

PELICAN BAY SERVICES DIVISION
Municipal Services Taxing & Benefit Unit

NOTICE OF PUBLIC MEETING

APRIL 21, 2017

THE **WATER MANAGEMENT COMMITTEE** OF THE PELICAN BAY SERVICES DIVISION WILL MEET AT **1:00 PM** ON **FRIDAY, APRIL 21** AT THE PELICAN BAY SERVICES DIVISION, 3RD FLOOR OF THE SUNTRUST BUILDING, SUITE 302, LOCATED AT 801 LAUREL OAK DRIVE, NAPLES, FL 34108.

AGENDA

1. Pledge of Allegiance
2. Roll call
3. Agenda approval
4. Approval of 01/26/17 meeting minutes
5. Audience comments
6. *North berm restoration
7. 2017 aerator installation
8. Status of recently installed aerator systems
9. *Status of bacteria and tilapia testing
10. Status of "microfloc" testing
11. Status of plantings in Avalon lake
12. Plantings and rip rap at the Oak Lake Sanctuary lake
13. *Lake bank erosion (consultant presentation)
14. Other business
15. Adjournment

**indicates possible action items*

ANY PERSON WISHING TO SPEAK ON AN AGENDA ITEM WILL RECEIVE UP TO THREE (3) MINUTES PER ITEM TO ADDRESS THE BOARD. THE BOARD WILL SOLICIT PUBLIC COMMENTS ON SUBJECTS NOT ON THIS AGENDA AND ANY PERSON WISHING TO SPEAK WILL RECEIVE UP TO THREE (3) MINUTES. THE BOARD ENCOURAGES YOU TO SUBMIT YOUR COMMENTS IN WRITING IN ADVANCE OF THE MEETING. ANY PERSON WHO DECIDES TO APPEAL A DECISION OF THIS BOARD WILL NEED A RECORD OF THE PROCEEDING PERTAINING THERETO, AND THEREFORE MAY NEED TO ENSURE THAT A VERBATIM RECORD IS MADE, WHICH INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED. IF YOU ARE A PERSON WITH A DISABILITY WHO NEEDS AN ACCOMMODATION IN ORDER TO PARTICIPATE IN THIS MEETING YOU ARE ENTITLED TO THE PROVISION OF CERTAIN ASSISTANCE. PLEASE CONTACT THE PELICAN BAY SERVICES DIVISION AT (239) 597-1749 OR VISIT PELICANBAYSERVICESDIVISION.NET.

**PELICAN BAY SERVICES DIVISION
WATER MANAGEMENT COMMITTEE MEETING
JANUARY 26, 2017**

The Water Management Committee of the Pelican Bay Services Division met on Thursday, January 26 at 2:00 p.m. at the SunTrust Bank Building, 801 Laurel Oak Drive, Suite 302, Naples, Florida 34108. The following members attended.

Water Management Committee
Tom Cravens, Chairman

Scott Streckenbein
Dave Trecker

Pelican Bay Services Division Staff
Neil Dorrill, Administrator (*absent*)
Marion Bolick, Operations Manager

Mary McCaughtry, Operations Analyst (*absent*)
Lisa Jacob, Associate Project Manager
Barbara Shea, Recording Secretary

Also Present
Tom Barber, Agnoli, Barber & Brundage
Jim Carr, Agnoli, Barber & Brundage

Susan O'Brien, PBSB Board
Mike Shepherd, PBSB Board

APPROVED AGENDA (AS AMENDED)

1. Pledge of Allegiance
2. Roll call
3. Agenda approval
4. Approval of 11/18/16 meeting minutes
5. Audience comments
6. North berm restoration
7. Replacement of bahia sod at north end of the berm
8. Problems with existing solar powered aerators
9. 2017 aerator installation
10. Trial lakes report – what's working/not working
11. Status of "microfloc" testing
12. Proposal for dealing with lake bank erosion
13. Input from Collier County Presidents Council
 - A. New Business (*add-on*)
14. Adjournment

ROLL CALL

All members were present and a quorum was established

AGENDA APPROVAL

Mr. Streckenbein motioned, Dr. Trecker seconded to approve the agenda as amended with the addition of item #13A, and with agenda item #12 to be discussed after agenda item #7. The motion carried unanimously.

APPROVAL OF 11/18/16 MEETING MINUTES

Mr. Streckenbein motioned, Dr. Trecker seconded to approve the 11/18/16 meeting minutes as presented. The motion carried unanimously.

AUDIENCE COMMENTS

Mr. John Hughes, President of the Avalon Community Association, requested that the PBSO install blue tilapia in Avalon's lake, instead of aerators. He commented on his community's opposition to the noise generated by an aerator.

Ms. Ellie Tracy, Avalon board member, commented on the lack of littoral plantings in the Avalon lake and the severe erosion of the lake bank which has resulted in extensive irrigation pipe repairs.

Ms. Anne Georger-Harris commented on the high density of residences in Avalon and her opposition to the installation of any noise-generating aerators.

Dr. Trecker commented that he cannot support adding blue tilapia to an additional lake. Numerous consultants and other communities have concluded that negative consequences from blue tilapia include (1) any beneficial results from blue tilapia are transient, (2) blue tilapia will eat the lake's littoral plants, and (3) negative consequences of ammonia-rich fecal matter generated by the blue tilapia.

The committee and staff agreed to put the Avalon lake aerator installation on hold and expedite littoral plantings in this lake.

NORTH BERM RESTORATION & REPLACEMENT OF BAHIA SOD PROJECTS

Dr. Trecker recapped two projects under consideration for a total of \$86,000: (1) east side erosion of the north berm from the north tram station to the Montenero for \$41,000 and (2) addition of riprap on the west side of the north berm from the Commons to the north tram station for \$45,000. Our Agnoli, Barber, & Brundage consultant, Mr. Jim Carr commented that the first project is a structural issue, is not an emergency, and could wait another year; the second project may be completed for aesthetic reasons. By consensus, the committee agreed that the first project should be built into the FY18 budget and the second project should be part of a master priority list of lake bank projects.

PROBLEMS WITH EXISTING SOLAR POWERED AERATORS

Mr. Cravens commented on staff's recorded observations of eight solar powered aerators on nine days, as provided in the agenda packet, which shows that five of these eight aerators are not functioning continuously, as designed. Mr. Bolick commented that technicians are still trouble-shooting these malfunctioning devices. The aerators have a two-year warranty on parts, one year on labor. At the recommendation of the committee, Mr. Bolick will provide an update on our aerators to the full board on Feb. 1.

MR. STRECKENBEIN LEFT THE MEETING AT 3:12 PM

2017 AERATOR INSTALLATION

By consensus, the committee agreed that no new aerators should be installed in 2017 until all of the existing aerators are functioning properly.

TRIAL LAKES REPORT

Dr. Trecker commented on his observations of the four bacteria test lakes. He commented that three out of the four test lakes appear pristine and algae free. Bacteria may not be working as well in the St. Maarten/Commons lake as this lake has no aerators.

STATUS OF "MICROFLOC" TESTING

Ms. Jacob reported that she has a February conference call set up with Mr. Raphael Vazquez-Burney of CH2M Hill to discuss the logistics of the microfloc testing. Mr. Bolick reported that the Club Clubhouse lake and the Naples Grande front lake have been selected for this testing.

PROPOSAL FOR DEALING WITH LAKE BANK EROSION

Mr. Tom Barber, our Agnoli, Barber & Brundage consultant, summarized his \$37,200 proposal to provide a master priority list of lake bank erosion projects. Ms. Jacob strongly recommended this project. Mr. Bolick commented that \$130,000 is currently available in the PBSB budget for lake bank erosion projects.

Dr. Trecker motioned, Mr. Streckenbein seconded to recommend to the full board to do the \$37,000 study by Agnoli, Barber, & Brundage. After discussion by the committee, Dr. Trecker withdrew his motion, and Mr. Streckenbein withdrew his second. By consensus, the committee agreed that Mr. Tom Barber would make a presentation to the full board on Feb. 1 regarding a proposal for a study of lake bank erosion to include 45 lakes and the berm erosion, resulting in a priority list of repair projects.

INPUT FROM COLLIER COUNTY PRESIDENTS COUNCIL

Dr. Trecker commented on the Collier County Presidents Council he attended with Ms. Jacob where attendees discussed their communities' successes with various lake algae control methods. He commented that some communities have experienced significant success with bacteria. Mr. Bolick commented that it is difficult to quantify the effectiveness of bacteria in PB test lakes since these lakes are also subject to chemical spraying. He commented that bacteria cost per lake is approximately \$600 annually.

ADJOURNMENT

The meeting was adjourned at 3:43 p.m.

Tom Cravens, Chairman

Minutes approved [] *as presented* OR [] *as amended* ON
[] *date*

SheaBarbara

From: David Cook [merlincdc@gmail.com]
Sent: Wednesday, April 19, 2017 10:52 AM
To: Tom Cravens
Subject: Re: Blue tilapia

Tom, I can comfortably say that the Blue Tilapia have been a great assist in eliminating the algae in our lake. We added blue tilapia together with bass and blue gills - to make it a great lake for kids to fish. Also bought a few thousand mosquito fish which have almost eliminated mosquitos in our area. I would recommend working with your friendly fish supplier to buy the mixed batch of fish for the above benefits.

I believe we spent about \$500 for the fish and I was previously spending about \$1,000 a year on beneficial microbes.

With those we also did not have algae, but the expense was a recurring one.

Either solution is significantly less expensive that the bubblers that the PBSB has been installing.

On Wed, Apr 19, 2017 at 10:08 AM, Tom Cravens <nfn16799@naples.net> wrote:
Greetings Dave,

The PBSB water management committee is current;y in the process of evaluating the use of Blue tilapia to control algae in lakes in Pelican Bay. You have used Blue tilapia in your condos lake and we would appreciate your comments on your experience with them.

Thanks.

Tom Cravens



Virus-free. www.avg.com

From: Vazquez-Burney, Rafael/TPA [<mailto:Rafael.Vazquez-Burney@CH2M.com>]
Sent: Wednesday, April 19, 2017 12:59 PM
To: JacobLisa
Cc: Gorsira, Rick/TPA
Subject: Re: Microfloc Testing Budget?

Dear Lisa,

Rick and I have discussed this. We understand Dr. Trecker's request for additional information to anticipate the cost to implement this project. I think I can explain why we did not submit a cost for the implementation and help clarify any misunderstandings. This technology (microfloc) we are intending on pilot testing at 2 lakes is a relatively new technology so there are not many test cases to reference but its success is definitely a proven concept. There are specific data required to arrive at conservative estimates that need to be assumed before implementation. For this reason, we requested to see the site and understand how and where this would be implemented so we can calculate quantities and ultimately the cost.

We need to perform some detailed calculations based on lake volumes, rates of application, pump size required, tubing lengths, power requirements, alum volume, dosing rates, expected performance, adjustments required during operations, etc. There are many variables to consider as this is not an off-the-shelf item with a unit cost. We may need 25 gallons or 150 gallons of alum based on the size of the lake. Lake water quality chemistry will come into play to determine these rates and volumes. The equipment itself is relatively simple in terms of alum in drums (or other tank), small pump, tubing to deliver alum to the lake, and power to operate the pump. Some of this can be rented or purchased. We were hoping that some of this equipment may come from the WWTP onsite and other equipment could be scavenged for temporary use to reduce cost to PBSB.

The operational cost is expected to be minimal from a labor cost perspective. One person (assumed PBSB staff) will need to monitor the dosing rates and check on available alum in the drums and re-supply as needed. We will provide guidance for any adjustments to application rates. Laboratory analysis by the county lab will involve twice weekly samples at startup with a decreasing frequency until we feel confident that we have reached a proper application rate to start a decrease in phosphorous concentrations. The pilot test can be run as long as PBSB is willing to collect data but phosphorous levels may drop quickly and maintain, or potentially additional applications may be required. Once this process is understood it is expected that these rates are likely applicable to all the lakes at PBSB due to similar water quality and the same equipment can be used at all lakes. Only alum would have to be replenished. This process is iterative but it will have a definitive outcome.

I know I explained the process more than the actual cost but I think this does provide a sense of effort and the type of equipment involved. Depending what's available onsite from the plant, rental sources, or purchased equipment, cost can be minimal or have an initial capital expenditure but the long term use of this will make it very economical for the numerous lakes. Our plan will build confidence in terms of operation and material cost and will provide you with the facts to proceed or re-evaluate this treatment option. Our engineers have proven success with this method and we believe this is a cost-effective long term solution. If this works, quarterly water quality monitoring could be significantly reduced and only be performed at the lakes (6) that discharge to the bay and ultimately discontinued.

Rick and I are both on a client site for the rest of the week, but next week we can build the materials list and cost for an initial dose.

I hope this helps the committee understand that we are committed to provide a proven solution and not a commodity product with unproven results.

Rafael Vazquez-Burney, PE
CH2M HILL/TPA
Office 813.281.7766
Cell 727.366.3301