OneWater Nevada
Our Sustainable Water Future

Researching Advanced Purified Water Treatment Technologies for Northern Nevada

The goal of **OneWater Nevada** is to evaluate various technologies and determine if advanced purified water can offer regional long range benefits and opportunities to Truckee Meadow's water portfolio.

History of Water Management in the Truckee Meadows

From the time pioneers first settled in the Truckee Meadows, having a sustainable water supply was critical. Initially it was about agriculture and economic development but eventually issues of recreation and environmental protection became priorities. As a high-desert community, these needs fostered deep appreciation for the value of water in the Truckee Meadows and has shaped sustainable water management practices through conserving, recycling, and storing water for the future. Developing innovative solutions to manage water for tomorrow's generations is both a tradition and a responsibility that has become a hallmark of our community's approach to water-resource management.

OneWater Nevada –
Looking Toward Our Water Future

OneWater Nevada, a unique Feasibility Study (Study), is a joint effort to evaluate and determine if advanced purified water can provide long-term benefits for our region's water future.

As a result, OneWater Nevada is developing multiple advanced purified water treatment demonstration projects. Several sites have been chosen for innovative research and exploration based on their geographic location and hydrogeologic characteristics.

These demonstration projects offer opportunities to:

- Safely evaluate the feasibility of augmenting drinking water supplies with advanced purified water
- Engage the public and provide hands-on tours
- Operate, monitor and conduct data analysis at a small scale
- Test and validate treatment technologies.

The Study will be guided by a panel of international water quality experts who will offer feedback and guidance on its goal and approaches. The Governor's Drought Forum recommended advanced purified water treatment investigations to augment existing water supplies and improve drought response efforts.

Understanding Advanced Purified Water Treatment
How It Can Be a Key Part of Our Water Supply Solution

Nevada has decades of experience producing recycled, or reclaimed, water. In 2016, new regulations were adopted to permit use of "exceptional quality reclaimed water," or advanced purified water, for groundwater augmentation. Advanced purified water is achieved through multiple steps to clean the water in addition to natural purification processes.

The Feasibility Study will occur over the next 2-3 years. It consists of multiple elements including technical, social, environmental and financial analyses, regulatory compliance, public engagement, advanced purified water pilot testing, geotechnical investigations, and demonstration projects.

Safe, Reliable, Sustainable

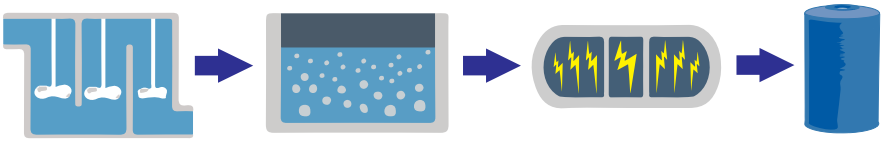
Many regions around the world are experiencing drought and the resulting lack of water supplies. Proven engineered and natural treatment processes that purify reclaimed water help provide a sustainable water supply. Although using purified water for drinking is not new, innovative projects in Australia, Texas, California and elsewhere are successful examples of advanced purified practices being used to diversify water portfolios.

OneWater Nevada, in partnership with local northern Nevada agencies and the University of Nevada, Reno, is looking to develop new, potential options to ensure a future water supply for the Truckee Meadows area.

Demonstration Trailers Will Help to Educate and Inform the Public

The University of Nevada, Reno will lead the treatment technology evaluations and water quality testing and compliance programs. Each demonstration project is envisioned to operate 9-12 months. Multiple trailers will be equipped with advanced water purification technology as illustrated below.

After the advanced treatment process, the purified water will be introduced to local groundwater at a small scale for an extended period of time. This natural filtration of the purified water adds an additional cleaning step.



Filtration | **Ozone-BAC** (Biological Activated Carbon) | **Ultraviolet Light** | **Granular Activated Carbon**

Filtration: Solids are filtered out in this initial step toward purification.

Ozone-BAC: Ozonation with biological treatment removes organic matter and chemicals.

Ultraviolet Light: Ultraviolet light inactivates viruses and breaks down trace organic compounds.

Granular Activated Carbon: Acts as a final polishing step.

How the Project Benefits the Area

Advanced purified water is a local, reliable, drought-proof water source which provides vital benefits:

Safe, reliable water supply

Advanced purified water uses proven technology that cleans water to a level that tests cleaner than most bottled water.

Sustainable water supply option

Advanced purified water could help diversify the region's water portfolio by adding an option that is both sustainable and energy-efficient.

Environmental benefits

Advanced purified water could reduce reliance on the Truckee River, leaving more water in the river for aquatic life and recreation.

Drought-proof water supply

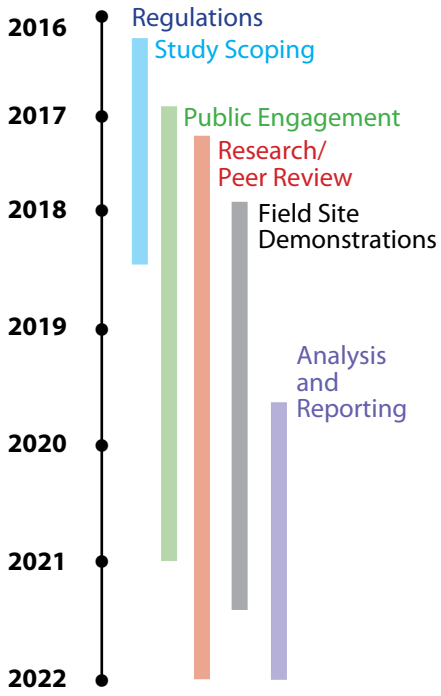
Having a safe, sustainable water supply ensures water is available even during periods of drought.

Independent of weather variability

Advanced purified water may enhance the region's water supply resiliency to help address future uncertainties of climate change, such as longer growing seasons, snowpack changes and runoff timing.

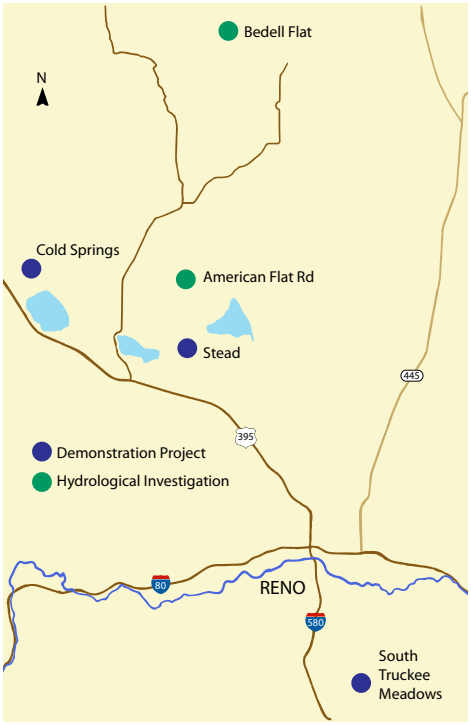
Project Timeline

The project schedule will be updated as the project evolves.



Potential Project Sites

The sites shown here are demonstration project and hydrogeologic investigation areas.



Frequently Asked Questions

What is being contemplated for the future use of advanced purified water?
A specific use has not been identified at this time. The results of the Feasibility Study will inform water planners if advanced purified water offers benefits to the community and will identify where and how it could be used. Advanced purified water could potentially be used to increase the region's drought and/or emergency water supplies or could create new recreational or environmental opportunities. Public input will be sought on potential uses once the technical, social, environmental and financial feasibility is established.

With the implementation of the Truckee River Operating Agreement (TROA), do we need advanced purified water now?
Similar to TROA, this is a long term effort and could take years to implement. Water providers throughout Nevada are responsible for securing, managing and delivering safe and reliable water supplies to their regions. Identifying sustainable, local water supplies that match the right quality with the right use is part of that responsibility.

Many regions are looking for ways to meet long-term demands for water. Advanced purified water could be a new, locally developed and reliable water supply. Provided through proven technologies, it is a drought-resistant resource that can help ensure safe, sustainable water. Advanced purified water can be stored to address future uncertainties of climate change, such as an increased number of growing days, changes to snow pack and timing of runoff.

Is advanced water purification already in use? Where?
Advanced purified water has been used to replenish underground aquifers and surface reservoirs in the United States for over 40 years. These places include Texas, California, Arizona and Northern Virginia. Many other areas are studying it as well. There have been no adverse health effects from the use of recycled water.

As an example, Orange County California has operated a groundwater replenishment project since 1971. In this case, highly treated recycled water is used for aquifer recharge to prevent seawater intrusion. Orange County Water District built upon its long history of successfully treating recycled water and implemented advanced processes to further purify the water and send it to recharge basins, where it ultimately becomes part of the drinking water supply. Orange County's Groundwater Replenishment System produces 100 million gallons of purified water per day.

Why have other communities implemented their projects?
In numerous parts of the country and the world, communities are facing limited water supplies, stricter environmental constraints, and drought. Diversifying the water supply with advanced purified water has provided a long term, sustainable water resource for many communities. Like the Truckee Meadows, these communities have a strong desire to conserve and recycle water resources instead of simply using them once.

Is advanced purified water safe?
Yes, it is regulated to rigorous state and federal standards. Advanced water purification processes remove contaminants to levels below concentrations of significance and can produce water qualities that are equal to or better than existing drinking water sources.

Examples of Successful Projects

Silicon Valley Advanced Water Purification Center
Santa Clara Valley Water District
California • www.purewater4u.org

- 8 million gallons produced daily
- Recycles treated wastewater that would otherwise be discharged into the San Francisco Bay
- Operating as a demonstration project
- Engaging and educating the public about the value of recycled water

Orange County Water District
California • www.ocwd.com

- Provides both purified potable water for domestic use, as well as a supply for irrigating one of the most fertile agricultural areas in the country
- Recycles not only wastewater, but stormwater, food industry processing water, and impaired surface waters
- An environmentally sustainable solution for this region's water supply needs

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OneWaterNevada.com

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Partnering Agencies:

University of Nevada, Reno
Truckee Meadows Water Authority — Quality. Delivered.
Washoe County, Nevada 1861
City of Reno
Western Regional Water Commission
Northern Nevada Water Planning Commission
Truckee Meadows Water Reclamation Facility
City of Sparks