Washington County Water Conservancy District

How much water do we have, how much do we need, how much can we develop?

Since the 1800's when the pioneers entered the Virgin River Basin, water has always been seen as a valuable resource that had to be developed and managed for the benefit of all. Those who came here from the east had never been forced to irrigate for they came from land that received vast amounts of annual rainfall. Their days in Washington County were spent laboring to bring water to their families and their crops.

It is the same today. Water is still a valuable resource and it needs to be developed and managed for the common good. In 1962, the Fifth District Court ordered and decreed that this was to be the task of the Washington County Water Conservancy District.

The District's Capital Facilities Plan lays out in detail the water we currently have developed within the County, what we can develop in the future and how many people it will serve.

Current water demand is at 45,000 acre feet (af) per year. 72,000 af has been developed, so at present, we have sufficient. However, as you know, we are a healthy, growing community and this is not going to change any time soon. Current water resources and planned projects, including water conservation but excluding the Lake Powell Pipeline, will provide sufficient water to support a population of approximately 200,000. This population number will be realized around 2020.

The Capital Facilities Plan predicts demand to reach 174,000 af by 2039. This amount of water would serve a population of approximately 453,125 residents, assuming we reach our conservation goals. Conservation is an essential part of water supply, but it is a short-term option in meeting water demand. It will not eliminate the need to develop additional water resources. Projects are currently in the planning stages. They include:

• New Projects	7,000 af/yr
• Ag Conversion	15,000 af/yr
• Wastewater Reuse	10,000 af/yr
• Lake Powell Pipeline	70,000 af/yr
• Current Developed Supply	72,000 af/yr
TOTAL:	174,000 af/yr

Two years ago, the *Utah Foundation* gathered opinions from Utah residents concerning growth. Sixty-six percent felt that efforts should be spent on endeavoring to accommodate growth with long-range planning for infrastructure rather than spinning our wheels on trying to control growth. This long-range planning is the responsibility of the District. Growth management, on the other hand, is the responsibility of elected officials of the municipalities and the county.

Due to today's environmental requirements and permits, projects must be in the planning stages well in advance of when they are actually needed. It is the mission of the District to clearly understand water demand and do everything in its power to meet that demand for the good of all.

The future of our economy is, overall, measured in drops of water.

The Capital Facilities Plan may be accessed at http://wcwcd.state.ut.us.

Washington County gets bad rap on water usage

St. George City is sometimes criticized in the press for its exorbitant water use. Writers compare St. George to an area like Tuscon, Arizona, for example. Tuscon's water usage figure of 110-112 gallons per capita per day for calendar year 2005 does *not* include commercial and industrial water usage. It also does *not* include "multi-family" homes. This number takes in only single-family homes.

Keep in mind that St. George, in particular, has a lot of industrial and commercial water usage, including water used by tourists and other visitors. If valid comparisons are drawn, the residents of Washington County cities should receive credit for being quite frugal with their water use.

The numbers are also skewed by the secondary residences in our county. Secondary homes make up approximately 25% of the homes in our area and their water use is attributed to our local population. The following chart includes numbers from the County Assessor's Office. It takes five of our cities and computes the number of primary and secondary residences in those cities. Secondary residences use nearly as much water as primary residences, but the occupants are *not* counted in the area's census.

City	# of Single Family Homes	# of Primary Homes	# of Secondary Homes	% of Secondary Homes
St. George	28182	21783	6399	22.7%
Washington	7178	5186	1992	27.8%
Hurricane	5280	3741	1539	29.1%
Ivins	3370	2412	958	28.4%
La Verkin	1533	1177	356	23.2%
County Total	45543	34299	11244	24.7%

After eliminating commercial water usage and secondary homes from 2005 Washington County data, the following gallons per capita per day (gpcpd) water usage represents our full-time, residential water use:

• St. George	127 gpcpd
• Washington	166 gpcpd
• Hurricane	125 gpcpd
• Ivins	110 gpcpd
• La Verkin	224 gpcpd

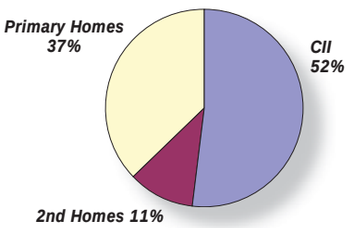
The pie charts you see on this page illustrate water use in these five cities. Note that residential use by primary homeowners is less than 50% in three of the cities. Secondary homes and commercial, industrial and institutional ("CII") use account for more than 50% of the water consumed.

In conclusion, we have seen positive steps toward water conservation in our area. As I stated in a recent editorial, in the last 10 years the population serviced by the St. George waste water treatment plant has doubled, but the amount of water being treated has increased by only 20%. This definitely means *we are becoming more efficient with our water.*

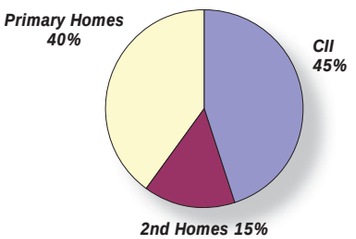
Current conservation measures are to be commended. Everyone is encouraged to continue their commitment to establishing prudent water use as a way of life for themselves, their businesses, their families and for the future of Washington County.

This Manager's Message is presented by Ron Thompson, General Manager of the Washington County Water Conservancy District.

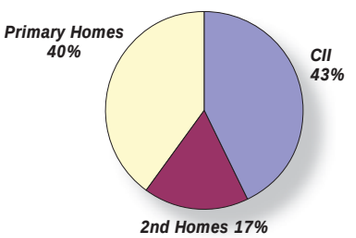
St. George Water Use



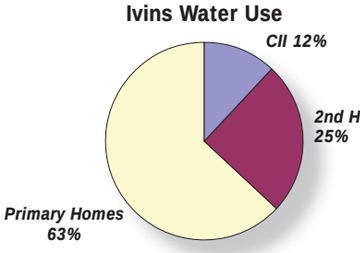
Washington Water Use



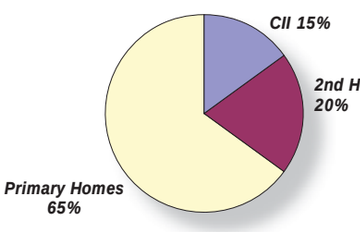
Hurricane Water Use



Ivins Water Use



La Verkin Water Use



Sand Hollow Reservoir is one of a kind

by Corey Cram

Sand Hollow Reservoir is a very unique reservoir. It is the only one of its kind in Southern Utah. The reservoir was designed and constructed to leak. The purpose of the Sand Hollow Aquifer Recharge Reservoir is to store water and allow the water to recharge the underlying aquifer.

The reservoir is built on the red sandstone of Southern Utah that is known as Navajo Sandstone. It is a fine to medium grained sandstone with about one-quarter of the rock consisting of open-pore spaces between sand grains.

The Navajo Sandstone is the main aquifer in Washington County. The District's Sand Hollow well field as well as St. George City's Gunlock well field and Snow Canyon wells are all developed in the Navajo Sandstone due to the sandstone's ability to store and transport groundwater.

200,000 acre feet of water stored

Sand Hollow Reservoir is designed to allow water to slowly leak from the reservoir into the underground aquifer, thereby adding to the existing groundwater resource. Water is pumped to the 50,000 acre-foot reservoir from the pipeline that normally takes water from the Virgin River to Quail Creek Reservoir. In addition to the water that is stored in Sand Hollow Reservoir, it is estimated that the potential exists for the reservoir to add another 200,000 acre-feet to the underground storage.

As water passes through the sandstone, it is naturally filtered and cleaned. Ground water pumped from wells near the reservoir only requires chlorination in order to keep it free of bacteria as it passes through water distribution lines and into our homes.

20-foot deep trench captures shallow groundwater of drinking water quality

Before construction of the Sand Hollow Aquifer Recharge Reservoir, the water table was approximately 60 to 80 feet below the ground surface near the reservoir. Now, after the reservoir has been constructed and functioning for a few years, the water table has risen significantly.

The 2005 water year was the highest on record allowing the District to divert a lot of water into Sand Hollow. The reservoir was completely full by May 2006. Having the reservoir filled to capacity resulted in good infiltration and recharge of groundwater. The water table has risen to within 50 feet of the ground's surface in most areas around the reservoir.

In a couple of areas close to the reservoir, the groundwater has risen nearly to the surface of the ground. In fact, near the west side of the reservoir, the water table has risen to the ground surface resulting in some wet spots and springs. In March 2006, the District began construction of a project to collect this groundwater.

2000-foot long trench intercepts water

A large trenching machine cut a trench 20 feet deep, three feet wide and 2,000 feet long. This ditch intercepted the groundwater and allowed it to be pumped from the trench into the reservoir. This trench was constructed with a gravel drain and a perforated pipe collection system. It was then backfilled and covered with a plastic liner to prevent any potential connection with surface water sources. The pipes were subsequently connected to three wells and pumps allowing for continuous pumping of the water.

As much as 4,000 gallons of water per minute is being pumped from the trench into the reservoir. This inflow of water can be viewed just north of the boat launch area.

The water has been tested and, after having been filtered by sandstone rock, has been found to meet drinking water standards. Testing has also indicated that water in the trench is not tied to surface waters; instead, it is water that has traveled through the sandstone aquifer. Upon approval from the State, this water will be placed into the District's water delivery system that connects to the regional pipeline and runs from the Quail Creek Water Treatment Plant to Washington City, St. George, Santa Clara, Ivins and Snow Canyon State Park.

Water need not be treated

The water from the trench is good, clean water. Use of this water results in considerable cost savings as it does not have to be pumped from deep wells or treated at the water treatment plant.

The groundwater from this trench and from the wells at Sand Hollow is used to supplement other water resources in the county. It is also available to help address drought conditions and peak summer demands in Washington County.

Water temporarily being pumped into the reservoir

Staff Leaks

Melanie Massey, Secretary/Receptionist

by Ann Jensen

"Happy is the man with a wife to tell him what to do and a secretary to do it."
(Lord Mancroft)

And let there be no room for doubt, Melanie will get the job done.

Melanie was hired by the District in February 2002. Prior to 2002, the receptionist was also the water conservation coordinator. As the District's mission grew, it became evident that a full-time person at the front desk was essential. This person would perform various secretarial duties, but first and foremost she would be a liaison between the District and the public.

The person at the front desk of any office interacts with the public perhaps two to three times more often than does the administrative staff. That person must be knowledgeable about the workings of an organization and be capable of interacting positively with anyone who walks through the door or calls on the phone. Melanie fills this role with grace and enthusiasm.

In just four short years, her job has evolved from answering phones, filing, typing, distributing mail, making bank deposits and scheduling appointments to actually calculating the impact fees on new development.

Melanie was born in Salt Lake City and graduated from Highland High School. She is very devoted to her sisters and her Mom. Her son, Zach, by her first marriage graduated from Pine View High School in 2006. She is his constant support and has done everything she could to see that he is cared for and loved.

In 1998, Melanie met and married the "man of her dreams." Rick Massey is a marine to the core. He is faithful to country and family and is strongly committed to the marriage he and Melanie

Melanie with Randi and Sam

Massey Family left to right: son Zach, Melanie, husband Rick, stepson Scott and Mom Bernice

share. Between 1998 and 2002, Melanie followed Rick wherever his Marine Corps duties took him. After 20 years of service, Rick retired from the Marines in 2002 at which time they made their home in St. George. Rick has a 16-year old son, Scott, whom Melanie loves as her own.

Melanie is not all work and no play. She enjoys scrapbooking and has put her family's history together in very creative ways. She might not have signed on with the Lewis and Clark expedition, but mention camping or hiking on the week-end and she is ready with sleeping bag and beef jerky in hand. If it means spending time with family, Melanie is ready to go. Her dogs, Sam and Randi, also cash in on her nurturing spirit.

To say she is a country music lover would be an understatement. Melanie would brave traffic jams, long lines and computer snafus to secure a ticket to a Tim McGraw concert.

Melanie loves working with District staff. She is always willing to help someone with a project. She has a smile for everyone who walks through the door. If she cannot help them, she will find someone who can. She is a fine representative of the District and we are lucky to have found her.

So keep this in mind - *"Always be nice to secretaries; they are the real gatekeepers in the world."* (Anthony J. D'Angelo (Founder of The Collegiate EmPowerment Company))

LAKE POWELL PIPELINE

Delivering the future.

Pipe Dreams

by Ann Jensen

2006 was a significant year for the Lake Powell Pipeline Project. The 2006 Utah Legislature passed:

• Senate Bill 27 which authorized the building of the Lake Powell Pipeline, and

• House Bill 47 which authorized diversion of certain state sales and use tax revenues for pre-construction costs of the Lake Powell Pipeline.

Shortly after the passage of these bills, the Lake Powell Pipeline Management Committee was organized and a monthly meeting schedule was determined. Committee members include:

• Dennis Strong, Director of the Utah Division of Water Resources and Chairman of the Management Committee;

• Harold Shirley, Representative of the Utah Board of Water Resources;

• Ron Thompson, General Manager of the Washington County Water Conservancy District;

• Mike Noel, Executive Director of the Kane County Water Conservancy District; and

• Scott Wilson, Executive Director of the Central Iron County Water Conservancy District.

In November 2006, Larry Anderson, P. E., was unanimously chosen by a selection committee and approved by the Utah Board of Water Resources to serve as the project manager for Phase I of the project.

This committee consisted of representatives from the three water districts, the State Division of Water Resources and others, including Senator Orrin Hatch.

Larry's responsibilities will be to oversee the preliminary engineering and environmental studies and to ensure that Phase I comes in on time and within budget.

Larry brings more than 34 years of experience in the field of water resource planning, development, conservation and management. He spent 21 years as the director of the Utah Division of Water Resources.

In 2007, it is expected that a contractor will be selected to commence the NEPA process.

For additional information on the Lake Powell Pipeline or other water development projects, visit

http://wcwcd.state.ut.us

or

www.lakepowellpipeline.org

Lake Powell

Conservation Corner

FREE Landscaping Workshops March - July 2007

By Julie Breckenridge

These workshops are held at the Tonaquint Nature Center
1851 Dixie Drive
St. George, UT

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

Color My World – Painting with Perennials in a Water-wise Landscape:
Saturday, March 24 – 10-11 a.m.
Add vibrant color to your landscape with perennials. Learn about the varieties that work well in our area.

Made of Stone – Paver, Concrete Finishes & Riverbeds:
Saturday, April 21 – 10-11 a.m.
This workshop will inspire creativity when adding rock to your landscape either as mulch or dry river beds. You will discover a variety of pathways (or patios) available for your landscape.

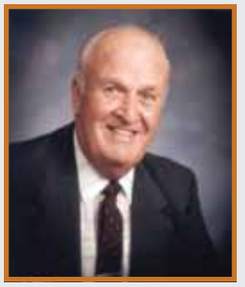
A Desert Rose:
Saturday, May 19 – 10-11 a.m.
Roses can still be part of a water-wise landscape. Choosing the correct variety, appropriate soil preparation and care can make the difference in your growing success.

What's Eating You?
Guide to Pest and Disease Control in the Landscape:
Saturday, June 16 – 10-11 a.m.
Learn how to identify and treat pests and disease problems in the landscape.

It's All in the Container:
Saturday, July 21 – 10-11 a.m.
From patios to large yards, learn how you can add more space and visual interest using containers. Techniques will be taught on care for potted plants and minimizing water use.

District Board bids farewell to Jack Lemmon

By Ron Thompson



Jack Lemmon is a man of honor who has dedicated many years of his life to public service in such roles as the Mayor of Hurricane, member of the Washington County Planning Commission and Director for the Utah League of Cities and Towns, to name but a few. It has been my privilege to work with Jack on the Board of Trustees for the Water District for a total of 15 years; he served as Chairman of the Board for nine of those years.

Jack resigned from the Board in 2003 to fulfill an LDS mission in Palmyra, New York. Upon his return home, he replaced another Board member and served for two more years. We are deeply appreciative of Jack's unselfish nature. We wish Jack and his wife, Angelyn, all the best. Jack will now have some extra time to spend with those 13 grandchildren and 25 great grandchildren.

Steps being taken to address water odor/taste issues

By Hank Childers

A taste and odor problem with the water out of Quail Lake occurs each summer. As the temperatures rise, algae thrives and contributes a unique, and for some, an unpleasant taste and odor to the water even while the water remains safe to drink.

As the taste and odor issues resurfaced this past summer and once the District took over the management of the treatment plant, the Taste and Odor Task Force was formed. This Task Force meets every two weeks to explore possible solutions to the taste and odor problems with the water which is being released from the treatment plant. The Task Force is comprised of personnel from both the Water District and St. George City.

Several solutions are presently being considered:

1. Copper sulfate - this is a source treatment. In other words, it will eliminate algae growth in the Quail Creek Reservoir. Experimentation is currently underway with the use of copper sulfate to try to determine the size of the granules or the liquid needed for penetration;

2. Higher grade of powder-activated carbon – this is the most efficient carbon on the market at absorbing MIB and geosmin which are produced by the algae and are responsible for the taste and odor; and

3. Ozone - a study is currently underway to determine if this treatment is feasible. If it is, it will supersede the use of the copper sulfate or the carbon.

Everything possible is being done to rectify the problem before the summer months arrive. Whatever method is chosen to address the taste and odor issues in the future, the water will always be safe for human consumption.

Local Reservoir Capacities and Levels

Reservoir	*Capacity*	*January 2006*	*% of Full*	*January 2007*	*% of Full*
Quail Creek	40,000 af	35,338 af	88%	27,783 af	70%
Sand Hollow	50,000 af	48,751 af	98%	47,479 af	93%
Kolob	5,585 af	5,443 af	97%	9,118 af	84%

WASHINGTON COUNTY WATER CONSERVANCY DISTRICT

Water Line
Winter 2007

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