

Irrigation System Information Paper

Executive Summary

1. Our irrigation pipes are 30 years old on the Almonte nine and much older on the other. Similarly, our water pumps are 3 decades old and are very inefficient by modern standards. The frequency of repair and availability of spare parts indicate that our system is nearing the end of its life cycle. We budgeted \$21,000 for irrigation labour in 2016 and spent \$30,000. Replacing the system is a question of “when” not “if”.
2. Your current Board of Directors wants to invest in the long-term interests of the golf course by proceeding with the installation of a modern, efficient, digitally-controlled irrigation system. We have about \$400,000 set aside in our capital reserve (largely from the sale of our surplus farmland), and would need to borrow an additional \$800,000 to fully fund the project and the existing mortgage (total \$1.2 million). The approval of a simple majority of the members will be required before the Board can proceed.
3. Our savings per year would be in the \$19,000 range owing to a reduction in the cost of labour, spare parts and the operation of our pump house (\$475,000 over the term of the loan). To finance this project, the annual capital assessment would rise by \$48 per member to \$348 (assuming 350 members), but membership dues would not be affected by it. Our total loan obligation of \$1.2M, including our current mortgage of about \$330,000, would be extended to an amortization term of 25 years from 12.
4. Construction could begin in the fall of 2017 and finish the following spring. Work-arounds such as adding a make-up hole would be considered, but some one-time loss of playing time, green fees, cart rental and bar revenue could be expected. The trenching required would concurrently give us an opportunity to level some of the 10th fairway up to the 150-yard marker (this cost is built into our estimates).

Irrigation System Replacement Details

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Why Replacement?

Repairs and Operation

5. The current irrigation system represents a maintenance problem for our Greenskeeper. During the 2016 season we had repairs to our distribution pipes and sprinkler heads totalling 700 person hours. While we do not have objective maintenance data for previous years, it is the opinion of our Greenskeeper that this issue has been getting steadily worse.
6. The current pipes are a hodgepodge of materials and sizes. They are 30 years old on the Almonte nine; the Carleton Place nine is much older. The system is manually operated - meaning that the Greens Superintendent must employ one full-time and one part-time seasonal employee to move around the course in the evening and at night to water those areas that require it. This task typically takes between 8 and 12 hours "per day", depending on how much watering is required. Given the working hours, finding qualified employees is often problematic. We currently budget \$21,000 per year for operation and repairs and spent an additional \$9,000 in 2016 for overtime.

Wastage of Water

7. We do not have the capability to balance the water pressure in the irrigation system. We need to open the valve in front of the 10th tee to dump water into the creek, then manually turn on the pumps until the pressure builds gradually to water the golf course. Our best estimate is that for every 10 gallons of water pumped, 4 gallons are being dumped back into the Mississippi River. The water men have to keep an eye on the pressure at all times otherwise over-pressuring will cause breaks in the system. Once this happens the pumps must be shut off. The repair is made, once it is located, and the whole process starts over again. Keep in mind the work is done primarily at night.

Water May Not Continue to be "Free"

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8. The Board is concerned that the Ontario government has publicly expressed an interest in charging golf courses for all the water that they use, although this intention has not yet found its way into legislation.

Pumps

9. The pump building (behind the 18th green) itself needs to be modified and refurbished. It is not well insulated and needs a minimum amount of heat in the winter to keep certain components of the pumps from freezing and breaking. The solution would be to install a completely new pump system inside a pump room situated directly over the reservoir. The system would regulate the pressure to an acceptable range. There would be no need to discharge water to balance the pressure so all the water pumped would go on the golf course.
10. The new Vertical Turbine Pumps would supply over fifty percent more water for the same power consumption. The higher water volume these pumps produce would allow watering of our course in less time, later in the day/night and using less water and labour. One additional small pump in the system would maintain the pressure at a predetermined range. The new pumps and modifications to the pump house would cost \$174,000.

Number 10 Fairway

11. The cost of levelling of #10 fairway to the 150-yard marker would be \$23,000. This cost is built into our estimates.

Construction Approvals

12. We have had preliminary discussions with the Mississippi Valley Conservation Authority and the Township of Mississippi Mills to determine the nature and scope of approvals required for this project. We have received approval in principle and would proceed with formal applications if the members vote in favour of the project.

The New Digital System

Pipes and Sprinklers

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13. A total of 405 new sprinkler heads and 2 new vertical turbine pumps would be installed, as well as about 50,000 feet of communication/power cable and a similar length of piping. Each hole should take 2 to 3 days to complete installation and testing. Normally only one hole at a time would be affected by construction activities.

Advantages

14. The improvements resulting from installing a modern, digital, 2-wire system are perceived to be as follows:

- It would be completely automated. Remote operation is possible through, for example, a smart phone. Each component of the system would regularly report its status to the digital controller;
- Watering times plus arcs and trajectories can be programmed and selectively adjusted to uniformly cover just the areas that need it and to operate more effectively in higher wind conditions.
- There would be a drastic reduction in maintenance requirements;
- The vertical turbine pumps are approximately 50% more energy efficient. The higher output from these pumps would allow us to operate for less time and later at night.
- Whenever grass seed, fertilizer, or insecticides are applied, they can be properly “watered in” without applying too much water to adjacent areas.
- Green-side rough can be watered separately from the greens themselves, helping to ensure the maintenance of ideal moisture conditions for both;
- We would no longer need to dump excess water back into the river. Not only would this be more environmentally sound, it could produce

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cost savings in the event the province starts to charge for water usage.

- Trenching requirements would give us an opportunity to level some of the 10th fairway while pipe is being laid;
- As-built maps would be provided by the equipment supplier, facilitating future maintenance or repair requirements;
- There would be a comprehensive 3-year warranty on sprinkler assemblies, distribution pipes and installation that wouldn't begin until the equipment is operational; and
- The reduction in labour, spare parts, and pump house operation costs would be about \$19,000 per year (\$475,000 over the term of the loan).

Financing

Funding Requirement

15. The loan needed to finance all aspects of our irrigation system project would be:

- \$906,000 for sprinkler heads and pipes (installed);
- An additional cost of \$134,000 to pay for extensive rock cutting on most of our fairways;
- \$174,000 for modifications to the pump house and the installation of 2 main and 1 pressure maintenance pump;
- \$23,000 to level the 10th fairway to the 150-yard marker;
- \$20,000 for site remediation (for example, sand, topsoil, sod ...);
- Contingency of \$13,000
- Sub-Total: \$1,270,000

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- Minus \$400,000 from our Capital Reserve plus \$330,000 for our existing mortgage = a Grand Total of \$1,200,000.

Bank Loan

16. Financing of a \$1.2M loan with an amortization period of 25 years has been discussed with our bank. Should we proceed with this project, they have agreed to fold this amount into our existing mortgage (\$330,000) and charge an interest rate of about 3.45% on the new total of \$1.2M. The annual capital assessment would rise by \$48 per member to \$348 (assuming 350 members). This represents an annual increase to our existing loan obligation of about \$16,800 (approximately 1.5% of our budget).

No Dues Increase

17. There would be no increase in the membership dues as a result of this project.

Recommendation

18. The Board recommends the procurement of a Toro digital irrigation system, Vertical Turbine Pumps and High Density Polyethylene (HDPE) pipes. The procurement and installation of the pipes and sprinklers would be done by Atkinson Irrigation Systems of Toronto. The pumps would be purchased from and installed by Pumps Plus (Toronto). The modifications to the pump house would be contracted locally.

19. There is an expression in business: "Timing is Everything". The Board believes that the time for this project is now. We have a substantial portion of the money set aside in our Capital Reserve and can afford to borrow the balance.

What are We Asking of You?

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20. We ask for your vote of approval for the Board to borrow a grand total \$1.2 million (including our existing mortgage of \$330,000) and to extend the term of this comprehensive loan to 25 years from 12. The Board would like to first respond to any questions or concerns about this project, including holding an information meeting in the clubhouse on Tuesday 10 January 2017 at 7 PM. A vote will subsequently be called at a special meeting that will be held on Thursday 19 January 2017 at 7 PM. If you cannot attend, regardless of which way you intend to vote, please submit your completed proxy by:

- Giving it to the Manager in the Pro Shop or to a friend who will attend the meeting;
- Faxing it to the Manager at 613-257-5155;
- Scanning a completed proxy form and sending it to the Secretary by e-mail (my e-mail address is at the end of this information paper and every Board decision record);
- Taking a digital photograph of a completed proxy form and sending it as an e-mail attachment to the Secretary; or
- Mailing your completed form to the Secretary at the following address: 719 - 1047 Canadian Shield Avenue, Kanata, K2K 0H4. I will ensure that your vote is registered, regardless of whether you are in favour of the motion or not.

If any member has a question or concern, please contact me at:

john.foottit@gmail.com

John Foottit
Secretary/VP