



**TOWN OF BOURNE
BOARD OF HEALTH
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Cynthia A. Coffin,
Health Agent

**MINUTES
OCTOBER 12, 2011**

**Members in attendance: Kathy Peterson, Chairman; Stanley Andrews, Vice-Chairman;
Don Uitti; Galon Barlow; Carol Tinkham**

**Support Staff in attendance: Cynthia Coffin, Health Agent; Carrie Furtek, Health
Inspector; Melissa Chase, Secretary**

Meeting was called to order at 7PM.

4) 62 Old Plymouth Rd: Update only on progress

(Agenda item 4 taken out of turn to allow the presenter from item 1 to arrive.)

There were no audience members present regarding this issue.

Ms. Furtek stated that all items were finished. As of right now, all parties are happy. Ms. Peterson asked if everyone had signed off agreeing that all items were addressed. Ms. Furtek stated that she had not yet received written verification, but would be attending to that project immediately. Ms. Peterson stated that she wanted letters from everyone on both sides stating that the work was completed. Ms. Furtek said she had received an email from Matt Connolly, the contractor, that the work was completed. She stated that the downspouts were extended away from the house, and they were waiting for the impending rain to see how they were working at keeping water from leaking into the basement. The tenants were happy with everything, and Ms. Furtek will remind them that she needs a letter.

1)Tim Mullen, Director DNR: Presentation to the Board re: Monument Beach Marina

In attendance for this item was Tim Mullen, Director of the Bourne Department of Natural Resources.

Mr. Mullen stated that "the grand scheme" he was presenting was a Marina reconfiguration permit for the whole Monument Beach area that was started about 2 ½ years ago. This will be the largest marina configuration permit in the State once it is approved, which should be "any day now." This permit is like a blanket permit covering maintenance dredging project; it will cover expansion of the marina, should the Town choose to do so, from the current 62 slips to 99 slips; it covers the parking lot and septic system; it covers the roadway up to the railroad tracks. Basically no more permitting would have to be applied for; the Conservation Commission (ConCom) would have to be supplied with letters for any intended projects. It is a 10 year permit that would

be renewable. Back in May at Town Meeting, \$360 thousand was approved for the first phase of upgrading the septic system. It is a seasonal system but is overburdened. Included in that \$360 thousand is redo/repair the existing parking lot and also pave part of the field at the rear of the parking lot to expand. The septic system needs to be done before any paving or work gets done through the parking lot in the back. Mr. Mullen stated that the engineer/consultant through the whole permitting process (Norm Hayes of BSC) has done many other projects with the Town on the waterfront (dredging, etc). Brian Yergatian has begun working with them on the septic system project. He stated that there are no real plans as of yet; it is going to be designed to accommodate additional parking, as well as to the specs of a 99 slip marina so that it will be ready if and when the Town decides to expand. It will need to be an innovative/alternative system. Mr. Mullen said he was in front of the Board to give a "heads up" and hear any concerns that the Board would like taken back to the engineer at this point. Mr. Barlow asked for the engineer to come before the Board for an informal discussion, brought the plans in so the Board could see them and raise any preliminary concerns before the project progresses to help things run smoothly. Mr. Mullen agreed. Ms. Tinkham asked if the Town had pump outs at the Marinas. Mr. Mullen stated that the 2 large private Marinas (Kingman Marina & Parker's Boat Yard) in Town do have pump out systems. The largest Town Marina at Taylor Point does have a pump out system as well. There will be a pump out system in the design for the new septic at the Mo Beach Marina. Fiscal year 2014 they will asking for additional funding to help pay for that. Ms. Peterson commented that it is quite an extensive permit. There were no further questions or comments from the Board. Mr. Mullen said he would provide more information to the Board as things became available (ie: plot designs).

3)Pocasset Mobile Home Park: update on PMHP by Attorney Chuck Sabatt

(Agenda item 3 taken out of order with consent of Mike McGrath)

In attendance for this item were Attorney Chuck Sabatt and a full audience of PMHP residents.

Attorney Sabatt stated that he would "get to the question of the hour" which is the status of his report to the Suffolk Superior Court. Under the order, he is required to advise the Superior Court as to whether or not the installation/construction of an on-site septic treatment plant would be financially feasible. On September 27, he requested a conference with the judge and received an extension of the deadline. He stated that he had talked to the Attorney General's Office, and believed that the date will be extended until January 15, 2012; at that time he will file a report with the Suffolk Superior Court. There are 3 dimensions to the report: 1) what type of system will be installed and how much will it cost; 2) how will it be paid for-financed, additional income from raising fees ; 3) are there other options for funding by expanding the park into some of the unused land. All of these things are being looked at as answers to the feasibility question. He acknowledged that he was aware that people were looking for and expecting an answer at this meeting, but he just didn't have one to give at this point. The engineers have the options and are looking at it. He also plans to retain a consultant to help with some of the financial aspects. In terms of current septic situation, the septic repair that was done in the spring is still holding. There were 2 issues that arose in the past week: an overflow on 3rd Ave and an overflow on 1st Ave (which occurred the day of the meeting). He stated that he had someone out to look at the 1st Ave overflow, but hadn't yet been back in contact to find out what the issue was. The 3rd Ave. overflow is an ongoing issue that involves conduits that need to be replaced/repared. Attorney Sabatt said he had a proposal for this repair on his desk, but DEP wanted a large holding tank constructed that would become part of any on-site treatment plant. It was the opinion of the engineer that this was unnecessary in the sense that it is a significant expense that may not even be utilized as a component depending on what is finally decided on for a treatment facility. He is at a stalemate on that, and is going back to DEP and request that he be allowed to have the

conduits repaired. He had no further information on the 1st Ave issue. There are 2 other issues that are causing complications: the water delivery system needs to be replaced and the roadways need immediate work but will be torn up for installation of any new treatment facility. This is another substantial cost to the project. He is looking at several temporary fixes for the roadways. He is supposed to obtain estimates for patching the worst areas for the winter. He is hoping to make some progress on that. He stated that was the status of the Park at this point, and said he is open to questions. Ms. Peterson expressed concern for the Park in the winter months, as that is when there are the most system failures. She said that pushing the response to the Court until January puts the Board of Health in a precarious situation. She said the BOH had been “screaming for help”, and was put off again and again. When they finally get to us 2 years later, and we know that the system has failed. She said that now we will be into January. Ms. Peterson is worried for February and March. Plans have to be made for those months, over and above all the other things that have to be attended to. There has to be some sort of assurances for those months. December and January roll around and a decision is finalized; what is going to be done in the meantime? Attorney Sabatt responded to this concern. He said if he had come here tonight, stating that it was economically undoable, the Park would have to remain open while an orderly process of closure took place. He doesn’t know what that time frame would be, but it would be a substantial time frame. He pointed out that the decision is not his to make; he is just making a recommendation/report of feasibility, and the Suffolk Superior Court will decide. If he makes the recommendation to close, the Park will still be in operation through the winter months. He is prepared to discuss with the engineers what to expect over the winter and how to address it. Ms. Peterson stated that she understands the legal ramifications of Park closure. She is asking him to look forward to that February/March time period, when the calls typically jump from 1 a month to 10 calls a week or daily. Attorney Sabatt stated that he took over in the middle of the winter, and has been monitoring that through Capeway Septic, and will continue to monitor that through the winter, and attempt to stay ahead of it. He feels that they have been fairly responsive to situations that have arisen, and feels that he has a plan in place through monitoring and pumping when needed. He stated that was the regime last winter before the repair. He has the funding to maintain that regime. Mr. Barlow stated that was what the Board wanted to hear: that he had the funding and had a contract in place with a hauler to take care of any overflows that happen. Attorney Sabatt stated that one of the things that he addressed with the Court was his ability to make payments for these things in a more efficient manner than has been done. The process he has had to follow thus far for approval of payment of bills that was becoming unworkable. He has gone to the Court to ask to modify that procedure so that things could get paid more efficiently. The funding is there; it is a matter of public record. He feels that “we are all rowing the same boat” and that almost everyone is “pulling their oar”. Most of the residents are paying their rent. There are still stragglers that are being pursued. Some have been successfully removed from the park. Attorney Sabatt stated that when everyone is stepping up to the plate and paying their rent, he has the funding to make the needed repairs. He reiterated that the money is in place, and he has an understanding with Capeway Septic for continued monitoring and pumping. Ms. Peterson asked Ms. Coffin if she was meeting with Mr. Gilpin from Capeway soon. Ms. Coffin stated that she has been in contact with Mr. Gilpin, and has an appointment with him to meet at the Park to take a look at the pits and new system to see what kind of shape it’s in. Attorney Sabatt said he would be out there as well. Ms. Peterson asked for the Board to be notified of the date/time of the meeting at the Park so as many Board members as possible can be there as well. Ms. Peterson asked how much it cost last year to keep the system pumped. The figures were not readily available. Attorney Sabatt said he could provide those figures, but he felt that between pumping and the repair itself that about \$40,000 was spent; that is the amount of the loan he has in place for that with the County. Mr. Andrews stated that he felt that the high cost of pumping was prior to Attorney Sabatt’s receivership when the system was in constant failure and there was almost daily pumping. Attorney Sabatt said that he did have a substantial bill immediately when he took

over as receiver in March, before the emergency repair. The Board had no further questions for Attorney Sabatt, so questioning was opened up to the floor. *Maggie Berg of 2nd Ave* stated that there are problems on 2nd Ave as well which prompted her to invest in several plungers. She complained of a trench in front of her trailer that hasn't been paved, it hasn't been filled with anything. It is a hazard. She also complained of the mailbox area needing to be rock salted further away from the boxes because it gets very icy. *Joe Pacicco of 5th Ave.* asked if the proposals have looked only at sewerage treatment plants, or if they have looked at alternative technologies like composting toilets or incinerator toilets. Attorney Sabatt said that there are some of the alternative technologies on the table for the engineers to look at. He said that a lot of that decision rest on what DEP would approve, but they are being looked at in addition to the traditional on-site treatment plant. Mr. Pacicco thought it would be interesting to compare financially those "out of the box" ideas with the traditional systems. Attorney Sabatt stated again that it was an engineering assessment from his side of the table, but also a DEP assessment. He said that Mr. Pacicco's point was well taken, and was already under evaluation. Ms. Berg stood again and stated that anyone from 2nd Ave to 6th Ave do not have a way to get out if there is a fire at the front of the Park, which is a major problem. Ms. Peterson stated that the Board has asked Attorney Sabatt to look into that and the fire department has been contacted. *Steve Marconi* stated that there is an old fire road there that could be opened and would solve the problem. Ms. Berg stated that there aren't any fire hydrants in the Park and that they are all down the street on Barlow's Landing Road. Ms. Peterson stated that we would review the Minutes from the previous meeting at which this was discussed and find out who was supposed to do the contacting of the Fire Department, and make sure it gets followed up on. *Gail Daniels, 17 1st Ave,* asked what the problem on 1st Ave was that was mentioned earlier. Attorney Sabatt stated that there was sewerage percolation up under a trailer. Peter Valeri, the septic repair contractor, has been to the site. This is not the first time there have been issues in that area. On one of the previous problems, it was discovered that items that are not supposed to be flushed (paper towels) were being flushed and clogging the line. There have also been some sticks and rocks that were found in the pipes in that area. Ms. Daniels stated that they have been unable to get in contact with the management company that is supposed to be representing the residents, that she had called them and was told that they were no longer working for the Park. She wanted to point out that she stepped out of her trailer and her ankle went through a hole in the deck. She spoke with the management company, and they sent over someone who put a block of 2x4 with 2 nails. Ms. Daniels said that she removed it because she kept tripping on it. She is being told by the management company to look at her paperwork from when she bought the mobile home as to who owns the deck. Ms. Daniels pointed out that if she moves, the fencing, the trees, the sheds, etc. all remain property of the park; why would the decking be different? Attorney Sabatt responded that he had spoken with the gentleman who was sent out to repair the hole; Sabatt is not satisfied with the repair and has asked for an estimate to replace the deck. It is his intention to replace the deck. *Joanne Sedlock of 4th Ave* asked Attorney Sabatt what kind of consultant he was getting and how that consultant was going to be paid. Attorney Sabatt said the type of consultant he needs is for assistance in cash flow analysis. He wants a specialist who specializes in not just simple mathematics, but in analyzing income flows in real estate and the feasibility of real estate. He has funding available for this. Steve Marconi asked if the roads would be addressed soon because they are really bad. Attorney Sabatt agreed that they are bad, and he said he would be addressing them soon. He did acknowledge that he has promised action before and has not lived up to that promise. His first attempt to repair was a notable failure. He has gotten estimates for paving, and it is cost prohibitive. He has out now some estimates for cold patching, and he hopes that will work. He has asked for a breakdown street by street so that the worst roads can be addressed first. Mr. Marconi asked if it might be possible to get a street sweeper to clean up some of the mess left from the first attempt at repair. Attorney Sabatt said that he was going to try to get out to the Park once a week. He has met with someone about the problem; he knows it's a problem and he wants

to try to address it. He apologized for not addressing it sooner, but promised to follow through on it. *Ellen Bragg of 1st St* asked Attorney Sabatt if he was hopeful that the Park would remain open. Attorney Sabatt said that the overall sense is that if there is a way to do it, it will stay open. His sense is that the Attorney General's office would like to find a way for him to keep the Park open. He said there are some really good people in the Park. There were and are some bad ones, and he is trying to identify them and remove them. But the bulk of the people at the Park are good hardworking people, and he would like to be able to find a way for the Park to remain open. While it is not his decision to make, only his recommendation, he would like to find a way to make it a good, well-functioning facility for people to live in, in a healthy way. He is not going at it with the objective of "how soon can we close this", but he cannot commit to the result of it remaining open either. Ms. Peterson stated that we had checked back in the Minutes and it was the BOH that was to contact the Fire Department. She felt that perhaps the Fire Chief could meet Ms. Coffin and Attorney Sabatt at the Park for a more substantial reporting to the Board in regards to the fire road. Mr. Andrews commented to Attorney Sabatt that one of the things that has been made evident tonight, as well as at previous meetings, is a lack of communication with the residents of the Park. He asked how often he has been meeting with the residents in a public forum. Attorney Sabatt said only once, and he realizes that need improvement. Attorney Sabatt said he is planning a meeting at the end of October, hopefully at the Pocasset Community Club Building (Barlow's Landing Road) and hopes to meet with the residents on a monthly basis from now on. Mr. Andrews said that it seems as though the BOH meetings are being used as a forum for residents to sound off about not only health issues, but everything else. He stated that we would like to accommodate everyone, but the Board does have a busy schedule. Attorney Sabatt recognized that, and hopes that regularly scheduled meetings will allow the residents to "hammer away" at him. Mr. Andrews asked if he was anticipating a meeting at the end of October; Attorney Sabatt said yes, on a Saturday. Ms. Berg asked if they could get more than a day's notice of the meetings. Ms. Coffin stated that she had done 2 reverse 911 calls on Tuesday, but there was a small delay in them because of the Monday holiday, and she thought sending them the Friday would be too far in advance and people might forget. Ms. Peterson pointed out that people can check the website for the agenda and that it is not the Board's responsibility to notify every resident. Ms. Furtek stated that, for those that do not use computers, there are paper agendas available at the BOH office, and that they are welcome to call the office at any time to find out if the Park is on the agenda. Ms. Peterson said that Attorney Sabatt comes to the Board generally every two/three months, so that gives the residents an idea of the next time (probably around January 2012 when the license expires). Ms. Peterson called a 5 minute recess to allow the Park residents to depart.

2)Mike McGrath: presentation to the Board re: new type of alternative system

In attendance for this item was Mike McGrath, registered engineer and dominant partner in Holmes & McGrath.

Mr. McGrath stated that he has designed an alternative de-nitrifying septic system. He is also co-founder of a company in Bourne called Environmental Operating Solutions. They manufacture and sell a carbon used for de-nitrification at municipal sized treatment plants. RUCK systems work on the principle of stratified sand filters. Mr. McGrath provided the Board with a picture of a demonstration that he built for a civil engineering convention. It shows basically a glassed in bookcase with these stratified layers and water dosed onto it. Mr. McGrath said there is a sort of "magic" that happens when you stratify sand filters; you get better treatment caused by the texture changes in the layers. The man that invented the RUCK system told Mr. McGrath he designed the system to mimic the ground, and mimics the behavior of the groundwater as it moves through the ground. Mr. McGrath is now on his 4th model of RUCK systems. He claims

that on residential RUCK systems, he is getting 82% nitrogen removal, and with a “certain tweak” he gets over 90% total nitrogen removal. He has measured that nitrogen is lost as it travels through the RUCK filter through a series of bacterial actions. Mr. McGrath feels that if he can do this type of removal in the ground with natural occurring soils below the soil absorption system, he should be able to do it in the ground water. He stated that one thing that people say that to get rid of nitrate, you have to have organic carbon. He provided the Board with an “almost cartoon like” diagram of what is required for de-nitrification. It doesn’t matter if the nitrates are in the ground or in a de-nitrification tank. Nitrates go in; bacteria action + time and temperature, de-nitrification occurs. De-nitrification means that nitrates are converted to free nitrogen and carbon dioxide and biomass. Mr. Andrews asked if this only happens at certain temperatures with the right conditions and the right bacteria in order to change the solid with the chemical reaction. Mr. McGrath agreed, and explained that it is a serial reaction. 1/3 of the soil bacteria are anaerobe. De-nitrification is very real in that, and it is a common, natural process. In his practice as a general civil engineer, Mr. McGrath found a sewerage plume of raw waste water at the Town Marina (in Falmouth) that was at 80 feet. He put together a bunch of concepts. The reason that they don’t think that attenuation occurs in the natural soils is because when they dry the well, they don’t find enough organic carbons in the soils for attenuation to take place. Mr. McGrath believes that attenuation does take place. He has a study done by a Marine Biological laboratory scientist that tracks a plume like the one at Falmouth Marina. It was a little different because it was above the groundwater and it attenuated over time and distance. He stated that one of the problems is that the carbon (in order for de-nitrification to occur, there must be carbon). His hypothesis was that if you took treated wastewater from a system and added carbon to it in the final discharge, attenuation should be able to be established in place. He was successful in doing this. He found that he lost 70% of the total amount of nitrates that were discharged at a small scale treatment plant in Yarmouth, MA. HE wrote and presented a paper on it. He started a new company called Ground Penetrating Carbon, Inc. using this idea. The process they use is called Wright Carbon. Basically what is done is they go to a waterfront lot, and they drive small scale monitoring wells (about 2 inches) in an area and put in transducers. The transducers relay what happens to the groundwater, and they are able to predict where the plume is. They then drive an irrigation well and a treatment well into the plume. In order to get the plume to go to the well, they pump in several times the daily discharge. In an irrigation system there are different zone. There is a spray irrigation zone, as long as the water is the right quality. The second zone puts a portion of the water into a small chamber where Wright carbon is added. It is then dosed back into the ground between the soil absorption system and the monitoring well. He believes this will remove the majority of the nitrogen that is in the groundwater that is captured. His research shows that if the water is pumped through several times on a RUCK filter, there are extraordinary removals. He deals with very high strength waste water in residential systems. His average on the 2007 model has been 80 mg/l. On the models built since 2007, he has been getting 85-87% removal, sometimes higher. Ms. Peterson stated that the presentation by the County had shown that the system worked well. Mr. McGrath is confident that he can remove nitrogen from the groundwater. It is hard to make it neutral, but if there was a lot of space allotted for the system (he said several feet), it could probably be made nitrogen neutral. He said it is a tool. It will also remove no matter where the nitrogen comes from. His hypothesis has always been that if you discharge nitrogen with carbon, there will be attenuation. He looks at fertilizer as having adverse consequence because there is very little carbon discharge with it. There is some evidence that those types of nitrogen plumes run a long way. At the treatment plant in Yarmouth, the monitoring well downstream is about 2 ppm, meaning that about 80% removal has occurred. Ms Peterson asked if Provincetown called on him with their discharge issue. Mr. McGrath said he had no dealings with P-Town. Ms Coffin asked if he had done any experiments with it not being at the tail end of an alternative treatment system; he said he had not. She asked if he thought he might be able to get results with a straight TitleV system. Mr. McGrath stated that the regulatory

model says that about 42ppm hits this and there's 35ppm in the groundwater if you were to look at a Title V cross section. He sees about 80 ppm. He has yet to see any studies done with an actual plume with today's systems. Ms. Coffin says that the number of people with alternative systems is relatively small, and asked if he thought it might be something that should be looked at for regular TitleV. Mr. McGrath said there may be some research on taking this and applying it to a TitleV by putting the carbon close, but he didn't know if that will get funded. He felt it would work if there was a lot of space. There is a shared system in Falmouth that has irrigation wells that create a barrier and they have knocked the nitrogen down significantly. Ms. Coffin asked if he meant that you need more treatment spots. He said you need more area to irrigate and more area for carbon to drop through and degrade. It takes time, but it will work and it will work long term. Ms. Coffin asked if he needed DEP approval. He said there is no physical connection to the septic system. Ms. Coffin asked how he is getting people interested in the system. He has sent informational flyers out to engineers and wetland scientists and to Towns. Mr. Andrews stated that this only deals with nitrogen through the flow after the treatment process. There is no tie into the septic; it is built an "interruption barrier" from a resource or receptor and the septic system, essentially a curtain of sorts to prevent the nitrogen from flowing through to that resource. Mr. McGrath said he pumps and treats, and some of the carbon drops down into the groundwater and is readily available. Mr. Andrews and Mr. McGrath discussed the elements of organic gardening and the benefits of natural bacteria/organisms in the soil. Mr. McGrath also discussed several experiments he has conducted in his garage and the results that have led him to realize that you can't put too much carbon in the ground water or it will chemically seize up. He stated that an author named Chapelle has written a book on microbiology and hydrology which documents this process. Mr. Barlow said it was good that someone was doing this type of work, and asked if there was a way to adapt the technology so it could be used by recreational boaters, who are always having problems with their effluent. It was pointed out that it is an in-the-ground system. Mr. Andrews asked what the ratio of wells to the amount of area needed for irrigation (1 well which has 2 carbon injection points needs how big an area of irrigation to run that well?) Mr. McGrath said he did the math based on about 10-12 thousand sq/ft. of surface to be irrigated. Mr. Andrews asked how often carbon injections are needed to create a curtain. Mr. McGrath explained that with that size area, he uses a trench similar to a leaching trench for introducing carbon, along with 1 water well. The irrigation is about 70% on the top soil and 30% underground, all of which is restored back to the water table in that area. Mr. McGrath stated that Otis AFB has abandoned the sand beds that were in the quadrant that drained into Falmouth in 1995. In 2004, there was still organic carbon attached to the soil particles over 28 feet into the groundwater, and was still acting as a barrier for nitrogen. Mr. Barlow asked if it would make sense to market this system along with a specific system that would work along with it to direct the flow of effluent into the carbon area. Mr. McGrath said he wanted it to remain usable with any system. He stated that he is a pioneer in de-nitrification, and he doesn't want to get tangled up in bureaucracy. Ms. Coffin asked if a bunch of these systems in and was pumping 4 times the amount to draw up from the groundwater, is there enough of a draw that would affect the draw on nearby drinking well. Mr. McGrath said no, because what is being drawn out is going back in and clean. Ms. Peterson thanked Mr. McGrath for his presentation.

5) Approval of Minutes dated September 14, 2011 and September 28, 2011

For the Minutes dated September 14, 2011 and September 28, 2011:

Mr. Uitti motioned to approve; Mr. Andrews seconded the motion. The motion passed unanimously.

Mr. Andrews made a motion to adjourn. Mr. Uitti seconded the motion. The motion was passed unanimously.

The meeting was adjourned at 8:20 pm

Respectfully submitted,

Melissa A. Chase
Secretary

Kathleen Peterson_____

Stanley Andrews_____

Galon Barlow_____

Don Uitti_____

Carol Tinkham_____

cc Board of Selectmen/Town Clerk