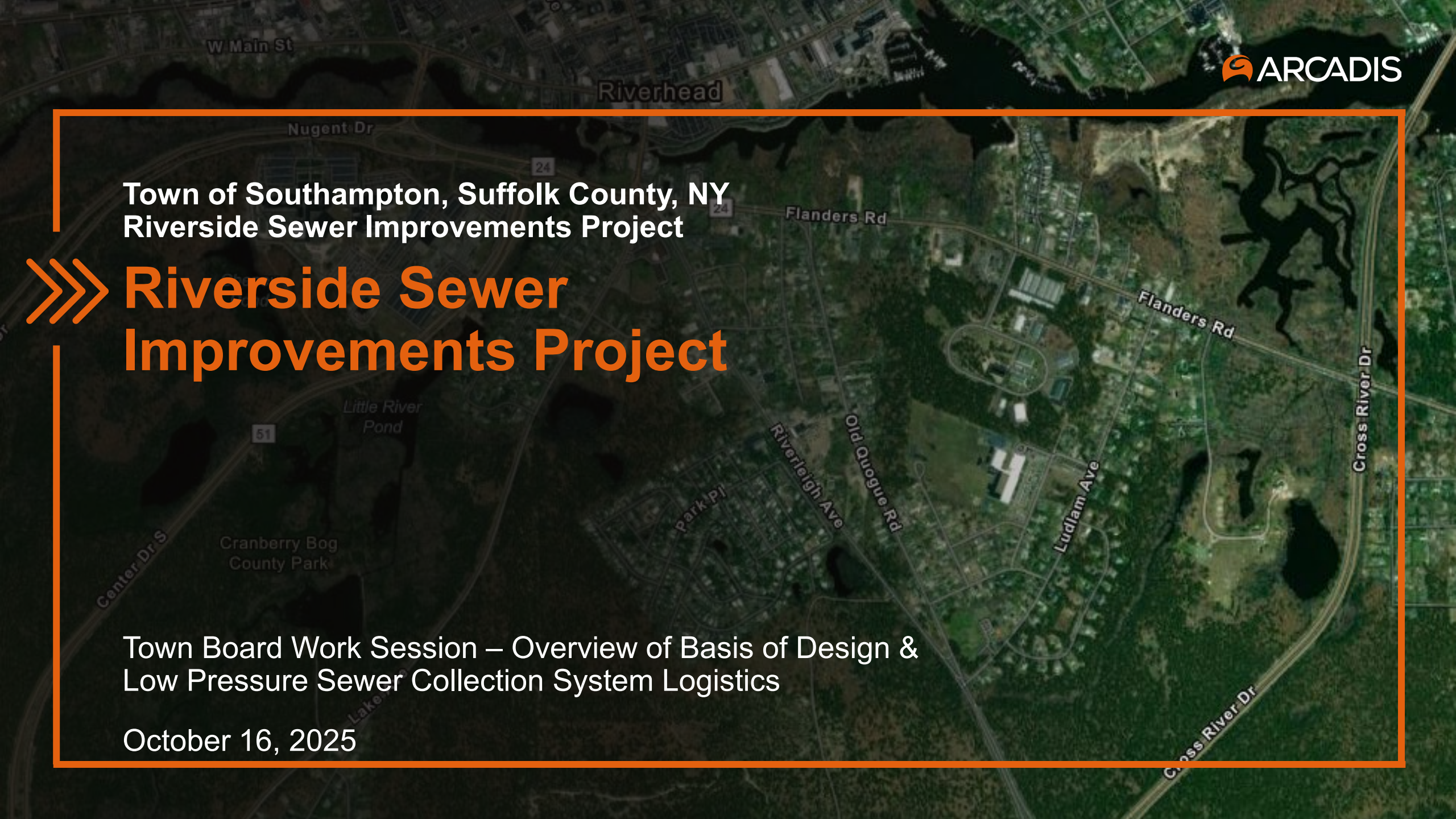


Town of Southampton, Suffolk County, NY
Riverside Sewer Improvements Project

»»» Riverside Sewer Improvements Project

Town Board Work Session – Overview of Basis of Design &
Low Pressure Sewer Collection System Logistics

October 16, 2025



Introductions

Agenda

- 1 Site Layout and Effluent Discharge**
- 2 Treatment Process and Equipment Selection**
- 3 Collection System**
- 4 Public Engagement**
- 5 Opinion of Probable Project Cost**
- 6 Schedule / Next Steps**

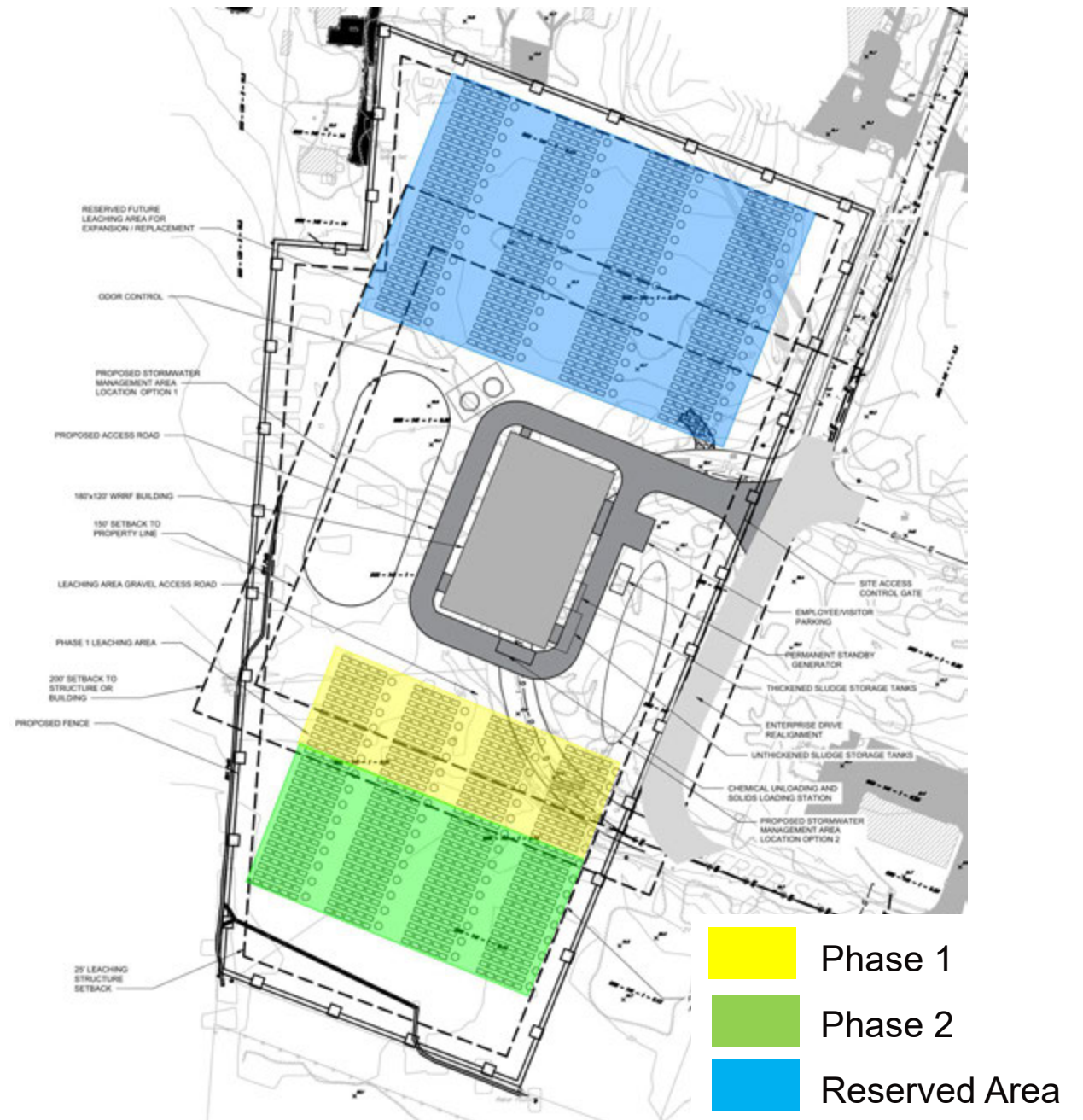
Water Resource Recovery Facility (WRRF) Design Capacity Overview

	Phase 1	Phase 2	Buildout
Current/Baseline Flow (gpd)	95,000	100,000	
Future Development Allocation (gpd)	100,000	190,000	
Design Capacity (gpd)	200,000	300,000	500,000

Site Layout and Effluent Discharge

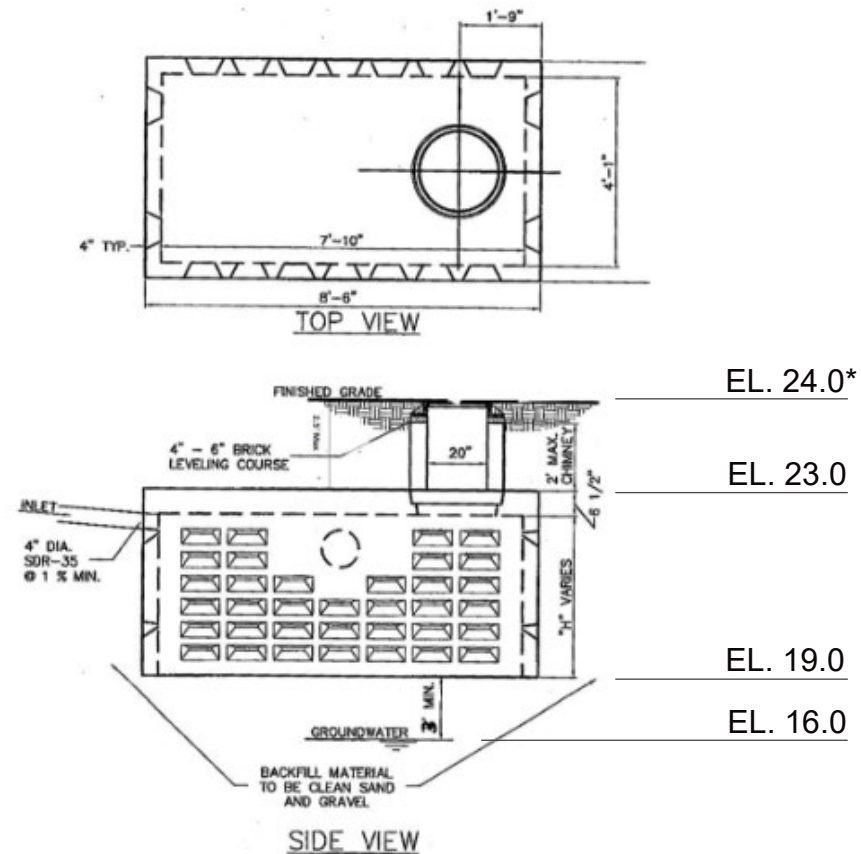
Proposed Site Plan

- Reconfiguration of Enterprise Zone Drive
- Leaching field at the southern end of the site (below grade)
- Reserved leaching area at northern end of the site (100% for future if needed)
- Ground elevation rises from north to south



Effluent Discharge

- Borings complete and groundwater monitoring in place
- Modeling completed to review impact to water table resulting from WRRF subsurface discharge; some mounding occurs in proximity to the leaching area
- Fill required to establish required separation between the leaching structures and high groundwater elevation



* Exist grade El. 19.0

Stormwater Management

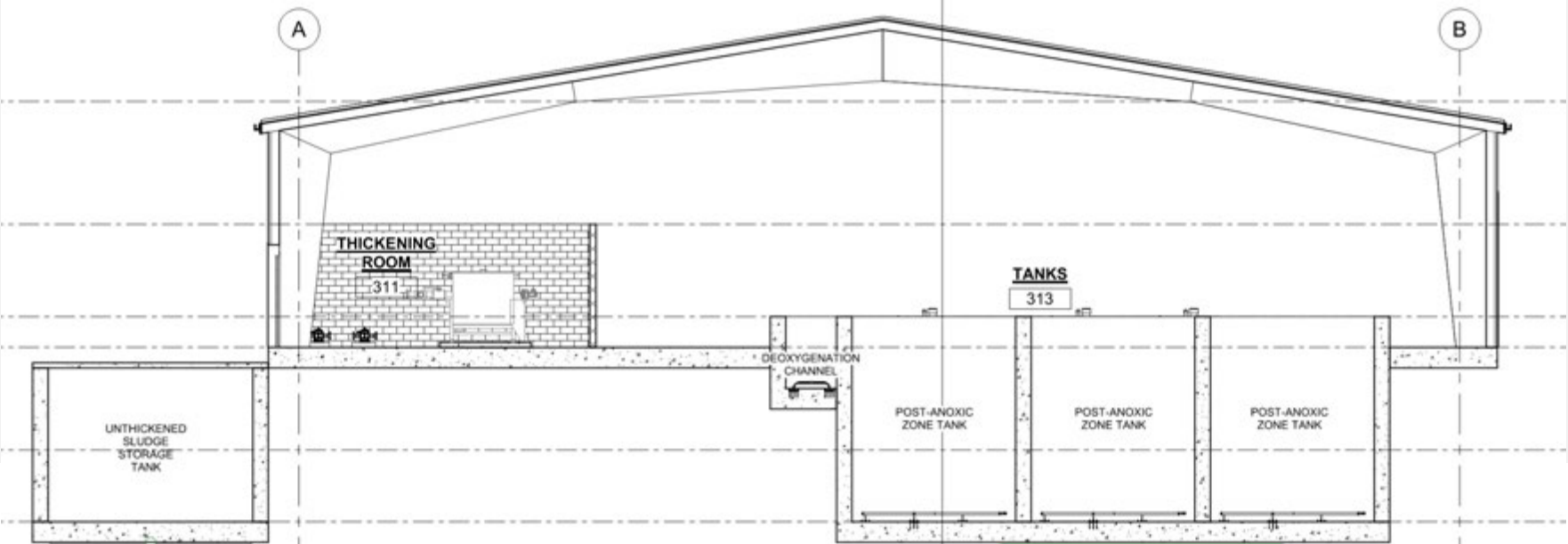
- Educational Opportunity
- Focus on Green Infrastructure
 - Bioretention Pond
 - Vegetated Swale



Building Façade Aesthetic

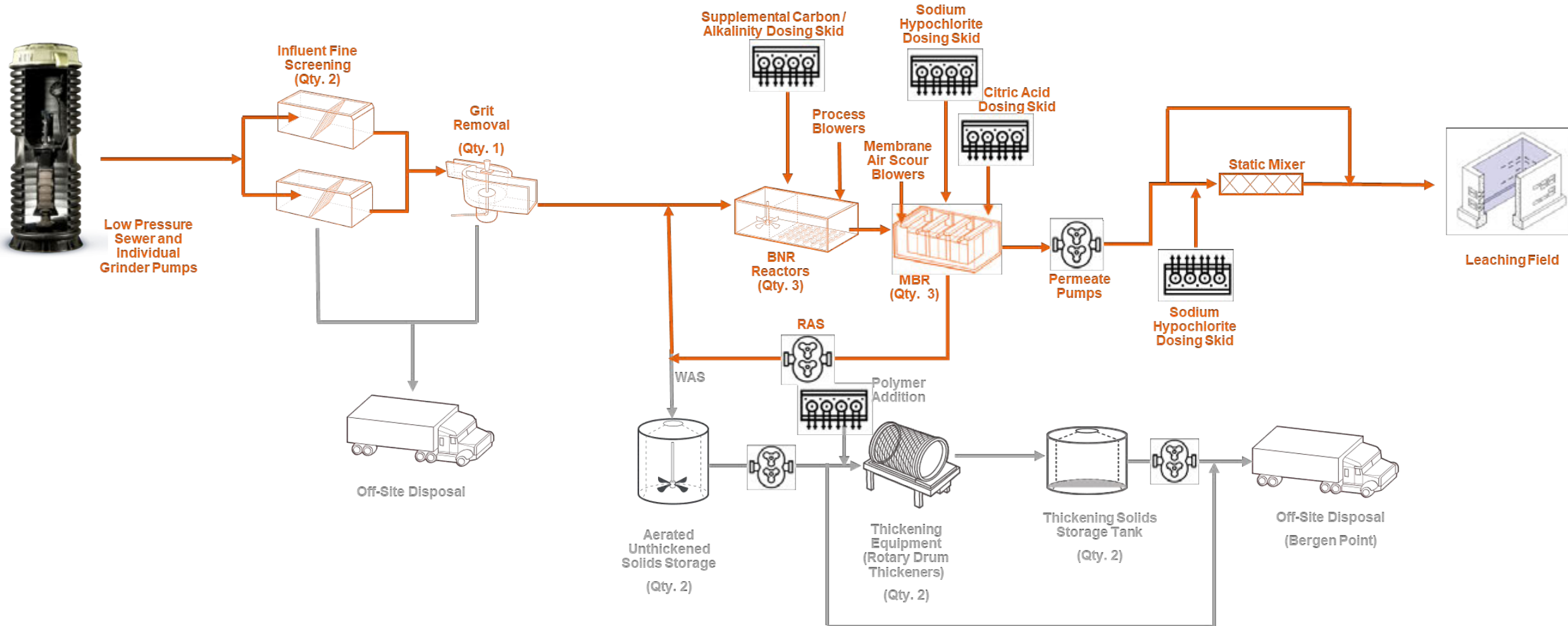


Conceptual Rendering

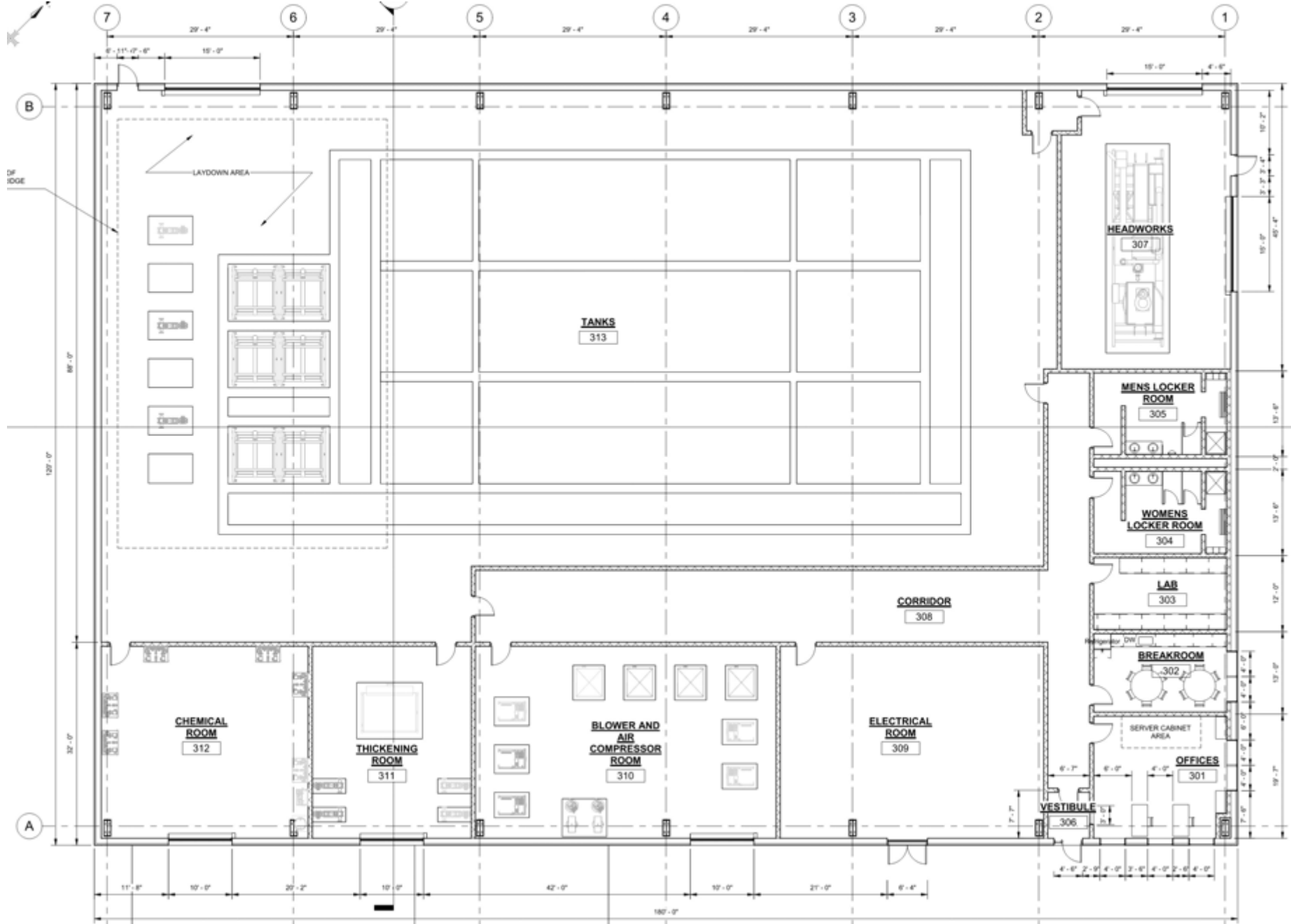


Treatment Process and Equipment Selection

Preliminary Process Flow Diagram



WRRF 30% Proposed Layout



Biological Treatment 30% Design



Phase 1

- All tankage constructed for BNR and MBR tanks
- Two trains operational with equipment to treat AA Flow of 0.2 MGD

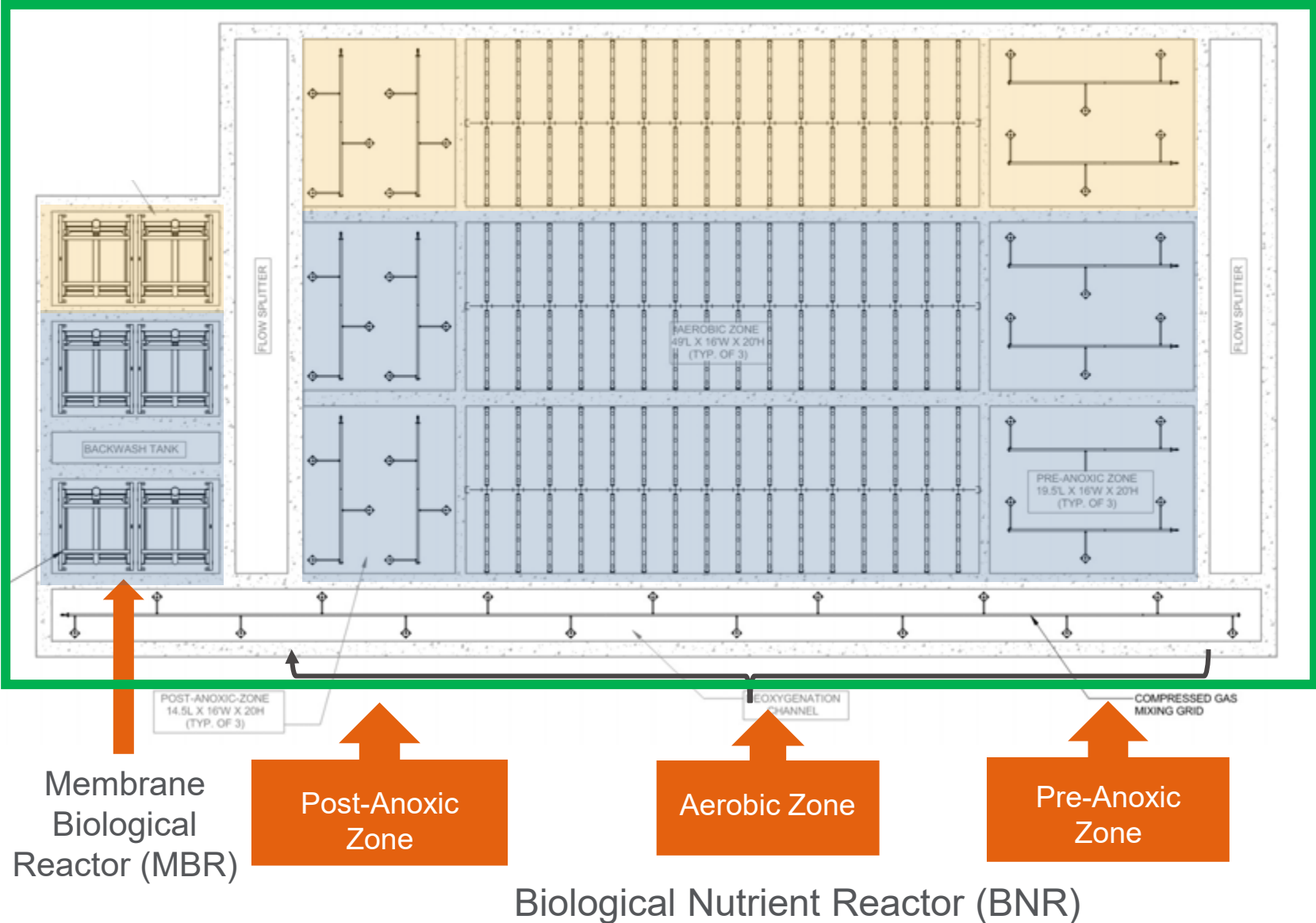
Phase 2

- Third train is operational with equipment to treat total AA flow of 0.5 MGD

Buildout (Phase 1 + Phase 2)

- All trains are operational to treat AA flow of 0.5 MGD and Peak flow up to 0.75 MGD

Flow equalization through tank freeboard



Biological Treatment – Equipment

Equipment	Phase 1	Phase 2 (Additional Installed in Future)
Process Air Blower	2 Duty + 1 Standby	1
Fine Bubble Diffuser Grids (per BNR Tank)	2	1
Anoxic Zones (Pre & Post) Mixing		
Membrane Air Scour Blowers	2 Duty + 1 Standby	1
Permeate Pumps	2 Duty + 1 Standby	1
RAS Pumps	1 Duty + 1 Standby	1
WAS Control Valve/Pump	1 Duty + 1 Standby	1
Air Compressors for Actuated Control Valves	1 Duty + 1 Standby	
Piping & Instrumentation		
Chemicals (Hypo, Citric Acid, Alkalinity, Carbon)	Totes & Duplex Pump Systems	

Process Component Technology Selections

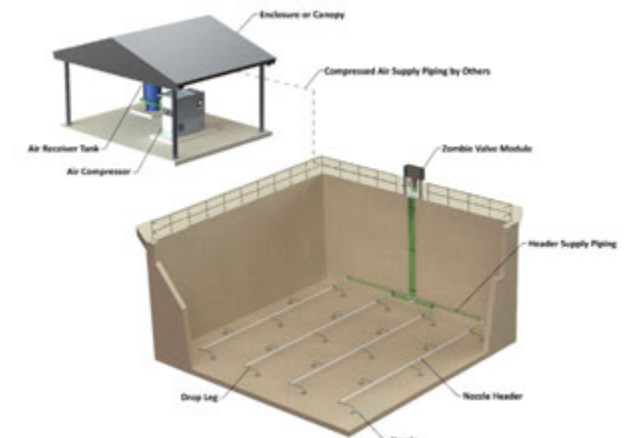
- ❑ Headworks
 - Packaged Fine Screens and Grit Chamber
- ❑ Biological Treatment
 - Compressed Air Mixing Systems
- ❑ Thickening Equipment
 - Rotary Drum Thickener
- ❑ Odor Control
 - Carbon Adsorption – sized for Phase I and II



Screening and Grit Removal (Headworks)
Smith & Loveless PISTA Works



DUAL 4 X 6 RDT UNIT (Thickening)
BDP

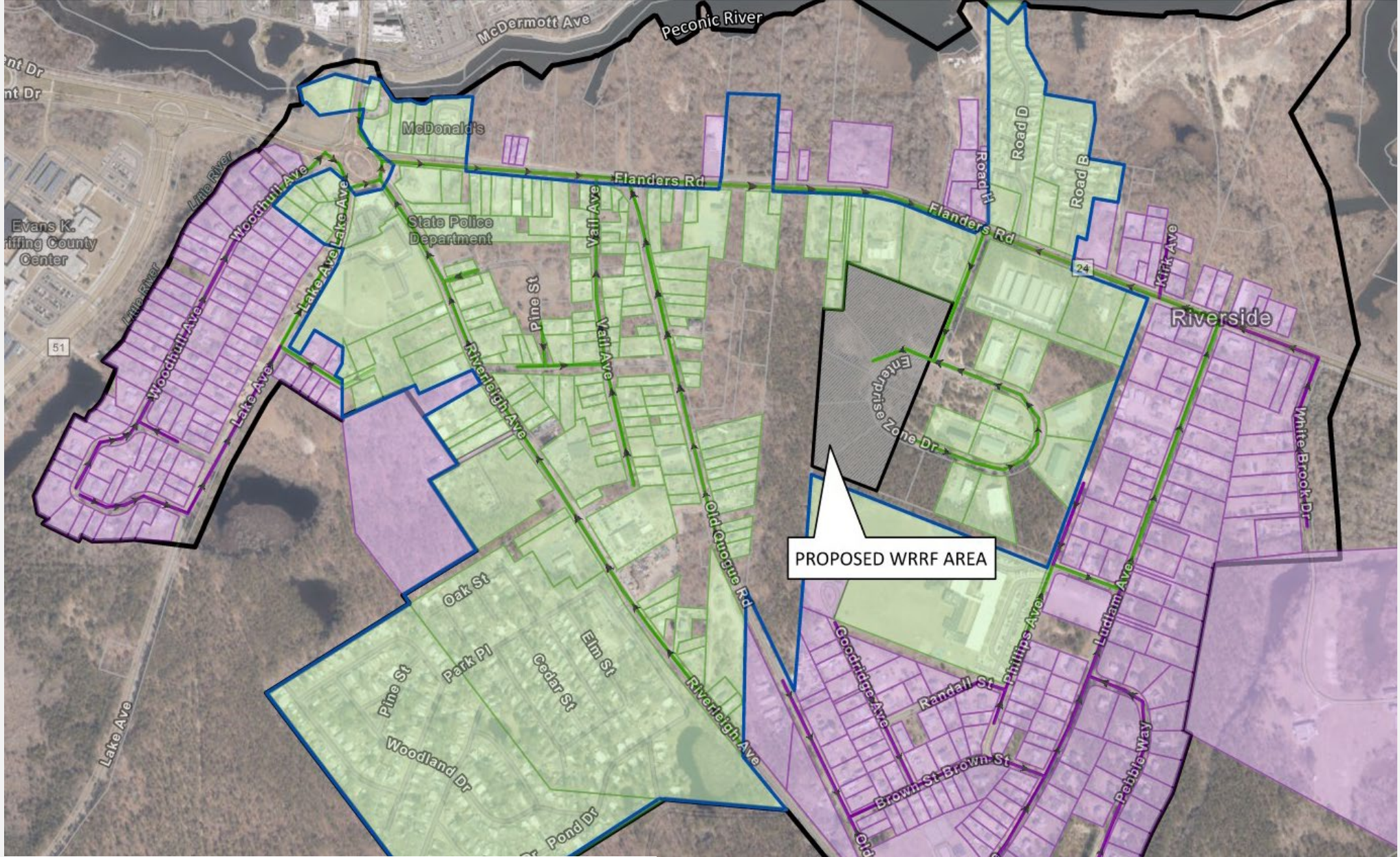


Compressed Air Mixing
Enviromix



Carbon Vessels (Odor Control)
Newterra

Collection System



Legend

Phase 1 Low Pressure Sewer	Phase 1 Parcels	Riverside Sewer District
Phase 2 Low Pressure Sewer	Phase 2 Parcels	Phase 2 Area
	Proposed WRRF Area	

Design Approach / Alternatives Reviewed

- Preliminary Engineering Report reviewed several Collection System alternatives:
 - Traditional Gravity Sewer
 - Low Pressure Sewer
 - Vacuum System
- Low Pressure Sewer was selected as the preferred approach
 - Lowest overall lifecycle cost, ease of construction and operability,
 - No large pump stations in historically sensitive areas
 - Ideal for:
 - Flat terrain
 - High groundwater table

E/One Experience: Long Island & NYC Installations

- Carlls River: ~3,400 units
- Patchogue: 600 units & growing
- The Bronx: 225 units
- Staten Island: 100 units
- Glen Cove: 100 units
- Silver Point Beach: 85 units
- The Hamptons: 75 units
- Lloyd Harbor: 30 units
- Huntington: 30 units
- Brookhaven: 25 units
- Northport: 20 units
- Riverhead: 10 units

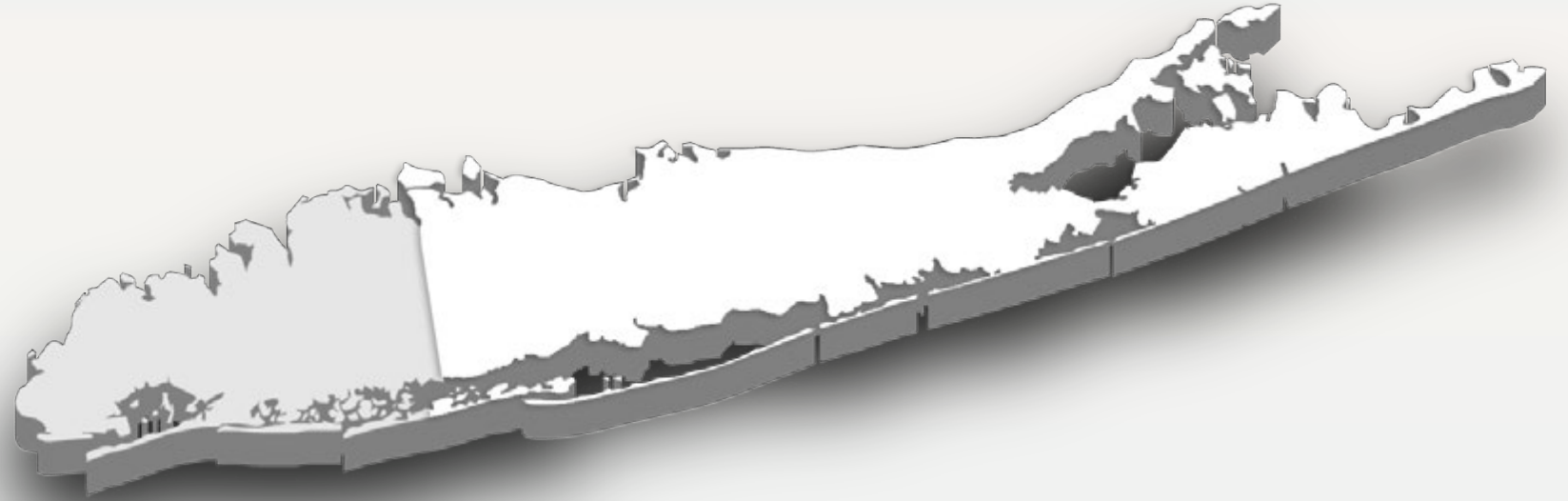


History in Long Island

E/One installed the first pressure sewer system in Long Island more than 27 years ago.

Since then...

- More than **4,500 homes** & businesses connected
- Serving 20+ towns & villages
- Helped bring several key projects to fruition
- Future project pipeline of 5+ years



E/One remains fully committed to solving Long Island's toughest wastewater challenges for decades to come!

Grinder Pumps... What Do They Look Like?

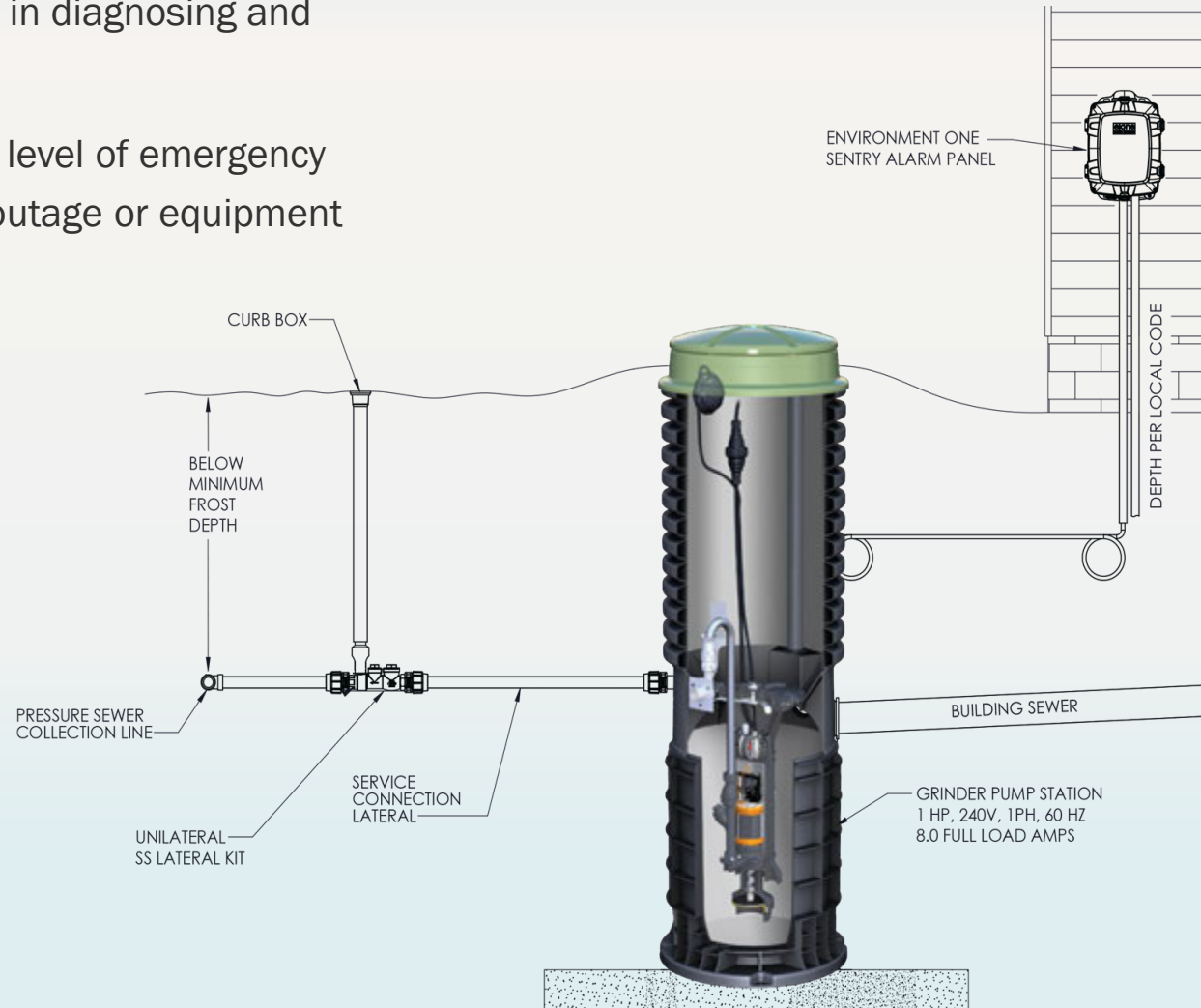




Advantages – Grinder Pumps

- Pumped systems with positive pressure are common and more intuitive than “other” systems - therefore technicians are more successful in diagnosing and correcting faults
- Grinder pump stations provide a level of emergency storage in the event of a power outage or equipment fault

- Grinder pumps in LPS systems actively process solids and debris with a grinder



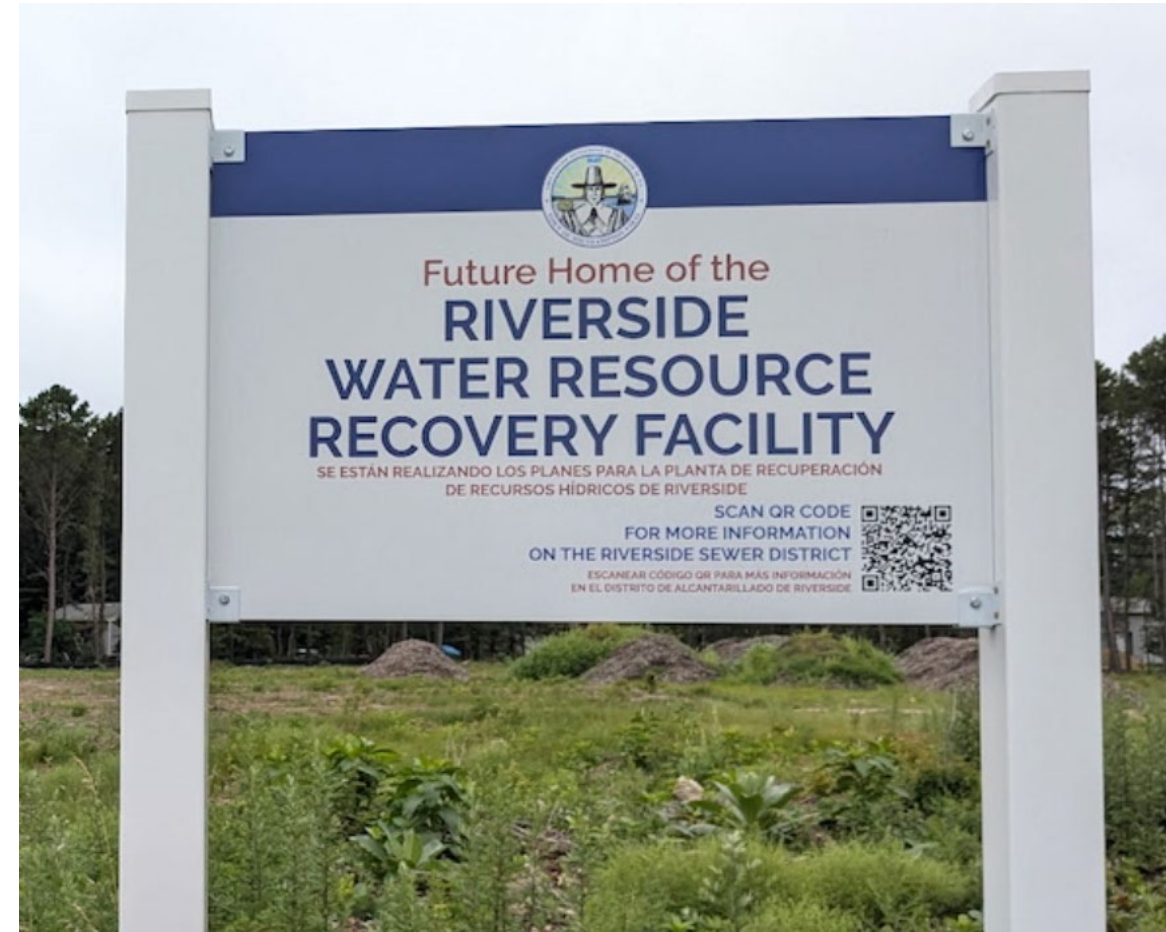
Considerations to be Reviewed by the Town

- Logistics for low pressure system to be determined prior to additional public outreach
 - Approach for Maintenance
 - Electrical Use
 - Easements needed for grinder pump installation and access

Public Engagement

Work Done to Date

- Town website updated with infographic (English/Spanish) and project contacts
- Two in-person outreach sessions conducted – Phillips Avenue School and FRNCA (March 2025)
- Public Participation Plan (PPP) prepared and included in the Preliminary Design Report submitted to EFC in accordance with Commissioner Policy 29, Environmental Justice and Permitting (CP-29)
 - Input from Town needed to confirm all stakeholders are reflected
- DEC Division on Environmental Permits will review when the SPDES permit process is initiated – application is submitted (EJ, Public Participation)



Opinion of Probable Project Cost

Project Cost Summary

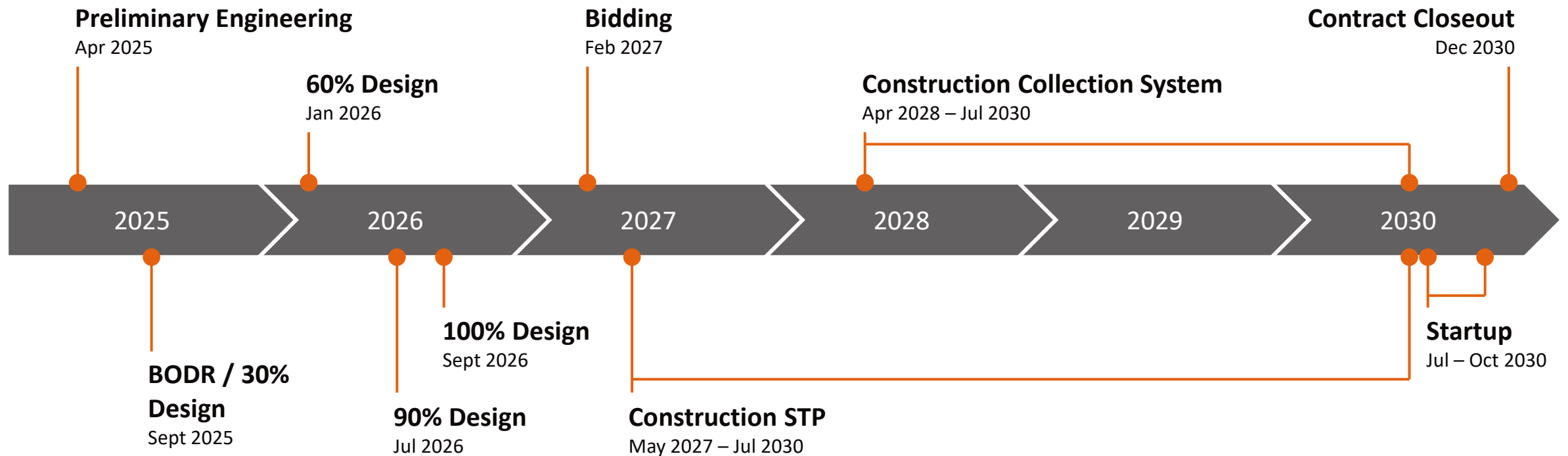
TASK	Description	Quantity	Units	Labor Cost	Material Cost	Equipment Cost	Unit Cost	Total Cost
Phase 1 Construction Subtotal								\$ 20,820,000.00
	General Conditions						10%	\$ 2,082,000.00
	Overhead and Profit						15%	\$ 3,123,000.00
Phase 1 Construction Total								\$ 26,030,000.00
	Construction Contingency						35%	\$ 9,111,000.00
	Land/Easement Acquisition						0%	\$ -
	Other Misc. Costs - Permitting						0.25%	\$ 66,000.00
	Legal						0.1%	\$ 27,000.00
	Bonds						0.3%	\$ 79,000.00
	Engineering - Design						6%	\$ 1,562,000.00
	Engineering - Construction						12%	\$ 3,124,000.00
	Financial Advisor						0.1%	\$ 27,000.00
	Grant/Loan Administration						0.1%	\$ 27,000.00
Phase 1 Project Subtotal								\$ 40,060,000.00
	Escalation to Mid-Point of Construction			2 years at			3.5%	\$ 2,860,000.00
Phase 1 Point Estimate								\$ 42,920,000.00
Phase 2 Construction Subtotal								\$ 7,650,000.00
	General Conditions						10%	\$ 765,000.00
	Overhead and Profit						15%	\$ 1,147,500.00
Phase 2 Construction Total								\$ 9,570,000.00
	Construction Contingency						35%	\$ 3,350,000.00
	Land/Easement Acquisition						0%	\$ -
	Other Misc. Costs - Permitting						0.25%	\$ 24,000.00
	Legal						0.1%	\$ 10,000.00
	Bonds						0.3%	\$ 29,000.00
	Engineering - Design						3%	\$ 288,000.00
	Engineering - Construction						12%	\$ 1,149,000.00
	Financial Advisor						0.1%	\$ 10,000.00
	Grant/Loan Administration						0.1%	\$ 10,000.00
Phase 2 Project Subtotal								\$ 14,440,000.00
	Escalation to Mid-Point of Construction			5 years at			3.5%	\$ 2,720,000.00
Phase 2 Point Estimate								\$ 17,160,000.00
Project Point Estimate (Phase 1 + Phase 2)								\$ 60,080,000.00

The following assumptions and references were used to develop the opinion of probable construction cost:

1. Opinions of probable costs are at a conceptual level based on 30% project definition.
2. Estimates are consistent with AACE Class 4 construction cost estimate which are typically accurate between -15% and -30% to +20% and +50%.
3. All unit costs are in 2025 dollars.
4. All items are rounded to the nearest \$1,000. All subtotals rounded to nearest \$10,000.
5. Phase 1 Point estimate is escalated at 3.5% escalation for 2 years.
6. Phase 2 Point Estimate is escalated at 3.5% escalation for 5 years

Schedule / Next Steps

PROJECT SCHEDULE



Next Steps

- Finalize Basis of Design Report (Town Comments on Draft)
- SPDES Permit Application Submission to DEC
 - Includes Public Participation Plan (PPP)
- Joint Permit Application
- Arcadis Proposal for Detailed Design
- 60% Design Development

Open Discussion

Reference Slides

Models: D-Series

- Wetwell/Drywell Station Design
- HDPE Tank
- Capacities of 70 gal to 500 gal
 - 1 pump: 70 and 150 gal
 - 2 pumps: 150, 272 and 500 gal
- Field-Variable Tank Height
 - Tank depths range from 61 in. to 200 in. (160 in for DH071)



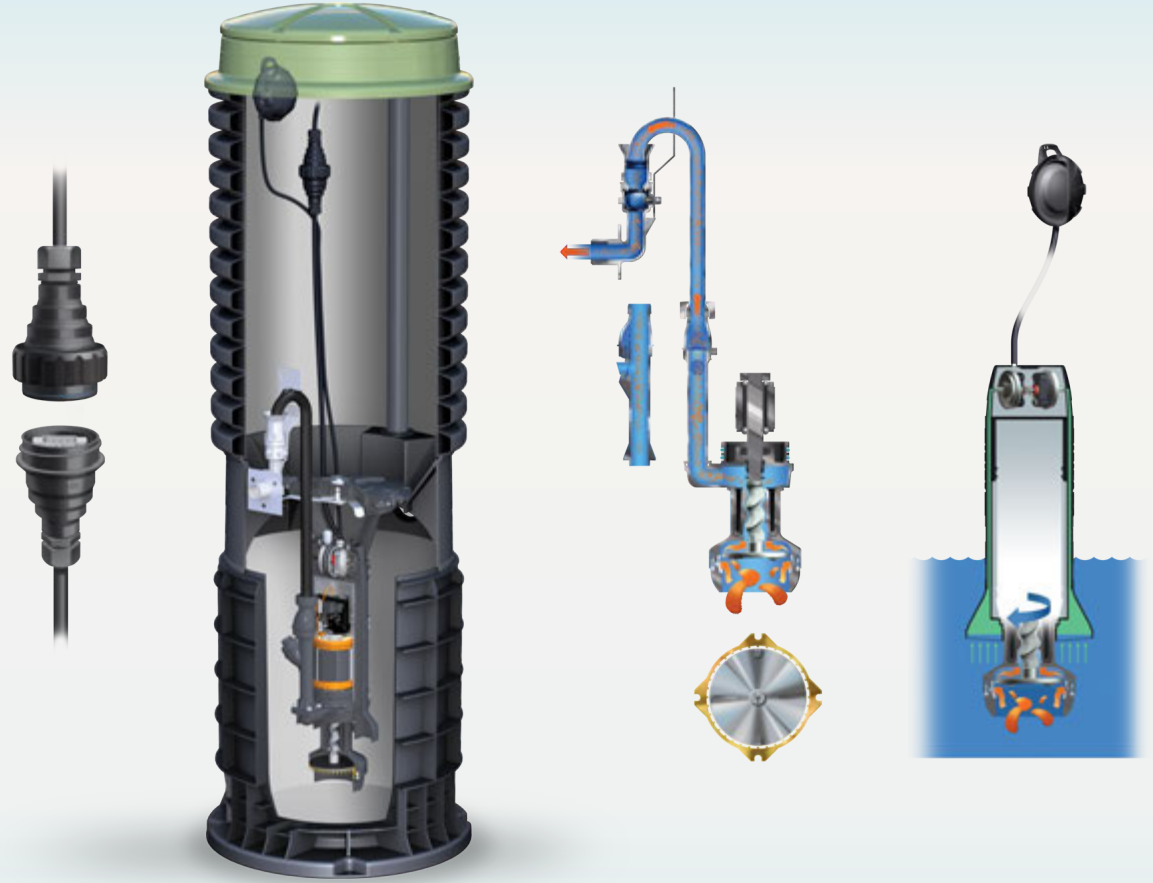
Station Design: Ease of Installation & Serviceability

- Factory assembled and tested
- Complete with basin, pump core, tray cable, check valve/anti-siphon valve, alarm panel
- Field-adjustable basin height
- Double-walled basin construction



Station Design: Serviceability

- Core vs. individual components
- Electrical quick disconnect eliminates junction box
- Stainless steel discharge components
- Alarm box vs. control panel



Alarm Panel Offerings



Standard Simplex Panel



Protect Plus Panel with
Advanced Features

E/One Sentry Advisor

- Cellular modem installed into each panel
- Modem transmits pump events real-time
- Data accessible on E/One Sentry Advisor website
- Notifications via text, email, voice
- Add to existing panels
- Standalone option for non-E/One applications



Field Service

Communication

- Service Council – Best Practices

Training

- Factory Training
- Online & Video Conference Training
- E/One Field Training

Tools

- Web Hosted Service Apps
- Certified Installation Instructions
- Certified Start-Up

