

BEAR LAKE LAKE BOARD

REGULAR MEETING

Thursday 8/3/2017

6:00 p.m.

MINUTES

CALL TO ORDER: The meeting was called to order by Kim Arter at 6:00 pm.

PLEDGE OF ALLEGIANCE TO THE FLAG:

ROLL CALL:

Present: Brenda Moore, Sam Janson, Darrell VanFossan, John Snider and Kim Arter

Absent: None

Also: Consultant from RLS Dr. Jennifer Jermalowicz-Jones , Recording Secretary Veronica West

MINUTES: Sam Janson moved to accept the minutes of April 27, 2017. Brenda Moore supported the motion. The motion carried by voice vote. The minutes will be placed on file.

REPORTS:

- **Draft Outline of Feasibility Study – Presentation by Dr. Jennifer Jermalowicz-Jones of RLS:** Dr. Jones presented her findings with the help of a power point presentation. She began by listing the impairments found in Bear Lake; reduced water clarity, excessive blue-green algae, lack of diverse native submerged aquatic vegetation, invasive species, elevated nutrients, low dissolved oxygen, oil in Fenner's Ditch and deep basin, low biodiversity of zooplankton and sediment macro invertebrates. She noted she found the lake more impaired than she had originally expected. She went into more detail noting there are 2 prevalent types of algae one being the blue-green type being the "toxic" microcystis species, 77% of the lake is non-vegetated, invasive species include Eurasian water milfoil, curly-leaf pondweed, starry stonewort, purple loosestrife and phragmites, native aquatic plants include coontail, bladderwort, elodea, flat-stem pondweed, and both white & yellow water lily. She also discussed the lack of biodiversity in the zooplankton and macro invertebrate, low dissolved oxygen and elevated nutrient loads and how these all equate to an impaired ecosystem that is not adequate to support a healthy food chain. Dr. Jones reported concerning findings with regard to the oil seepage in Fenner's Ditch; she explained taking a sediment sample in the middle of the Fenner's Ditch canal and having it tested and finding petroleum in the sediment, then having others of her team see an oil sheen and observe a strong petroleum odor at the deep basin (near the south west shore). She expressed concern with this finding and suggested that it is strongly recommended as part of the plan to survey (by taking 4 foot core samples) around the lake over a 2 year period to make sure there isn't petroleum throughout the lake bottom. Dr. Jones went on to discuss methods/technologies that could be used in Bear Lake to rehabilitate and restore the lake and make it better. She explained alum treatments that area applied as a slurry and cover the bottom to prevent the use of the nutrients in the sediment and she also explained Laminar Flow Aeration which she is recommending be used in this lake. The lake could be aerated (provided petroleum is not found throughout the lake bottom sediment), which improves the amount of dissolved oxygen in the water and reduces nutrients and allows the nutrients that are there to be utilized by the food chain, resulting in a healthier food chain and larger fishery. She explained that while a bit expensive, it is a very green technology and works very quickly, stating that it could eliminate the microcystis algae in approximately 6 months. Dr. Jones also discussed and is recommending tributary filters be utilized to reduce the incoming nutrients and solids. After discussing her treatment recommendations she covered some early estimated costs and a proposed budget for 2018 - 2022, and broke them down over the 5 year treatment plan per lot/parcel with Bear Lake

frontage: 2018 (year 1) \$619.38, 2019 (year 2) \$370.19, 2020 (year 3) \$691.73, 2021 & 2022 (years 4 & 5) \$636.73 each year. These are proposed numbers for a five year Bear Lake restoration program.

COMMUNICATION: NONE

PUBLIC COMMENT (On Agenda Item):

- **An informal question & answer session with Dr. Jermalowicz-Jones occurred:** An audience member asked what happens after 5 years; Dr. Jones explained that significant changes should be seen in 5 years and the lake board has the option to continue with any treatments deemed necessary and the cost over time should go down. Another question asked was regarding water quality and lack of vegetation and how much of the cost is due to the oil seep; Dr. Jones stated that the costs she has outlined are not related to the oil seep; also noted the lack of vegetation could be due to blue green algae or the oil/petroleum, but the bigger concern is if the oil/petroleum is throughout the lake sediment. When asked what if the lake sediment does contain significant petroleum, Dr. Jones cautioned not to get ahead of ourselves and if that scenario were to present itself then there would have to be further discussions, including the state and possibly EPA to determine the next course of action. Mr. Snider and Mr. VanFossan commented on the importance of determining if there is even oil in the rest of the lake. Mr. VanFossan also asked Dr. Jones to elaborate on the algae with regard to the nutrient load and alum treatments. Dr. Jones discussed the alum treatment in Spring Lake but noted that Bear Lake needs to increase its oxygen in the water more than it needs an alum treatment and noted the alum treatment could cause more damage to the biodiversity whereas the aeration would improve the biodiversity by adding more oxygen. Ms. Moore added that she feels alum is more of a band aid treatment that binds with the nutrient load still coming in and Spring Lake and Bear Lake are different. Dr. Jones stated she feels it would be healthier for the lake to use aeration and while expensive, it's not more expensive than alum and she would not recommend the use of aeration without the nutrient filter/barriers at the tributaries due to the level of impairment in Bear Lake. Another question raised was when can the treatment stop, when is the lake cured; Dr. Jones explained that once the phosphorus is there in the sediment it is there, but aeration can reduce the soluble phosphorus so the aeration shouldn't ever be completely stopped – but is shut down for the winter months (November – April). It was asked when this could all begin; again Dr. Jones explained the importance of finding out if there is more oil in the sediment around all of Bear Lake because if it is there and the aeration is used and the bottom of the lake is stirred up it could release the oil into the whole lake which would be a very bad situation. Mr. VanFossan asked if after checking the whole of Bear Lake and finding no additional oil in the sediment and aeration begins in year 3 when can results expect to be seen; Dr. Jones stated there is a need to reduce nutrient load as well, but a very damaged lake she worked on in Florida has seen significant results very quickly over about 2 years.

OLD BUSINESS: NONE

NEW BUSINESS:

Item 2017-02: Feasibility Study: Ms. Moore asked Dr. Jones to speak to the effects of the copper sulfate that has been used for many years to treat for weeds w/regard to blue green algae. Dr. Jones explained how the algae adapts to stressors in its environment, how it often comes back double after a stress event resulting in bioaccumulation caused by overuse of copper, how copper is a heavy metal that doesn't break down easily or quickly and accumulates in the flesh of the fish in the food chain and when the fish die they break down and release the copper back into the environment to start the process all over again. Mr. VanFossan commented that these findings are concerning and the lake needs more restoration than he ever realized; he added that as part of the Bear Lake Association's program, participating residents had been paying about \$150 per year for weed treatment and now are looking at potentially \$600 per year the lake board will need to really look at

and evaluate what to do next and wondered if this could be stretched out over a longer period of time. Dr. Jones did note that Bear Lake is one of the most impaired lakes & most challenging lakes she has seen over her career of over 500 lakes. Mrs. Arter commented on the boat washing station component of the proposal and talked about recently working as a volunteer at a boat launch and educating boaters about do's and don'ts and felt there could be grant funds out there for a boat washing station. She also commented on the professional limnologist services and felt that perhaps the Bear Lake Association could step up and perform some of the educational workshops. She added that this lake board will have to look closely at the items proposed and decide which to implement, no costs or treatments are being determined tonight. Ms. Moore asked Dr. Jones about the budgeted contingencies and if that amount could be lower. Dr. Jones said 10% is required by law, but 15% is preferred so yes, that amount could be adjusted down.

Mr. Janson moved to accept the Feasibility Study as presented, while noting that the numbers and monetary amounts are not final numbers but estimates. Mr. Snider supported the motion.

Ms. Moore stated she feels this is a fabulous document and a lot of work has been done to get to this point, but she also wanted to point out this is a fluid document that can be amended over time and added to or deleted from based on further needs and information. Dr. Jones noted that part of this plan included yearly reports to the State and to this Board with updates and new conclusions over time as things change, hopefully for the better.

A voice vote was taken on the open motion: The motion carried by a voice vote and the Feasibility Study was accepted.

- **Timeline:** Mrs. Arter discussed the hearing of practicability and the hearing of special assessment and the timeline of required notices and newspaper publications. She also noted it had been discussed by this board to hold both hearings on the same night to reduce notification costs and to save time, but the Lake Board attorney Mr. Bultje expressed concerns that while not illegal, holding both on the same evening could be perceived negatively by the public, they could feel like not enough time, thought, public input was sought before decisions were made. Mr. Snider commented he agrees and feels the more public input the better and is opposed to doing both on the same night. Ms. Moore stated time is of the essence and the hearings need to be held close together to be able to make the December tax bills with the special assessments this year to be able to begin implementing the plan in 2018. Mr. Janson stated this is more of a public relations issue than a legal issue and asked the audience present for their feelings by a show of hands. The crowd was split nearly evenly with some in favor of the hearings both on one night and others wanting each on their own night. Mr. Janson noted with the even split he'd suggest and be more comfortable with each hearing on a separate night. He did also note that each hearing covers basically the same information, but one is to determine the implementation of the study recommendations and the other to determine the special assessment district. Dates of publications, notice mailings and timing were discussed and Mr. Janson suggested the Chair, Mrs. Arter connect with Attorney Bultje and determine the minimum amount of time between the 2 hearings to get all publications, notices and hearings accomplished in compliance with the law. All agreed.

PUBLIC COMMENTS:

- Douglas Wagner, 1310 Moulton Ave, City of North Muskegon, stated he feels it would be worth spending some money on a public relations person to sell the program and asked if anyone has studied the effect on property values if nothing is done to the lake. Dr. Jones said a study like he is suggesting is quite pricey, but that it is possible to contact some local realtors and ask some questions to get a rough idea of the possible effects on property values. She also added that she feels the data "sells itself" and in most cases she has found that people are willing to pay to repair a sick lake.
- Julia Keen, 90 N Bear Lake Rd, Laketon Township, explained she is a summer only resident and expressed concern over a boat washing station as most boats are not coming in via the one shallow boat launch at Horton Park in Laketon Township but the Bear Lake Channel connected to Muskegon Lake. She also commented that she feels it is important to protect property values and supports this effort.

- Bruce Baker, 1014 Moulton, City of North Muskegon, commented he is surprised to learn that Bear Lake is worse than Mona Lake and wondered where it ranks, is it the worst in the State? Dr. Jones commented on the disturbing number of problems found in Bear Lake, noting the ecosystem is not functional and residents need to be aware of that. Ms. Moore added that it is important to be careful about comparing Bear Lake to other lakes, each is different and has different problems; she also added that Muskegon Lake used to catch fire and now it is a world class fishery again. Mr. Snider commented on all the changes he has personally seen on Bear Lake, having been a property owner for many years, and feels it can be brought back to health and the investment will be well worth it.
- Justin Wilson, 60 N Bear Lake Rd, Laketon Township, commented he is glad to hear Mr. Snider feels the lake can be repaired and he is shocked by the findings but hopeful it can be saved as well.
- Collette Cowan, 438 Melody Ln, City of North Muskegon, expressed concerns regarding the oil in the lake and asked if the only option if there is oil is more herbicides and buffers/barriers. Dr. Jones replied it is necessary to be sure if there is oil before using aeration and it is too soon to second guess things until it is known if there is oil throughout the lake sediment.
- Shawn Butler, 120 N Bear Lake Rd, Laketon Township, commented on the importance of lake front property values and reminded everyone to remember the graphic shown in Dr. Jones presentation regarding eutrophication and the lake turning into dry land over time – it is important to keep/preserve the lake otherwise it will eventually stop being water front property.
- Darrell VanFossan, 138 N Bear Lake Rd, Laketon Township, commented on the Bear Lake Association and it needing active residents to join and it's transition to the Bear Lake Preservation Association, a 501c3 entity, that can be utilized assist this Lake Board with the restoration of Bear Lake by raising funds to use as match money for grants and to engage in public awareness and education efforts.

ADJOURN: Brenda Moore moved to adjourn the meeting. Sam Janson supported the motion. The motion carried by voice vote and the meeting adjourned at 7:53 pm

Respectfully Submitted:
 Veronica West
 Recording Secretary

Approved by the Bear Lake Lake Board on _____.

Signed: _____.