

FERRY POINT RIPARIAN RESTORATION PROGRAM

ALTERNATIVE WATER SOURCE MANAGEMENT STRATEGY

What is an Alternative Water Source?

Alternative water sources derive their water from an area other than a river or lake. One alternative source is ground water, which is water that is trapped in bedrock far below the surface. The water is then reached by drilling down into the bedrock and creating a well.



New water well; Credit: BRWA

How do they work?

Wells are drilled down into bedrock, which is where the groundwater is trapped in aquifers. The upper portion of a well that is above the bedrock is lined with casing, in order to prevent surface water from entering the hole. Casing also provides structural support, to ensure the hole doesn't fill in or collapse. If there are loose fragments that are entering the water, a well screen is installed. This is a sieve-like material that lines the well to allow water through and prevent sand or small rocks from coming in. After the well has been dug, a submersible pump is installed at the bottom to push the water up to the surface, and a pressure gauge is often used to trigger the pump to turn off and on. The average depth for a well is 200ft, but this can vary from less than 100ft to over 300ft.

Alternatives

There are many sources of alternative water including:

- Shallow wells
- Dugouts
- Dams
- Deep wells
- Spring Development

What's the Cost?

The cost of drilling a well varies quite a bit, depending on the size of the drill, the depth of the well, and the medium through which you are drilling. It is not a small investment, and you can expect to pay at least \$10 000 for a single well. In addition, the total cost of the project will not be determined until the well has been completed. This is due to the fact that the contractor doesn't know how deep a well will be until they've finished.

How do Alternative Water Sources help the Riparian Area?

By installing an alternative water source, such as groundwater from a well, landowners are able to divert their cattle away from the edge of a natural water body. This protects riparian areas along the edge from over grazing and erosion.

CASE STUDY: THE LOHR FARM

DIGGING DEEP, A NEW WATER SOURCE

“The project has been good for us and for the river.”

Well Details

- Well drilled to 200ft deep, cased to 120 ft
- Water is slightly salty, which is good for cattle
- Corrals built to direct cattle towards waterers
- Pump House built to house water tank and pumps

Project Costs

	Description	Cost	Total
Well	Drilled and cased water well	\$34/ft	\$4536
	Steel sleeve and well cap		\$126
	Brown shale delivery	15/tonne	\$2509
Waterer	Omnifont Stock Waterer (2)	\$1165	\$2447
	Waterline supplies		\$1416
	Backhoe work for waterline	\$115/hr	\$3321
Pump House	Concrete (for pump house and waterers)	\$8/ft ²	\$2688
	Building materials & electrical		\$5218
	Construction labour		\$5271
	Culvert and lumber		\$609
	Water pump and accessories		\$3268
Total Cost:		\$31 409	

Lucy Lohr has already noticed the difference in the riparian area. Willows are growing back and the ground is not as punchy. “It’s amazing how it repairs itself” comments Lucy. She also knows that with cattle drinking out of the well they will experience less hoof rot, more weight gain, and be healthier over all, all because of the clean water.

Brad and Lucy Lohr have enjoyed living on the banks of the Battle River for the last 20 years, although Brad and his family have been in the area his whole life. They have a cow/calf operation of 275 pair head, plus their herd bulls.

The Lohrs use multiple pastures to graze their cattle, and while some of them do have water systems in place, one pasture close to their home did not and the cattle still needed to use the river for water. For this particular location, the Lohrs thought it best to dig a well for use in a new corral.

Brad believes that in the future it will be mandatory to keep cattle off the water. “It’s the way of the future. It will have to be done, so we might as well be on the bandwagon first.”

The well has been very successful with the cattle utilizing it regularly. The water never froze in winter, thanks to the continued use. The only issue has been when cow manure entered the trough, but as the saying goes, ‘manure happens’. After the Lohrs noticed the problem and cleaned the trough, the cows were quickly drinking from it again.



Waterer supplies ground water to cattle; Credit: BRWA