Village of Volente Community Meeting

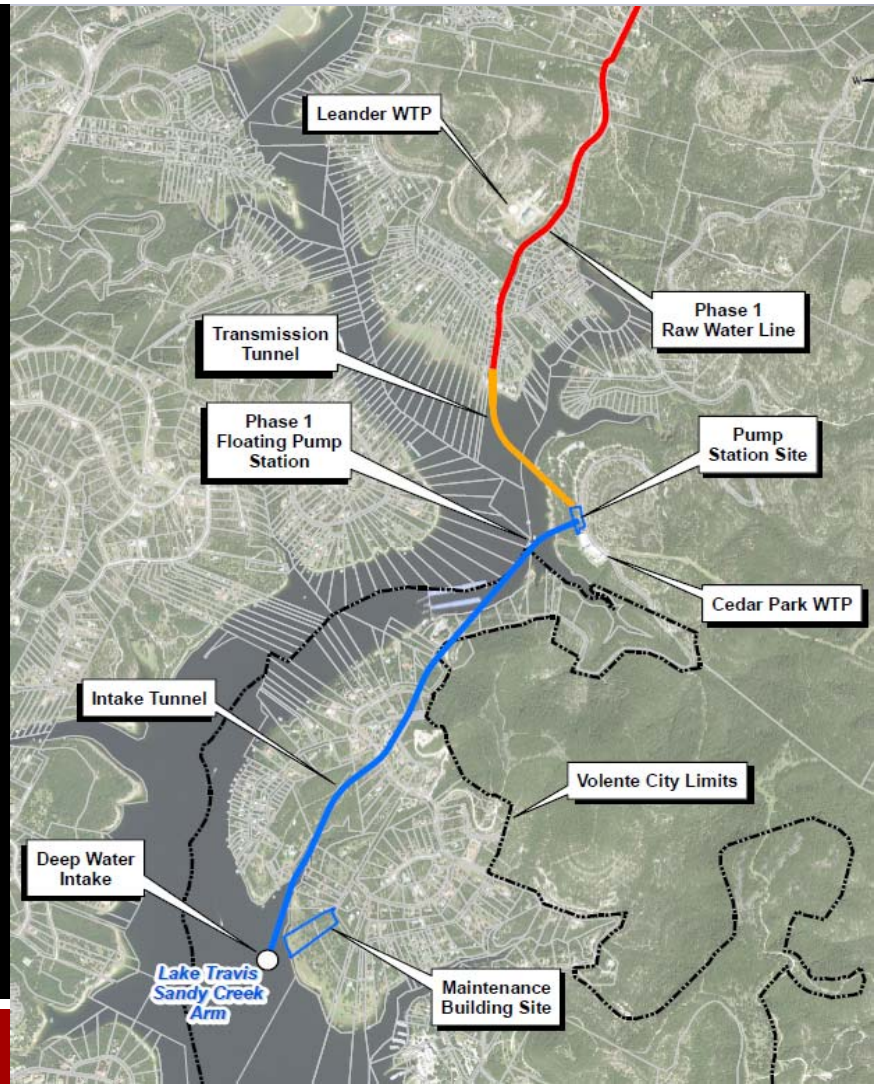
Volente Fire Hall
July 27, 2019

BRUSHY CREEK
REGIONAL UTILITY AUTHORITY
A Partnership of Cedar Park, Leander, and Round Rock

Phase 2 Deep Water Intake

Project Update

Walker Partners
engineers ★ surveyors

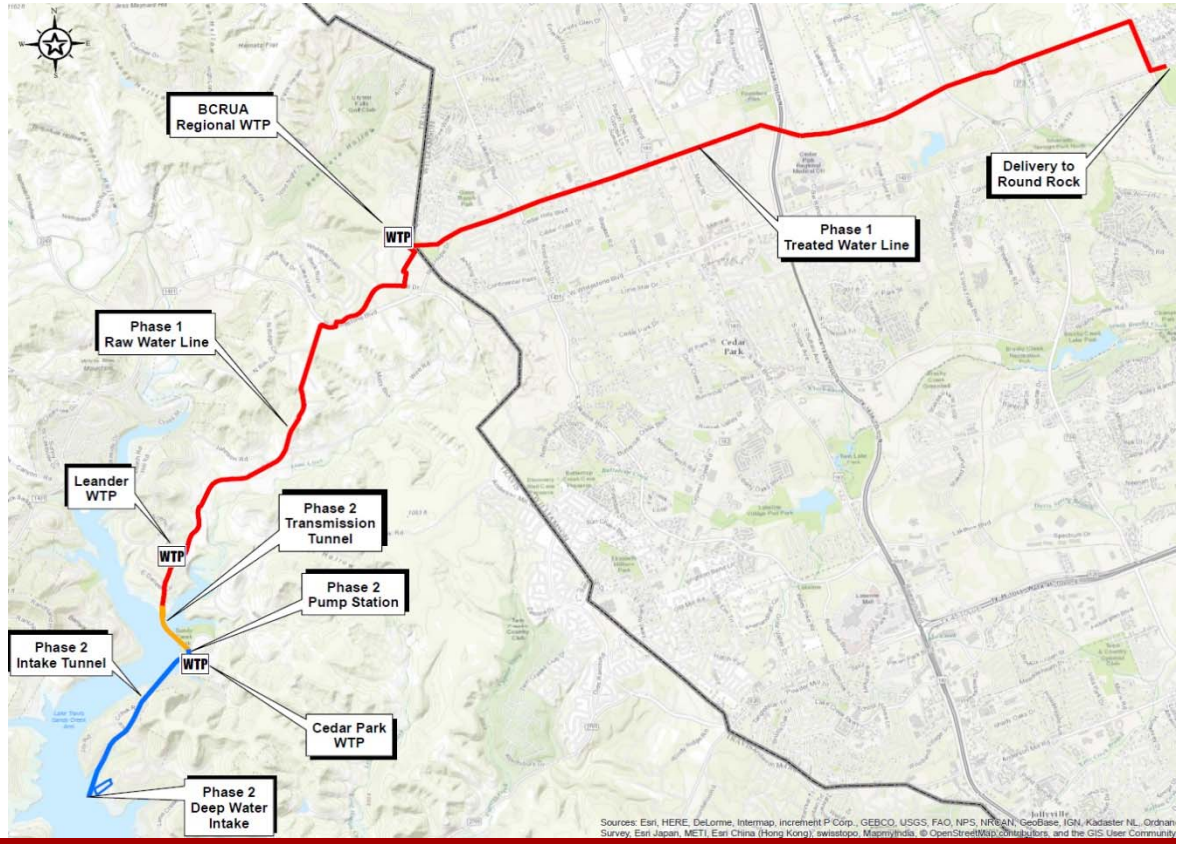


Meeting Objectives and Overview

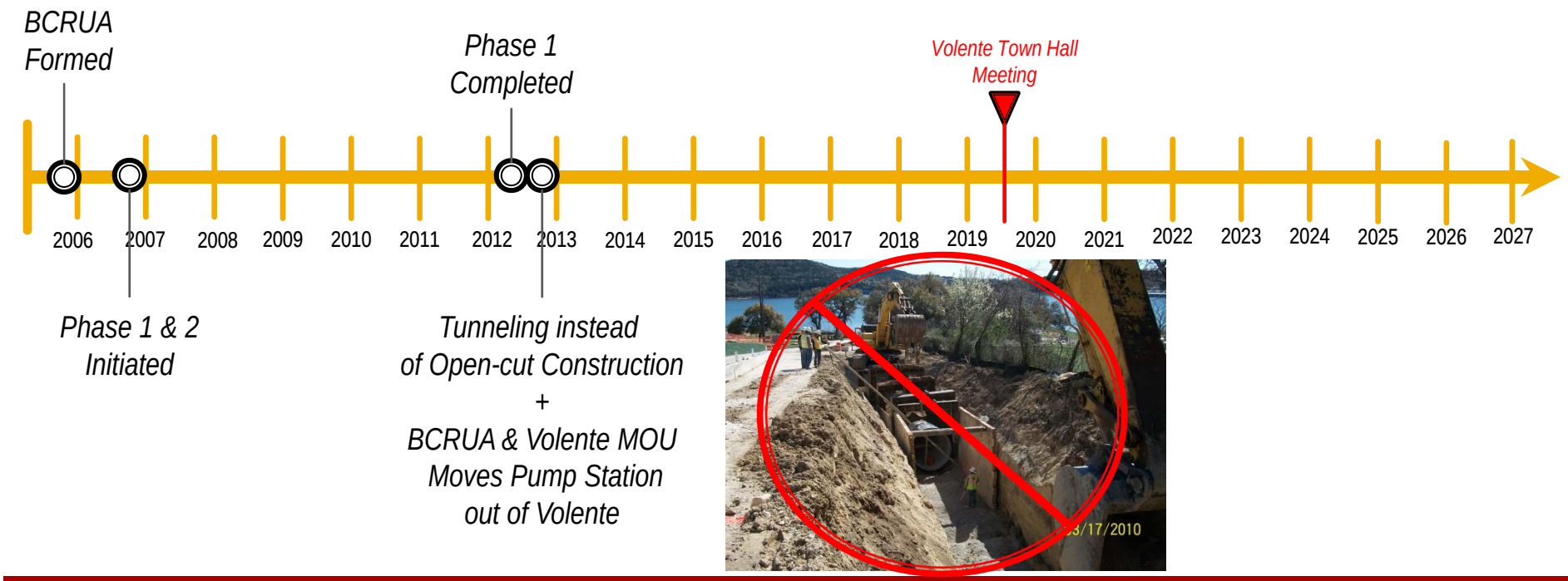
- Describe the BCRUA Regional Water System
- Review the project history and milestones
- Review the Phase 2 project layout
- Discuss upcoming activities

BCRUA Regional Water System

- Phase 1
  - Temporary floating intake
  - Water treatment plant (WTP)
  - Raw/treated pipelines
- Phase 2
  - Deep water intake
  - Pump station
  - Intake/transmission tunnels
- Phase 3 – pump station and WTP expansions

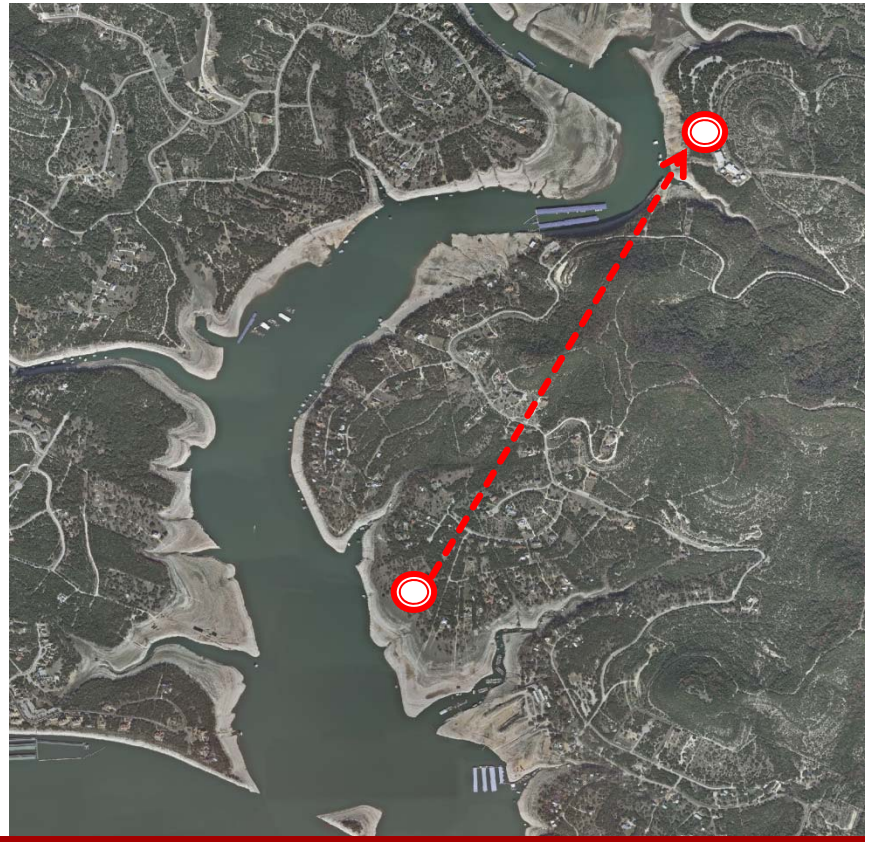


BCRUA History and Milestones



Volente and BCRUA Memorandum of Understanding

- BCRUA moves the pump station out of Volente at increased costs
- Volente withdraws objections to the intake and maintenance building on Bernard Street
- BCRUA and Volente deal in good faith with respect to Volente regulations



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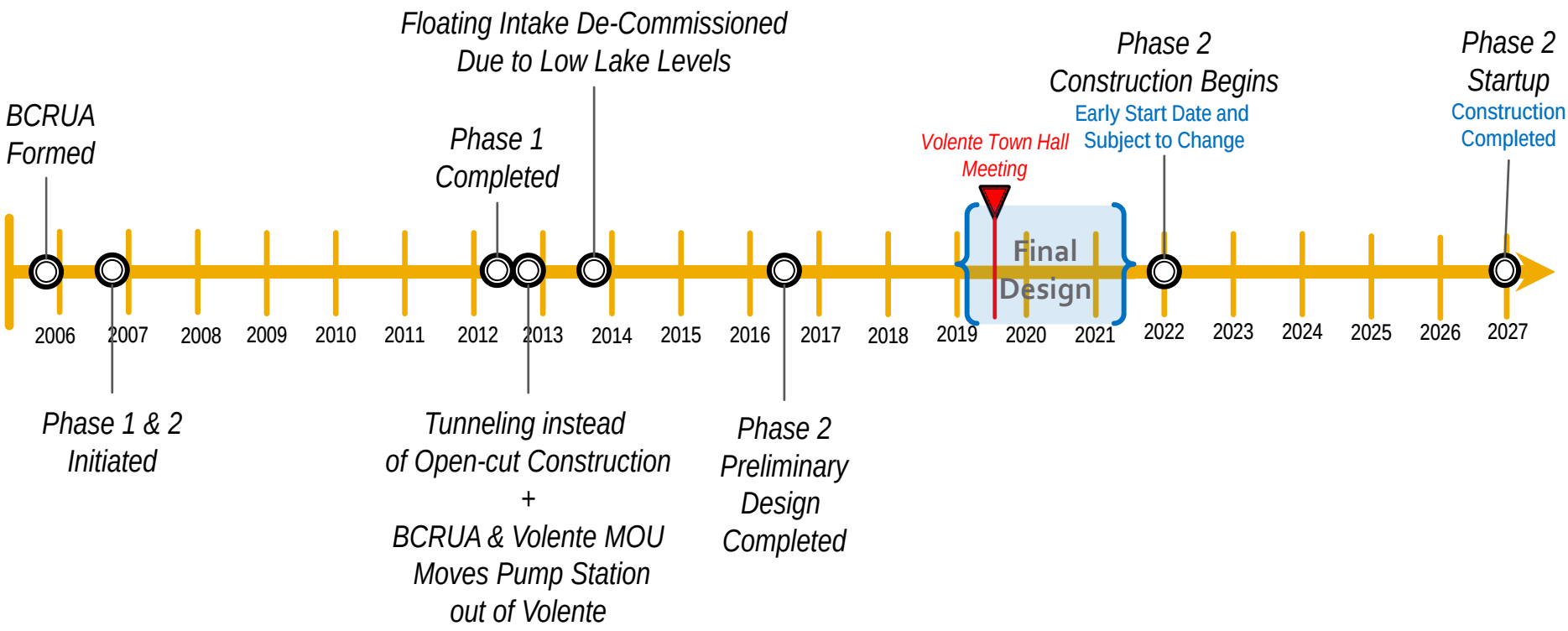
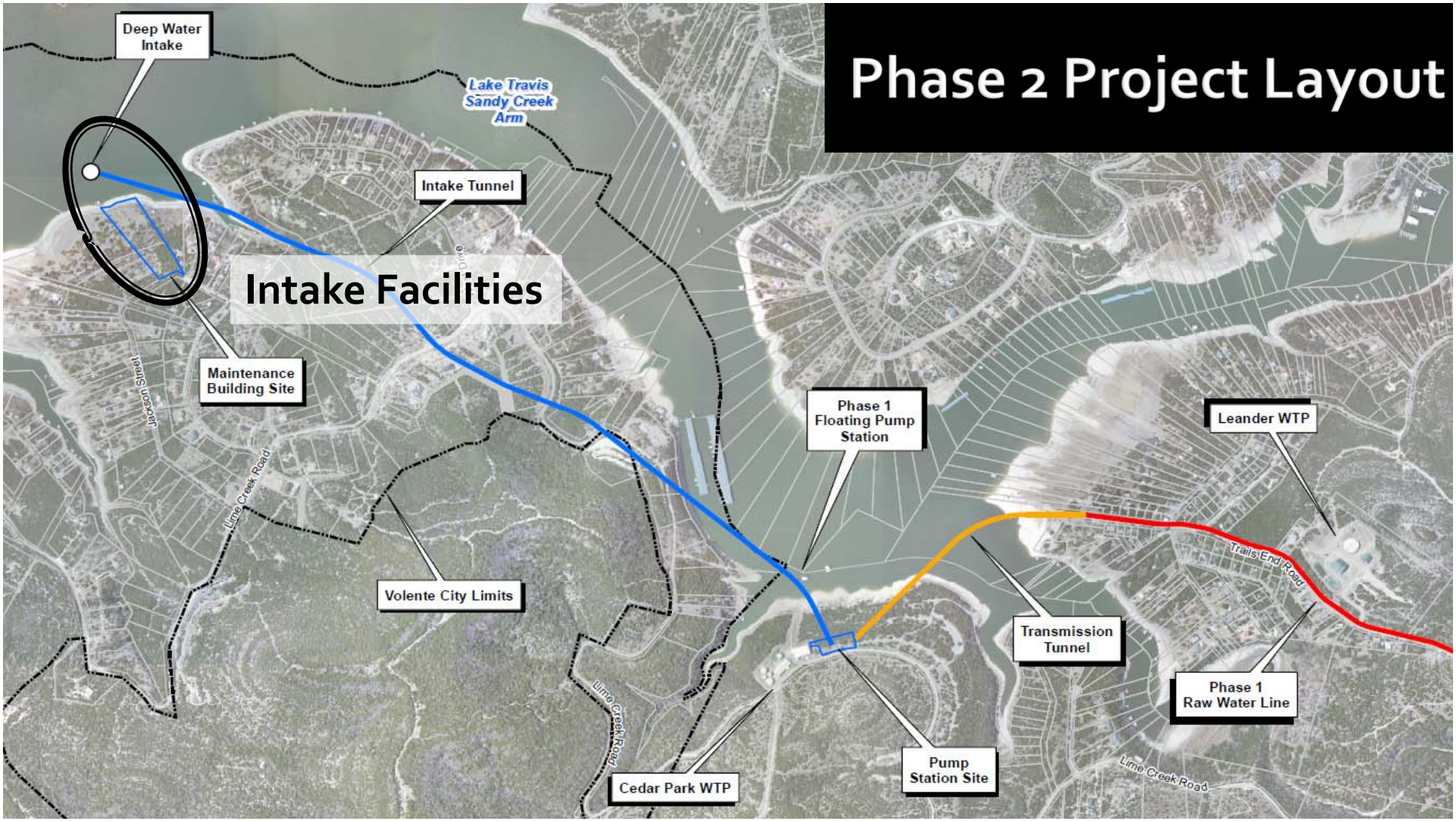


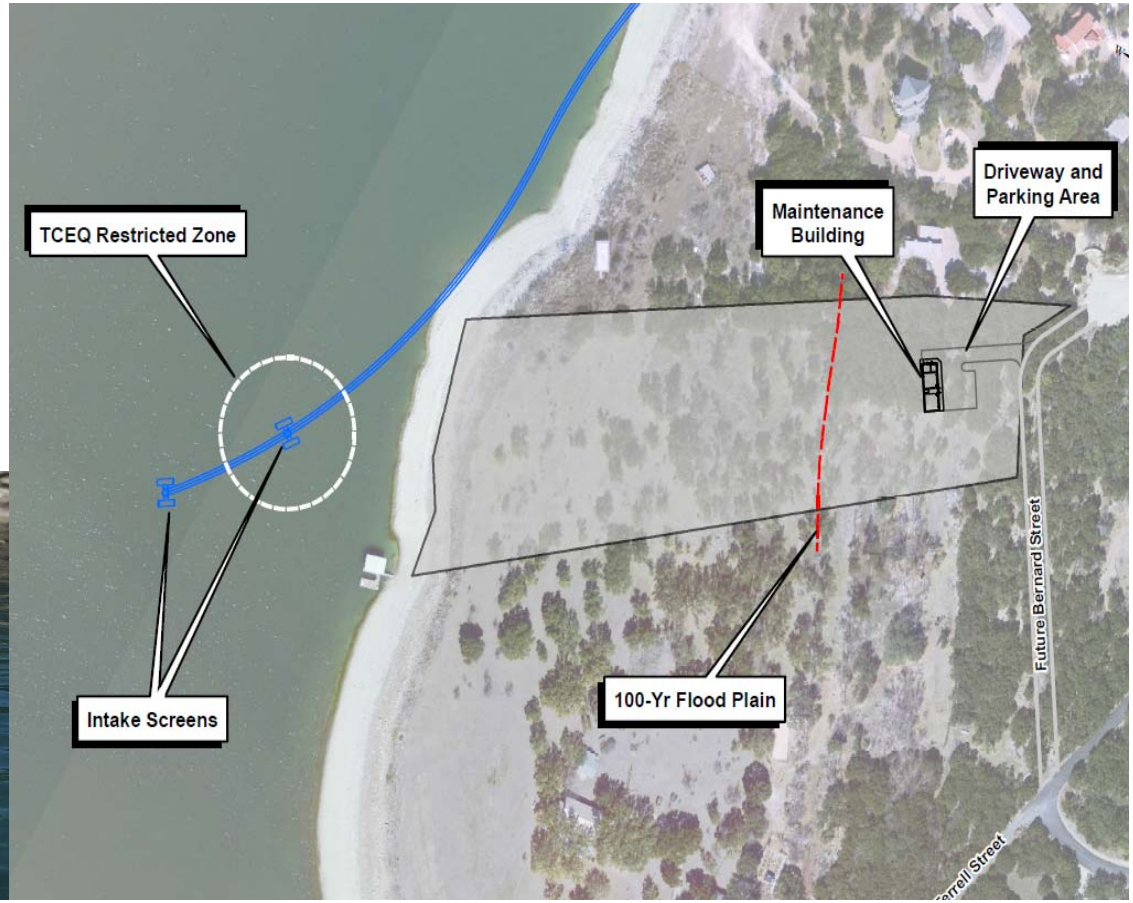
Phase 2 Project Layout



Intake Facilities

- Top screen visible at lake level 660 ft-msl
- State required water quality zone
- No noise or impingement hazards
- Comply with LCRA turbidity control & fill/dredge requirements

Intake Screen Rendering

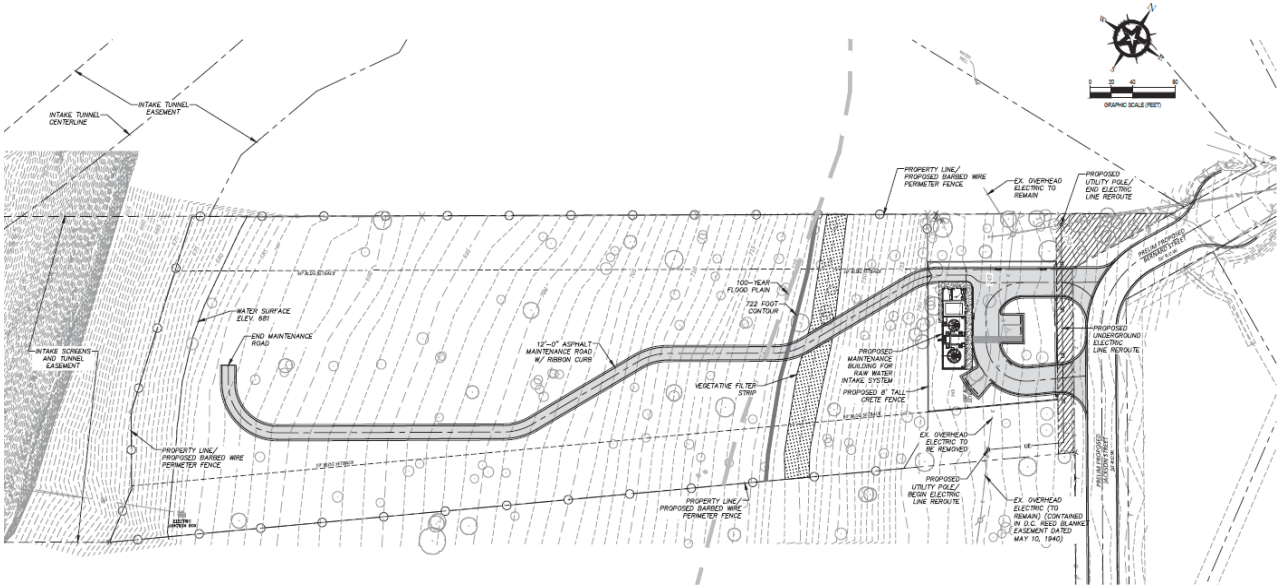


Intake Facilities – Maintenance Building

- Onshore maintenance building (~1500 SF) to control invasive mussels
- Develop existing ROW for road access
- Support intake construction

Maintenance Building Rendering

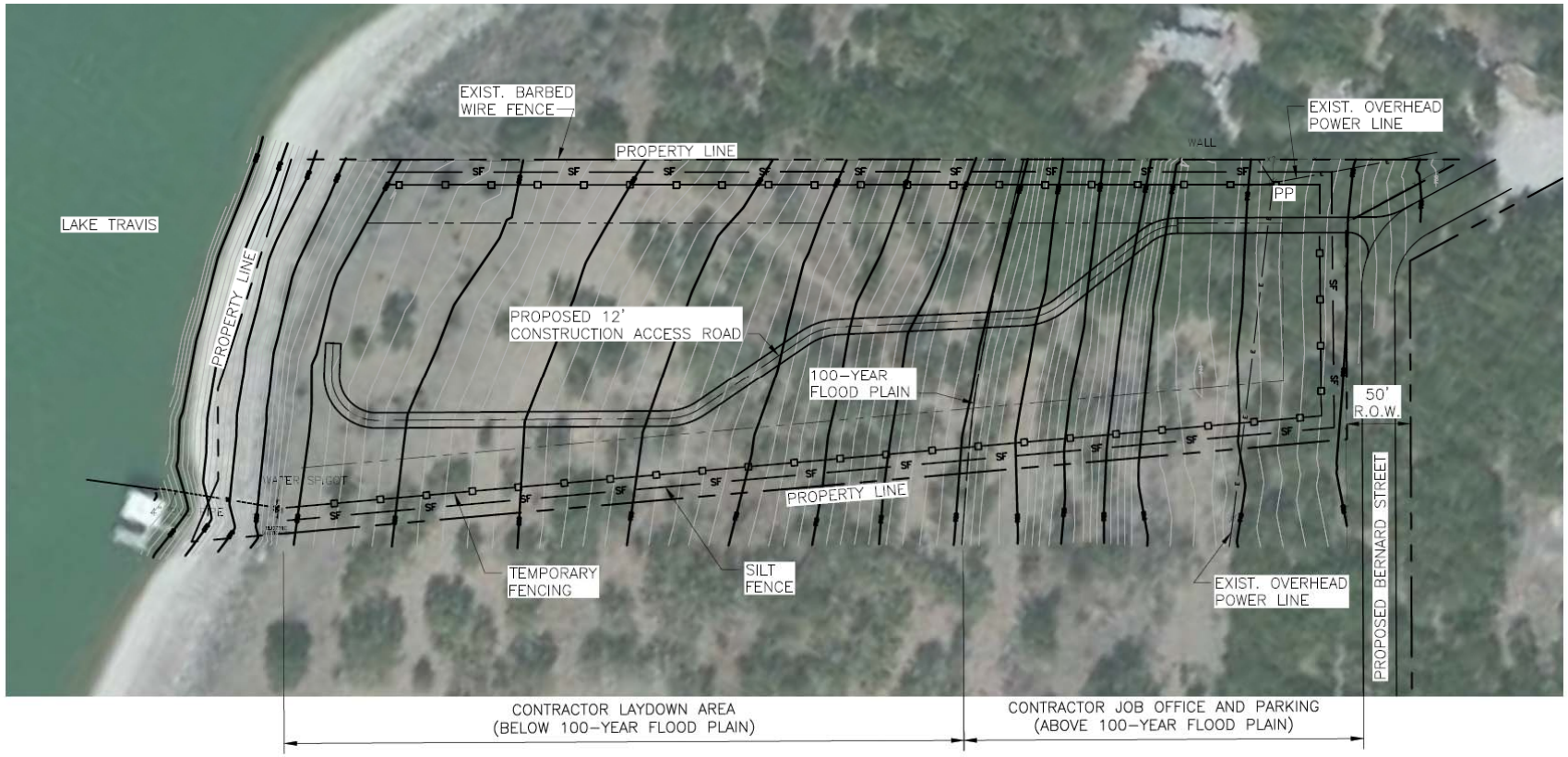
Intake Facilities – Maintenance Building



Permitting

- Short form final plat (submitted)
- Rezoning application (submitted)
- Conditional use permit (submitted)
- Site plan approval
- Driveway entrance permit
- Fire access route approval
- Landscape plan
- NPS pollution control
- Site development permit
- Building permit
- Tree removal permit
- Certificate of occupancy and compliance
- Noise control permit
- Temporary construction impacts approval
- ROW construction permit
- Variance requests (as needed)
- Final closeout approvals
- Street plan approval

Intake Facilities – Construction Staging



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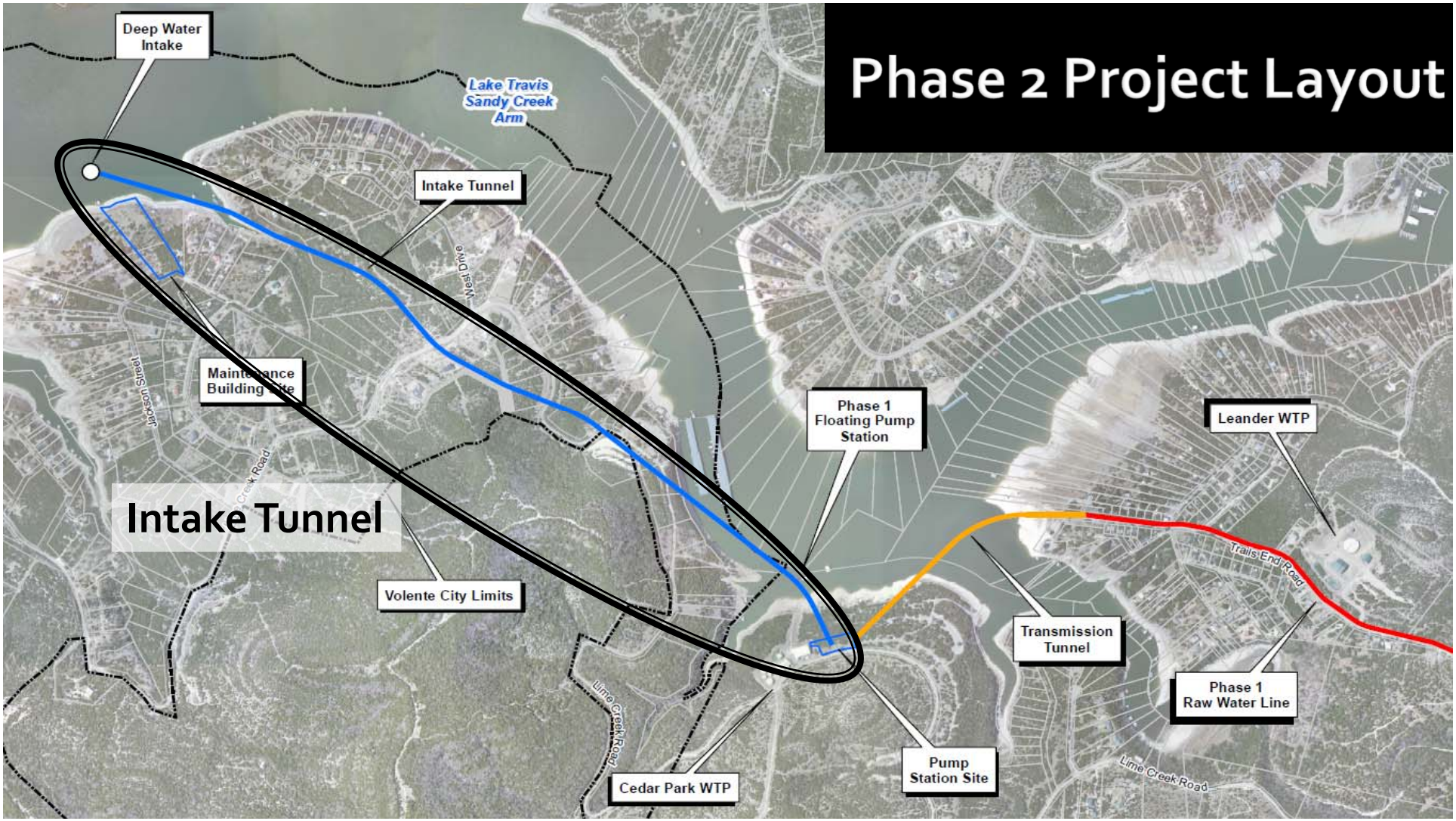


Intake Tunnel

- 96-120" diameter tunnel 100 to 350 below ground
- Alignment selected to minimize easement and well impacts and avoid preserve
- Construction by tunnel boring machine (no noise or vibration)
- Spoils removed from the pump station site outside of Volente
- Two temporary drop shafts to facilitate concrete placement and reduce schedule

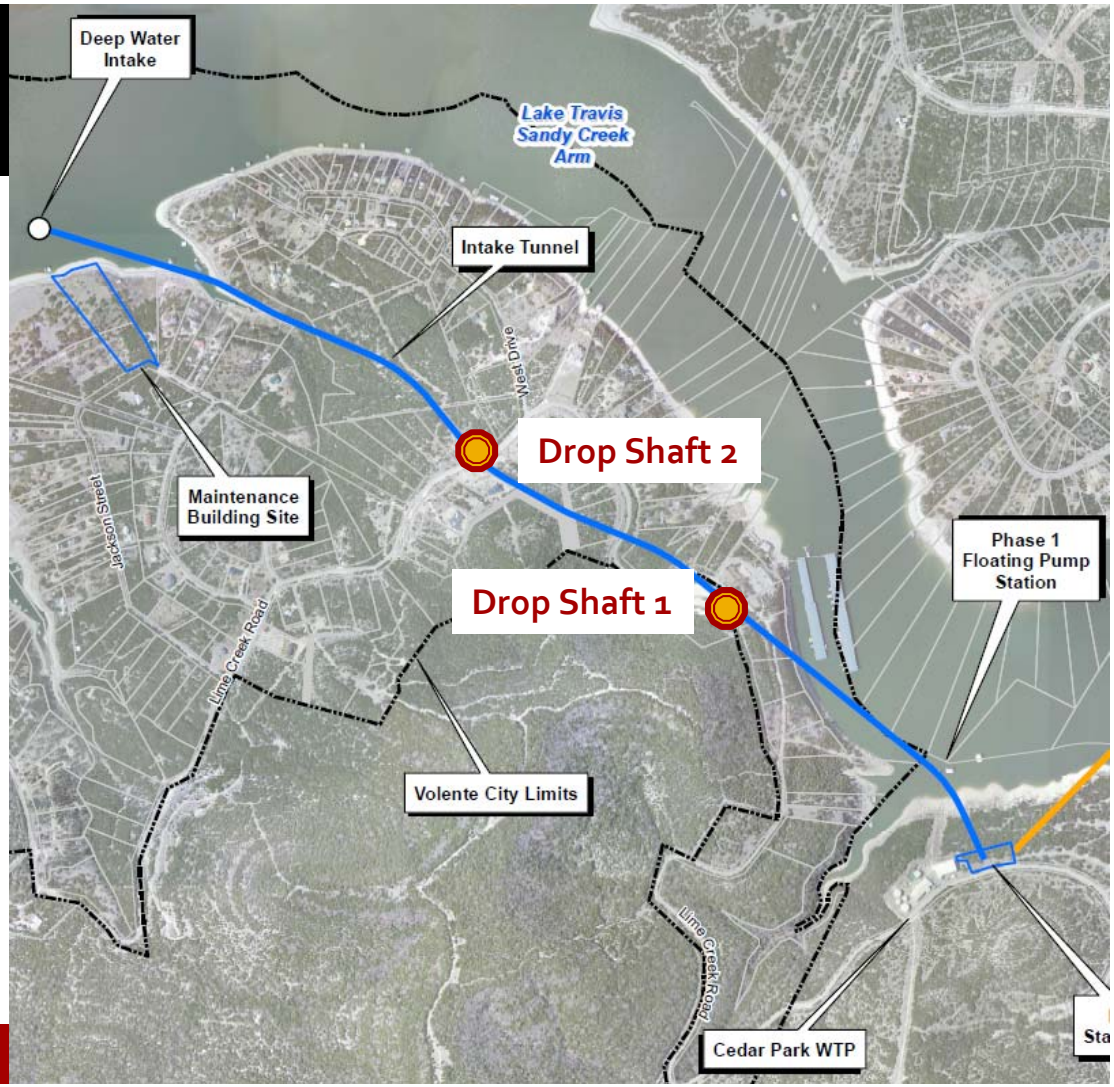
WTP4 Jollyville Tunnel TBM

Tunneling to City of Austin Lake Tap

Intake Tunnel

Drop Shafts

- Temporary construction easements at Sandy Creek Marina and adjacent to Lime Creek Road
- 12-inch diameter shaft
- 12 concrete deliveries per day for 1.5 – 2.5 months
- Seal shaft after completion and restore site
- Total 4-6 months activity from start to finish



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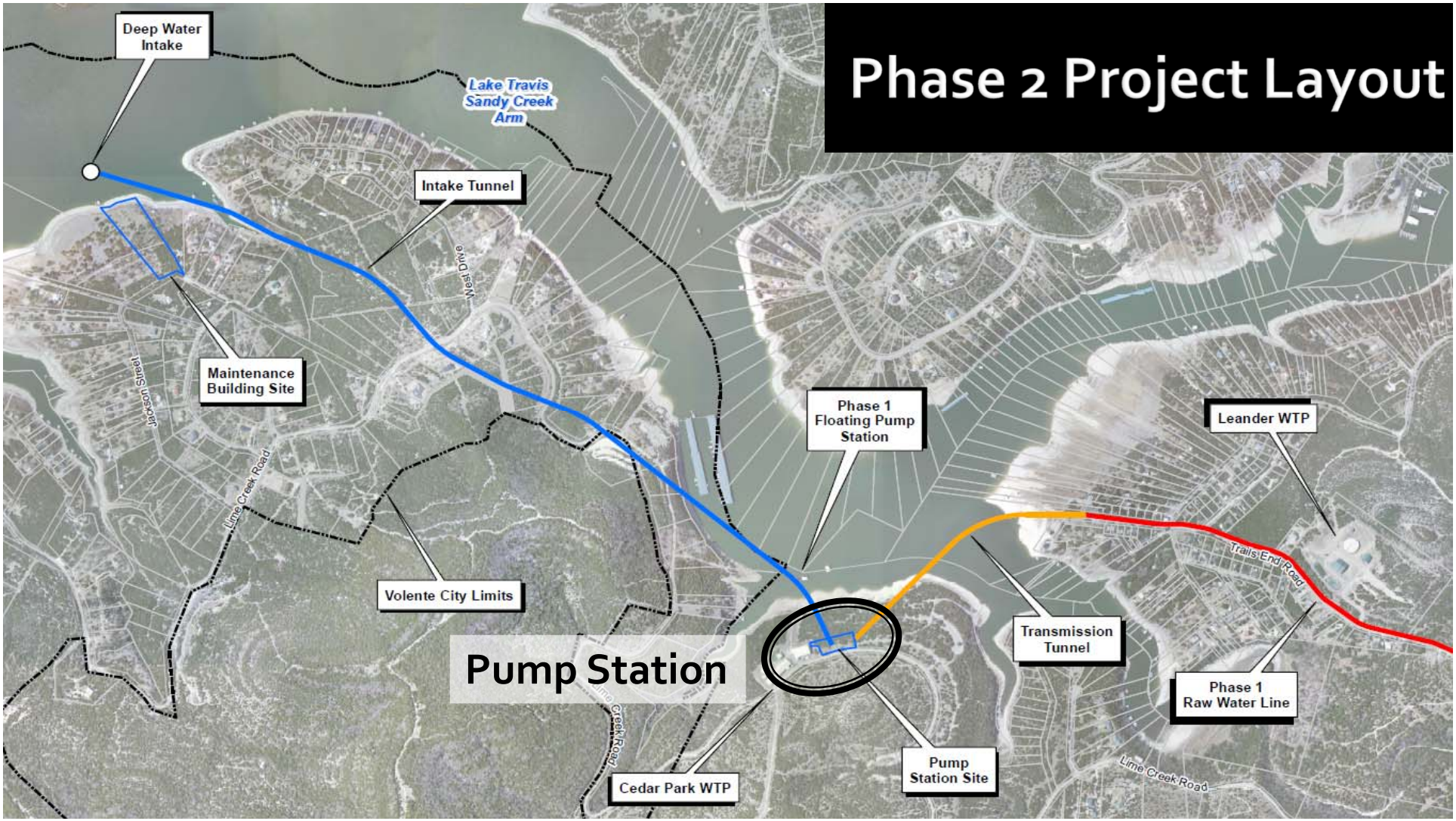
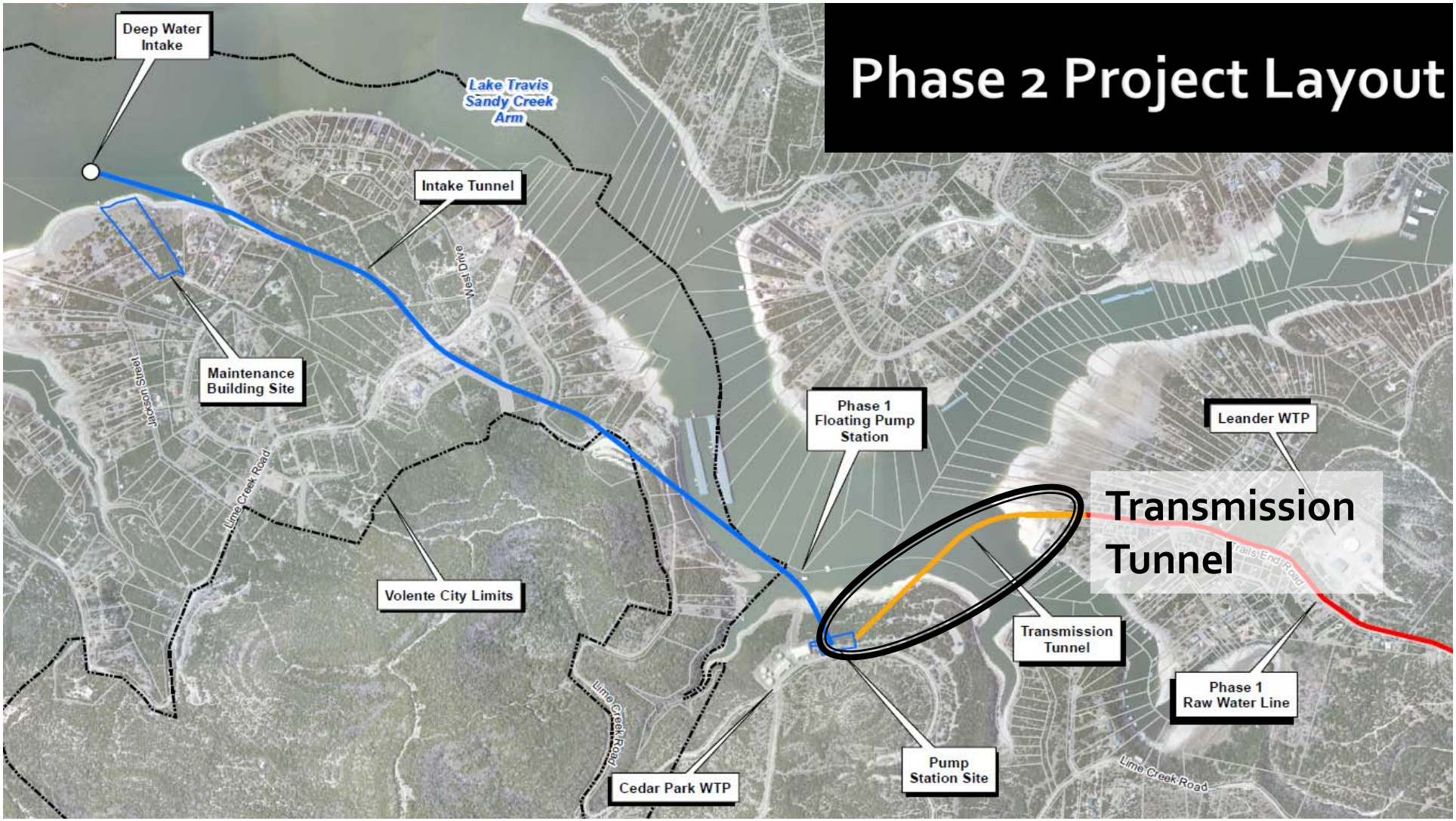


Pump Station

- Adjacent to Cedar Park WTP
- Extensive planning done as part of site acquisition to minimize impacts to park
- Primary work site for tunnel launching and construction
- Hauling to Anderson Mill
- Eliminates four floating pump stations

Pump Station Building Rendering

Phase 2 Project Layout

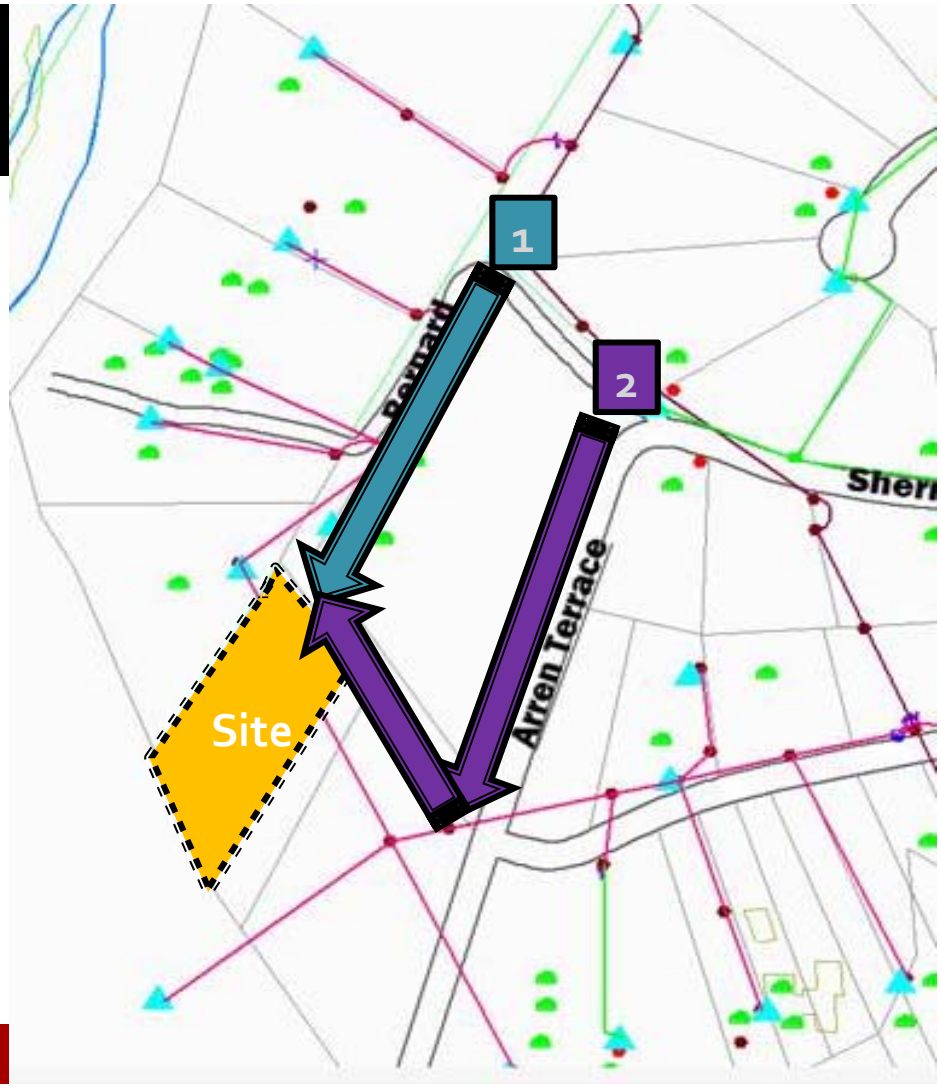


Transmission Tunnel

- 78-84" tunnel at depths of 70 to 300 feet
- Riser at end of Trails End Road to connect to Phase 1 raw water line

Electrical Service

- Major power upgrades occurring outside of Volente
- Minor upgrades required for maintenance facilities
  - Option 1: Bernard Street Extension
    - 1A – Buried
    - 1B – Existing poles
  - Option 2: Arren Terrace Extension – Buried
- Rebuild lake crossing adjacent to Cedar Park WTP



Schedule and Activities

1. Geotechnical investigation – completed
2. Field surveying – completed
3. Easement acquisition – ongoing
4. Water quality sampling – ongoing
5. Traffic studies – began in July
6. Monitoring well development – scheduled for September
7. Development of interlocal agreement with Volente – ongoing

Water Quality Sampling

- Monthly collection of water quality samples by boat at the intake site
- Boat launched from public ramp

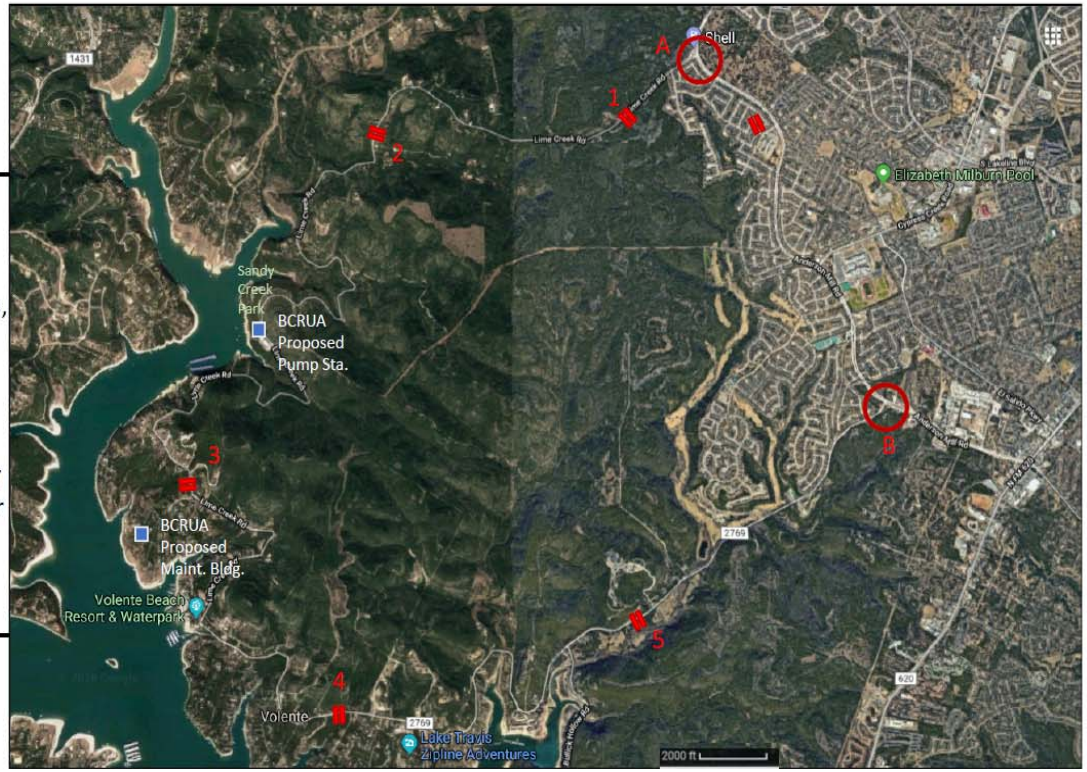
Traffic Studies

BCRUA Traffic Study - Data Collection Plan for Phase 2 Raw Water Delivery Project

LEGEND

24-hour bi-directional counts, speeds and classification

2-hour AM, 2-hour midday and 2-hour PM peak turning movement counts



- Evaluate traffic volumes and truck trips for both construction sites
- Evaluate mitigation strategies for sharp curves and steep grades
- Determine truck size constraints
- Prepare traffic control concepts
- Data collection complete & draft report to be submitted in September

Monitoring Well Development

- Collect well level and water quality information to gain better understanding of groundwater aquifer in proximity to the tunnel alignment
- More quickly detect and address impacts during construction
- 4 ft x 4 ft concrete pad, 2-inches above grade

Installed Monitoring Well

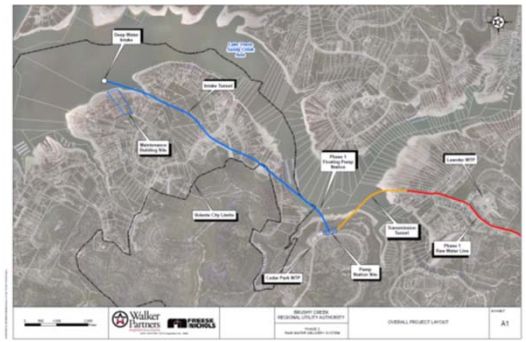
Monitoring Well Development

- Volente approval to construct wells in Lime Creek Road ROW
- Construction of wells to start in about 6-8 weeks
- Wells turned over to Volente after construction of the deep water intake is completed

Open House Stations

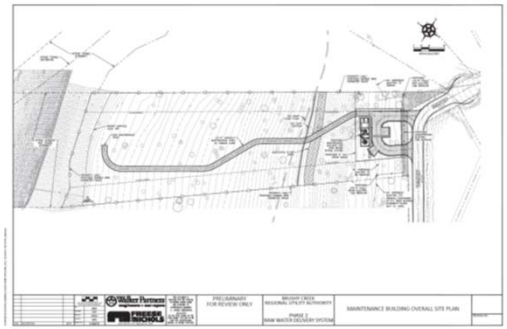
Station 1

Phase 2 Project Layout



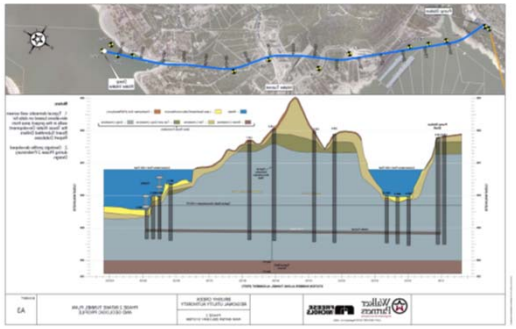
Station 2

Maintenance Building Site



Station 3

Intake Tunnel Plan and Geological Profile



Station 4

Phase 2 Easement Map

Village of Volente Community Meeting

Phase 2 Deep Water Intake

Project Update

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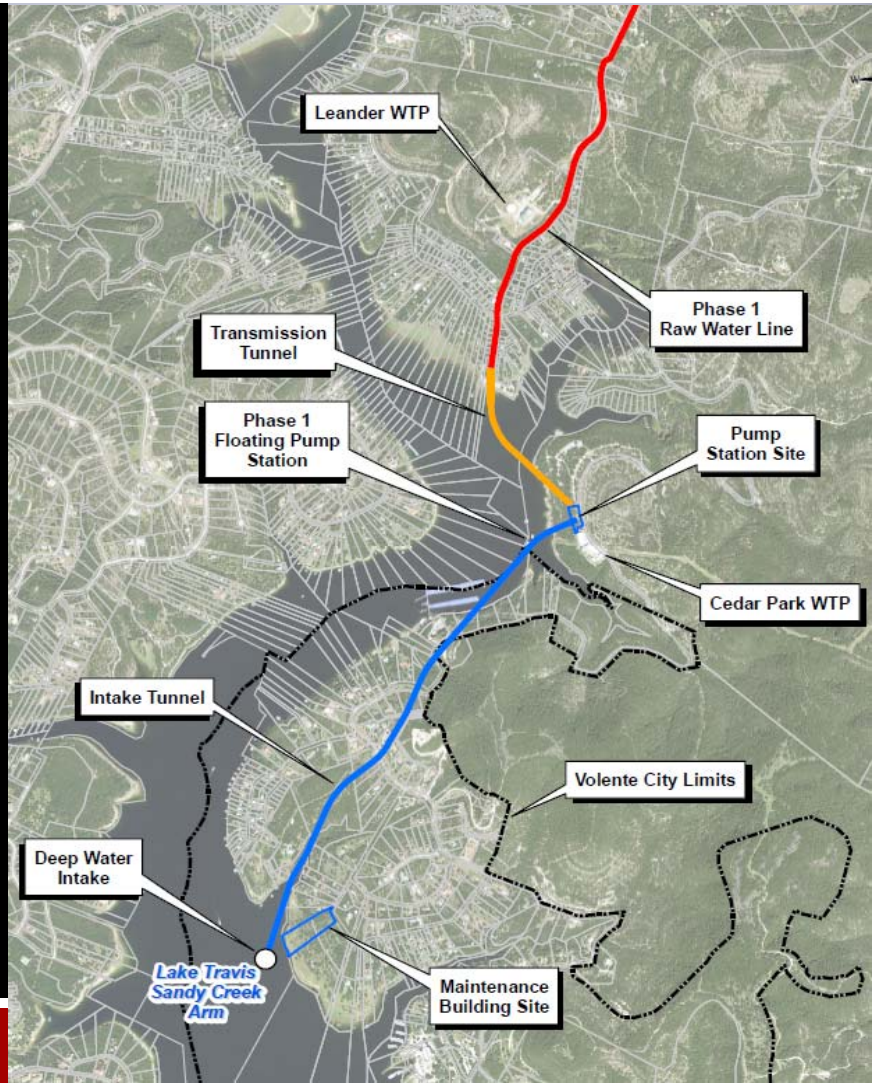
Aaron Archer, PE
Walker Partners
Project Manager