



Selah-Moxee Irrigation District Enhanced Water Conservation Program

March 2018

The table below summarizes the specific water conservation projects benefits and estimated costs. The future benefits to the environment through decreased senior water rights diversion, improvements in water quantity, water quality, water temperature, and instream flows in the lower Yakima River will be the result of the proposed improvements.

Although SMID is in sound financial condition, they are currently investing approximately \$16,000,000 in piping the tunnel that runs under Yakima Ridge to improve service reliability. Due to this, project funding for the proposed conservation measures is beyond the ability of the water users to pay without external assistance. It is anticipated that project funding agreements identifying reduced water diversion requirements will be developed by funding agencies.

A staged approach could be used to implement water conservation projects over time. Specific projects could be initiated in the near future. For a relatively minimal investment, construction contract documents could be prepared for priority projects in advance of securing construction funding – “shovel ready” project would expedite implementation when construction funding becomes available.

Prioritized Water Conservation Projects Benefits and Costs

ID No.	Project Identification Sorted by Priority	New Pipe or Canal Lining (LF)	Acres Served (acre)	Estimated Annual Water Savings (AF)	2018 Estimated Cost (\$)	Cost per AF of Saved Water (\$/AF)
Initial 5-Year Funding Phase						
1a	Pipe lower Selah Moxee Canal to Konnowac Spillway	10,092	671	523	\$2,811,715	\$5,376
1b	Pipe lower Selah Moxee Canal from Konnowac Spillway to Moxee Drain	11,400	787	591	\$4,901,674	\$8,294
2	Pipe Moxee Ditch Intersection of Ekelman and School Rd to Turnout 260 (Lateral 7)	8,707	266	451	\$2,588,912	\$5,740
11a	Concrete Line Upper Selah Moxee Canal from Turnout 19 to 29A	6,953	221	834	\$2,173,640	\$2,606
11b1	Concrete Line Selah Moxee Canal from Turnout 29A to 41	3,377	107	412	\$1,055,439	\$2,562
11b2	Concrete Line Selah Moxee Canal from Turnout 41 to 53	3,377	107	412	\$1,055,439	\$2,562
11c	Concrete Line Selah Moxee Canal from Turnout 53 to Tunnel Inlet	3,027	96	650	\$946,653	\$1,456
11d	Concrete Line Selah Moxee Canal from Horse Ranch Spillway to Turnout 19	4,027	128	697	\$1,259,414	\$1,807
11e	Concrete Line Selah Moxee Canal from Headworks to Horse Ranch Spillway	4,227	134	706	\$1,321,130	\$1,871
	Subtotals	55,186	2,517	5,276	\$18,114,017	\$3,433
Future Project Phases						
3	Pipe Moxee Ditch Turnout 260 to Sublateral 7.3 and Pipe Sublateral 7.4	7,470	263	387	\$1,811,715	\$4,500
4	Pipe Moxee Ditch from Sublateral 7.3 to Selah Moxee Canal and Sub Lateral 7.1 and Hubbard Ditch Sub Laterals 7.3 and 7.2	9,376	289	486	\$2,031,381	\$4,000
6	Pipe lower Hubbard Ditch from Turnouts 200 to 100 (South end Lateral 7 and Sub Lateral 7.6)	7,196	1,012	373	\$1,597,280	\$4,100
7	Pipe Selah Moxee Canal from Moxee Drain to Turnout 181 and Lateral 10	15,938	1,128	826	\$9,596,234	\$11,100
8	Pipe Selah Moxee Canal from Turnouts 181 to 131, and Lateral 8	20,040	845	1,038	\$12,688,285	\$11,700
9	Pipe Selah Moxee Canal from Turnouts 131 to 76, and Laterals 6, 5, 4, and 3	20,084	460	1,041	\$11,788,703	\$10,800
10	Pipe Selah Moxee Canal from Turnouts 76 to Tunnel outlet, and Laterals 2 and 1	9,657	126	500	\$5,086,820	\$9,700
	Totals	144,947	6,640	9,927	\$62,714,435	\$6,318



Potential Coordinating Partners:



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The Selah-Moxee Irrigation District (SMID) in south central Washington covers 7,936 irrigable acres and is served by the Selah Moxee Canal, the Moxee Ditch, and the Hubbard Ditch. The 23-mile-long Selah Moxee Canal conveys water diverted from the Yakima River at Pomona to the Moxee and Hubbard Ditches, each 7-miles long. The three waterways are unlined and serve approximately 300 turnouts. SMID's low-lift pump station at the Roza Hydro Station can divert water from the tailrace to the Moxee and Hubbard Ditches when the hydro station is operational.

In 2015 SMID completed a Feasibility Investigation to evaluate water conservation measures, and provide the basis for implementing final design of those measures. This work built on the 2004 Comprehensive Water Conservation Plan and Feasibility Study. SMID plans to implement proposed conservation measures in phases, with early implementation projects to include:

Establishing a single river diversion point for all three SMID canals. The combined diversion point at the Pomona diversion on the Yakima River (the primary diversion for all three systems since 2000). The pump station installed in the Roza Hydro Station trailrace would be abandoned, and the Moxee and Hubbard Ditch diversion locations would be removed as river diversion points.

Piping lower Selah Moxee Canal. Pipe 21,492 linier feet (4.07 miles) of open ditch in the lower Selah Moxee Canal. This portion of the canal services 1,458 acres of land. Water savings for piping this section of canal is estimated at 1,114 acre-feet per year.

Piping lower Moxee Ditch. Continue piping efforts on the lower portions of the Moxee Ditch. A short portion of the Moxee Ditch is already piped. This project would expand piping another 1.65 miles, saving 451 acre-feet per year.

Pipe and Line Upper Selah Moxee Canal. Lining the upper 4.7 miles of the Selah Moxee Canal with concrete. To improve reliability, this project will be paired with piping a portion of the Canal that travels under Yakima Ridge via a tunnel. Currently debris fall inside the tunnel can damage SMID infrastructure and cause service interruptions. Cumulatively, these projects will provide 1,165 acre-feet of annual water savings.

Additional phases of work will include piping the remainder of the SMID canal and ditches, as well as constructing automated flow control facilities with instrumentation and telemetry. SMID is also interested in working with Basin partners to help solve region water issues, like declining groundwater and winter base flows. Potential opportunities include shoulder season infiltration projects or expanding service to areas of declining groundwater.

Overall, these early implementation projects would provide 5,276 acre-feet of water savings to 16.5 miles of the Yakima River, from Pomona to the Konnowac Spillway. This reach of the Yakima River provides habitat to ESA listed bull trout and steelhead. This reach also supports rearing and spawning habitat for spring and fall Chinook and a documented population of coho, all of which are candidate species. Additionally, these early implementation items would provide 157 acre-feet of secondary reach benefit, from Konnowac Spillway to the Columbia River. SMID's senior water rights ensures water savings would be available instream in drought and non-drought years.

SMID's water conservation measures would provide multiple benefits for agriculture and fish through an improved water supply including the ability of water and fisheries managers to adapt to climate change.

Conserving water through phased capital improvement projects will reduce lower Yakima River water demand and enhance fish habitat

