



REPLENISH  
— *Big Bear* —

# Draft Program Environmental Impact Report (DPEIR) **OVERVIEW**

For BBARWA Board Meeting // December 19, 2023



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# Agenda

- Program Overview and Objectives
- CEQA/NEPA Process Overview
- Draft EIR Analysis and Conclusions
- DPEIR Schedule and Process Overview



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# Program OVERVIEW



# Local Water Challenges

- Natural precipitation is the Valley's only source of water.
- Drought and low lake levels threaten water supply, economy, and ecosystem.
- The local water cycle is broken: All the Valley's wastewater is discharged outside of the watershed.



An aerial photograph of a large lake surrounded by a dense forest of evergreen trees. In the foreground, there are several houses and buildings, some with docks extending into the water. The background shows rolling hills and mountains under a clear sky. A semi-transparent white rectangular box is overlaid on the center of the image, containing text.

# Program Team Goals

**The goals of the Program Team are to recover a Big Bear Valley water resource that is currently being disposed of in Lucerne Valley, close the water loop, and keep the water in the Valley for beneficial reuse.**

# Program Purpose & Objectives

**This Program Team goals would be achieved through the development of a multi-benefit water reuse program 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

Peaks  
Lucerne Valley (LV Site)  
Discharge Reduction

2,200 AFY  
New Purified  
Water Source





Future Option  
Replace Shay  
Pond Water  
Source

2,200 AFY  
Replenish  
Stanfield Marsh

380 AFY  
Replenish  
Groundwater  
Basin

Inflow from Marsh  
Replenish Big  
Bear Lake

**LEGEND**

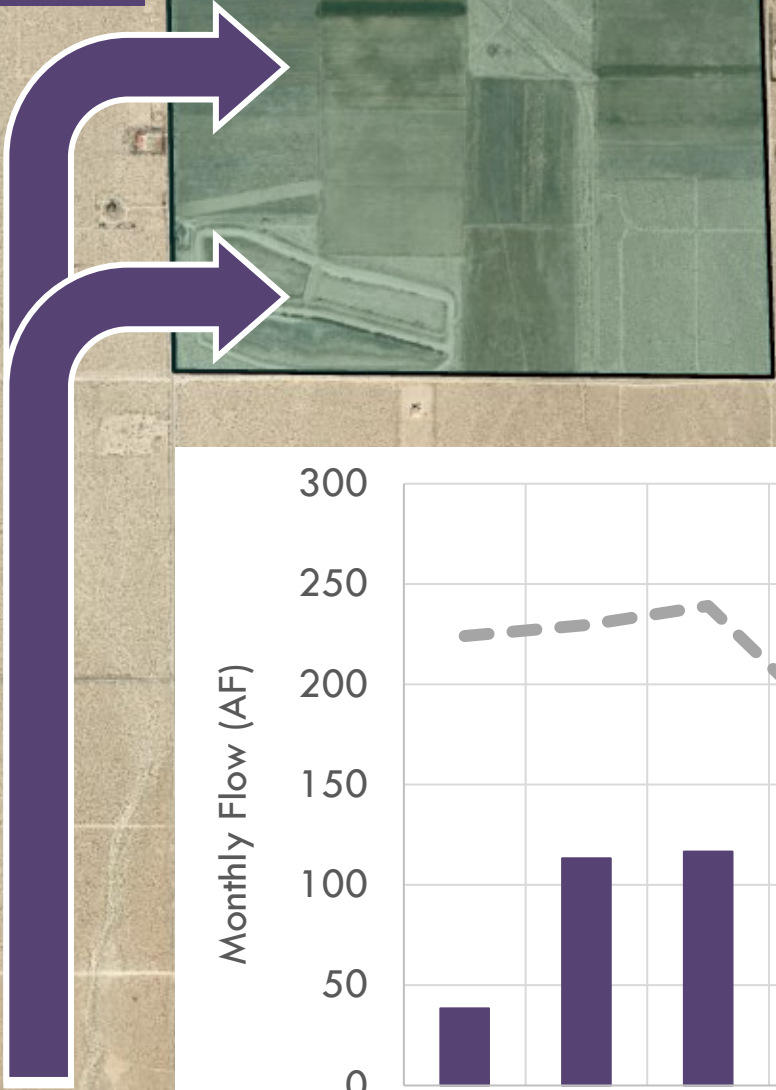
-  Water Flows
-  New Pipeline
-  Existing Pipeline
-  Pump Station



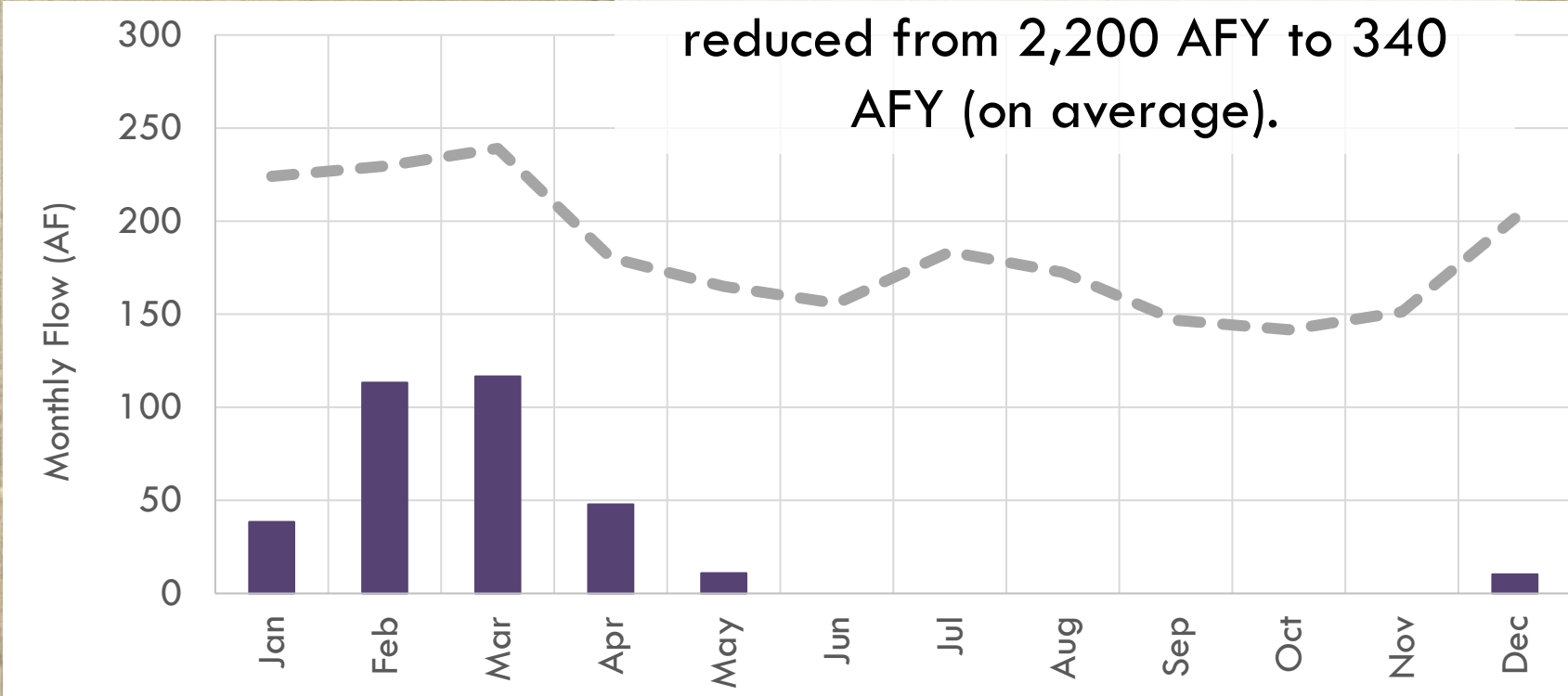
# Lucerne Valley (LV Site) Water Uses

Treated water is used for irrigation of alfalfa and grain for animal feed

Any excess treated water is sent to two earthen overflow ponds for disposal



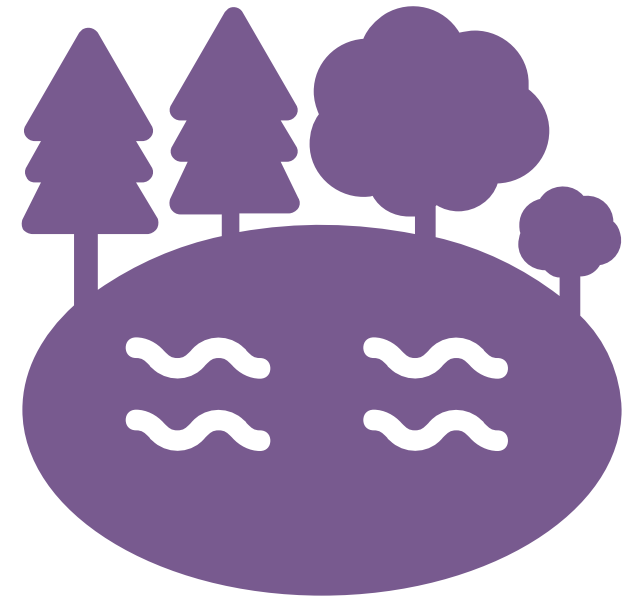
With Replenish Big Bear, water sent to LV Site is expected to be reduced from 2,200 AFY to 340 AFY (on average).





# Additional Replenish Big Bear Projects

- The Replenish Big Bear Program involves multiple projects that aim to retain recycled water in the Big Bear Valley for beneficial use that would increase the sustainability of local water supplies.
- The Environment Impact Report (EIR) focuses on the components that create the new water source and the primary beneficial uses.
- The EIR also provides flexibility for the future development of additional area-wide projects lead by other Program member agencies; this includes the use of Program Water for dust control, golf course irrigation, and snow storage.
- BBARWA is not proposing to approve dust control, golf course irrigation, and snow storage. If a Program member pursues these projects in the future, they may be able to utilize this EIR.



# Replenish Big Bear Projects & EIR Analysis



## Program Categories for EIR Analysis

Project	Conveyance Pipelines	Ancillary Facilities (Pump Stations and Monitoring Wells)	Solar Evaporation Ponds	BBARWA WWTP Upgrades
<b>BBARWA Wastewater Treatment Plant (WWTP) Upgrades</b>	✓	✓		✓
<b>Solar Evaporation Ponds</b>		✓	✓	
<b>Stanfield Marsh/Big Bear Lake Discharge</b>	✓			
<b>Sand Canyon Recharge</b>	✓	✓		
<b>Shay Pond Discharge</b>	✓	✓		



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# BBARWA WWTP Upgrades Project

This project proposes upgrades to the BBARWA WWTP and construction of a 2.2 MGD Advanced Water Purification Facility (AWPF) to produce up to 2,200 AFY of Program Water. The proposed AWPF treatment includes:

- Upgrades to the existing oxidation ditches
- New denitrification filter (DF)
- New ultrafiltration (UF) and reverse osmosis (RO) filtration membranes
- New ultraviolet (UV) disinfection
- New advanced oxidation process (AOP)
- New brine minimization process and pellet reactor: 0.22 MGD

Proposed installation of 2 megawatt (MW) of solar panels at BBARWA's WWTP, Operation and Control Building (OAC), and Administration Building site, and the BBCCSD site to the south of BBARWA's Administration Building



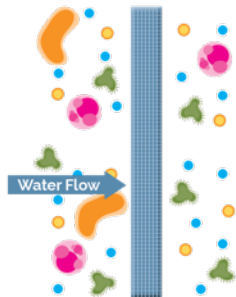
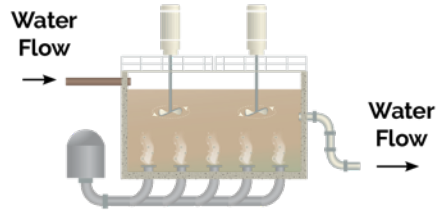


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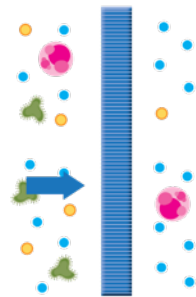
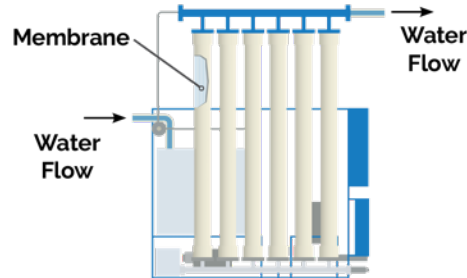
# AWPF Treatment

Multiple treatment processes, using the best available technology, are proposed to produce purified water that meets or exceeds all State and Federal water quality standards.

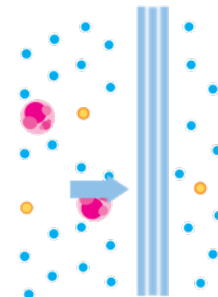
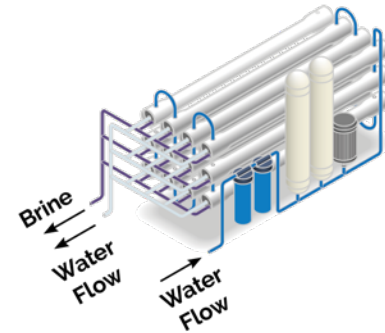
## Nutrient Removal



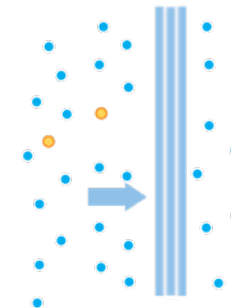
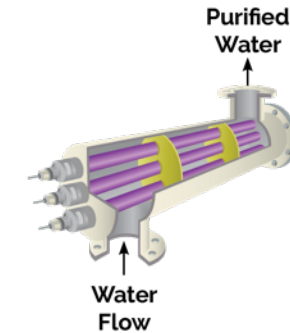
## Ultra Filtration



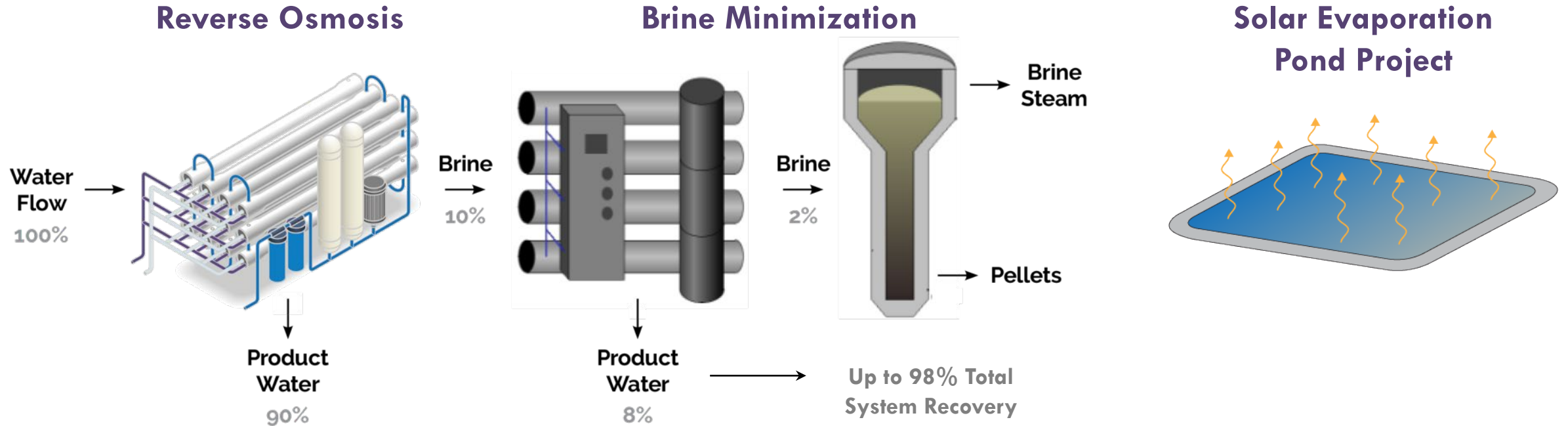
## Reverse Osmosis



## UV Disinfection & Advanced Oxidation Process



# Proposed Brine Management Facilities



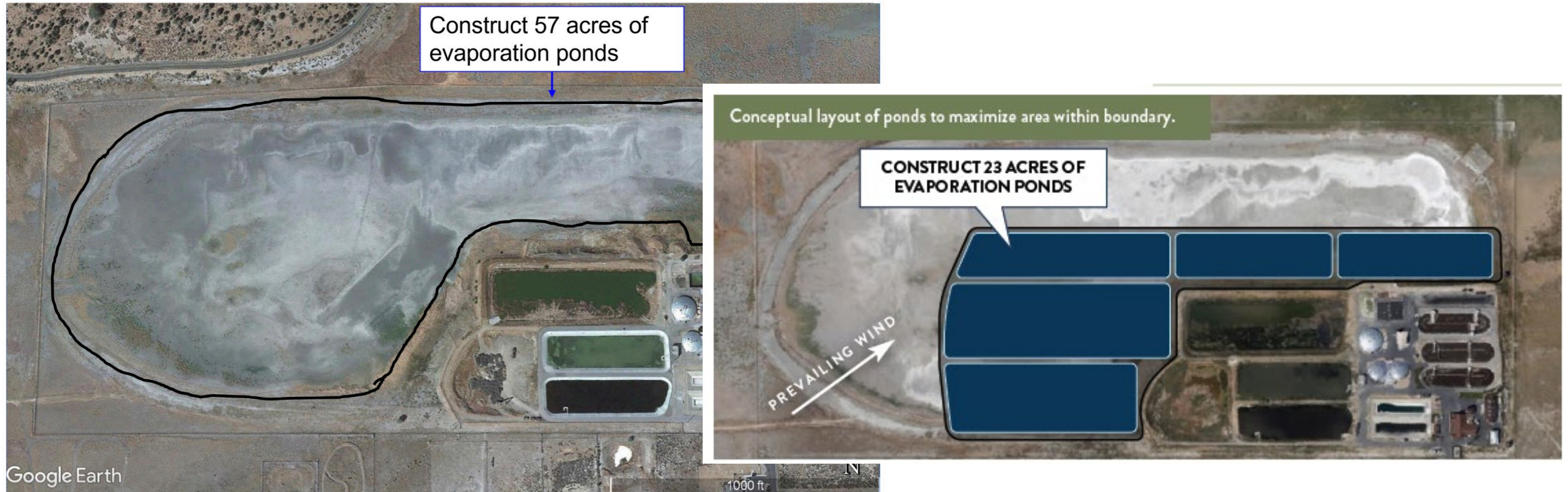
The proposed RO process would produce liquid brine concentrate that requires disposal. A desalter system is proposed that would use an additional RO process to reduce the liquid brine volume and a pellet reactor to produce solid pellets for disposal or reuse. The remaining brine would be evaporated onsite using solar evaporation ponds.



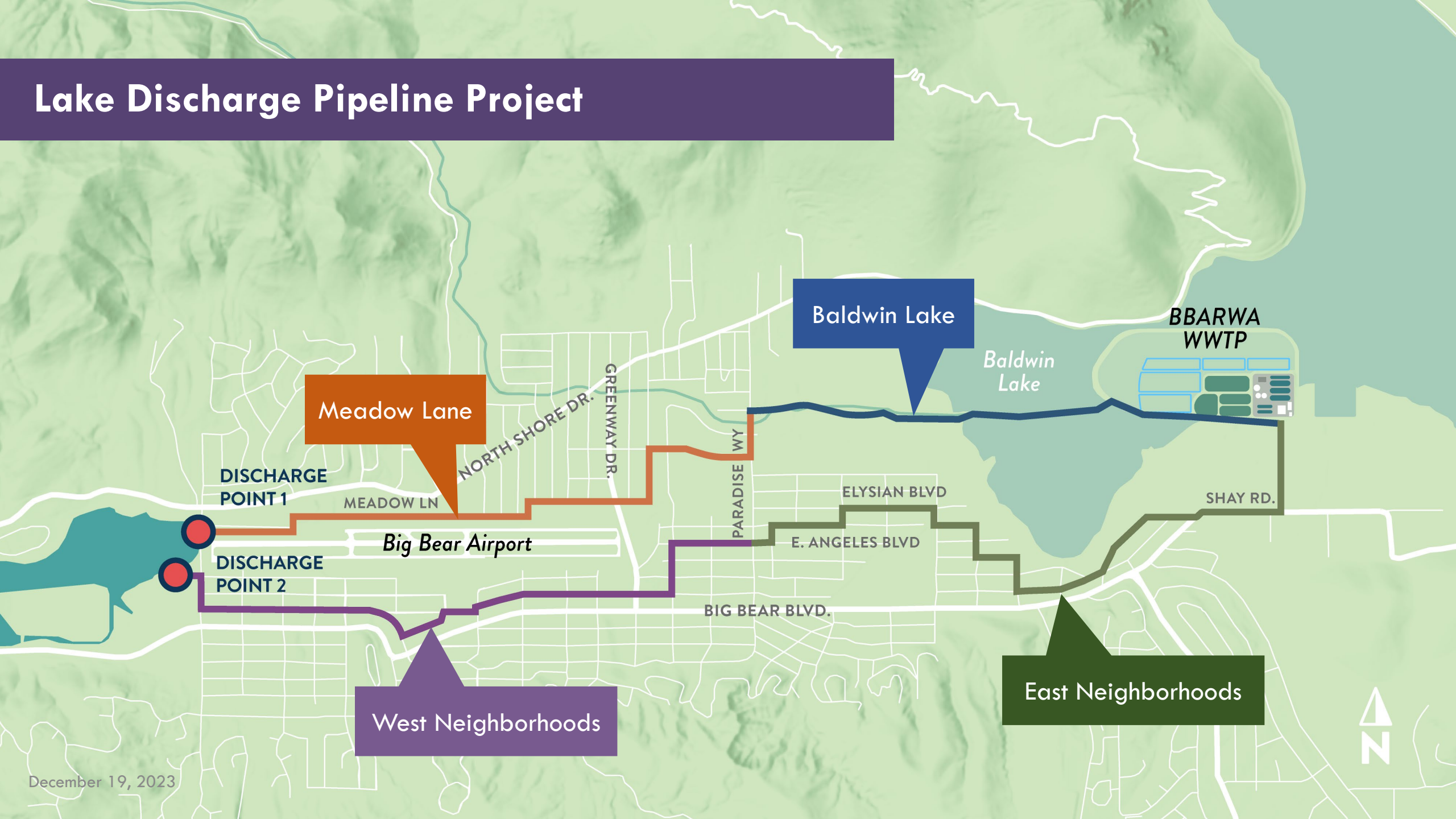
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# Solar Evaporation Ponds Project

This project proposes to construct between 23 and 57 acres of Solar Evaporation Ponds at the BBARWA WWTP site. The ponds would be divided into separate storage basins to allow the brine to evaporate. The project would include two monitoring wells to detect leakage from the ponds.



# Lake Discharge Pipeline Project



Meadow Lane

Baldwin Lake

BBARWA  
WWTP

DISCHARGE  
POINT 1

MEADOW LN

NORTH SHORE DR.  
GREENWAY DR.

PARADISE WY

ELYSIAN BLVD

SHAY RD.

DISCHARGE  
POINT 2

Big Bear Airport

E. ANGELES BLVD

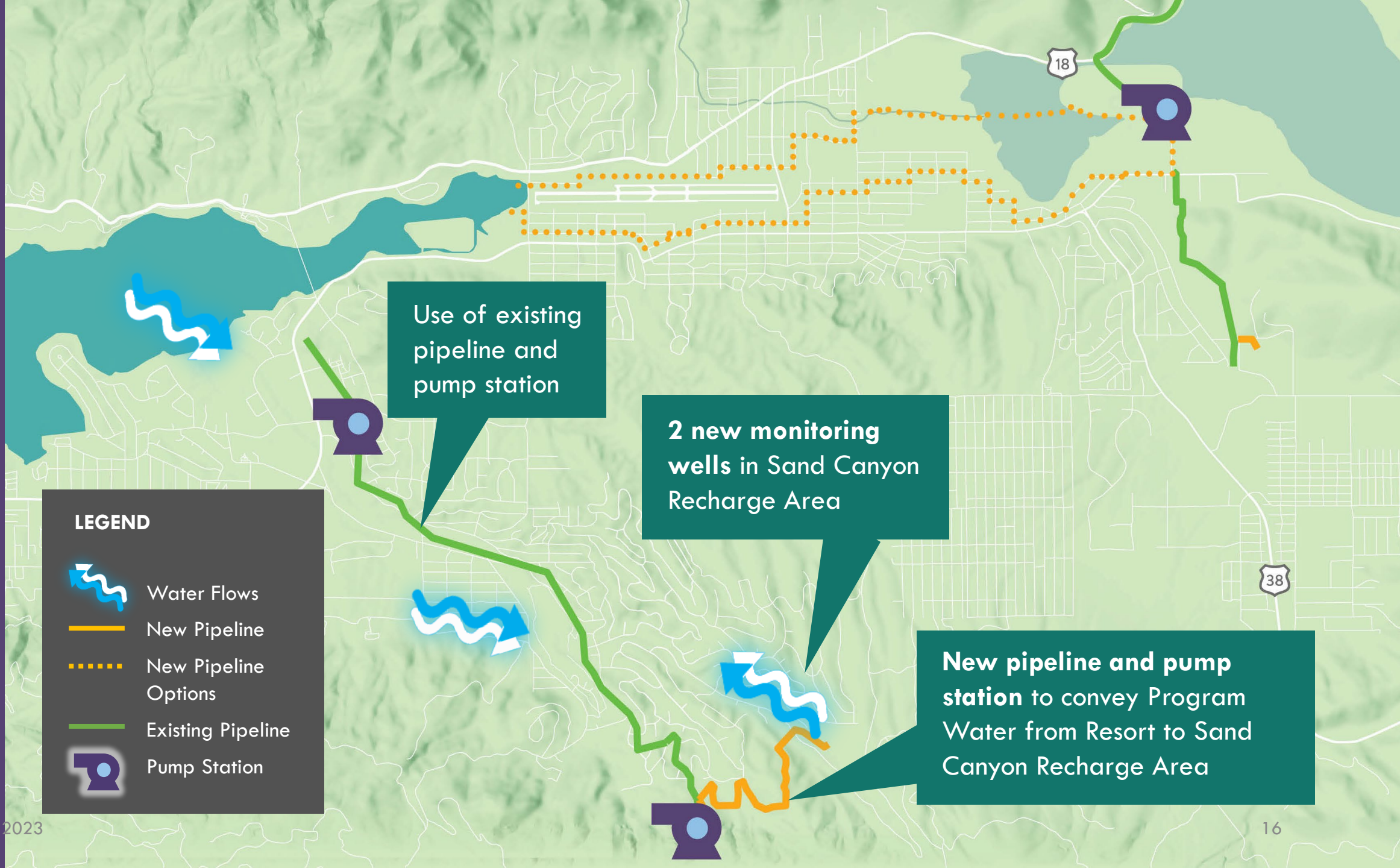
BIG BEAR BLVD.

West Neighborhoods






East Neighborhoods



# Sand Canyon Recharge



## LEGEND

-  Water Flows
-  New Pipeline
-  New Pipeline Options
-  Existing Pipeline
-  Pump Station

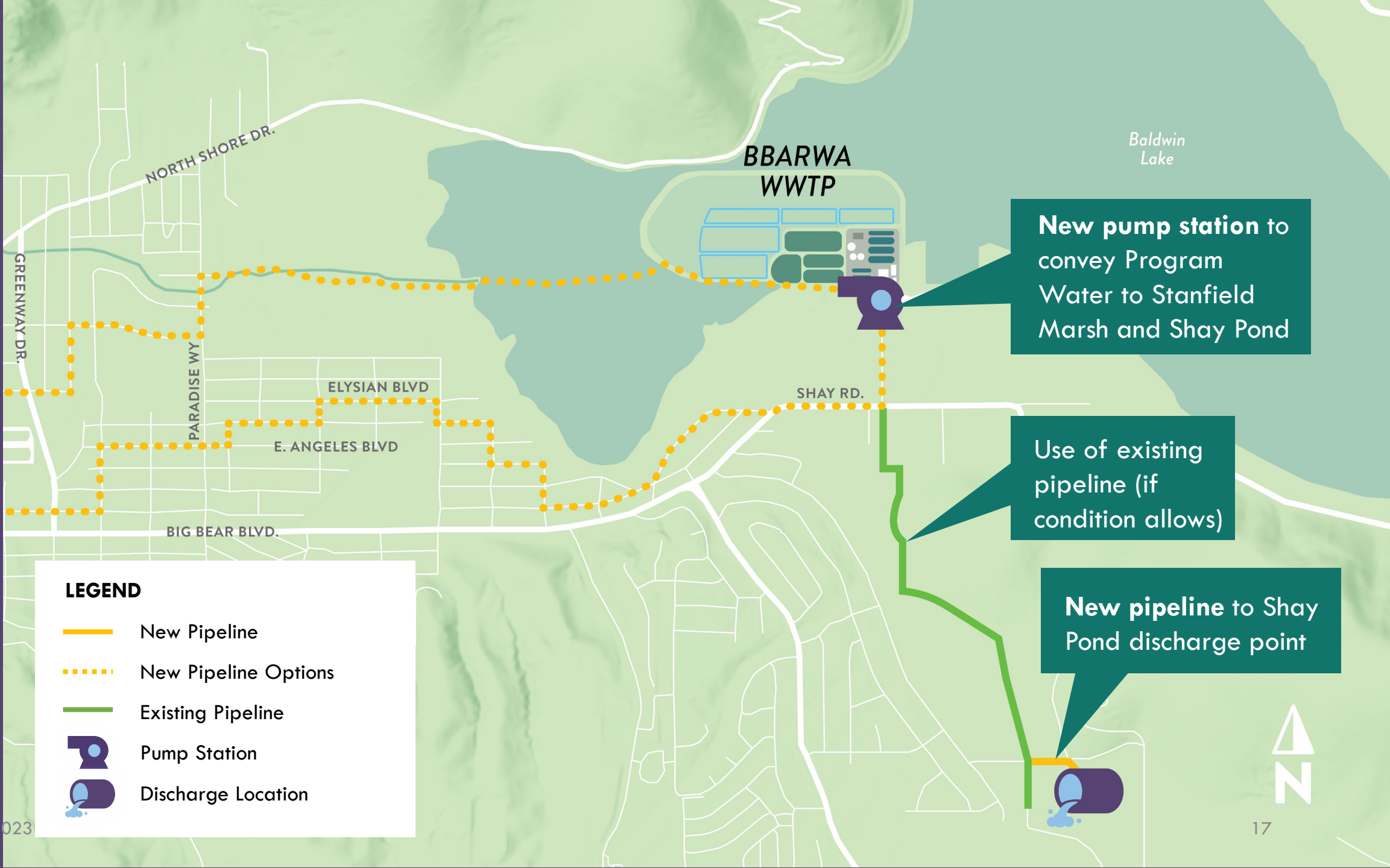
Use of existing pipeline and pump station

2 new monitoring wells in Sand Canyon Recharge Area






New pipeline and pump station to convey Program Water from Resort to Sand Canyon Recharge Area



# Shay Pond Discharge



**LEGEND**

-  New Pipeline
-  New Pipeline Options
-  Existing Pipeline
-  Pump Station
-  Discharge Location

**New pump station to convey Program Water to Stanfield Marsh and Shay Pond**

**Use of existing pipeline (if condition allows)**

**New pipeline to Shay Pond discharge point**



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# CEQA/NEPA

## PROCESS OVERVIEW





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# CEQA

The California Environmental Quality Act (CEQA) requires government agencies to consider the environmental consequences of their actions before approving plans and policies or committing to a course of action on a project

**This process is intended to:**

1. Inform government decision-makers and the public about the potential environmental effects of proposed activities.
2. Identify the ways that environmental damage can be avoided or significantly reduced.
3. Prevent significant, avoidable environmental damage by requiring changes in projects, either by the adoption of alternatives or imposition of mitigation measures.
4. Disclose to the public why a project was approved if that project has significant environmental impacts that cannot be mitigated to a less than significant level.



# NEPA

The National Environmental Policy Act (NEPA) requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.

**The Program has been awarded Federal grants, so compliance with NEPA is needed.**

Each of the Federal Agencies that have awarded grants to the Program have different requirements that must be met to comply with NEPA. These NEPA procedures vary from agency to agency since they are tailored for the specific mission and activities of the agency. Thus, NEPA compliance for the Program will be prepared to meet the requirements of each individual agency.





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# Draft EIR Analysis AND CONCLUSIONS

December 19, 2023

# Environmental Impact Report (EIR) Analysis

## The DPEIR evaluated the following environmental issues:

- Aesthetics
- Air Quality
- Agriculture and Forestry Resources
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Wildfire
- Utilities and Service Systems



# DPEIR Conclusions: Potential Impacts

Impacts to environmental issues in purple are less than significant or can be reduced to less than significant with the mitigation measures identified in the DPEIR

- **Aesthetics**
- **Air Quality**
- Agriculture and Forestry Resources
- Biological Resources
- **Cultural Resources**
- **Energy**
- **Geology and Soils**
- **Greenhouse Gas**
- **Hazards and Hazardous Materials**
- Hydrology and Water Quality
- **Land Use and Planning**
- **Mineral Resources**
- **Noise**
- **Population and Housing**
- **Public Services**
- **Recreation**
- **Transportation**
- **Tribal Cultural Resources**
- **Wildfire**
- Utilities and Service Systems



# DPEIR Conclusions: Potential Impacts

The Program could result in potentially significant adverse environmental impacts to the issues in **black**

- Aesthetics
- Air Quality
- **Agriculture and Forestry Resources**
- **Biological Resources**
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas
- Hazards and Hazardous Materials
- **Hydrology and Water Quality**
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Wildfire
- **Utilities and Service Systems**





## CONCLUSIONS

# Agricultural and Forestry Resources

- There are no impacts to Forestry resources if CalFire regulations are followed (mitigation measure AGF-1).
- The LV Site is considered Prime Farmland and Farmland of Statewide Importance under agricultural production.
- The Replenish Big Bear Program would reduce the water discharged to the LV Site, which will cause some of the current farmed area to lie fallow in the future, resulting in the loss of Prime Farmland and Farmland of Statewide Importance. This loss is considered a significant impact.
- No feasible mitigation measures exist to avoid the loss of Prime Farmland and Farmland of Statewide Importance at the LV Site.



## CONSIDERATIONS

# Agricultural and Forestry Resources

- BBARWA's wastewater flow to the LV Site is not considered an adjudicated water right or claim to the LV Site, but only considered to be an accounting for that supply (**Appendix 23**). Since BBARWA's wastewater is not included in the LV Basin's annual yield calculation or claim to that supply, BBARWA is not bound by the LV Basin's adjudication, and its wastewater can be diverted to be reused in Big Bear Valley at BBARWA's discretion. (**Appendix 24**).
- The discharge of effluent to the LV Site is for the purposes of disposal and was intended to be temporary until suitable uses for the water could be found in the Big Bear Valley. BBARWA cannot provide an alternative water source to avoid the loss of farmland.



## CONCLUSIONS

# Biological Resources

- With one exception, impacts to species and habitats were determined to be less than significant, with mitigation.
- The Baldwin Lake Pipeline Alignment option (Stanfield Marsh/Big Bear Lake Discharge Pipeline Project) has the potential to adversely impact the plant species bird-foot checkerbloom.
  - Feasible mitigation includes designing the pipeline to avoid the plant, where possible, and relocating plants that would be impacted by construction. Even with mitigation, there may still be a significant impact to this species.
- The biological impacts of the Program are only significant if the Baldwin Lake Pipeline Alignment Option is pursued; otherwise, the Program would not result in significant impact to any biological resources.



*Bird-foot Checkerbloom*

## CONSIDERATIONS

# Biological Resources

**Not building the Baldwin Lake Pipeline Alignment would avoid the biological impact to the bird-foot checkerbloom, but there are benefits that come with this project, including:**

- Fewer construction disruptions in the residential area south of Baldwin Lake.
- Reduced utility congestion in the residential area south of Baldwin Lake.
- Lower construction costs.



*Bird-foot Checkerbloom*

## CONCLUSIONS

# Hydrology and Water Quality

- No significant hydrological impacts are anticipated to occur in Big Bear Valley, with the implementation of mitigation measures.
- At the LV Site, there is a potentially significant and unavoidable impact to water quality and groundwater availability.
  - Because the BBARWA effluent is of better quality than the downgradient groundwater for nitrate and TDS, the discharge may be currently acting as a minor source of dilution. Therefore, the reduced discharge to LV Site, has the potential to contribute to water quality degradation in the Lucerne Valley Basin by removing a dilution source, resulting in a significant and unavoidable impact.
  - The Program has the potential to reduce the groundwater recharge of the Lucerne Valley Basin due to the reduction in discharge to the LV Site, thereby resulting in a significant and unavoidable impact.
- No feasible mitigation measures exist to avoid this impact.



## CONSIDERATIONS

# Hydrology and Water Quality

- The groundwater at the monitoring wells downgradient of the LV Site currently exceeds the drinking water standards for TDS (recommended) and nitrate, so the reduced flow would not be a direct cause of the exceedances. There are likely other sources near the LV Site contributing to degradation, such as septic systems.
- As stated earlier, BBARWA's discharge to the LV Site is not considered an adjudication water right or claim to the LV Basin. BBARWA is not bound by the LV Basin's adjudication, and its wastewater can be diverted to be reused in Big Bear Valley at BBARWA's discretion.



## CONCLUSIONS

# Utilities and Service Systems

- Impacts to stormwater drainage, energy, natural gas telecommunications, and solid waste are less than significant, with mitigation measures.
- There are significant and unavoidable impacts on utilities and service systems due to:
  - The construction of the Baldwin Lake Pipeline Alignment option, which may have a significant biological resources impact on the bird-foot checkerbloom plant.
  - The reduction in discharge to the LV Site has a potential to impact the amount of water expected to be recharged to the Lucerne Valley Basin, a significant and unavoidable impact.
- The biological impact is only associated with the Baldwin Lake Pipeline Alignment option, if selected.



# Alternatives Evaluation

**The CEQA process requires an evaluation of alternatives to the proposed action.**

The following alternatives were evaluated:

- No Program Alternative (NPA)
- Groundwater Recharge at Greenspot
- Groundwater Recharge at Greenspot and Sand Canyon





## ALTERNATIVE

# No Program Alternative (NPA)

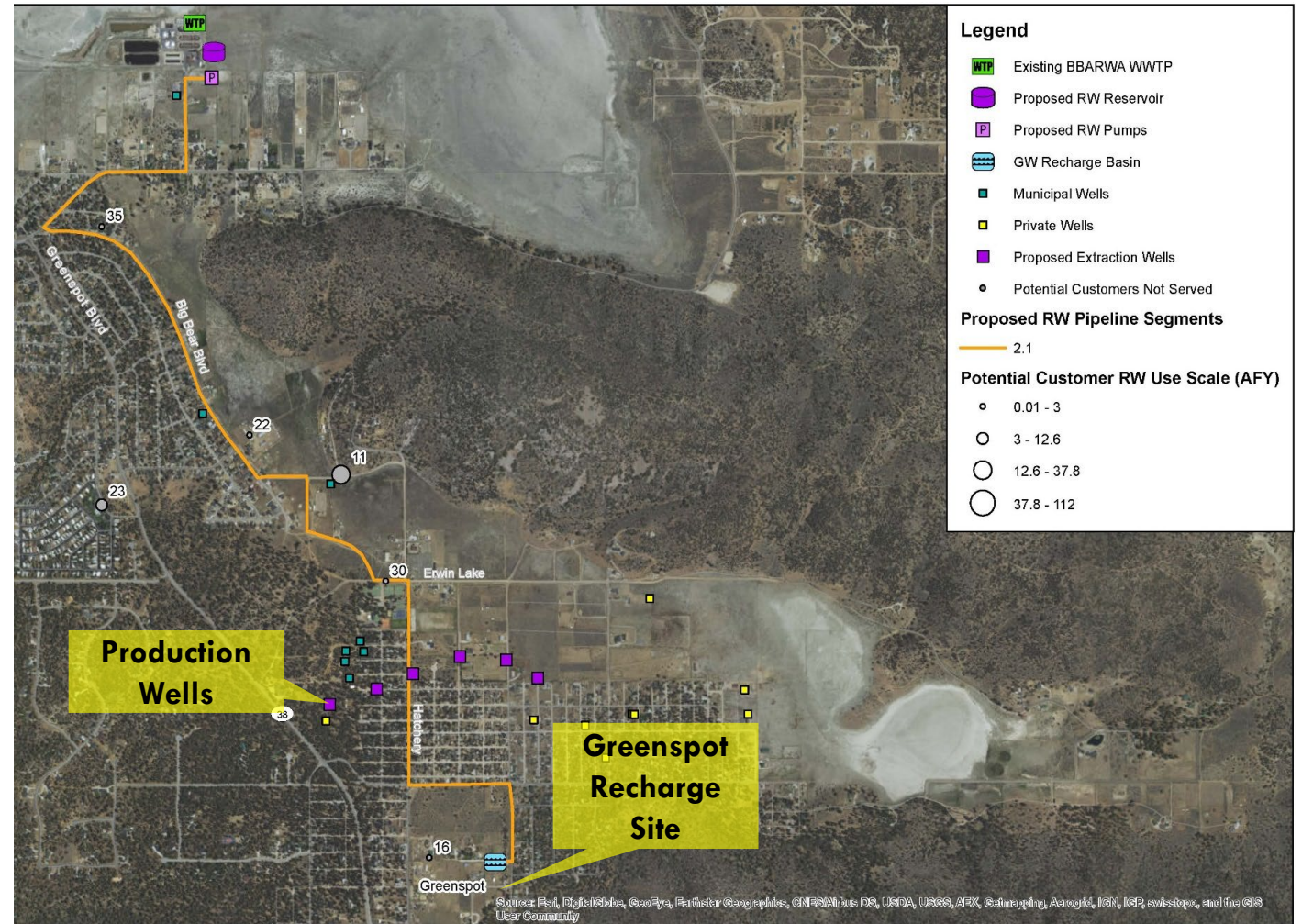
- This alternative evaluates the environmental impacts resulting from a hypothetical continuation of the existing land use and circumstances.
- The NPA is required under CEQA to evaluate the environmental effects associated with no action on the part of the Lead Agency.
- The NPA would not require any upgrades to the BBARWA WWTP and the secondary effluent would continue to be discharged outside of Big Bear Valley for crop irrigation at the LV Site.
- The NPA would not provide any benefits to the Big Bear Valley.



## ALTERNATIVE

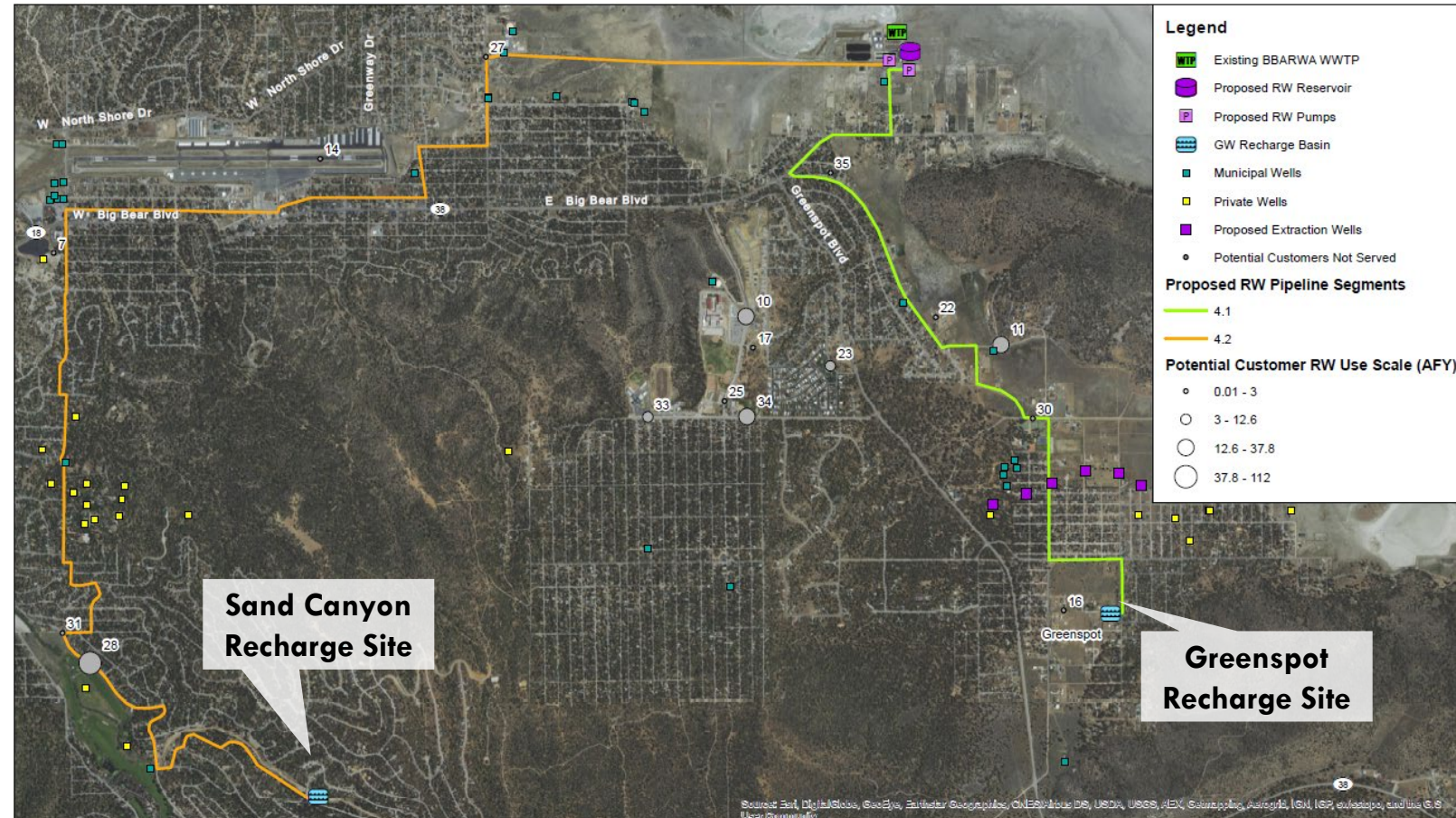
# Groundwater Recharge at Greenspot

- **Yield:** 1,000 AFY for groundwater sustainability.
- Advanced treatment upgrades and brine disposal required.
- Requires 6 new production wells and coordinated pumping to recover water.
- Does not provide lake or habitat benefits.



# ALTERNATIVE Groundwater Recharge at Greenspot and Sand Canyon

- **Yield:** 1,750 AFY for groundwater sustainability.
- Advanced treatment upgrades and brine disposal required.
- Requires 6 new production wells and coordinated pumping to recover water.
- Does not provide lake or habitat benefits.



# Conclusion of Alternatives Analysis



Alternative	Impacts	Objectives
<b>No Project</b>	<ul style="list-style-type: none"> <li>• Taking no action to manage water resources in Big Bear Valley is expected to cause new significant adverse impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Does not meet any Program Objectives.</li> </ul>
<b>Greenspot Recharge</b>	<ul style="list-style-type: none"> <li>• Similar impacts to the proposed Program</li> <li>• No significant biological impact</li> <li>• Reduced impact to LV Site, but still significant</li> </ul>	<ul style="list-style-type: none"> <li>• Uses less than 50% of available water.</li> <li>• Does not meet Program objectives to develop and promote a thriving community through enhanced recreation and protecting diverse habitats in Big Bear Valley</li> </ul>
<b>Greenspot &amp; Sand Canyon Recharge</b>	<ul style="list-style-type: none"> <li>• Similar impacts to the proposed Program</li> <li>• Reduced impact to LV Site, but still significant</li> </ul>	<ul style="list-style-type: none"> <li>• Uses nearly 80% of available water</li> <li>• Does not meet Program objectives to develop and promote a thriving community through enhanced recreation and protecting diverse habitats in Big Bear Valley</li> </ul>



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# DPEIR Schedule AND COMMENT PROCESS



# PEIR CEQA Schedule

MILESTONE	DATES
<b>Publish NOA</b>	<b>December 21, 2023</b>
<b>DPEIR Public Review Period</b>	December 21, 2023, to February 5, 2024
<b>DPEIR Public Comments Due</b>	February 5, 2024
<b>Prepare Final PEIR</b>	TBD
<b>Provide Written Response to Comments</b>	10 days prior Final Adoption
<b>Public Hearing Adoption</b>	TBD
<b>Certify PEIR</b>	TBD
<b>File Notice of Determination</b>	Within 5 working days after project approval
<b>NOD Post Period</b>	The NOD must be posted with the county clerk and State Clearinghouse for at least 30 days.

# DPEIR Public Review Process

The review period is **December 21, 2023 – February 5, 2024**

Comments must be received no later than **February 5, 2024**



An electronic version of the Program DPEIR is available at:  
<https://www.replenishbigbear.com/eir-process>.



A printed copy of the Program DPEIR and reference documents is available at BBARWA's offices and San Bernardino County Library Big Bear Lake Branch  
**41930 Garstin Drive**  
**Big Bear Lake, CA 92315**

Written comments and questions should be submitted to:



**Bridgette Burton**  
[bburton@bbarwa.org](mailto:bburton@bbarwa.org)  
909-584-4524

**Big Bear Area**  
**Regional Wastewater Agency**  
121 Palomino Drive  
P.O. Box 517  
Big Bear City, CA 92314

An aerial photograph of a large lake resort. The lake is a deep blue, surrounded by dense evergreen forests. In the foreground, several large, multi-story resort buildings with dark roofs are nestled among the trees. Numerous wooden docks extend into the water, with several boats moored. The background shows rolling hills and mountains under a clear sky. A semi-transparent white rectangular box is centered over the middle of the image, containing the text "POCKET SLIDES" in white, bold, sans-serif capital letters.

# POCKET SLIDES