Hazen

West Parish Water Treatment Plant

General Contractor and Subcontractor Informational Session

June 9, 2023

Introductions

Participants

- SWSC Team
  - **Procurement**
    - ***Theo G. Theocles - Esq., Director of Legal Affairs / Chief Procurement Officer***
    - ***Raemarie Walker - Assistant Procurement Officer***
    - ***Sara Tetrault - Payroll and Accounting Specialist***
  - **Engineering**
    - ***Darleen Buttrick - Director of Engineering and Capital Projects***
    - ***Frank Zabaneh - Senior Engineer***
    - ***Jake Weinrich - Project Engineer***
  - **Water Operations**
    - ***Jim Laurila - Director of Water Operations***
    - ***Christina Jones - Deputy Director of Water Operations***

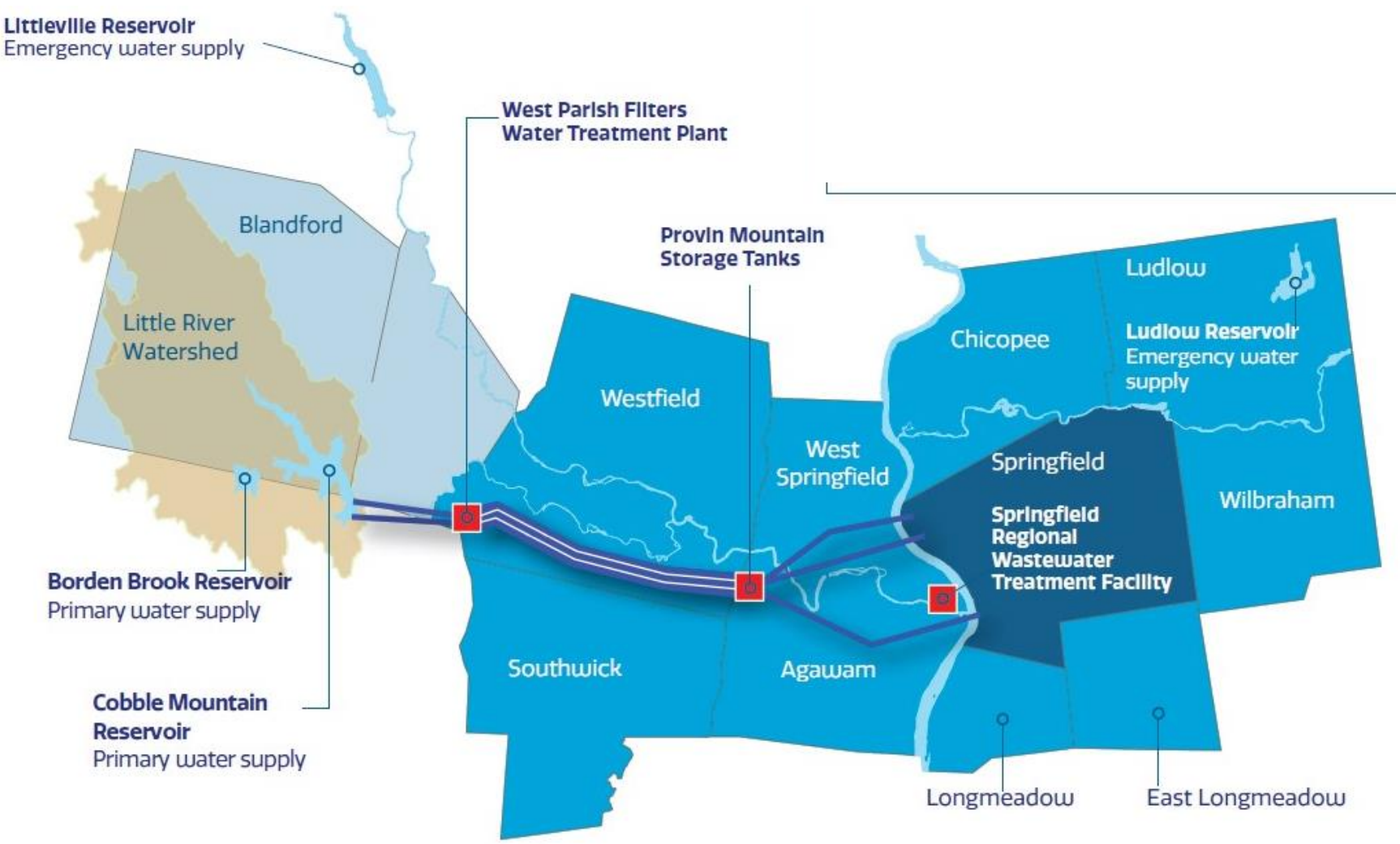
- Design Team
  - **Scott Bonett, Project Director**
  - **Marc Morin, Design Manager**
  - **Matt Hross, Project Engineer**
  - **Chris Gill, Project Engineer**

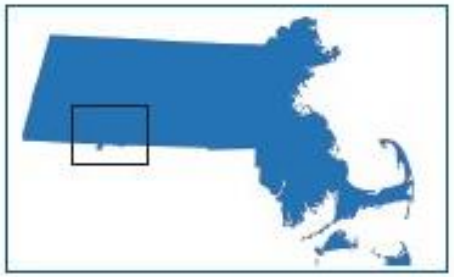
Agenda

- Project Background
- WTP Design Overview
- Schedule
- Funding
- Prequalification Overview
- Questions
- Site Walkthrough

Springfield Water and Sewer Commission

System Map – Service Area and Major System Components





Service Categories

Springfield (main customer)	Retail water and wastewater
Ludlow	Retail water and wholesale wastewater
Agawam, Longmeadow, East Longmeadow	Wholesale water and wastewater
Southwick	Wholesale water, peak emergency water
Westfield, Chicopee	Peak emergency water
West Springfield, Wilbraham	Peak emergency water, wholesale wastewater

Springfield Water and Sewer Commission (SWSC)

- Independent, regional public utility formed in 1996 under MGL Chapter 40N
- Serves 250,000 people in 10 communities
- Approximately 230 employees
- Drinking water system
  - **Cobble Mountain Reservoir water supply**
  - **West Parish Filters WTP (serves 2 retail, 4 wholesale communities)**
  - **Provin Mountain storage tanks**
  - **17 miles of transmission mains, 580 miles of distribution pipes**
  - **5 water booster stations**
- Wastewater system
  - **471 miles of wastewater collection mains (Springfield only)**
  - **27 pump stations, 7 flood control stations**
  - **150 miles of combined sewer and 23 CSO outfalls; 324 miles of separated sewer**
  - **Springfield Regional WWTF on Bondi's Island (serves 1 retail, 6 wholesale communities)**

Hazen and Sawyer

- National environmental engineering and consulting firm
- Focused on all things water
- Over 1,500 professionals across 63 offices
  - **Environmental, architectural, civil, structural, mechanical, electrical, I&C, plumbing, and HVAC professionals**
- Designed some of the largest (and smallest) WTPs in the country
  - **7,600 mgd of drinking water treatment plants**
  - **850 mgd of dissolved air flotation drinking water**

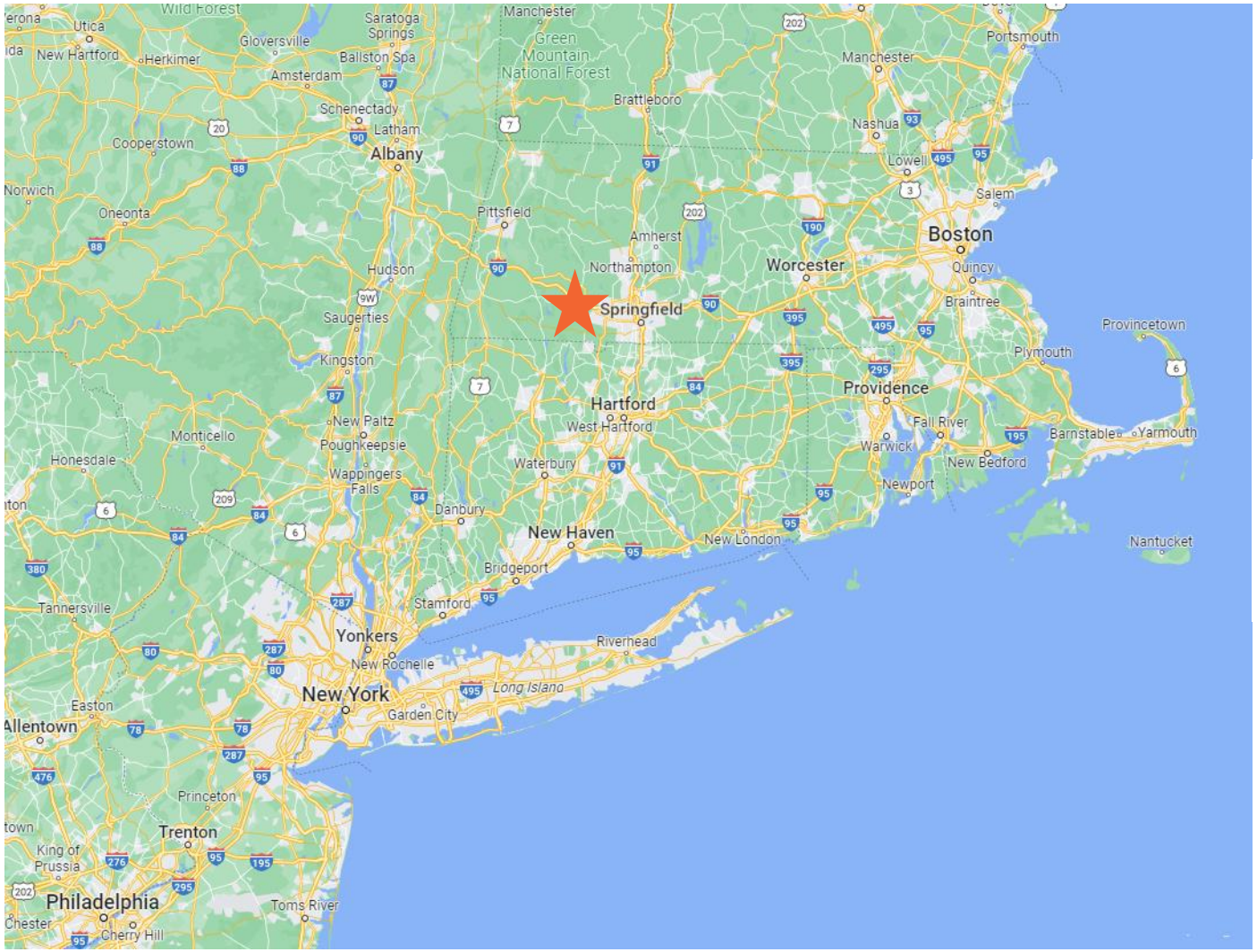
Informational Session Purpose and Objectives

- Purpose
  - **Inform general contractors and subcontractors about the West Parish Water Treatment Plant project**
- Objectives
  - **Encourage interested firms to pursue DCAMM certification**
  - **Review prequalification process**

Project Background

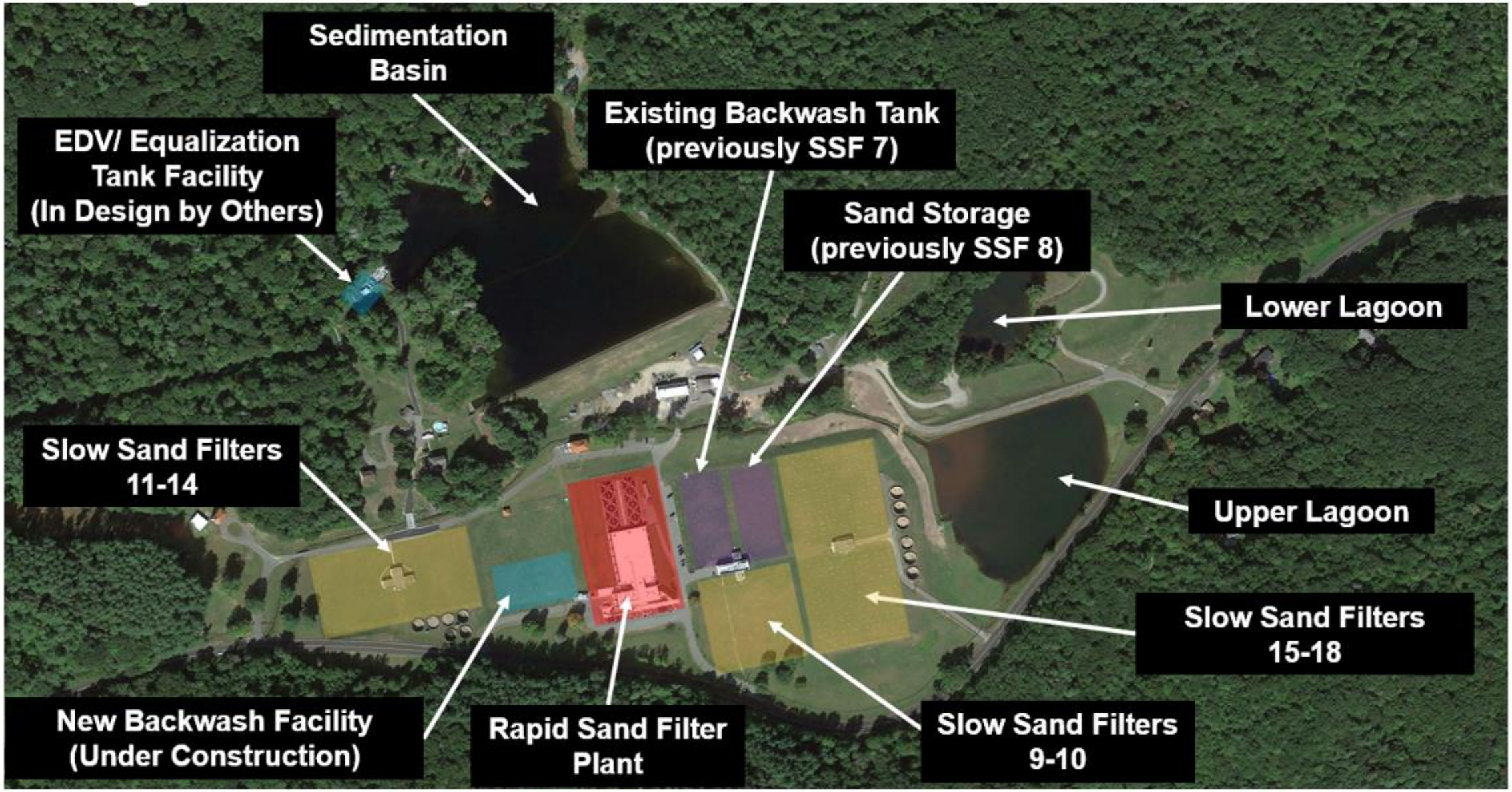
West Parish Filters – Westfield, MA

1515 Granville Road



PROJECT LOCATION
1515 GRANVILLE ROAD
WESTFIELD, MA

Site Overview



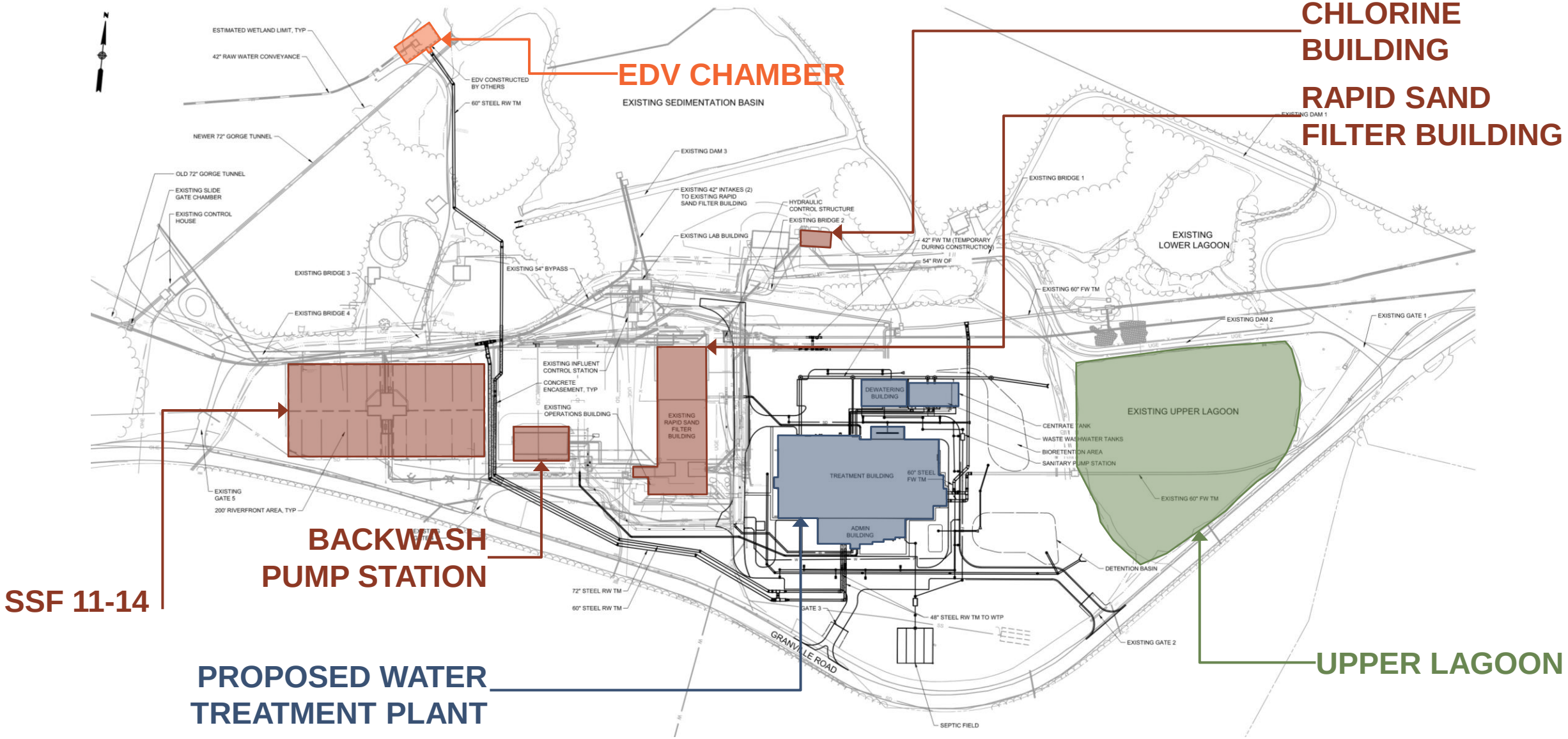
Project Drivers and Funding

- Ongoing violations of the disinfection byproduct (DBP) maximum containment levels (MCLs)
- Aging infrastructure
- Existing treatment through direct filtration and slow sand filtration
  - **Slow Sand Filters (SSF) Constructed 1909 through 1967**
    - *40-mgd capacity*
  - **Rapid Sand Filters (RSF) Constructed in 1974**
    - *60-mgd capacity*
    - *Rapid mix, flocculation, direct filtration, chemical addition*
- Build a new WTP to replace the SSFs and RSF
- WIFIA funding in place to construct a new plant by December 2027
- SRF funding to supplement WIFIA

Other Concurrent Capital Projects at West Parish Site

- Backwash Tank and Pumping Facility
  - **Currently under construction; construction planned through Fall 2023**
  - **Will serve existing Rapid Sand Plant and new plant**
- Energy Dissipating Valve (EDV) Chamber and 42-inch pipe replacement
  - **Currently in design (by others)**
  - **New Pipe from WTP connects to pipe from EDV project and controls will interface with new plant**
  - **Construction planned for January 2024 through July 2025, overlaps with WTP construction project**
- Upper Lagoon Dredging
  - **Currently in design (by others)**
  - **Required for continued operation of the existing plant**
  - **Construction planned within next 2 years**

Other Concurrent Capital Projects at West Parish Site



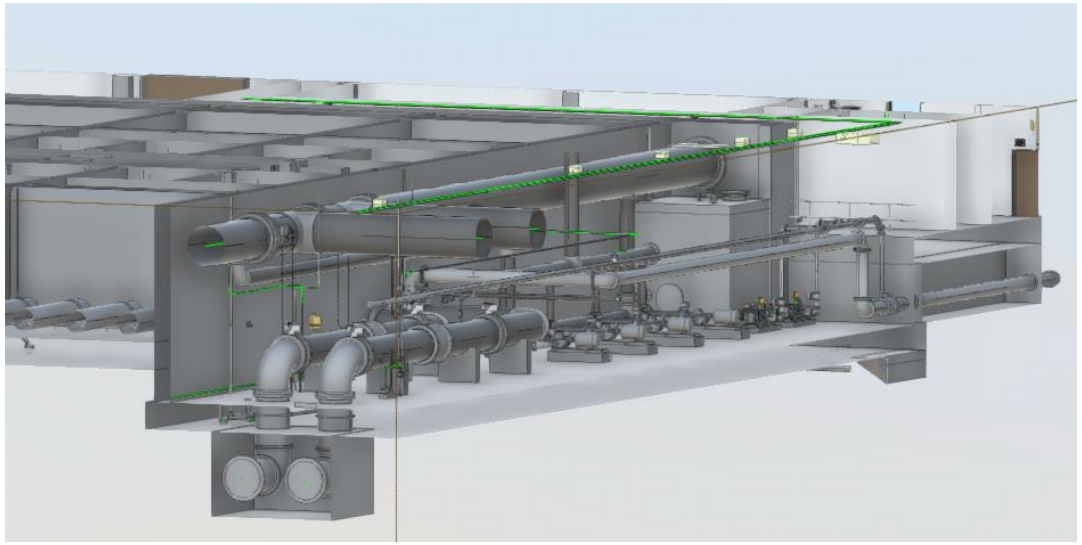
WTP Design Overview

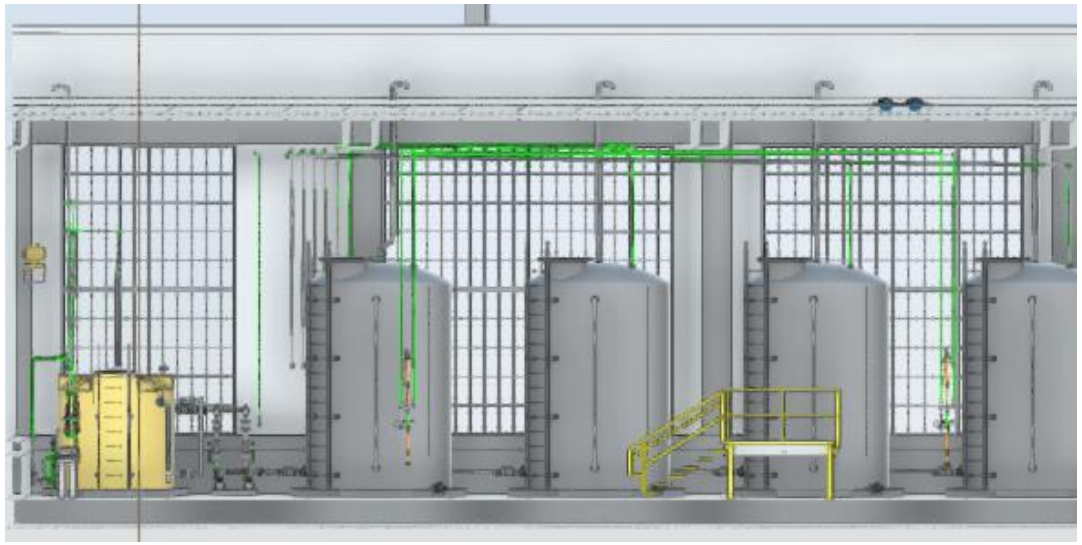
WPWTP Project – Summary of New Structures

- Water Treatment Plant (Treatment Process Area and Chemical Systems)
  - **Treatment Capacity 65 mgd**
  - **Process Area - Mixing, Flocculation, DAF, Filters, Chemical storage and metering**
  - **Process Area - 105,000 sf**
  - **Administration (offices, locker rooms and Laboratory) – 22,000 sf**
- Dewatering Building
  - **Centrifuges, residuals tanks, centrifuge feed pumps**
  - **10,000 sf building, two floors and two residuals storage tanks**
- Waste Washwater and Centrate Tanks
  - **Waste washwater and centrate recycle pumps**
  - **4,300 sf structure**

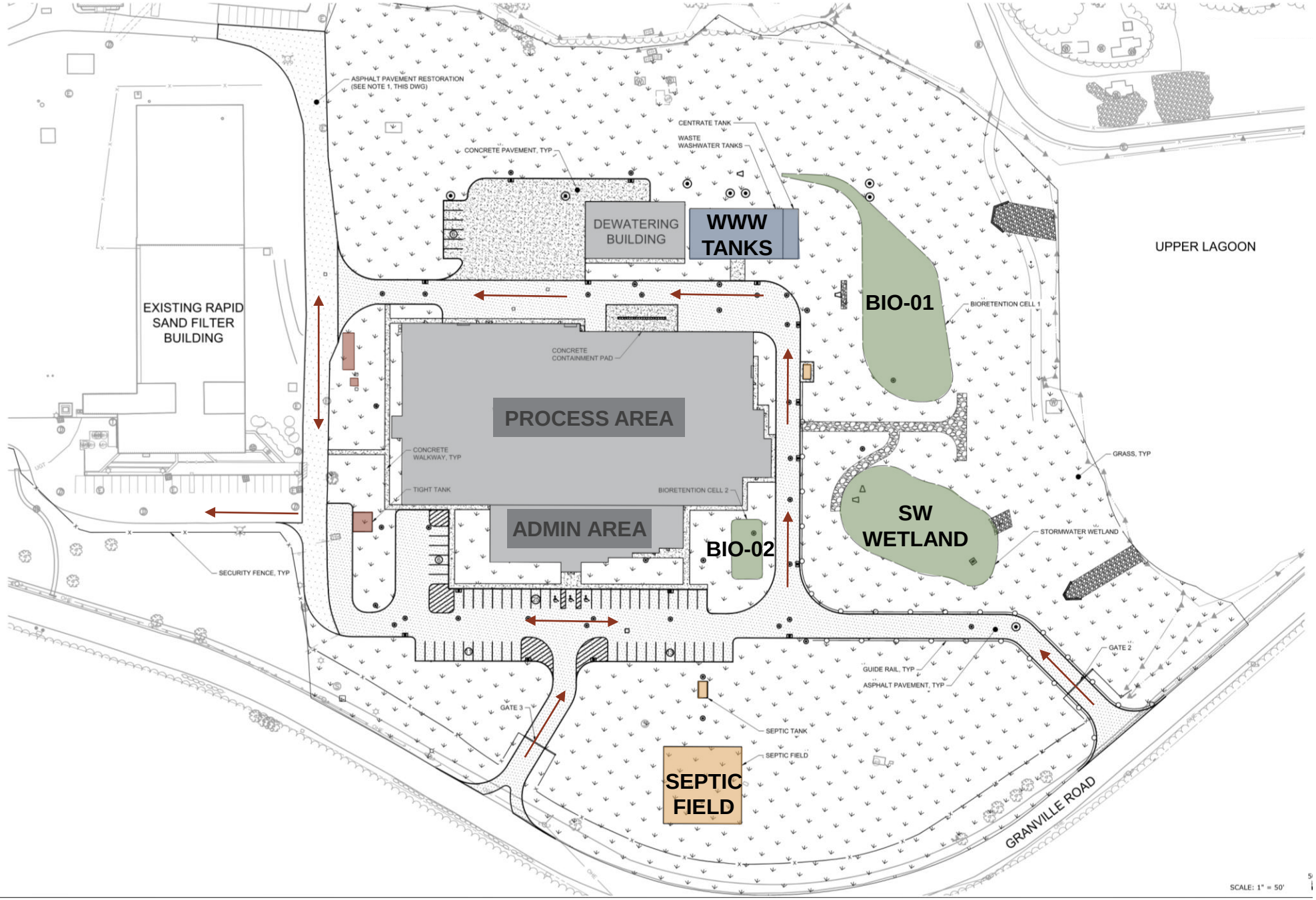
BIM Design Tools Used to Create Contract Documents

- Civil 3D
  - **Used for site work, buried piping, and utilities**
- Revit
  - **Used for structures**
  - **Separate models for disciplines**
    - *Structural, architectural, process mechanical, HVAC, electrical, plumbing, fire protection*
- Plant 3D
  - **Used to create P&IDs**
- Contractors may prefer 3D coordination during construction on a project of this scale





Site Plan

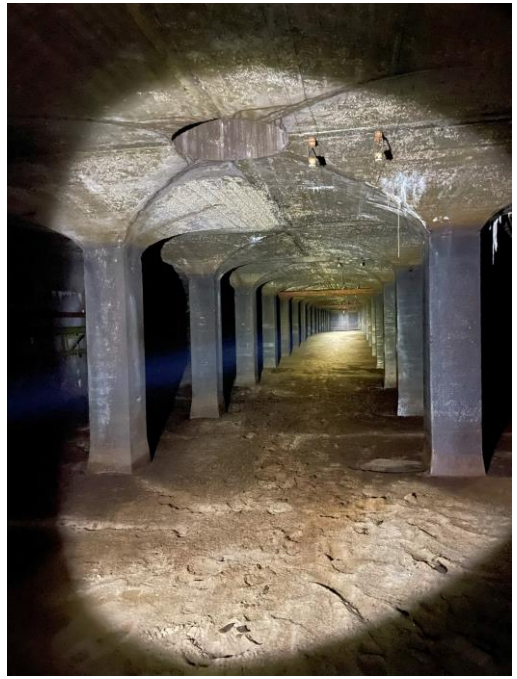

ASPHALT PAVEMENT RESTORATION (SEE NOTE 1, THIS DWG)
CONCRETE PAVEMENT, TYP
CENTRATE TANK
WASTE WASHWATER TANKS
DEWATERING BUILDING
WWW TANKS
UPPER LAGOON
EXISTING RAPID SAND FILTER BUILDING
BIO-01
BIORETENTION CELL 1
CONCRETE CONTAINMENT PAD
PROCESS AREA
CONCRETE WALKWAY, TYP
TIGHT TANK
BIORETENTION CELL 2
GRASS, TYP
ADMIN AREA
BIO-02
SW WETLAND
STORMWATER WETLAND
SECURITY FENCE, TYP
GATE 2
GUIDE RAIL, TYP
ASPHALT PAVEMENT, TYP
GATE 3
SEPTIC TANK
SEPTIC FIELD
SEPTIC FIELD
GRANVILLE ROAD
SCALE: 1" = 50'

WPWTP Treatment Process – Detailed Components

- 10 flocculation trains (9 duty, 1 standby)
- 10 DAF trains (9 duty, 1 standby)
- 14 filters (13 duty, 1 standby)
- Chemical storage and feed systems
- 2 waste washwater storage tanks
- 2 floated solids transfer tanks and 2 residuals storage tanks
- Dewatering Building with 2 centrifuges (1 duty, 1 standby)

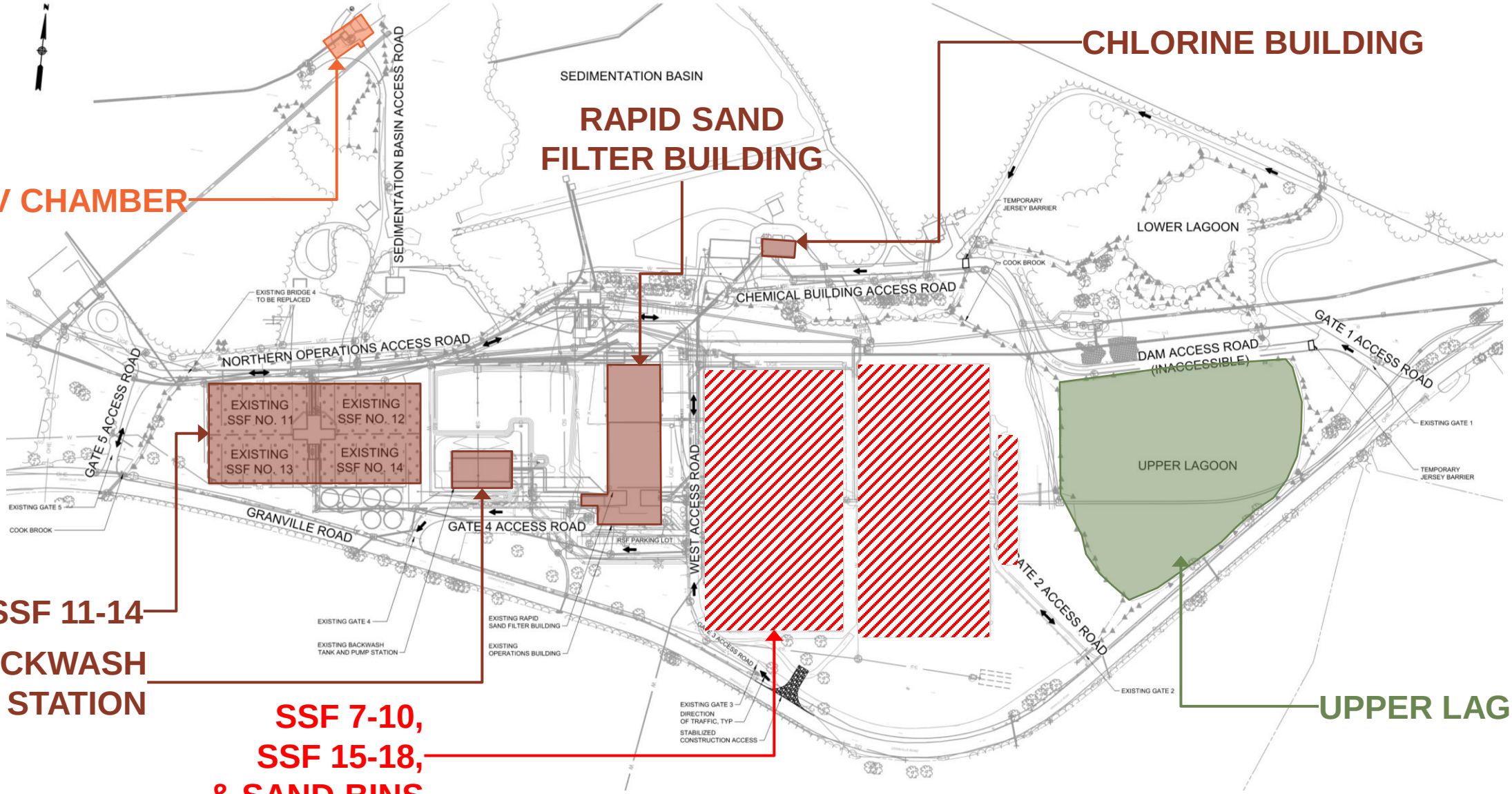
Project Components

- Demolition of existing Slow Sand Filters (SSF) 7-10 and 15-18 & SOE
- Demolition of two regulator houses
- Relocation of Site Storm Drainage
- Relocation of Filtered Water Piping
- New 60- and 72-inch Raw Water Transmission Mains
- WTP Building (process area, chemical storage, admin area, laboratory)
- Dewatering Building
- Waste Washwater Tanks
- Facility Start-up and Performance Testing
- Commissioning/Warranty
- Site Restoration



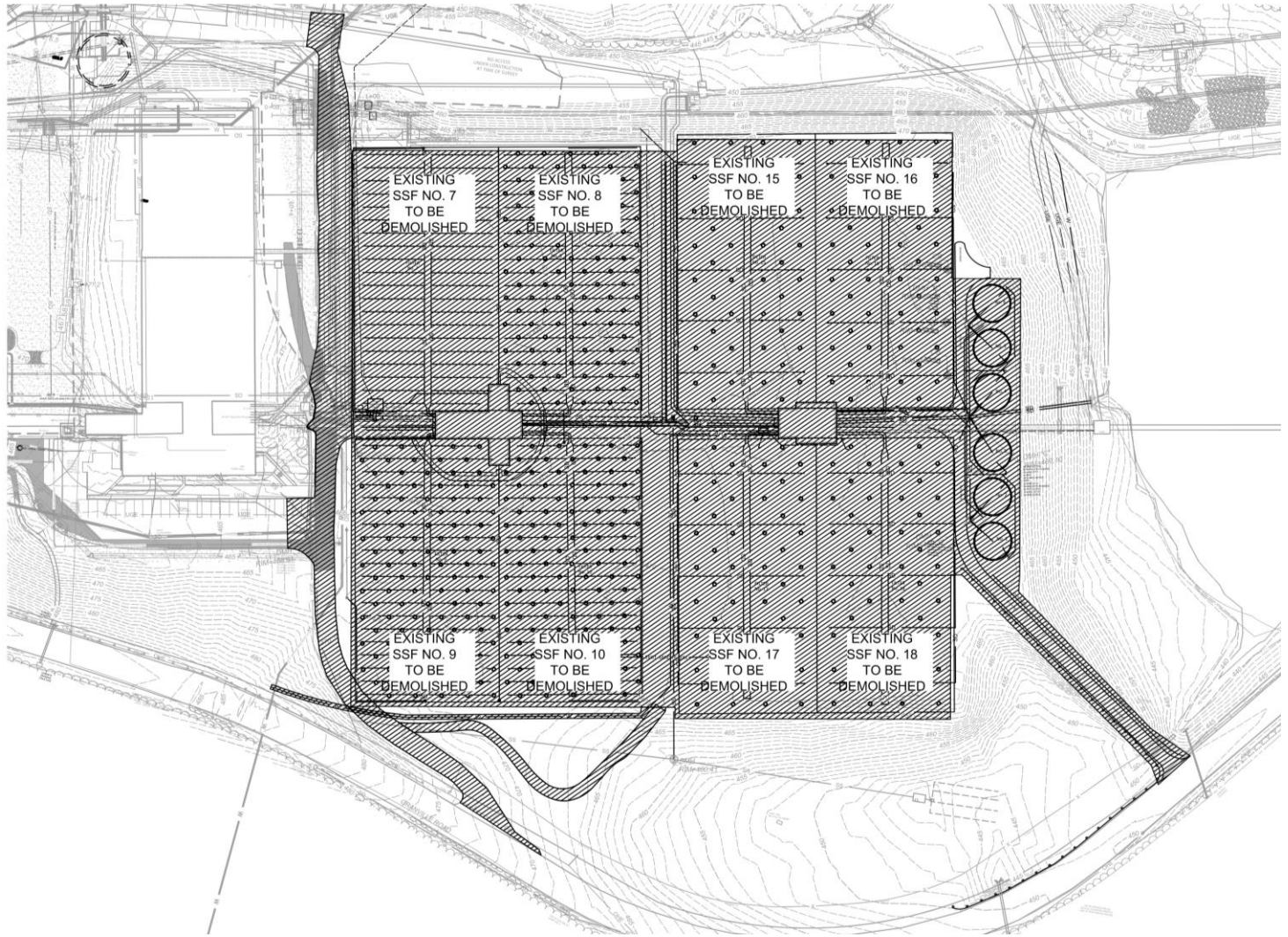
Demolition of SSFs 7-10 and 15-18

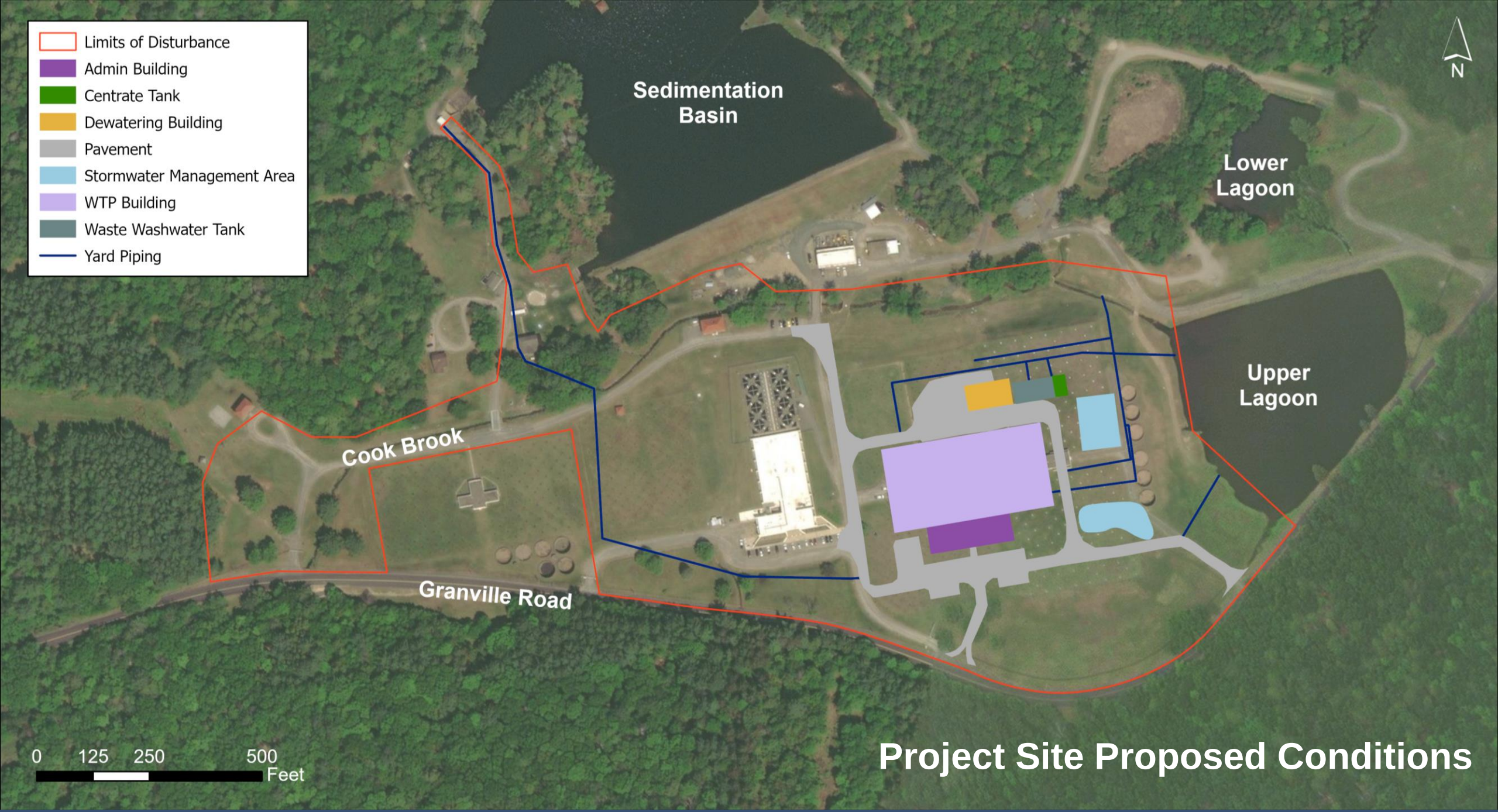
Existing finished water piping to be rerouted prior to demolition



Earthwork

- Demolition of existing SSF 7-10 and 15-18
  - **Available area for stockpiling will be limited**
  - **Preliminary excavation quantity of 150,000-200,000 cubic yards**
  - **Preliminary backfill quantity of 100,000-150,000 cubic yards**





Project Site Proposed Conditions

Electrical Overview

- New Electrical Distribution & Service
  - **Westfield Gas & Electric; 480V, 3ph service**
  - **Single Feeder w/ main-tie-main distribution**
  - **Standby emergency diesel generator w/ 10,000-gal integral tank**
  - **Portable generator connection box/manual transfer switch**
  - **Existing loads transferred to new electric service**

Instrumentation and Controls Overview

- Control Room and Server Room in Admin Area of WTP Building
- SCADA system
  - **New SCADA system for WTP process and monitoring control**
  - **Incorporate Clearwell and Backwash PS PLC**
- Remote I/O panels distributed into the field to minimize conduit and wiring requirements
- Field instruments hardwired to RIOs in the process area
- Analytical instruments including:
  - **Turbidity, pH, Streaming Current, Chlorine, etc.**
- Industrial grade instrumentation
  - **Level, Pressure, Temperature, Flow, etc.**
- Valve actuators hardwired to RIOs for remote operation and equipped with local control stations

Equipment Procurement

- Pre-selection or pre-procurement equipment being considered for the following:
  - **I&C**
    - *System integrator*
    - *Process control (SCADA) software*
  - **Electrical**
    - *Emergency generator*
  - **HVAC**
    - *Building management system*
    - *Dehumidification units*
    - *VRF system*
  - **Process Mechanical**
    - *Centrifuge*
- Select proprietary equipment and systems may be applicable
  - **Instances where fewer than 3 manufacturers available**
  - **Instance where there exist technical differences with equipment**

Project Schedule

Project Schedule

- Design
  - **Ongoing into Q1 2024**
- Prequalification
  - **Q3-Q4 2023**
- Bidding
  - **Q1-Q2 2024**
- Notice to Proceed
  - **Q2 2024**
- Construction
  - **Q2 2024-Q4 2027**

Funding

WIFIA and SRF

- WIFIA
  - **Covers both design and construction of the project**
  - **Quarterly reports to EPA (during design and construction): condition of loan agreement for disbursement of funds**
  - **Must demonstrate efforts to meet W/MBE goals**
  - **Specs will capture WIFIA requirements**
- SRF
  - **Specs will capture SRF requirements (similar to WIFIA)**
  - **SWSC seeking a BABA waiver for SRF funding**

Prequalification Overview

Request for Qualifications

- RFQ process to prequalify general contractors and subcontractors
- DCAMM certification required to submit SOQ
  - **General Contractors**
    - ***Sewage and Water Treatment Plants with a single limit greater than $260M***
  - **Joint ventures**
    - ***At least one joint venture participant must be certified in Sewage and Water Treatment Plants***
    - ***The joint venture share of the individual venturer certified must be at least 30%***
  - **Subcontractors**
    - ***Relevant filed sub-bidder categories (next slide)***
- Only firms prequalified will be permitted to submit bids and filed sub-bids

Filed Sub-Bid Categories

- Acoustical Tile
- Electrical Work
- Elevators
- Fire Protection Sprinkler Systems
- Glass and Glazing
- HVAC
- Masonry Work
- Metal Windows
- Miscellaneous and Ornamental Iron
- Painting
- Plumbing
- Resilient Floors
- Roofing and Flashing
- Tile
- Waterproofing, Dampproofing, and Caulking

Prequalification Schedule

- Informational sessions
  - ~~May 10 – in-person~~
  - **May 24 – virtual**
  - **June 9 – in-person**
- May-August 2023 – DCAMM Certification period
- September 2023 (after Labor Day) – RFQ advertisement
  - **Only firms DCAMM-certified will be permitted to submit SOQs in response to the RFQ**
- October 2023 (early Oct) – SOQs due
- December 2023 – Notification of prequalified firms
- February 2024 (early Feb) – Bid advertisement
  - **Only firms prequalified will be permitted to submit bids and filed sub-bids**

DCAMM Certification – General Contractors

- Apply online: https://www.mass.gov/how-to/how-to-become-a-prime-certified-contractor
- Create account in the DCAMM Contractor Management System portal: https://dcamm.gob2g.com/
- Online Application - what you need:
  - **Collect and complete Prime Documents Checklist**
  - **Federal EIN and contact information**
  - **Information for up to twenty (20) of your company's most recent construction projects of at least $80,000 completed within the past five (5) years**
- Application fee varies $250-$600 depending on gross revenues
- **Certification process could take between 60 and 90 days**

DCAMM Certification – Joint Ventures

- Apply online: https://www.mass.gov/how-to/prime-joint-venture
- Create account in the DCAMM Contractor Management System portal: https://dcamm.gob2g.com/
- Online Application - what you need:
  - **Collect and complete Joint Venture Documents Checklist**
  - **Joint Venture Authorized Signatory**
  - **Update Statement for each participant**
- At least one participant must be certified in Sewage and Water Treatment Plants; proportionate share of that individual participant must be at least 30%
  - **Single Project Limit will be limited to sum of individual participants' Single Project Limits or 150% of the larger participant's Single Project Limit, whichever is less**
- No application fee
- **Certification process could take at least 4 weeks**

DCAMM Certification - Subcontractors

- Apply online: https://www.mass.gov/how-to/how-to-become-a-filed-sub-bidder-certified-contractor
- Create account in the DCAMM Contractor Management System portal: https://dcamm.gob2g.com/
- Online application; what you need:
  - **Collect and complete Filed Sub-bidder Documents Checklist**
  - **Federal EIN and contact information**
  - **Information for up to ten (10) of your company's most recent construction projects of at least $20,000 completed within the past three (3) years**
- Application fee of $200
- **Certification process could take between 60 and 90 days**

Questions?

West Parish Water Treatment Plant

Site Walkthrough