10
206	2	641	1	50	12	15	15	15	20
208	OFF LINE		OFF LINE	-	-	0	0	0	0
209	OFF LINE		OFF LINE	-	-	0	0	0	0
210	2	150	1	50	3	3	3	3	10
212	OFF LINE		OFF LINE	-	-	0	0	0	0

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
213	2	85	1	50	2	3	3	3	10
214	2	80	1	50	1	2	2	2	10
215	2	160	1	50	3	3	3	3	10
216	AIR	70	AIR	-	-	5	5	5	10
217	AIR	80	AIR	-	-	5	5	5	10
219	2	275	1	50	5	5	5	5	10
220	2	150	1	50	3	3	3	3	10
222	2	103	1	50	2	3	3	3	10
225	2	519	1	50	9	10	10	10	10
226	2	429	1	50	8	10	10	10	10
232	2	150	1	50	3	3	3	3	10
233	2	85	1	50	2	3	3	3	10
235	2	80	1	50	1	2	2	2	10
237	2	150	1	50	3	3	3	3	10
238	OFF LINE		OFF LINE	-	-	0	0	0	10
241	2	700	1	50	13	15	15	15	20
242	2	200	1	50	4	5	5	5	10
245	AIR	82	AIR	-	-	5	5	5	10
248	2	100	1	50	2	3	3	3	10
250	2	450	1	50	8	10	10	10	10
251	2	300	1	50	5	5	5	5	10
252	2	479	1	50	9	10	10	10	10
253	2	145	1	50	3	3	3	3	10
254	AIR	40	AIR	-	-	5	5	5	10
255	2	147	1	50	3	3	3	3	10
256	AIR	70	AIR	-	-	5	5	5	10
257	AIR	40	AIR	-	-	5	5	5	10
258	2	156	1	50	3	3	3	3	10
259	2	227	1	50	4	5	5	5	10
260	2	91	1	50	2	3	3	3	10
261	2	150	1	50	3	3	3	3	10
262	2	295	1	50	5	4	4	4	10
263	2	184	1	50	3	3	3	3	10
264	2	333	1	50	6	7.5	7.5	7	10
265	2	169	1	50	3	3	3	3	10

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
266	2	120	1	50	2	3	3	3	10
267	AIR	70	AIR	-	-	5	5	5	10
268	2	200	1	50	4	5	5	5	10
269	3	3500	2	75	95	100	200	195	215
270	2	244	1	50	4	5	5	5	10
270	2	495	1	50	9	10	10	10	10
272	2	200	1	50	4	5	5	5	10
273	OFF LINE		OFF LINE	-	-	0	0	0	0
276	2	100	1	50	2	3	3	3	10
279	2	131	1	50	2	3	3	3	10
280	2	127	1	50	2	3	3	3	10
281	2	230	1	50	4	5	5	5	10
282	2	127	1	50	2	3	3	3	10
283	2	523	1	50	9	10	10	10	10
284	2	246	1	50	4	5	5	5	10
286	AIR	40	AIR	-	-	5	5	5	10
287	2	125	1	50	2	3	3	3	10
289	2	320	1	50	6	7.5	7.5	7	10
290	2	180	1	50	3	3	3	3	10
292	2	100	1	50	2	3	3	3	10
293	2	225	1	50	4	5	5	5	10
294	2	225	1	50	4	5	5	5	10
295	2	266	1	50	5	5	5	5	10
297	2	125	1	50	2	3	3	3	10
298	2	240	1	50	4	5	5	5	10
299	2	640	1	50	12	15	15	15	20
300	3	1650	2	75	45	50	100	98	100
301	3	1750	2	75	47	50	100	98	100
302	3	2575	2	75	70	75	150	146	150
303	2	80	1	50	1	2	2	2	10
304	2	520	1	50	9	10	10	10	10
305	2	494	1	50	9	10	10	10	10
306	OFF LINE		OFF LINE	-	-	0	0	0	0
307	2	160	1	50	3	3	3	3	10
308	2	201	1	50	4	5	5	5	10

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
309	2	80	1	50	1	2	2	2	10
310	2	424	1	50	8	10	10	10	10
312	2	240	1	50	4	5	5	5	10
314	2	300	1	50	5	5	5	5	10
315	2	86	1	50	2	3	3	3	10
317	2	350	1	50	6	7.5	7.5	7	10
318	OFF LINE		OFF LINE	-	-	0	0	0	0
319	2	250	1	50	5	5	5	5	10
320	2	222	1	50	4	5	5	5	10
321	2	200	1	50	4	5	5	5	10
322	2	265	1	50	5	5	5	5	10
323	2	265	1	50	5	5	5	5	10
324	2	360	1	50	6	7.5	7.5	7	10
325	2	159	1	50	3	3	3	3	10
328	2	735	1	50	13	15	15	15	20
330	2	100	1	50	2	3	3	3	10
331	2	365	1	50	7	7.5	7.5	7	10
332	2	550	1	50	10	10	10	10	10
333	2	20	1	50	0	1	1	1	10
334	2	225	1	50	4	5	5	5	10
335	2	410	1	50	7	7.5	7.5	7	10
337	2	250	1	50	5	5	5	5	10
339	2	150	1	50	3	3	3	3	10
341	2	80	1	50	1	2	2	2	10
342	2	100	1	50	2	3	3	3	10
343	2	750	1	50	14	15	15	15	20
344	2	700	1	50	13	15	15	15	20
346	2	650	1	50	12	15	15	15	20
347	2	450	1	50	8	10	10	10	10
348	OFF LINE		OFF LINE	-	-	0	0	0	0
349	2	100	1	50	2	3	3	3	10
350	2	100	1	50	2	3	3	3	10
351	2	424	1	50	8	10	10	10	10
352	2	350	1	50	6	7.5	7.5	7	10
354	2	100	1	50	2	3	3	3	10

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
355	2	100	1	50	2	3	3	3	10
356	2	108	1	50	2	3	3	3	10
357	OXID POND		OXID POND	-	-	0	0	0	0
359	2	125	1	50	2	3	3	3	10
360	2	100	1	50	2	3	3	3	10
361	2	93	1	50	2	3	3	3	10
362	2	100	1	50	2	3	3	3	10
363	2	170	1	50	3	3	3	3	10
364	OFF LINE		OFF LINE	-	-	0	0	0	0
366	2	425	1	50	8	10	10	10	10
368	OFF LINE		OFF LINE	-	-	0	0	0	0
369	2	5961	1	50	108	125	125	122	125
370	2	3500	1	50	63	75	75	73	85
371	2	170	1	50	3	3	3	3	10
373	2	240	1	50	4	5	5	5	10
374	1	150	1	50	3	3	3	3	10
375	2	100	1	50	2	3	3	3	10
376	2	150	1	50	3	3	3	3	10
377	2	150	1	50	3	3	3	3	10
378	2	262	1	50	5	5	5	5	10
380	2	185	1	50	3	3	3	3	10
381	2	100	1	50	2	3	3	3	10
382	2	48	1	50	1	2	2	2	10
383	2	100	1	50	2	3	3	3	10
384	2	100	1	50	2	3	3	3	10
385	2	100	1	50	2	3	3	3	10
386	2	400	1	50	7	7.5	7.5	7	10
387	2	100	1	50	2	3	3	3	10
388	2	100	1	50	2	3	3	3	10
389	2	588	1	50	11	15	15	15	20
390	2	100	1	50	2	3	3	3	10
392	2	64	1	50	1	2	2	2	10
393	2	199	1	50	4	5	5	5	10
394	2	30	1	50	1	2	2	2	10
395	2	127	1	50	2	3	3	3	10

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
396	2	100	1	50	2	3	3	3	10
397	2	6000	1	50	108	125	125	122	125
398	2	389	1	50	7	7.5	7.5	7	10
399	2	100	1	50	2	3	3	3	10
400	2	161	1	50	3	3	3	3	10
401	2	60	1	50	1	2	2	2	10
403			1	50	0	1	1	1	10
404	2	161	1	50	3	3	3	3	10
405	2	138	1	50	2	3	3	3	10
406	2	200	1	50	4	4	4	4	10
407	2	100	1	50	2	3	3	3	10
408	2	70	1	50	1	2	2	2	10
409			1	50	0	1	1	1	10
410	2	100	1	50	2	3	3	3	10
411			1	50	0	1	1	1	10
412	2	125	1	50	2	3	3	3	10
413	2	100	1	50	2	3	3	3	10
414			1	50	0	1	1	1	10
415	2	100	1	50	2	3	3	3	10
416	2	343	1	50	6	7.5	7.5	7	10
417	2	240	1	50	4	5	5	5	10
418			1	50	0	1	1	1	10
419			1	50	0	1	1	1	10
420			1	50	0	1	1	1	10
421			1	50	0	1	1	1	10
422			1	50	0	1	1	1	10
423	2	179	1	50	3	5	5	5	10
424			1	50	0	1	1	1	10
425			1	50	0	1	1	1	10
426			1	50	0	1	1	1	10
427			1	50	0	1	1	1	10
428			1	50	0	1	1	1	10
430			1	50	0	1	1	1	10
500	2	617	1	50	11	15	15	15	20
501	2	692	1	50	12	15	15	15	20

Existing Pump Stations (Not Impacted By The PDP); Baton Rouge Program

Pump Station Number	Number of Pumps	Capacity of Each Pump (gpm)	No. of Pumps for Des. Cap.	Pump TDH (ft)	HP per Duty Pump	Motor HP per Duty Pump	Operating HP	Station KW required	Generator KW
504	2	1012	1	50	18	20	20	20	20
508	3	1072	2	75	29	30	60	59	60
510	3	1781	2	75	48	50	100	98	100
601	3	1450	2	75	39	40	80	78	85
944	3	1177	2	75	32	40	80	78	85
1001(367)	2	154	1	50	3	3	3	3	10
1003(353)	2	292	1	50	5	5	5	5	10
101A	2	174	1	50	3	3	3	3	10
22A	2	115	1	50	2	3	3	3	10
31A	2	2060	1	50	37	40	40	39	42
353 (1003)	2	292	1	50	5	5	5	5	10
365 (676)	3	771	2	75	21	25	50	49	60
367(1001)	2	154	1	50	3	3	3	3	10
65A	3	1736	2	75	47	50	100	98	100
676(365)	3	770	2	75	21	25	50	49	60
7A	2	800	1	50	14	15	15	15	20
CHIPPEWA	SUMP PUMP		SUMP PUMP	-	-	0	0	0	0
DEVALLANE			1	50	0	1	1	1	10
EOPP CIV. CTR.			1	50	0	1	1	1	10
PARISH PRISON			1	50	0	1	1	1	10
PORT HUDSON			1	50	0	1	1	1	10
ST. JEAN APTS.	2	800	1	50	14	15	15	15	20
UTTLEFARMS	2	163	1	50	3	3	3	3	10
	2		1	50	0	1	1	1	10

Total Number of Active Stations = 320

Air PS = 21 included in the above 320

Off Line = 19

#### APPENDIX B PDP Lift Stations; Baton Rouge Program

PS number	New Capacity (MGD)	New Capacity (gpm)	New Head (ft)	Hydraulic Station HP	Efficiency 70%	KW per Station	Generator Size	Notes:
PS 139	2.01	1394.94	50	18	25	28	35	SGU-C-0001
PS 16	1.9	1318.6	45	15	21	24	35	SGU-C-0001
PS 18	1.2	832.8	16	3	5	5	10	SGU-C-0001
PS 21	3.25	2255.5	34	19	28	31	35	SGU-C-0001
PS 31	10.8	7495.2	46.5	88	126	141	150	SGU-C-0001
PS 50	32.5	22555	39.5	225	321	362	500	SGU-C-0001
PS 66	4.4	3053.6	46	35	51	57	60	SGU-C-0001
PS 30	1.6	1110.4	58	16	23	26	35	SGC-C-0001
S5XX	28.2	19570.8	82.2	406	580	653	680	SGC-C-0001
'S 58A	88	61072	100	1542	2203	2479	2 @ 1250	SGC-C-PS58A
PS 119	2.25	1561.5	50	20	28	32	35	SGC-C-PS119
PS 120	0.73	506.62	60.5	8	11	12	14	SGL-C-0002
PS 329	1.7	1179.8	60	18	26	29	35	SGL-C-0002
PS 40	1.15	798.1	56	11	16	18	20	SGL-C-0002
'S 53A	16.5	11451	70	202	289	325	325	SGL-C-0002
PS 56	9.25	6419.5	38	62	88	99	100	SGL-C-0002
PS 68	1.63	1131.22	80	23	33	37	42	SGL-C-0002
'S 102	1.2	832.8	50	11	15	17	20	SGL-C-0002
PS 236	7.1	4927.4	105	131	187	210	215	SFL-C-0001
PS 336	1.4	971.6	57.5	14	20	23	35	SFL-C-0001
'S 311	1.8	1249.2	32.1	10	14	16	20	SFL-C-0001
PS 505	9.2	6384.8	192	310	442	498	500	SFL-C-0001
PS 505A	4.2	2914.8	77	57	81	91	100	SFL-C-0001
PS 107	1.3	902.2	69.2	16	23	25	35	SFL-C-0001
PS 514	73.2	50800.8	88	1129	1613	1814	2000	SFL-C-0002
PS 118	1.23	853.62	121.8	26	38	42	42	SFL-C-0003
PS 221	1.5	1041	152	40	57	64	70	SFL-C-0003
PS 358	0.4	277.6	67.2	5	7	8	10	SFL-C-0003
3PS 999	12.6	8744.4	60	132	189	213	215	SFL-C-0003
S 239	0.2	138.8	21	1	1	1	10	SFL-C-0003
S 229	0.9	624.6	89.3	14	20	23	35	SFL-C-0003
PS 182	0.6	416.4	66	7	10	11	14	SFL-C-0004
S 223	1.1	763.4	98	19	27	30	35	SFL-C-0004
PS 327	0.5	347	96	8	12	14	14	SFL-C-0004
PS 353	0.7	485.8	89	11	16	18	20	SFL-C-0004

#### APPENDIX B PDP Lift Stations; Baton Rouge Program

PS number	New Capacity (MGD)	New Capacity (gpm)	New Head (ft)	Hydraulic Station HP	Efficiency 70%	KW per Station	Generator Size	Notes:
PS 278	1.1	763.4	110	21	30	34	35	SFL-C-0004
PS 372	0.6	416.4	150	16	23	25	35	SFL-C-0004
PS 365	4.9	3400.6	90	77	110	124	125	SFL-C-0004
PS 115	0.6	416.4	53.6	6	8	9	10	SFU-C-0001
PS 148	0.8	555.2	57.8	8	12	13	14	SFU-C-0001
PS 338	1.4	971.6	35.3	9	12	14	14	SFU-C-0001
PS 379	0.3	208.2	111	6	8	9	10	SFU-C-0001
PS 201	1.6	1110.4	31	9	12	14	14	SFU-C-0001
3PS 507	56	38864	43	422	603	678	680	SFU-C-0001
3PS 777	31	21514	30	163	233	262	280	SFU-C-0002
PS 172	0.5	347	35	3	4	5	10	SFU-C-0002
PS 112	2	1388	23	8	12	13	14	SFU-C-0002
PS 274	2.7	1873.8	29	14	20	22	35	SFU-C-0002
PS 170	6.5	4511	73	83	119	134	150	SFU-C-0002
3PS 889	24.8	17211.2	77	335	478	538	575	SFU-C-0003
PS 402	0.3	208.2	22	1	2	2	10	SFU-C-0003
PS 174	0.4	277.6	28.6	2	3	3	10	SFU-C-0003
PS 162	1.3	902.2	59	13	19	22	35	SFU-C-0003
PS 224	2.2	1526.8	49.5	19	27	31	35	SFU-C-0003
PS 139	0.4	277.6	10	1	1	1	10	SFU-C-0003
PS 345	0.4	277.6	48	3	5	5	10	SFU-C-0003
PS 149	0.9	624.6	96	15	22	24	35	SFU-C-0003
PS 247	2.2	1526.8	83	32	46	51	60	SFU-C-0004
PS 391	0.5	347	81	7	10	11	14	SFU-C-0004
PS 316	3.8	2637.2	99	66	94	106	125	SFU-C-0004
PS 211	3.4	2359.6	10	6	9	10	20	SFU-C-0004
PS 296	1.7	1179.8	41	12	17	20	20	SFU-C-0004
PS 156	0.8	555.2	42	6	8	9	10	SFU-C-0004
3PS 100A	13.9	9646.6	57	139	198	223	250	SFU-C-0004
PS 227	0.56	388.64	46	5	6	7	10	SFU-C-0004
PS 175	1.3	902.2	74	17	24	27	35	SFU-C-0004
PS 326	0.4	277.6	75	5	8	8	10	SFU-C-0004
PS 153	0.9	624.6	61	10	14	15	20	SFU-C-0004
PS 41	0.6	416.4	31	3	5	5	10	SFU-C-0004

# APPENDIX B

PDP Lift Stations; Baton Rouge Program

PS number	New Capacity (MGD)	New Capacity (gpm)	New Head (ft)	Hydraulic Station HP	Efficiency 70%	KW per Station	Generator Size	Notes:
PS 59	38.4	26649.6	50	336	481	541	575	CGN-C-0004
PS 15	5.78	4011.32	66.5	67	96	108	125	CGN-C-0005
PS 19	2.15	1492.1	26	10	14	16	20	CGN-C-0005
PS 60	23.4	16239.6	94.5	388	554	623	625	CGN-C-0005
Central WWTP PS	48	33312	200	1682	2403	2704	2 @ 1400	CC-WWTP-PS
PS 2	9.3	6454.2	89.5	146	208	234	250	CC-EAST-PS
PS 3	23.67	16426.98	13	54	77	87	100	CC-EAST-PS
PS 4	11.6	8050.4	50	102	145	163	185	CC-EAST-PS
PS 5	42.8	29703.2	98.5	739	1055	1187	1250	CC-EAST-PS
PS 6	2.6	1804.4	28.7	13	19	21	35	CC-EAST-PS
PS 7	1.7	1179.8	50	15	21	24	35	CC-EAST-PS
PS 10	2.13	1478.22	45	17	24	27	35	CC-EAST-PS
PS 127	1.3	902.2	39.1	9	13	14	14	NGS-C-0003
PS 129	0.4	277.6	64	4	6	7	10	NGS-C-0003
PS 240	1.9	1318.6	42.1	14	20	23	35	NGS-C-0003
PS 38	0.7	485.8	30.6	4	5	6	10	NGS-C-0003
PS 63	18.2	12630.8	15	48	68	77	85	NGS-C-0003
PS 64	2.36	1637.84	41	17	24	27	35	NGS-C-0003
PS 244	2.4	1665.6	46	19	28	31	35	NGS-C-0004
PS 44	12.8	8883.2	24	54	77	87	100	NGS-C-0004
PS 45	22.3	15476.2	37.6	147	210	236	250	NGS-C-0004
PS 75	0.4	277.6	15	1	2	2	10	NGS-C-0004
PS 80	1.1	763.4	50	10	14	15	20	NGS-C-0004
PS 176	1.71	1186.74	84	25	36	40	42	NFE-C-0001
PS 230	1.77	1228.38	72	22	32	36	42	NFE-C-0002
PS 282	1.33	923.02	74	17	25	28	35	NFE-C-0002
PS 187	0.55	381.7	26.1	3	4	4	10	NFE-C-0002
PS 291	1.1	763.4	148	29	41	46	60	NFE-C-0003
PS 246	0.4	277.6	125	9	13	14	14	NFE-C-0003
PS 94	0.8	555.2	100	14	20	23	35	NFE-C-0003
PS 313	0.16	111.04	69	2	3	3	10	NFE-C-0005
PS 144	0.8	555.2	48	7	10	11	14	NFE-C-0005
PS 86	0.7	485.8	74.5	9	13	15	20	NFE-C-0005
PS 234	0.7	485.8	88.5	11	16	17	20	NFE-C-0005

#### APPENDIX B PDP Lift Stations; Baton Rouge Program

PS number	New Capacity (MGD)	New Capacity (gpm)	New Head (ft)	Hydraulic Station HP	Efficiency 70%	KW per Station	Generator Size	Notes:
PS 218	0.62	430.28	52	6	8	9	10	NFE-C-0005
S 271	0.7	485.8	70	9	12	14	14	NFE-C-0005
S 249	1.56	1082.64	114	31	45	50	60	NFE-C-0005
S 164	1	694	81.5	14	20	23	35	NFE-C-0005
S 285	0.6	416.4	20	2	3	3	10	NFE-C-0005
S 196	0.6	416.4	107	11	16	18	20	NFE-C-0005
S 231	2.2	1526.8	63	24	35	39	42	NFE-C-0005
S 207	0.58	402.52	98	10	14	16	20	NFE-C-0005
PS 509	11	7634	51	98	140	158	185	NFE-C-0007
PS 511	29.3	20334.2	66.3	340	486	547	575	NFE-C-0007
PS 510AA	11.5	7981	48.3	97	139	156	185	NFE-C-0007
S 288	0.27	187.38	63.5	3	4	5	10	??
S 51A	12	8328	28.3	60	85	96	100	NFW-C-0002
S 51 AA	4.5	3123	50	39	56	63	70	NFW-C-0002
S 52A	48	33312	100	841	1202	1352	1400	NFW-C-0002
et Mem PS	25.9	17974.6	100	454	648	729	750	Group Proj 1B
S 47	12.9	8952.6	18	41	58	65	70	Group Proj 1B
S 92	0.7	485.8	54	7	9	11	14	Group Proj 1B
S 35	2.43	1686.42	40	17	24	27	35	Group Proj 1B
S 39	3	2082	16.8	9	13	14	14	Group Proj 1B
S 55	3.2	2220.8	49.4	28	40	45	60	Group Proj 1B
S 54	5.35	3712.9	16.7	16	22	25	35	Group Proj 1B
S 23	2.26	1568.44	142	56	80	90	100	Group Proj 1B
S 243	1.64	1138.16	150	43	62	69	70	NFW-C-0009
S 275	2.31	1603.14	130	53	75	85	85	NFW-C-0009
S 105	0.44	305.36	125.5	10	14	16	20	NFW-C-0009
PS 513	4.5	3123	146.4	115	165	186	215	NFW-C-0009
SOXLF	1.9	1318.6	67.8	23	32	36	42	NFW-C-0009
S 123	0.5	347	86.2	8	11	12	14	NFW-C-0009
S 124	1.3	902.2	81.1	18	26	30	35	NFW-C-0009
S 429	0.05	34.7	135	1	2	2	10	NFW-C-0009
S 897	23	15962	135	544	777	875	880	NFW-C-0009
S 43	13.3	9230.2	116.7	272	389	437	500	NFW-C-0009
S 24	5.5	3817	68.5	66	94	106	125	NFW-C-0010

#### APPENDIX B PDP Lift Stations; Baton Rouge Program

PS number	New Capacity (MGD)	New Capacity (gpm)	New Head (ft)	Hydraulic Station HP	Efficiency 70%	KW per Station	Generator Size	Notes:
PS 24A	4.7	3261.8	140	115	165	185	185	NFW-C-0010
PS 277	0.95	659.3	108	18	26	29	35	NFW-C-0010
PS 503	5.88	4080.72	53	55	78	88	100	NFW-C-0010
PS 119N	1.22	846.68	124	27	38	43	60	NFW-C-0010
PS 183	3.16	2193.04	141.3	78	112	126	150	NFW-C-0010
Old Baker Rd	14.6	10,200	75	193	276	310	325	
Hwy 964	39	27,300	60	414	591	665	680	
Red Mud Lakes	20	14,000	145	513	732	824	880	

Total Number of PS = 144