SJRA
SAN JACINTO RIVER AUTHORITY

GRP

Ten-Year Project Plan
FY 2025 – FY 2034

Date: 02/29/2024

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Introduction

The purpose of the GRP Division 10-Year Project Plan for Fiscal Years (FY) 2025 through 2034 is to identify the potential projects and associated funding requirements and sources to appropriately maintain and manage the SJRA's extensive surface water treatment facility and transmission system assets; to continue to provide efficient and reliable services which is compliant to all state and federal regulations for the 149 GRP Participants in Montgomery County, Texas.

Key Focus Areas:

- Construction of facility for on-site discharge water treatment
    - This project would allow for treatment of process wastewater produced from the GRP Surface Water Treatment Plant and discharge to the river or return to the Surface Water Treatment Plant rather than having to discharge into the City of Conroe sewer system. This would allow for a long-term cost savings as the return on investment for a small on-site facility would be approximately 10 years based on 2023 rates.
- Replacement of Low-Pressure Microfiltration Membrane Modules
    - The low-pressure microfiltration membranes in the GRP Surface Water Treatment Plant have a useful life of 10 years. Starting in 2025, the membranes are planned to be replaced in three phases over a three-year period.
- Surface Water Receiving Facility Optimization Project
    - This project would provide an evaluation of the eighteen (18) receiving facility locations to see what the maximum volume of surface water could be if the automatic control valve were increased in size. This process also provides for the replacement of half of the control valves with a larger size.

Total Projected Costs (All Projects)	
Previous	$405,000
FY 2025	$1,515,000
FY 2026	$3,715,000
FY 2027	$4,560,000
FY 2028 – FY 2034	$0
Total	$10,195,000

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Risk Management

The Project Plan has been prepared utilizing condition, expected service life, and available funding. Projects have been prioritized based on funding and renewal of some assets which may have been delayed past their recommended renewal timeline.

Projects that may improve operational efficiencies through plant operations, reliability, or O&M cost reductions are not included in this Project Plan due to lack of funding availability.

SWP Effluent Treatment

Membrane Replacement

Panorama Village

Honea

Egypt

Conroe

Beach

Four Corners

Shenandoah

Tamina

The Woodlands

Oak Ridge North

Rayford

Oklahoma

Lone Star Executive Airport

West Fork Golf & Country Club

Woodforest Golf Club at Fish Creek

River Plantation Golf Club

Lake Windcrest Golf Course

Woodlands CC Player Course

Carlton Woods-Nicklaus Course

Woodlands CC Palmer Course

George Mitchell Nature Preserve

Woodlands CC Tournament Course

Golf Trails of the Woodlands

West Fork of San Jacinto River

Highway 105

Highway 105 W

W Davis St

E Loop 336

S Loop 336 W

Conroe Porter Rd

Old Montgomery Rd

FM 1484 Rd

FM 1488 Rd

Lazy River Rd

Rayford Rd

Woodlands Pkwy

I-45 Feeder Rd

I-45 S

North Fwy

IH 45

N Frazier St

N 1st St

Airport Rd

Carter Moore Dr

College Park Dr

Kuykendahl Rd

Gosling Rd

Porter Rd

Riley Fuzzel

2432

1484

2854

1488

2978

242

105

45

99

Sam Houston National Forest

The Woodlands

Legend

- Surface Water Plant
- Receiving Plants
- Transmission Main

GRP Surface Water Plant and Transmission System

0 0.5 1 Miles

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GRP Project Summary

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FY 2025 - FY 2034 Projects

PAGE NO.	PROJECT ID	PROJECT NAME	ESTIMATED EXPENDITURES THROUGH END OF FY 2024	2025 ESTIMATE	2026 ESTIMATE	2027 ESTIMATE	2028 ESTIMATE	2029 ESTIMATE	2030 ESTIMATE	2031 ESTIMATE	2032 ESTIMATE	2033 ESTIMATE	2034 ESTIMATE	TOTAL
5	GSWPET	Process Water Discharge Optimization	$ 105,000	$ 304,000	$ 1,253,000	$ 1,267,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,929,000
6	GW1901	Membrane Replacement	$ 300,000	$ 1,050,000	$ 2,200,000	$ 2,200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,750,000
7	GSWRFO	Surface Water Receiving Facility Optimization Study	$ -	$ 161,000	$ 262,000	$ 1,093,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,516,000
	TOTALS		$ 405,000	$ 1,515,000	$ 3,715,000	$ 4,560,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,195,000

PROJECT NAME	PROJECT ID	FISCAL YEAR	DIVISION
Process Water Discharge Optimization	GSWPET	2024-2027	GRP

PROJECT DESCRIPTION

The GRP Surface Water Treatment Plant is permitted to treat up to 30 million gallons per day (MGD) of water from Lake Conroe to produce drinking water utilizing chemical dosing, membrane filtration, and granular activity carbon polishing. Process wastewater generated on-site is currently discharged to the City of Conroe's sanitary sewer system for treatment and disposal.

SJRA is exploring the possibility of treating process wastewater on-site, rather than continue discharging to the City of Conroe's sewer system. A feasibility study was performed that showed that treatment could be performed on-site using a variety of treatment methods specific to the process water discharged by the plant. Each year, SJRA is charged for wastewater fees ranging from $150K to $300K, at a rate twice normal City of Conroe discharge cost due to the location being outside the city limits. The expected Return on Investment (ROI) is expected to be 10 years, with 40 years of remaining service life once the on-site treatment is complete. The treated water would be evaluated to determine its suitability to be recycled through the treatment plant for further potential cost savings.

A study will be conducted to determine the best method to approach process wastewater treatment, removal or reduction through plant optimization. These will be analyzed in combination with a continued discharge option to obtain the most cost effective solution for removing the process water discharge. Preliminary engineering would be performed to further define the project prior to final design. Project costs were based upon a feasibility study performed in 2022.

PROJECT MAP/PICTURE

PROJECT SCHEDULE		DELIVERY	FUNDING
Initiate Cons. Selection:	FY 2024 - Q2	☑ CSP	☐ O&M
PSA/WO Issued:	FY 2024 - Q3	☐ Other	☐ Bonds
Final Proposal Docs:	FY 2026		☑ R&R
Proposals/Bids Received:	FY 2026		☐ Other
Constr. Contract to Board:	FY 2026		
Substantial Completion:	FY 2027	☑ Capitalized	☐ Expensed

BUDGET*	TOTAL	PREVIOUS	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Planning/Permitting/PER	$ 214,000	$ 105,000	$ 109,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Engineering/Design	$ 217,000	$ -	$ 195,000	$ 22,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Construction	$ 2,271,000	$ -	$ -	$ 1,119,000	$ 1,152,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CPS, CM&I, and CMT	$ 227,000	$ -	$ -	$ 112,000	$ 115,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land Acquisition	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Equipment Purchase	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 2,929,000	$ 105,000	$ 304,000	$ 1,253,000	$ 1,267,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -

*Budget includes contingency.

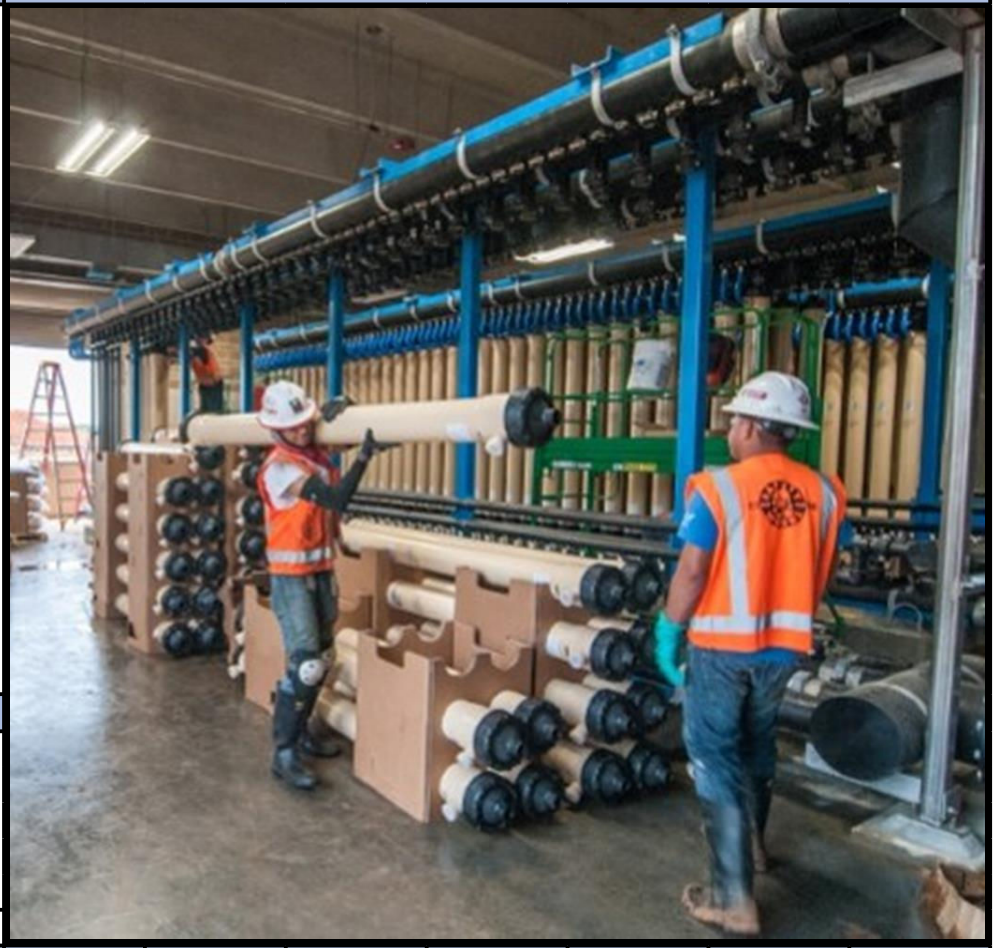
PROJECT NAME	PROJECT ID	FISCAL YEAR	DIVISION
Membrane Replacement	GW1901	2024-2027	GRP

PROJECT DESCRIPTION

The GRP Surface Water Plant utilizes low pressure microfiltration membranes to remove particulates from water within the core of the treatment process. There are nine membrane racks, and each rack contains 152 modules (1,368 total modules). The membranes, installed in 2015, have a useful life of 10-12 years based on the average design flow of 24 MGD.

Prior to replacement of the membranes, a study was approved in FY24 that will assess the feasibility and cost of other manufacturers and membrane types to realize any opportunity for increased membrane treatment and overall plant capacity and more in-house operations and maintenance capabilities. This study will lead to the development of performance specifications to procure the new membranes, and plan for potential future plant optimization. The cost for the membrane replacement is based on a vendor estimate from 2023 to replace in-kind.

PROJECT MAP/PICTURE



PROJECT SCHEDULE		DELIVERY	FUNDING
Initiate Cons. Selection:	FY 2024 - Q2	☐ CSP	☑ O&M
PSA/WO Issued:	FY 2024 - Q3	☑ Other	☐ Bonds
Final Proposal Docs:	FY 2025 - Q2		☑ R&R
Proposals/Bids Received:	FY 2025 - Q3		☐ Other
Constr. Contract to Board:	FY 2025 - Q3		
Substantial Completion:	FY 2027	☐ Capitalized	☑ Expensed

BUDGET*	TOTAL	PREVIOUS	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Planning/Permitting/PER**	$ 300,000	$ 300,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Engineering/Design	$ 50,000	$ -	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Construction	$ 5,400,000	$ -	$ 1,000,000	$ 2,200,000	$ 2,200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CPS, CM&I, and CMT	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land Acquisition	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Equipment Purchase	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 5,750,000	$ 300,000	$ 1,050,000	$ 2,200,000	$ 2,200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -

*Budget includes contingency.

**O&M funded.

PROJECT NAME	PROJECT ID	FISCAL YEAR	DIVISION
Surface Water Receiving Facility Optimization Study	GSWRFO	2025-2027	GRP

PROJECT DESCRIPTION

The SJRA delivers surface water to GRP Participants at eighteen (18) locations. At each location, a surface water receiving facility (SWRF) was constructed as the "entry point" where the delivery rate is controlled, monitored, and measured. The design of the receiving facilities was based upon the anticipated maximum required flow for a service area of entities receiving surface water, with the automatic flow control valve and meter being sized to meet that future demand. However, since that time, current and potential future demands surpass the current flow capabilities at the receiving facilities.

A study will be performed for all existing GRP surface water receiving facilities to determine if more flow capacity can be achieved by increasing the size of the flow control valve, flow meter and reduced size piping. Following this study, it is estimated that approximately 50% of the surface water receiving facilities will be upsized. The budget for this project also includes that cost.

PROJECT MAP/PICTURE

PROJECT SCHEDULE		DELIVERY	FUNDING
Initiate Cons. Selection:	FY 2024 - Q4	☑ CSP	☐ O&M
PSA/WO Issued:	FY 2025 - Q1	☐ Other	☐ Bonds
Final Proposal Docs:	FY 2026		☑ R&R
Proposals/Bids Received:	FY 2026		☐ Other
Constr. Contract to Board:	FY 2026		
Substantial Completion:	FY 2027	☑ Capitalized	☐ Expensed

BUDGET*	TOTAL	PREVIOUS	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Planning/Permitting/PER	$ 134,000	$ -	$ 134,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Engineering/Design	$ 137,000	$ -	$ 27,000	$ 110,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Construction	$ 1,132,000	$ -	$ -	$ 138,000	$ 994,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CPS, CM&I, and CMT	$ 113,000	$ -	$ -	$ 14,000	$ 99,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land Acquisition	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Equipment Purchase	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 1,516,000	$ -	$ 161,000	$ 262,000	$ 1,093,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -

*Budget includes contingency.