

Water Line™ Spring 2010

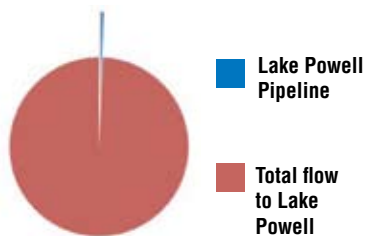
Sand Hollow Reservoir

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 The graph below illustrates the amount of water withdrawn by the Lake Powell Pipeline.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)



Where's the water?

The Washington County Water Conservancy District was created by court decree in 1962 to provide and manage water for Washington County. Put very simply, the District's job was to get water to flow out of your tap. Forty-eight years later, the District is still working to keep water flowing out of your tap.

Where does this water come from that you use each day in your homes, in your workplace, on your fields, on your gardens and on your landscape?

In Washington County, we get our water from two sources – 55% from surface water and 45% from ground water.

- **Surface water** flows on the surface of the earth in rivers and streams. The Virgin River is the surface water source for our reservoirs. Historically, canal companies have taken this water and used it for irrigation. Now, the District diverts water for storage in either Quail Creek or Sand Hollow Reservoirs. After treatment, this water meets our culinary needs.
- **Groundwater** is accessed by dig-

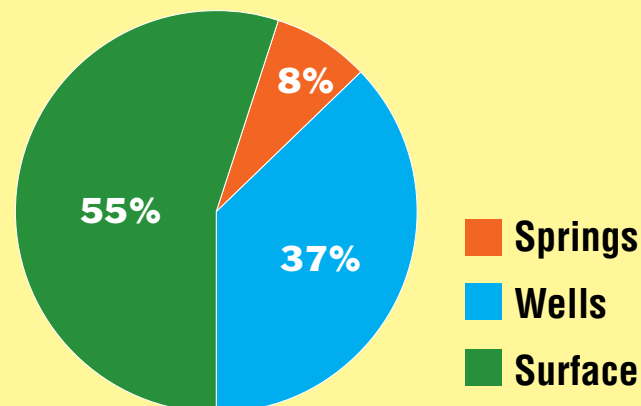
ging wells or piping springs. The District has several wells near Anderson Junction, Leeds and Kayenta. The largest well field lies around Sand Hollow Reservoir where 13 wells have been drilled to date. In addition to the water stored above ground in the surface reservoir, Sand Hollow stores water below ground in the Navajo Sandstone aquifer. As the water is recharged into this aquifer, more wells will be drilled. This underground water supply is then sent through a pipeline to the regional culinary water supply line and serves Hurricane, Washington, St. George and Ivins.



Manager's Message

By Ron Thompson
General Manager

WATER SOURCES



Where's the

Do we have enough water to meet demand now and in the future?

• With the completion of the **Crystal Creek Project** last December, we have approximately 13,000 acre feet (af) of water that can be treated for culinary use that has not been allocated to existing users and is, therefore, available to meet future growth demands.

• The **Ash Creek and Warner Valley Projects** are currently in the planning stages. It is estimated these projects will be completed around 2016 and will enable the District to serve a population of approximately 280,000.

Can we solve the problem of water demand by placing a cap on growth?

Currently, Washington County has an internal growth rate, based upon births and deaths, of 2.3%. We can expect a 2-3% growth rate in Washington County even if nobody ever moves here. 2008 population projections from the Governor's Office of Planning and Budget put Washington County's population at 560,000 by 2040. Locally developed water would not be sufficient to adequately serve a population of this size.

Can we rely totally on the Virgin River as our source of water?

A look at the numbers shows that the Virgin River is fully allocated:

- Data compiled by the Utah Department of Water Resources from 1941-1990 shows the base flow of the Virgin River reaching the Quail Creek Diversion averages about 130,000 af per year. (Each residential unit needs about .89 af to meet state standards for water service.)
- The average flow amount only occurs in about three years out of every ten years.
- Most of the high flow occurs between March and June. Since we divert water from the river through a pipeline to our reservoirs, high flows are bypassed due to the vol-

“Around 2020, we will start running into a water deficit and will have to begin dipping into the recharge bank at Sand Hollow Reservoir.”
—Ron Thompson

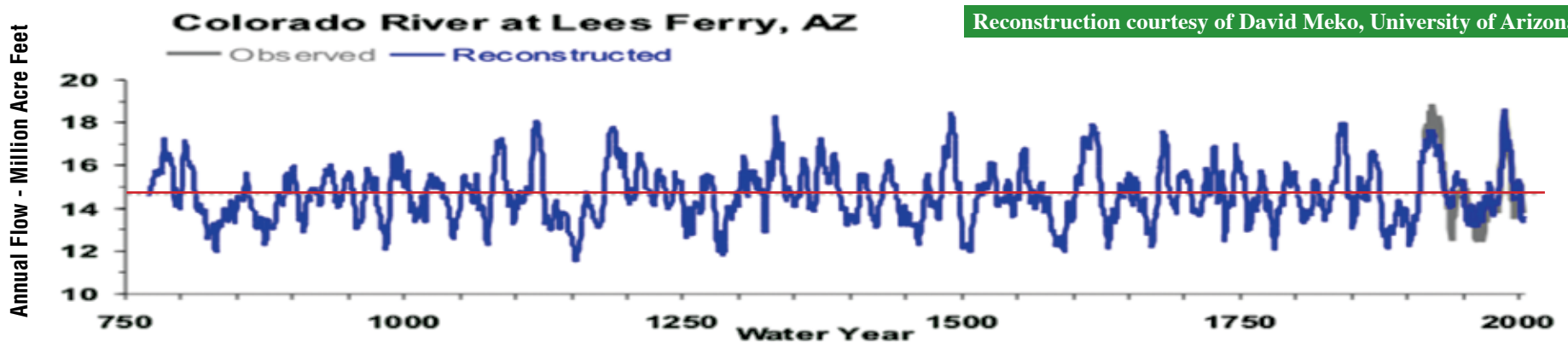
ume of water and the debris in the stream.

- We can't rely upon water flows that won't be there when we need them. To ensure that water is there for our customers, we plan on a water supply that is reliably present in excess of 80% of the time.
- Flows in the Virgin River are also relied upon by fish, wild life and plants, so we don't plan on taking everything for human use.
- The reliable yield for human use from Sand Hollow and Quail Creek combined is 39,000 af/year.
- The District's water supply would serve approximately 43,000 equivalent residential units, which

would be apportioned between full-time residents, second-home owners and commercial, institutional and industrial uses. If the entire 39,000 af were devoted to full-time residential use, it could serve a population of about 127,000.

The water supply discussed above is projected to meet demand until about 2020. Around that time, we will start running into a water deficit and will have to begin dipping into the recharge bank at Sand Hollow Reservoir. While that resource can tide us over in the short term, it is not a sustainable source to meet long-term needs, so we must develop additional water supplies beyond those described above. Utah's allocation of Colorado River water is the next step.

Tree Ring Data



What do tree ring studies tell us about Colorado River flows over time?

Basically, tree rings change in width depending on the amount of moisture available to the trees, so scientists can measure these rings to estimate

climate conditions that existed before precipitation measurements were kept. Researchers at the University of Arizona have reconstructed flows

going back to 762 A.D., showing the ups and downs of the Colorado River at Lees Ferry (Utah's lowest point of diversion from the Colorado River

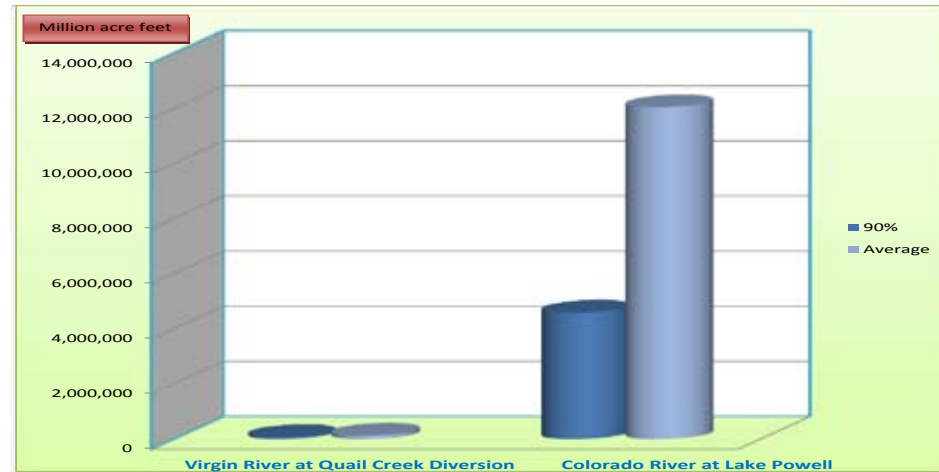
nearby to the Lake Powell Pipeline intake structure). The average annual flow based on tree ring studies is almost 15 million acre feet (MAF).

water? con't

Based on actual measurements taken since 1971, average inflow into Lake Powell is 12 MAF. The probability of Lake Powell being below the low level intake of the proposed Lake Powell Pipeline (3,400 feet) is 0.00% over the next 50 years assuming past hydrology for future inflows. If we consider paleohydrologic data (from tree ring records dating back to 762 A.D.) the probability of Lake Powell being below the low level intake in any one month is less than 1% over the next 50 years.

The Colorado River has enough reservoir storage to store five years of the average annual flow. Data shows that, after the drought years between 2000 and 2007, which was the driest period since more accurate records have been available, water storage was still in excess of 50%. The chart to the right shows average flows and flows at 90% of average for both the Virgin River and the Colorado River.

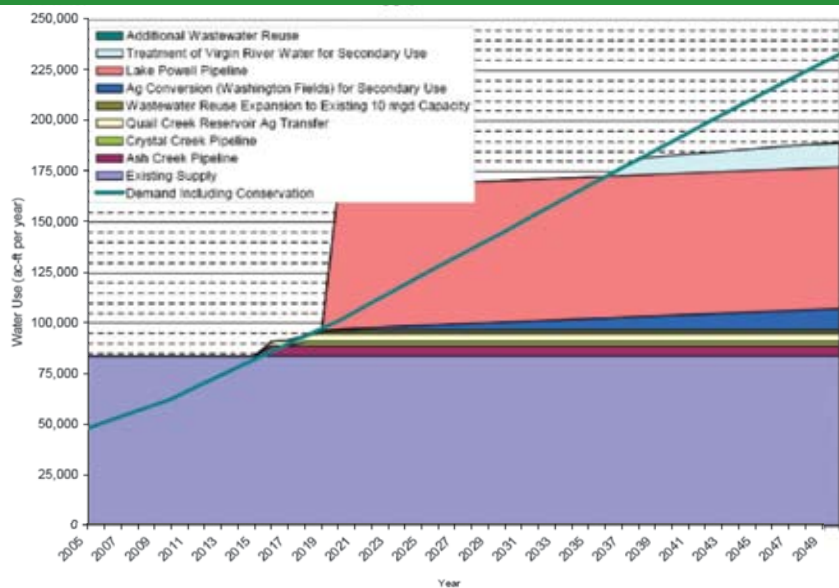
Which river would you rather depend on for your water supply?



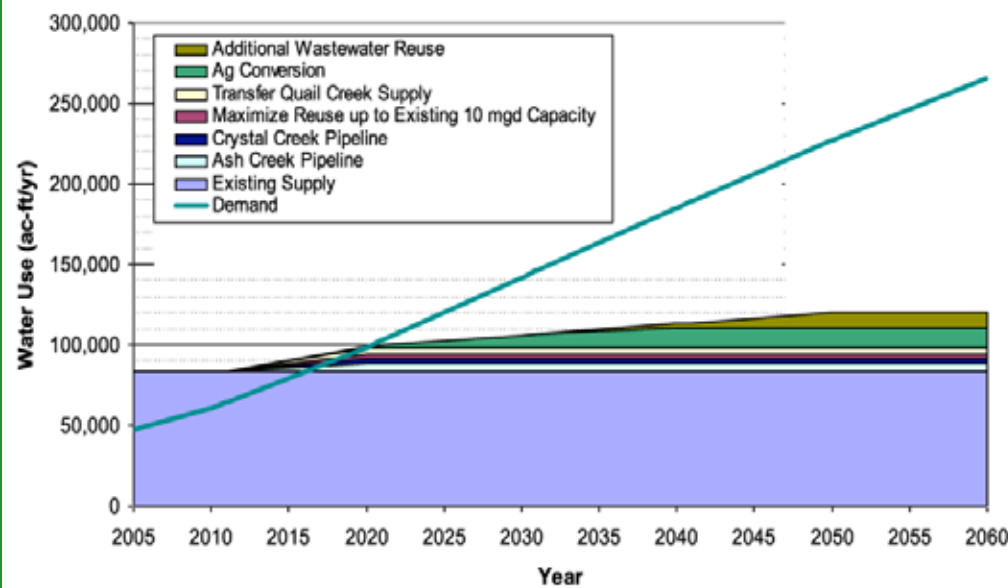
The two graphs below illustrate what Washington County can expect with the Lake Powell Pipeline and without it.

- **WITH** the Lake Powell Pipeline, we will have water until about 2037.
- **WITHOUT** the Lake Powell Pipeline, we will have enough water to get us to 2020.

Water supply WITH Lake Powell



Water supply WITHOUT Lake Powell



Jerry Olds, past State Engineer with the Utah Division of Water Rights, is quoted as saying:

“With the Lake Powell Pipeline water rights and the point of diversion occurring in Lake Powell, it is one of the most firm water supplies in Utah’s part of the Upper Colorado River Basin.”

CONSERVATION CORNER

by Julie Breckenridge — Water Conservation Coordinator

Irrigation blunders that really cost all of us

If you wanted to waste up to 30% of the water you pay for, what would you do?

- Water during the heat of the day
- Constantly saturate the top soil and raise a healthy, dense layer of thatch
- Allow irrigation water to run off your landscape and on to driveways and streets
- Allow water to leak or gush from broken sprinklers

Attention to how irrigation water is being used will conserve water for all of us and will keep more money in your wallet.

The District offers **free** water checks May 15 through September 30.

This process will determine how much water your landscape really needs to be healthy.

Call 673-3617 to schedule a **free** water check.

Water-wise plant feature

By Casey Jones, Horticulturist

Angelita Daisy, *Tetranneuris acaulis*

This colorful, taprooted perennial has many qualities that make it an excellent plant for a desert environment:

- Blooms during the warm months and nearly all year in mild areas
 - Needs well-drained soil with little to moderate water
 - Tolerates heat, cold and drought
- Forms rounded clumps growing to 12" by 12"



Trim off the faded flowers to extend the blooming season.

Irrigation Schedule

Month	Schedule
March	Once every 7-10 days
April	Once every 5-7 days
May	Once every 4-5 days
June, July, August	Once every 3 days
September	Once every 5-7 days
October	Once every 7-10 days
November to shutdown	Once every 10-14 days as needed



Water Line™ Spring 2010

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Board Meetings—7:00 p.m.

Tuesday, June 15

Tuesday, July 20

No meeting in August

FREE Landscaping Workshops

June - September 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.

Pest Control

Saturday, June 19
10:00 to 11:00 a.m.

Patio Pavers/River Beds

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

Fall Vegetable Gardening

Saturday, August 7
10:00 to 11:00 a.m.

For more information on the FREE landscaping workshops log on to

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