# THE BEAVER FALLS WATERWORKS DISTRICT: COULD IT SERVE MORE VALLEY RESIDENTS?

#### **INTRODUCTION**

The Beaver Falls Waterworks District is considering if it may be able to serve more residents of the valley. An ample and reliable supply of potable water is necessary for a community to thrive and grow. Providing water to the east side of the valley would increase property values, make higher density occupation possible, and relieve the residents of the cost and trouble of maintaining their own wells. However, the cost of the new piping to extend the system would need to be offset by the increased taxes received by the district. This study was designed to determine if the extension is financially practical.



THE BEAVER FALLS WATERWORKS DISTRICT (GREEN)





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#### RESERVOIRS

#### **RESULTS AND DISCUSSION**

59 parcels were identified (blue on the map to right) as properties that could be serviced by the BFWD. The resultant tax revenue from these properties was calculated to be \$17,279 per year. The length of new piping required to service the new parcels was measured to be 3,290m. Installation and material costs for the project were estimated to total \$217,739 based on current pricing and recent work done in nearby Genelle and Ootischenia water districts. Borrowing costs are based on \$218,000 @ 5.25% for 21 years. Payments on this amount borrowed would be \$1,429.57 per month or \$17,155 per year.

#### **NEXT STEPS**

The project will need to be considered by the BFWD Board of Trustees. If viewed favourably, it would require the assent of the current ratepayers, and finally the acceptance of a majority of the property owners to be added.

#### **DATA SOURCES**

Base map with cadastre and contours produced by RDKB and on file in "O" drive, Selkirk College. BFWD boundary taken from RDKB produced map stored in BFWD archives, plot date: 28/05/2013. Survey and field data produced by author, 21/02/2019. Tax information from BFWD. Cost information provided by BFWD system operator.

#### **LIMITATIONS AND ASSUMPTIONS**

The contour line on the east side of the valley was only checked at one point; agreement should be confirmed in several other places. Construction and material costs were based on recent projects in other districts where soil conditions may differ causing a change to the overall cost of this project. The expected revenue from taxes was calculated on tax rates set by the BFWD. Tax rates are based on land parcel size. Infrastructure grants become available from time to time but were not considered in this project.

Cadastre RDKB District Boundary

## Scale

**Drawn By: Bruce Winterburn** Date: March 27, 2019 NAD 83 UTM Z11U

#### **METHODS**

The tank base was assigned an elevation of 650m and this elevation was transferred to the east side of the valley and compared to a place on the base map 640m contour line. The 640m contour line was found to be 637.8m in relation to the tank base (sufficiently close for these purposes) but not low enough to supply necessary head pressure for domestic use. Consequently, the 620m contour was chosen as the critical elevation because parcels at this elevation or lower will have a water pressure of at least 45 psi. A parcel was considered to qualify if it intersected the 620m contour line or if it lay below the 620m contour line on the way down Columbia Gardens Road. The number of qualifying parcels was used as the basis for calculations to determine the increased tax revenue (Tax rates are set by the district and are based on lot size). The length of required new piping was measured in ArcMap and used to estimate the cost of material and installation. The amount to be borrowed was determined and the cost of servicing the debt was obtained from web based amortization tables. The survey equipment used was a Topcon GTS 225 total station.





### LAND PARCELS THAT THE BFWD COULD SERVICE (BLUE)

Prepared by: Bruce Winterburn 13 March 2019 IEP 271 Thanks to Tracey Harvey for exuberant instruction, and patience

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