

Water Line™ Winter 2010

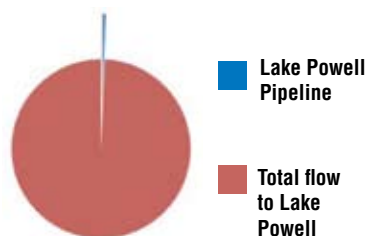
Sand Hollow Reservoir

Water for Today and Tomorrow™

Facts

- There is 60 million acre feet of water storage on the Colorado River system.
- Historical records show an average annual inflow of 12 million acre feet into Lake Powell.
- The Lake Powell Pipeline will withdraw 100,000 acre feet of water.
- Or $100,000/12,000,000 = 0.008$ or 0.8 percent.
- The Lake Powell Pipeline withdraw is equal to 0.8 percent of the annual inflow to Lake Powell. The graph below illustrates the amount of water withdrawn by the Lake Powell Pipeline.

Water Quantity (acre-feet)



Do we have enough water to get us to Lake Powell?

The Lake Powell Pipeline Project (Lake Powell) has been considered a project way off in the distant future. That future is not so distant anymore.

In order to get us to Lake Powell, the District has recently completed some water development projects. For example:

- Crystal Creek Pipeline Project is finished.
- Construction is under way on a new 10-million gallon water storage tank at the Quail Creek Water Treatment Plant and the treatment capacity of the Plant was expanded making it capable of producing an additional 8-million gallons of water per day.
- Five new culinary wells were drilled at Sand Hollow Reservoir.

Additional projects are in the planning stages that will help get us to Lake Powell. Two of the more significant projects include:

Warner Valley Reservoir – this project will be a major tool in the District's tool box that will add reliability, efficiency and flexibility to water management.

Ash Creek/Anderson Junction – the Ash Creek Reservoir is located at the top of the black ridge as one drives north to Cedar City on I-15. This reservoir has never held water.

This project will pipe water from Ash



Manager's Message

By
Ron Thompson
General Manager

Creek Reservoir as well as water from some old irrigation ditches on the tributaries to Ash Creek.

The water will then be conveyed to a new storage reservoir at Anderson Junction.

The water will be used for irrigation in the Toquerville area, thereby freeing up the high-quality Toquerville Spring water for culinary use. We expect to produce 5,000 acre feet of water annually.

Supplying adequate water to a community is a balancing act. It is the District's job to do the best it can to:

- predict water demand
- analyze current water supply and
- look for other sources of reliable water.

While the Virgin River is the major source of our water today, we need to continually look at augmenting water supply from other sources. If one source goes bad, another source may provide what we need. If we have a bad year for surface water, maybe we can tap our groundwater supply just to get us through the bad times. If we have to mine groundwater, we hope that flows will come back in future years when the groundwater supply can be built back up.

In the future, Washington County can count on having years of plentiful water supply and years of drought. No matter the scenario, the District will remain committed to the pursuit of water development projects that will get us to Lake Powell.

Warner Valley Project reborn after 35 years

By Ron Thompson, General Manager

Since the days of the pioneers, Washington County has struggled to provide water to its residents. During the 1960s and 1970s, several proposals for water storage facilities were considered in order that Virgin River water could be managed for the good of the community.

One proposal was the Dixie Project which would have stored about 93,000 acre feet of water. When the site was core drilled,

it was found that there were fractures and sink holes that would make storing water impossible.

Another project was then envisioned that would dam the Virgin River where the Dixie Springs subdivision is located today. This might have been a feasible storage project, but problems arose when funding for the project changed. Traditionally, the federal government would have paid

75% of the costs with the local community paying the other 25%. When the Bureau of Reclamation decided it would change the funding formula, Washington County withdrew its support and the project died.

The Warner Valley Project was planned in that era to be a power project. The water component would have consisted of a huge dam and a canal by Hurricane that would transport water into the Warner Valley Reservoir. The project went through extensive review, but was found to be impracticable at that time mainly for the following reasons:

- there was huge public opposition because the project included a large

coal-fired power plant and

- the project was very expensive and would have cost a great deal more than the Quail Creek Reservoir project.

Since a storage facility was needed, construction of the Quail Creek Reservoir began in 1982.

Today's Warner Valley Project will allow us to store approximately 40,000 acre feet of undeveloped water that currently flows down the Virgin River into Lake Mead. This surplus, secondary water comes from three sources in our system: Virgin River, Santa Clara River and the St. George Reuse Plant.

Virgin River water is high in total dissolved solids, but mixing it with water from other sources will improve it. This water can be used for irrigation and potential environmental mitigation if needed. Warner Valley will allow us to better manage water resources and it will also provide the ability to pressurize secondary water.

As can be seen in this secondary water systems map, secondary water sources could all be tied together at the Warner Valley Reservoir. In short, this reservoir would allow us to:

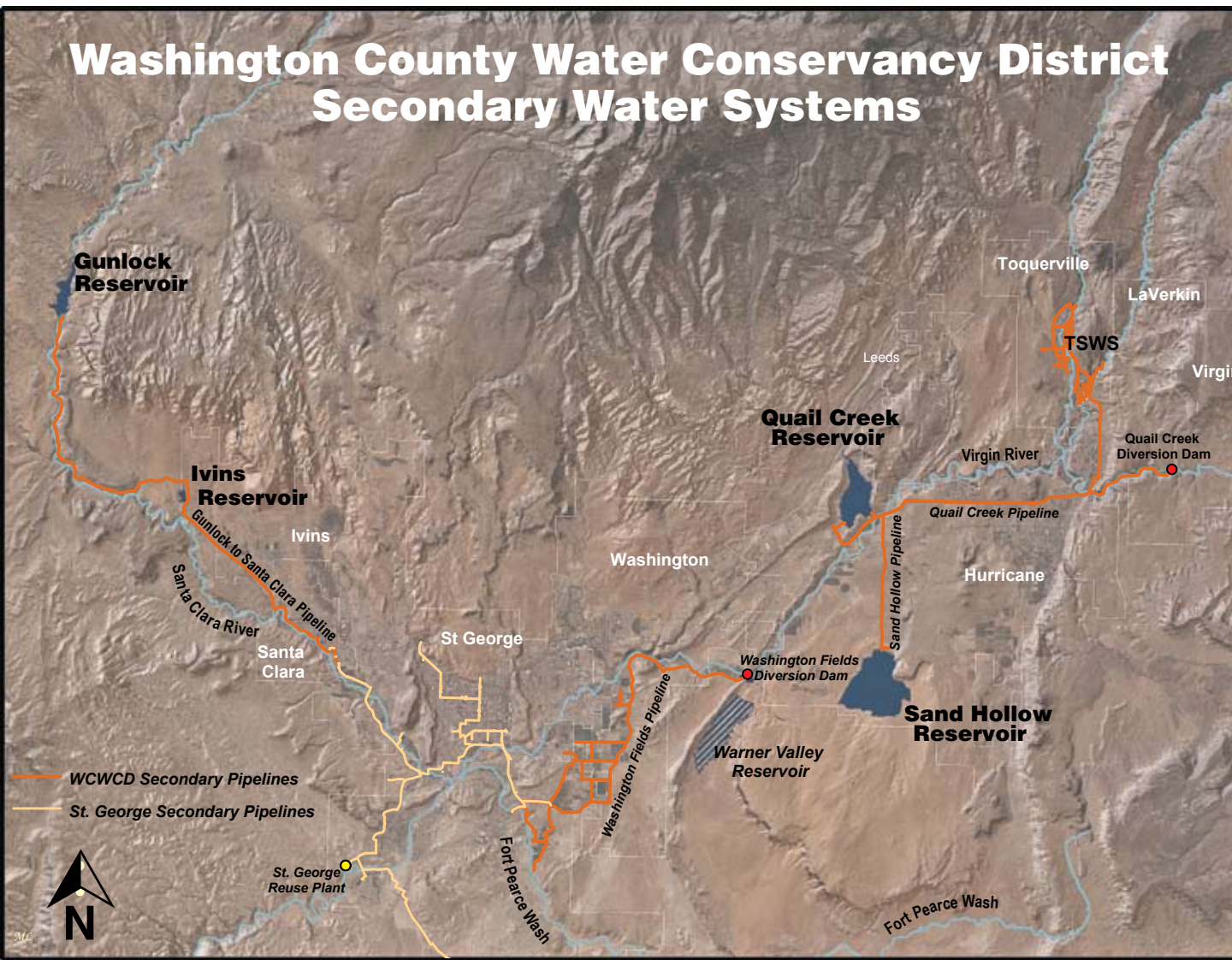
- manage water more efficiently
- save water we are now losing
- improve water quality and
- pressurize water systems in the St. George and Washington Fields areas.

In the long-term, as the water resources we are now developing, including Lake Powell, are fully allocated, the Warner Valley Reservoir could be an additional water resource. As technology advances, it may well be possible for this water to be treated and brought up to culinary standards. That will be a project for future generations.

Warner Valley Reservoir will hold approximately 40,000 acre feet of water

Projected completion date: Approximately six years

Washington County Water Conservancy District Secondary Water Systems



Map—Mark Layton,
GIS Technician

Conserve and end up with reserve

By Julie Breckenridge, Water Conservation Coordinator

The District is always looking toward the future when planning water projects. As a water district, we are responsible to see that current and future water needs are met. Water development projects are essential if we are to meet this obligation. Commitment to conservation is imperative and pursuit of a conservation ethic is a major component of water availability.

The District has spent \$12.6 million on water conservation since 1996 and currently budgets about \$250,000 per year for conservation efforts.

We are seeing progress. The Utah Governor's Water Conservation Team analyzed culinary water use data from six cities in Washington County between the years 2000 and 2008. Water use dropped from 325 gallons per capita per day (gpcd) in 2000 to 260 gpcd in 2008. This translates into a 20 percent reduction in culinary water use. This reduction in use is good, but we are nowhere near where we need to be.

You might ask, if water always comes out of my tap when I turn it on and if I can afford to pay my water bill, why should I conserve water? There are several reasons why each one of us should conserve.

- Conservation preserves and extends limited water supplies.
- Conservation creates a more productive use for this limited resource.
- All the cheap water in Washington County has been developed. Conserving water extends supply and delays construction of costly water projects.
- Less money is needed for facility upgrades, water infrastructure, energy for pumping and water treatment chemicals.
- Conservation saves money for the individual water user by decreasing the amount of money spent on both water and the power used to heat and pump water.

Numbers from the Utah Governor's Water Conservation Team show a 20% reduction in culinary water use in six Washington County cities between 2000 and 2008.



There are, however, some side effects that need to be considered especially if the conservation model is rigid and overly aggressive. For instance:

- When less water is used on landscape, less water seeps into the ground. As a result, water that now reaches streams and rivers may decline or even disappear.
- If the amount of grass and the number of trees is reduced in landscape, hotter temperatures surround homes and businesses. Heat radiates from gravel and hardscape making the area hotter. When temperatures close to a structure are hotter, more power is used to keep the indoor temperatures cooler. When more power is used, more water is used. Power cannot be generated without water.
- Adopting strict conservation measures could exclude the possibility of fostering locally grown food in home gardens or small farms.
- When the maximum, reasonably-

available conservation level is achieved, that means outdoor and indoor water use has been slashed to the bare bones. So, when a drought occurs or a water source fails, there is nowhere to turn to further reduce water demand.

None of these points should be construed to suggest that water conservation is not vital to Washington County. But there is a point at which additional conservation, even if reasonable, may not yield additional benefits or there may be some disadvantages that offset some of the advantages. It is important to look at the whole picture.

Water conservation must be our way of life. It is essential that everyone realize water is a limited resource that must be used wisely if we are to continue having access to an ample amount of high-quality water.

**Photos: Winter at The Garden
courtesy of Casey Jones,
Horticulturist**

Conservation Corner

By Julie Breckenridge — Water Conservation Coordinator

Make a minor change—create a major difference

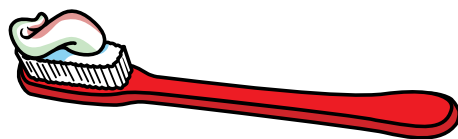
Water is a renewable resource. However, Washington County's low annual precipitation and arid climate results in the water supply being limited and unpredictable.

To ensure there is enough water for future generations, Washington County Water Conservancy District encourages everyone to make a change—just one change.



Consider shaving only one minute off your shower time. Depending on your type showerhead, you could save a minimum of 1.5 gallons of water per shower which adds up to 10.5 gallons per week or 3,832.5 gallons per person per year.

OR



Consider turning off the faucet while brushing your teeth.

With a high-efficiency fixture you could save an extra 1.5 gallons of water per minute (non-efficient faucets use 2.2 gallons per minute). Each time you brush your teeth for two minutes

while running the faucet, you use three gallons of water. Brushing your teeth without the water running would save at least 21 gallons of water per week or 1,092 gallons per person per year each time you brush your teeth.



If the 4,924 gallons of water saved by limiting shower time and brushing teeth without running water was multiplied by the 140,000 people living in Washington County, over **689,000,000** gallons of water could be saved annually.

**Will you make a change?
Will you make a difference?**

Water-wise plant feature

Gaura lindheimeri

This plant tolerates soil made up of clay and alkali, so it does very well in Washington County. It is a perennial that should be cut back in the spring. Flowers range in color from white to yellow to pink. Gaura will bloom from spring through fall.



Free Landscaping Workshops March - May 2010

These workshops are held at the Tonaquint Nature Center - 1851 Dixie Drive.
Space is limited so please call 673-3617 to reserve your seat.

Backyard Conservation

Saturday, March 13
10:00 to 11:00 a.m.

It's all in the Container

Saturday, April 17
10:00 to 11:00 a.m.

Desert Rose

Saturday, May 22
10:00 to 11:00 a.m.

For more information on the FREE landscaping workshops log on to

<http://wcwcd.state.ut.us/Water Conservation/2010 Water-wise Landscape Workshops>



Water Line Winter 2010

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Board Meetings—7:00 p.m.

Tuesday, March 9

Tuesday, April 20

Tuesday, May 18