Approved: September 1, 2015

NEW CASTLE CONSERVATION COMMISSION
August 4, 4:00 PM

The July 2015 Meeting of the New Castle Conservation Commission was cancelled.

Members Present: Beth Hume, Bill Marshall, Curt Gillespie, Darcy Horgan, Sharon Houston, Jim Rini, Lynn McCarthy

Also Present: Bob Silva from Septic Preservation, Jim Boucher from Septic Preservation and Ellie Clement- Shaw Circle applicant and a town resident, Peter Rice

Approve June minutes – this issue was deferred.

Work Session / Applications:

Review and Recommendation:
15 Shaw Circle, Elaine Clement-New septic system installation to replace a failed septic.

Mr. Silva and Mr. Boucher provided a presentation on the proposed system to the Ms. Clement and the members.

Mr. Silva said the National Sanitation Foundation (NSF) tests all equipment for onsite sewage treatment and this equipment by federal standards is designed to dump into a receiving water way. He said the system consists of three compartment treatment tanks. Mr. Silva noted that the first compartment is a septic tank, the second chamber is an aeration chamber (it raises bacteria population and consumes any remaining organics) and the third chamber is a clarifying chamber where it allows bacteria bodies to consume nitrogen. He noted that in the end what is discharged is a highly clarified fluid. Mr. Silva said the filter is a high end clarifier and allows solids or dead bacteria body to drop out which makes what comes out a very, very clear effluent. Mr. Silva said the system is similar to a tertiary treatment plant on a smaller scale. He said it is equipped with the capability of denitrification and noted that ammonia is the primary concern around salt water marshes and water ways because it can cause salt water algae blooms. Mr. Silva said to denitrify you need to convert the NH3 by adding oxygen in the second chamber and turning it into nitrate and nitrite. He said it then goes into the third chamber where the bacteria strips the oxygen from the compounds and releases nitrogen as a gas which then denitrifies. Mr. Silva said the NSF standard 40 systems provide some denitrification if you specifically want denitrification you need to request a system that passes NSF standard 245.

Mr. Boucher said that oxygen is added because there are two types of bacteria; anaerobic bacteria and aerobic bacteria. He said that anaerobic bacteria is what your typical septic tank produces (does not need oxygen) but when you utilize anaerobic bacteria they consume at a much larger rate and by adding oxygen it promotes the growth and that is when they start stripping oxygen off of other compounds and that is how they survive.

Mr. Silva said by adding a little bit of oxygen you can increase the number of bacteria by several million times which allows the organics to be consumed. He said when they consume the organics they are converting to carbon dioxide.

Ms. Clement asked if the system will be completely self-enclosed and have no filter to change.

Mr. Boucher said the system is completely enclosed and there is no filter to change, but there is maintenance required; which his company provides twice a year. He said the maintenance is a process that ensures the system is working properly. Mr. Boucher noted that these systems typically need to be pumped less frequently (approximately every 5 years for a family of four).

Mr. Silva said when they meet with the homeowners they tell them that it is their job to feed the zoo and keep the animals (bacteria) happy.

Chair Horgan asked if the issue of nitrogen is addresses in these systems.

Mr. Silva said in conventional septic systems a large amount of nitrogen is released into the ground; with the NSF 40 they are designed to reduce fecal coliform and to protect ground water. He said the NSF 240 takes it a step farther and reduces the nitrogen.

Mr. Silva said because the lot size is small and because the water quality is so high and because New Hampshire allows a 50% field size lot reduction the field for this system can be half the size of the previous one.

Mr. Boucher said if using an advanced treatment system the state allows you to reduce the footprint of the drain field because of the quality that is coming out of the system. He said in Maine it is 75% and in New Hampshire it is 50% (as is Massachusetts). He said a system like this allows the drain field to be reduced and to have high quality water coming out of the system.

Mr. Silva said all of the waste water ends up in an aquifer and then ends up in oceans or streams so nitrogen is a concern. He said there is no cost difference between this equipment for denitrification or the standard system for treatment. He said the difference is the timing of the system; he said typically it cycles on and off so it is starving the bacteria half the time. Mr. Silva noted that the systems prices have come down significantly and are typically $4000 more than a traditional system.

Ms. Clement said her contractor chose this system because of the size and location of the lot.

Chair McCarthy noted that the system requires electricity and asked what would happen if the electricity failed.

Mr. Avila said there two options for an alarm. He said the standard alarm panel goes to an alarm under two conditions: 1) high water and 2) if the amp drawer is too high. Mr. Avila said the home owner would see and hear and the alarm and then phone our company. He said there is a

second alarm panel that could plug into a phone and dial the company showing that there is a problem.

Ms. Clement said that means she will need to get electrical power to the wall where the septic tank is located closest to.

Chair Horgan asked what happens when a system of this type fails.

Mr. Avila said the big difference between the aerobic system and the conventional septic system is that the conventional septic is designed to last 20 years and the life expectancy of a treatment system is indefinite. He said there will be an electrical cost of approximately $15/month and an annual maintenance cost of $250/year. He said every 20 years the owner will need to replace the aerated filter and will need to pump it occasionally; but the system as a whole should never go into failure unless something mechanically has happened. Mr. Avila said he is the operator of record for approximately 2000 of these systems and most issues can be avoided and the company does all we can to educate the homeowner and the installer in order to avoid issues.

Chair Horgan asked what happens when a homeowner sells the property.

Mr. Avila said that in general buyers of properties will get a visit from the company regarding the maintenance program and at that time the representative will educate the new home owner. He said they have had instances where people have not had the maintenance done for several years and issues arise and the alarm goes off and they phone the company.

Chair Horgan asked if most companies are similar and take on the onerous of educating the homeowner.

Mr. Avila said the maintenance is determined by the state and New Hampshire requires maintenance twice a year. He said the company needs to be a licensed waste water treatment operator to service this equipment. Mr. Avila noted that when a company's credentials are on the line they need to provide quality work.

Mr. Boucher said that only a hand full of companies provides service, maintenance, sales or installation for advanced treatment systems. He said his company keeps records on all systems that they provide maintenance for.

Mr. Avila said that there are 18 well established companies that do this type of work in this area.

Mr. Boucher said this system has a plastic tank, but some tanks are made of fiber glass, concrete or even stainless. He said plastic is easier to move on smaller lots.

Mr. Avila said if the system loses power for an extended period of time the bacteria population will begin to die but when the pump and electricity start back up it will take 48 hours of adding oxygen to get the bacteria population back up.

Ms. Clement noted that she has a generator in case of electricity loss.

Mr. Avila said there is a conversion kit (The White Knight) that is about 80% as effective as the full system. He said that typically it is installed in a failing system to raise the bacteria field in it.

Ms. Clement noted that her contractor recommended this system due to its location to the wetlands and the small size of her lot.

Chair McCarthy said that she and Ms. Horgan viewed the lot and agrees that this system would be better for the lot.

Curt Gillespie asked if the existing tank will stay in place and Ms. Clement replied that it is her plan to leave it in place but she needs to discuss it with her contractor.

Sharon Houston MOVED to recommend approval of the application for 15 Shaw Circle, Elaine Clement for a new septic system installation to replace a failed septic per the submitted plans dated July 7, 2015 and with the stipulation that a maintenance contract be entered into; this was SECONDED by Curt Gillespie and APPROVED unanimously.

Other Business

Chair McCarthy noted that the Commission received a letter from Steve Rickerts to NH DES for 95 Marina Heights regarding (July 21st) asking for an increase of 150 sq. ft. of impervious surface (asphalt). He noted that it is still within the parameter of the percentage of lot coverage. Chair McCarthy spoke with Don Graves and he felt it was appropriate and would not require a presentation by Mr. Rickerts to the Conservation Commission.

Don Graves explained that driveways are not included in the total lot coverage of a lot (they are considered an accessory access to the lot).

Beth Hume suggested the Commission review the ordinance regarding driveways and lot coverage and impervious surfaces.

Don Graves said Mr. Rickerts is requesting that DES amend their permit to allow him to increase the impervious surface coverage by 150 square feet (he still meets the state requirement of impervious surface remaining under 30%).

Unfinished Business

- Invasive maintenance at the Great Island Commons

Chair McCarthy said the invasive maintenance at the Great Island Commons is almost completed.

Tracy Degnan said they did not treat the fresh water wetland area since the special permit had not been received at that point. She said they will return in late August or early September to treat them.

- PREP grant approval and overview, Tracy Degnan from RCCD Presenting

Tracy Degnan said the wetland buffer PREP grant went forward for the Town of New Castle and was funded. She said they are one of three towns working on their wetland buffer and updating their ordinances. Ms. Degnan said the grant is a one to one match with a $2500 cash match and the rest ($7500) in volunteer time – she distributed volunteer forms for the members to keep track of their time. Chair McCarthy noted that she has also set up a "drop box" account for the Conservation Commission and they could also note their hours there. Ms. Degnan said she and Lynn met with representatives from PREP to discuss this project and how they can assist moving forward. She said the goal is to do a lot of outreach and education to residents and in September will review the wetlands environmental study to determine the health of the wetland if the functions and values remain the same and what the buffer health looks like. Ms. Degnan said a wetland scientist will go to each site to update the study.

Jim Rini asked if it is possible that land that was previously classified a wetland could now not be classified as a wetland.

Ms. Degnan said it is possible and they have already found one; a small wetland in the cemetery at the Great Island Commons toward the back closer to Wentworth Road. She said the property was reviewed and evaluated to no longer be a wetland.

Ms. Degnan said she will review the Newcastle ordinances and other community ordinances and then draft some language for the Conservation Commission and the Planning Board. She said she will also focus on Lavenger Creek salt marsh as well. Ms. Degnan said that will be reviewed and scrutinized more thoroughly and if it is appropriate they will move forward with a prime wetland designation. She said that designation would provide more protection for the state with regard to reviewing docks etc. It needs to go through the same warrant process through the Town and if it pass then needs to go to the State.

Ms. Degnan will be doing a public relations document for The Island Times next week which she will distribute to the members for them to read.

Ms. Degnan distributed a table to the members for their review. She explained the table is a monthly breakdown for things to be done with regard to the grant work. Ms. Degnan said two main workshops have been suggested; the first in the fall and will discuss the integrated pest management review for Lavenger Creek. She said they hope to have an onsite workshop there. Ms. Degnan said the second workshop will be with National Resources Outreach Coalition (NROC) just before Town Meeting. She said that Jill Farrell is part of that group and will be very involved. Ms. Degnan NROC has been successful at planning these workshops and getting attendance by residents.

Ms. Degnan said she discussed with PREP about invoicing and was told that RCCD can do the invoicing for the Town; but PREP is going to be very particular about the matching volunteer hours.

Ms. Degnan said there will be an article in The Islander in September.

Beth Hume said she would ask Jim Cerny to take some sunset photographs of Lavenger Creek for The Island Times.

Ms. Degnan said the PREP assessment done in 2013 is how they came up with the four top recommendations for each community. She suggested that the members and the Planning Board may want a copy of the assessment to review.

Ms. Degnan said they need to find someone to be a moderator (who likes to talk about things) to help with the round robin neighborhood meetings. She asked the members to suggest individuals.

Ms. Hume said each of the members can think about someone in their neighborhood that would be appropriate.

Chair McCarthy said increasing the 50 feet buffer to 100 feet may cause some pushback. She said some of the B wetlands are large and wondered why they are classified as B and not A.

Ms. Degnan said the pristine wetlands are usually designated as A, but she is not exactly sure.

Darcy Horgan asked if when the study is done if it would be possible to have a field trip (to include the Planning Board and the Conservation Commission).

Ms. Degnan said that would be good and she may be able to do that.

She said she is approximating that the wetland scientist should be completed with his study by the end of October.

- "Welcome to New Castle" packet

Chair McCarthy discussed the "Welcome to New Castle" packet that Sharon Houston has put together for homeowners. She said it includes very good information and should be reviewed by the members for comment. She said if there are any changes please email them to her so it can be updated and ready for the next meeting and can begin to be distributed.

New Business

- Green Team

Chair McCarthy asked if any member would like to be the contact and or head for the Green Team.

Beth Hume suggested Sandy Bisset as an individual who may be interested in such a position.

- NC Conservation organization, membership, and officer nominations.

Beth Hume said the Commission needs more members since she and Bill Stewart will be leaving the Commission. She suggested Connie White, Etoille Holzepfel and Jane Finn.

Chair McCarthy said she spoke with Beth Barnhorst who expressed an interest. She noted that Peter Rice was here this evening to observe and consider joining the Commission.

- Spring education and outreach initiatives – this item was discussed during the PREP grant discussion with Ms. Degnan.

Announcements

Beth Hume MOVED to adjourn the August 4, 2015 meeting of the New Castle Conservation Commission at 5:50 pm; this was SECONDED by Curt Gillespie and APPROVED unanimously.

Respectfully submitted by,

Sue Lucius, Secretary to the New Castle Conservation Commission