



**ST. LUCIE WEST SERVICES  
DISTRICT UTILITY SYSTEM  
ENGINEER'S BOND REPORT  
for the  
UTILITY REVENUE BONDS,  
SERIES 2024**

July 9, 2024

# AGENDA

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- Introduction/Purpose
- Management & Operation of the System
- Conditions & Regulatory Compliance
- Recommended Improvements
- Water System Total Project Cost Estimate
- Findings And Conclusions
- Q&A

# Introduction

## - The Purpose of This Report -

This Utility System Engineer’s Report *summarizes our engineering evaluation and findings* with regard to the proposal by the St. Lucie West Services District (the "District") to issue the “Series 2024 Bonds”.

SUMMARY OF SERIES 2024 BONDS SOURCES AND USES OF FUNDS [1]	
<b>Sources of Funds:</b>	
Series 2024 Bond Proceeds – Par Amount	\$39,100,000.00
Net Premium/OID	-830,404.80
<b>Total Sources of Funds</b>	<b>\$38,269,595.20</b>
<b>Uses of Funds:</b>	
Deposit to Project Fund	\$34,746,777.44
Deposit to Reserve Fund (25% of MADS)	747,929.41
Capitalized Interest to 10/1/2024	1,595,823.75
Costs of Issuance	1,179,064.60
<b>Total Uses of Funds</b>	<b>\$38,269,595.20</b>
<small>[1] Amounts provided by District's underwriter and are preliminary and subject to change based on the actual terms regarding the sale of the Series 2024 Bonds.</small>	

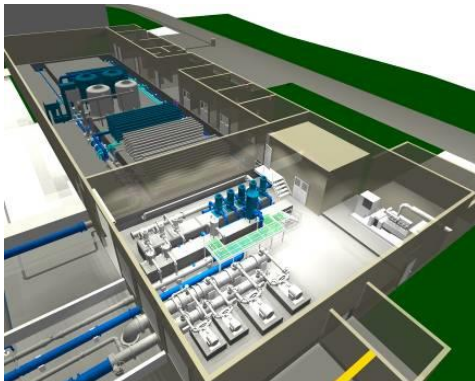
# Management & Operation of the Systems



❖ Water System

❖ Wastewater System

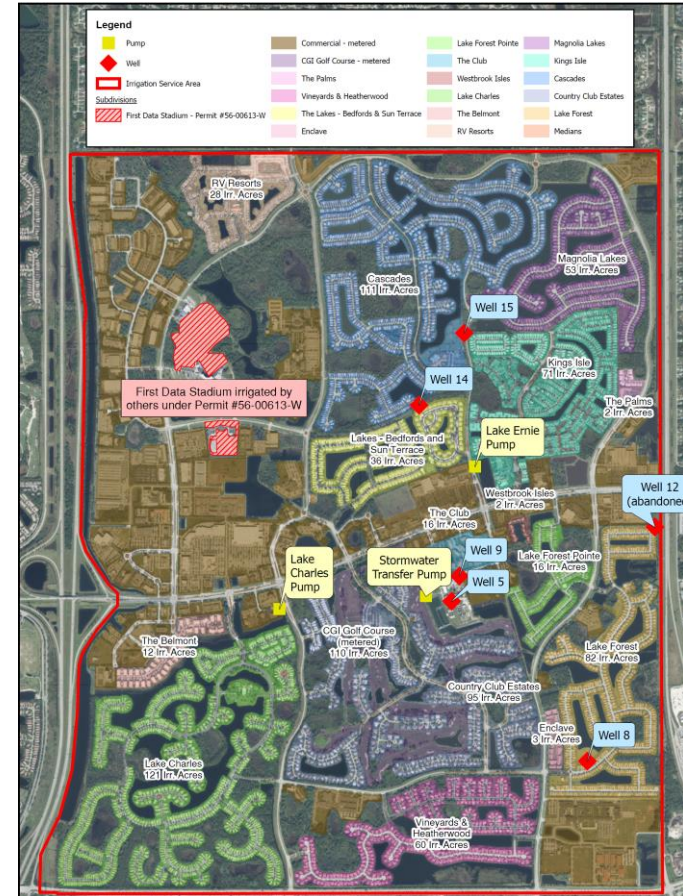
❖ Irrigation System



SLWSD ROWTP (3-D VIEW)



SLWSD WWTP (AERIAL VIEW)



SLWSD OVERALL IRRIGATION SYSTEM

# Condition and Regulatory Compliance

- ✓ **CONDITION AND REGULATORY COMPLIANCE OF WATER SYSTEM:**  
The water supply and treatment facilities of the Water System for the District are considered to be fully functional and appear to be in good condition. The water system needs improvements to meet the future supply, treatment, and underground injection needs. The Water System is in compliance with the water quality, permit, and operational standards required by the FDEP and the SFWMD.
- ✓ **CONDITION AND REGULATORY COMPLIANCE OF WASTEWATER SYSTEM:** The WWTP and collection systems appear in good operating condition and has had significant WWTP replacement or rehabilitation for the foreseeable future. The WWTP was expanded in treatment capacity and upgraded to remove some nutrients. The Wastewater System has reached the point in its useful life where it requires more regular preventative maintenance, and this preventative maintenance is being proactively completed by the utility operating staff. The Wastewater System is currently in compliance with the wastewater treatment, disposal, and operational standards required by the FDEP. The FDEP WWTP Permit is current through 2027.
- ✓ **CONDITION AND REGULATORY COMPLIANCE OF IRRIGATION SYSTEM:** The Irrigation Permit has capacity to meet the irrigation needs and is in compliance with the permit and regulatory requirements. Additional improvements are needed on irrigation pumping systems.

# Recommended Improvements

## Floridan Aquifer Wells 1, 2 & 3



One new Floridan Aquifer groundwater well and pump are recommended to increase the firm capacity of the groundwater supply to 6.5 MGD.

## Upgrade to Micro Cartridge Filter



One new identical vertical cartridge filter with a capacity of 2.4 MGD is recommended to be installed increasing the firm capacity of the cartridge filters to 7.2 MGD

	Well No. 1	Well No. 2	Well No. 3
Year Drilled	2005	2005	2005
Depth Drilled	1,321 ft	1,657 ft	1,895 ft
Depth & Dia of Casing	908 ft 10 in	885 ft 8 in	765 10 in
Depth of Grouting	70 ft		
Well Pump Capacity	1,400 gpm @ 45 psi		
Motor Size	50		

# Recommended Improvements

## High Pressure RO Feed Pumps



Two new identical vertical turbine pumps with capacities of 785 gpm each are recommended to be installed, increasing the capacity to 6.85 MGD while maintaining one standby pump for redundancy.

## Degasifier Odor Control Unit



One new identical degasification unit with a capacity of 2 MGD (or biotrickling filter) is recommended to be installed and operated, increasing the capacity to 6 MGD.

# Recommended Improvements

## ROWTP Calcite Contactors



Increasing the rated treatment capacity of the plant requires the addition of two new identical calcite contactors with capacities of 300 gpm to be installed increasing the firm capacity of the calcite contactor system to 5.2 MGD assuming a 50% bypass rate.

## Additional WTP RO Skid



The current firm capacity of the two operational skids is 3.6 MGD, with the third reserved for redundancy. One new identical RO treatment skid with a capacity of 1.8 MGD is recommended to be installed and operated, increasing the capacity to 5.4 MGD while maintaining one standby skid for redundancy.



# Recommended Improvements

## SLWSD ROWTP Transfer Pump



One new transfer pump rated at 1,400 gpm with a capacity of 2 MGD is recommended

## Ground Storage Tank



The ROWTP has two 2-million gallon pre-stressed concrete ground storage tanks. At 4.0 million gallons of finished water storage, no additional on-site WTP storage is recommended at this time.

## ROWTP High Service Pumps Set A (upgraded 2019)



Considering a WTP peaking factor of 1.7, the future capacity of the high-service pumps will be 6.70 MGD.

# Summary of Recommended Improvements

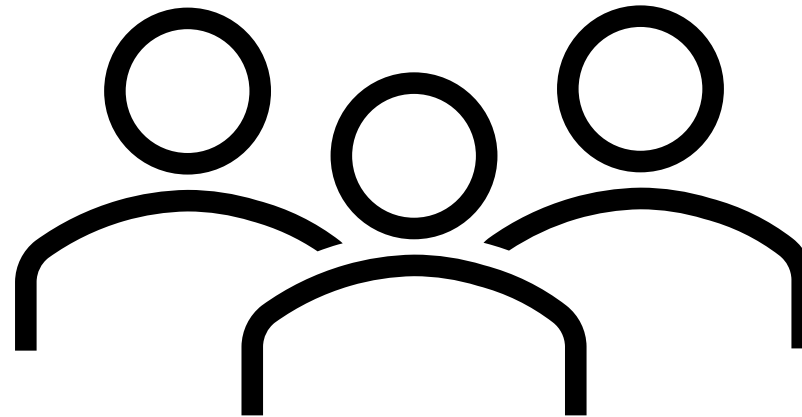
UNIT PROCESS	PROPOSED IMPROVEMENTS	PROPOSED CAPACITY (MGD)		
		<i>Expansion</i>	<i>Firm</i>	<i>Rated</i>
<b><i>Water Supply</i></b>	One Duty Floridan Aquifer Groundwater Wells rated for 1,500 gpm with 50 HP Well Pump	2.1	6.4	6.4
<b><i>Pretreatment</i></b>	One Duty 5 micron Vertical Cartridge Filters rated for 2.4 MGD	2.4	7.2	6.4
<b><i>Reverse Osmosis</i></b>	Two Duty Vertical Turbine Pumps rated at 785 gpm @ 245 ft TDH, 3,600 rpm, 150 HP each. (required with new skid)	2.25	6.85	6.4
	One Two Stage RO Treatment Skid with Inter-Stage Boost in a 28:14 Configuration rated for 1.8 MGD @ 14.2 gpd flux each	1.8	5.4	4.8
<b><i>Primary Disinfection</i></b>	Second duty Clearwell / CCC 24 ft wide x 52 ft long x 9.5 ft deep; 11,400 CF or 85,272 gal	4.1	8.2	4.8
<b><i>Post Treatment</i></b>	Two Duty Calcite Contactors each rated for 0.86 MGD @ ~50% Bypass (required with new skid)	1.7	5.2	4.8
	One Duty Degasification and 10,000 SCFM Blower.	2.0	6.0	4.8
	One Duty Odor Control Unit or Biotrickling filter	4.0	8.0	4.8
<b><i>Transfer Pumping</i></b>	One Duty 1,400 gpm @ 30 ft TDH, 25 HP	2.0	5.7	4.8
<b><i>Water Storage &amp; Distribution</i></b>	One Duty High Service Pumping Split Case Centrifugal Pump rated at 1,400 gpm @ 50 HP 5,700 gpm firm pumping capacity required. 7,900 gpm firm pumping provided @ 1.7 Peak Hour PF	0.6	6.7	4.8
<b><i>Concentrate Disposal</i></b>	New DIW, 10-in rated up to at 2,000 gpm.	5.1	9.0	4.8
<b><i>Chemical Feed</i></b>	Anti-Scalant, Acid, & Caustic Bulk Storage Tanks, Day Tanks, and Chemical Feed Skids	1.8	5.4	5.4

# Water System Total Project Cost Estimate

Proposed Capacity Expansion Improvements	Probable Construction Cost
New Raw Water Supply Wells	\$2,680,000
New Raw Water Transmission Main	\$463,000
Chemical Feed System Replacements	\$910,000
Upgrades to ROWTP Cartridge Filtration	\$390,000
Upgrades to ROWTP High-Pressure Pumping Capacity	\$1,050,000
New ROWTP Membrane Skid	\$6,560,000
Upgrades to Calcite Contactors	\$504,000
Upgrades to ROWTP Degasifier and Odor Control System	\$1,780,000
Upgrades to ROWTP Chlorine Contact Chamber/Clear Well System	\$1,020,000
Upgrades to Transfer Pumps	\$236,000
Upgrades to High-Service Pumps	\$402,000
Underground Injection Well <sup>A</sup>	\$13,900,000
Underground Injection Well Site	\$970,000
Electrical System Upgrades	\$2,350,000
I & C System Upgrades	\$413,000
<b>Construction Cost Subtotal</b>	<b>\$33,628,000</b>
Design Engineering Cost, Study, Permitting Services	\$1,910,000
Engineering Services During Construction	\$1,357,500
<b>Project Cost Total</b>	<b>\$36,895,500</b>

# Findings and Conclusions

- The existing facilities can reasonably be expected to ***meet the projected requirements*** of the System, at least through the Fiscal Year ending September 30, 2029.
- In general, the System is in ***good condition and in compliance*** with all regulatory permits required for the operation of the System.
- The Water System will have ***sufficient capacity*** to meet the service area needs of the SLWSD for the five Fiscal Year period ending September 30, 2029, but will require improvements to meet future needs.
- ***No significant funds will be required*** for additional capital expenditures for the System beyond that identified herein during the Forecast Period.
- The addition of significant Reserve CDD utility customers will result in the Reserve CDD being a ***cost-effective addition*** to the District System.
- ***A due diligence evaluation*** of the Reserve CDD water and sewer systems ***should be completed by SLWSD to bring that system up to the District standard prior to closing.***



**Thank you!**