

Jordan Lake Water Supply Program

January 28, 2025



Western Intake
Partnership

- Western Intake Partnership program update
- WIP Facilities Recap
- What to expect in 2025
- Q & A
- Networking



Briefly introduce yourself

Your name & company

M/W UBE representatives – sentence on the services your company provides



Western Intake Partnership



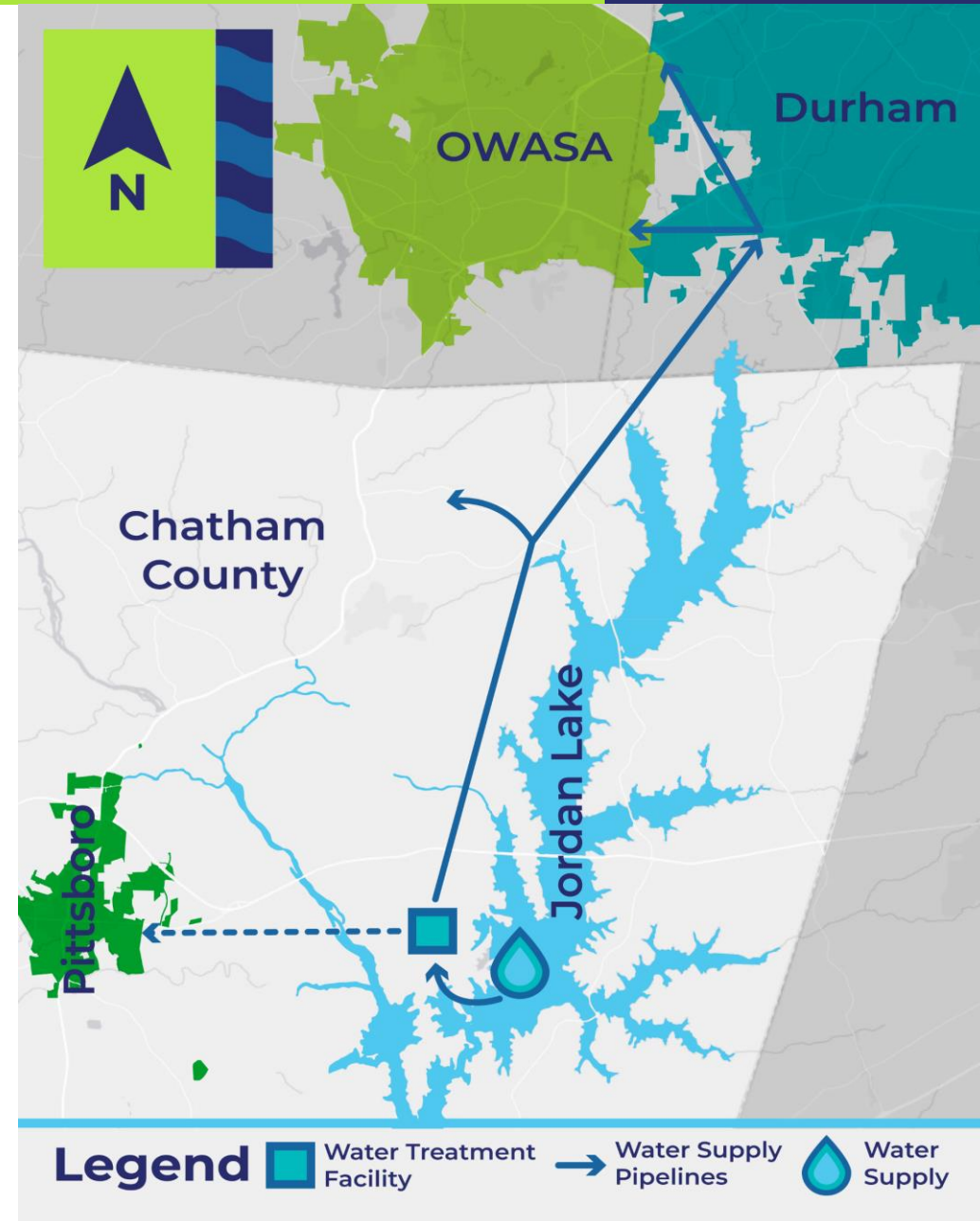
WIP formed in 2014 among Jordan Lake Partnership members

Goal: access state-issued Jordan Lake allocations

Total allocations: 40.6% of total supply

Projects began in 2019 for new water supply & treatment

Jointly funded preliminary projects



City of Durham - Contracting Entity

- Project Manager – Sydney Miller

Additional Partners plan to participate in future phases

- OWASA
- TriRiver Water (utility provider for Chatham Co. and Pittsboro)

HDR - Program Manager

- Not eligible to be a design engineer on the Program
- Supports Selection Committees, but not a voting member

Direct all Meeting and/or Information Requests to HDR:

- Jeff Adkins – Program Manager, jeff.adkins@hdrinc.com

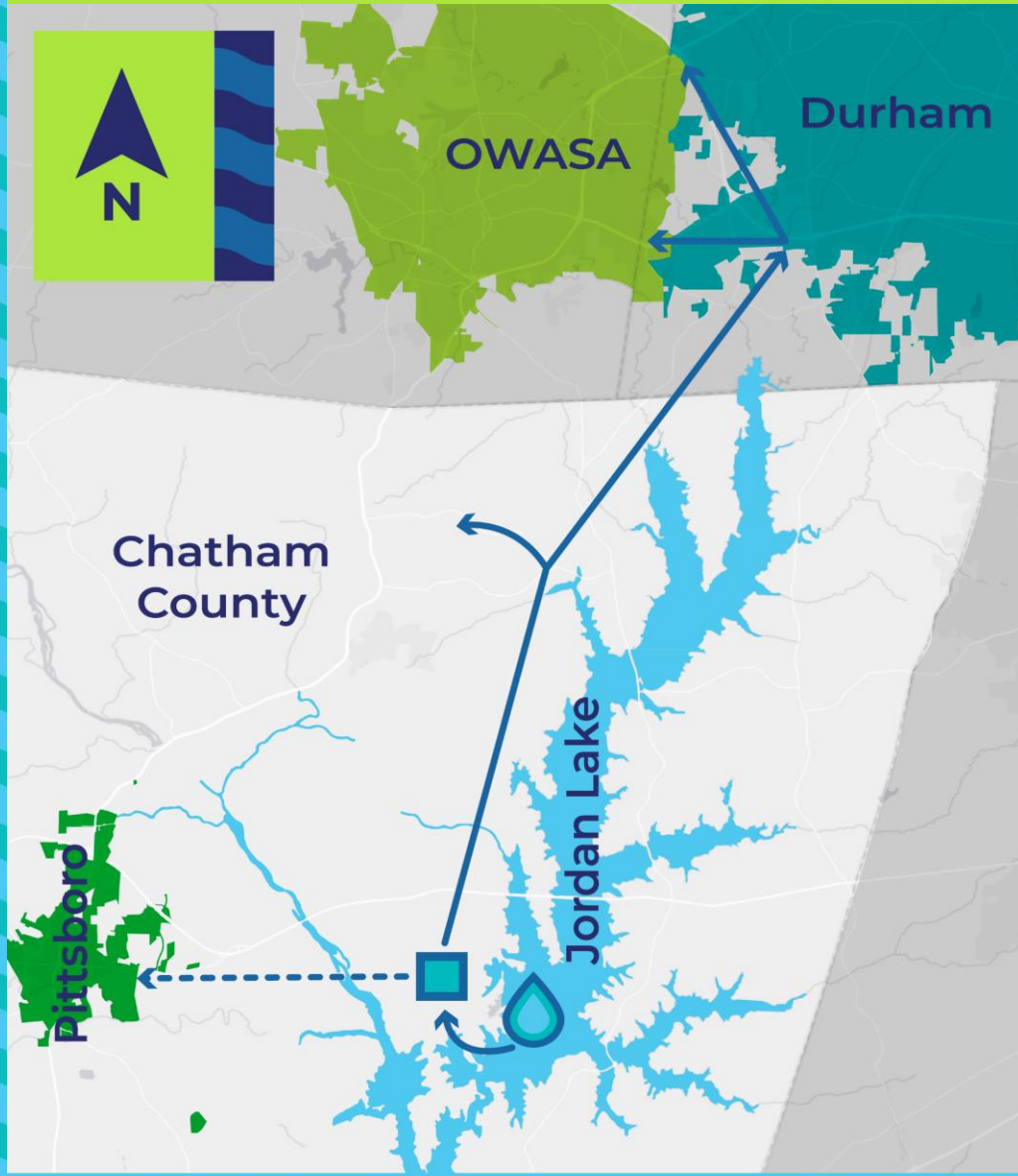




Western Intake Partnership program update



Western Intake Partnership Water Supply Program

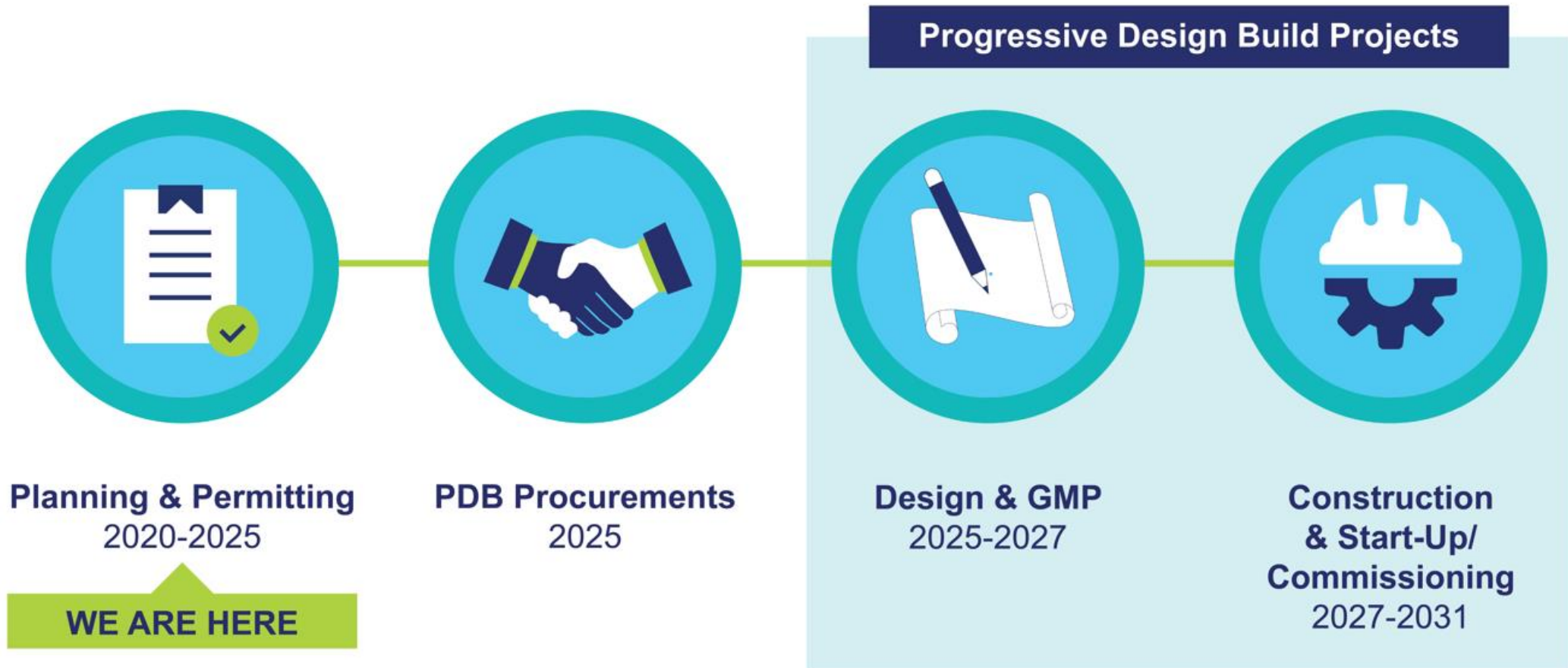


Initial phase to access Durham's Jordan Lake allocations, provide for all Partners eventually

Plan, design, construct and operate:

- Jordan Lake Intake, Tunneled Raw Water Pipeline & Pump Station
 - **Progressive Design-Build Opportunity**
- Regional Water Treatment Facility (*initial capacity 20 mgd, site plan for future expansions*)
 - **Progressive Design-Build Opportunity**
- Finished Water Transmission Pipelines (*16 miles WTF to Durham, future Chatham Co. interconnect; future Pittsboro pipeline*), 1 or 2 contracts
- Elevated Water Storage Tanks (2), Booster PS
 - **Traditional Design-Bid-Build**

Program Schedule



What's new since WIP September 2024 Outreach Event?

- Chatham County decision to merge utility with TriRiver Water; TriRiver may participate in initial phase, but it would not change capacity or design
- Optional opportunity to present to Partners - 5 PDB Teams
- Preliminary Engineering Reports Complete
 - **Raw Water Intake, Pump Station & Transmission PER**
 - **Regional Water Treatment Facility PER**
 - **Finished Water Transmission PER**
 - **Reports made available to interested engineers/contractors**
 - **Surveys and preliminary geotech investigations included in Reports**
- Work continues on intermediate elevated storage tank location
 - **Northern elevated tank will be on City-owned property near South Durham WRF**
- Non-recreational outgrant applications submitted to USACE mid-August
 - **Includes Environmental Assessment (EA)**

Preliminary Construction Cost Estimate (2024 dollars)

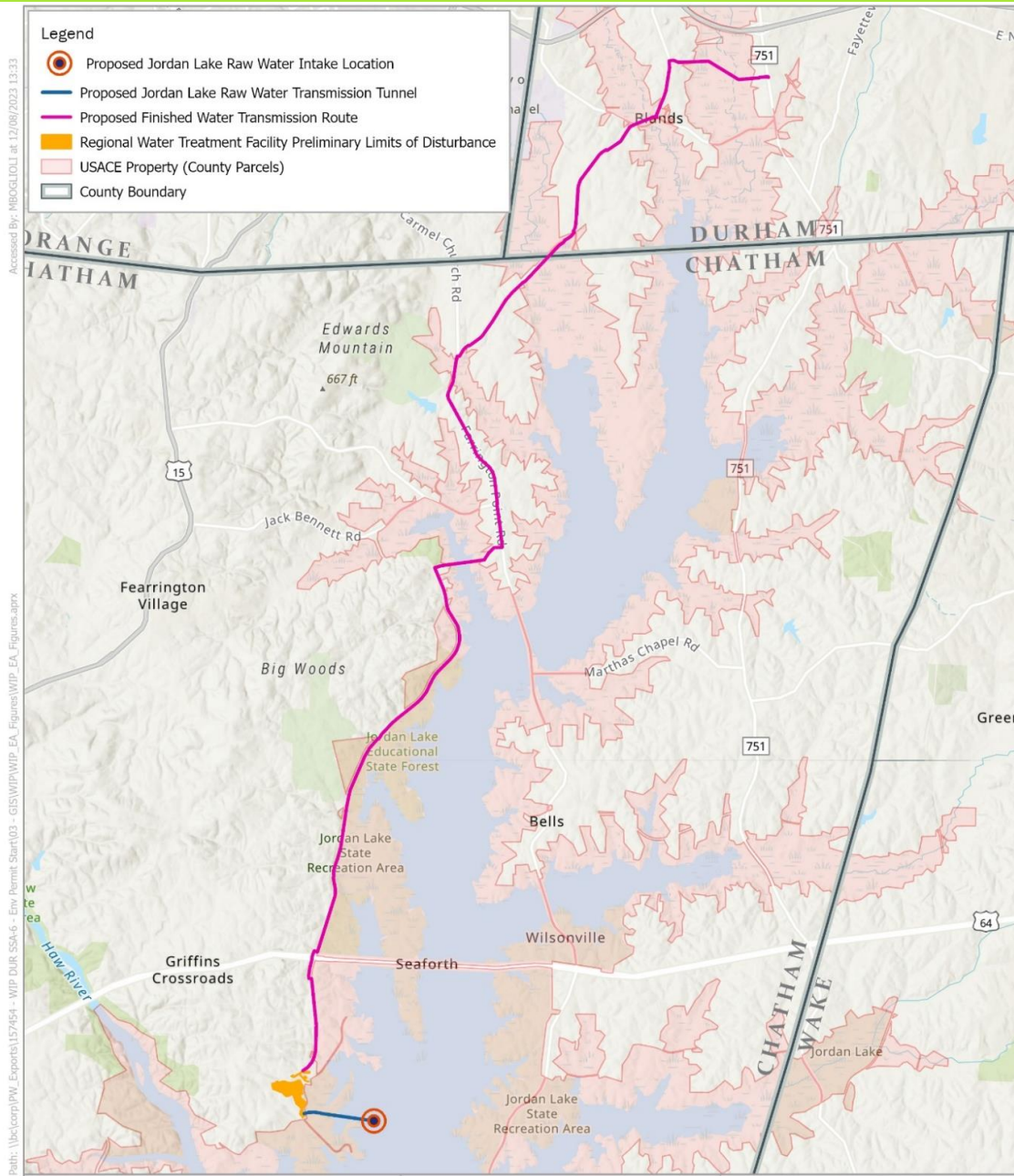
PDB Program Element	Prelim. Construction Cost	Prelim. Project Cost ¹
Intake, Raw Water Pumping & Transmission	\$117M	\$134M
Regional Water Treatment Facility	\$445M	\$500M

DBB Program Element	Prelim. Construction Cost	Prelim. Project Cost ¹
Finished Water Transmission	\$152M - \$190M (36-in vs 42-in)	\$176M - \$213M (36-in vs 42-in)
Two Elevated Storage Tanks	\$21M	\$24M

**Total Program Estimate (PDB + DBB) = \$735M-\$773M Construction
= \$834M-\$871M Project***

*Project Costs including Design, Permitting, Land & Administration

Finished Water Transmission Pipeline



- Traditional Delivery project
- Transmission pipelines along roadways from Treatment Facility
- 16-mile transmission pipeline from Treatment Facility to Durham water distribution system
 - Provides for future delivery of WIP water to Chatham County and OWASA
- Future parallel pipeline
- Future 6-mile transmission pipeline to Pittsboro



WIP Facilities Recap

Opportunities for Progressive
Design Build Delivery

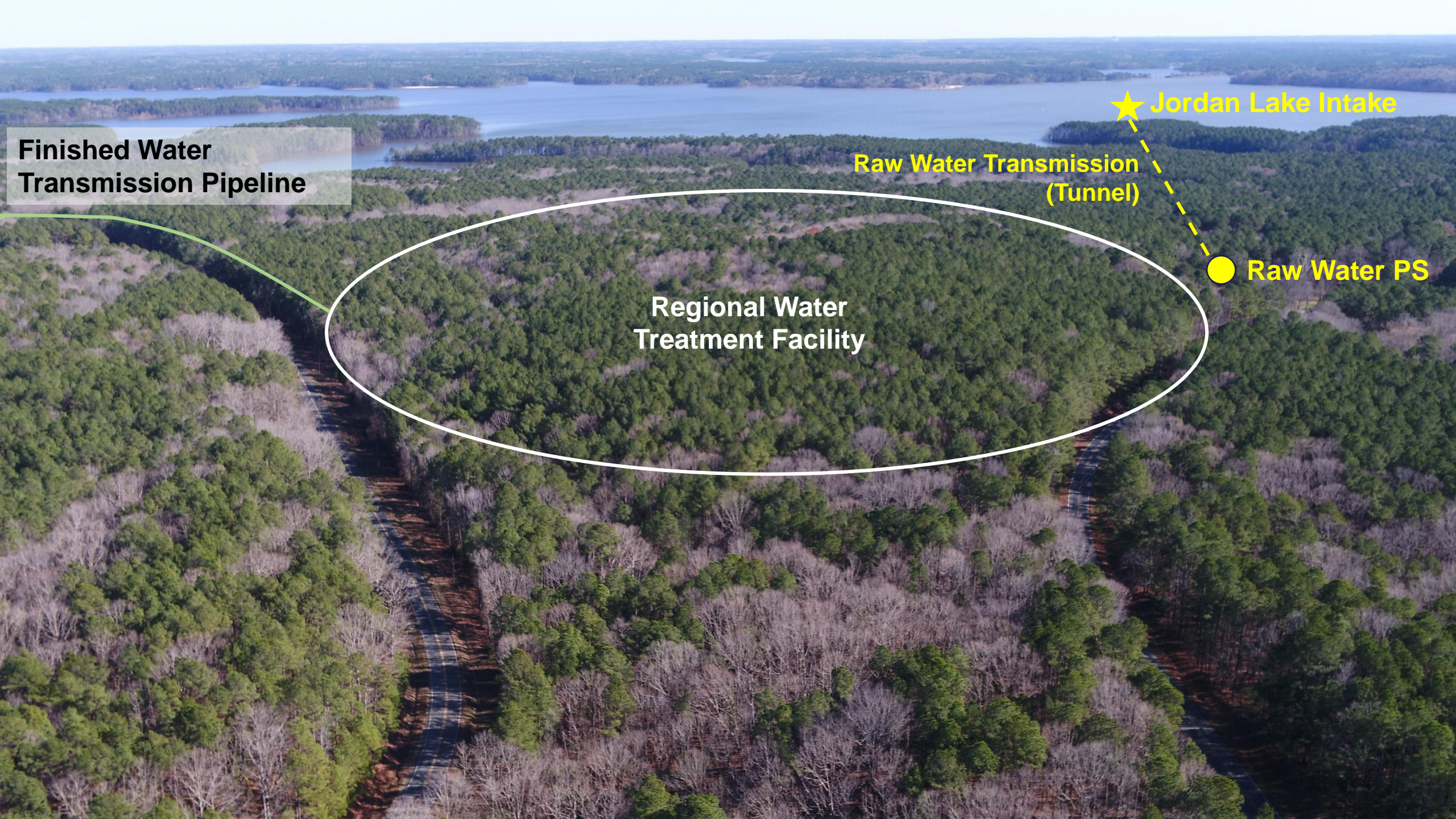


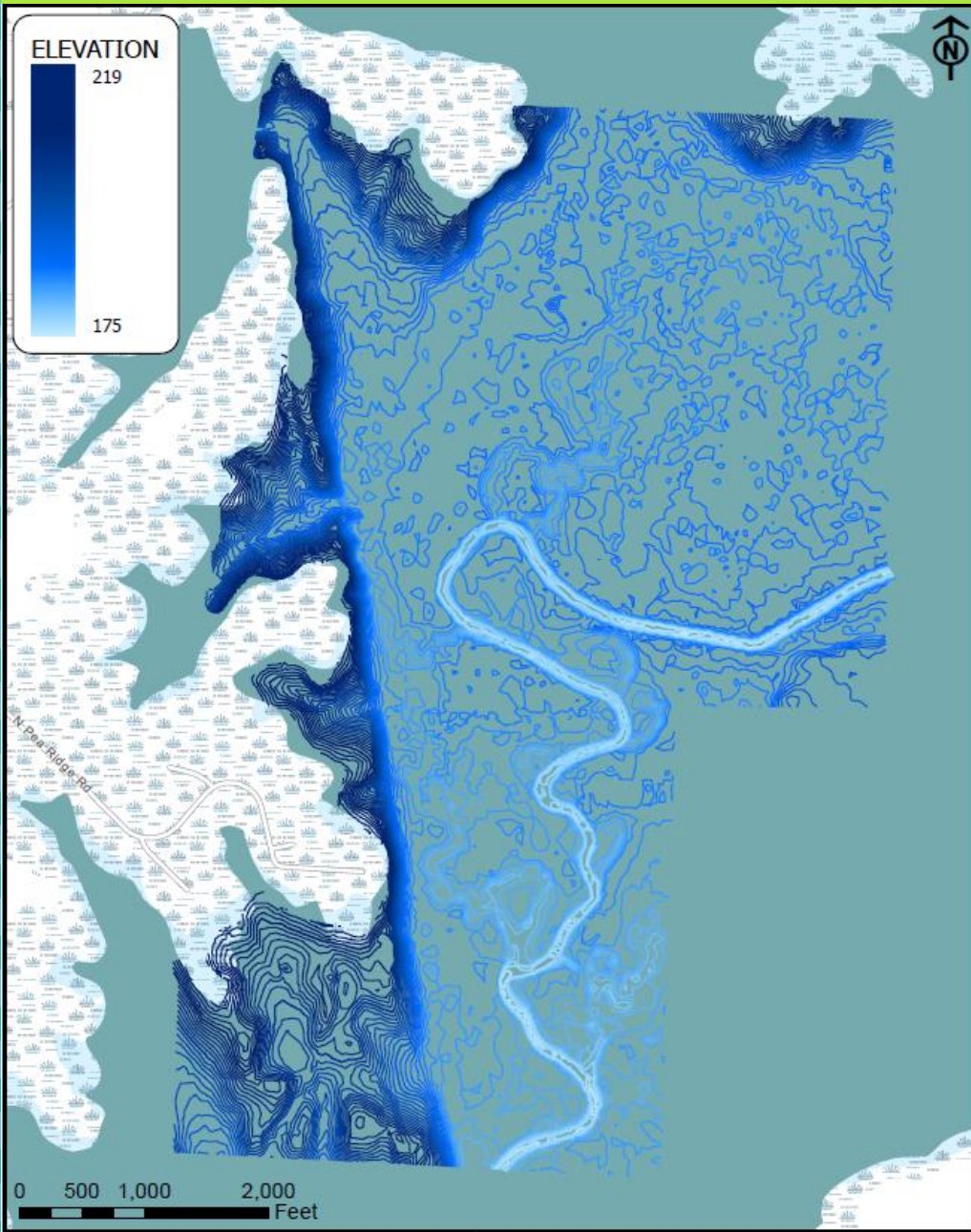
**Finished Water
Transmission Pipeline**

Jordan Lake Intake
**Raw Water Transmission
(Tunnel)**

Raw Water PS

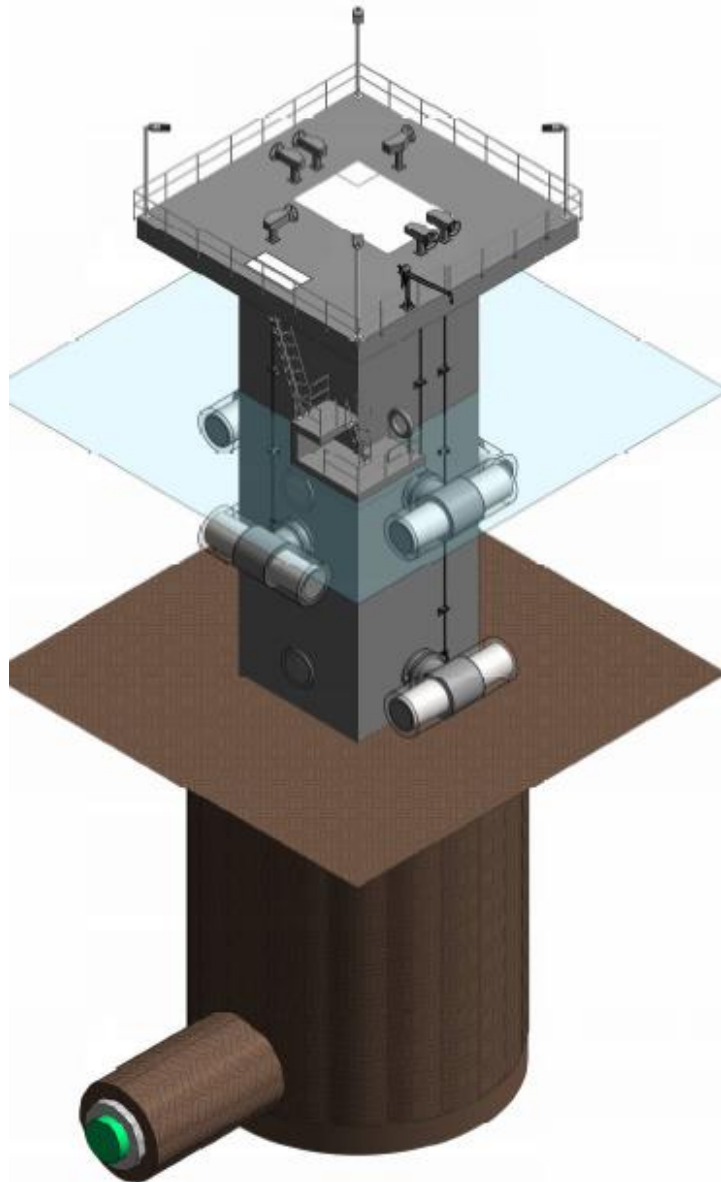
**Regional Water
Treatment Facility**





- Thalweg Access – resilient to severe drought
 - **Vicinity bathymetric survey**
- Pump station above flood elevation, including access during flood event
- Intake capable of multi-level withdrawals for seasonal WQ challenges
 - **Changing intake elevation is infrequent**
- Minimize disturbance to Vista Point State Recreation Area

Raw Water Intake and Pump Station Location

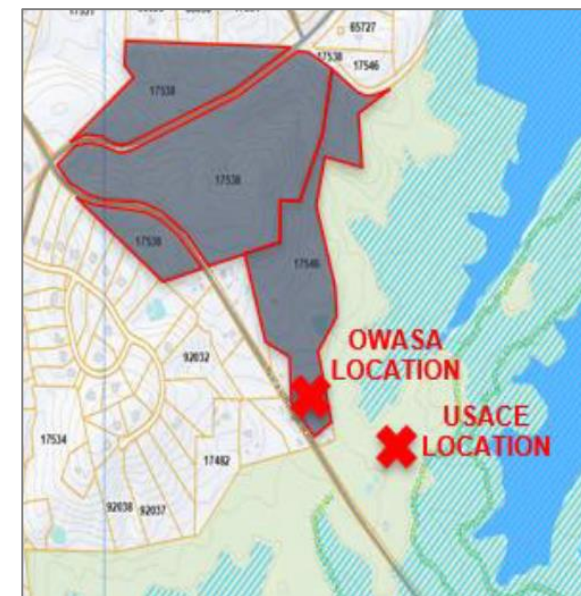
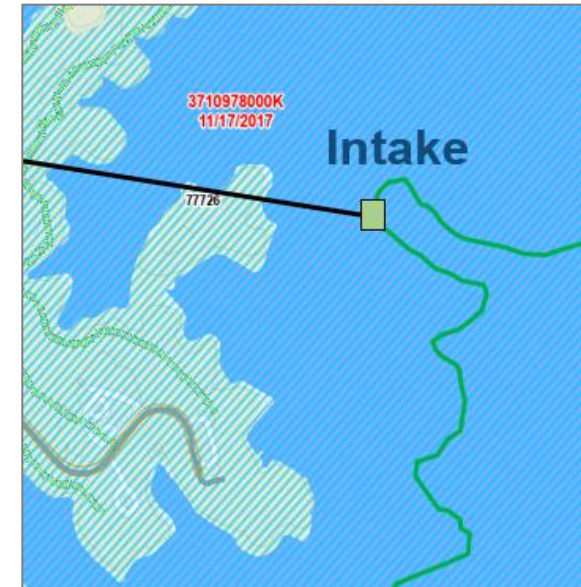


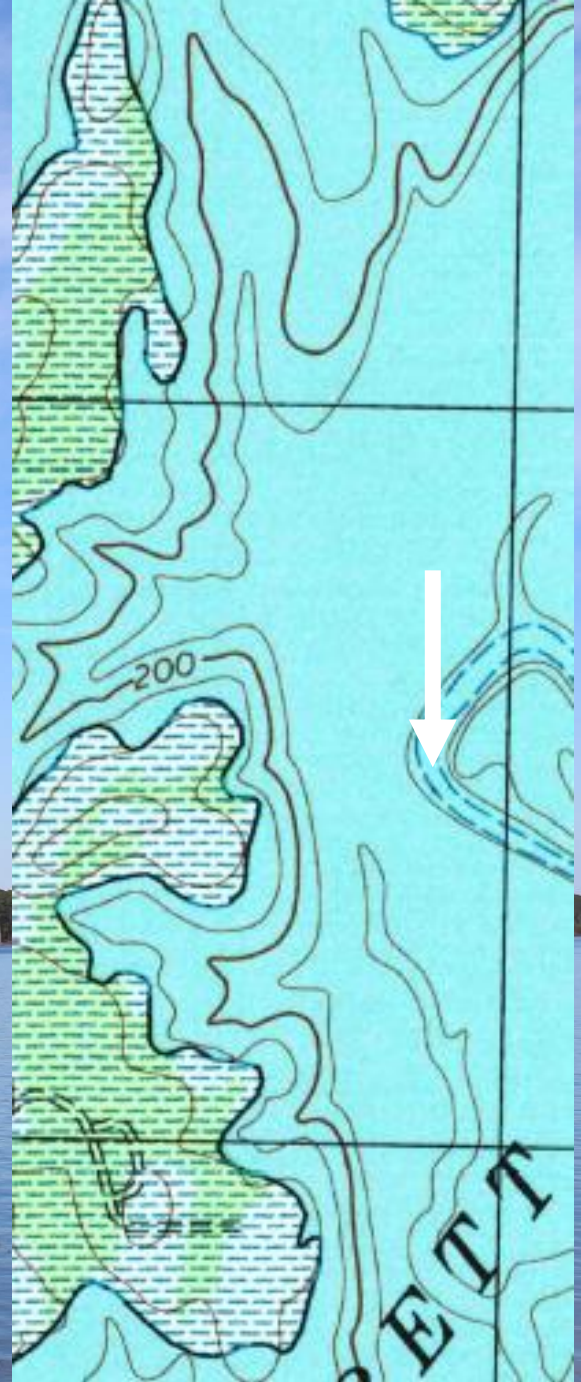
Jordan Lake Intake

- In-lake, north of Vista Point
- Concrete tower style intake w/ integral gates, tee barrel screens
- Withdraw from 3 levels

Raw Water Pump Station

- Located above floodplain
- Southeast corner of WTF property

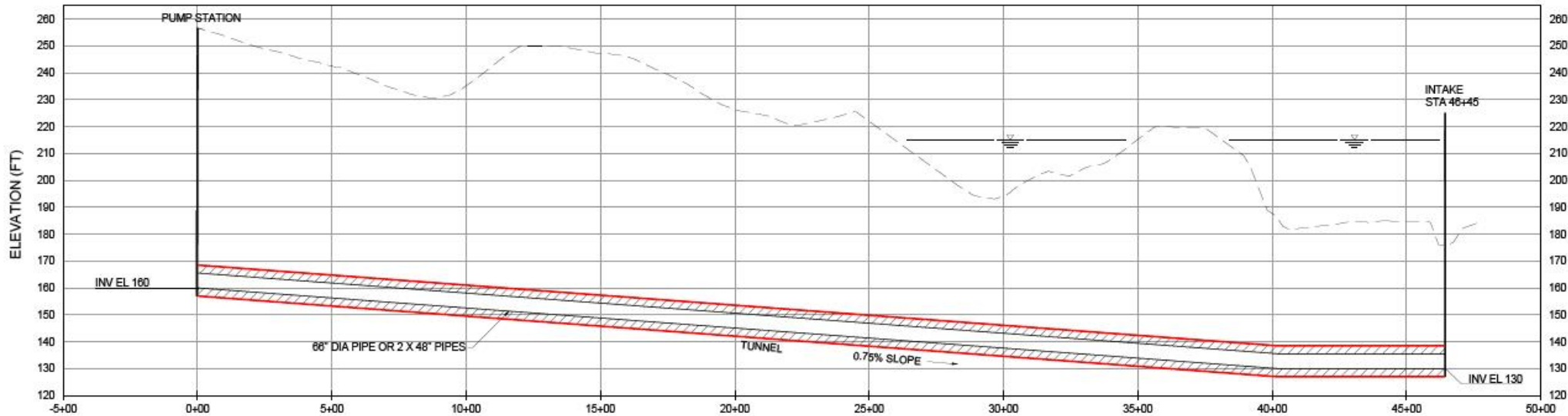
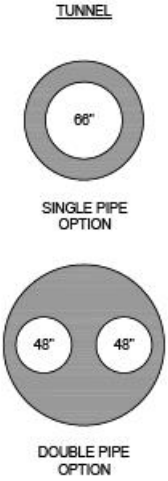




Raw Water Pipeline Trenchless Construction



PLAN
SCALE: 1" = 200'



PROFILE
HORIZONTAL SCALE: 1" = 200'
VERTICAL SCALE: 1" = 2'

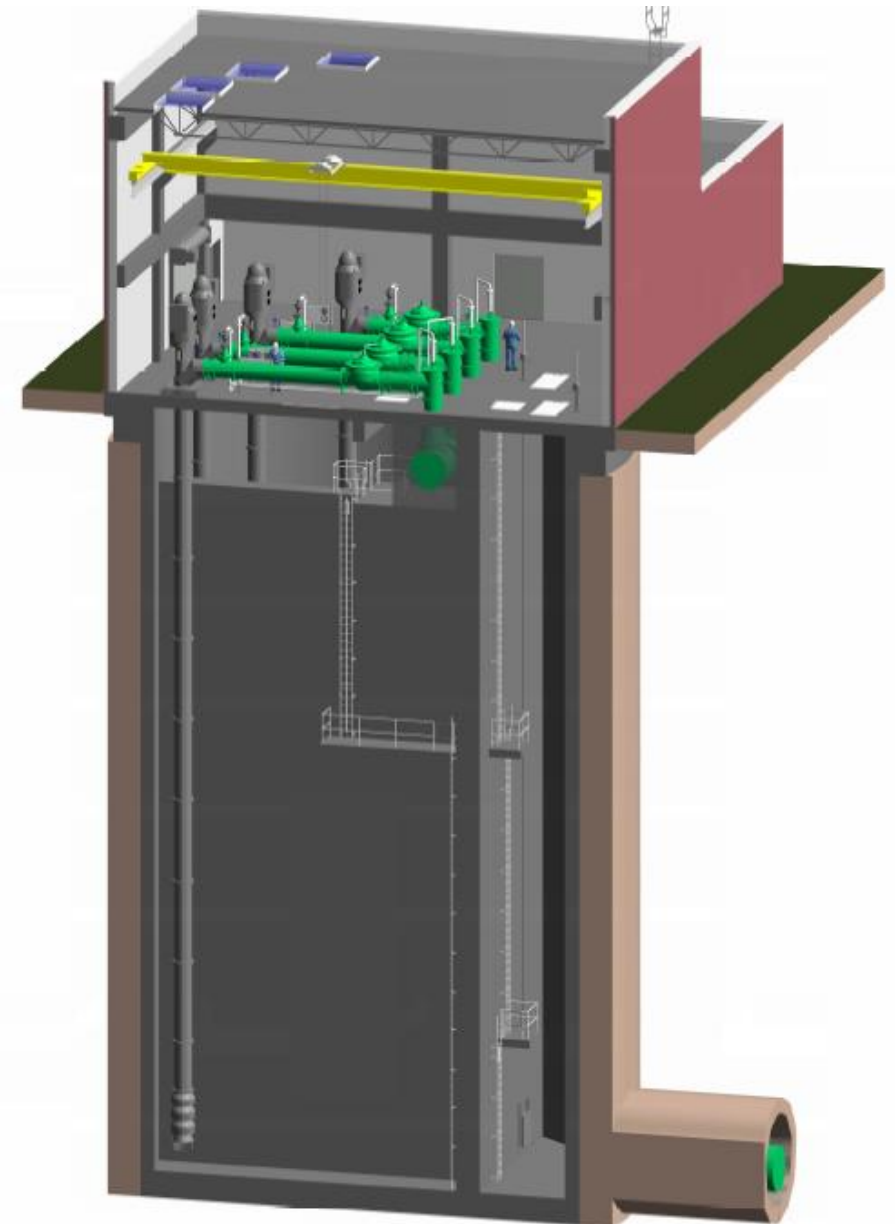
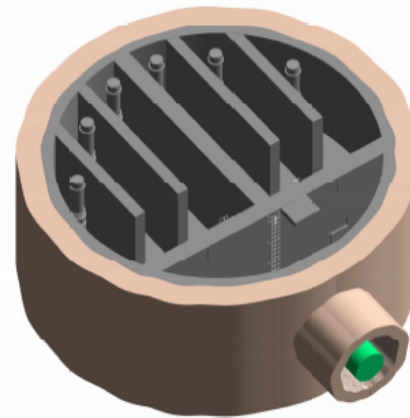
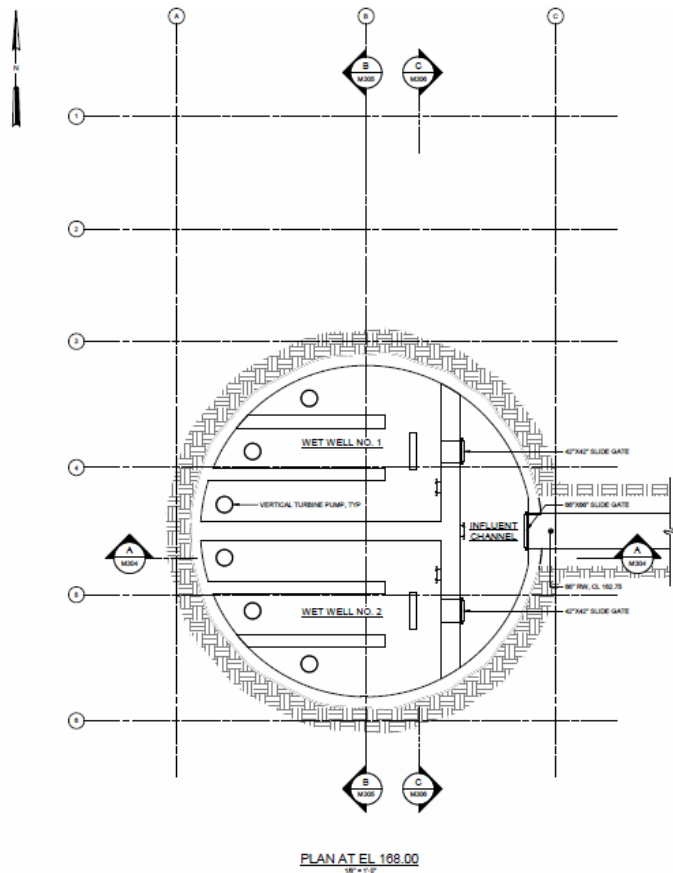
Raw Water Pump Station Features



- Zoning requires 100-ft vegetated buffer
- Chemical storage & feed facilities for WTF will also provide for Raw Water facilities
- Raw water pumped to WTF's raw water reservoirs

Raw Water Pump Station Configuration

- Pump Station wet well is launch point for tunnel construction for raw water pipeline
- 22 MGD initial pumping capacity



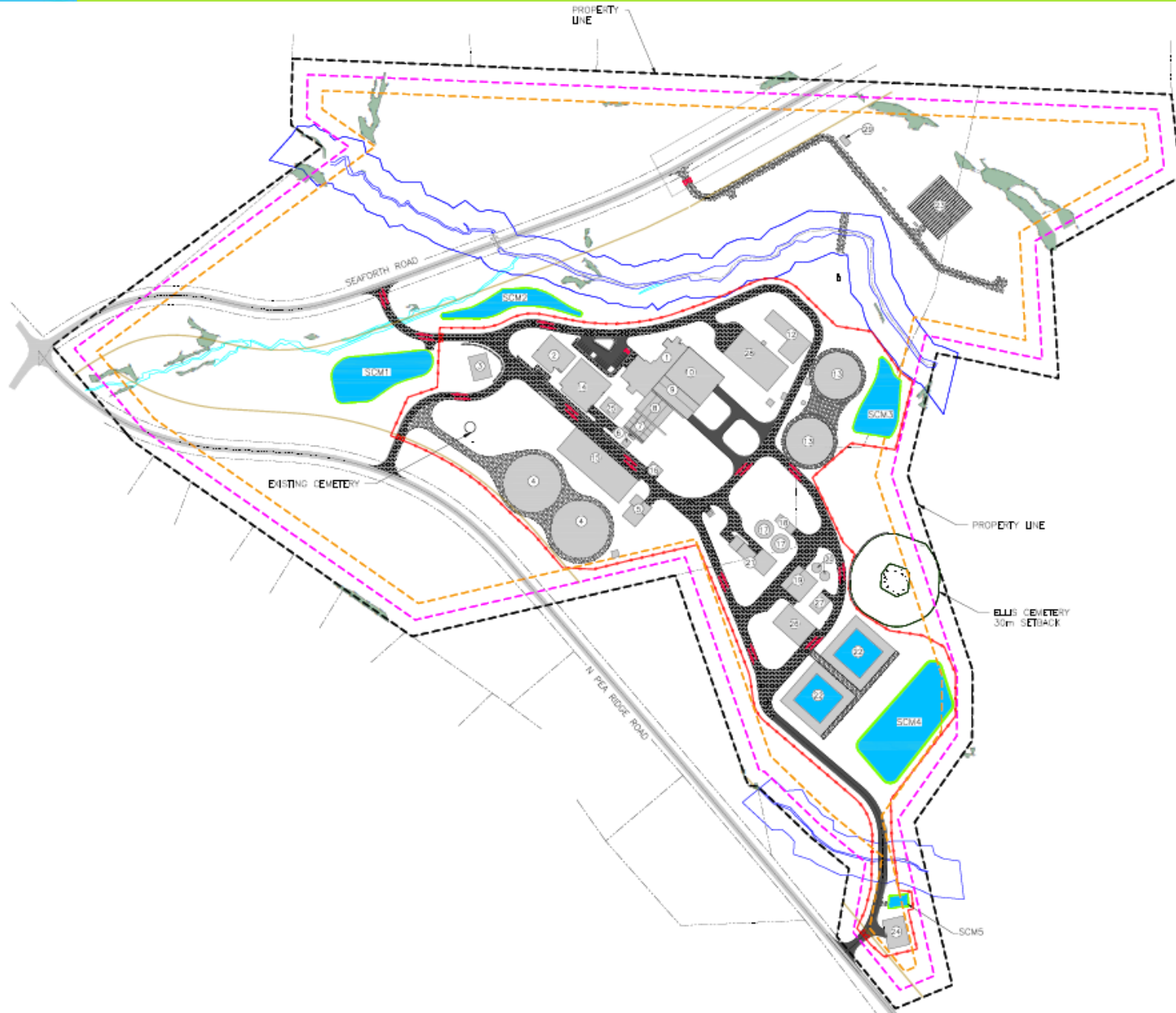
- Comply with current federal/state drinking water standards at all times
- Construction meets design criteria, standards and code
- Comply with rezoning requirements, incl. undisturbed vegetated buffer, appearance requirements, native plantings
- Consider constructability, reliability, operability & maintenance
- Incorporate sustainability concepts, incl. LEED Gold for Admin & Maintenance Buildings (City's High-Performance Building Standard)
- Minimize impacts to surrounding community during construction & operation
- Stream/wetland impacts eligible for 401/404 Nationwide Permit

Water Treatment Facility Rendering

Initial phase, with footprint of future phases



WTF Site Plan (initial phase)



KEY:

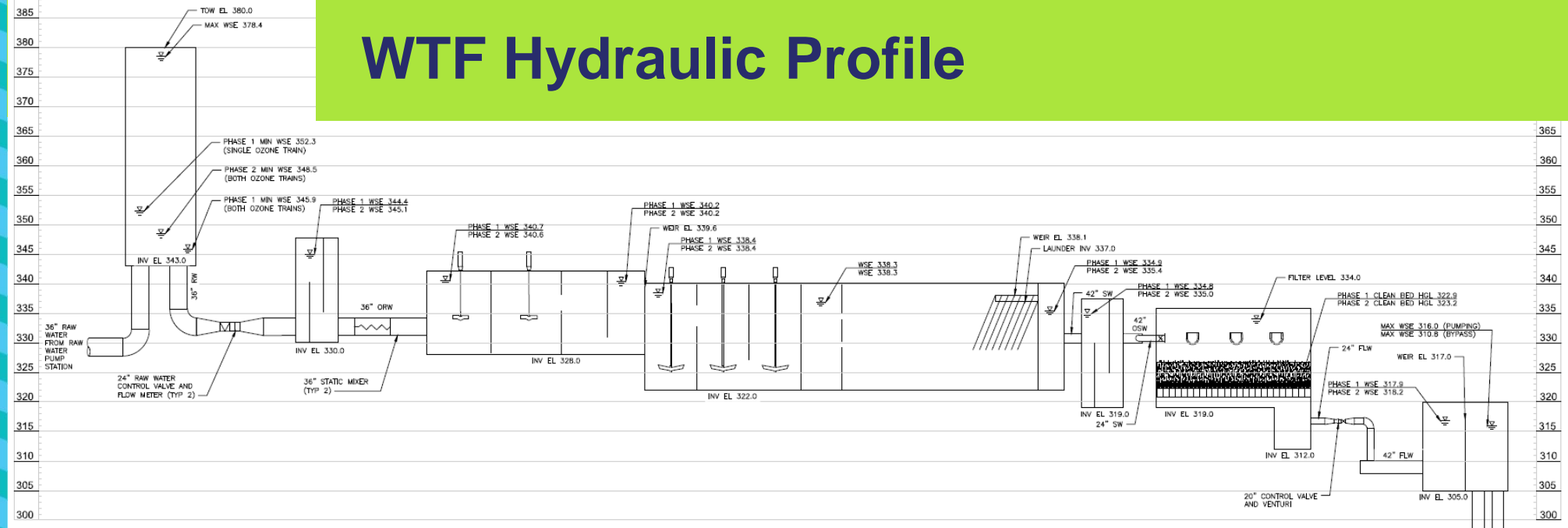
- ① ADMIN/ OPERATIONS BUILDING
- ② MAINTENANCE BUILDING
- ③ SUBSTATION / TRANSFORMERS
- ④ 7.5MG RAW WATER STORAGE TANK
- ⑤ RAW WATER OZONE INJECTION BUILDING, CONTACTORS AND RAW WATER CONTROL VAULT
- ⑥ STATIC MIXERS VAULT AND RAPID MIX BASINS
- ⑦ FLOCCULATION
- ⑧ SEDIMENTATION BASINS WITH PLATE SETTLERS
- ⑨ OZONE GENERATORS AND SETTLED WATER CONTACTORS
- ⑩ FILTERS
- ⑪ FINISHED WATER PS AND ELECTRICAL ROOM
- ⑫ 4MG CLEARWELL
- ⑬ ELECTRICAL / GENERATORS BUILDING
- ⑭ CHEMICAL BUILDING
- ⑮ LOX STORAGE
- ⑯ GRAVITY THICKENERS
- ⑰ THICKENED SOLIDS PS
- ⑱ DEWATERING BUILDING
- ⑲ THICKENED SOLIDS STORAGE TANK
- ⑳ BW RECLAMATION AND RECYCLE FACILITY
- ㉑ RECLAMATION BASINS
- ㉒ SEPTIC DRAINAGE FIELD
- ㉓ RAW WATER PS
- ㉔ FUEL STORAGE FOR STANDBY GENERATORS
- ㉕ DEWATERED SOLIDS STORAGE BUILDING
- ㉖ RESIDUALS ELECTRICAL BUILDING
- ㉗ ADVANCED TREATMENT BUILDING
- ㉘ SURGE TANKS

Water Treatment Facility

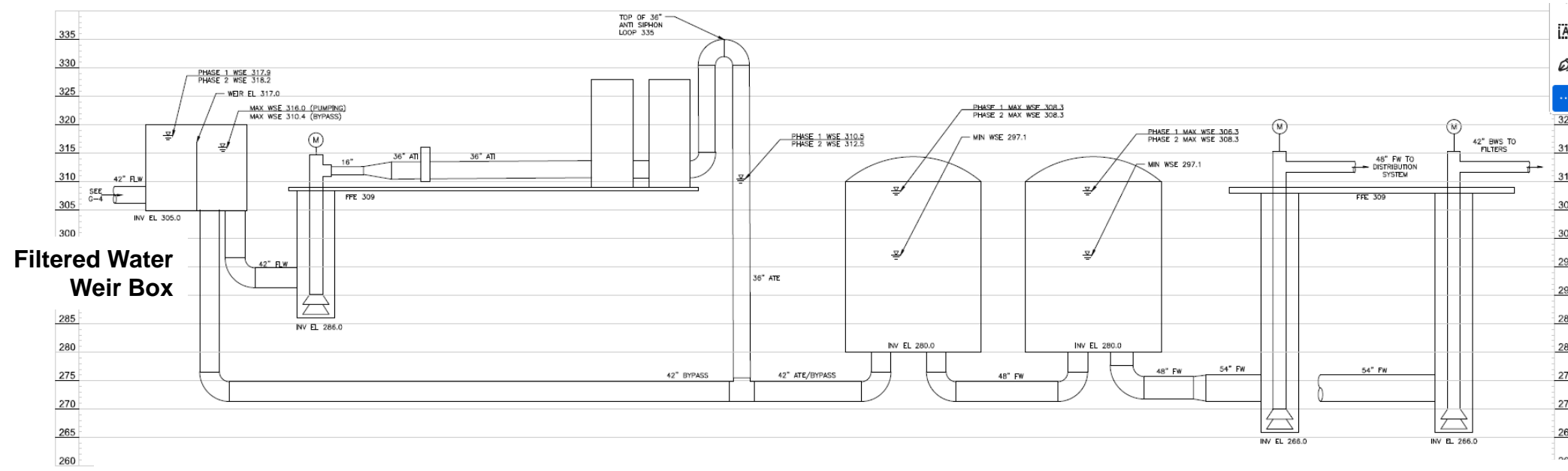
- 121-acre site acquired by OWASA in 1989 – undeveloped
 - **Significant slope down to north, with non-contiguous portions separated by roads (elevation range ~100 ft across site)**
- Phase 1 max day 20 MGD finished water capacity to transmission pipeline
 - **Some Phase 1 elements constructed to meet Phase 2 capacity (30 MGD)**
 - **Site Plan accommodates ultimate expansion to 77 MGD**
- 12-month PFAS Pilot Study to evaluate treatment options
- Ongoing WQ sampling program at Jordan Lake intake site



WTF Hydraulic Profile

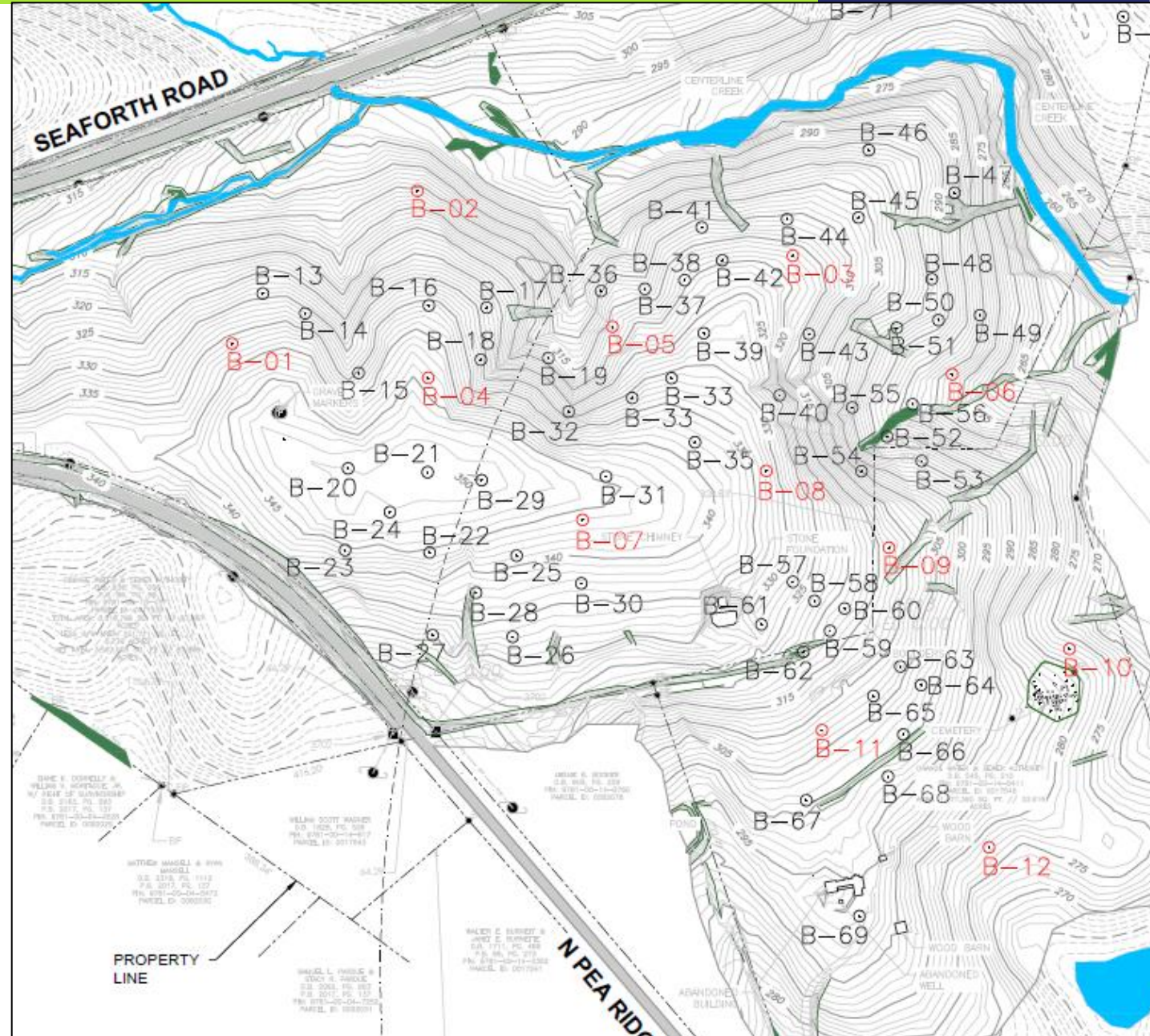


Raw Water Tanks Raw Water Ozone Rapid Mix Basins Flocculation Basins Sedimentation Basins Settled Water Ozone Filters Filtered Water Weir Box



Filtered Water Weir Box Adv Treatment Feed / Cartridge Filters / Adv Treatment Vessels Finished Water Clearwells Finished Water PS

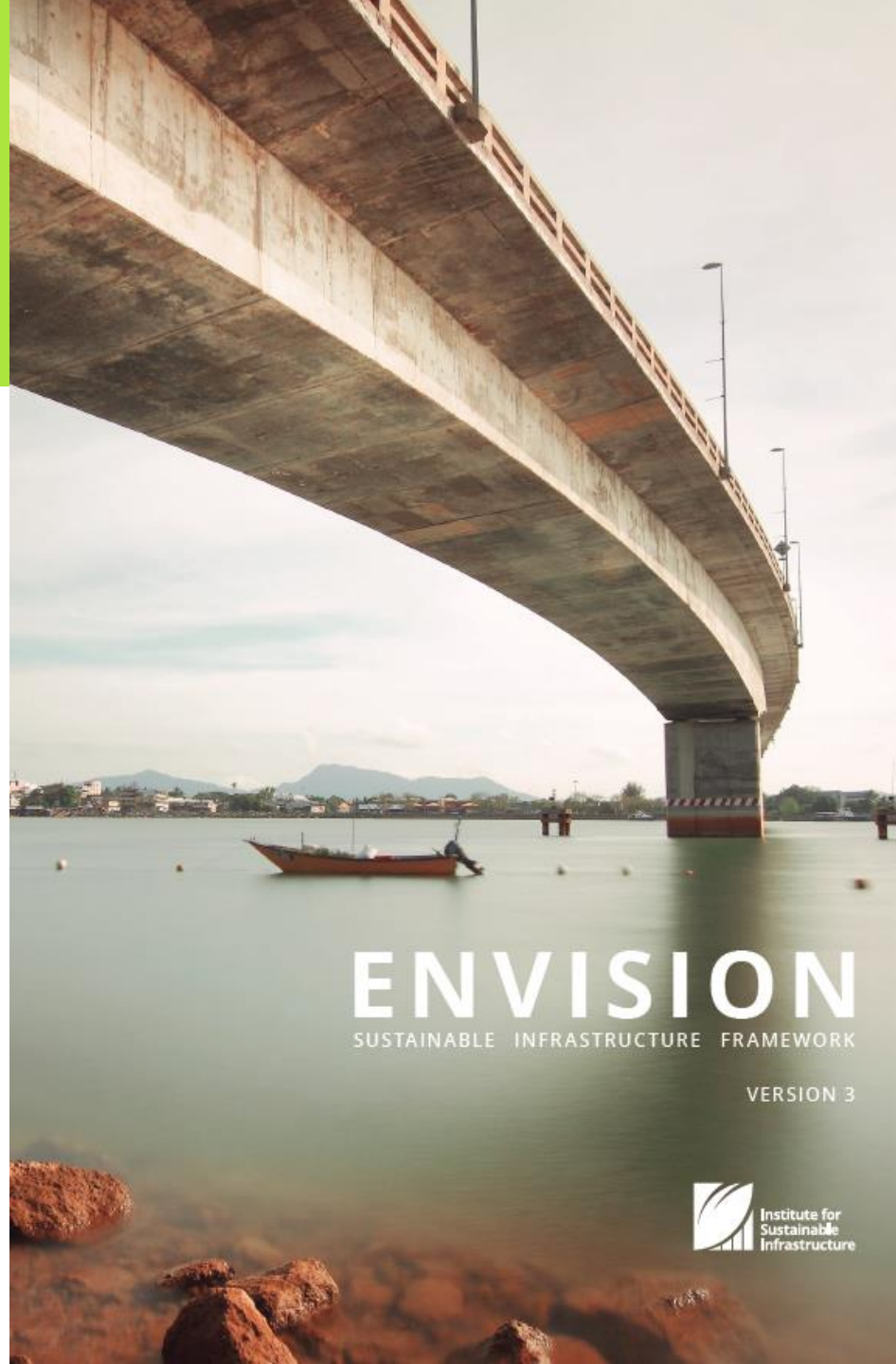
- Intake/Raw Water Geotech investigations
 - **PER (2023) – 10 borings**
- WTF Geotech investigations
 - **Phase 1 (2022) – 12 borings, GPR to delineate cemetery**
 - **Phase 2 (2024) – 60 borings, 4 monitoring wells**
- Geotech investigation reports incorporated in final PERs



WIP is using Envision to encourage Sustainability

Targeting Gold achievement level

Envision discussed in PER section 15



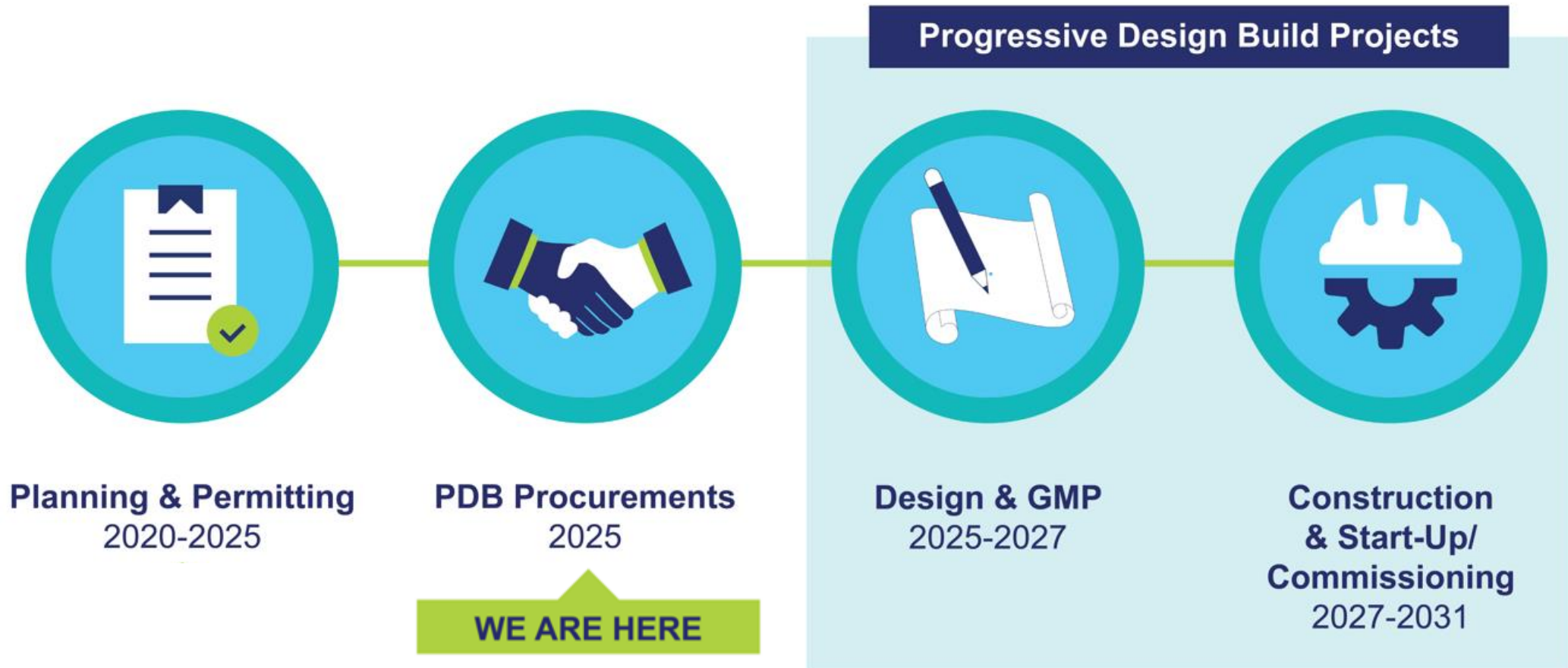
- WIP PERs will be available to interested engineers and contractors
- Contact Jeff Adkins/HDR to request
- Other useful information and links for WIP projects available at
 - WIP website www.westernintakepartnership.com
 - Chatham County website www.chathamcountync.gov , 2024 rezoning page



What to expect in 2025



PDB Delivery Schedule



February 28th – Last day for meetings with HDR

By April

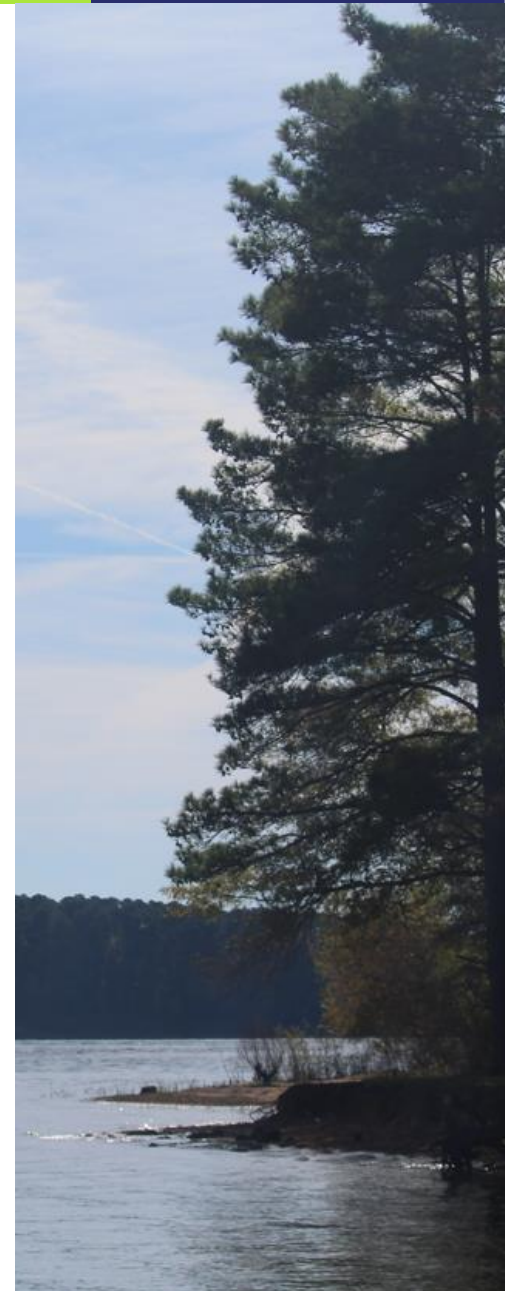
- Advertise first PDB RFQ (for Treatment Facility)
- Begin Finished Water Transmission Final Design
- Outgrant applications prompt Agency EA review & opportunity for public input (probable)
- Partners complete WIP Interlocal Agreement

Summer 2025

- WTF PDB Team selection
- Second PDB RFQ (for Intake & Raw Water Facilities)

Fall 2025

- Intake/ Raw Water Facilities PDB Team selection



Progressive Design Build Procurements

- City of Durham is WIP's Contracting Agent; following Durham's procurement process
- DB contract documents and RFQs being finalized
- Solicitations for PDB Contracts
 - **1st RFQ – Water Treatment Facility (Contract 2) – ~March/April**
 - **2nd RFQ – Intake & Raw Water Facilities (Contract 1) – ~June/July**
- Not planning to issue 2nd RFQ until selection made on 1st RFQ
- 2-stage selection – SOQ, Interviews
 - **Structured evaluation – criteria will be in RFQ**

Finished Water Transmission Projects –anticipate bidding 2027
Traditional Delivery (1-2 Pipeline contracts, elevated storage tanks, booster pump station)



Selection Criteria to be published in RFQs are being finalized, but Partners anticipate the following will characterize the selected team:

- **Project Approach: Project Management, Communications, Schedule Adherence**
- **Innovative Ideas**
- **Relevant Firm Experiences & References**
- **Qualified & Available Project Team**
- **Team Proximity to Project Site, Particularly PM and Key Team Members**
- **M/W UBE Utilization (Equal Business Opportunity Program)**
- **Limited Proposed Changes to City's Design-Build Contract Agreement**
- **Required Bonds, Insurance; Claims Litigation**

- All construction projects – PDB and Traditional - will have goals for Underutilized Business Enterprise (UBE) participation
 - **% Minority-owned and % Women-owned UBE firms**
 - **Separate goals for Engineering/Professional Services vs Construction**
- Underutilized Business Enterprise Compliance Division in Finance Department; requirements at City's website <https://www.durhamnc.gov/4091/Underutilized-Business-Compliance-Divisi>

Email: ubcfinance@durhamnc.gov

- RFQ will explain UBE requirements with forms all proposers are required to complete
 - **UBE Participation Documentation**
 - **Consultant Workforce Diversity Questionnaire**
 - **Letter(s) of Intent to Perform as a Sub-Consultant**

- City is establishing Minority-owned & Women-owned UBE utilization goals for PDB Opportunities at this time
 - **Separate goals for Professional Services and Construction Services**
- Goals to be finalized by early March, and published in RFQs
- M/W UBE utilization goals may not be the same for the 2 PDB Opportunities
- M/W UBE utilization goals for Traditional projects will be established closer to 2027 bidding

Professional Services

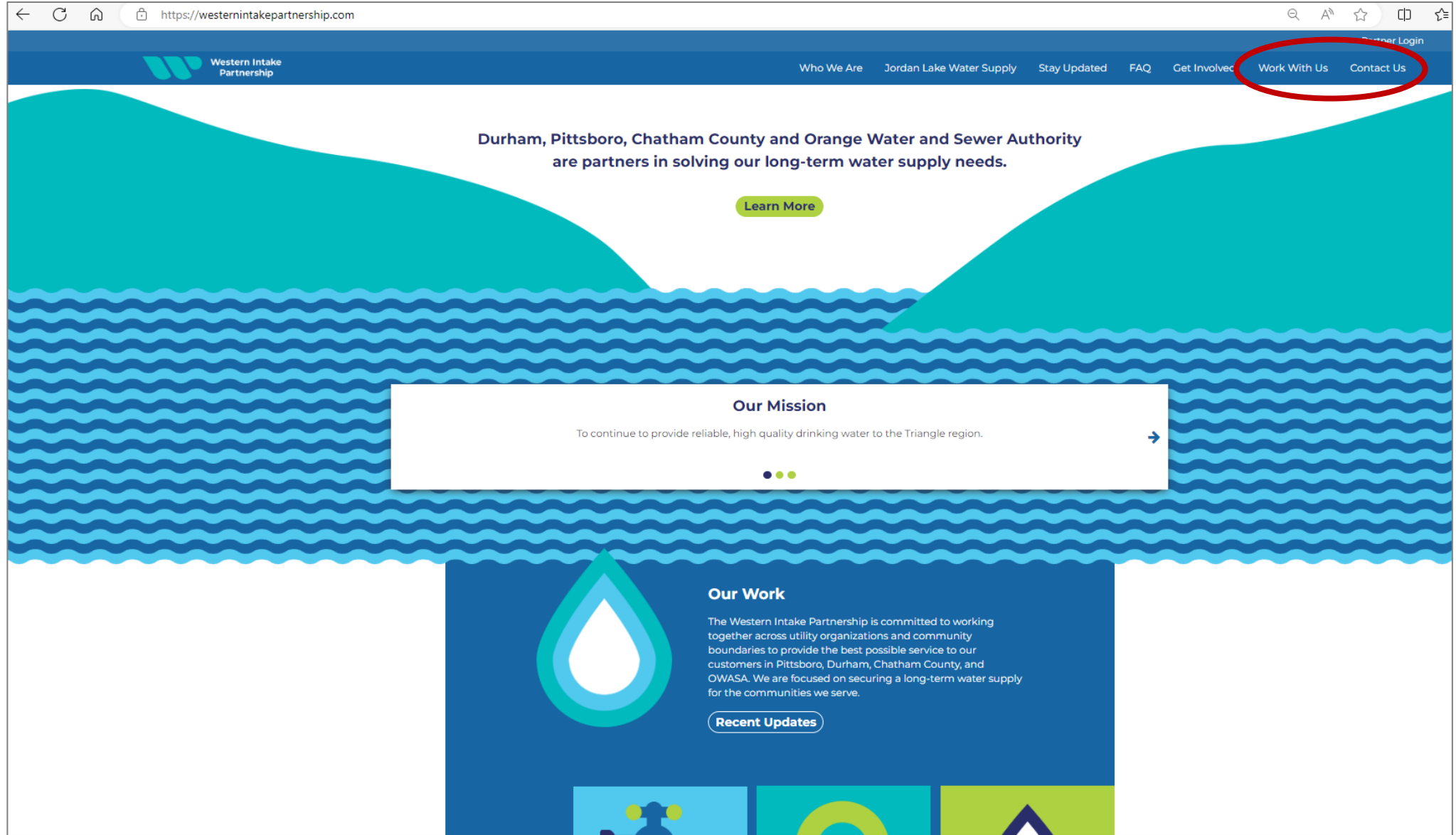
- Engineering design (all disciplines)
- Field survey
- Geotechnical investigations
- Soils/materials testing
- Architecture
- Other consulting services
- Compliance monitoring
- Asbestos surveys, remediation for existing structures
- Environmental investigations
- Permitting support
- Public engagement

Construction Services

- Building / structures construction
- Buildings / structures painting
- Mechanical (plumbing, HVAC) contracting
- Electrical contracting
- Site clearing & grubbing
- Site/civil contracting (incl. stormwater, erosion control, etc.)
- Haul construction debris
- Roadway construction
- Work zone traffic control
- Pipeline install, directional drilling
- Materials testing
- Vibration & noise monitoring

Partnership Website – sign up for updates & newsletter

westernintakepartnership.com



The screenshot shows the homepage of the Western Intake Partnership website. The browser address bar displays "https://westernintakepartnership.com". The navigation menu includes "Who We Are", "Jordan Lake Water Supply", "Stay Updated", "FAQ", "Get Involved", "Work With Us", and "Contact Us". The "Work With Us" and "Contact Us" links are circled in red. The main content area features a teal and blue wavy background with the text: "Durham, Pittsboro, Chatham County and Orange Water and Sewer Authority are partners in solving our long-term water supply needs." Below this is a "Learn More" button. A white box titled "Our Mission" contains the text: "To continue to provide reliable, high quality drinking water to the Triangle region." and a right-pointing arrow. Below the mission box is a "Our Work" section with a large water drop icon and the text: "The Western Intake Partnership is committed to working together across utility organizations and community boundaries to provide the best possible service to our customers in Pittsboro, Durham, Chatham County, and OWASA. We are focused on securing a long-term water supply for the communities we serve." Below this is a "Recent Updates" button. The bottom of the page shows three icons: a water tap, a water drop, and a house.

Jeff Adkins – jeff.adkins@hdrinc.com

Kip Kalisiak – kip.kalisiak@hdrinc.com

**** February 28th - Last day to meet with HDR about WIP ****





Q & A





Networking

