

NOTE: These Minutes are subject to Agency approval at next regular meeting.

Chester Inland Wetlands & Watercourses Agency

Regular Meeting, July 1, 2019

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1. Call to Order

The Chester Inland Wetlands & Watercourses Agency held its regular meeting on Monday, July 1, 2019, at the Chester Town Hall, 203 Middlesex Avenue, Chester, Connecticut. In attendance were Al Bisacky, Sally Sanders, Eric Davison, Bob Blair, Bill Bernhart and Ellie Wahlberg. Anna Sweeney, Wetlands Compliance Officer, was also present. Chairman Bisacky called the meeting to order at 7:07 PM.

2. Minutes – June 3, 2019

Motion by Sanders, second by Wahlberg, to approve June 3, 2019 Minutes as written.

Unanimously Approved.

3. Audience of Citizens – none.

4. Continued Show Cause Hearing – Chester Airport, 61 Winthrop Road – unpermitted activity within review area

5. Chester Airport, 61 Winthrop Road – unpermitted activity within review area

Items 4 and 5 tabled.

Motion by Sanders, second by Davison, to move Agenda item #9 to after #5. Unanimously Approved.

9. #19-09 Horse & Rock Properties Inc, 221 Middlesex Avenue – Shed

It was noted for the record Eric Davison recused himself from this application. Mark Rohlfs noted he was looking to put a 16' x 20' Post and Beam shed for material storage on the property of East Coast Precision, 221 Middlesex Avenue. This is a small flat piece of property probably filled at some point in the 1950's. It's grass, parking and building with wetlands in the back of the building where it just drops. Mr. Rohlfs noted this was the only place the shed could go. There's parking in front of it, leaching field next to it and property lines all around. The wetlands have been flagged by Eric Davison. Chairman Bisacky noted the members will each visit the site on their own. The shed location has been staked.

6. #19-03, Aaron Manor, S. Wig Hill Road, Septic System – Continued Public Hearing

Chairman Bisacky noted there were a couple of open items from the last meeting that the applicant should address. He also noted a report was received from Brian Curtis of Jacobson & Associates. Mr. Curtis was also present.

Mark Lancor with Dymar introduced himself. He noted one item that came up last month was the force main. They have come up with an alternative that elevates it out of the ground. The system straddles above the grade, is supported by piers. There is no direct drill

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or cutting further below grade into the area. He reviewed Drawing SS-9B which was the alternative for constructing the force main. He reviewed the Detail 500 in detail. Mr. Lancor noted they felt this was an appropriate solution and hoped the Agency looks favorably on it.

Mr. Lancor submitted a letter addressing comments raised by the Intervenors regarding the direct connection to the Town sewer. The Intervenors at that meeting provided a concept plan and costs to the tune of \$2.4 million. Mr. Lancor further noted this was an opinion letter relative to USDA Grants and what's involved. This letter addresses some of the shortcomings of that estimate in terms of other items that should have been included in that cost estimate. Maintenance and Protection of Traffic is a big line item that is not shown. Lateral construction for each property that has to be served is another item not shown. Preparation of the USDA grant application and regulatory procurement, increased costs for bridge crossings are not the standard \$100 per foot installation (premium to be paid for that) and the associated impact of prevailing wages on a USDA grant can add 15 to 18%. Just looking at those things, it's probably an additional quarter of a million dollars in additional expenses. In addition, there's also the time frame. If you started now with the USDA, it would probably be about 4 years to start time and then you have to add inflation of 3% a year which would be another \$240,000 to that estimate. He reviewed pumping for the next 5 years which would equate to approximately 6.8 million gallons needing to be pumped at a cost of \$1.35 million dollars. He further noted this is all being suggested for a concept outlined in the POCD that has no realistic conclusion of being cost effective to the Town.

Mr. Lancor reviewed USDA grants noting the Town has to be involved. These grants are designed for infrastructure improvements necessary for economic growth and would need to be supported through the Town's WPCA. The WPCA would have to buy into it as well as others and taxpayers alike and the applications are driven through the First Selectman's office. WPCA would be the primary beneficiary and Aaron Manor would be a participant. Chester would have to be able to demonstrate that the equivalent dwelling units would help to offset and pay for the difference in cost so that economically it makes sense. There aren't enough properties along that route to even come close to support a grant, thus it would be strictly a loan that the Town could bond at a lesser interest rate. He indicated that alternative is just not feasible.

Mr. Lancor noted they have developed a force main alternative that is above ground built on supports and with insulated piping and feel it is the most prudent and feasible alternative.

Mr. Lancor noted they have gone through this with the Health Department (email dated June 28, 2019 from Faiella to Lancor), but still waiting for a report from the State Health

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Department, Bob Scully. The Health Department has met with Mr. Scully and his questions have been addressed.

Robert Russo, Certified Soil Scientist with CLA Engineers introduced himself. He submitted a CT DEEP letter dated June 27, 2019 and a letter from CLA Engineers addressing questions that came up at the last meeting, dated July 1, 2019.

He reviewed the proposed impacts on the site using the framework of the U.S. Army Corps of Engineers to do a highway methodology assessment of the functions of that wetlands. This ties into understanding what the impacts are and if there is a need for mitigation and if we've met that need. Based on the data in that letter, the primary functions of this piece of wetland are wildlife habitat and ground water discharge recharge. He noted overall this wetland provides wildlife habitat and reviewed the same. He also reviewed the hydrology underneath the crossing to maintain that function of discharge and recharge through that wetland. He reviewed a planting plan for the area around the edge of the wetland to enhance the wildlife habitat. They are offering compensation for those two functions that are going to be disturbed.

Mr. Russo noted the alternative of keeping the force main above ground means there will not be as much excavation during construction as if it were buried in the ground. He also reviewed directional boring for pipe installation and its impact. He also reviewed the potential for a "Frac Out". The occurrence of this can require an extensive cleanup effort.

Mr. Russo noted at the June meeting there was a concern for bedrock removal to create the access driveway to the leaching field area. He noted in his experience removing bedrock in a condition like that is very unlikely to cause any wetland impact. It's not a large amount and will be replaced with a porous surface. He didn't see the potential for any wetland impact in that area.

Mr. Russo noted he indicated at the last meeting, he presented an area directly upslope from where the system was proposed indicating there was too much exposed and shallow bedrock soils there. The Agency asked if he could look further up north. He indicated he walked the entire extent of the property the applicant owns and there are two very important things going on. The wetland on Sheet SS-2B continues northwesterly and goes all the way up to the far property line. So essentially that property is cut in half by a wetland that's about 60 feet. Putting a 100 foot upland review area on either side of it, there would be a 260 foot width going through that property that should be avoided. That greatly limits any potential site this size leaching field. He reviewed some photographs of bedrock

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outcrops attached to his letter. Mr. Russo believes that alternative of going upslope is not feasible based on this investigation.

Mr. Russo noted he distributed copies of the CT DEEP NDDDB request to Agency members and Intervenors. He noted the species discussed are both mullucks (sp?) are not found in the area proposed to be impacted. They are found downstream in the Pattaconk Brook system. CTDEEP recommended several Best Management Practices already included on the plans. He indicated an important note to what CTDEEP said was that no vegetation should be cleared within 100 feet of Pattaconk Brook. Keeping the crossing as far north as possible from the Pattaconk Brook was recommended. CTDEEP also concurs with the planting plan provided. They have followed the guidance from CTDEEP and minimized the potential to effect protected species.

Mr. Russo noted this is the most feasible and prudent alternative and we have presented the data and analysis to show that.

Bill Bernhart asked how the force main above ground would be protected from falling trees. Mr. Russo noted there will be a clear area and structurally they will be sure the connections can hold its own. Mr. Bernhart asked where the force main will be above ground. Mr. Russo responded on the southerly side of the road.

Al Wolfgram introduced himself. He submitted documentation showing the volume and page of the property map filing in the Town Clerk's Office. He submitted a chronology of events. He reviewed his resume noting he has extensive experience in sewer system planning, sewer system design, construction administration, grants administration, all for municipalities in Connecticut. He also noted he has spent over 25 years on Commissions (Wetlands, WPCA, Sanitary Waste, Planning & Zoning and also was a former Selectman). He understands the small municipality judgment factors. He's been on both sides of the table.

Mr. Wolfgram noted this project started in 1993 when his client hired Nathan Jacobson & Associates to do a soil testing program and a septic system suitability study for this project. In 05 his client received a Notice of Violation from the Town of Chester that they had to do something. Mr. Wolfgram noted he was hired in 06 with the idea they would be doing a mounded system on that piece of property similar to what is being applied for tonight. He then found out the water use was over the limit for DPH at that time, over 5000 gallons a day. They spent 06, 07 and into 09 trying to fix the system and come up with a plan that would be acceptable to DEEP. Once they had a plan DPH liked, they hired an architect to do an architectural expansion plan of Aaron Manor and came to the Wetlands Agency at the end of 2012. The question at that time was was there an alternative of going downtown.

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The application was then withdrawn. They then went to Planning & Zoning to get a change in the POCD to go downtown. We spent most of 2013 in front of Planning & Zoning to see if that was viable, and they decided there was no POCD modification needed. So we wasted a year with the Planning & Zoning Commission. In 2014, we went to WPCA and showed them the plans, alternatives, the line going down Route 148. They came back with a list of things they wanted – engineering study, feasibility study, cost analysis. Everything was documented. We also hired legal counsel who specialized in getting money for these kinds of project. They went to USDA and other sources. Aaron Manor was being pushed to take on more and more of the cost and they couldn't even think of funding this project. The bottom line was Aaron Manor could not financially do it. Fast forward to today, we didn't know DEEP and DPH were going to change their jurisdiction flow from 5000 to 7500. That worked in Aaron Manor's favor and they are back here doing a mounded system that supposed to be done in 05. Then, the new POCD came out and it showed a sewer shed coming up Route 148. Mr. Wolfgram referenced a couple excerpts from the new POCD. Section 1-Introduction and Section 4-Sewer Plan (last 3 paragraphs). He noted if it weren't for Aaron Manor, there would be no need for a sewer line up Route 148. He also noted back in 12, 13 and 14, the Town did not want to fund this project and he doesn't think anything has changed in that regard to now.

Mr. Wolfgram noted the Town of Essex hired a few consultants over the years to study conceptual sewer planning in town and the earliest one was in the mid-70's. To date, Essex has not municipal sewers in town. If the public is not for it, it isn't going to happen.

Attorney Timothy Lee from Fasano, Ippolito, and Lee in New Haven introduced himself representing the applicant. He will address the issue of feasible and prudent alternatives. He submitted a letter to the Agency outlining standards the Agency should consider when deciding upon an application and what weight they should give feasible and prudent alternatives. Messrs. Lancor, Russo and Wolfgram have spoken and gone through the history and other alternatives the applicant has considered as well as the cost involved. Environmental impact to other proposed alternatives was also discussed. The reason for all this discussion is because when the Agency ultimately acts on this application, they will have to consider whether there were any feasible and prudent alternatives to this proposal. Attorney Lee indicated their position is there are no feasible and prudent alternatives. Other options have been considered, but didn't make any sense. He noted the terms "feasible and prudent" are defined in the Wetlands Statute. Feasible is defined as "able to be constructed or implemented consistent with sound engineering principles." Prudent is defined as "economically and otherwise reasonable in light of the social benefits to be derived from the proposed regulated activity provided cost may be considered in deciding what is prudent and further provided a mere showing of expense will not necessarily mean an alternative is

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imprudent.” The Agency can consider the cost of an alternative in weighing the merits of an application. Mr. Lancor went through the cost in some detail for the applicant to tie in to the community sanitary sewer system. Its cost prohibitive for the client to do that as it was in excess of \$6 million and 5 years of time. Attorney Lee noted it was their position they have met the burden of feasible and prudent alternatives.

Attorney Lee referenced the 2019 Plan of Conservation & Development noting it is an advisory document and just because something is in there, it doesn't necessarily mean it will happen. It's not binding on the Town. POCD's are required by State Statute to be done every 10 years and they tend to change over time. It certainly doesn't mean his client is obligated to fund the cost of that connection in order to continue his operation in town.

Attorney Lee noted the final issue the Board should consider in deciding an application on the basis of feasible and prudent alternatives is the social benefit to be derived from the application. This is an assisted living facility that takes care of people in their last stages of life. It does serve a social benefit. There aren't many other alternate places for people to go in town. We are asking you to take that into consideration when you are weighing feasible and prudent alternatives of this application.

Sally Sanders asked if anyone has spoken with the Selectmen since the POCD has come out. I know the Intervenor's lawyer has said he spoke with them and I wondered if Aaron Manor had spoken with them. Martin Sbriglio introduced himself noting he did speak with the First Selectman and the issue was the timing and the expense. The town doesn't have any intention of spending the money to do it and for us a small facility it would be impossible for us to be able to afford that. Sally Sanders asked if within a decade or so that sewer system was built, would it be mandatory for Aaron Manor to hook up to it? Mr. Sbriglio noted he could not answer that. An unknown person indicated he didn't know specifically what the Chester regulations say, but most towns require you to hook into a sanitary sewer system if it was available to your property.

Chairman Bisacky noted the Agency had asked Jacobson & Associates to review regulations pertaining to DEEP and DHS systems and this application in particular. Brian Curtis submitted a report which he reviewed in detail.

Brian Curtis, Nathan Jacobson & Associates, introduced himself, Professional Engineer registered in the State of Connecticut with offices in Chester, Connecticut. He indicated his office was asked by the Agency to look at the differences between the design criteria of the Health Code versus the DEEP with the larger subsurface disposal systems. Our firm has a lot

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of experience in this area. DEEP hired our firm to rewrite their design manual for the hardscale systems.

Mr. Curtis noted they looked at the jurisdictional differences between the Health Department and DEEP and then looked at the four basic differences between their design criteria for subsurface disposal systems. Prior to 2017, the local and State Health Departments had jurisdiction over systems with design flows up to 5,000 gallons a day. If it was over 5,000 gallons a day or a community system or an advanced treatment system, the DEEP had jurisdiction. In 2017, the Legislature changed the flow break point between the Health Department and DEEP and upped the flow to 7,500 gallons a day. That's currently the difference. The Health Code criteria is more of a prescriptive or you plug the numbers in because it covers anything from a household system up to larger commercial systems that fall under their criteria. The DEEP design methodology is more of an engineering analysis of additional parameters and facets of the system design. Its warranted because those systems get to be very large up to 100,000 gallons a day. There's many systems in the 20, 30 to 70,000 gallons a day with a whole different set of circumstances that come into play with those large flows.

Mr. Curtis summarized the four basic criteria used and the differences. In terms of flow they are quite similar in that the Health Department has a set of tables of flows per bedroom or flow per unit whether it is commercial or residential. They use a flow figure and in this case it would be on a per bedroom basis. They also monitor actual water use to determine average water use for a given facility and then a safety factor is applied usually 1 ½ times the average use to arrive at a design flow. The safety factor accounts for peak flows. DEEP uses a similar criteria in terms of flow per bedroom essentially the same as the Health Department. They also monitor water usage and apply a safety factor. The two are somewhat similar in terms of arriving at a design flow. If it's based on water use flows, they look at a period of time to be sure you are comparing apples to apples taking into account the occupancy.

Mr. Curtis noted he understood from the information received from Ms. Sweeney that part of the design for this facility was based on actual water use and applying the 1 ½ safety factor and that for proposed units the 150 gallons per bedroom was used for the additional units. A combination of the two was used to arrive at the design flow which is a little below the 7,000 gallons per day so it falls under the Health Department jurisdiction.

Mr. Curtis reviewed leach field system sizing. Data is used on the soil percolation rate and strength of the wastewater. There are various application factors allowed for various kinds of leach field units. In this particular case, the leach field structures were allocated a certain

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amount of square feet per linear foot. One would then calculate how many square feet are needed and divide by that allocation to see how many feet of leaching structures are required. Curtis noted based on his review, the calculation appears to be done correctly in compliance with the Health Code sizing criteria. The DEEP method is somewhat different in that they apply a wastewater strength. If it's a weak strength, you can have a higher application rate. If it's a higher strength, the application rate goes down. They look at the actual λ parameter of whatever the leach field structure is in order to arrive at a leach field sizing. The DEEP bases it on soil permeability rate and the strength of the wastewater. It's been shown over time, the current Health Code methodology for sizing systems as long as the proper flow rate with the safety factor has been used, the systems have been shown to function properly when sized by that method. That's what was used in this case to size the overall length of the leach field system.

Mr. Curtis reviewed hydraulic capacity between the two. The DEEP systems can get very large whereas a small household or commercial system, the groundwater effect is to a lesser extent. The Health Department requires you to monitor the average spring groundwater elevation and then keep the bottom of the system 2 feet above that for this category of system. The system is split into 2 as one can see from the drawings. If the upper and lower system are separated by 50, you basically ignore the uphill system in sizing the length of the application rate. The DEEP would look at the combined rate for both systems. That's the significant difference between the two. When there are larger flows, the uphill system can have an effect on the downhill system, so they look at a combined flow. The Health Department method assumes once you get 50 feet away, there's less effect on the groundwater mounding so they allow that separation distance and treat them individually. With the DEEP method you have to use an actual groundwater flow model to calculate how high the ground water will mound due to the application of the additional water and the bottom of the system has to be 2 feet above that mounded water table. It's a different methodology because of the larger flows involved.

Mr. Curtis reviewed pollutant renovation analysis. The Health Department in terms of pathogen renovation, they use standards setbacks as the criteria for protecting well water supplies or surface waters. They have to keep 75 feet from a small well and the separating distance from a leach field. You have to keep at least 50 feet away from surface waters assuming there will be pathogen renovation within that distance. The DEEP methodology, they look at the actual travel time of the effluent through the soil for a 3 week minimum time period before the effluent reaches a property line or surface water or even longer than 3 weeks if it's going to impact a well. The Health Department keeps 15 to 20 feet away from a property or 50 feet from a drain or surface water or a point where it might break out. The Health Department system does not look at nitrogen effects on ground water whereas the

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DEEP criteria looks at the nitrogen effects. Any time you put wastewater into the ground, you are adding nitrogen and it's essentially treated by two methods. The primary method is that rainfall will infiltrate into the ground and dilute the nitrates down to a lower concentration. The other removal mechanism is if groundwater and effluent are flowing away from a leach field and encounters wetlands soils with an organic layer, there will be significant denitrification of nitrogen. It all depends on what's down gradient and how much organic soil is encountered before the effluent reaches the surface water. In the Health Department criteria, there is currently no criteria for nitrate impacts for discharge of up to 7,500 gallons a day.

Mr. Curtis noted there is currently research being done relative to Pharmaceutical and Personal Care Products Renovation. Currently there's no analysis or criteria for evaluating impacts of those types of products on the ground water under DEEP.

Eric Davison asked Mr. Curtis about comments from Wright Pearce on how the septic system was designed, how calculations were done, how the mapping was done and mostly how the system and sizing was done. He asked if Mr. Curtis reviewed those comments and were they accurate. Mr. Curtis noted any system designed over 2,000 gallons a day is required to get reviewed by the engineers at the State Health Department in addition to the local Health District. That is currently being done. The State Health Department has to concur with the design before it can be approved by the local Health Department. He noted he looked at the sizing of the leach field based upon the required effective leaching area and how much is provided and the separating distance between the two. It does meet the general criteria of the Health Code. Some judgment will be interjected in terms of determining the length of the system spread, but that will be looked at by the State Health Department. The system length proposed is somewhat wider than the minimum required. Mr. Curtis noted this will be a judgment call by the State Health Department. There are a number of areas where bedrock is encountered at varying depths. The Health Department will determine if there were a sufficient number of test pits and if they have a concern, they will ask for more test pits. If they want more test pit and flow information, they will ask for it.

Mr. Curtis noted, in response to a question from Mr. Davison, in terms of nitrogen the State Health Department doesn't look at it. He indicated there is less review of it because of the smaller flows. However, this year the Legislature is talking about upping the flow to 10,000 gallons a day. It ended up dying so it's still 7,500 gallons. As the flows get bigger it becomes more of an issue. The Health Department feels that given their setbacks and separating distances, they haven't seen this as a major issue for smaller systems so that's why they don't require it to be evaluated. Eric Davison asked about the 6 week and 3 week travel time. Mr. Curtis noted the DEEP requires 3 weeks normally but if you're impacting a well, it's

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6 weeks. He indicated there was a travel time evaluation submitted which was 77 feet for 3 weeks based on the data used.

Chairman Bisacky noted last month there was discussion about mowing access. Mr. ? pointed out on the plan where the access was. Bisacky noted there was discussion last month about construction access through that area. He asked what other types of crossings were considered at that location. What is being proposed is an embankment with a culvert. He indicated when they did their field walk a month or so ago it was wet but not flowing. Is there another way to get across without putting in an embankment and culvert? Can it be accessed across during the dry season for construction. Mr. ? noted heavy equipment and fill have to be brought in. There needs to be a legitimate base. Bisacky asked if timber matting could be used. Mr. ? noted yes, timber matting could be used now and if needed temporarily in the future for any maintenance. He noted, however, they are looking for a permanent solution so they don't have to come back to the Agency every time they want to access the area.

Chairman Bisacky asked if there was an alternate for turnaround cul-de-sac. Mr. ? noted he reviewed Mr. Curtis comments and that was temporary. It could be shrunk down to a hammerhead or something other. It could be reduced. He agreed that was a reasonable request.

Chairman Bisacky asked about Map 1553 Lot Line Revision (3 South Wig Hill) and Map 1513 Lot Line Revision (19 South Wig Hill). Mr. Wolfgram reviewed the history of the two maps. Mr. Russo noted he also investigated this area and the wetland. Its either shallow to bedrock or exposed bedrock or wetland or within the wetland review zone. Not a suitable place. There is a wetland behind 19 South Wig Hill that cuts through the Aaron Manor property. There was discussion about a 4 acre piece that Mr. Wolfgram indicated was not usable.

Chairman Bisacky noted it was indicated the State Health Department is conducting their review of the plans, but it's not completed yet. Mr. ? noted the local Health Department met with Bob Scully two weeks ago. He came back with a few questions that have since been addressed. To date, we haven't heard back from Mr. Scully. Locally, the Health Department is good with everything, just waiting to hear back from Mr. Scully.

Chairman Bisacky had questions relative to the crossing detail on Sheet SS-9. There is an inline flushing station at the edge of the wetland. He questioned the grout and link seals shown. Mr. ? noted the mechanical seal would be used. Bisacky noted a sleeve was called for but it wasn't shown how it connects to the structure. Mr. ? noted it would terminate inside the manhole. Bisacky noted it wasn't shown that way. He also asked why that is

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shown at the edge of the wetland and not further away. Mr. ? noted that is the low point and explained why. Bisacky asked what the purpose of the sleeve was. Mr. ? noted it was for flush out. Bisacky noted that doesn't need to go at the low point. It's a force main. Mr. ? noted it is always at the low point. Bisacky replied that was not the case in his experience. Mr. ? noted they would be happy to move it up stream if required, but they generally put it at the low point.

Attorney Rich Carella, attorney for the Intervenors, introduced himself. He also introduced Todd Richie from Wright-Pierce to address some of Mr. Curtis' comments. Todd Richie introduced himself noted he reviewed the document submitted at the last meeting "Aaron Manor, Chester, CT. June 3, 2019 Nitrogen Dilution Estimate." This was the travel time estimate for the lower system area. He indicated the Percent Infiltration vs. CN Number was 48%. The number used for this calculation was 65. He adjusted that number and it came out to 10.9 mg/l based on the Percent Infiltration vs. CN Number chart. With regard to Factors Determining Hydraulic Conductivity he came up with Table No. 1 – Fine Sand at 10.00 ft/day and Table No. 5 – fine sand at -0.15. Mr. Richie reviewed the information on this document in more detail. He also noted now there are 2 species of special concern downstream that weren't brought up earlier that are sensitive to pollution and soluble nutrients. What happens to them? How are those impacted? This should be discussed and evaluated to be sure that are not adversely impacted.

Mr. Ritchie reviewed travel time referring to the CT DPH Design Manual under coliform bacteria. This is not just a DEEP document statement requirement, suggestion, recommendation, it's also in the Public Health Design Manual.

Mr. Ritchie noted a lateral sand filter was required. In his experience, this was only needed if you could not meet the 21 day travel time. He reviewed this in more detail. Ritchie also noted the Public Health Code has been updated to allow for the passive treatment of nitrogen by putting a wood chip type design layer underneath the leaching system to provide the carbon that was discussed as being a source for denitrofication. Those things have been dropped from the previous design. He didn't know there was enough information to determine if there would be an impact. We don't know that the calculations provided are agreeable correct and we don't know the impact on these protected species by the increase of nitrogen within the 100 feet of the wetlands.

Mr. Ritchie noted he agreed with the Jacobson review by Mr. Curtis that the applicant should be testing the ground water. There are ground water monitoring wells shown on the site but no data showing ground water monitoring elevations. There has been ground water and test pits recorded so if ground water isn't able to be easily identified and determined seasonally,

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then that should be something that should take place. He was surprised that information wasn't provided.

Mr. Ritchie noted it should be disclosed that Jacobson worked for the owner of this property previously and test pits performed for this property were added to the plans the last time this submission came through. Those were the test holes from 1993. It sounds like problems started 26 years ago in 1993 and here we are today talking about how urgent it is to get this done. We should want it done right and permanently.

Eric Davison noted if we assumed from Mr. Ritchie that the calculations are incorrect and the nitrogen levels exceed the 10 mg/L that's required under the Health Code, how would you fix that. Are you saying these soils are not suitable or is it a matter of modifying the design? Mr. Ritchie noted he suggested in his first review pretreatment. Pretreatment would go back to DEEP. Mr. Ritchie noted they need to show the data, the soil sample testing and lab reports. He reiterated based on the calculations they provided, he didn't think the right values were taken from the resources and applied in the equations. Mr. Davison noted taken that the nitrogen level is 10.9 and .9 in excess of what's allowable, given that you are an engineer and not a wetlands expert, do you feel it would adversely impact the wetland. Mr. Ritchie noted he didn't know what the wetland nitrogen load is right now. Mr. Davison noted we can assume it is pretty high based on the failed system. Mr. Ritchie noted the failed system is discharging in a different direction.

Mr. Davison asked Mr. Ritchie if he felt this application in its current condition is reasonably likely to have the impact as stated in the Intervenor's Notice previously submitted. Mr. Ritchie noted he doesn't have enough information. He was just presented with information tonight on a protected species that nobody has addressed yet. This isn't apples to apples. This is fixing the problem and were going to add more beds. He felt the nitrogen issue is something of concern and felt the bacteria ? travels and is proven to be adequate. There are all different types of designs now – air systems that can be put into this that could connect to a soilator to remediate it to be sure the biomat doesn't get out of hand.

Sally Sanders asked Mr. Curtis if he had any further information to help Agency members to decide between the two opinions. Mr. Curtis noted regarding the travel time analysis, the application goes to the Health Department to meet the requirement of the Health Code. They don't look at travel time or nitrogen. He reviewed how the travel time is calculated and the porosity. He noted he would have used a higher number for porosity which would give a slower travel time. He reviewed permeability.

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Eric Davison asked if the nitrogen levels were higher. Mr. Curtis noted the amount of infiltration that was used for dilution was higher than what would be used for a DEEP system. He felt the number for nitrogen would be higher. Mr. Davison asked Mr. Curtis to explain the wood chip system and the air intake system. Mr. Curtis noted the passive nitrogen removal system is new in the Health Code this year and they allow it for certain sensitive areas. You put a wood chip and sand mix below the leach field to denitrofy the nitrates. Eric asked if there was another system that allows air to come down into the system. Mr. Curtis noted there is a proprietary system that they consider a certain amount of nitrogen removal when using the soil air system. It's a system designed to accomplish a certain amount of nitrogen removal. Mr. Davison asked if one of those could be incorporated into this system. Mr. Curtis noted it is allowed in the Health Code and it does remove a higher amount of nitrogen, although there are pros and cons to it because it's very shallow and doesn't have a lot of storage capacity. There are pros and cons and you want to make sure your leach field can accommodate your flows and peak flows and you might have to use equalization tanks or things of that sort. The Health Code does allow for soil air systems that removes a certain amount of nitrogen removal.

Attorney Rich Carella he has been listening to this for the last 3 meetings. There are a couple things not in dispute. There's high ground water and bedrock outcroppings throughout this entire site. Mr. Davison didn't think they mentioned high ground water. Attorney Carella noted the system there is failing and they are trying to make this thing work. There are prudent and feasible alternatives that exist that won't put nitrogen into the wetlands and Pattaconk Brook. There was a DEEP designed system that was thrown out the window now because its more cost effective to comply with DPH. That doesn't absolve the Agency from looking out for the wetlands and for the environment and that's what the Intervenors are trying to bring to your attention. They could design a system to remove the nitrogen that has greater travel time so that pathogens don't get into the wetlands. They haven't done that. The real and preferred solution would be the sewer because it's permanent and doesn't involve the wetlands.

Attorney Carella referenced the Planning and Zoning Commission Public Hearing Minutes from September 12, 2013. Carella noted the on site system was very expensive because at that time they would need to design a system that would address the nitrogen and travel time for the pathogens. It was more preferable at that time to connect to the sewer and they proposed that. That's the real solution. That's the prudent and feasible alternative. Another prudent and feasible alternative is a DEEP design system that will resolve the nitrogen and pathogens coming out of the system. The other prudent and feasible alternative that we just learned about tonight is all this land that is now part of this application. There's no evidence of where the wetlands are there other than what was

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eluded to. There's no testing in that area. There's no evidence in front of you of what could be allowed up there. It's farther away from Pattaconk Brook and may have more travel time. This system was design with the property line as it existed in the past with the system right up against the back of the property. Now there is another 10 acres to the north. It might be wooded, full of bedrock but we don't know. There's not a bit of information about that in front of you. It's there obligation to provide prudent and feasible alternatives and they haven't done it. Mr. Davison noted there is a map showing the wetlands and Mr. Russo testified he walked the site and that the wetland continues through there. He also offered his description of the soils there with photographs which clearly show bedrock and ? topography. Attorney Carella noted Section 7.5C requires the applicant to provide enough information about the property to consider it not feasible and you do not have that.

Timothy Lee noted when Attorney Carella was talking about Mr. Wofgrams's testimony he mentioned, he mentioned the word feasible and that's not the standard. Anything is feasible if you have enough money to design something that is feasible. The statute and regulations say feasible and prudent. The one thing not mentioned by Attorney Carella was what is the cost to connect into the sewer system. The testimony of Mark Lancor tonight was that cost would be in excess of \$6 million and 5 years worth of time. Eric Davison asked Mr. Lee about his opening discussion when he mentioned the change from this being a DEEP required system to a DPH required now made this project advantageous for the owners. Is that strictly financial? Mr. Lee noted with all due respect he didn't recall saying that.

Eric Davison asked Mr. Curtis if the DEEP required system submission more rigorous or is the actual performance with respect to pollutants that can effect wetlands more efficient. Mr. Davison noted if they were required to make this a DEEP system in the same location serving the same volume, would we automatically assume that would be better in removing pollutants or is that not a guarantee. Mr. Curtis noted that is not a guarantee, it's a case by case. You would have to meet the 10 mg/L or implement treatment to remove the nitrate in a treatment system. It's only implemented when you don't have enough on site dilution to remove the nitrogen. If you have a site with enough dilution water, then you could use a conventional system and if not enough dilution area, you would put in a treatment system first. Davison noted then the opportunity for a system to be less effective is higher with a DPH system because no one is going through the technical standards in the same fashion. Mr. Curtis noted he wouldn't say it would be less effective. The larger you have with design flows, the more issues you need to look at because there could be more impact.

Stefan Zavatore introduced himself as one of the adjoining property owners. I thanked all the members of the Agency and appreciated all of the time and they obviously take this extremely seriously. He noted from their prospective, the applicant went back to 2000 when

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they first noticed the system had failed. From that point, it took 10 years until there was finally a formal Notice of Violation from DEEP. So why in 10 years who should be a responsible operator and owner and steward of that facility and 10 years goes by and nothing happens. Now they are under Notice of Violation, 3 more years go by before they bring an application to Inland Wetlands with a DEEP compliant system. They withdrew that application because there was concern by the Agency about the pollutants and the pharmaceuticals and there were questions about connecting to the sewer system. They went to Planning & Zoning and recommended a sewer connection. Their implication was that the on site system was very expensive. I take that to mean they prefer the sewer system connection. Now 6 more years go by and in 2019 because the State changed the law from 5,000 to 7,500, now there's a sense of urgency on the part of the applicant. They have the cheapest possible system, the least effective system, and now there's a sense of urgency to put that in. Physics didn't change, nature didn't change. If the DEEP believed that 5,000 was the right threshold, they evaluated the 7,500 threshold, should they go to 10,000 and they said no because that's a high flow system. They didn't say that physics has changed or nature has changed, so changing to 7,500 was a politically budget motivated decision. So now the applicant is trying to put in a system that has lesser capability because of this requirement. All of the questions about nitrogen, the pharmaceuticals which have been brought up by the Agency are now being investigated in more detail by people in the State. He felt those were serious things that need to be considered and its very concerning that the applicant has let so much time go by with a failing system and has not done anything about it. To have another system further away from their facility where they are not paying attention to it, that's going to have failures in the future, and that raw sewage will go into the river again, are we going to have another 20 years or more before something gets done to address it. I would assume so, because that's the track record. From his perspective, the only thing that makes any sense is to have this facility connected to the sewer. That's the best thing for the Pattaconk Brook and the people in Chester and all the people that live down stream. Mr. Zavatore appreciated the Agency's time and consideration and trust the members will do the right thing.

Ellie Wahlberg noted back when we got the application with the prudent and feasible alternative evaluation, they did Alternate 1, 2, 3, 4. She reviewed Alternate 2 which was unacceptable to everyone at that time.

Mr. Wolfgram replied to a comment by Mr. Curtis regarding water usage. During the course of his work with Aaron Manor, they did a water usage analysis 3 time, 06, 08 and sometime later. Each time they used 2 years worth of water and it was pro-rated it to 100% occupancy of the facility and multiplied by 1 ½ times. He commented the term feasible has many connotations. One connotation to the Wetlands Commission, one to the Zoning Commission

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and one to the applicant. In 2013, the concept of going downtown was a feasible thing. In 2014, when they started working with the WPCA, they determined it was not feasible because all the financial burden was on the applicant. So that term feasibility has a lot of different connotations. As far as Aaron Manor is concerned, if they are footing the bill, it's not feasible. When we did our initial flow analysis with the addition to Aaron Manor and the flows of the DEEP system, the WPCA said they needed an expanded wet well and more grease trap activity before the pump station. The impact was the applicant would have to make changes to the pump station in the center of town that wouldn't effect going to Deep River but would affect the pumping station in the Village.

Eric Davison asked Mr. Wolfgram why they didn't come back after 2013 and how is Aaron Manor operating. Is there a fine they have been paying? Mr. Wolfgram noted when they came to the Wetlands Agency in 2012, they didn't get an answer. Mr. Davison asked why they didn't come back once they got that answer. Mr. Wolfgram noted the answer was it was not feasible because the costs were becoming very high and they had to find another alternative. Fortunately for us, the law changed. It is now less of a financial burden. Mr. Wolfgram noted it does now make it a feasible alternative to do an on site system and that was what we wanted to do. This makes it feasible to do that. The Town of Chester will not fund a big, multi-million dollar sewer project for Aaron Manor. It just won't happen.

Sally Sanders noted that doesn't answer the question. Why didn't the DEEP system show up in Wetlands? Mr. Wolfgram noted they were trying to replace the existing system in the yard where it is now. We were looking at expanding into the property next door. We were looking at on site alternatives and now we have come to one. Eric Davison asked if during that time they are operating under some kind of fine system. Wolfgram noted he did not know that but didn't believe so. They had been working with DEEP and now working with DPH and have seen some progress.

Mark Lancor noted it sometimes takes 3 to 4 months for DEEP to get back to you. Mr. Davison noted they reviewed the system, same location DEEP system, and our question was wouldn't it be better than rather crossing the wetland to connect to the sewer system. The applicant said we will find out and come back to you. Mr. Wolfgram noted one thing that happened was the addition being planned went away. We were trying to accommodate on site a reduced system size and that takes some time to do. Wolfgram then contacted Mr. Lancor to work with them to find a different solution that worked with a smaller footprint. Wolfgram further noted they reduced the size of the expansion which greatly reduced the flow to get it on site.

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Mr. Lancor reviewed the travel time in detail in response to question from Eric Davison. He indicated one thing they did not take into consideration with the 10.9 is the wetland edge and the area for dilution. He noted they could argue the 45 or 65 all day long. He noted they are starting to split hairs and he will stick by their numbers. Lancor reviewed soil air systems in detail. These systems are complicated and he wasn't in favor of it. Mr. Curtis talked about using carbon source or wood fiber but that system will have to be regenerated. It's not forever. It's new and that material eventually gets absorbed and won't have the same capacity.

Eric Davison asked Mr. Lee if there was an existing Notice of Violation on Aaron Manor for this failed system. Mr. Lee indicated he didn't know as he was relatively new to this project.

? noted there is an old one with the existing Health Department. They have talked to the new Health Department and they are basically not recognizing that. Mr. Wolfgram noted in Appendix B is a letter to the Town and correspondence from DEEP. Davison asked if this Notice of Violation was still active. Wolfgram noted according to CRAD it is not.

? noted he had a conversation with Zach at DPH and if the applicant said we are not going to do this, there will be a Notice immediately. We have had a conversation with Bob Scully and they want to see this done.

Chairman Bisacky asked Mr. Curtis if there was any more information on the wood chip system and efficacy and DPH. Curtis noted it was new to the Health Code this year and not to be commonly used. They are allowing it to be used to try it out in selective situations. No one seems to know the longevity of the wood chip layer. It's not a few years, it's in terms of decades. If at some time it lost its effectiveness, it would be a reconstruction of the system to remove the whole thing and put another layer in and put it back again. There's no good data on how long it lasts. Maybe 20, 30, 40 years but nothing specific because it hasn't been used for that long to determine that. Mr. Curtis noted it is a new thing and there's not a lot of longevity information about it. They are trying a few pilot systems around the state to try and generate that information.

Attorney Rich Carella noted the Notice of Violation dated July 9, 2010 requires that Aaron Manor to submit for Commissioner's review approval of contract plans and specifications to remediate the unpermitted discharge of subsurface disposal system. From our understanding, this Notice of Violation was withdrawn once the law changed. There has never been a closure letter issued by DEEP. That's our understanding.

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Bob Russo, Soil Scientist, CLA Engineers, noted he apologized to the Agency for his impatience earlier in the night. That was out of order. He indicated when Attorney Carella made comments about plans submitted to the Agency, he wanted it to be very clear that a map showing the wetlands on the properties owned by the owner north of the site was presented to the Agency tonight and put on the table for everyone to see. He had indicated that no wetlands were shown to the Agency on those properties, they were. I just want that to be correct for the record. In terms of that being a feasible and prudent alternative, look at that property north, Attorney Carella called it 10 acres, it was never 10 acres. The total was 8 acres and the total added on to the Aaron Manor property was about 4. I just want that to be correct for the record. In addition, his argument that there may be a feasible and prudent alternative there, I think you have substantial evidence from me, a Certified Soil Scientist, that that is not suitable for a septic system. I have done thousands and thousands of soil test pits in the State of Connecticut over the past 3 decades. This is my profession. I'm telling you as a professional, the conditions on that site are not suitable for a septic system and I believe there is substantial evidence in the record in both verbally and in my written report. I'd like to mention a couple other points, one is a question about the porosity of the soil that intervenors brought up. I'd like to address from a practical standpoint an indicator of the porosity of the soil, especially where the system is going. Those of you that were on the site walk, I think will remember a finger of wetland that was in the field that I'm indicating on Sheet SS2-B. This was at the interface between the glacial till that's in the north on the steep slopes which we know have a lower curve number and presumably more runoff would come from that site. The interface from the glacial till and the glacial outwash. This finger of wetland is fed during the spring time by water flowing in a north to south direction and the topography diverts that water into this little finger and it soaks into the ground. That is a great field indicator. The fact this wetland doesn't continue any further is a great field indicator that this glacial outwash is extremely porous material and the porosity values that Mark Lancor used are well justified. Another point he made was that in a big picture sense and I think the Agency has pointed this out, the department of public health is reviewing and has the eventual responsibility to make sure the system meets the standards. And that's the final test and it's their job to protect the quality of drinking water and protect the environment. They are the ones to finally sign off on the system as being one that is adequately protective. I'd just like to point out one more time that the actual impact to wetland is something that we've minimized, that is to say the areas this Agency regulates are going to be directly impacted, the area of impact has been minimized, the functions have been preserved and mitigated. He noted he does need the Agency to consider the point that Todd Richie was trying to make about potential impacts to the life downstream, the mollusks (sp?) that are downstream on the site.

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Mr. Russo noted when the Agency walked the site it saw a failing septic system. Aaron Manor has been pumping that out on a regular basis so it's not like they have been completely ignoring what's been going on here. That costs them a tremendous amount of money to do. Considering that downsite, 2 mullocks (sp?) were found in the existing conditions, they were found unfortunately in a condition of a failing septic system already in place. I can tell you that the new system will reduce the nitrogen, phosphorus and other pollutants going into the Pattaconk Brook. There's not going to be an adverse impact on the mullocks downstream. If anything, there's going to be an improvement in the water quality due to putting in a new water system. It's unfortunate that pollution is reaching the Pattaconk Brook, but at this point, those things have been found down stream in the existing condition. This is going to be an improvement and there's not going to be a negative impact.

Chairman Bisacky asked if anyone from the public wished to make any comments. No one offered comments.

? noted this is a Department of Health system and there has been historical data that has been done on permeability because this was considered a DEEP system at one time. That work was done at some time. In terms of how relevant it is towards a DPH system, it's not relevant.

**Motion by Sanders, second by Wahlberg, to close the public hearing on Aaron Manor.
Unanimously Approved.**

Chairman Bisacky noted the Agency has 65 days to make a decision. Sally Sanders asked if the Agency should have the decision from DPH before making its decision. Bisacky noted if DPH comes back with more questions, we'll have to cross that bridge at the time.

WCO Sweeney noted she was waiting to get the cancelled check for the application fees. ? noted they didn't receive a copy of the Jacobson proposal. Bisacky noted the applicant has Mr. Curtis' report. The applicant is responsible for 150%. Ms. Sweeney will send a copy of the proposal.

7. #19-03, Aaron Manor, S. Wig Hill Road - Septic System
Tabled.

Motion by Sanders, second by Wahlberg, to move Agenda item #8 to after #10. Unanimously Approved.

Motion made and seconded to deny #19-06 Ray Young. Unanimously Approved.

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10. #19-10 Irwin Griffith, 16 Bokum Road, Farm Related Activities

Mr. Griffith noted he met with members at the site. He graded off the road and planted after Father's Day. The road is grassing in with perennial rye. He put in 2" crushed stone for the apron. Hay bales were installed along the edge to stop runoff. He reviewed the property and the CL&P right of way and around the corner. Bisacky asked about the retaining wall. Mr. Griffith noted he graded it down and seeded, no retaining wall. Bisacky noted it looks like it's been stabilized and silt fence installed. **Motion by Wahlberg, second by Bernhart, to approve #19-10 application, Griffith. Unanimously Approved.**

8. #19-06 Ray Young, 173 W. Main Street, demolition and house construction

Motion by Sanders, second by Blair, to deny without prejudice. Unanimously Approved.

11. #19-11 Belle Star LLC, 5 West Main Street, Underground Propane Installation

Application copies were distributed. The work has been done. This work was ordered by the Fire Marshal who requested a waiver of the fee. No permit required.

12. Regulations and Map Modifications

13. Wetland Compliance Officer Report

226-8 – house is outside the regulated area. They are demolishing old house and putting new house in farther away than the old house.

Town will be submitting an application for debris removal and stabilization for six areas of issues left over from the flooding in September 2018. Ms. Sweeney has gone on 2 site reviews with NRCS and DEEP officials with the First Selectwoman and Howard Pfrommer. First Selectwoman Gister noted there were six areas in town damaged in September from flooding mostly because of debris in stream beds that has changed the way the water flows and in some places completely blocked the culverts so the water can't get through the same way. NRCS has approved all six sites. There estimate is \$220, 000 of which \$50,000 will be the Town's share. The town has 220 days to complete the work. Jacobson's office says it will be 2 years before we can get all the permits. Most of the work is cleaning out the big debris of fields of small stone. This will need Army Corps permits. An environmental study is being done next to the Herbery for endangered species. The only place not in the streambed or a debris type field is at the corner of North Main and High Street by the dam. The high bank across the street from the dam was damaged. That is to come in the future. Chairman Bisacky noted many years ago the Agency gave the Town a permit to do maintenance and it's possible this might fall under that.

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14. Correspondence – none.
15. Receipt of Applications After Posting of Agenda – none.
16. Any Other Business – Protocol for Administrative Permits – not discussed.
17. Adjournment
Motion by Sanders, second by Wahlberg, to adjourn at 10: 05 PM. Unanimously Approved.

Respectfully submitted,

A handwritten signature in cursive script that reads "Judith R. Brown". The signature is written in black ink and is positioned above the typed name.

Judith R. Brown, Recording Secretary