

Water Line

Water for Today and Tomorrow

Fall 2007

Virgin River
Photo: Doug Wilson

Water Conservation: how low can we go?

Since 1990, a period of 17 years, southern Utah has experienced only four years of above-average stream flows: 1993, 1995, 1998 and 2005.

When calculating the yield of a water supply, all historical years of stream flows are tallied and ranked highest to lowest. With this ranking, the lowest 25% of the years are used in predicting a water supply. This process has worked well in the past and has not yet presented an issue to water managers. A dilemma is created, however, when water conservation enters the picture.

The residents of Washington County have risen to the challenge of cutting back on their water use. This efficiency has allowed water supplies to be maintained during times of drought and it has been instrumental in delaying development of future water supplies. So, current conservation measures are to be commended.

However, this efficient water use puts a tremendous strain on water managers when determining the amount of water that is actually available. Before water

conservation was in vogue, we could handle a 25% shortage of water yield in any given year. When shortages occurred, water managers addressed the problem by implementing restrictions on water use. When springs and streambeds are drying up in late summer, the demand for water is at its peak. But even at this point, outdoor water use is one component that can be curtailed. Obviously, it is a non-essential need.

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— Ron Thompson

But what happens when non-essential water uses such as the sprinkling of lawns and landscapes have been removed? Where would we find surplus in the system? What additional components of our water use would we be able to eliminate at this point?

Manager's Message

Ron Thompson, General Manager



The average water consumption in Washington County is 259 gallons per person per day. Of that amount, 61% is used on landscape.

When asked to implement more stringent conservation measures, residents can cut that usage in half leaving 30% of their water still available for landscapes. But, if consumers have already cut back a significant portion of their landscape water use, there is really no “fat” to trim.

As our water conservation efforts continue and water use drops significantly, we will need to harden our water supply. “Hardening” a water supply basically means that a lower percentage, such as 10% or less, of the low water years is used when calculating water supply yields. Using this lower percentage creates a more accurate picture of the reliable annual water supply.

With the highly efficient use of our water, there is no longer a non-essential water use that we can plan to eliminate in a crisis. Water supply shortages could then have a very serious effect on the community.

Therefore, as future water development projects are being planned and currently constructed that will provide Washington County with a more stable water supply, the District is also working with the State to more precisely quantify Washington County's reliable water supply.

Hardening of the water supply does not rule out continued efforts in water conservation. Conservation needs to be a life-time approach to the use of this limited resource. But these impacts of water conservation do emphasize the fact that water development will always be a top priority in a desert community.

Local Reservoir Capacities and Levels

Reservoir	Capacity	November 2006	% of Full	November 2007	% of Full
Quail Creek	40,000 af	25,455 af	64%	20,537 af	51%
Sand Hollow	50,000 af	42,522 af	85%	33,913 af	67%



Ivins Reservoir
Photo: Doug Wilson

IVINS CANAL – WATER FOR YESTERDAY, TODAY AND TOMORROW

By Ann Jensen

It is winter. It is the month of January 1862. Pine Valley Mountain is cloaked with snow. The rains begin. The Santa Clara River roars. What had been a narrow, placid stream easily crossed by foot was rapidly becoming a broad, deep, raging waterway. Loud splashes can be heard as gigantic chunks of earth fall into the river. The river's bank has been carved away as if someone took a sharply-honed knife to it. Any structure once standing on the bank has simply disappeared. People watch as their belongings float downstream to be buried in the mud and forever lost.

The Swiss pioneers reached Santa Clara on November 28, 1861. In order to meet their personal and agricultural needs, it was critical that the water supply be properly managed. They immediately started building a dam and a diversion. Their work was completed on Christmas Eve of 1861. As they celebrated, rain fell softly. They were completely oblivious to the hardships they would undergo during this "Forty Days Rain". Among other things,

they lost their diversion and their dam.

A visionary is defined as a "person with unusual powers of foresight." The history of the settling of

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Washington County presents us with various and numerous leaders who were imaginative and far-sighted. In order to effect change that would elevate the quality of life, these visionaries braved the terrain, drought, floods, disease, public ridicule, and, at times, even the despondency of their own people.

In the 1860's, Ivins was an unsettled region known as the Santa Clara Bench. The visionaries at that time stepped up to the plate to ensure that the people would survive and that their descendents

would thrive. Today, Ivins is a city of approximately 8,500 residents.

These men of vision include, but are not limited to, the following:

Leo A. Snow and Clarence S. Jarvis, Civil engineers. These men are credited with filing an application in 1909 for thirty-second feet of water. They then conceived of a plan that would bring Santa Clara River water from the site of the old Shem [Sham, according to the Shivwits tribe] smelter onto the Santa Clara Bench.

This diversion, consisting of brush and willows, was called the Shem dam. It was named after a prominent Shivwits Indian chief renowned for his kindness and his commitment to living in peace with the pioneers. Spring thaws and summer flash floods continually washed it away. Ground was broken for the canal in 1911; it was completed in 1914.

Bishop Edward R. Frei, Sr. said that *John S. Stucki's family* "built nearly a seventh of that big canal, an undertaking for so few people of so little means." The canal was eight miles long.

Edward R. Frei, Sr. envisioned a reservoir that would store Santa Clara water instead of allowing it to flow further downstream. The reservoir was completed in May of 1918.

John G. Hafen and the Santa Clara Bench Board visualized a siphon that would transport water across Wild Cat Canyon. A particularly cold winter descended upon Washington County in 1927. In January of that year, water turned to ice in the flume. The trestle that carried water in the Ivins Canal across the canyon collapsed under the weight. All water to the town was cut off. The siphon idea worked; however, the flume collapsed again the following winter and was again repaired.

These early pioneers were confronted by many challenges. While wrestling with water issues, they were, at the same time, having to deal with the Great Depression. The Depression turned out to be a blessing for the Santa Clara Bench community. The Civilian Conservation Corps (CCC) created by President Roosevelt put people to work. Under the leadership of

The District is grateful to **Emma Hafen Fife** for her review and comment on this history and for use of materials gathered for the future book [The Santa Clara Bench/Ivins — Our Home Beneath the Red Mountain](#) and to **Kay Ence** whose personal knowledge of the area's water issues and development contributed greatly.

Luther M. Winsor, the Santa Clara Bench Irrigation Water Board was able to convince the government of the need for a new diversion dam at Shem. The construction of the dam began in the spring of 1933.

Luther Winsor was the driving force behind the building of this dam. For that reason, it was named after him and is still known today as the Winsor Dam. He received his engineering education in Logan, Utah. He built irrigation systems world wide. In one of his letters we read:

It was about 1933. The town of Ivins was in need of a diversion dam that would be permanent and one that would provide a means of keeping silt out of their canal and reservoir. They had a "make shift"



Winsor Dam receiving a coat of veneer on its downstream face by C.C.C. workers — 01/01/1935

diversion that would wash out in times of flood. Furthermore they needed to divert the water during times when the flow was high in order to fill the reservoir...They could not afford to buy cement for building the dam...

Result: I was called in for advice... I had made work programs for each of the counties in Utah when the Hoover Administration had set up funds for that purpose during the "depression." A cement plant had burned in the area North and West of Brigham City...Rains had caused a crust to form over the outer surface of huge piles of cement...Inside the cement was good. Therefore a project for Box Elder County was made to load a car of cement. The SPLA and SLRR transported it to Cedar City free. The people of Ivins hauled it to the dam site.

The ordinary working man played a major role in securing water to the Ivins area. During the winter months, men and boys left home on Monday mornings with primitive tools and scant provisions to spend the week working on the canal. At times, inclement winter weather would delay their efforts.

Leo F. Reber wrote: "I worked on this canal for many days...I was only fifteen years of age but we worked hard, and instead of getting money we subscribed for water stock at fifty dollars per share...It was a very thrilling experience when the water was turned in the canal and it flowed through the canal out on the large plot of land known as the Santa Clara Bench."

Reuben Ence was president/water master of the Ivins portion of the Santa Clara Field Canal Company from 1942-1950. His son, Quentin Ence, reminisces about the early days of the Ivins Canal. "Every winter they had to spend weeks



Excavation and beginning of south end of churning bowl — 1933

just keeping the ditch open so that during the summer they could run water in it...That's where the drinking water came from — out of that ditch."

Weston Hafen became president/water master in 1950. Since the charter had expired, Weston changed the name of the company to Ivins Irrigation Company. Weston served the Ivins Irrigation Company for 25 years. His daughter, Emma Hafen Fife, recalls "he spent many hours cleaning out and repairing the canal with a shovel. He would stay up all night to catch flood water in the reservoir to prolong the growing season."

Ivins Reservoir was completed in 1918. It is an off stream reservoir with a holding capacity of 500 acre-feet of water used for irrigation and recreation. It was modified in 1943 and again in 1986. In 1994, work was performed on the reservoir to bring it into compliance with the State of Utah's safety standards. Cores were drilled all around the dam down to the bedrock. Concrete was then poured to reinforce the dam so it would not break. Ivins Reservoir has been owned by the Washington County

Water Conservancy District since March 15, 2004. In return for the reservoir, the Santa Clara Field Canal Company now has primary water.

Many hardships were endured by the early settlers. Their grit and determination to forge a land where they could prosper continues to inspire us today as we endeavor to:

- Develop our water resources innovatively,
- Use our water supplies prudently, and
- Manage our water projects intelligently

in order that Washington County may have "*Water for Today and Tomorrow.*"

Bibliography

L.M. Winsor papers
(1912-1964) and

Winsor Dam photos

Special Collections and Archives

Merrill Library

Utah State University

Washington County Chapter of the
Daughters of Utah Pioneers,
Under Dixie Sun, Panguitch, Utah,
Garfield County News, 1950

Conservation Corner

by Julie Breckenridge - Water Conservation Coordinator

FREE Landscaping Workshops

January - March 2008

These workshops are held at the Tonaquint Nature Center
(1851 Dixie Drive)

Space is limited so please call 435-673-3617 to reserve your spot.

**Thursday, Jan. 17:
6:00-7:30 p.m.**

Landscape design I — laying out the plan

Why is Xeriscape a natural choice in our climate? Information will be presented on how to be informed when talking to and/or hiring a landscape contractor. This class will give you the opportunity to ask questions specific to your property. Bring a rough sketch of your property with you.

**Saturday, Jan. 19:
10:00-11:00 a.m.**

Total tree care

St. George City arborist, Debra Scarborough, will teach pruning and how to properly care for your trees and shrubs.

**Thursday Jan. 24:
6:00-7:30 p.m.**

Efficient irrigation design I — lawn irrigation

Learn the basics of irrigation system design and how to recognize potential problem areas. Instruction will be given on reading an irrigation plan. Common errors in design will be discussed. Turf varieties will be demonstrated. You will learn how to grow a lush lawn without a high water bill.

**Saturday, Feb. 16:
10:00-11:00 a.m.**

Efficient irrigation design II — understanding drips and new technologies

Learn about design, installation, maintenance and scheduling of water-efficient drip systems.

**Thursday, Feb. 21:
6:00-7:30 p.m.**

Landscape design II — develop your plant palette

Design your landscape with color and variety. Choose plants that complement one another. Discover which plants work in the microclimates of your yard.

**Saturday, Feb. 23:
10:00-11:00 a.m.**

Color my world — paint with perennials

Add color to your landscape with perennials and learn about the varieties that work well in our area.

**Saturday, March 22:
10:00-11:00 a.m.**

It's all in the container

Learn how to add more space and visual interest with plants in containers. Techniques will be taught on care for potted plants and minimizing water use. Instruction can be applied to vegetable, perennial or ornamental plants.

New District office building is being planned

By Ron Thompson

For years the District operated with six office employees and two field staff. Recently, when the District took over the operation and maintenance of the water treatment plant, the number of District staff grew significantly to 27 employees. We are "bursting at the seams" in our current office space which we have occupied since the mid-1980's. As water management, water resource development and water delivery needs grow, so will the number of District employees.

The District has worked out a land exchange with the City of St.

George on Red Hills Parkway. Our new offices will be located next to the regional pipeline pump station on the Parkway. The architect is in the process of designing the building to blend in with the topography of that area. This site will be much more accessible to the public and will have more than adequate parking available.

Construction is planned to start early in 2008. It will take approximately one year to complete the project. This building is being designed to serve Washington County for at least the next 30 years.



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