Pajaro Valley Water
Management Agency

Watsonville Slough System Managed Aquifer Recharge and Recovery

Board Update

October 18, 2023

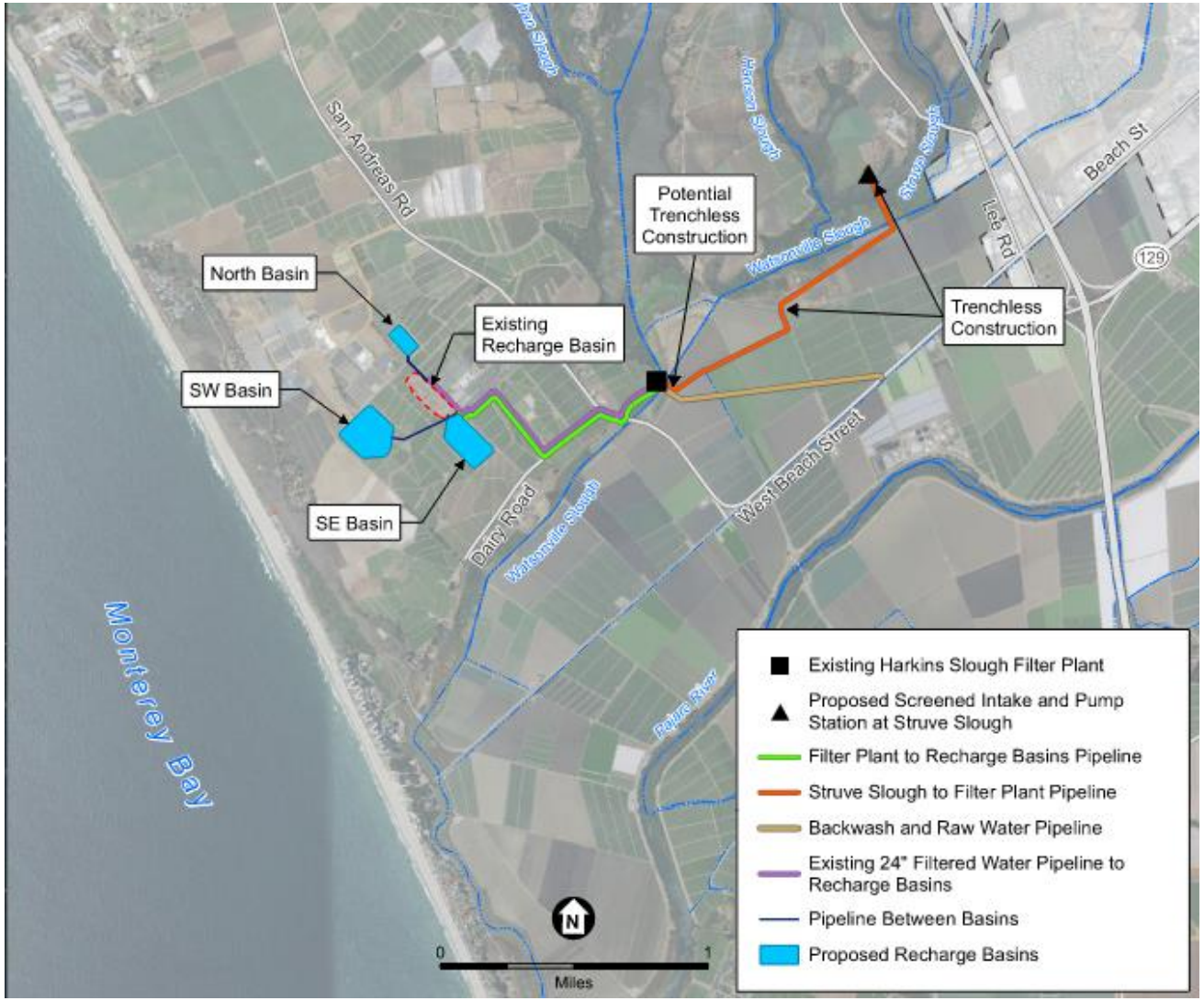
carollo 90 YEARS

WSS-MARR Facilities Design Update

- Project Overview
- Highlights of proposed facilities
- Cost and schedule

Project Overview

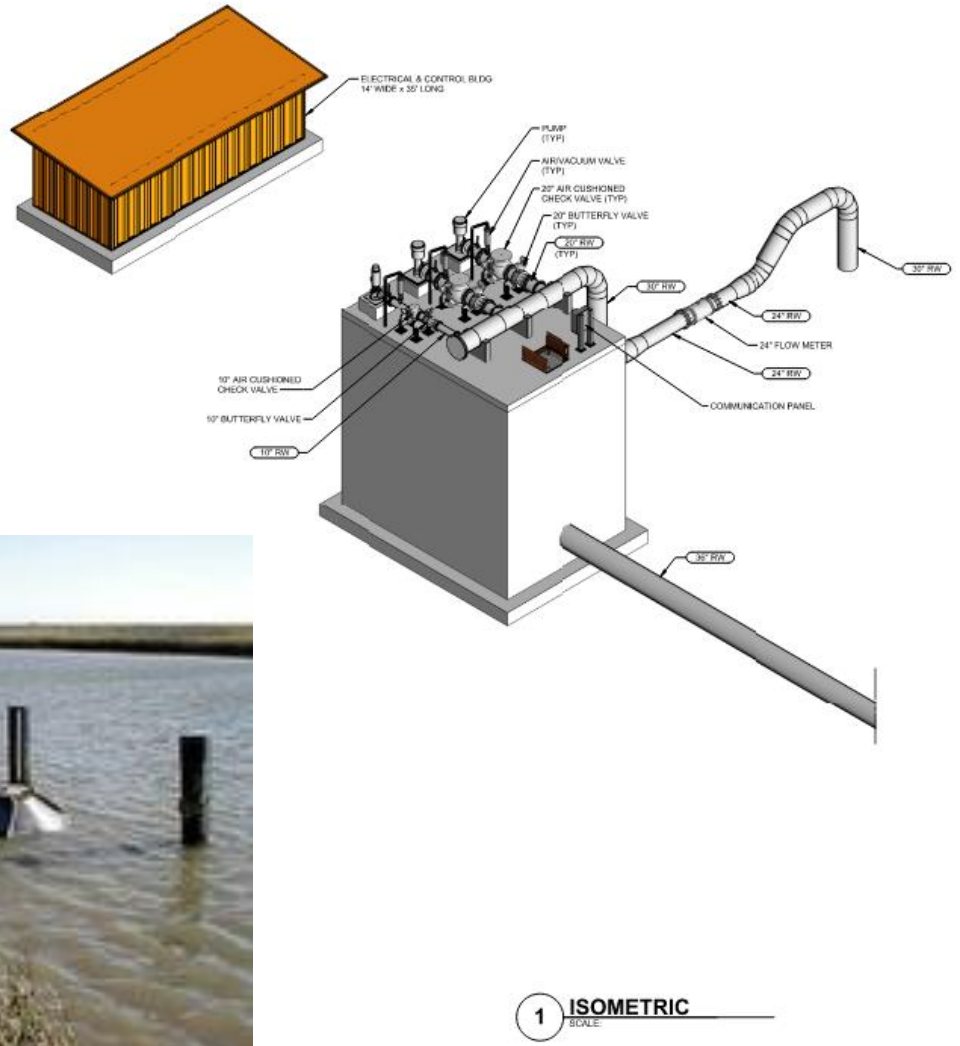
- Struve Slough Intake
- Struve Slough to Harkins Pipeline
- Harkins Intake Improvements
- Existing Recharge Basin Electrical and Controls Improvements
- SE Recharge Basin and Recovery Wells

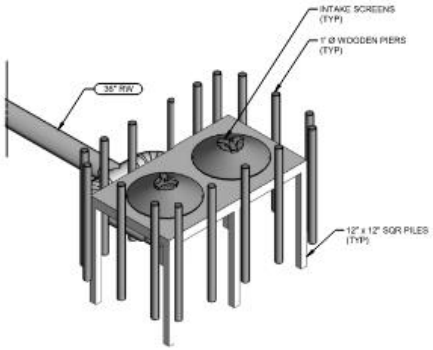


Struve Slough Intake Facilities

Struve Slough Intake and Pumping Station

- Two large duty + one small (jockey) pump all on VFDs
  - » Designed for 25 cfs (11,000 gpm)
  - » Small jockey pump, 3 cfs (1,300 gpm) or less





Anticipated Construction of Intake Screens

Struve Slough to Harkins Pipeline

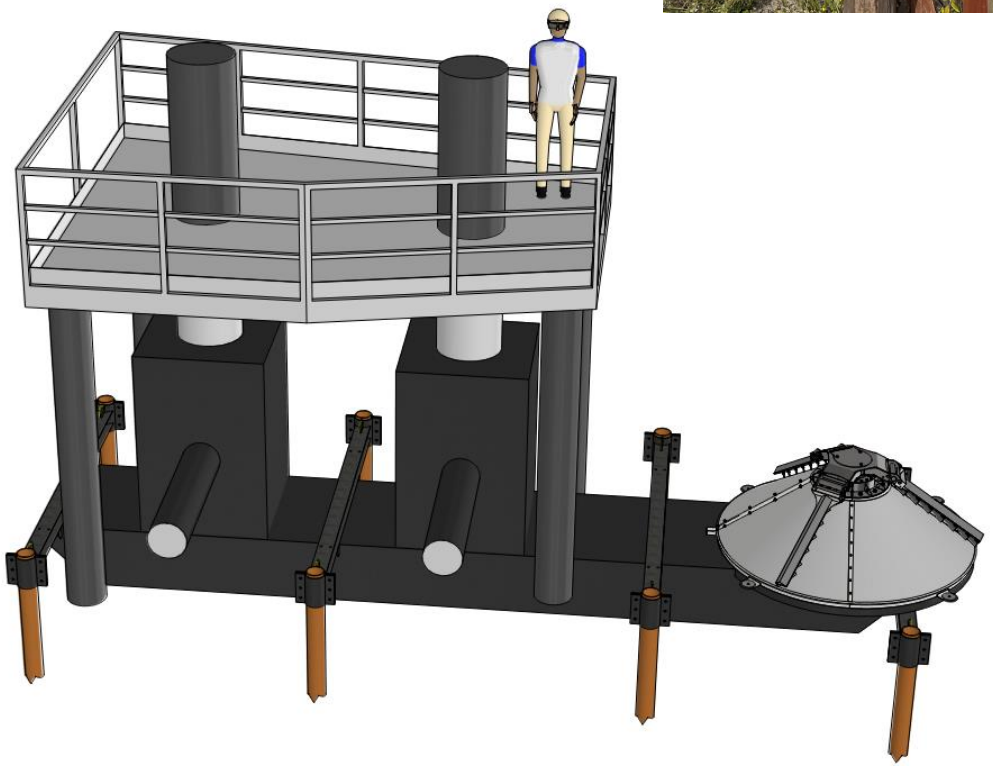
Pipeline Elements

- ~7,400 LF of 30-inch diameter HDPE pipe
- Geotechnical field investigations underway
- Easement negotiations
- Two trenchless crossings
  - » Struve Slough
  - » Railroad tracks

Harkins Intake and Filter Plant Improvements

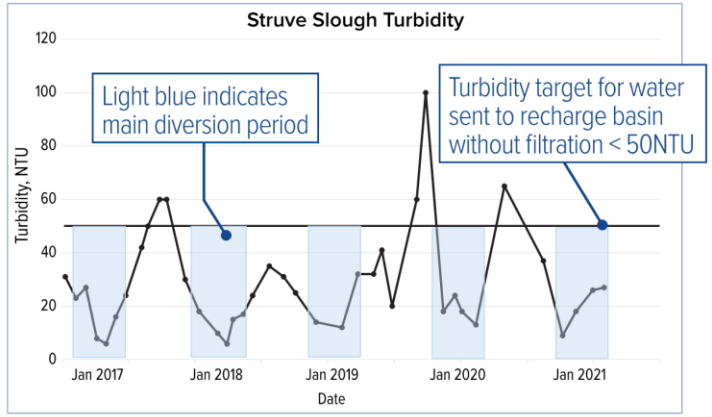
Harkins Intake Improvements - Screens

- One 8-foot diameter screen
- Intermediate pump station mechanical upgrades
- Filter plant demolition



Filter Plant

- PV Water has been successfully sending water for recharge without treatment.
- Struve Slough turbidity data collected since 2017 consistently shows results with less than 35 NTU which meets operations staff targets for recharge without filtration.
- Filters will be demolished.



Turbidity data indicate Struve Slough meets operations staff targets for recharge without filtration during the main diversion period.

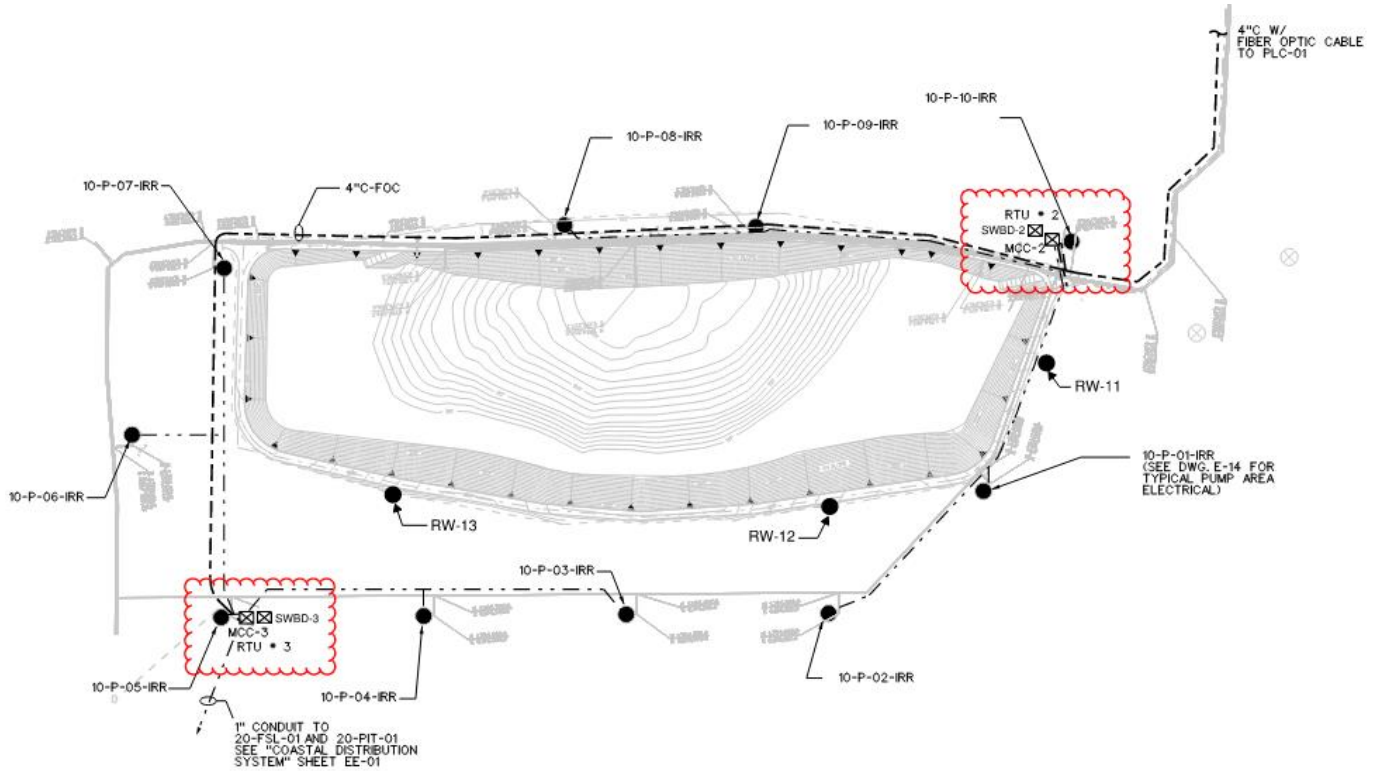
Existing Recharge Basin Electrical and Controls Upgrades

Existing Equipment

- Replacing all electrical and controls equipment
- Installed in 2002.
- Exterior and interior of equipment is extremely corroded.

Equipment Replacement Approach

- Each equipment set (i.e. SWBD, MCC, RTU) serves half of the loads & instruments at the basin
- Equipment & loads in each half can be shut down and taken off-line for as long as 6 months
- This presents the ideal scenario for replacing the equipment in place.

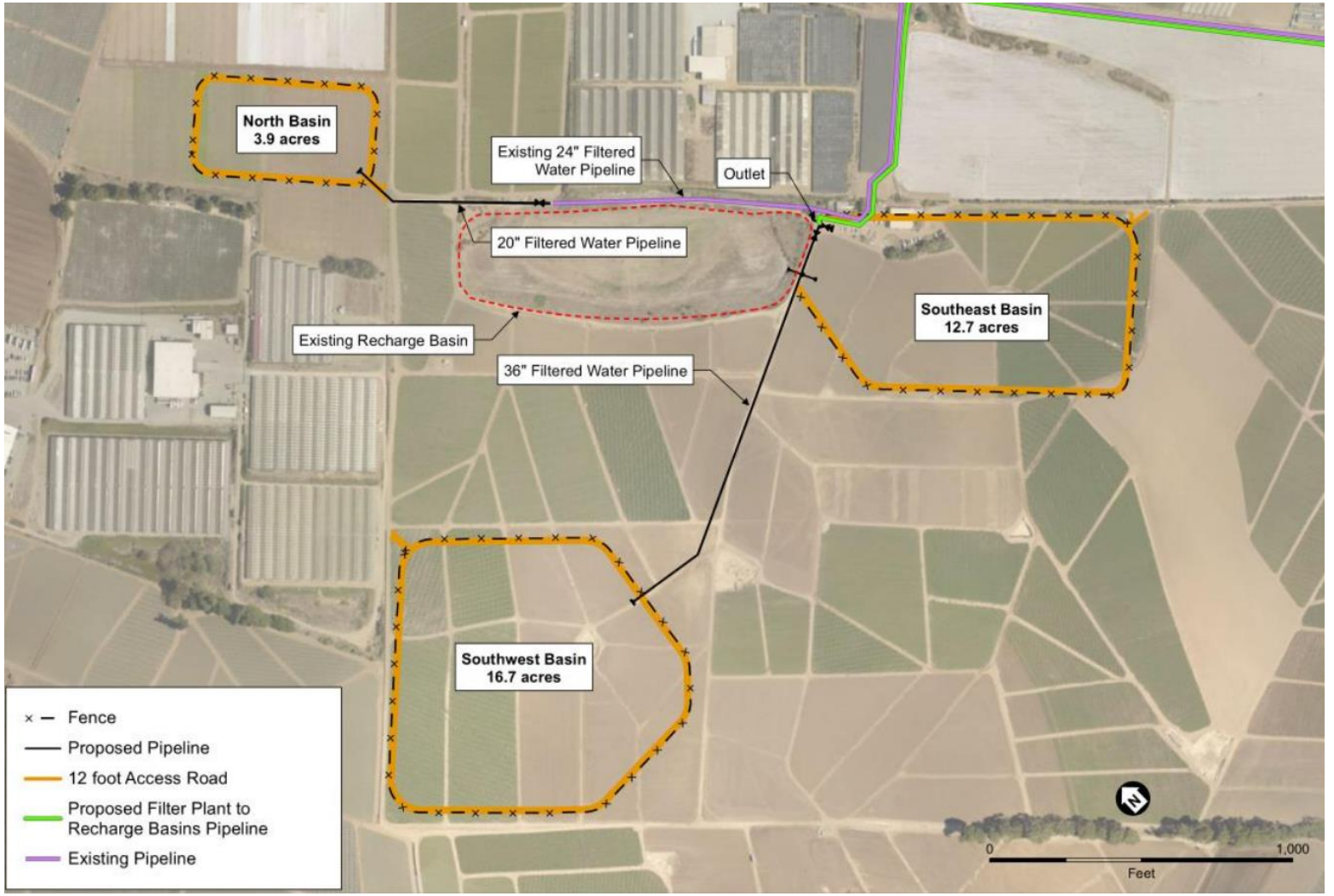


New Southeast Recharge Basin and Recovery Wells

Recharge Basin Siting Locations

Basin	Wetted Acres	Storage (AF)
North	3.9	20
Southwest	16.7	77
Southeast	12.7	128

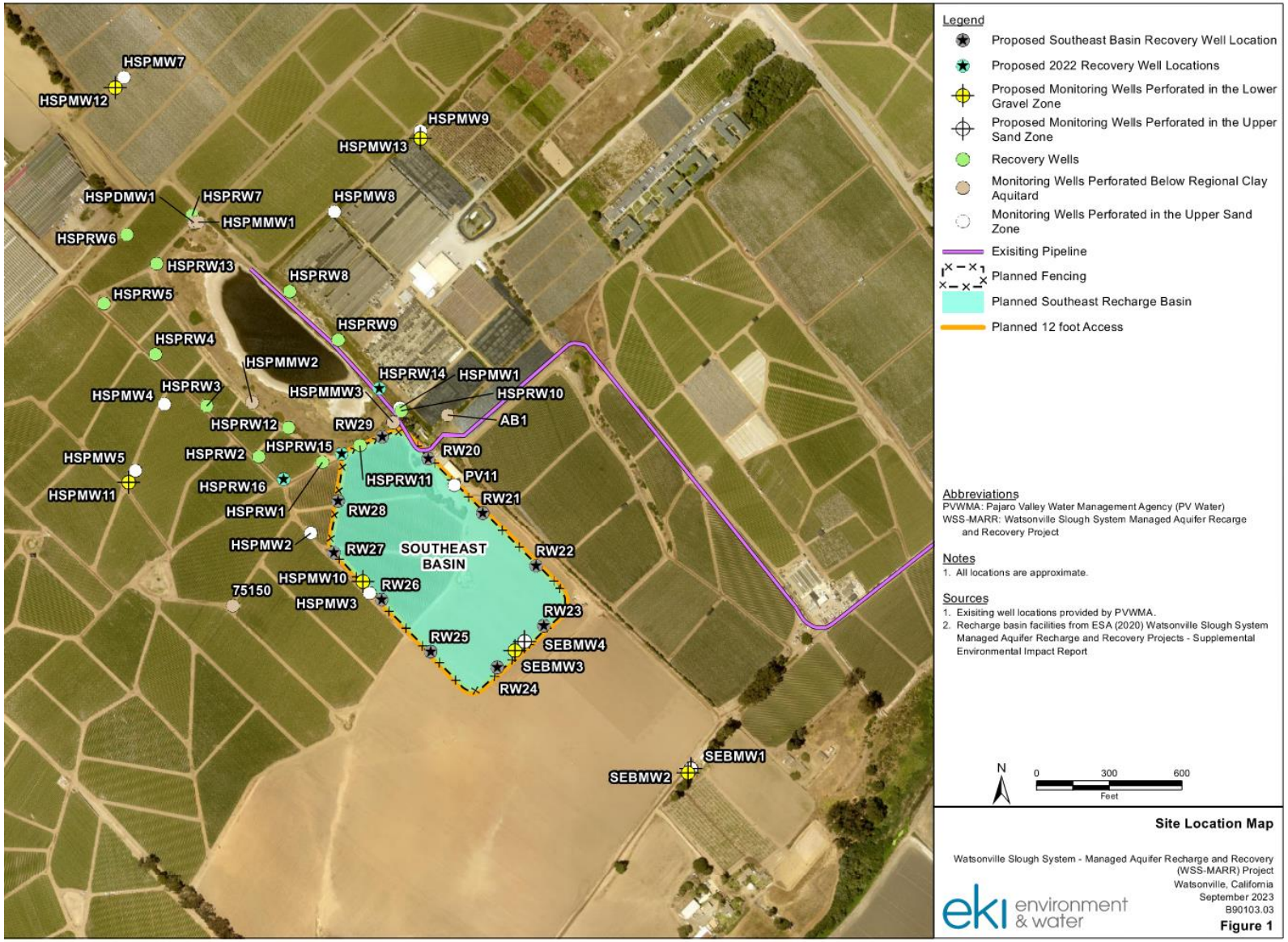
- Southeast basin selected based on:
  - » Site has bowl-like topography
  - » Better soil conditions
  - » Least earthwork per storage volume



Proposed Recovery Well Piping

- Each recovery well will include the following:
  - 4-inch diameter steel piping
  - 4-inch isolation valves
  - 4-inch swing check valve
  - 4-inch magnetic flow meter
  - 1-inch air/vacuum valve
  - High pressure switch
  - Pressure transducer

Monitoring Well Locations



Project Schedule

- Preliminary Design Completion – December 2023
- 60% Design Submittal – March 2024
- 100% Design Submittal – June 2024
- Bidding - TBD
- Other requirements
  - Easement negotiations
  - Water rights
  - Environmental permitting

Project Estimated Construction Costs

- Struve Slough Intake - $7 Million
- Struve Slough to Harkins Pipeline - $7 million
- Harkins Intake Improvements - $2 Million
- Existing Recharge Basin Electrical and Controls Improvements - $1 Million
- SE Recharge Basin and Recovery Wells - $8 Million
- **Total Estimated Construction Cost = $25 Million (range $18-37 Million)**

Thank you!