

Ground Water Project Report – Bob Dunne

Overview

The following report is a summary of activities that have been proceeding over the last 12 months concerning the Ground Water Project first proposed at the club's 2019 AGM, at that time it was at a proposal only. During the year investigations have continued and clarified whether or not the project does have an achievable outcome and at what cost to the club. Because of the presence of Covid 19 in the community, things have not progressed at the pace we probably hoped for consequently the project is still a work in progress but there is now a lot more definition and clarity on its potential as a realistic outcome for the club.

The overarching idea behind the proposal project is to have a water source available to the club in the event that extended dry periods disrupt our usual source of water coming from Coliban, who are our first line supplier of water. Such events although rare have happened in the past and placed great stress on the course, and the club's ability to manage its affairs. So most importantly this project concerns having a supplementary water source which would be available during periods of drought.

Project Description

Discussions with the owner of a property in Belvoir Park Road regarding a current water right on his property (Corner Gap Road & Belvoir Park Road) revealed the bore was not being used by him and he was prepared to enter into some form of leasing agreement with BPGC. The agreement would be for 12 years with 3 yearly reviews and a known desire by the owner of our wish to continue beyond this time. After consultation with Murray Goulburn Water they advised that a signed leasing agreement would be needed in order for them to grant us permission to pump water from the site. As a first option this water would be connected to the golf course over private land avoiding complex environmental issues associated with use of the road reserve. After speaking with involved neighbours, they have all given agreement that a pipe connecting the bore to BPGC could be installed underground on their properties, formal signed agreements with those affected is now underway. Approval for a road crossing under Belvoir Park Road Park Road and a crossing of Genders Lane has been sort and approved by the Bendigo City Council

The site of the bore at 120 Belvoir Park Road has been tested for water quality and found to be unsuitable for direct application on the course, and would require desalination before use. This of course comes at a cost which has been quantified and shown below in this report. The above remains the projects primary objective. It would however be possible to the use the water by mixing it directly (not desalinated) with water supplied from Coliban in the large dam at Number 3 Tee. This would require constant management and oversight by our Green Keeper to ensure water quality is maintained at all times and that the "parts per million" salt content remains below required levels. The matter is currently being discussed with the Green Keeper and others to determine whether or not this is a practical option.

An initial testing of the bore by North West Drilling gave an output rate from the bore of 4.5 litres per second and well within our requirements for a sustainable flow rate of a of 1.3 litre per second (aggregating to 114,000 litres per day}. This would after desalination and remix contribute 75,000 litres of water per day. The water output from the bore would need to be metered by Murray Goulbourn Water (the body responsible for ground water provisioning in the area) and charged to us at a rate of \$3 per megalitre, a relatively insignificant cost in the overall operation.

Project Costings

Costings for the project are still taking shape and are not yet fully evaluated, but there is now a reasonable degree of accuracy associated with most of the project's major costs. The list below describes the position with regard to the current status of the costings,

The cost to connect 240volt power to the bore site \$10,000

The cost to refurbish the bore to bring it up to a standard for our use is estimated at \$5000 {we are currently waiting for a quote to come in}

The cost of all pumping equipment needed to complete the work including the cost of pipe to connect the two sites will not exceed \$20,000. This has been evaluated based on received quotes. Labour costs are not included and are estimated at \$3,000

The cost to lay the pipe is an estimate only based on the use of a Dingo using a trencher over a distance of 1.4 Km and the pipe buried to a depth of 20 cm is \$5,000

The cost of the road crossings plus 54 meters of road reserve from the point of exit from private land to the crossing location is an estimate only, we are still waiting for a quote, but of \$5,000 is made as an interim estimate.

The cost of a desalination unit capable of delivering 50,000 litres per day (44,000 plus 6,000 litres remix) has been quoted as \$25,293. There is a unit step in this costing of 50% of the quoted cost ie \$12,650 for each increase of 25,000 litres meaning to produce 75,000 the cost would be \$25,300 + \$12,650 = \$37,950.

The cost of miscellaneous item including refurbishment of the bore pump house, the cost of a small steel shed to house the Desal equipment, connection of 240 power to the shed, and the establishment of an evaporation pond is estimated at \$5,000.

The cost to establish a contract with Murray Goulbourn Water approx. \$1,000 for the meter.

The cost of an annual payment to the owner of the property for the right to use the bore to be negotiated.

To summarise the above, the total cost to produce 75,000 litres of water per day for the course would be \$92,000

Current Status of the Project

The project has evolved to its present stage with the full knowledge of the club committee, and discussions have held with other stake holders including our green keeper and head groundsman. The following list of Pros and Cons are currently under review by the committee

Pros

The club has experienced drought conditions in the recent past and received a zero allocation of water from Coliban and hence been placed in the position of having to truck water to the course. The millennium draught could have almost caused us to close the gates. This proposal would at least provide for 75,000 litres of water per day whilst not enough to water the course in its entirety it would provide enough to water all critical elements of the course.

The costs when amortised over a 12-year minimal period would amount to an annual cost of \$6,000 to ensure the ongoing viability of the course during severe drought conditions.

The water output from the Desal system could be used in non-drought periods, to supplement the Coliban supply thereby reducing our need to purchase additional water rights from them.

Cons

It is a major cost to the club especially when we have had a bumper year for rain. Our dams are full and we have assurance from Coliban that they can guarantee 100% of our allocation for the next 4 years.

By then our agreement with the bore owner would be 4 years into its life ie 1/3 the way through. Can we delay activating an agreement with the bore owner?

Is it a better option to seek an agreement with the bore owner to have a low cost solution for periods of drought? Trucking water to the course from the bore, using a petrol driven pump at the bore site to offset the cost of connecting power to site, and not having to run pipe all the way to the course.

Can we rely on the bore to provide a constant water flow during drought periods? Do we have any guarantees about the bore capability?

Conclusion

The project has been costed to a reasonable level of confidence and although not complete gives indicative costing for the project. When all costings are available the incoming committee will need to decide on the merits of the project during 2021 and decide whether it is a cost-effective solution for the club providing value for money.