REPLENISH
— Big Bear —

Scoping Meeting

MEETING 1: City of Big Bear Lake Department of Water and Power
JANUARY 5, 2023

MEETING 2: Big Bear Area Regional Wastewater Agency
JANUARY 10, 2023

Scoping Meeting Purpose

- The purpose of tonight's scoping meeting is for the BBARWA Staff and Consultants (the Project Team) to listen to your feedback and questions about implementing the **Replenish Big Bear Program**.
- In order to do that, the Project Team will go through a summary of the **Replenish Big Bear Program**. Which includes:
  - Identifying the project purpose and objectives
  - Providing a preliminary project timeline for processing the Draft EIR
- Those persons present at the scoping meeting will have an opportunity to comment on the project either by leaving a written comment on the comment cards that the Project Team has provided, or by making your comment verbally after the presentation on the project.

Project Purpose & Objectives

The goal of the Project is to recover a local water resource that is currently being transported out of the Valley to Lucerne Valley, close the water loop, and keep the water in the Big Bear Valley for beneficial reuse.

Project Purpose & Objectives

This goal will be achieved through the development of a multi-benefit water reuse project that:

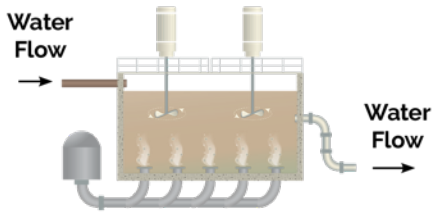
- Creates a new and sustainable water supply
- Augments natural recharge for water supply sustainability
- Protects the rare and diverse habitat and species in the Valley
- Promotes a thriving community through enhanced recreation
- Educates the community about the water cycle, recycled water treatment process, and water quality to gain public support
- Creates a project that benefits all agencies involved
- Develops a cost-effective project to offset potable water demands
- Takes advantage of current outside funding opportunities.

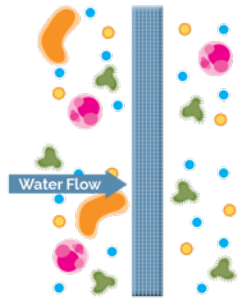
Replenish Big Bear Program Overview

Proposed Advanced Treatment Upgrades

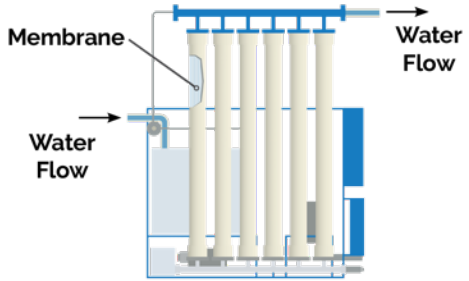
The existing BBARWA Wastewater Treatment Plant (WWTP) will be upgraded with full advanced treatment process at a capacity of 2.2 MGD, or approximately 2,210 AFY. Multiple treatment processes will produce purified water that meets or exceeds all State and Federal water quality standards.

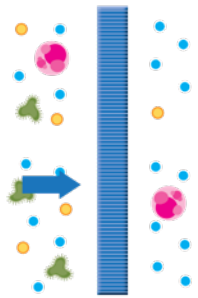
Nutrient Removal



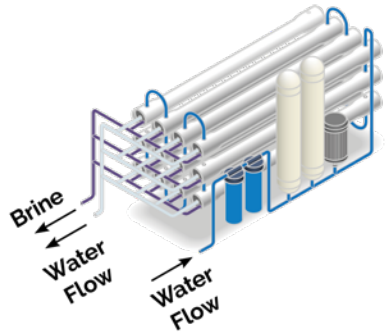


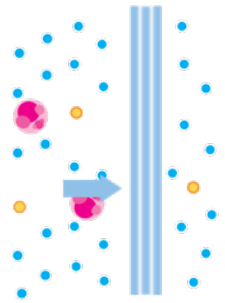
Ultra Filtration



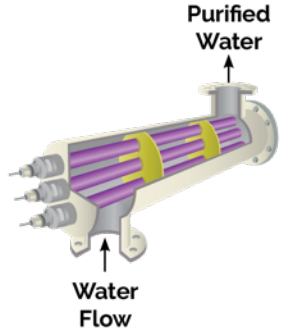


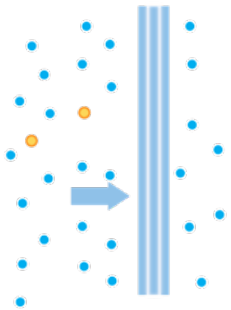
Reverse Osmosis (RO)



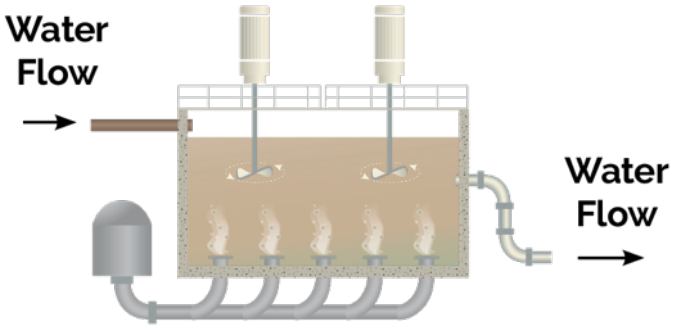


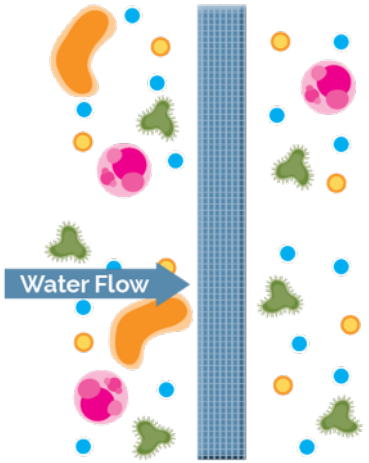
UV Disinfection & Advanced Oxidation Process





Proposed Advanced Treatment Upgrades

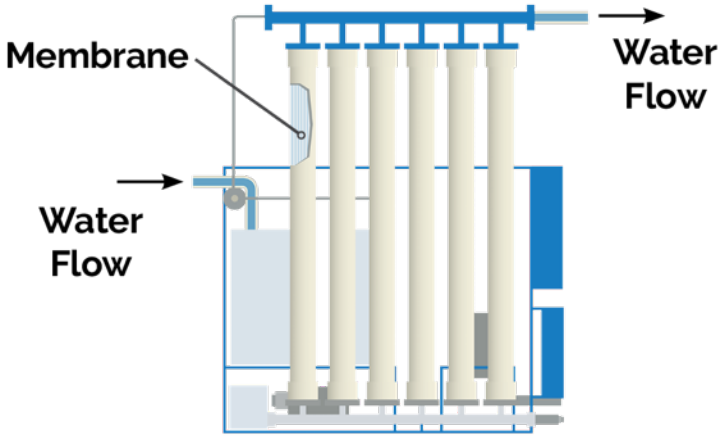


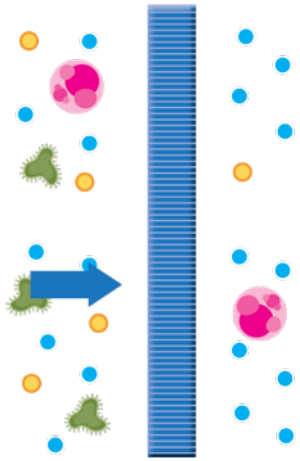


Nutrient Removal

Specialized biological processes and chemical treatment remove most of the organics, nitrogen, and phosphorous from the water.

Proposed Advanced Treatment Upgrades

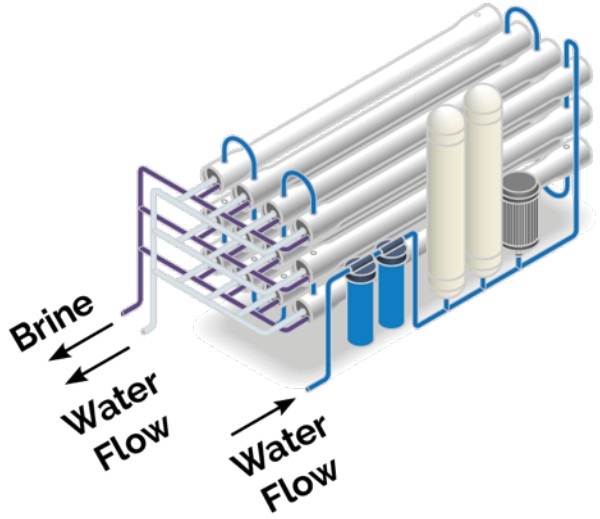


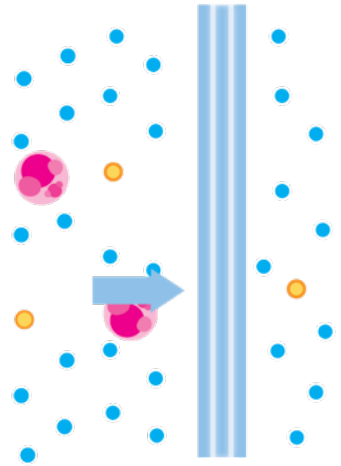


Ultra Filtration

An ultra filtration process uses permeable membranes to remove suspended solids and bacteria from the treated water as it passes through the filter.

Proposed Advanced Treatment Upgrades

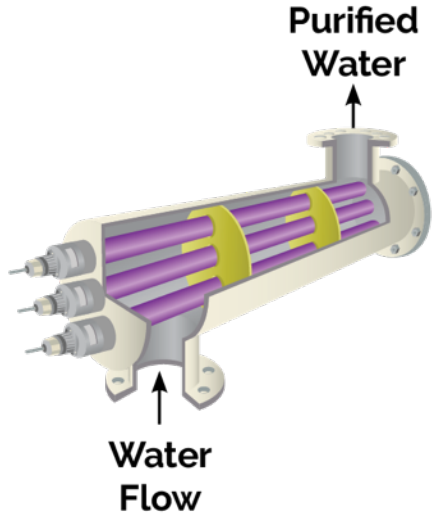


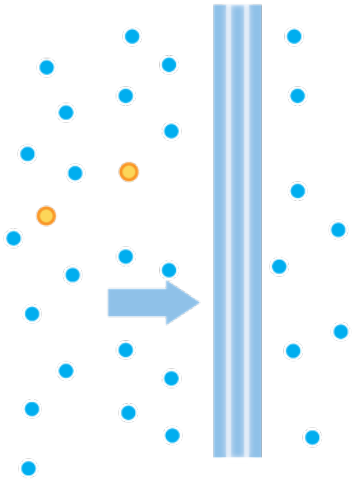


Reverse Osmosis (RO)

Water is forced under high pressure through reverse osmosis membranes to remove impurities, including salts, bacteria, viruses, pharmaceuticals, and personal care products.

Proposed Advanced Treatment Upgrades





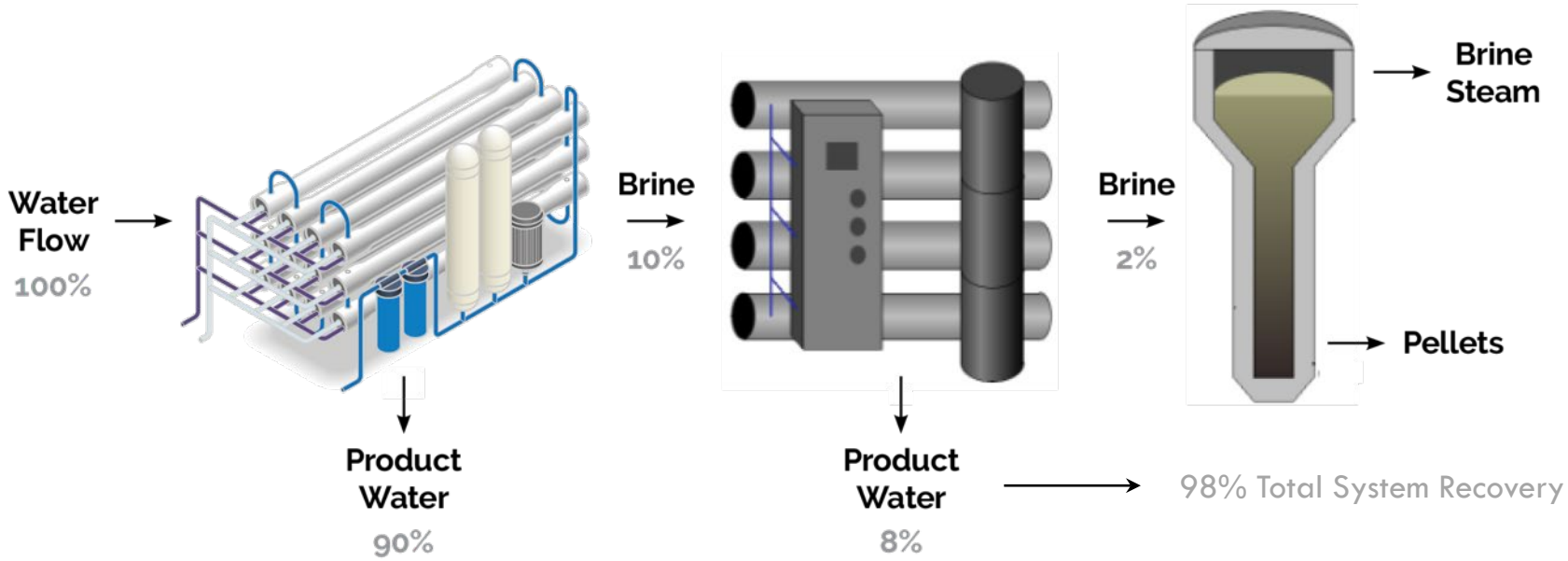
UV Disinfection & Advanced Oxidation Process

High-intensity UV light disinfects the water by damaging the DNA of microorganisms, while the advanced oxidation process uses a non-selective oxidant to destroy trace contaminants.

Proposed Brine Management Facilities

Reverse Osmosis

Brine Minimization

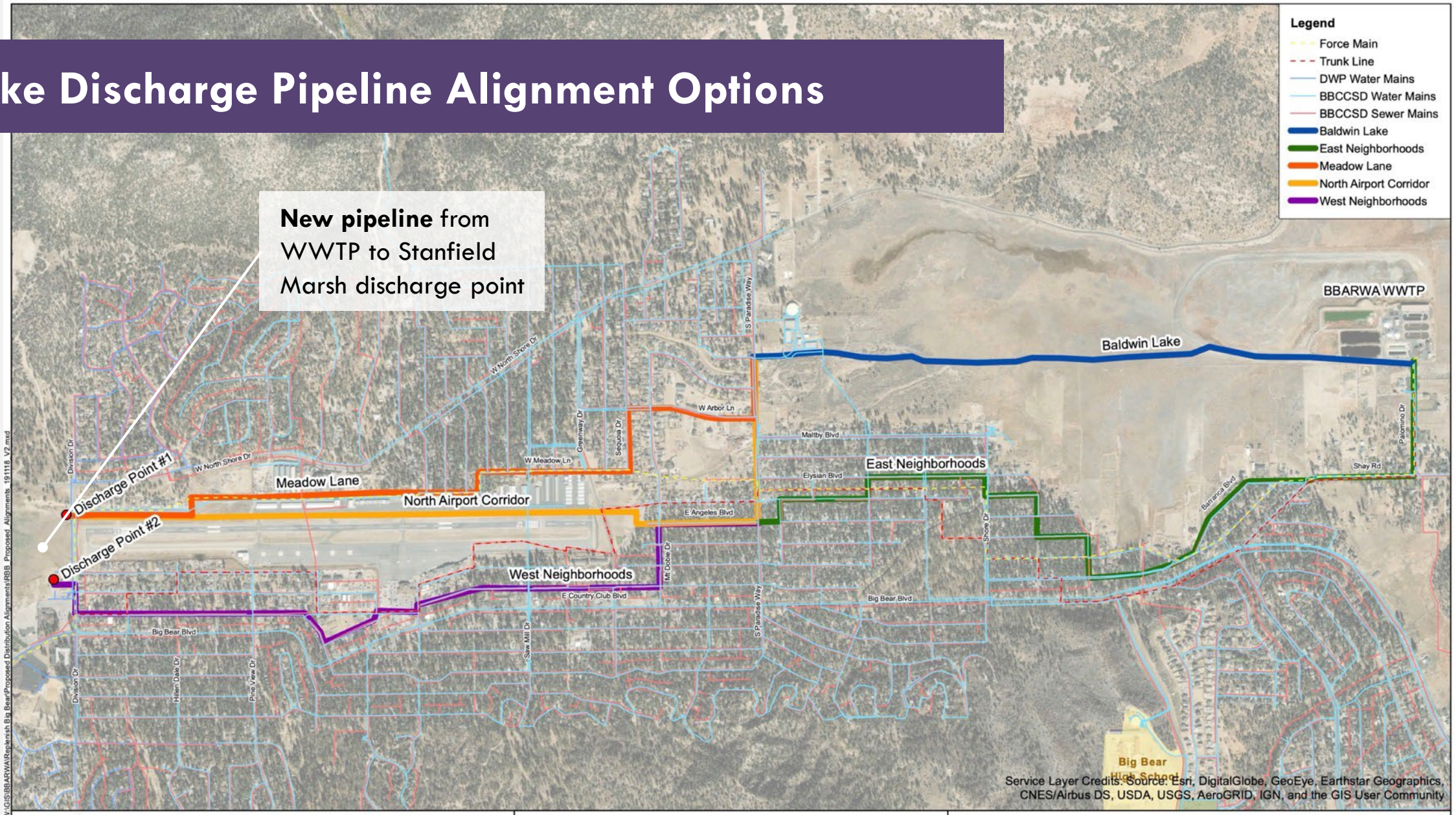


Example water balance of total system recovery

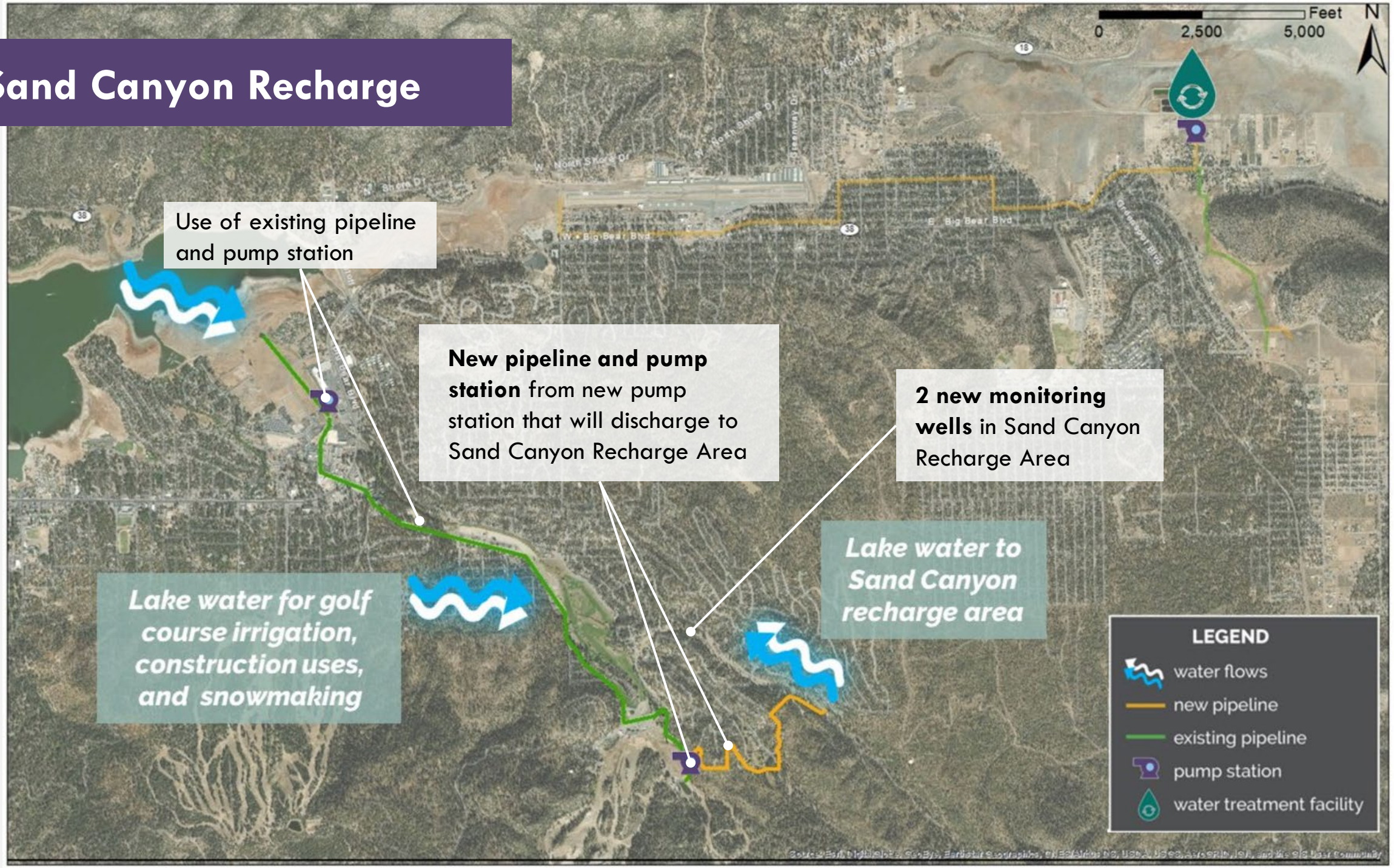
Brine Reduction and Evaporation

The Reverse Osmosis process produces a liquid brine concentrate that requires disposal. A Desalter system will use an additional RO process to reduce the liquid brine volume and a Pellet Reactor that will produce solid pellets for disposal or reuse. The remaining brine will be evaporated onsite using 23 to 57 acres of solar evaporation ponds.

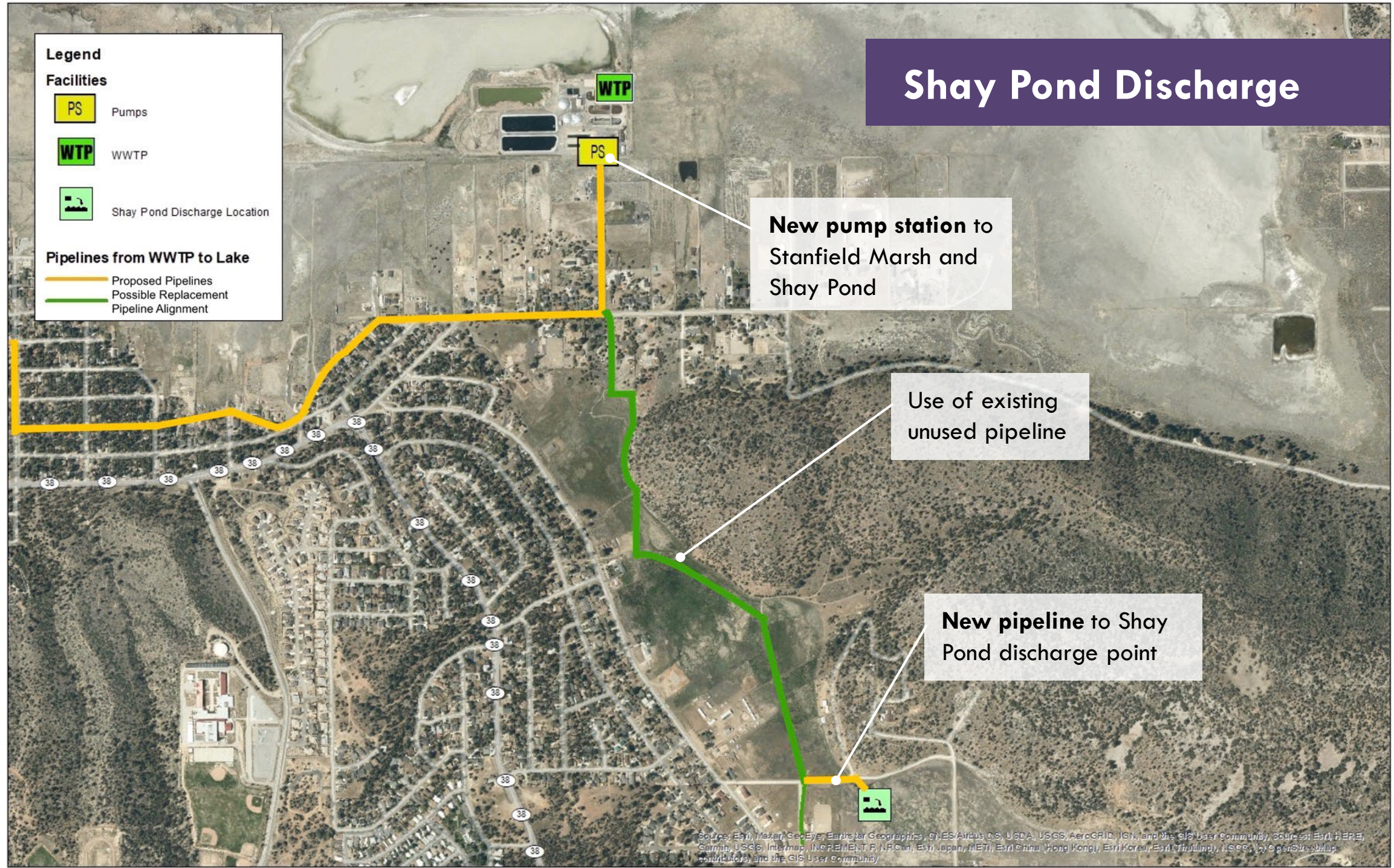
Lake Discharge Pipeline Alignment Options



Sand Canyon Recharge

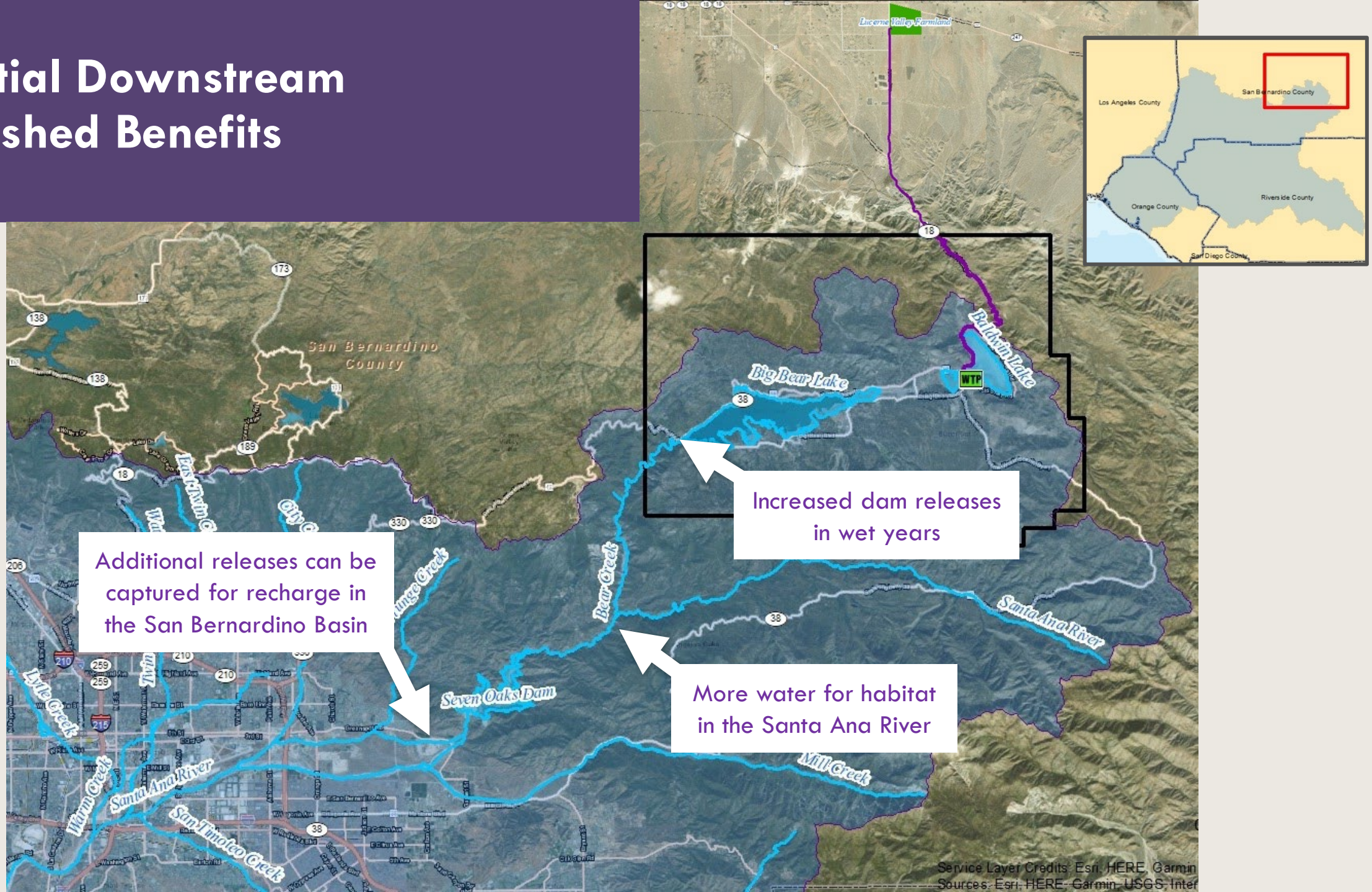


Shay Pond Discharge



REPLENISH Big Bear

Potential Downstream Watershed Benefits



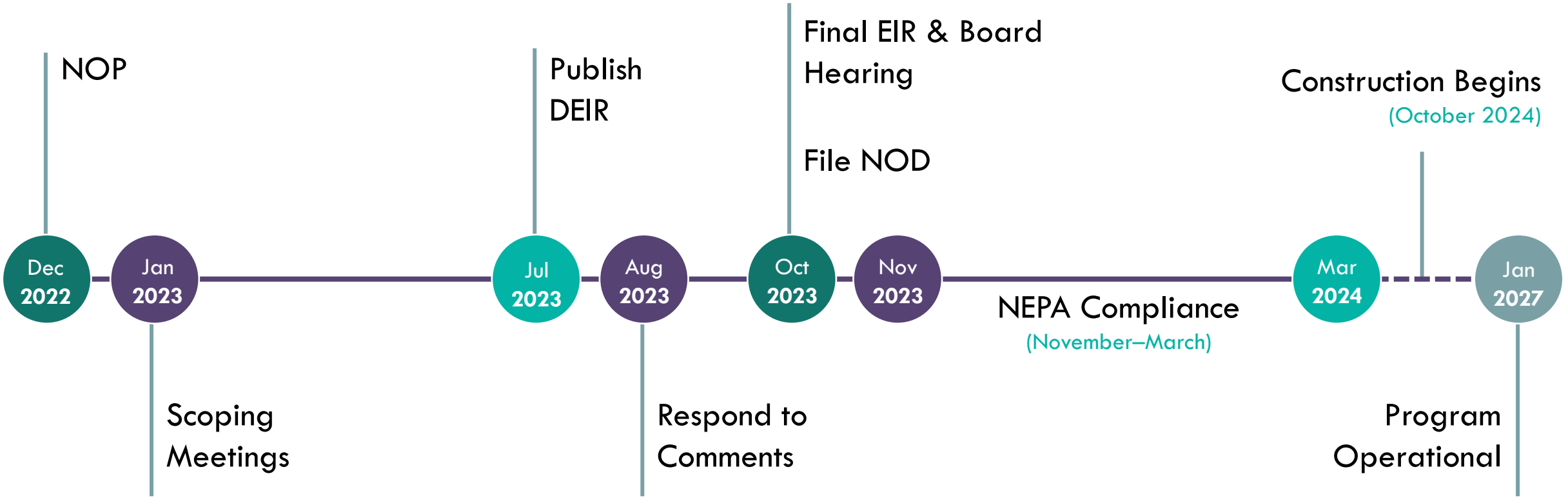
Replenish Big Bear Summary

- Purified water will be discharged to Shay Pond to sustain habitat for the federally listed Unarmored Threespined Stickleback fish, which is currently sustained using potable groundwater
- Purified water will be discharged to the Stanfield Marsh Wildlife and Waterfowl Preserve (Stanfield Marsh), providing a consistent water source to sustain habitat and increase education opportunities for the community and visitors
- Purified water will flow through Stanfield Marsh and provide new inflow to the Lake to increase inflows and Lake level, enhance recreational opportunities and aquatic habitat, and support water quality improvements

Replenish Big Bear Summary

- When needed, purified water stored in the Lake will be pumped to Sand Canyon to recharge the groundwater basin to strengthen the sustainability of the groundwater basin
- Purified water stored in the Lake can be used for golf course irrigation and dust control by the Big Bear Mountain Resorts (Resorts) in the summer
- During wet periods, excess purified water stored in the Lake could be stored locally as snow, providing flexibility to further enhance winter recreation, reduce spills from Big Bear Lake, augment spring runoff and increase groundwater recharge. This activity is not currently planned to be implemented as part of the Program, but the Program provides the flexibility to adapt if more extreme hydrologic conditions occur in the future.
- Additional inflow may enable BBMWD to modify their current Big Bear Lake management strategy to minimize spills and optimize releases to enable additional water to be captured downstream for recharge of the San Bernardino Basin, rather than discharged to the ocean.

Replenish Big Bear Timeline



Scoping Meeting Comment Procedure

The Project Team is here to listen to and record your comments (both in writing and by recording the meeting).

- Your questions and comments will be responded to **in the Draft EIR** that will be published later this year.

Both written and spoken comments will be treated equally. At the rear of the room, the Team has provided comment cards that are there to enable the Project Team to receive your comment(s) in your own words.

Scoping Meeting Comment Procedure

Procedure for Commenters:

- Each commenter will have 3 minutes to verbalize their comment.
- If someone has already made a comment that reflects your thoughts, please reference the previous comment with which you agree, for example by stating “I agree with Jane’s comment.”

COMMENTS

Replenish Big Bear Scoping Meeting