

An aerial photograph of a large reservoir system, likely Silver Lake and Ivanhoe Reservoirs, with a cityscape visible in the background. The text is overlaid on the image.

# SILVER LAKE & IVANHOE RESERVOIRS AERATION AND RECIRCULATION SYSTEM PROJECT

February 12, 2024

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Project Management Office

# THE AERATION & RECIRCULATION PROJECT

## Objective

Control algal growth and associated odors at the Reservoirs by installing an aeration and recirculation system to properly mix the water

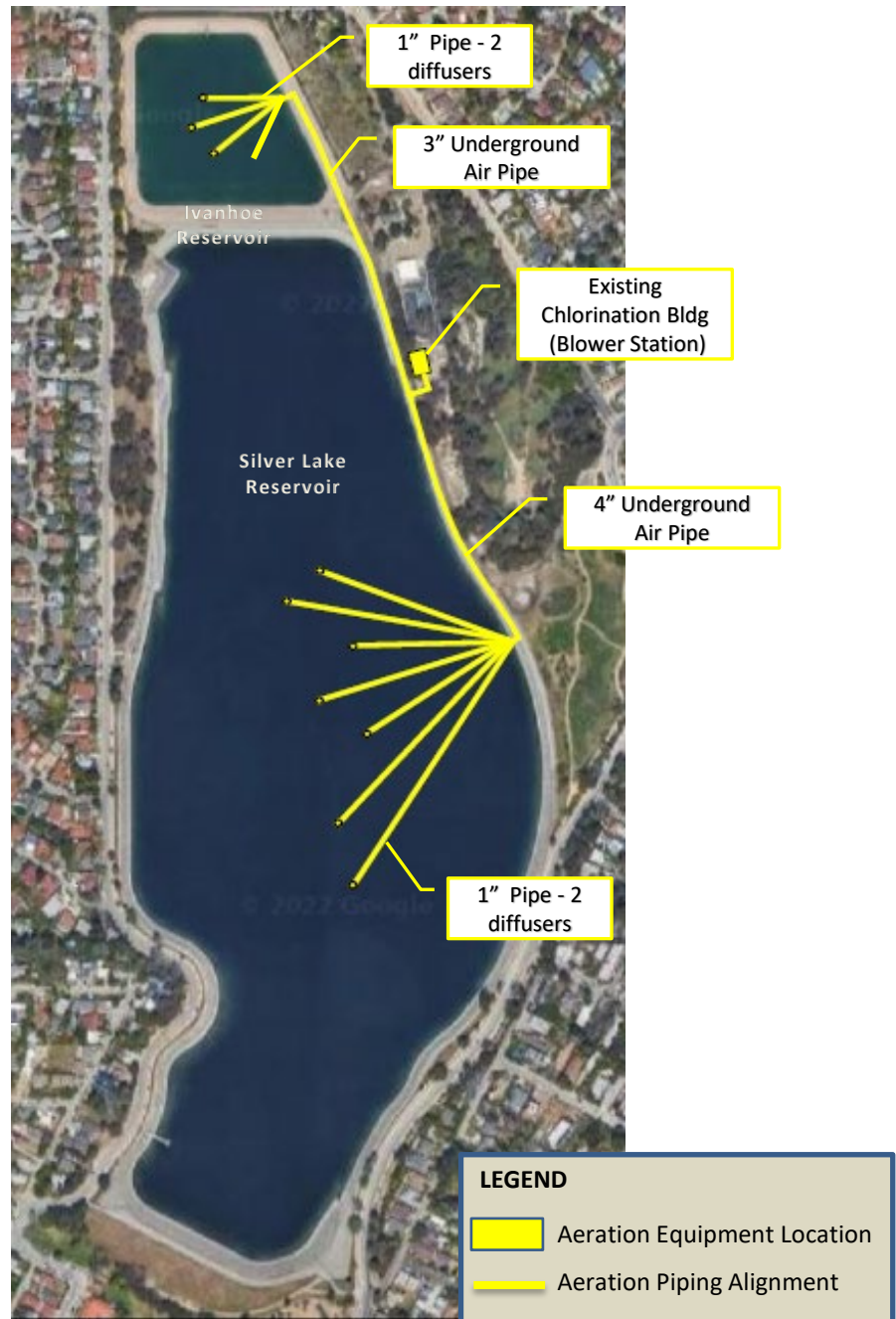


## Scope of Work

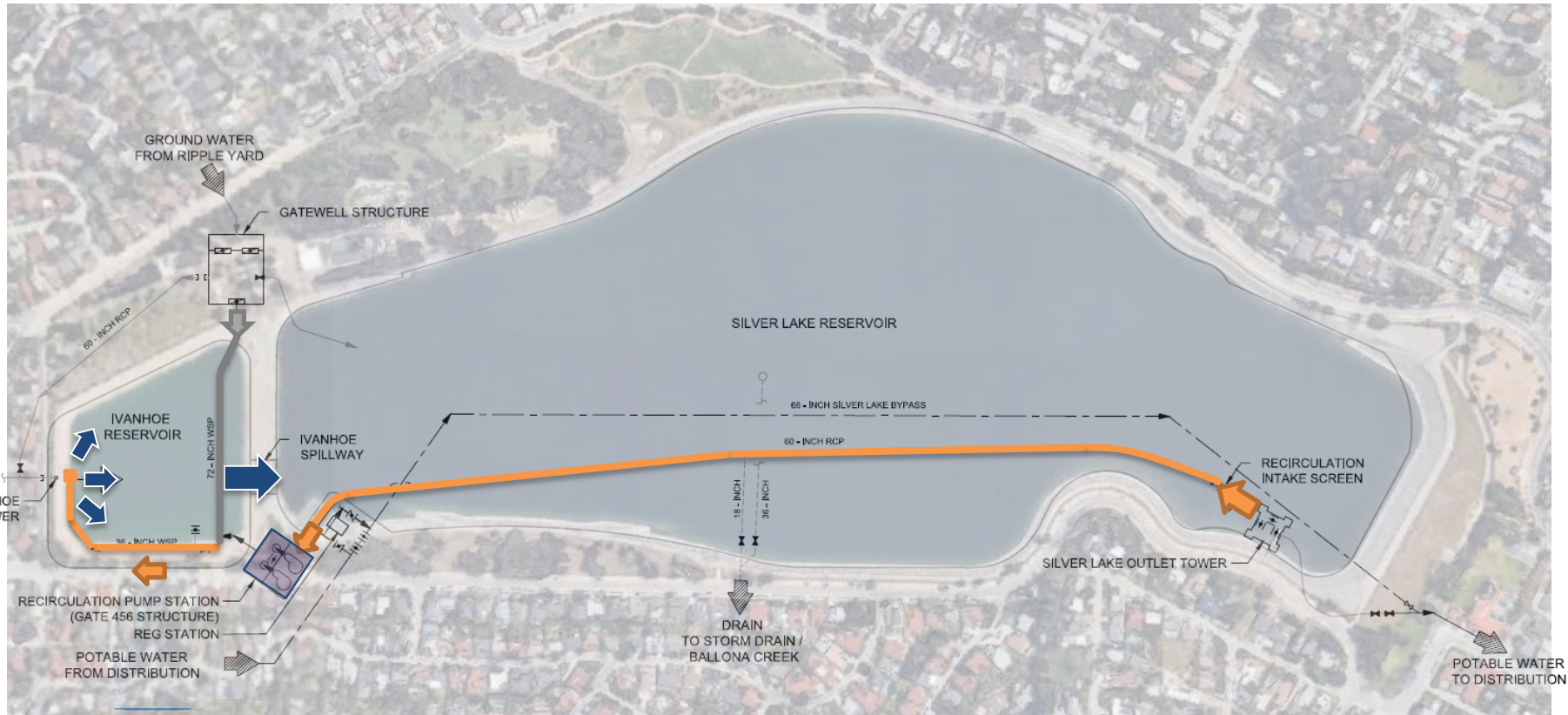
- **Phase 1** – Aeration System: install diffusers at the bottom of the reservoirs to aerate the water.
- **Phase 2** – Recirculation System: install pipe to transport water from the south end of Silver Lake to the north end of Ivanhoe. The water will then overflow back to Silver Lake via the existing spillway.

# Phase 1 - Aeration System

- Construction started on May 10, 2021 by our in-house construction crews
- Repurpose existing Chlorination bldg. into a new Blower Station
- 3" and 4" diameter air piping installation connecting to diffusers
- Diffusers will add air at bottom of reservoirs to prevent reservoir destratification



# Phase 2 - Recirculation System



- Construction started on February 13, 2023 by our in-house construction crews
- Repurposing existing concrete vault into pump station and an existing 60" line to recirculate water



**LEGEND**

- Recirculation Equipment Location
- Recirculation Pipe Alignment
- Existing Pipe Alignment
- Plug Flow
- Free Flow

# Aeration – Construction Update

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- The 3" & 4" underground piping within the reservoir roadway to Ivanhoe has been installed and backfilled.
- Inside the blower station – crews have installed equipment, electrical wiring and piping assemblies



# Aeration – Construction Update



Initial piping and Equipment installation

# Recirculation – Construction Update



Repurposing existing underground concrete vault (~ 40 ft deep) for new recirculation pump station. Includes installation of scaffolding, rebar and formwork getting ready to pour a wall inside of the vault.

## ***Future Work***

Installation of pipes, valves, controllers and pumps and electrical work.

# Recirculation – Construction Update



Left Photo: looking down into the 40' deep concrete vault – New Pump Station  
Right Photo: piping and electrical work adjacent to New Pump Station



# Work inside Ivanhoe

Installed 36" dia. pipe, finishing pouring concrete encasement, removal of forms.



# Work inside Ivanhoe



Left Photo: 36" pipe concrete encasement inside Ivanhoe

Right Photo: Air piping going into Ivanhoe for Aeration system

# Diver Work at Silver Lake

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Installing the intake suction line that taps into the existing 60" diameter pipe.

The water will get suctioned in and travel to the new pump station.

Divers will also be making a connection to the pump station on the north side of the 60" line near pump station.

# Rain Update

Pumping out water from Ivanhoe Reservoir and allowing work areas to dry requires time and effort before work can proceed.



# CONSTRUCTION TIMELINE

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- **Critical construction that has to be completed prior to any refill activities:**
  - New pump station
  - Ivanhoe work inside reservoir
- **Refill is anticipated to begin this Fall 2024**
- **Aeration system**
  - Final connections inside Blower station can be done and all remaining electrical work
- **Commissioning period**
  - Start up and testing of all equipment and systems
- **Overall completion Date: Spring 2025**

# PROJECT CHALLENGES

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Weather



Procurement

# Construction Information

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- Construction vehicles
  - Backhoes and trucks
- Noise reduction measures continue to be implemented.
- All work within the Reservoir Complex.
- Bird Nesting Season
  - Nesting Bird Survey completed on February 8, 2024.
  - Monitor during construction activities.
- Work hours
  - 7:00 am to 3:30 pm, Monday thru Friday

# Contact Information

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# QUESTIONS

