Preliminary Draft
Report of SVEA's Pond Committee
For Presentation at the Board's January 3, 2020 Meeting

To: The Board of Directors of the Sun Valley Elkhorn Association, Inc.

From: The Board's Pond Committee:
Clark Furlow clarkfurlow@msn.com
Bob Diercks rjdiercks@icloud.com

Copies: Jim Laski, Esq. jrl@lawsonlaski.com
Chuck Williamson, General Manager chuckw@elkhorninsunvalley.com

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At the meeting of the Board of Directors (the "**Board**") of the Sun Valley Elkhorn Association, Inc. ("**SVEA**"), held on March 21, 2019, three homeowners asked the Board to dredge the five ponds located along Twin Creek to remove accumulated silt. The five ponds are depicted in Exhibit A.

Following that meeting the Board appointed us to serve as the ad hoc Pond Committee (the "**Pond Committee**") to look into the matter. To assist the Pond Committee, Chuck Williamson prepared a 12-page report with nine attachments summarizing (1) the history of the ponds, (2) certain issues that clouded SVEA's title to the land containing two of the ponds, and (3) other issues. The members of the Pond Committee met with concerned homeowners, examined each pond on multiple occasions, reviewed the history of the Board's treatment of the ponds, reviewed the Master Declaration to clarify SVEA's obligations regarding the ponds, and conferred with SVEA's legal counsel.

At the meeting of the Board held on July 12, 2019, the Pond Committee reported its initial findings to the Board and requested that the Board (1) authorize SVEA's legal counsel to resolve the cloud on SVEA's title and (2) authorize the Pond Committee to retain the services of a hydrologist to help it better understand the ponds and alternatives that might be available to address various concerns regarding the ponds.

At the meeting of the Board held on September 19, 2019, the Pond Committee reported that it had retained (with the approval of the Board's Executive Committee) the services of Brockway Engineering, PLLC, ("**Brockway Engineering**"). The Pond Committee also reported that Dr. Charles G. Brockway, a principal of the firm, had inspected the ponds in August and that employees of Brockway Engineering would be collecting data from the ponds in September and October.

Subsequent to the September Board meeting, members of the Pond Committee studied the SVEA's files documenting the process by which SVEA obtained a Water Use License for the ponds. On November 8, 2019, Brockway Engineering delivered its report regarding the condition of the ponds (the "**Brockway Report**") to the Pond Committee. The Brockway Report is attached as Exhibit B.

In this document, the Pond Committee discusses: (1) the history of the ponds, (2) the current condition of the ponds, (3) SVEA's contractual obligations regarding the ponds, (4) available alternatives for the ponds, and (5) its recommendations for action by the Board.

History of the Ponds

Elkhorn was developed by a joint venture between Johns-Manville Idaho, Inc. and Dollar Mountain Company, Inc. The joint venture was named Elkhorn at Sun Valley (the "**Developer**").

On May 31, 1972, the Developer submitted an application to the Idaho Department of Water Resources ("**DWR**") for permission "to impound waters of the North Fork and the South Fork of Elkhorn Gulch.[1] The North Fork runs through what is now the Elkhorn Golf Course. The South Fork is today known as Twin Creek. It is a spring-fed stream that also carries runoff during snowmelt, rain-on-snow events, and heavy rainfall.

The five ponds at issue are located on Twin Creek. (See Exhibit A) From upstream to downstream the ponds are identified in the DWR documents and in the Brockway Report as ponds G, H, I, J, and K. Our Association has traditionally identified the ponds as 1, 2, 3, 4, and 5. In the interest of clarity, this report will use both names and refer to the ponds as G-1, H-2, I-3, J-4, and K-5.

The ponds were originally part of the natural stream. The Developer wanted to enhance these natural ponds for the sub-division. To this end, the Developer submitted a Water Use Application[2] to DRW. That Application explained that the Developer wanted to excavate "in or near existing non-perennial stream channels" and construct two-foot or three-foot high dikes.[3] The application promised "the use [of the water] will be non-consumptive and no stream depletion will occur."[4]

On June 22, 1972, Lane Company (the owner of downstream real property now known as Lane Ranch) protested the Developer's application.[5] On January 24, 1973, DWR convened a conference to consider the protest. At the conference the parties reached a settlement. Lane Company would withdraw its protest if the Developer would, among other things, agree to install measuring devices at each pond to assure that the amount of water leaving the pond system equaled or exceeded the amount entering the pond system.[6] On January 30, 1973, DWR approved the Developer's application.[7]

The Developer began work on the ponds in the summer of 1973. Doug Clemens, the man in charge of the project, told the Pond Committee that he supervised the dredging of silt from five naturally existing ponds along Twin Creek. He said he had a clear and certain recollection that he did not excavate land to create or enlarge the Ponds. He said he merely removed silt from the pre-existing Ponds.

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[1] This document is contained in SVEA's 121-page file of documents relating to the application for a Water Use Permit and ultimately a Water Use License. We will refer to that file as the Water Use File ("**WUF**"). The Water Use Application can be found in WUF at pages 120-121.

[2] WUF, pages 28-31

[3] WUF, page 28, ¶6

[4] WUF, page 28, ¶6 & ¶8

[5] WUF, pages 114-118

[6] WUF, pages 88-89

[7] WUF, page 87

On the other hand, Mr. Clemens also said that he removed hundreds of truckloads of slit from the ponds. The removal of such a large volume of material suggests that he probably removed more than accumulated silt and made the ponds deeper than they had been in their natural state. This conclusion is supported by the fact that if the project had merely been intended to clean up natural ponds it would not have required the Developer to incur the expense of obtaining a water use permit. A water use permit is not required to maintain a natural pond.[8] But such a permit is required when a person seeks to expand the water holding capacity of a natural pond by excavating to increase its depth or by building dikes to block the flow of water out of the pond and thus increase its size.[9]

Pursuant to the permit, the Developer excavated the ponds. It installed a weir with head gates at the downstream end of pond G-1 which would raise the water level and control the flow of excess water from the pond into a culvert that runs beneath Lupine Rd. Similar mechanisms were installed for similar reasons at the downstream ends of ponds J-4 and K-5. The Developer also built earthen dikes covered with rubber membranes and rocks at the downstream ends of ponds H-2 and I-3. Thus, the Developer made the ponds bigger and deeper. Finally, Mr. Clemens said that when he finished excavating the ponds, he poured a powder-like substance into the ponds in an attempt to seal the bottoms of the ponds and thus prevent seepage.[10] We believe this powder would have been a product called Bentonite. All of these changes to the natural condition of the ponds would have increased their size and depth. In this way, the ponds were developed in conjunction with the development of Twin Creeks sub-division.

The Developer was supposed to submit its "proof of beneficial use" by January 1, 1978 which would have triggered an inspection of the project by DWR to confirm compliance with the terms of the Water Use Right. But, on the eve of the deadline, the Developer sought and received an extension of time until January 1, 1983.[11]

In December, 1982, C. E. Brockway,[12] a hydrologist hired by the Developer, informed DWR that the work on the ponds was complete.[13] He also requested that DWR waive the requirement of installing water measuring devices on the ponds.[14] The reason for that request was that the Developer had never bothered to install the devices.[15] C. E. Brockway provided a technical justification demonstrating why they were not necessary to meet the objectives of the water permit.[16]

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[8] DWR, Administrators Memorandum, p 5 (February 28, 2003). A copy of this Memorandum is attached as Exhibit C.

[9] Id.

[10] As we will see in the discussion about the condition of the ponds, this did not work well in Ponds K-4 and K-5.

[11] WUF, page 84

[12] Dr. C. E. Brockway is an engineer with a specialty in hydraulics and hydrology. He is the father of Dr. Charles G. Brockway, the hydrologist who is currently advising the Pond Committee. He is also the founder of Brockway Engineers. To avoid confusion, this report will refer to the father as "C. E. Brockway" and the son as "Dr. Brockway."

[13] WUF, pages 70-71

[14] WUF, pages 73-80

[15] WUF, page 63

[16] Id.

DWR was persuaded by C. E. Brockway's explanation, but refused to waive the requirement unless Lane Ranch agreed. DWR also warned that if the requirement weren't waived before DWR inspected the project, the Developer might not obtain a water use license.[17]

In May, 1983 the Developer obtained Lane Company's approval of the waiver,[18] and DWR agreed to remove the requirement. On April 17, 1985 DWR formally removed the requirement.[19] In August of that year the State of Idaho issued its Beneficial Use Field Report.[20] The report states: "Water runs thru the creeks and is diverted into large ponds located on the Golf Course and in and around the Housing Subdivision."[21] It also says: "The water is used for beautification of the property. Is used more for esthetics than recreation."[22] The Water Right License right was finally issued in September, 1992.[23]

Present Condition of The Ponds

Brockway Engineering inspected the ponds on August 14, 2019 and collected data from the ponds in September and October of 2019. In general, Brockway Engineering found the ponds to be in poor health with considerable sedimentation, especially in the upper ends of ponds G-1, H-2, and I-3. The Brockway Report also states that the upstream ends of these ponds have significant growths of algae. Pond K-5 is very stagnant and can also often accumulate a large amount of algae growth. Pond J-4 is in better condition than the others.

Here are the details of Dr. Brockway's findings:

Water Flow. On September 6, Brockway Engineering measured the flow of water through the pond system. The water flow was measured above Pond G-1 (the beginning of the system), between each of the ponds, and below Pond K-5 (the end of the system). The flow of water at the beginning of the system was 49 gallons per minute. A shallow, subsurface flow of water enters the system at pond H-2 and in the riparian area between Ponds H-2 and I-3. This flow delivers an additional 39 gallons of water per minute. But, in Ponds J-4 and K-5 the system loses a cumulative total of 63 gallons of water per minute. In other words, these two ponds are leaking. The flow of water at the bottom end of Pond K-5 (the end of the system) is 27 gallons per minute. Thus, the system has a total net loss of water (all inflows minus out flows) of 22 gallons per minute.

The measurement of the streamflow in Twin Creek defines what is called the "base flow" of the stream. Base flow is the relatively constant flow of a perennial stream after the end of spring runoff. Although the data is not definitive, it appears that, over the years, the base flow in Twin Creek has declined. In August 1984 and January 1985, DWR and C. E. Brockway measured the

[17] Id.
[18] WUF, page 60
[19] WUF, pages 21-22
[20] WUF, pages 35-36
[21] Id.
[22] Id.
[23] WUF, pages 15-16

outflow from pond K-5 as part of the review process for the water right. They found a significantly greater amount of water in the stream below the pond system than is there today. The reason for this apparent decline in the volume of water in Twin Creek is unknown.

Pond Size. The total volume of water in the ponds is estimated to be 2.44 acre-feet. That is less than half the amount allowed in the Water Right License.

Turnover Time. "Turnover time" is the time required for the water that enters a pond to leave it. The turnover times for the ponds are good, ranging from 1 to 3.2 days. Generally, the faster the turnover time the better. A slow turnover time can cause algae growth. The relatively quick turnover times in the Twin Creek ponds suggests that their algae growths result not from slow turnover, but from their shallow depth. Shallow depth can increase water temperature which, in turn, can contribute to algae growth. But the solution to the ponds' algae problem is not as simple as deepening the ponds. Deepening the ponds will increase the turnover time. If the ponds are dredged too deep; the increased turnover time could also cause algae growth. Therefore, depth and turnover time must be balanced to reduce the growth of algae.

Water Temperature. Average temperatures of the ponds in September ranged from 50.2 degrees to 56.8 degrees Fahrenheit. Water temperatures during the hottest part of the summer are likely to be about 10 degrees higher. These averages are below 68 degrees, the temperature that can stress trout.

Nutrient Data. Water quality samples taken at the inflow of pond G-1 and the outflow from pond K-5 were tested for nitrogen and phosphorous to assess the level of nutrients that might be contributing to algae growth. The nutrient levels are low, and they are not a significant contributor to the algae growth.

Dissolved Oxygen Data. Dissolved oxygen increased significantly through ponds H-2, I-3, and J-4 and decreased slightly through pond K-5. Dissolved oxygen levels were generally high, exceeding 90% saturation, except at pond H-2 which had an 88% saturation level.

Evapotranspiration Losses. "Evapotranspiration" is the loss of water that results from evaporation and consumption of water by plants in and around the ponds. The evapotranspiration loss in the ponds is small relative to the flow of water through Twin Creek and is apparently not an important factor.

Flood Mitigation. Dr. Brockway determined that the ponds do not play a significant role in mitigating the magnitude of any flooding that may occur as a result of runoff during snowmelt, a rain-on-snow event, or a heavy rainfall.

SVEA's Contractual Obligations

SVEA's contractual obligations regarding the ponds are defined in the Master Declaration. The ponds are located on a strip of SVEA property that is defined as an "Open Space Area." The Master Declaration provides that an Open Space Area is to be maintained either (1) for recreational

uses that do not require a structure, or (2) in a natural, semi-natural or landscaped state.[24] These Open Space Areas must be available for use by all Members of SVEA.[25]

If the ponds had remained natural, then SEVA would merely be obligated to maintain them in a natural or semi-natural state. But, as we have seen, the Developer impounded water from Twin Creek by (1) excavating, (2) constructing water level control devices at the downstream ends of ponds G-1, J-4 and K-5, and (3) dikes at the downstream ends of ponds H-2 and I-3. Thus, we conclude that the developer constructed the ponds by modifying the pre-existing natural ponds. Indeed, in his December, 1982, Water Use Report, the Developer's hydrologist, C. E. Brockway, described the ponds as having been "constructed."[26]

The Master Declaration provides that SVEA is obligated "to keep all Improvements[27] of whatever kind . . . located [in Open Space Areas] in good order and repair" (emphasis added).[28] That presents the question whether the ponds would be considered "improvements." The Master Declaration defines the word "improvement" to include "all structures and appurtenances thereto of every type and kind" (emphasis added).[29]

Having concluded that an "improvement" is a "structure," the next question is whether ponds would be deemed to be "structures." The word "structures" is not defined in the Declaration, but the relevant definition in the Webster Dictionary is "something (such as a building) that is constructed." As we have seen, the ponds were constructed by the Developer, thus they would fall within Webster's definition of a "structure."

The conclusion that the ponds would be deemed "structures" is supported by the fact that the Master Declaration which generally prohibits the construction of "structures" in Open Space Areas, specifically allows the construction of "bridges, streets, highways, ponds or waterways, public or private utilities and restroom facilities" (emphasis added).[30] If the ponds were not deemed to be structures, it would not be necessary to expressly create this exception to the general prohibition of structures in Open Space Areas.

The conclusion that the ponds would be deemed "structures" means that the ponds fall within the Master Declaration's definition of "improvements." From this it would seem to follow that the SVEA's obligations toward the ponds would be the same as its obligation toward all improvements -- it must maintain them "in good order and repair." But the Master Declaration carves out an exception regarding maintenance of ponds. It expressly gives SVEA the power: "To maintain . . . .

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[24] MD, Art. V, §5.04.

[25] MD, Art VI, §6.04(c)

[26] WUF, page 73.

[27] The word "improvement" is capitalized in this quote because it is a defined term, and the Master Declaration capitalizes all defined terms wherever they appear.

[28] MD, Art. VI, §6.04, ¶ C.

[29] MD, Art. I, page 3.

[30] MD, Art. V, §5.04.

ponds . . . to the extent deemed advisable by the Board" (emphasis added). This language appears to give SVEA latitude in how it maintains the ponds.

Conclusion: SVEA has a great deal of latitude in dealing with the ponds, but it cannot simply ignore them. This brings us to the question: What should SVEA do about the ponds?

Available Options

We have identified five options: (1) retention of the ponds, (2) conversion of the ponds into a riparian corridor, (3) retain some ponds and convert others into a riparian corridor, (4) maintain the ponds better than they have been maintained (but without dredging), and (5) convey the ponds to a sub-association formed by SVEA members who desire to care for the ponds in a manner other than the manner chosen by the Board.

1. Retention of the Ponds by Dredging:

This is the option preferred by the group of homeowners who live in the vicinity of the ponds. The advantage of dredging is that it would remove the sediment and could restore the ponds to the depth and volume allowed by the license. Dr. Brockway thinks that if the dredging is not too deep, a reasonable turnover time of 2 to 4 days could be achieved.

There are several disadvantages to dredging. Among them: (1) it is difficult to do because access to some of the ponds is very limited, (2) it is very expensive, (3) that large cost will have to be born approximately every 15 years to maintain the ponds into the future, (4) standing water in the ponds will continue to attract Mosquitos, and (5) the ponds pose the possibility of a drowning hazard that could pose liability issues for SVEA.

There are additional expenses associated with retaining the ponds. SVEA may have to augment the amount of water flowing in Twin Creek to compensate for the apparent decline in base flow. This might be accomplished by acquiring additional water rights and pumping this additional water to Twin Creek from other areas. Or, it might be possible to acquire additional water by doing a deal with the Sun Valley Water & Sewer Co. in which the company would divert its excess water into Twin Creek. Both of these options would involve significant cost and on-going maintenance.

Beyond these general concerns, each pond presents own unique problems.

- The bottoms of Ponds J-4 and K-5 are leaking. Together, they cause the system to lose 63 gallons of water per minute. Retention of these ponds will require the installation of a compacted earth liner to reduce their seepage rates. This job will require the temporary construction of channel around each pond so that each pond can be emptied and a compacted earth liner installed.
- The earthen dikes at the downstream ends of Pond H-2 and I-3 are failing. The retention of these ponds would require replacing the dikes natural looking water level control devices.
- The water level control mechanism at the downstream end of Pond J-4 is not the proper device for water level control, although it could be retained. The better solution would be to install a natural looking device that is designed to control water level.

2. Convert the Ponds into A Riparian Corridor

The ponds could be converted into a stream as part of a riparian corridor. The corridor would include a defined, constructed channel bounded by a riparian flood plain in which native grasses, shrubs, and trees would grow. There is sufficient slope to the area to accommodate the creation of some interesting riffle features as the water flows down the stream. The resulting corridor may have a similar appearance to the area between Ponds H-2 and I-3.

The Master Declaration gives SVEA the power to do this. Section 6.05, ¶M provides that SVEA has the power and authority, with the approval of the Architectural Design Committee, to "demolish existing Improvements."[31] And, Section 5.04 says that SVEA has the power to construct "waterways" in Open Space Areas and maintain such areas "in a natural, semi-natural, or landscape state."[32] Thus, SVEA has the power to convert the ponds into a riparian corridor.

The advantage of this alternative is that would create a stream along the corridor. Another advantage is that is avoids most of the disadvantages associated with retaining the ponds: (1) it would not require expensive ongoing maintenance, (2) the flowing and riffling water would not be likely to attract mosquitos, (3) it would be unlikely to pose a liability issue for SVEA, (4) it would not require additional water because it would simply revert to a dry stream bed when the water flow drops, and (5) it would avoid the need to fix seepage from some of the ponds and their water level control devices.

The disadvantage to this alternative is that it, too, costs money, but the expense is significantly less than the cost of retaining the ponds. Also, there may be potential advantages to starting upstream and converting one or two ponds each year. That would allow SVEA to evaluate the effect of the conversion to riparian conditions on the downstream ponds and adjust things accordingly as the work moves down stream. Also, it would allow SVEA to spread the cost over several fiscal years.

3. Combination of Riparian Corridor and Pond Retention.

Some ponds could be converted to a riparian way. Other ponds could be retained. Ponds J-4 is a likely candidate for retention; but it is also one of the ponds that is leaking. Retention would require that its seepage problem be fixed. We do not yet have an estimate for the cost of this work.

4. Better Maintenance.

The Master Declaration gives SVEA the power: "To maintain . . . <u>ponds</u> . . . <u>to the extent deemed advisable by the Board</u>." (emphasis added).[33] Relying on this language, SVEA has limited its maintenance to merely removing the algae and trimming back the vegetation around the ponds. Recently, it also sprayed for mosquitos as a temporary measure to respond to concerns expressed by nearby owners.

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[31] MD, Art. VI, §6.05, ¶ M.

[32] MD, Art. V, §5.04.

[33] MD, Art. VI, §6.05, ¶ H.

5. Convey the Ponds to a Sub-Association

If SVEA pursues alternatives 2, 3, or 4, there is a possibility that the homeowners who advocate for dredging ponds will be dissatisfied. If so, and if they and other like-minded homeowners are willing to form a sub-association that can establish to SVEA's satisfaction that it will be willing and able to maintain the ponds, then SVEA could convey the open space containing the ponds to that sub-association. This option will require advice of legal counsel.

The Pond Committee's Recommendation

There are 1,632 members of SVEA. The ponds are of concern to only a very, very small minority of them. Although, it is true that the ponds are located in Open Space Area that is technically available to all Elkhorn homeowners, it is also true that very few, if any, homeowners will actually use the ponds, other than, perhaps, those who live in the immediate vicinity. The Open Space Area containing the ponds is a thin strip of land behind the back yards of approximately 15 homes. When you visit the ponds, you feel like you are trespassing in those back yards and intruding into the homeowners' privacy. In short, the ponds are not situated in environment where other members of SVEA would feel welcome or comfortable.

None of this alters the fact that SVEA has a contractual duty under the Master Declaration to maintain the ponds. But it does affect the way SVEA choses to perform that duty. It would be unfair to the vast majority of SVEA members if SVEA were to spend large amounts of money for an area that is of interest to only a very few and is of no interest or benefit to most of its members. Thus, we think the Board should seek a way to meet SVEA's contractual obligations regarding the ponds that also respects the financial interests of the vast majority of SVEA's members.

We do not recommend retention of all five ponds. We think that spending a large amount of money to keep all of them would not serve the best interests of the SVEA community as a whole. Retention would require the enormous expense dredging the ponds – an expense that would have to be repeated approximately every 15 years to maintain the ponds into the future. Moreover, with the apparently declining volume of water in Twin Creek, retention of the ponds may also require SVEA to spend additional money to augment the water flow in Twin Creek. Finally, SVEA would also have to spend money to fix the seepage of water from two of the ponds and to fix the dikes and water control mechanisms in all of the ponds. For these reasons, we do not recommend retention of all five ponds.

Also, we do not recommend continuing SVEA's existing policy of maintaining the ponds by clearing algae and cutting back surrounding vegetation. The problem with this approach is that it has allowed the ponds to fall into bad health. The ponds suffer from sedimentation and stagnation. The existing policy does not adequately address these problems. If the Board wants to continue to maintain the ponds, it should find a way to address these problems.

We recommend that the Board authorize the Pond Committee, with the assistance of Brockway Engineering, to access the feasibility and cost of converting ponds G-1, H-2, I-3, and K-5 into a riparian corridor. These ponds are chosen for several reasons: (1) G-1, H-2, and I-3 are the ones

for which retention would be most expensive; (2) SVEA does not have the guaranteed right of access it would need to maintain these three ponds; (3) all four of these ponds lack the comfortable and easy access that would be required to make them attractive for use by other members of the SVEA (specifically: none of these ponds have nearby public parking and all of these ponds are located next to the backyards of private homes); and (4) pond K-5 suffers from stagnation and seepage. We expect that the one-time cost of converting these ponds into a riparian way will be substantially less than the cost of retaining them, and when the time value of money is taken into account, only slightly greater than the cost of maintaining them into the indefinite future. Once created, the natural riparian way would be virtually maintenance free.

We further recommend that pond J-4 be considered for possible retention as a pond. It is the largest of the ponds, and it is in the best condition. It also has easy access for maintenance and possible recreation use. We would like to determine if the cost of fixing the seepage problem in bottom the pond would be less than the cost of incorporating it into the riparian way. If so, and if the cost of its ongoing maintenance would not be too great, we would recommend that it be retained.

As a first step, we would propose destroying the dikes at the downstream ends of ponds H-2 and I-3 and opening the water control mechanisms in ponds G-1 and K-5. We would take these steps with the guidance of Brockway Engineering. This will allow an assessment of the unimpeded flow of water through Twin Creek. After that, Brockway Engineering could design an attractive riparian way. The construction of the riparian way would be done on a pond-by-pond basis and, depending on advice from Brockway Engineering, would likely begin upstream and proceed downstream. Work on the first pond (or, possibly, the first two ponds) could begin in the late Summer/early Fall of 2020 when the volume of water in the stream is lowest and the work can be done most economically.

Brockway Engineering, has submitted a proposal for the analysis of pond retention and conversion. The total estimated cost is approximately $15,000. The work defined by this proposal will require 30 to 45 days and will have to be done in the Spring when the relevant area is no longer covered by snow.

We request:

- The Board consider and approve the recommendations set forth above, and
- Retain the services of Brockway Engineering to work with the Pond Committee.