



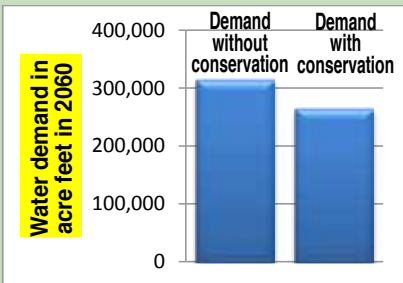
Water Line™ Spring 2011

Sand Hollow Reservoir

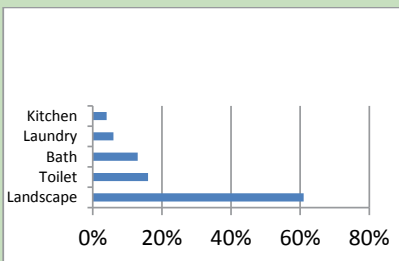
Water for Today and Tomorrow™

FACTS

Future water demand



Where does Utah use its water?



Reduction in water use

26 billion* gallons of water were saved in Washington County between 1995 and 2009.

*(based on reported per capita use in St. George, Washington, Ivins, Santa Clara, Hurricane and LaVerkin)

Without water from the Lake Powell Pipeline, rock and concrete may dominate our landscapes

Approximately 20 years ago, Utah's state water managers began to ponder the potential benefits of delivering some of Utah's Colorado River water to Southern Utah. Washington County was, after all, the fastest growing county in Utah. The idea received broad support because it would allow for Utah to use part of its allocation of Colorado River water where it is needed.

The state took on the project under the Lake Powell Pipeline Development Act and ultimately applied to the Federal Energy Regulatory Commission (FERC) for a license to generate power from the water flowing into Washington County from the highpoint of the pipeline.

Over the past two years, 23 study reports have been drafted for the preparation of an Environmental Impact Statement by FERC. One of these studies looks into the alternatives to building the Lake Powell Pipeline Project (Project). The

studies were required to look at the impacts of an alternative water scenario that considers other options to provide the amount of water that the project would provide, called the "No Lake Powell Water Alternative." For the Water Alternative, the study considered whether and how other sources of water might be developed for culinary use. The study also looked at the degree of conservation efforts that would reduce use by existing residents to allow future residents to share in the limited water supply available.

The Project is design to address anticipated demand based upon growth predictions that are established by the state of Utah and are required to be followed in developing state water projects. The models take into account data on past growth, which was 560% between 1970 and 2000 in Washington County.

The study was based upon "Equivalent Population Water



MANAGER'S MESSAGE

By Ron Thompson

Needs," which is the water needed to serve the population that would be served by the Project. Without the Project, the equivalent population is 278,864. With the Project, the equivalent population is 516,422, which is expected to occur in 2037. For a population of 516,422 the total water demand would be 172,232 acre feet per year with a water

Continued on page 2

supply deficit of about 69,000 acre feet.

The alternatives considered to provide 69,000 acre feet in lieu of the Project included various combinations. Each combination would include reverse osmosis treatment (RO) of Virgin River water, yielding 36,279 acre feet, plus some reduction in outdoor water use beyond the target conservation rate. Other additions would be:

- RO of future reclaimed (treated) wastewater, yielding 31,806 acre feet.
- Restricting outdoor water use to 10.3 gallons per person per day (gpcd), yielding 32,721 acre feet.
- Importing 6,100 acre feet of groundwater from Kane County.

Each of these ideas has unique factors that must be considered. RO is costly today, but the technology is expected to improve over time, so we believe that it would be more cost-effective to build RO facilities after 2037

Combinations considered by the study	
COMBINATIONS	YIELD (AF)
Virgin River RO	36,279
10.3 gpcd outdoor limit	32,721
TOTAL	69,000
Virgin River RO	36,279
Wastewater RO	31,806
1.6 gpcd outdoor limit	915
TOTAL	69,000
Virgin River RO	36,279
Kane County groundwater	6,100
24.4 gpcd outdoor limit	26,621
TOTAL	69,000

than it would be today. The Virgin River RO process would produce about 3,721 acre feet of brine that would require large areas of land for evaporation and processing. Wastewater reuse would produce about 3,534 acre feet of brine. The importation of groundwater from another county is likely to meet resistance by Kane County residents.

The other alternative that deserves careful consideration is the substantial reduction in water use by limiting outdoor watering to 10.3 gpcd. This alternative essentially requires existing users to give up the water they have today in order to accommodate new users by requiring that:

- All trees, plants, grass and bushes would have to be removed.
- Only a limited amount of xeriscaping would be allowed.
- Vegetable and ornamental gardens as well as fruit trees would be prohibited around homes and in parks, cemeteries, schools and public areas.
- Surfaces would have to be covered with either rock or concrete if dust and weeds are to be kept in abeyance.

In order to ensure that everyone complied with these strict limits, mandatory metering, inspections and audits of residential properties would be required. Violations would be investigated and fines would be imposed. Additional government employees would be needed to monitor water usage. Regulations and enforcement of these regulations would change our social fabric to a more

government-controlled lifestyle. All of these government controls would necessitate costs that must be imposed on current and future residents.

The following identified impacts tell part of the story of the future of our community with draconian water conservation limits that would require trees, shrubs, flowers and lawns to be replaced with concrete, rock and a few desert plants:

- Concrete foundations heaving because of reduced subsurface water.
- Reductions in return flows to the Virgin River could affect listed aquatic and wildlife species and their designated critical habitats.
- Wildlife resources and vegetation communities would be affected by the changed landscape.
- Air quality could be permanently affected due to increased airborne particulate matter generated from increased exposed soil areas.
- Long-term soil erosion could occur from desert landscapes through wind and precipitation runoff erosional processes.
- The elimination of existing landscapes would result in increased weed production.
- Visual resources would be affected in terms of color, texture, line and form, plus visibility could decrease during windstorms from increased airborne particulates.
- The temperature reductions offered by existing

landscaping would be lost, leading to higher temperatures and more power demands as use of air conditioning increases.

- More water would be consumed in connection with power production, although the source water may be located in a different area.
- Socioeconomic resources would be affected through changing property values, significantly increased water rates, enforcement of residential outdoor watering restrictions and related social costs as residents lose their sense of community and pride and as resentment of new residents grows.
- Residential yards would be uninhabitable during the hot summer months.
- Residential vegetable gardens would be eliminated because 10.3 gpcd would not provide enough water to sustain plant growth during the hot summer months.

For the convenience of the public, this Alternatives Study has been posted on the District's web page at

<http://wcwcd.state.ut.us/Projects.htm>

Since we could not begin to cover everything in this short article, I would encourage you to read the study in its entirety in order to understand some of the consequences associated with not building the Lake Powell Pipeline.

Diminutive creature can bring an economy to its knees

By Ann Jensen

In the winter issue of the *Water Line*, we looked at the millions of dollars required to prevent and control an invasion of quagga mussel.

In this issue, we will summarize some of the potential impacts to Washington County if the one mussel found in Sand Hollow eventually multiplies into the hundreds of thousands.

Impacts to water supply:

- If intake structures and transmission lines become clogged with quagga, flows will be reduced. Municipal and irrigation water deliveries could not be made during peak season if pipes are clogged.
- Management costs are enormous, especially when a water supply agency like the District has to be constantly cleaning and repairing equipment.
- Increased costs would be borne by local residents, farmers and businesses.

Environmental impacts:

- Quagga feed on food sources that other species depend on. Native fish populations could be wiped out.
- Recreational fishing could become obsolete.

Recreational impacts:

- Quaggas are pulled into cooling systems of marine engines, where they attach and grow. This will overheat and ruin an engine.
- Once quaggas get into a recreational facility, continual routine maintenance of docks and boat ramps is required along with constant monitoring of aquatic vehicles coming into and going out of a lake/reservoir.
- A boating and fishing venue could be closed permanently if resources do not provide sufficient financial support to manage the infestation and establish adequate control measures.
- Sandy beaches are impacted

as the quagga's sharp shells cut into bare feet. Also, as the mussels decompose, they emit a foul odor.

Our local reservoirs contribute to the overall economy of Washington County. Thousands of visitors come to Southern Utah specifically for the recreation provided by our reservoirs.

The District is hoping that it never becomes necessary for it to close, not only Sand Hollow Reservoir, but all of its reservoirs due to quagga infestation.

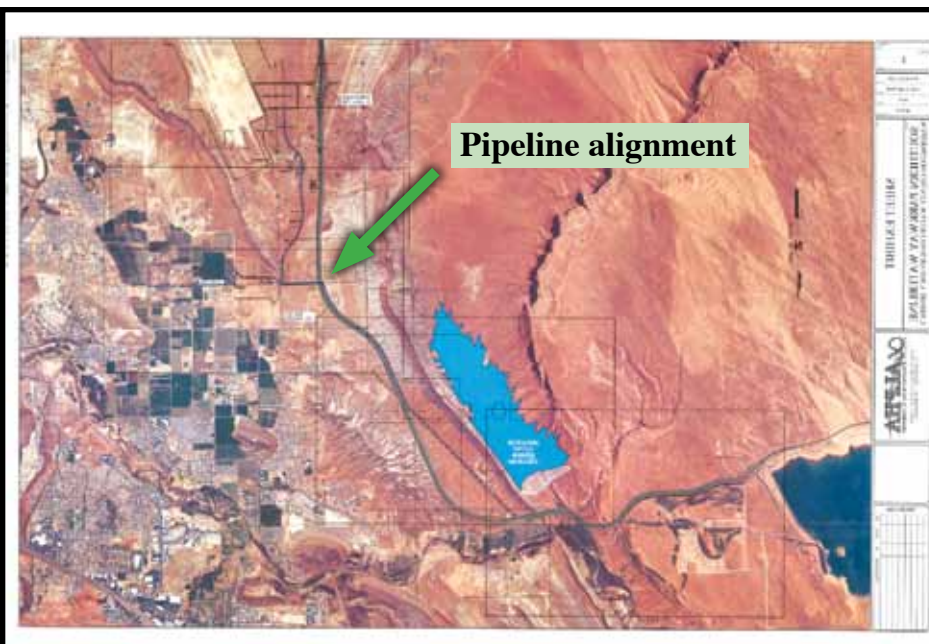
For more information log on to <http://wildlife.utah.gov/dwr/invasive-mussels.html>



Quagga mussels on an outboard motor

Pipeline to serve south end of valley

By Doug Wilson, Special Projects Coordinator



Pipeline alignment

The District, St. George and Washington City are working together on a pipeline that will follow the southern roadway.

The pipeline will start at Sand Hollow Reservoir, go around the proposed Warner Valley Reservoir and terminate in the vicinity of the new St. George Municipal Airport.

This pipeline project is intended to supply culinary water out of the Sand Hollow Well Field to the south end of Washington City, Washington Fields and any

development in the vicinity of the new airport.

Currently the Southern Parkway pipeline is in the preliminary design phase to be followed by the

- environmental review phase
- final design phase and
- construction phase.

The pipeline is currently planned to measure 36-inches in circumference and will be approximately 10 miles long. At this time, the projected completion date is 2014.

Conservation Corner

By Julie Breckenridge — Water Conservation Coordinator

Follow us on



The District is now using TWITTER as a tool to keep the public informed about

- water conservation
- Board meetings
- landscaping workshops
- water projects
- water demand
- water development and
- various water issues.

Follow us at WATERDIST.

WATER-WISE PLANT FEATURE

Autumn Sage (*Salvia greggii*)

By Casey Jones, Horticulturist

Part of the largest genus in the mint family, the Autumn Sage, is a tough performer in the dry, hot conditions of Southern Utah.

This fairly small shrub can grow from 1 to 4 feet high and wide with a thick display of red-mauve flowers with variations to white. It blooms from spring until fall here in St. George. Typically found from south Texas into upper Mexico, Autumn Sage is very drought tolerant and can survive under harsh conditions. It will bloom better with a modest amount of water, and an annual

spring pruning will keep it clean and more productive.

Generally, sages need a sunny spot with fairly good drainage. Deep but infrequent watering once established will help with the health and flowering of this desert shrub.



Free water checks now available

Starting May 15 and going through the end of September, the District is offering **free** water checks. Call 673-3617 to schedule a water check for your landscape.

The water check will determine how much water your landscape really needs to be healthy. It will allow you to become more water efficient and will take a load off your wallet.

Free landscape workshops scheduled

The Garden



Southern Utah Water Conservation Garden

JUNE

Saturday 11 (10-11a)
What's Eating You?

JULY

Saturday 16 (10-11a)
It's All in the Container

AUGUST

Saturday 6 (10-11a)
Wednesday 10 (4-5 p)
Fall Into Vegetable Gardening

SEPTEMBER

Saturday 24 (10-11a)
Bulbs by Design
(with Christena Gates)

**All workshops are held at
Tonaquint Nature Center
1851 Dixie Drive.**

**Space is limited so please
call 673-3617
to reserve your spot.**



Water Line™ Spring 2011

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Board Meetings—6:00 p.m.

at the District Office

Tuesday - June 14

Tuesday - July 19

August - no meeting

**For more information on the FREE landscaping workshops log onto
<http://wcwcd.state.ut.us/Conservation.htm>**