



Water Supply Planning

Introduction to Advanced Water Purification





Developing a Sustainable Water Supply

Our supply of water will determine how we will prosper as a region. Meeting the water needs of Santa Clara County residents and businesses is complex. Our current water supply depends on rainfall, groundwater and imported supplies that must pass through the sensitive ecosystem of the Sacramento-San Joaquin Delta. These traditional sources are affected by climate change, environmental regulations/restrictions, natural disasters and population trends – increasing the uncertainty of our future supply. New approaches must be found.

The Santa Clara Valley Water District is working to make sure we always have a safe, reliable and sustainable water supply. As the primary water resources agency for Santa Clara County, the water district is taking a proactive approach to diversifying our water supply with local sources to increase reliability. We must provide water for today and tomorrow from the best sources, using the most appropriate purification technologies.

Recycled water has been used in Santa Clara County since the 1970's and currently comprises almost 5 percent of the county's water supply mix. Recycled water is used for a variety of non-drinking purposes such as landscaping, agriculture and industrial uses. All recycled water produced in this county meets or exceeds the water quality standards set by the state for the various uses for which recycled water is approved.

We can apply advanced technologies to purify recycled water to a much higher level so that it can be used for many other purposes. We can now make choices about treatment technologies to produce the right quality water for the right use.

To this end, the water district has partnered with South Bay Water Recycling to build a state-of-the-art water purification facility to meet Santa Clara County's future water needs. This will allow us to apply proven technologies to produce purified water, expanding the ways in which we can use recycled water.

Effective long-range planning requires a diverse water supply that supplements variable rainfall and imported water supplies, along with aggressive protection of our groundwater basin and consistent attention to conservation. Recycled water is a component of region's water supply portfolio to ensure the region's continued economic health and our quality of life.



The Water Cycle

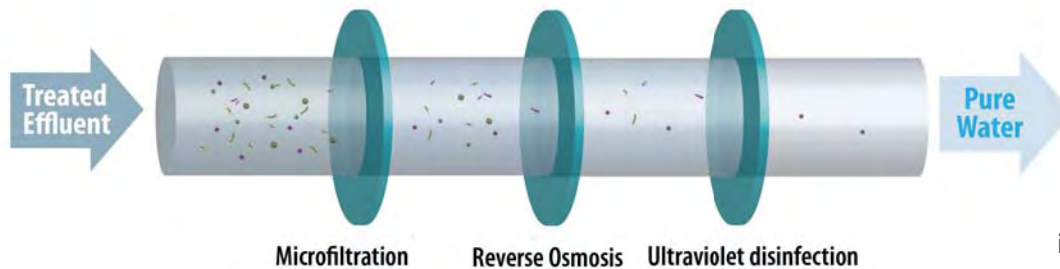
All water has been recycled – millions of times. Water molecules travel around and around the water cycle. The water we have today is the water that has always existed. The nature of the water molecule allows it to travel through many different environments and, with appropriate treatment, emerge - like new- ready to be used again.

The processes of the water cycle cleanse and renew the water. There are many substances in water – some natural, some man-made, some beneficial, some not – most of which must and can be removed to purify water for a variety of uses.

Advanced water purification technology is being developed and adopted in California – it is already in use in Orange County and Los Angeles – and it has been implemented by other leading water agencies in the United States and around the world.



Advanced Water Purification Processes



Locally, some of the water already treated at the existing wastewater treatment plant in north San José will soon be further purified in the new Silicon Valley Advanced Water Purification

Center currently under construction. This new facility includes three purification processes: microfiltration, reverse osmosis and ultraviolet light disinfection.

- Microfiltration removes particles down to 0.1 micron in size, including all bacteria.
- Reverse osmosis is a type of treatment used by major bottled water purveyors and even in kidney dialysis. The method is adapted from natural processes used by living cells to separate water from contaminants on a molecular level.
- Ultraviolet disinfection systems are used to further purify the water. This technique is often used to sterilize valuable medicines, fruit juices and food without the use of chemicals.



The Silicon Valley Advanced Water Purification Center

Our water purification facility will allow us to demonstrate the reliability of the treatment process here in Santa Clara Valley.

How will Purified Water be used?



Purified water from the facility will be blended with existing recycled water to enhance the overall quality so that it can be used for more irrigation and industrial applications.

In some locations around the world, including Orange County, agencies add purified water produced from advanced treatment to a water supply source, such as a reservoir or groundwater aquifer. The purified water blends with the water already present in the reservoir or groundwater aquifer and supplements drinking water supplies over time.

The water district will analyze the results from other areas where this approach has been successful, as we consider applying this technology to the unique conditions of our county. If one day we use this purified water to enhance our drinking water supplies, we will join others who are successfully using these same advanced technologies.

Your ongoing feedback is important to us as we consider possible uses for this purified water in the future, in a way that is safe for people and the environment.

The Future of Our Local Water Supply

Water is critical to all life. It is essential for our continued health and prosperity. We have an obligation to make our water supply sustainable for existing and future generations .

The water district has aggressive plans to increase water conservation, but conservation alone will not be enough. Drought, climate change and a more robust understanding of the water cycle are changing the way we think about water. Our understanding of how to purify and reuse water will make the difference for a sustainable future, enabling us to continue to prosper as a region for generations to come.

For more information

If you would like to learn more about the water district's recycled water expansion efforts please call 408-265-2600 or visit www.valleywater.org



The Santa Clara Valley Water District manages an integrated water resources system that includes the supply of safe, clean water, flood protection and stewardship of streams on behalf Santa Clara County's 1.8 million residents.

