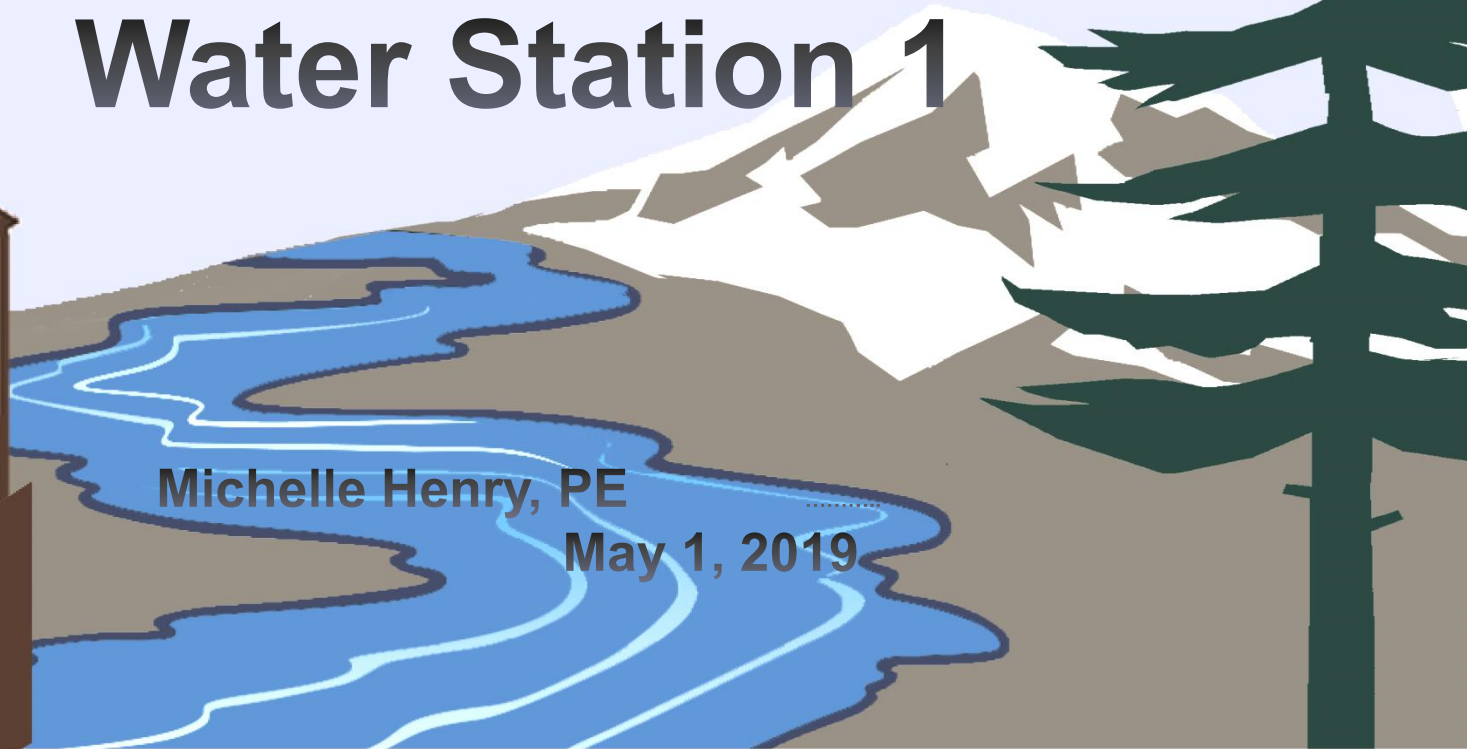
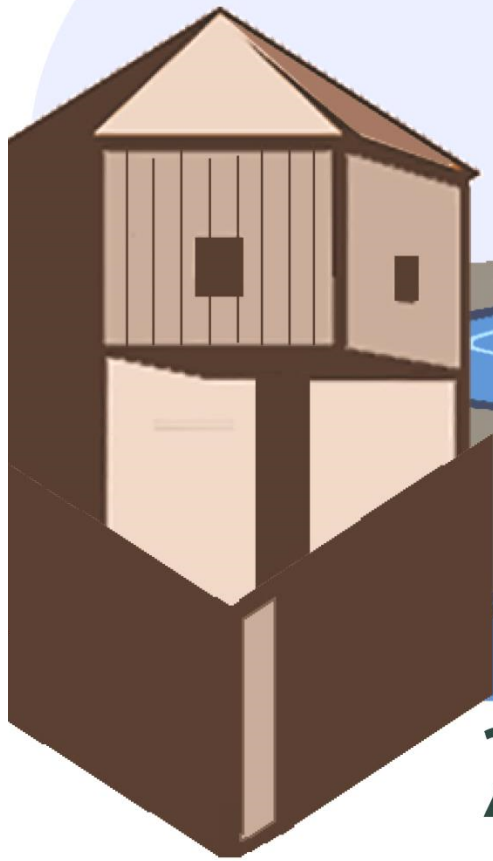


**A RIVER RUNS THROUGH IT**

# **Vancouver Water Station 1**

**Michelle Henry, PE  
May 1, 2019**

**2019 PNWS-AWWA CONFERENCE  
VANCOUVER, WASHINGTON**



# Water System Overview

- 72-square-mile service area
- 253,000 customers
- Over 1,000 miles of distribution pipe
- 40 wells at nine water stations
- 9.8 billion gallons pumped in 2018
- 3rd largest water utility in Washington State

# WATER STATION 1 - SITE & VICINITY



# Water Station 1 History

- Documented water source since 1880
- 1909 - 1 MG reservoir constructed
- 1937 - City became owner
- 1938 - 4 MG reservoir & water tower
- 1985 – park improvements
- 1992 - stripping towers built
- 1998 – Swift Skate Park constructed
- 1940-1998 – added wells/booster pump stations
- 2005 – Master plan completed



# Water Station 1 Project

Phase 1 - Electrical Upgrades, Booster Pump Station, Treatment, and Control System (2016-2019)

Phase 2 - Reservoir and Security Upgrades (2019 - 2021)

Phase 3 - Well Replacement of three wells (2022)

# Phase 1 Overview

- Electrical Upgrades
- Treatment System
- Tower Booster Pump Station
- Operations Support Facilities
- Control System Upgrades
- Site Security and Facility Access Improvements



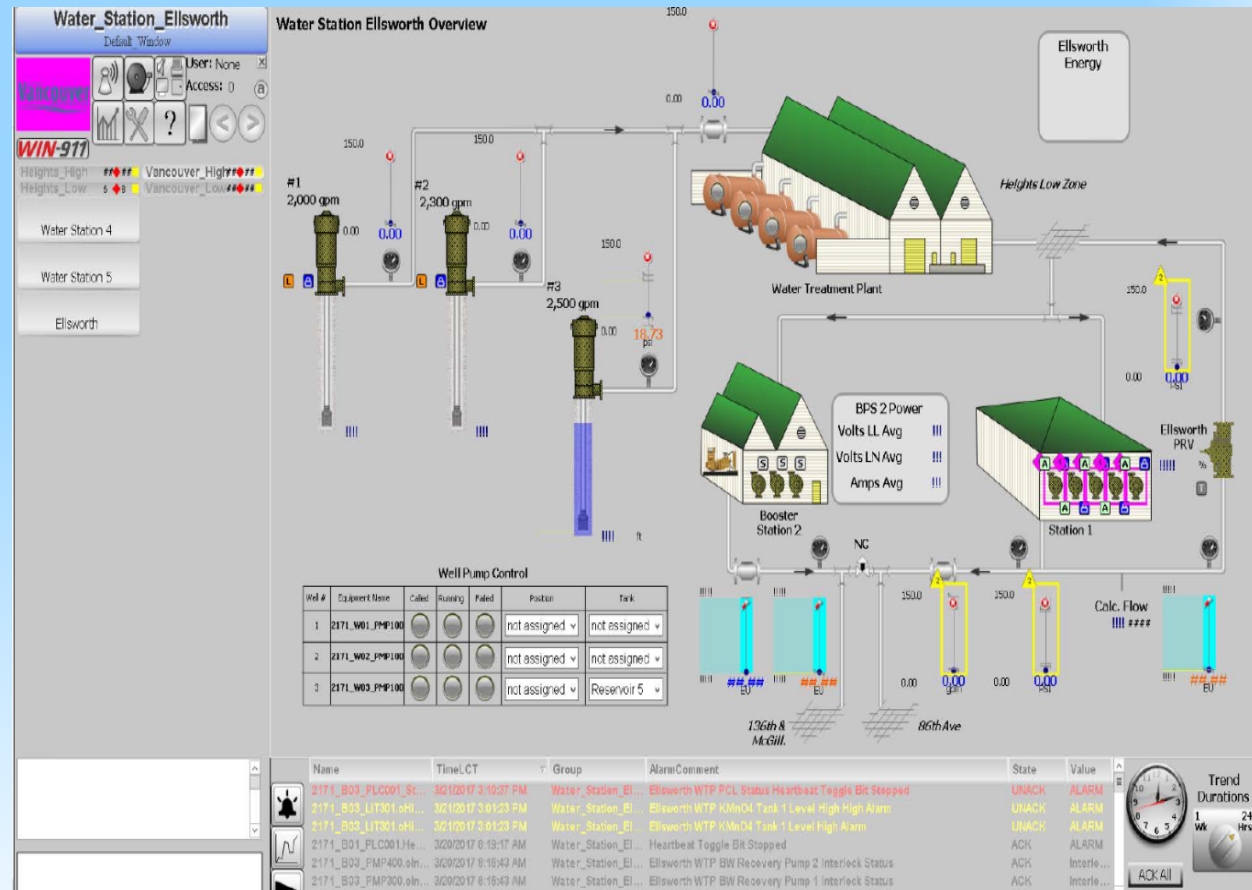
# Water Station 1 Phase 1 Project

- Tower Booster Pump Station Building
  - Electrical Room
  - SCADA System Control Room
  - Water Operations Emergency Support Center
- 2.5 MW Generator
- Treatment Building
- Lighting and Pathway Upgrades



# Upgraded Control System

- 21<sup>st</sup> century technology
- Cybersecurity
- Resilient and redundant network
- Tracking more data
- Improved monitoring and control



Water Station 1 - 8

JACOBS



# Phase 1 - Construction



# 15 New Control Panels - Existing Facilities

Upgraded controls in 12 well houses, 2 booster pump stations, and 1 treatment building.



# Tower Booster Pump Station Building



# Tower Booster Pump Station Building



# Tower Booster Pump Station Building



# Tower Booster Pump Station Building



# Tower Booster Pump Station Building



# Tower Booster Pump Station Building





# Tower Booster Pump Station Building



# Tower Booster Pump Station Building



# Tower Booster Pump Station Building



# Tower Booster Pump Station Building



# Tower Booster Pump Station Building



# Diesel Fuel Tank – 12,500 Gallons



# 2.5 MW Generator



# 2.5 MW Generator





# Sodium Hypochlorite Generation Building

## REPLACING CHLORINE GAS



# Sodium Hypochlorite Generation Building



REPLACING  
CHLORINE GAS



# Sodium Hypochlorite Generation Building



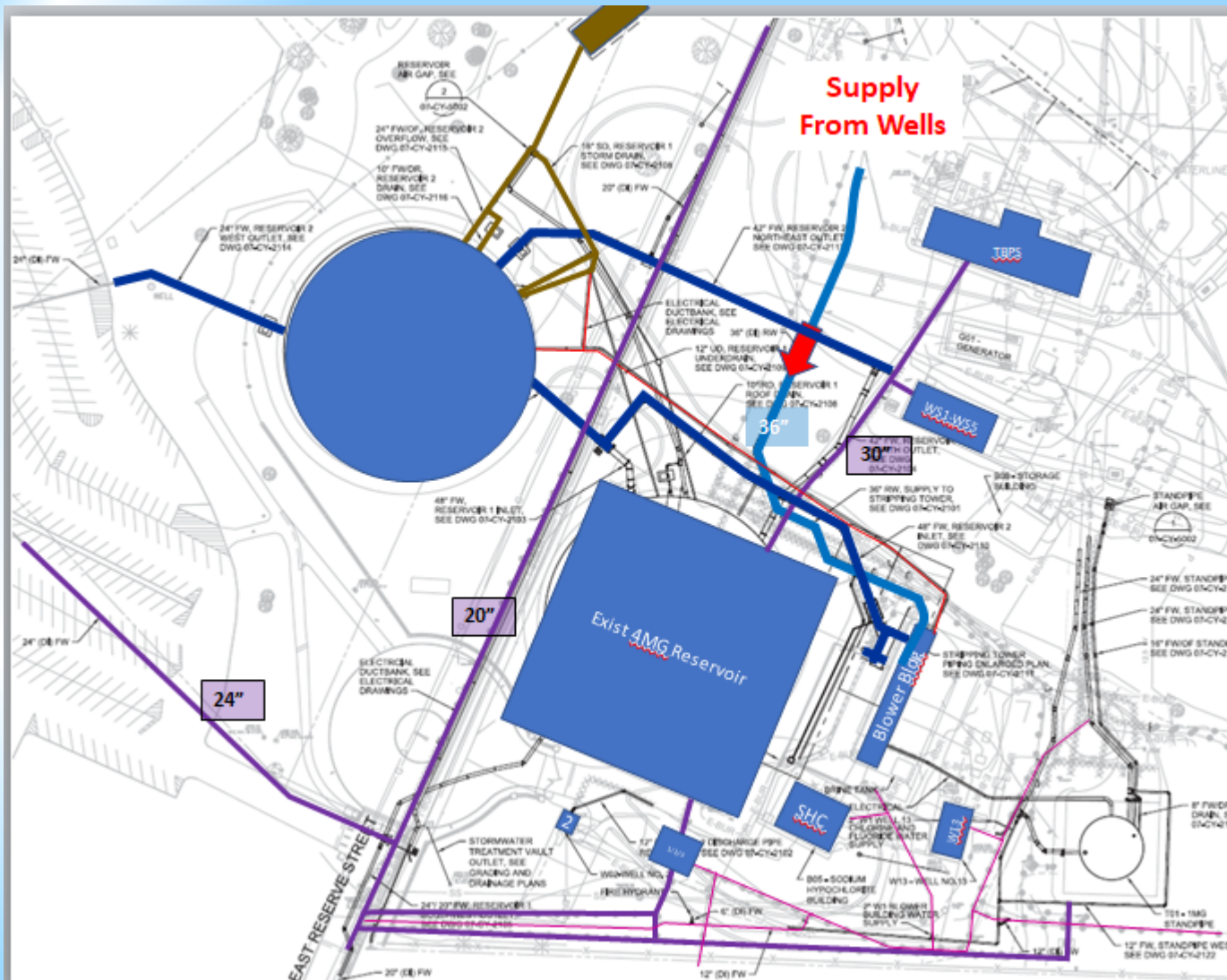
# Water Station 1 Phase 2 Project

- Twin 4.0 MG Concrete Reservoirs
- 1.0 MG Steel Standpipe
- New Reserve Street Entrance, Pedestrian, and Bike Paths.
- Site Security Upgrades



# Water Station 1 Phase 2

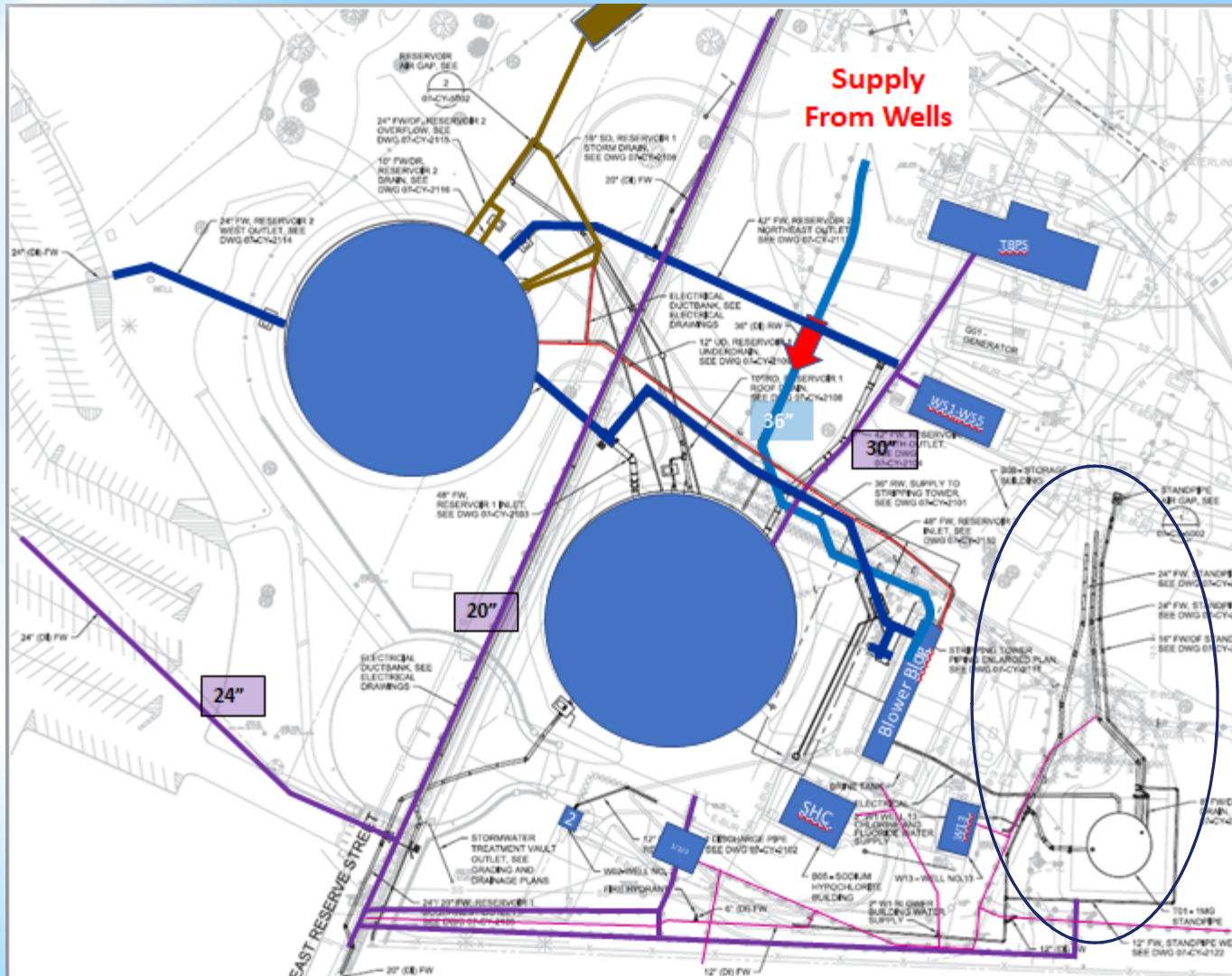
- Maintaining Operation
- 4 Pressure Zones Served
- Rerouting Pipelines
- Reservoir Drains

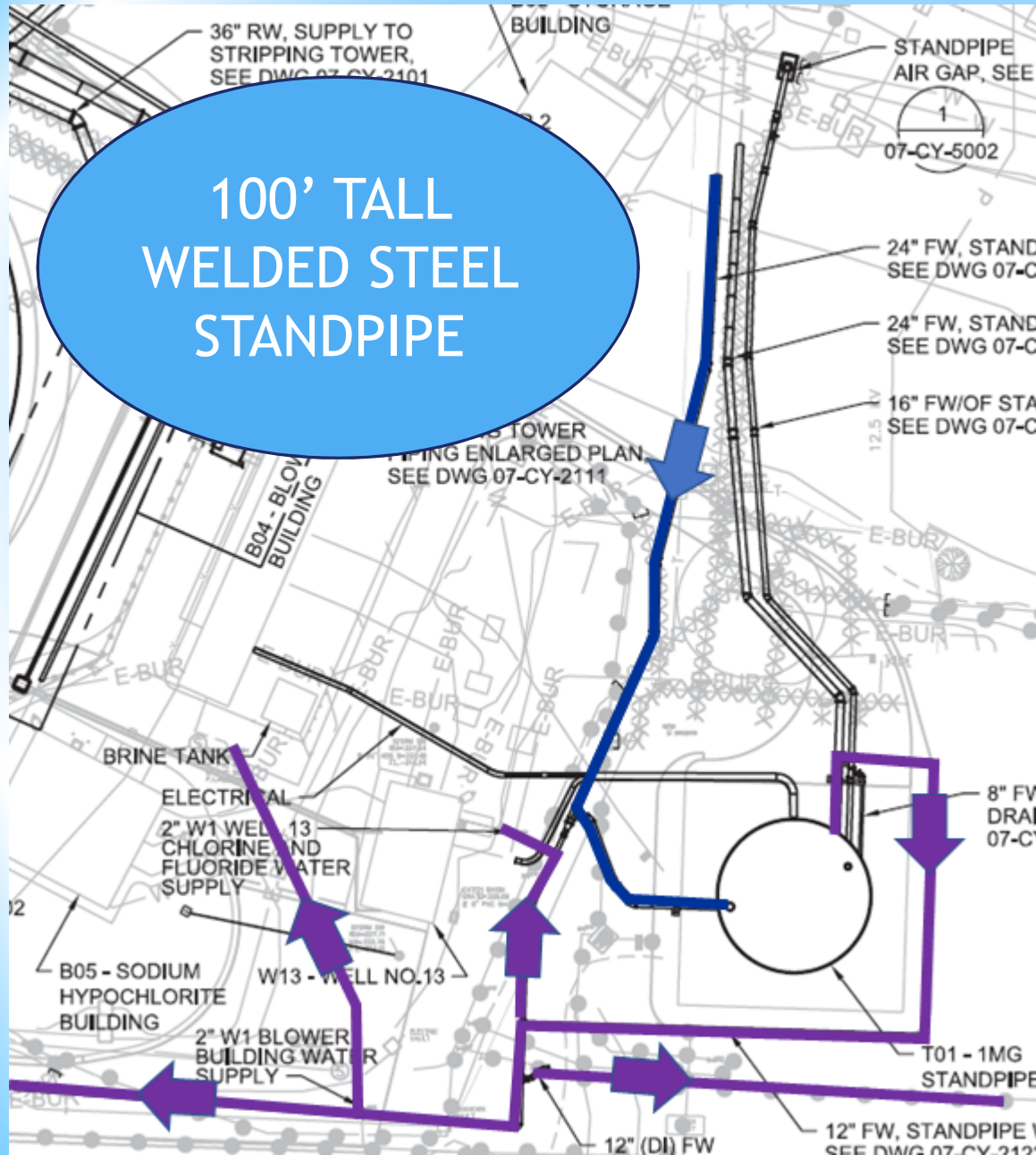


Phase 2 Overview - 29

# Water Station 1 Phase 2

- Maintaining Operation
- Rerouting Pipelines
- Reservoir Drains





## Water Station 1 Phase 2

- Maintaining Operation
- Rerouting Pipelines
- Reservoir Drains

Phase 2 Overview - 31

# Existing Site Entrance





# Simulated Graphic of Phase 2 Reservoirs and Security Upgrades



## Project Status Phase 2

- March 2019 - Bid Opening
- April 2019 - Awarded & Pre-con Meetings
- May 2019 – Contractor Mobilization
- December 2021 – Completion
- Construction Cost - \$21 million

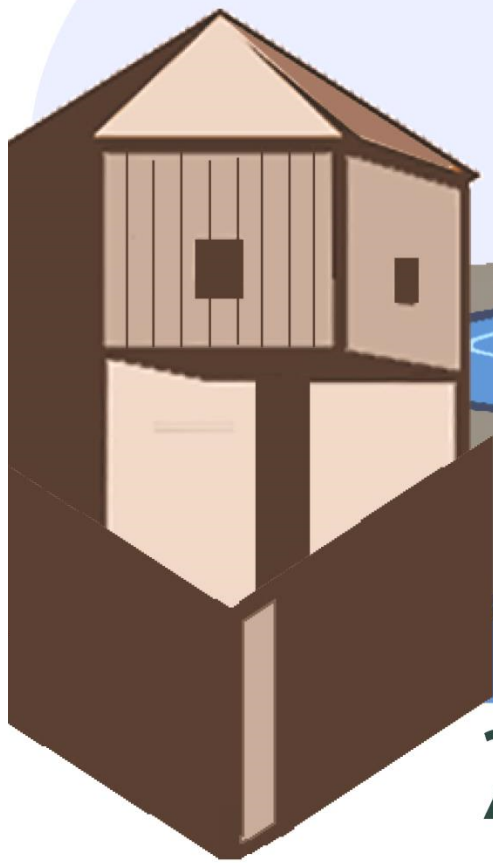
Water  
Station 1  
Future  
Phase 3

Replace  
3 Wells  
Year 2022



A RIVER RUNS THROUGH IT

QUESTIONS?



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