

PRSRRT STD
 US POSTAGE
PAID
 SUNNYSIDE, WA
 PERMIT # 50

RSB JC UPDATE

Spring 2002

Volume 5, Number 1

A PUBLICATION OF THE ROZA-SUNNYSIDE BOARD OF JOINT CONTROL
 P.O. Box 810 ♦ Sunnyside, WA 98944

Roza and Sunnyside Valley Irrigation Districts Celebrate Long History Of Conservation



Both the Roza Irrigation District (RID) and Sunnyside Valley Irrigation District (SVID) have been upgrading their respective irrigation delivery systems since the early 80's to increase efficiency and enhance water conservation.

In combined total, roughly 18-20 miles of open lateral has been piped each year since 1985. Dubbed "enclosed conduit" or "lateral piping"

enclosing or piping open lateral ditches eliminates seepage and evaporation, resulting in an estimated savings of 5% or more of total volume capacity per mile. Collectively, over \$20 million has been spent on improvements in the last few years alone.

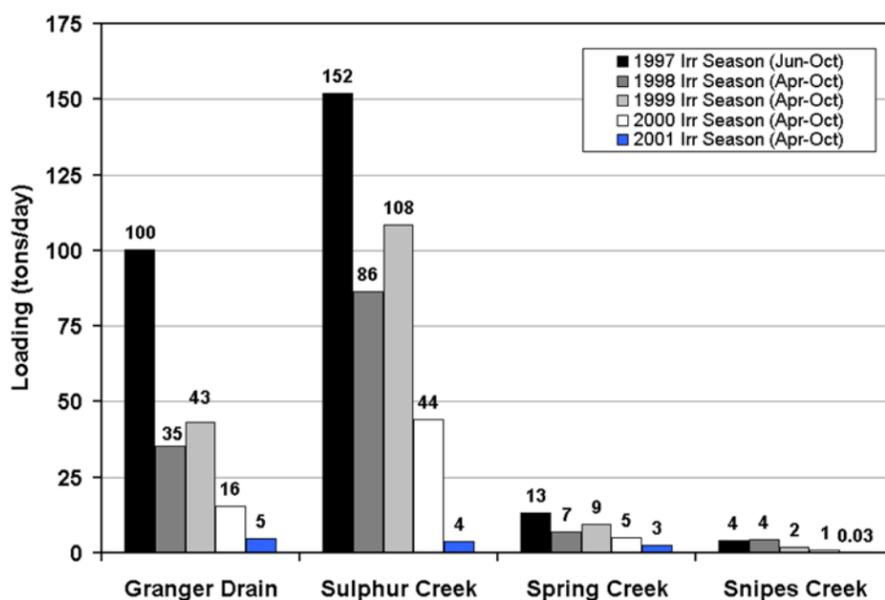
In addition to piping laterals, both districts have been automating their delivery systems. Several high-tech automated and remote controlled gates have been installed and integrated into each district's new Supervisory Control and Data Acquisition (SCADA) system. The gates co-

ordinate flow throughout the conveyance system, enabling accurate, timely response to demand fluctuations across the entire system. The gates can be adjusted in increments as fine as 1/100th of a foot which translates to roughly 2 cubic feet per second (cfs).

Such responsiveness enhances conservation by ensuring efficient water use and results in less water diverted. "The combination of these expensive upgrades and system improvements greatly enhances our ability to conserve water and optimize system delivery" said Jim Trull,

Water Quality Continues To Improve

Median TSS Loading at Drainage Outlet Sites



The graph says it all: sediment (TSS) has been reduced 97% in Sulphur Creek Wasteway and 95% in Granger Drain since the RSBOJC Water Quality Program was created in 1997. This dramatic improvement in water quality is a direct result of the hard work and on-farm investments of local farmers.

See Conservation
 continued on page 4

In This Issue

Enclosed Conduit & Conservation	1
Water Quality	1
Tim King New RSBOJC Health & Safety	2
Water Supply For 2002	2
Loan Program Status	3
Water Quality Target For 2002	4

Tim King New RSBOJC Health & Safety Coordinator

The RSBOJC welcomes Tim King, the new RSBOJC Health and Safety Coordinator.

Born in Wisconsin, Tim's family moved to Ellensburg Washington when he was six years old in the fall of 1977. He graduated from high school in Ellensburg in 1989 and proceeded to attend Central Washington University where he studied Geography and graduated with a bachelor's degree. A short time later Tim returned to school and received a second bachelor's degree in Health and Safety.

Tim brings with him an interesting and varied work history. He's worked for Pilot Corporation, the Kittitas County Planning Department, and even the Natu-

ral Resource Conservation Service (NRCS) in Goldendale where he performed salmon restoration work.



Tim currently lives in Prosser, WA. Tim looks forward to settling in to the area as well as his new post.

"I'm looking forward to familiarizing myself with the RSBOJC Safety Program," said Tim. "I truly enjoy the Health and Safety field. Both SVID and RID feature incredibly diverse job sites, each with its own challenges and obstacles. I'm looking forward to getting started."

Outside of work Tim likes to golf, fish, play sports, and study the history of Eastern Washington. "I enjoy the outdoors and I like to do things that keep me outside," he said.

Congratulations, Tim. Welcome aboard!

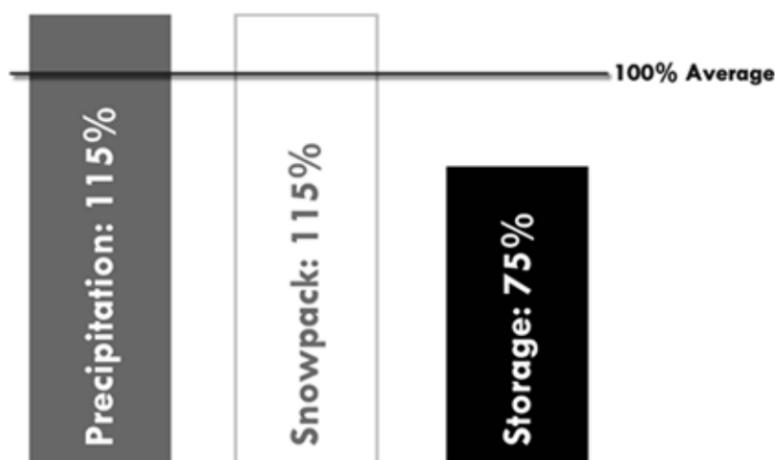
Water Supply Forecast In: We've Got Enough!

The water supply outlook for this upcoming season is good. "It appears we'll have no trouble filling our storage system," said Don Schramm, SVID Assistant Manager/Operations.

Even though precipitation for February was below average at 60% of normal, March was a productive month and the overall outlook remains securely above average.

Precipitation for the season as of publishing is 115% of average. Snowpack is also at 115% of average, and storage is 75% of average.

"March is historically a good



snow month," said Schramm, "and it really came through again this year with some heavy late season snow storms."

The long-range forecast calls for warmer weather and average precipitation. In any event, water sup-

ply is being projected as adequate, and carry-over should be average by the end of this season.

One thing's for certain, storage and supply is in much better than last year, when junior water rights were prorated down to 37% of entitlement.

"For comparison," said Schramm, "our precipitation and snowpack numbers at this time last year were roughly half of where we're at now." The robust water supply should keep Yakima Valley farms green this season, helping to ease the sting of last year's drought.

Board Requests RSBOJC Loan Program Extension

The program is still going strong, but November 9, 2002 may mark the end of the RSBOJC Loan Program. "Our aim is to request renewal of the program," said Lori Brady, SVID District Engineer. "I'm optimistic that it will continue, but this remains an unknown at this point in time."

Interested farmers are encouraged to apply for funding as soon as possible to ensure they can benefit from the low interest loan dollars before the program ends.

"It's a great way for irrigators to upgrade their systems at very low cost," said Mark Brady, RID Engineer. "We encourage everyone interested in the program to start the application process right away."

As for the program itself, every year more rill-irrigated acres are upgraded to sprinkler or drip irrigation, enhancing conservation and improving water quality. "I believe everyone would agree the program has been a success," said Lori Brady, SVID District Engineer.

During the last loan cycle, 2000-2001, SVID allocated \$1.5 million on just under 2,000 acres, while RID allocated \$1.2 million on 2,000+ acres.



To date, over 14,000 rill irrigated acres (above, left) have been (or is scheduled to be) converted to an improved irrigation method through the RSBOJC On-Farm Loan Program. Irrigators are encouraged to contact either Sunnyside Valley Irrigation District or Roza Irrigation District to apply.

If the Loan Program ends in November, the current expiration, any remaining funds will go back to the Clean Water Centennial fund. "Nobody likes to see this money go unclaimed," Brady added, explaining how any excess funding that isn't borrowed by a landowner will be returned. "Every dollar we can leverage on-farm is worthwhile," she said.

It's been reported that many farm-

ers are interested, but some fear looming economic hardship may make it difficult to follow through on a loan commitment. Both Barnett and Brady agree this is the result of a struggling agricultural economy.

See Loan Program
continued on page 4

Roza Irrigation District Conservation Work Recognized

Roza Irrigation District (RID) has been recognized with the Commissioners Water Conservation Award (Pacific Northwest Region) by the United States Bureau of Reclamation (USBR) for the "Pump 10 Project," where the district implemented a new technology to enhance water conservation.

The story begins with RID's Pump 10. Normally, all gravity laterals are enclosed with PVC pipe prior to expanding the Enclosed Conduit System (ECS) to the pump laterals. However, specific right-of-way and water quality issues brought about the necessity to enclose the Pump 10 pump lateral.

Previously, the Pump 10 pumping plant consisted of two 150 HP motors operating at 1760 RPM and 480 volts with horizontal split case pumps operating in parallel.



The MagnaDrive in action (left). The magnetic coupler device spins rapidly, controlling the engine RPM and adjusting pump flow.

Roza Irrigation District has won a regional award for the application of this technology and may go on to win a national competition for water conservation.

Water was pumped into a head weir box 139 feet above the pumping plant. From the box, the water spilled over a 48-inch weir and into an open gravity ditch flowing to farm deliveries.

The flow rate was manipulated by manually throttling the flow with a gate valve until the desired flow rate was measured over the head weir, allowing the pump to operate

at a constant rate.

RID engineers knew that piping the lateral and replacing weir blades with flow meters would give farmers the ability to turn off their deliveries. However, it would also cause the water to stack instantaneously at the head weir box. It would eventu-

See RID MagnaDrive
continued on page 4

Conservation continued from cover

SVID District Manager. Ron Van Gundy, RID Consultant agrees. "The Roza [RID] must contend with being a 100% junior water right district. These upgrades are absolutely critical if we want to supply water to our farmers during water short years like 2001."

Here's a quick summary of what the individual districts have accomplished:

RID summary (since 1985)

Total Miles Enclosed (piped): 176

Total Cost: \$13,420,471.68

Cost Per Mile: \$76,252.68

Miles per year: 10-12

Interesting Fact: Roughly 50% of total district acres have been converted to enclosed conduit.

SVID summary (since 1985)

Total Miles Enclosed (piped): Over 80

Total Cost: \$11,677,936.84

Cost Per Mile: \$145,974.21

Miles Per Year: 5-7

Interesting Fact: Urban location and installation complexity increases costs and reduces total miles piped.

Also, SVID has re-aligned and re-shored a total of 22 miles of the Sunnyside Canal at a total cost of over \$3,000,000.

Progress upgrading on-farm irrigation methods within both districts has been equally dramatic. Since the early 1980's, roughly 60,000 acres in RID and 40,000 acres in SVID have been upgraded from rill to an improved irrigation delivery system (either sprinkler or drip). This represents over 80% of total RID acres and over 50% total SVID acres. Van Gundy points out, "If it weren't for the hard work and dedication of Yakima Valley farmers, we wouldn't be even remotely close to these numbers or enjoying the efficiencies and increased water quality we are today."

Loan Program continued from page 3

"It's easy to spend money on upgrades," said Barnett, "but farmers know that this money must be paid back."

This is a reason some folks are holding off. Agriculture is being hit very hard, economically.

In related news, RID management announced that the conversions from rill irrigation to wheel line will now meet loan program upgrade criteria. Farmers are encouraged to apply this year for funding.

2002 Water Quality Goal Announced

The water quality target for this irrigation season will be 400 NTU (sum of three or fewer samples). Violators in reduction must meet 200 NTU in order to be have their water restored.

"We're keeping on track," said Don Schramm, SVID Assistant Manager/Operations.

All of the primary return drains must meet the water quality goal of 25 NTU this irrigation season (a measure of water clarity set by the Department of Ecology in 1997 per the federal Clean Water Act).

Almost all of the joint drains are in compliance. "Granger Drain needs to improve a bit more," said Ron Van Gundy, RID Consultant. "But we believe it can be done and remain optimistic."

RID Magna Drive continued from page 3

ally overflow if the pump flow rate were not immediately reduced.

The district required automatic flow control at the pumping plant and needed a solution.

"We determined the easiest way to achieve flow control was to maintain a water level set point in the weir box, regardless of the demand for water," explains Mark Barnett, RID Engineer.

Traditionally, this would have been accomplished with a variable frequency drive (VFD). The VFD reduces the flow rate by slowing down the motor. RID was approached with an alternative technology manufactured by MagnaDrive, Inc.

"MagnaDrive provided a financial incentive to utilize their product," said Barnett. "In addition, they provided an opportunity to enter into a demonstration project cost share agreement with the Bureau of Reclamation." Only nine MagnaDrives had been installed worldwide and none at an irrigation district.

The MagnaDrive utilizes a new application of the principle of magnetic induction. The MagnaDrive coupler consists of two components, the magnet rotor assembly and the conductor rotor assembly. Relative motion between these two components results in a powerful coupling force between the two rotors. Barnett explained why this is key to the application. "Varying the air gap between the powerful magnets and the copper conductor results in controlled output. Rather than slowing the motor to reduce pump rpm and therefore the flow rate, as does a VFD, the coupler allows the motor to operate at its optimal design speed while enabling manipulation of flow," he said.

Using the MagnaDrive to control flow rates makes the system responsive to demand, greatly enhancing water conservation and simplifying management of the lateral. Several modifications were made to the existing structure in order to integrate the MagnaDrive technology. "But it's worth it," said Barnett. "It saves irrigators money, water, and time."

Due to evaporation and seepage losses, the earthen pump lateral system was only 75% efficient, it now approaches 100% efficiency. According to Barnett, that corresponds to water savings of up to 700 acre-feet per year or 3.9 acre-feet per day.

The Roza-Sunnyside Board of Joint Control (RSBOJC) publishes the **RSBOJC UPDATE** biannually for landowners. All articles, letters and other items submitted to RSBOJC for use in its landowner newsletter become the property of RSBOJC which is authorized to use any item submitted, without payment or compensation to the person submitting the item, in any newsletter or other publication of RSBOJC. RSBOJC reserves the right to edit all items submitted. Doug Simpson, Chairman; Mike Miller, Vice-Chairman; Robert Golob, Ric Valicoff, Larry Haak, Dave Michels, David Minick, John Newhouse, Cus Arteaga, Douglas Vining, Dave Olsen, Jim Willard, Directors. Officers: Ron Van Gundy, Secretary; Patricia Bailey, Treasurer. Address comments to: Joe Schmitt, Editor, P.O. Box 239, Sunnyside, WA 98944.