

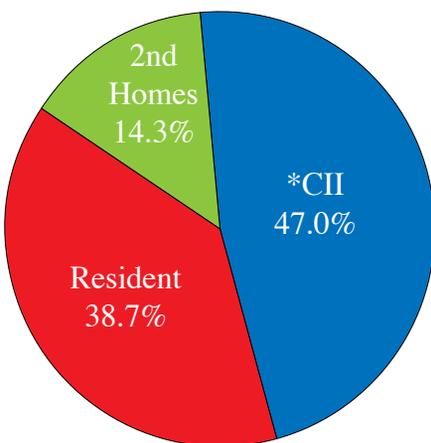
## Water Line Spring 2009

### Water for Today and Tomorrow

#### Facts

- **72,559 acre feet** – current reliable potable water supply in Washington County
- **54,800 acre feet** – current reliable potable water supply being used
- **17,759 acre feet** – current reliable potable water supply available for growth

#### Water Use Percentages



\*CII= commercial, institutional and industrial

## Is your water supply in good hands?

In 2009, the District will be completing various water development projects, some of which have been in process for a few years. These projects will add to the water supply in Washington County.

The **Washington Fields Canal piping project** began in 2004. This project will help prevent evaporation, avoid flood damage to fields when the canal washes out and alleviate public safety concerns. Piping the main canal was completed in 2007. Currently, lateral piping is being laid that will allow for a pressurized water system which will provide secondary water to the Washington Fields area.

The last phase of the **Crystal Creek Pipeline** will be completed this year. The diversion was completed in 2006. Due to the elevation of the project, only four miles of pipe can be laid each year. This pipeline will take water from Crystal Creek and put it into Kolob Reservoir. The project is another management tool in the District's tool box. More water can now be stored in Sand Hollow when the river is running high, power generation will get a boost and water will be available during the summer months to provide irrigation and enhance native and endangered fish habitat.

Five more wells were drilled at **Sand Hollow** and five more pump stations constructed. These pumps will draw water directly out of the underground aquifer and place it in the regional pipeline. No treatment (except chlorination) is necessary for this water as it is cleansed when it runs through the Navajo Sandstone. These

wells will serve Sand Hollow Resort and Dixie Springs subdivisions.

The District is redrilling the old **Santa Clara irrigation wells** and refitting them with new pumps and pump stations. The pump stations will be in underground vaults to avoid the cost of pump houses and to maintain aesthetics. This water will supplement the existing irrigation system.

The **Ash Creek Pipeline and Anderson Junction Reservoir Project** is in the planning stages. A request for proposals for the biological survey was sent out in March. Some of the preliminary design work has been completed. The environmental work is expected to be completed in 2010 or 2011. In order to keep costs to a minimum, the biological survey for the Warner Valley Reservoir Project is being

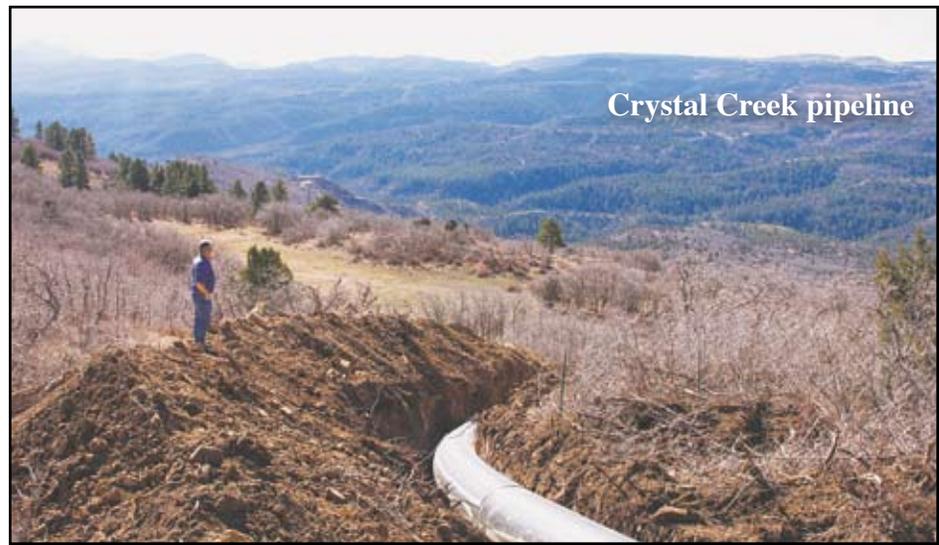


Manager's  
Message  
*By Ron Thompson,  
General Manager*

done in conjunction with the Ash Creek Project survey.

The District and its staff are committed to providing ample water in a cost-effective manner for those calling Washington County home. Yes, your water supply is in good hands.

For more information on our projects, visit our Web page at <http://wccd.state.ut.us>.



Crystal Creek pipeline

#### WASHINGTON COUNTY PORTION OF LAKE POWELL PIPELINE COST ESTIMATED COSTS IN 2008

Total Cost	\$695M
Cost/1000 Gallons	\$1.42
Cost/Gallon	\$0.00014
Cost/1000 Gallons in St. George today	\$1.60

# Where does your water come from?

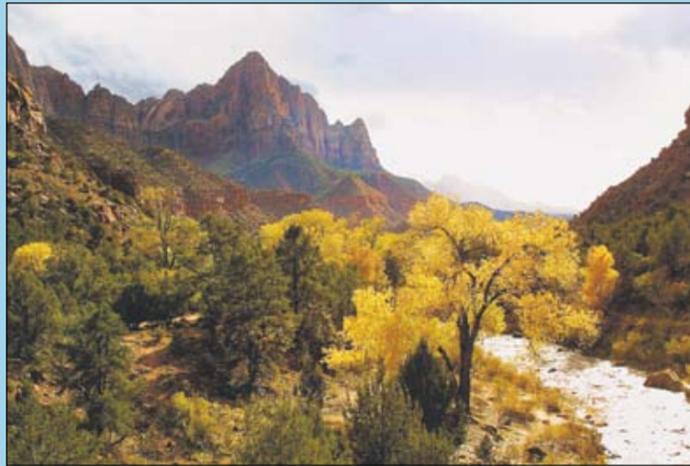
By Ann Jensen

High in the Dixie National Forest in a remote location surrounded by forested mountains and massive landscapes of natural beauty, the white-water rapids of the North Fork of the Virgin River rush southward into Zion National Park (Zion).



The East Fork of the Virgin River passes through magnificent slot canyons in Zion. The waters of the East Fork can be deadly when flows rage through these canyons.

Once the spring runoff ceases and flows diminish, the Virgin River quietly meanders through Zion.



The East Fork flows through Mount Carmel Junction and joins the North Fork just southwest of Zion. The confluence of these two streams form the mainstem of the Virgin River.

It is the same today as it was yesterday. Humans in Washington County depend on the Virgin River for basic needs such as drinking water, crops, sanitation and recreation as well as a means of sustaining an economy by allowing industry and tourism to thrive. Plant and wildlife species depend on the river for sustainable habitat. The Virgin River is life for Washington County.

Approximately 80% of our drinking water in Washington County comes from the Virgin River.

The river flows down through Springdale, Rockville, Virgin and Hurricane. A short distance upstream from the old Hurricane diversion, lies the Quail Creek diversion constructed in 1985. This diversion allows the District to take

water from the Virgin River for storage during the winter months when water is not needed by the irrigators. From the diversion, the water flows to Quail Creek and Sand Hollow Reservoirs and through the Quail Creek Pipeline to the Quail Creek Water Treatment Plant. At this plant, the water is prepared to become your drinking water.



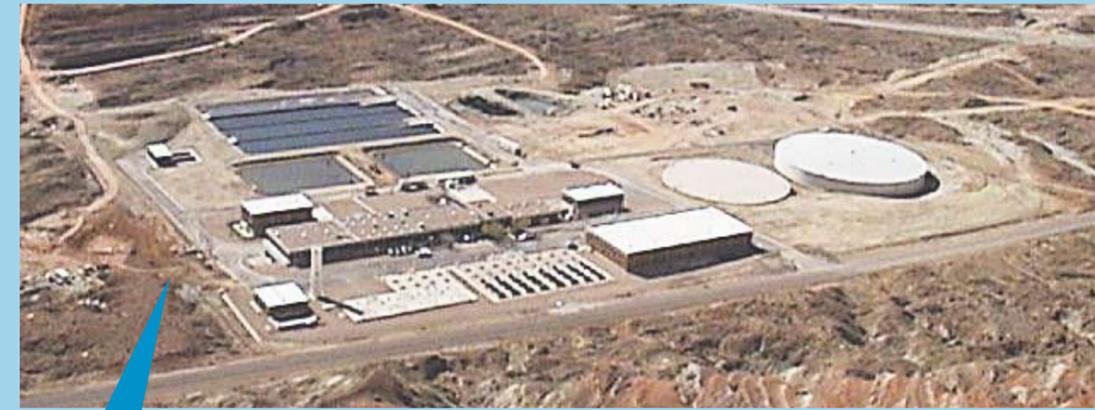
Quail Creek Diversion



Quail Creek Reservoir



Sand Hollow Reservoir



Quail Creek Water Treatment Plant

## Treatment Train

**Step 1:** The water comes into the Quail Creek Water Treatment Plant through flow control pipes from the Quail Creek Reservoir or the Virgin River.

**Step 2:** These pipes direct the water into the pre-treatment basins where the water is mixed with a disinfectant that removes such particles as bacteria, sand, silt, algae, viruses, etc. Powder-activated carbon (PAC) is also introduced into the water. PAC acts like a sponge. It draws odor causing chemicals out of the water. The water is then aerated which simply means that air bubbles through the water carrying the dissolved gases out of the water.

**Step 3:** The water then flows into flash mixers to which alum has been introduced. The alum helps to form a substance much like glue that absorbs impurities. The process that binds these impurities together is referred to as flocculation. Flocculation results in the formation of heavy particles referred to as floc. The floc is then processed out of the water through dissolved air flotation (DAF) and is swept away by brooms or, if it is heavy enough, it goes through sedimentation and settles on the bottom. At this point, it is swept into a canal that transports the floc to a containment area.

**Step 4:** The water is then run through filters made up of anthracite and sand to remove any remaining particles and unsettled floc.

**Step 5:** In the final step, the water is put into the clear well where it is chlorinated. This process removes any remaining particles that might have escaped the prior processes. The water is now sent to the finish reservoirs. At this point, the water is ready for a trip to your house.

### Step 6: DISTRIBUTION

When the water leaves the treatment plant, it passes through a vast network of pipes referred to as a transmission/distribution system. The Regional Pipeline, completed in 2004, is a 22.46 mile pipeline that takes water from the water treatment plant all the way to Snow Canyon. Water is transmitted through this pipeline to the cities of St. George, Ivins, Washington, Hurricane, LaVerkin and Toquerville. These cities then distribute the water through pipelines to neighborhoods and finally to your home.

### Regional Pipeline

WATER IS TRANSMITTED TO THE CITIES.

THE CITIES DISTRIBUTE THE WATER INTO NEIGHBORHOODS.

FINALLY, THE WATER ARRIVES AT YOUR HOME AND IS AVAILABLE WHEN YOU TURN ON YOUR TAP.

# Conservation Corner

By Julie Breckenridge — Water Conservation Coordinator

## Water Walk honors those who walk miles for water

Local citizens and staff from St. George City and the Washington County Water Conservancy District met at 7:00 a.m. Saturday morning, May 9, at Cottonwood Cove Park to walk two miles to the Demonstration Garden.

The Water Walk was held in recognition of the women and children in water-stressed regions who must walk three to six miles every day to get water for their families.

Mayor Dan McArthur led the walk while talking about the history of the area, the floods of 2005 that destroyed homes along the walk route, and the infrastructure, utilities and recreational resources in St. George that are constantly being built and improved upon to provide for the needs of local residents.

Other speakers along the route included Steve Meis-



mer from the Virgin River Program, Melinda Bennion from the Division of Wildlife Resources and Corey Cram from the Washington County Water Conservancy District. Julie Breckenridge from the District and Renee Fleming from St. George City organized the event.

**Around the world, 884 million people do not have access to safe drinking water.**

**2.5 billion are without adequate sanitation facilities.**

**6,000 people die everyday from water-related illnesses.**

### FREE Landscaping Workshops

June – October 2009

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 and disease control

Saturday, June 20th  
10:00 – 11:00 a.m.

#### Add rock to landscape

Saturday, July 18th  
10:00 to 11:00 a.m.

#### Vegetable Gardening

Saturday, August 15th  
10:00 to 11:00 a.m.

#### Rejuvenate your lawn

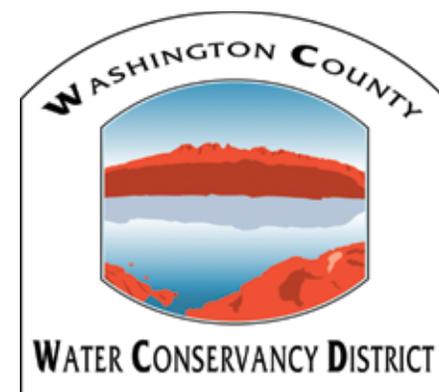
Saturday, September 19th  
10:00 to 11:00 a.m.

#### Fall Festival

Monday, October 19th  
1:00 to 3:00 p.m.

Enjoy Garden tours, craft booths and activities for the kids.  
Get lots of ideas for your garden.

For more information on the FREE landscaping workshops log on to  
<http://wcwcd.state.ut.us/Conservation/2009>



## Water Line Spring 2009

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Board Meetings — 7:00 p.m.

Wednesday, June 10

Wednesday, July 15

No meeting in August