



Infrastructure Improvements



New Mexico has faced historic droughts in the past and will again. EBID turned 100 years old in 2018 and its extensive system, designed and constructed by the Bureau of Reclamation, needs rehabilitation. Drought has become one of the greatest water issues facing the West; the District and its members have countered with innovative, creative and conservative practices to deal with this crisis.

Infrastructure improvements, including piping and lining, are needed across the District to better



Lift Pumps

utilize our limited water resources. EBID delivers water to 90,640 water righted acres through a network of over 264 miles of canals and laterals.

A 2012 Efficiency Study - Piped vs. Open Channel Laterals

A study led by Hydrology Director Patrick Lopez provided important results to the District in their efforts to improve water management efficiency. The report looked at 3 midsummer irrigation periods covering:

- June 20th to June 22nd
- June 27th to June 28th
- July 20th to July 27th

All sites were monitored using the District's Remote Telemetry Units (RTUs) to deliver accurate data.

- * Five different open channel laterals resulted in a conveyance efficiency of 58%.
- * Five piped laterals over the same time period delivered a conveyance efficiency of 92%.

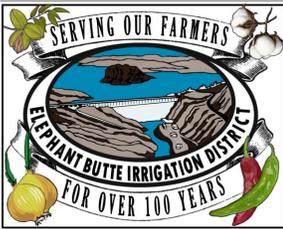
This difference of almost 35% translates into a reduction in operating costs and water savings shared among all members across the District.

The District must focus on getting the equipment in place so that they are prepared to start work on needed improvements with maximum efficiency.

Highly experienced in installing and evaluating the performance of pipe laterals, District employees have installed over 30 miles of pipeline to date. Piping saves, on average, about 500 acre-feet of water per mile of piped lateral.



The increased delivery efficiency in a pipelined canal from about 50% to 100% effectively doubles the amount of surface water available for allotment and delivery. By first piping the sub laterals off the main canal that constantly fill up and dry out, the District will greatly increase the efficiency of maintenance and operations in surface water management.



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The Rincon Pipeline Project, a BOR Water Smart Grant of over \$1 million cost shared with farmers, is an example of the benefits realized by piping laterals across the District. The project is expected to be completed during the winter maintenance season of 2017-18. Nearly 2.5 miles of EBID's Rincon Lateral is being converted from an open, earthen, unlined channel to an aluminized steel pipeline with concrete check and diversion boxes. This lateral was strategically targeted because of its location at the tail end of the Rincon Valley. It has both major operational difficulties and great potential water delivery and efficiency improvements.

Surface water delivery from the river diversion 33.4 miles upstream

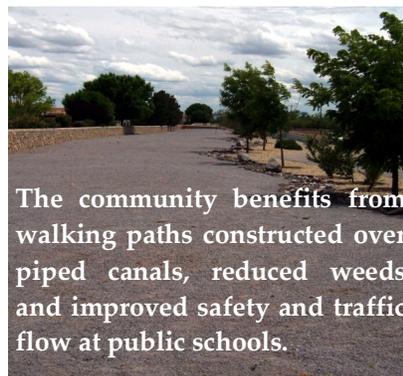
Jose Salinas, Farm Operations Manager Stahmann Farms: commented that closed canals would be a great benefit and cost savings during harvest: "We have to use a lot of labor in order to clean the canal." This would be much safer for the public too he said, saving time and labor spent patrolling open canals to keep people from swimming and being injured.

at Percha Dam is difficult and inefficient, causing system losses that affect the available on-farm water supply for all of EBID's members. Lift pumps like those



installed into the Rio Grande at EBID's Wasteway 18 help solve the problem.

By piping laterals such as this one, District members will see a significant reduction in operating losses. The chance of canal bank breaches will be virtually eliminated.



The community benefits from walking paths constructed over piped canals, reduced weeds and improved safety and traffic flow at public schools.

Improvements to the tail end of the system also benefit the upstream farmer whose water order delivery will be less tied up by those downstream.

Farmers in the project service area will also benefit when conveying groundwater that they pump into the system. The virtual elimination of seepage reduces the amount of

Hatch Valley Producer:

"It comes down to water has value, high value to it. If we can save 10% of the water it's worth it for the farmers in the future. 100 years from now if you don't do it..."

water they need to pump for a given farm delivery and increases the delivery flow rate. These improvements reduce the amount of water pumped, and reduce the energy consumed by that pumping.

Pipeline projects benefit EBID and its farmers in multiple ways including reduced seepage, reduced hydraulic roughness allowing for less head loss along each canal, reduced weed problems, reduced maintenance, improved safety and improved transmission of groundwater.

PK Colquitt, District member and producer, south valley where piping was installed about 2 years ago. "I love it, obviously no ditch breaks, no squirrels, the delivery is excellent...I think they're great." Piping is "invaluable" and he would like to see more put in.



Piping 4500 Feet of the Mesilla Lateral