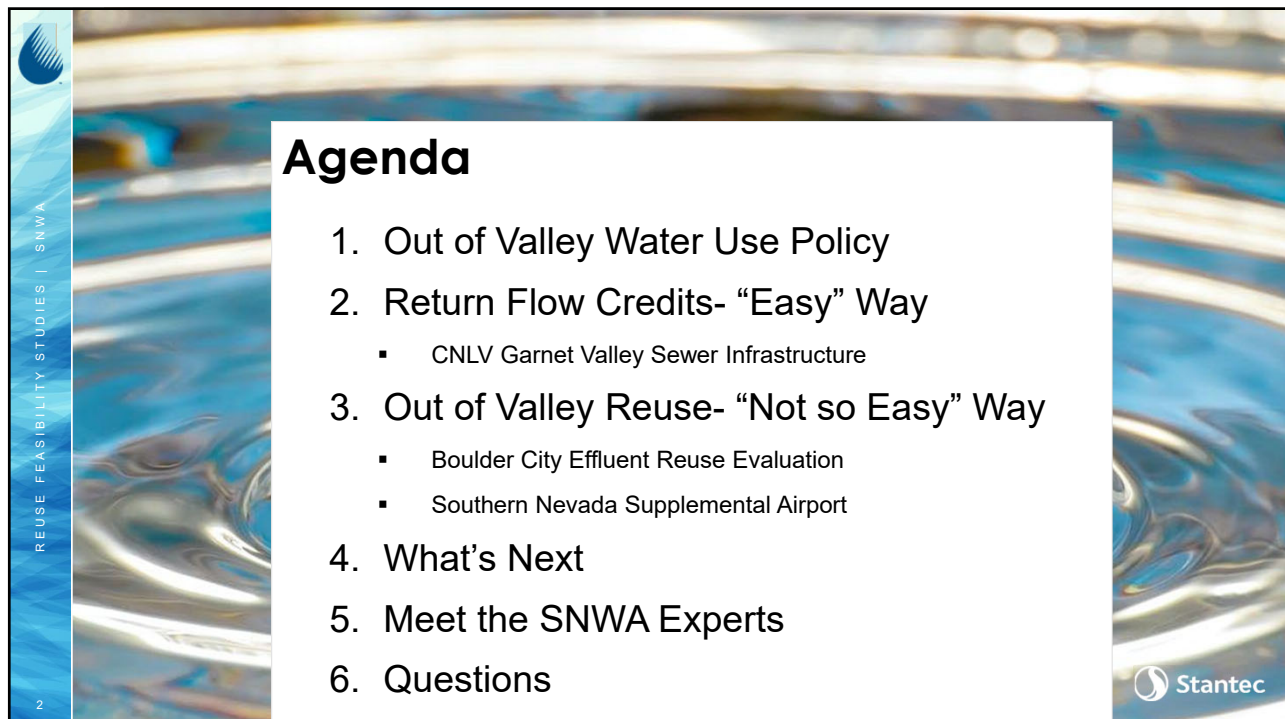


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May 2017- OOV Water Use Policy

- Return Flow Credits- Priority
- IRPAC 2020- Limit Consumptive Use – Out Valley Areas
- Recognizes the Hurdles of Out Valley Area Returns
- Studies of Practical Return or Reuse Options
 - Direct and Indirect Use Review
 - Schedule of Approvals
 - Cost Comparisons

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM
May 18, 2017

| | |
|--|--------------------------|
| Subject: Out of Valley Water Use Policy | Director's Backup |
| Petitioner: David L. Johnson, Deputy General Manager, Engineering Operations | |
| Recommendations: That the Board of Directors adopt a policy for water used outside the Las Vegas Valley. | |

Fiscal Impact:
None by approval of the above recommendation.


Background:
On December 18, 2008, the Board of Directors adopted a resolution approving the Policy Relating to Recycled Water (Recycled Water Policy), which sets forth a series of guiding principles and policy statements related to the efficient use of water resources in Southern Nevada. Following Board approval, the Recycled Water Policy was also adopted by the governing boards of Authority member agencies.

One of the Recycled Water Policy's provisions supports expanding return flows to the Colorado River to increase Nevada's credit for subsequent withdrawal. Colorado River resources represent a valuable resource for the community and currently meet 90 percent of water demands. With ongoing drought impacting resource availability, and the potential for supply reductions as a result of declared shortages on the Colorado River, it is imperative that water supplies in Nevada be used as efficiently as possible.

The proposed Out of Valley Water Use Policy (OOV Water Use Policy) emphasizes the value of return-flow credits to the region and recognizes that in some areas of Clark County returns to Lake Mead may not be practical. In those areas, the OOV Water Use Policy seeks to ensure that water resources are reused, through either direct or indirect methods, to achieve full beneficial use of recycled water similar to water resources within the Las Vegas Valley.

This action is authorized pursuant to Section 6(p) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved this item.

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01

Out of Valley
Water Use Policy

02

CNLV
Garnet Valley
Wastewater
System

03

Boulder City
Effluent Reuse
Study

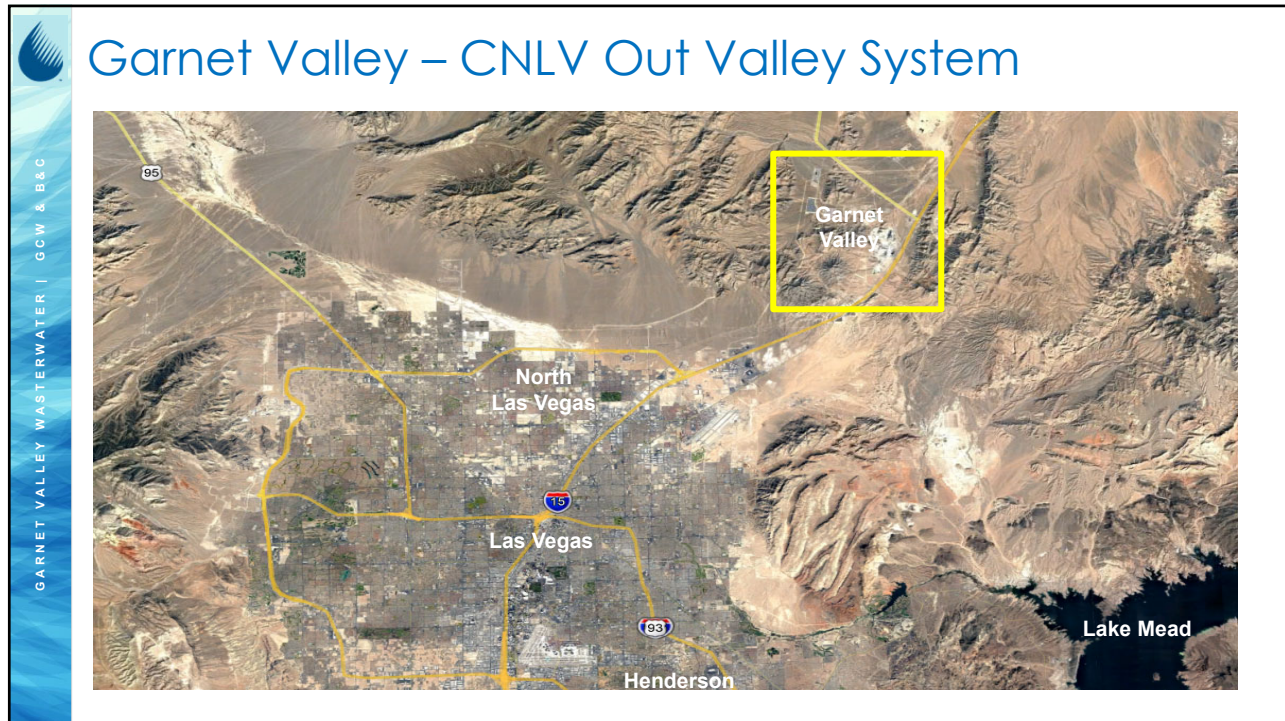
04

SNSA Reuse
Evaluation

05

Our Team

4



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Background

Apex Industrial Park in Garnet Valley: City of North Las Vegas (CNLV)

Largest industrial park in Southern Nevada

7,000 developable acres and lot sizes ranging from 5 to 1,500 acres

Project Purpose: Return water back to the Las Vegas Wash -CNLV Water Reclamation Facility

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GARNET VALLEY WASTEWATER | GCW & B&C

CNLV - Garnet Valley Wastewater System

LV Blvd Interceptor-PH IA- Sloan to Speedway

- Bidding: Dec 2023

LV Blvd Interceptor- PH IB- Speedway to UPRR

- Bidding: Winter 2024

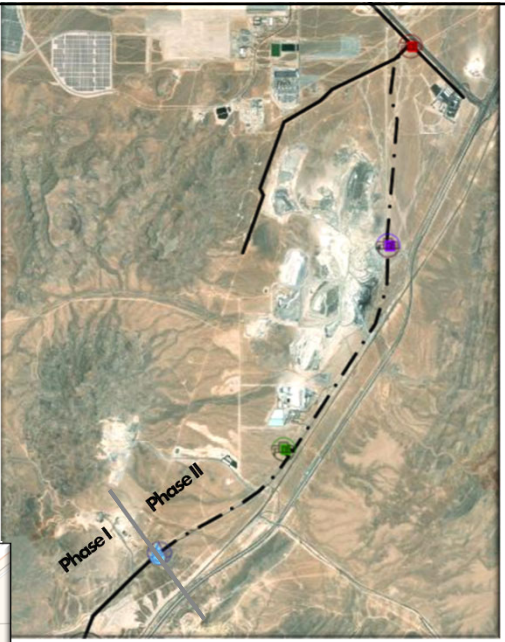
Out of Valley System (Lift Stations and Force mains)

- 60% Designs
- Est Construction: Summer 2025

Current Program Budget: \$500M


MAJOR HURDLES

- Schedule and Costs



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REUSE FEASIBILITY STUDIES | SNWA



01

Out of Valley
Water Use Policy

02

CNLV
Garnet Valley
Wastewater
System

03

Boulder City
Effluent Reuse
Study

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SNSA Reuse
Evaluation

05

Our Team

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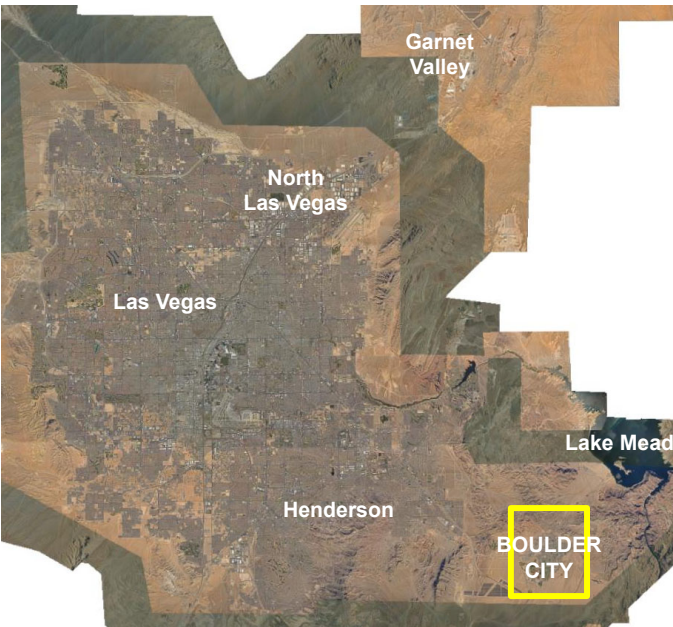
BOULDER CITY EFFLUENT REUSE STUDY | Brown & Caldwell

Boulder City Effluent Reuse

- Ex Treatment Plant
 - Evaporative Ponds
- Ex 2 MGD WW Flows
- Reclaimed Water Potential
 - Existing Golf Courses

MAJOR HURDLES

- Permitting and Costs



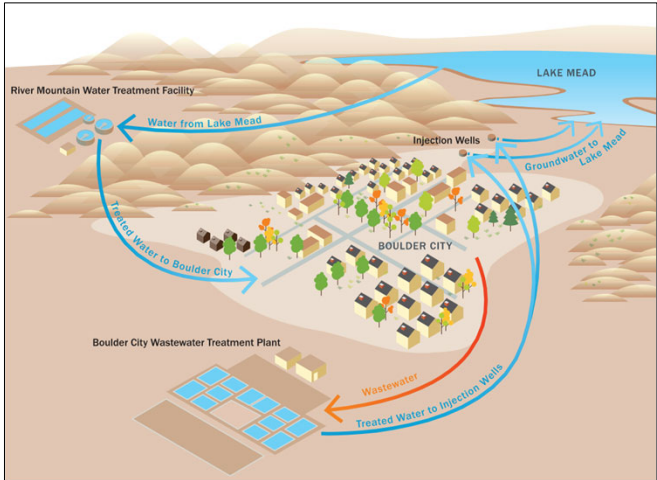
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BOULDER CITY EFFLUENT REUSE STUDY | Brown & Caldwell

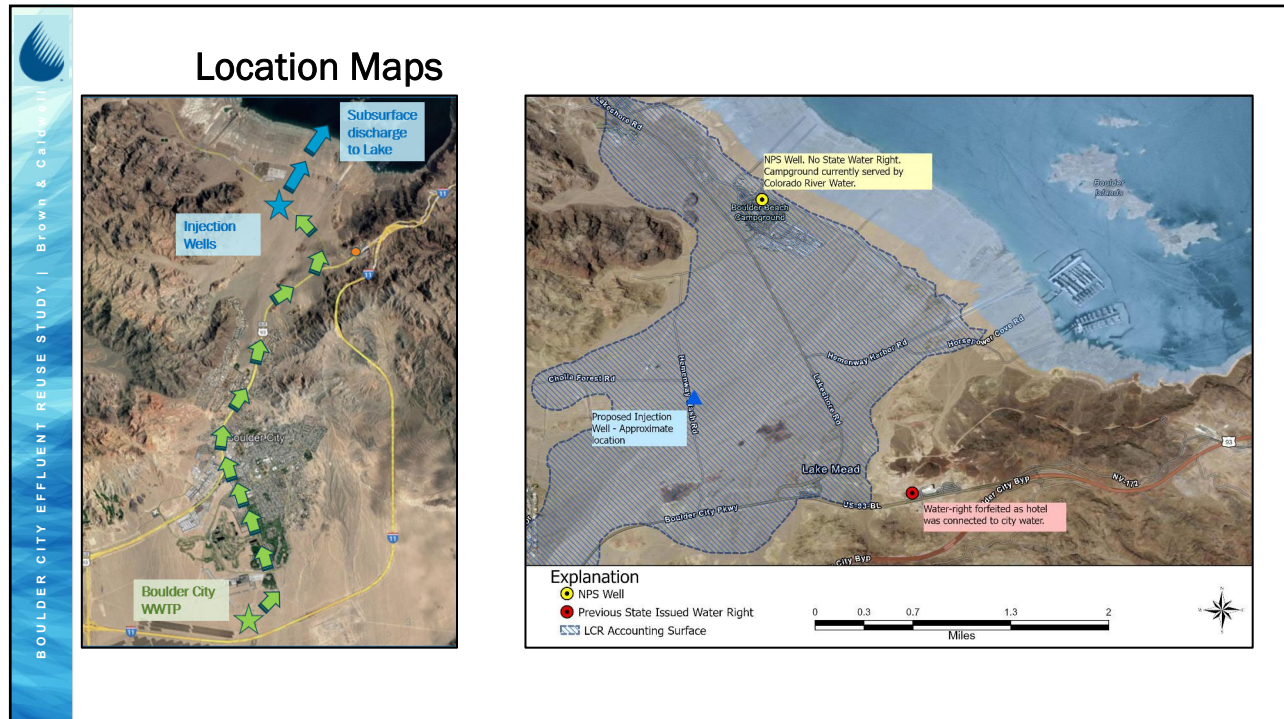
Concept #1– Injection Wells

Return Flow Credits:

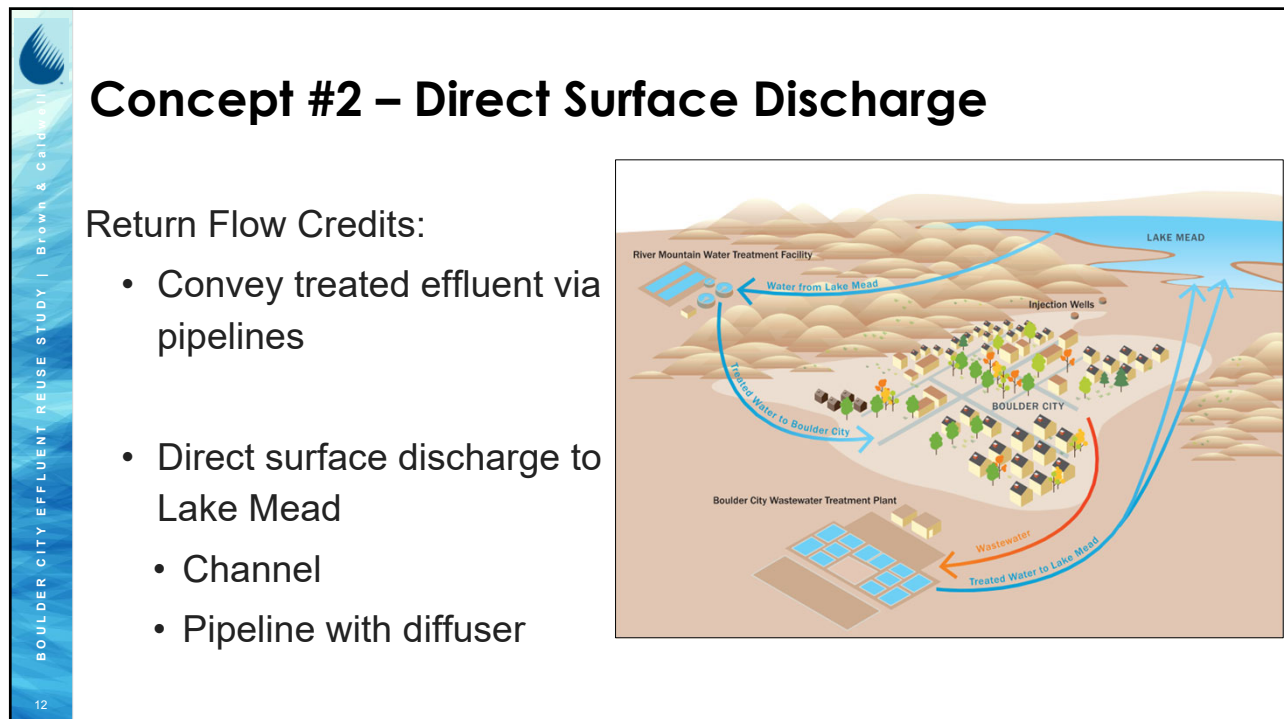
- Convey treated effluent to Hemenway Wash
- Inject into aquifer via wellfield where subsurface flow will return water to Lake Mead



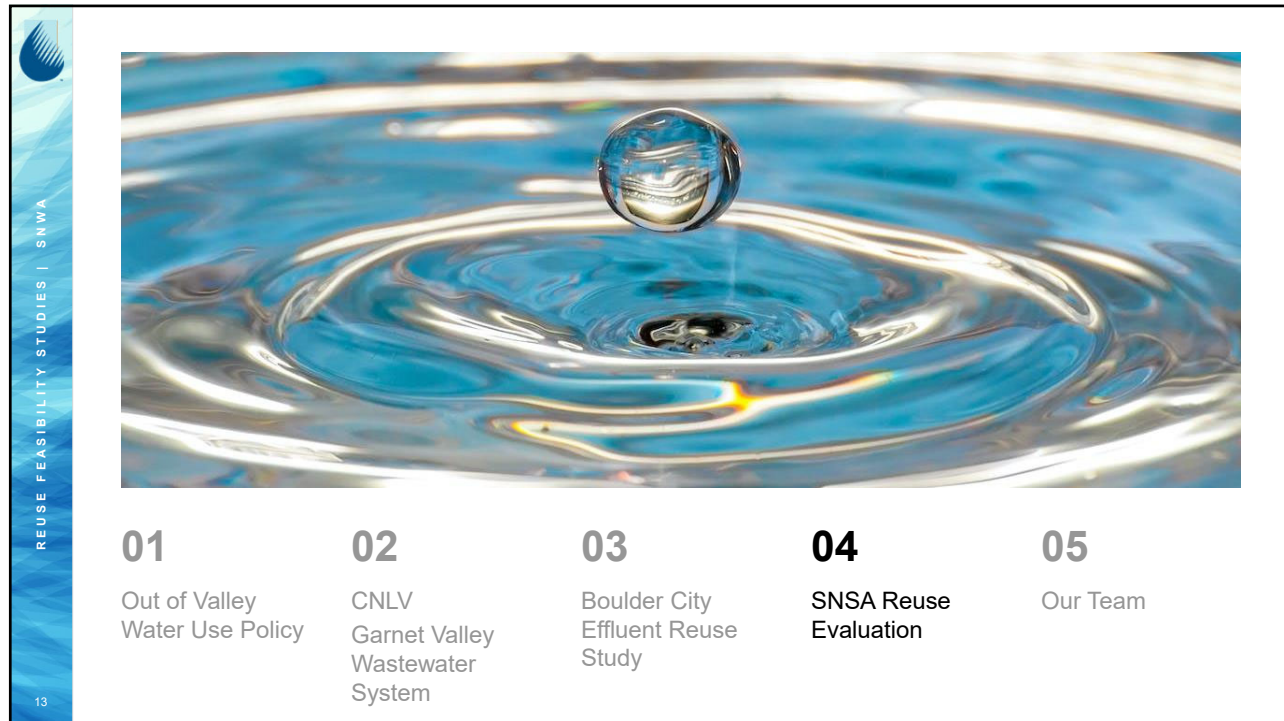
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SNSA Evaluations

- Non-potable Reuse (NPR)
- Indirect Potable Reuse (IPR) via groundwater recharge/recovery
- Direct Potable Reuse (DPR)
- Phased Approach - NPR to DPR

MAJOR HURDLES

- Permitting/Regulations/Schedule

LEGEND

- 12,000 Acres
- Future SNSA Site
- Future Helpport Site
- Stormwater Management Conveyance
- Proposed Modified Retention Facilities
- Transportation and Utility Corridor
- Proposed Brightline West Alignment
- State Boundary
- Mile Post Markers
- Union Pacific Railroad
- National Conservation Areas
- Las Vegas Boulevard
- 1-Mile Annotation Exclusion Area

AIRPORT REUSE FEASIBILITY STUDY | STANTEC

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AIRPORT REUSE FEASIBILITY STUDY | SNWA

Progress Update

- Overall Project Schedule:
8/22/2023 – 5/8/2024
- Task 3 – Alternatives Development
 - Reuse alternatives development (up to four alternatives)
 - Brine management strategy
 - Cost analysis
- Task 4 – Alternatives Analysis
 - Alternatives analysis
(using agreed upon criteria and weighting factors)
 - Draft and Final Alternatives Summary Report

| ID | Task Name | Activity Owner | Duration | Baseline Start | Baseline Finish |
|----|--|----------------|----------|----------------|-----------------|
| 1 | Notice to Proceed | SNWA | 0 days | Tue 8/22/23 | Tue 8/22/23 |
| 2 | Task 1 - Project Management | | 172 days | Tue 8/22/23 | Wed 4/17/24 |
| 3 | Project Administration | Stantec | 171 days | Wed 8/23/23 | Wed 4/17/24 |
| 4 | Progress Meeting - 1 | Stantec | 1 day | Wed 1/10/24 | Wed 1/10/24 |
| 5 | Progress Meeting - 2 | Stantec | 1 day | Wed 2/7/24 | Wed 2/7/24 |
| 6 | Task 2 - Project Definition | | 57 days | Wed 8/23/23 | Thu 11/9/23 |
| 7 | Define Issues and Needs | Stantec | 35 days | Wed 8/23/23 | Tue 10/10/23 |
| 8 | Source and Finished Water Characterization | Stantec | 35 days | Wed 8/23/23 | Tue 10/10/23 |
| 9 | Kick-off / Workshop 1 | Stantec / SNWA | 1 day | Thu 10/5/23 | Thu 10/5/23 |
| 10 | Overview of Regulations | Stantec | 20 days | Fri 10/6/23 | Thu 11/2/23 |
| 11 | Concepts for Reuse | Stantec | 20 days | Fri 10/6/23 | Thu 11/2/23 |
| 12 | Reuse Reference Review | Stantec | 20 days | Fri 10/6/23 | Thu 11/2/23 |
| 13 | Workshop 2 | Stantec / SNWA | 1 day | Thu 11/9/23 | Thu 11/9/23 |
| 14 | Task 3 - Alternatives Development | | 45 days | Fri 11/9/23 | Thu 1/11/24 |
| 15 | Reuse Alternatives Development | Stantec | 40 days | Fri 11/10/23 | Thu 1/4/24 |
| 16 | Workshop 3 | Stantec / SNWA | 1 day | Thu 12/14/23 | Thu 12/14/23 |
| 17 | Brine Management Strategy | Stantec | 30 days | Fri 12/1/23 | Thu 1/11/24 |
| 18 | Cost Analysis | Stantec | 30 days | Fri 12/1/23 | Thu 1/11/24 |
| 19 | Task 4 - Alternatives Analysis and Summary | | 84 days | Fri 1/12/24 | Wed 5/8/24 |
| 20 | Alternatives Analysis | Stantec | 20 days | Fri 1/12/24 | Thu 2/8/24 |
| 21 | Prepare Draft Alternatives Summary | Stantec | 20 days | Thu 2/1/24 | Wed 2/28/24 |
| 22 | Internal QA / QC | Stantec | 5 days | Thu 2/29/24 | Wed 3/6/24 |
| 23 | Submit Draft Alternatives Summary | Stantec | 0 days | Wed 3/6/24 | Wed 3/6/24 |
| 24 | AUTHORITY Review Period | SNWA | 20 days | Thu 3/7/24 | Wed 4/3/24 |
| 25 | Workshop 4 | Stantec / SNWA | 1 day | Thu 3/14/24 | Thu 3/14/24 |
| 26 | Prepare Final Alternatives Summary | Stantec | 20 days | Thu 4/4/24 | Wed 5/1/24 |
| 27 | Internal QA / QC | Stantec | 5 days | Thu 5/2/24 | Wed 5/8/24 |
| 28 | Submit Final Alternatives Summary | Stantec | 0 days | Wed 5/8/24 | Wed 5/8/24 |

YOU ARE HERE

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What's Next?


- Cost Estimating
- NDEP Coordination
- Phasing Strategies
- Agency Coordination

SOUTHERN NEVADA
WATER AUTHORITY


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REUSE FEASIBILITY STUDIES | SNWA


A few of our Team:



Megan Morris
Civil Engineer P.E. • 3480 System Delivery Division




Andrew Burns
SNWA Division Manager • 7160 Water Resources Division




James Prieur
Hydrology Supervisor • 7162 Data Acquisition & Reporting

✉ 🗨




Daniel Gerrity
Prin Res Laboratory Scientist • 4564 Research Microbiology

✉ 🗨



Thomas Maher
Sr Resource Analyst • 7163 Resource Planning



Eric Dickenson
Project Mgr - Research & Dev • 4561 Research & Development


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REUSE FEASIBILITY STUDIES | SNWA




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NEVADA WATER USE SYMPOSIUM | SNWA

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Thank you!