

**EAST LYME ZONING COMMISSION
PUBLIC HEARINGS I-IV
Thursday, SEPTEMBER 13th, 2007
MINUTES**

FILED IN EAST LYME TOWN
CLERK'S OFFICE

Sept 18 20 07 at 1:35 ^{AM}_{PM}

Esther B. Williams

EAST LYME TOWN CLERK

The East Lyme Zoning Commission held a Public Hearing on the Application of Landmark Investment Group LLC ("Landmark") for approval of a text amendment to Section 32 of the East Lyme Zoning Regulations adding a section entitled "Affordable Housing District"; Application of Landmark to rezone land of Jarvis of Cheshire, LLC and Landmark Development Group LLC from its existing zoning designation to an Affordable Housing District in connection with a proposed Affordable Housing Development to be known as "River View Heights VI a Residential Community"; Application of Landmark for approval of a Preliminary Site Plan for the construction of between 1548 and 1720 units under the newly proposed Section 32 of the Zoning Regulations and Application of Landmark for approval of a Coastal Management Site Plan on September 13, 2007 at Camp Rell, Smith Street, Niantic, CT. Chairman Nickerson opened the four continued Public Hearings and called them to order at 7:35 PM.

PRESENT: Mark Nickerson, Chairman, Rosanna Carabelas, Secretary,
Pamela Byrnes, Ed Gada, Marc Salerno, Norm Peck

ALSO PRESENT: Attorney Michael Zizka, Representing the Applicant
Glenn Russo, Principal, Landmark
Stephen McDonnell, P.E. WMC Consulting Engineers
Dennis Lowry, Soil Scientist
Brain Miller, Land Use Planner
Brian Hesketh, Traffic Engineer, FA Hesketh
Attorney Joshua Foley, Town Counsel
Attorney Paul Geraghty, Representing the Interveners
William Mulholland, Zoning Official
Robert Bulmer, Alternate
Joe Barry, Alternate
Rose Ann Hardy, Ex-Officio, Board of Selectmen

ABSENT: William Dwyer, Alternate

PANEL: Mark Nickerson, Chairman, Rosanna Carabelas, Secretary,
Pamela Byrnes, Ed Gada, Marc Salerno, Norm Peck

Pledge of Allegiance
The Pledge was observed.

Public Hearings I-IV

1. Application of Landmark Investment Group, LLC ("Landmark") for approval of a text amendment to Section 32 of the East Lyme Zoning Regulations adding a section entitled "Affordable Housing District" (AHD) – and –
2. Application of Landmark to rezone land of Jarvis of Cheshire, LLC and Landmark Development Group LLC from its existing zoning designation to an Affordable Housing District. The application is in connection with a proposed Affordable Housing Development to be known as "River View Heights VI – a Residential Community". The property to be rezoned is located immediately

southeast of River Road, Hill Road and Calkins Road, west of the Niantic River and Quarry Dock Road, and east of King Arthur Drive and is further identified in the application – and –

3. Application of Landmark for approval of a Preliminary Site Plan for the construction of between 1548 and 1720 units under the newly proposed Section 32 of the zoning regulations – and –
4. Application of Landmark for approval of a Coastal Management Site Plan.

Chairman Nickerson noted that all of the regular commission members are seated this evening and thanked the National Guard for the use of the facility and for the people who come to lock up the building after the meeting. He noted that the four hearing items are opened together however they would make a decision on them separately. He then gave the floor to Glenn Russo, applicant to give further testimony.

Glenn Russo, principal with Landmark Development and applicant said that he had a presentation to show them on the on-site septic that is being proposed for the site should municipal sewers not be available to the entire site. This presentation was of a Xenon membrane bio-reactor system installed and in operation in Oakley City, Utah. The \$1.7M facility treats up to 250,000 gpd without environmental impacts.

Mr. Russo said that this project in Utah won the engineering excellence award. The project technology that they are proposing does discharge water that could be used for irrigation although they are proposing that it be percolated into the ground. He then introduced Steve McDonnell, PE with WMC Consulting Engineers.

Steve McDonnell, PE with WMC Consulting Engineers said that he has been an engineer for over 30 years. He said that he designed the Tangier Outlets Xenon system that is in existence in Connecticut and that there are four such systems in existence in this State. Xenon is among other brand names that manufacturer membranes. He said that it is a 'belt and suspenders' type of operation and requires standby electricity. Sand fill is also used to cleanse plus a UV disinfectant. The plants in general do not fail catastrophically and those that do are usually due to storm water overload. He said that Westbrook's was installed some eight (8) years ago. He said that he has some submittals for them. According to the DEP Water Usage and Water Supply standards it is estimated that there would be 450,000 gpd with sewers and 405,000 gpd with the on-site septic. (Based on the DEP 150 gpd per bedroom standard) He said that the reason for the drop is due to the leaching system. They took a look at where the water might come from and there is a Waterford connection plus some from New London which might grant some 120,000 gpd; the rest would come from on-site wells. He submitted the following exhibits: **Exhibit 61** – Overall Site Plan Alt. Septic System, Revised thru 9/6/07 and **Exhibit 62** – Overall Site Plan Riverview Heights VI Revised thru 9/6/07.

Mr. Nickerson also entered **Exhibit 63** – Oakley City, Utah – Water Reclamation Facility video into the record.

Mr. McDonnell continued that typically the water usage would be more conservative and where it would be estimated at 300 gpd for two people they would generally see 140 gpd used. In terms of sewer flow for peak times they have estimated it at 241,000 gpd. He also noted that if they go forward with sewers that it could possibly serve the homes in the Golden Spur area as well which is estimated at about 9,000 gpd for about 50 homes. The estimated 250,000 gpd sewer need would cover this also. Sewage quantity is typically less than water usage as not all of the water goes into the sewers – such as watering, car washing and cooking although they typically design sewers for water usage. The Town is are currently contracted with New London for sewers of 1.5M gpd and the approximate current usage of the Town is 1.2M gpd. This leaves some 300,000 gpd which in their opinion is less that what they would need. He submitted a two page letter from him/WMC Engineers, dated 9/17/07 for the record. This was entered as **Exhibit 64**. He said that there are five (5) wetland crossings on the site and not six (6) as was mentioned at the last meeting. Some of them do not exactly correspond with the existing crossings however, they can do them with less than 5000 sq. ft. of impact to the wetlands and the Army Corps of Engineers allows them to do that as long as they stay below 5000 sq. ft. of wetland impact.. He said that it is their opinion that they can have a positive impact on the wetlands. Regarding the property, there would be 26.3% impervious coverage with septic and 30% impervious coverage without septic. 15% of the site has slopes greater than 15%. In terms of wetlands 5.6% of the parcel is wetlands. The overall density is 7.3 units per acre; there are seven (7) miles of

trails on the site and 39% of the site is open space. The closest unit to the river is 75' and the roadways are at least 200' from the river. He said that there was also a question about the proximity to Deerfield – there are two groups of units to the west of the property – one five pod unit is 48' from the property line and the other unit varies from 33' to 140' from the property line. There was also a lot of discussion on the soils on the site and they were asked to bring all of the information that they have. He said that 110 test pits were done throughout the site, they were done by Fuss & O'Neill and they are minimum depths to ledge and depths to the groundwater table. They also did a number of test pits in areas considered shallow and he has provided all test pit logs. These were entered into the record as **Exhibit 65** – All test pit logs dated 8/18/04. He said that in addition to the test pits that there is another soil type in the center of the site and that he hand augured the area randomly and was able to get below 24" to bedrock. He noted that sometimes the soil maps are not totally accurate. He submitted **Exhibit 66** – Letter from Mr. McDonnell of WMC to Glenn Russo dated 9/6/07.

Mr. Nickerson asked about the buildings that are close to Deerfield Village. Mr. Russo said that there are only two buildings that are located within 150' of their development and Deerfield is a multi-family rental unit which is like to like and they do not feel that they need to have the large buffer. He said that there is an area to the south that has a lot of brush and was difficult to measure.

Mr. Nickerson asked what the buffer is that he was proposing. Mr. Russo said that it is 35' and that the closest that they are is 38'. He then noted a slide representing the density on the site. The green area is about 20 units per acre and the blue area is 4.6 units per acre which is considered low density and which is located nearest to the coastal area. The overall density of the site is a little over seven units per acre and is not considered overly dense for a multifamily development.

Mr. McDonnell noted that there was a question on the accuracy of the topography – they had a surveyor go out and field verify the area. He noted the 50' cliff that was said to not be shown on their drawings – he said that it does show on their drawings and noted it and said that they are well aware of it and that they would have to work around it. He said that he wanted to submit the road grades and that he believes that none of the roads that they are proposing would exceed 10% and they have shown the grades on the roads. He submitted **Exhibit 67** – Revision of Riverview Heights VI with road grades – revised thru 9/6/07. He said that the storm water management plan is modeled almost exactly as the Darrow Pond's plan. Normally they do not want to keep the flows on site and they would want to get rid of them. All storm water will go through bio-retention basins. He submitted **Exhibit 68** – Pollution and Prevention Storm water Quality Plan by WMC dated 9/07.

Mr. Peck asked for clarification on the sewer treatment plant – he believed that they said that the plant was handling 250,000 gpd – but based on the number of units, he thinks that this would need double what that facility handled. He asked who and what would be the qualifications of the people who would monitor and maintain it.

Mr. McDonnell said that the DEP requires that the system be monitored two hours per day/five days per week. The people are all licensed and educated in this and this system would require a Level 3 operator. They have found that with these types of systems that there is not much for them to do. He said that they are proposing for two types of systems and that not all of the water goes into the sewage system.

Mr. Peck asked what a Level 3 Operator is.

Mr. McDonnell said that there is an exam system in Connecticut for the levels by the DEP of Levels 1 thru 4 and as you pass them you are allowed to operate bigger and more complex plants.

Mr. Peck asked if this would be up to the Homeowners' Association to maintain.

Mr. McDonnell said yes – and that they typically hire a Company that covers the plant as the number of hours would not be something that would require a full-time person so typically a large Company hires the operators and provides the service.

Mr. Peck said that they spoke about a municipal system and septic and asked if they are proposing a combination of the both systems.

Mr. McDonnell said that the first choice would be the conventional sewers however they could do a combination of the both systems.

Mr. Peck said that they spoke about the agreement with New London for 1.5M gpd and that we are now using 1.2M gpd leaving some 300,000 gpd. He said that in doing some math that 1500 units x 2 bedrooms comes to 3000 bedrooms and that would come to 450,000 which is more than the 300,000.

Mr. McDonnell said that is for conventional usage and the average home uses 150 gpd so the estimate is based on the sewage usage. The on-site disposal system is designed for 450,000 gpd and that amount of flow would be something that you would never see.

Mr. Peck said that the 150 gpd by the number of units would come to around 225,000 gpd which would approach the limit.

Mr. McDonnell said that Mr. Peck's point was well taken.

Ms. Byrnes said that she would like some clarification on the arrangements with New London over water and the potential arrangements with Waterford over sewage. She asked if he had said that they had reached an agreement –

Mr. McDonnell said that there are no hard agreements except for the one that this Town has with New London on sewers.

Ms. Byrnes said that they were talking about storm water run-off and that the less dense housing would be closer to the water and they would have more grass – what about the fertilizers and pesticides that they would put on their lawns and the run-off. She also asked about people planting flowers and vegetables near or around their homes.

Mr. McDonnell said that would require a management plan such as limiting or not allowing any fertilizers. Those areas are common areas that are managed by the Association and the homeowners cannot go out there and just fertilize around their homes.

Ms. Byrnes asked about the treatment during the winter on the roads for the ice.

Mr. Russo said that in the storm water plan that was presented that there are specific types of things that can be used. Under condominium ownership there are controls on the plowing and outside services and the hiring of one company to do the plowing or the lawn mowing/grounds maintenance services is typical. What you can do on the outside property is very restrictive and controlled by a set of rules that they have already submitted. There is also one person administrating this in the form of a property management company. This makes it easier to control than even a subdivision where you have everyone doing what they want and you have to go after the individual people. In a condominium situation there is a management company and the Town can deal with them and they in turn deal with the property owners and the hired contractors.

Ms. Byrnes asked what percentage of the units would be rental and how that would work with the condo and how the voting would go with the bylaws as it would change over time.

Mr. Russo said that the members can change as they do come and go. The DEP permit is issued to the Association and not to the individual people and they have submitted standards that the people are to live by in this type of living situation. If you live in a condo you just cannot go out and dig up the lawn and plant a vegetable garden. They may try but the management company will tell them about the rule and that they cannot do that. Regarding the rentals – that would be market driven and is outside of the 30% set aside for AH. Regarding the vote, each owner of a unit has a vote. If you own 300 units then you would have 300 votes. Each unit has only one vote. It is a management and ownership issue and the management company would go to the owner regarding a violation.

Mr. Salerno asked where the solids and sludge that would be generated from this system goes.

Mr. McDonnell said that all treatment plants create solids. This plant tends to be very efficient and creates about half of the typical solids. Periodically a truck comes in and pumps out the sludge and takes it to a wastewater disposal plant.

Mr. Salerno asked if he could give him an idea for a system of this size if there would be a truck coming every week or what –

Mr. McDonnell said that he could not really give him that answer but as a guesstimate that he would say that maybe it would be once a month however, he would defer to the actual system builders on it.

Mr. Salerno asked for an idea of the type of truck – say like an oil truck –

Mr. McDonnell said probably however, again he would defer to the actual system builders on it.

Mr. Salerno said that he had said that the Town is using 1.2M gpd now – and asked if he knew that there are other projects going on that also would affect the usage.

Mr. McDonnell said that it is up to 1.2M gpd and that they were aware of other projects that are in that figure.

Mr. Salerno asked why he uses two people per unit.

Mr. McDonnell said that you could have some with four people and some with one. They typically use the census data and the people per home, per Town, has been going down.

Mr. Salerno asked how they got their percentage of wetlands on the property.

Mr. McDonnell said that they were delineated before this time and that they went out and field tested and measured and used their CAD system.

Mr. Salerno asked, if, as he would guess that there will be, more than two people per unit and there is actually four people per unit, this would double the system –

Mr. Russo said that he was concerned about the line of questioning as what appears to be happening is a double standard with this line of questioning as most Towns do not like AH in their community. He said that he would demonstrate for the record what this Commission has been satisfied with in the past regarding the level of detail and the assumptions that are made and he thinks that it is unfair that when the census data says that it is two people and the engineer says that it has been going down that you try to say 'lets assume that it is twice two people so that's four people'. He said that he thinks that is an unfair line of questioning.

Mr. Salerno said to Mr. Russo that when they are on the zoning board that they have to design and rule based on worst case scenarios and that's their duty and they cannot assume a bare minimum and assume that is going to satisfy the land. He said whenever he goes forward on all applications that he has done that he always assumes worst case scenarios so then he can work down from that and its not a bias.

Mr. Russo said that you would use two sets of numbers based on the type of system and that you must follow the DEP guidelines and they have already factored in all types of requirements and the engineer has said that they have followed the DEP guidelines and those guidelines have already factored in the worst case scenario. So, for them to look for a system that is so big that they would never use the capacity is unreasonable and he said that he would demonstrate what this Commission was satisfied with from others and show that this line of questioning is different from that of others. He said that he does not think that it is fair.

Mr. Salerno said that he thought that the State said 150 average per unit per bedroom and their numbers are based on less than that.

Mr. McDonnell said yes, for sewers.

Mr. Salerno asked if he had said that he would design it differently on the coast.

Mr. McDonnell said yes, with respect to storm water to get it off as storm water quality is important everywhere.

Mr. Nickerson said that he heard the last time that agreement with Waterford with a water extension was for 20,000 gpd and now they are talking about 120,000 gpd.

Mr. Russo said that there is 50,000 gpd but there was no agreement with Lulu's and it could have been more or less. The line went by there and they would have to enter into an agreement with Waterford for it. The difference is 70,000 gpd from a Montville user who will not use it any longer so that would give the 120,000 gpd figure. He said that was his understanding from the minutes.

Mr. Nickerson said that they have been given all types of innuendos on Darrow Pond and he wanted them to know that there were at least two nights of presentation and also deliberations – so there was a lot of testimony on that property and it was not the first time that they heard about that property. He then asked if Mr. Russo could define for the record the seven (7) miles of trails and if they would be paved or what – Mr. Russo said that with seven (7) miles that they would have the ability to have a variety of surfaces and that some would be paved so that there would not be a trip hazard for older people. There would also be some with pea stone, bark mulch or some just flagged for hiking. He said that they are amenable to the type that they would like to see there however it is certainly a site plan item. Part of the seven miles would probably be for biking as well, some 4' wide.

Mr. Nickerson asked if they get to the point where they have to build the Xenon system – have they given any consideration to partnering with the Town such as for any extra water. He said that this certainly would not be anything that the Zoning Commission could do however they have had developers who have done this or offered a soccer field for Town use on their property.

Mr. Russo said that they certainly would be open to discussion with the Town to see what kind of arrangements they would be looking for.

Ms. Carabelas asked if she understood correctly that when they are talking about Water & Sewer that in the end - if this goes forward that it would certainly have to go before the Water & Sewer Commission and obtain a decision from them and the only reason why the other application passed was because it has passed through Water & Sewer. So, the decision does not stop here.

Mr. Russo said absolutely and that is what he has been saying. This is a preliminary site plan and they would have to go through a significant amount of other approvals from the Town and the State with respect to the systems and the roads.

Mr. Gada asked about the sludge and the water treatment and said that they hear that on a good day that the New London processing system is running at maximum capacity and on an awful day it does not run well at all.

Mr. Russo said that he thinks that is an unsubstantiated claim made by an opponent and that he can only say that there is an agreement with New London for 1.5M gpd. Also, what they have said all along is that if that is the issue, then they will do an on-site septic. That is their back-up and Darrow Pond is using their back up as their only system they do not have access to sewers. There are a lot of discussions on groundwater seepage in New London and there are conversations between Waterford, New London and East Lyme regarding increasing the capacity and it really is not relevant to their application that whatever that outcome is, if need be they have the technology and sufficient land mass to do their own on-site treatment and to discharge very, very clean water.

Mr. Gada asked if he was saying that there would be clean water discharge into the Niantic River.

Mr. Russo said no, they are saying that they have on-site septic that goes into a leaching system that meets the DEP standards.

(Note: a short break was taken here.)

Mr. Russo said that he had a PowerPoint presentation to address some issues brought up at the last meeting. He said that he first wanted to talk about the map of the wetlands that was signed by a soil scientist and that would be filed for the record. He said that there were some questions regarding the accuracy of their drawings and a cul-de-sac that had a supposed 90' drop that they could not find.

Ms. Byrnes said that it was a 60' drop over a 90' distance.

Mr. Russo said that could not be found either and noted that all of the cul-de-sacs are on the map. So, the massive grading that would be required is simply not an accurate statement. The map also shows the 50' cliff on the drawings. He noted also that there were some errors on the map regarding test pits and that this was being presented to counteract the misinformation on soil types and test pits that was given by the opponents at the last meeting. Some of these maps were actually the Town's maps and were mislabeled by the Town. There was also discussion about the minutes from Water & Sewer and the motion that Mr. Mingo made stating 'that the boundary was up to and any area that could be served by gravity.' Another error was made by the DEP where they concluded that there were 13.4 units per acre and based their analysis on that and

the fact is that the actual density is half that at 7.3 units per acre so the analysis that they used as a basis was incorrect.

The Town Planner, Meg Parulis also made her assumptions on 60% of the area being impervious which is simply incorrect. The opposition said that there was 32% impervious area and this certainly contradicts the Towns' assertion of 60% impervious area. He said that this contradicts the Town and that the opponent certainly would not be speaking in favor of this application so the information presented by the Town is flawed and incorrect. Page 19 of Dr. DeSanto's presentation (previously submitted) also mentions 32% impervious area.

He continued that in reading the Darrow Pond minutes that his position is that this is a preliminary site plan approval that they are seeking and they are asking for information that they did not require or ask of Darrow Pond. They held two public hearings at most commencing in March 2005 for Darrow Pond and decided the application at the time that the second public hearing was closed. He said that the preliminary permit is not a final permit and that approval would just allow them to come back with formal engineering plans and studies. He noted this information on the minutes from the Darrow Pond hearing. As a similarity he noted that there was discussion about Water & Sewer and that there appeared to be narrow roads there also. However, no demands were made on them as are being made here for this application. With Darrow Pond no septic testing was done for the preliminary site plan and the treatment system explanation is the same as that of which his engineer presented with a 21-day treatment plan. They keep hearing about storm water treatment and it was hardly discussed for Darrow Pond during their preliminary site plan presentation. He said that they are asking for the same considerations that they gave the Darrow Pond application. He noted that there was also a decline in the traffic level of service in four (4) areas for Darrow Pond and that a recommendation was made to widen Mostoway Road. This is important as the Commission approved the application without knowing what this would be like and if it would work. There also was no secondary means of egress in place at the time that this was approved. He said that he has belabored this preliminary site plan approval for Darrow Pond to show that they felt comfortable with it and it is the same type of information that they are presenting here. They are asking to be treated the same. He said that he checked the record and that there were no additional engineering sheets in the file and that he could not speak to that.

Mr. Nickerson said that the public gets into the record and sometimes things get misplaced.

Mr. Russo submitted a hard copy of this Power Point presentation dated 9/07 which was entered into the record as **Exhibit 69**.

Mr. Russo then introduced Dennis Lowry, Soil Scientist to speak.

Dennis Lowry, Natural Resource Scientist, State of CT submitted a Preliminary Natural Resource Assessment Report – Riverview Heights which was entered into the record as **Exhibit 70**. He also submitted a copy of his resume (Resume of Dennis Lowry) for the record and this was entered as **Exhibit 71**. He said that he has worked on some local projects in Waterford such as Wal-Mart, Crystal Mall/Home Depot and Waterford Commons noting the ponds and storm water management projects with a series of wetlands to treat storm water run-off. He said that he has also designed projects in North Attleboro, MA to treat run-off to Narragansett Bay. For this project they looked at the geology of the soils, habitat conditions and surface water and coastal resources. The type of geologic soils is glacial till which in New England can be similar to other properties. It is materials deposited by a glacier. This has a sandy texture to it which allows for more infiltration as opposed to compacted soils. While they do find boulders this should not be confused with shallow depth to bedrock as while there are portions that are shallow there are also more areas that have good depth as well. He said that the information that was provided is clear that this is the case; that they do have the depth. The cover is typical forest which is part of a large tract of over 700 acres. In terms of the species habitat and they are familiar with the DEP natural diversity database which lists the whippoorwill as a species of concern. However, it has not been seen there and typically they like much more open areas than what is found here. This particular area is not documented to have any rare or endangered species. He noted that the primary function of the wetlands on the site is to hold the water. The Niantic River Estuary concern have been documented and well laid out with respect to the eel grass, brook trout and Latimer Brook. If they look at the site plan, the contours of the land have been followed and best management practices have been employed with respect to the layout and grading. They have minimized the grading and earth work and with less than 5000 sq. ft. of wetland disturbance this will minimize the wetland crossings. If they look at this area as part of the 700 acre forest area and take the 260 acres here, that would leave them with well over 400 acres of forest and they would not expect to lose any wildlife species in the area as there is 400 acres of open space. He noted that they would be incorporating small scale systems to treat and

infiltrate the run-off. Some of the measures that will be used will be elaborated on going forward. He noted that the retention basins, infiltration, Vortech units, swales, rain gardens and other vegetative treatment systems treat the run-off but also allow for infiltration and recharge. With the storm water management systems monitoring and reporting and an integrated pest management system he said that there is no doubt in his mind that if this is done properly that the site can be developed and protect the natural resources.

Scott Hesketh, Licensed Traffic Engineer with F.A. Hesketh & Associates presented a Short version of Hesketh Traffic Engineers Traffic Report dated 9/6/07 which was entered into the record as **Exhibit 72**. He also presented a Long version of Hesketh Traffic Engineers Traffic Report dated 9/6/07 which was entered into the record as **Exhibit 73**. He said that they were asked to do a traffic study. They conducted an electronic study on Route 1 on August 13, 2007 and August 27, 2007 immediately west of River Road. The traffic volume on Route 1 was calculated to be 10,400 vehicles on a daily basis. The morning peak hour (8 AM) was calculated at 676 trips and the afternoon peak hour (4 PM) was calculated at 1218 trips. He said the information also utilized a previous Fuss & O'Neill study and they projected the traffic out for ten years growth. Figure 3 shows the projections for the project and table two shows that there would be 800 trips per AM peak hour and 936 trips per PM peak hour for the subject project. He said that this is similar to a report that was presented by Wilbur Smith for the Town. He said that the combined traffic volumes are found in Figure 6 of the report. Based on traffic information and statistics he said that with a traffic signal at River Road that the level of service would be a C during the AM peak hour and a B during the PM peak hour. Improvements would also need to be done to the right bound lane. He presented a plan entitled Preliminary Roadway Plan for Landmark Development – PRW-1 dated 9/6/07 which was entered into the record as **Exhibit 74**. He explained that River Road and Calkins Road would be widened for two lane egress. With improvements and signalization in place, this would improve the travel. He said that they also looked at the queuing and the two lights which are 740' apart. The westbound would be 306' maximum and eastbound would be 341' maximum so both would be accommodated within the intersection. The levels of service would be Level C during the AM peak hours and Level B during the PM peak hour, under the signalization.

Mr. Nickerson asked how many cars that would equal.

Mr. Hesketh said that the DOT uses 25' per vehicle so one would be about 13 cars and the other about 14 vehicles. He continued that they looked at the site distances to River Road and that there is approximately 301' and that would not be an issue as they would not be making that area worse as there would be a signal. They could put a sign up on Route 1 noting that a signal is in operation. In looking at the geometries of River Road and Hill Road, he submitted for the record a plan that was entered as **Exhibit 75 – Preliminary Roadway Plan for Landmark Development Corp. – PRW-2**, dated 9/6/07. He noted that the ROW on Calkins Road is currently 18-22' of pavement and that the yellow indicates the proposed pavement widths. Hill Road would get a minimum of 24' of pavement width and allow for some of those houses to have a driveway. Route 1, Hill Road and River Road have enough area to provide the pavement widths. It is their opinion that the local roadway network could accommodate this development. Should this go forward, application would be made to the State DOT and they would be reviewing detailed plans.

Mr. Nickerson asked if Calkins Road would be getting one-way designation.

Mr. Hesketh said that it perhaps is something that should be done and would be looked at in a future more detailed plan.

Mr. Nickerson asked about the green color on the plan and if it was the area that was being taken away. Mr. Hesketh said no, it is the area between the ROW and existing pavement area.

Mr. Nickerson said that he does not think that people would appreciate sitting through some three to four cycles of lights in the morning.

Mr. Hesketh said that he does not believe that they would be sitting through that many light cycles.

Mr. Nickerson said that he sits through that many light cycles now at the Flanders Road intersection of Route 1 so he knows what it is like to sit through this. He said that they have to address the Calkins Road issue.

Mr. Hesketh said that other things would be looked at with more detailed plans.

Mr. Russo said that they have no problem with making Calkins Road a one-way road as a condition of approval.

Ms. Byrnes asked about the ROW for the end of Calkins Road that was brought up at the last meeting. Michael Zizka, Attorney representing the applicant said that the lack of a deed is not indicative of anything as there are a number of ways that a public road can be accepted such as 'by dedication and acceptance' and this often happens in connection with subdivisions. In fact most roads in Connecticut, particularly the older roads are not owned in deed by the Town but were dedicated either by implied or formal dedication of the ROW of the road to the Town and it either becomes accepted by a formal acceptance or just by usage. For example, that part of Calkins Road that is unimproved, at least a portion of it has been maintained by the Town in the past and nobody has apparently complained about it so if nothing else there is an implied acceptance/dedication and at the very least if it was not considered to be a public road it certainly is a right of way that Mr. Russo, Landmark Development, has a right to use to get to his property and also has the right to improve. So, the .007 of a mile of road on the State Town Aid Road system does not say that there are no rights by the developer to it. He said that he wanted to present something written by an Attorney representing them - Attorney Bob Fuller who said that 'while land use agencies can regulate use of land they cannot decide title, ownership or rights to real property.' He said that this is not the Commission to be deciding the issue of title, it is something that would have to be decided only by the Court but they submit for the record that they do have the sufficient rights to that portion of Calkins Road to access their property and that they can improve it. He submitted this for the record. It was entered as Exhibit 76 - Limitations on Agency Authority - Excerpt from Attorney Fuller's Book.

Attorney Foley, Town Counsel noted for the record that Attorney Fuller represents the Town.

Ms. Carabelas asked Mr. Hesketh about page 4 of the report and the ROW and if the Town records were used and the figure correct.

Mr. Hesketh said that is the information that they received from the Town records.

Mr. Salerno asked about the queue on River Road.

Mr. Hesketh said that it is about 294' so about 12 cars.

Mr. Salerno asked how long it would take 12 cars to move through the intersection.

Mr. Hesketh said that the first car would take about 3-4 seconds and the rest about 2-3 seconds. He said that this would equate to about 24 seconds of timing during the AM peak hour. The analysis indicates that the approach would operate at .86 of capacity so he believes that they could get all of the traffic out in that one cycle.

Mr. Salerno asked if in his model he assumes a uniform distribution.

Mr. Hesketh said that it assumes that during the peak 15 minutes that it is fairly uniform and that the 15 minute periods are uniform so it operates fairly uniform across the 15 minute period.

Mr. Nickerson said that in going through that neighborhood with no connecting road that it does not appear to be safe to be in the road - he asked if it would be a safe road system.

Mr. Hesketh said that it would operate in a safe manner.

Mr. Nickerson said that with 1700 units that he thinks that there would be many more trips such as the soccer family that has to go out some seven times a day.

Mr. Hesketh said that by comparison that he made one trip from his home today.

Mr. Nickerson said that he is saying that it would balance out.

Brian Miller, Professional Land Use Planner, Eastern Land Use Analysis, Cheshire, CT submitted his report dated 9/07 which was entered into the record as Exhibit 77. He said that he was engaged to assess the comments on the buffers and also the appropriateness of this location for development. He said that the whole purpose of buffers is to delineate between non-similar properties such as residential and commercial. Regarding the 30' buffer from Deerfield - these are similar land uses and he would represent that there is no need for a huge buffer here and that it was not a consideration when Deerfield was developed many years ago. Also, they talk about accessibility and they just heard the specifics of how it would be accessed. However, under the Smart Growth principles, they have a property here that is right off of Route 1 and near I-

95 so this site is ideal. You would want to locate things so there is less travel and so that it is near amenities and services. This would also provide a much larger customer base to the Flanders area and boost their business. Also, when you develop near commercial areas there tends to be fewer trips. Smart Growth is locating development where the services and existing development already is. He said that he would suggest that this site is consistent with this.

(Note: a brief break was taken here)

Attorney Zizka said that he was not talking now in his role as a lawyer but in his former life as a geologist. He said that he has a BS and MS in Geology and spent five years as a Geologist in environmental studies and as an environmental analyst with the DEP and has substantial training in soil analysis. He said that he would like to submit some things for the record. He submitted **Exhibit 78** – Copies of Selected Materials of the Soil Survey of New London for the record and the Commissioners. He said that he wanted to point out that on Page 5, most importantly in paragraph three, it talks about the general map units '....because of its' small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, stoniness, drainage and other characteristics that affect management.' He said that much was made of the decision of the court in the first appeal but most of those decisions were made on the basis of the soil characteristics and because the premise that they have come to them with is under the preliminary site plan and the reason why they focus on Darrow Pond is because it was under the preliminary site plan analysis they do not do the detailed nitty gritty, they just get a general sense of the major concerns. The courts have also realized that in an AH appeal that it makes sense that the developers do not want to spend hundreds of thousands of dollars on detailed plans that may never be able to be used and that have to be revised and revised and revised. The point for Page 5 is that these soil surveys were never intended to be used to say that you could never do anything on this property because it is too difficult. He said that the next thing that he has is a couple of pages on the soil types around Oswegatchie Hills. He noted that north of the highway where it is zoned R-40 that there is found the same type of soils as the Hills. There are also copies of the soil types for the site and the definitions of them for their use and the record. He noted that they do not preclude development but rather that they just need to be more careful. The last thing is regarding the wildlife habitat and the soil survey for the area states that with respect to wildlife that the area provides very poor conditions for wildlife. He said that the point here is that it is not correct to use the soil survey to say that it is no good for development but that the area is an important wildlife habitat. He said that he does not think that the soil survey should be used to say that it is bad for development but good for wildlife as the soil survey does not bear that out. He said that in terms of sanitary facilities that he has a whole list of the soils for the area and that the vast majority of the soils in the soil county survey area are listed as being severe for absorption but that does not mean that they cannot be used as that would apply to most of the land in the area, but rather that they would have to take special care in addressing the situation. He said that another thing that he wanted to talk about was water and that there was no reason to suspect that water would not be available on this site. He said that as Mr. Russo has said – that they have to show that they can get water or else this project does not go forward. So there is really no reason for this Commission to worry about that. However, bedrock wells are common and there is no reason to suspect that they cannot get water from them. If they think of just 7" of run-off getting into the ground, the recharge would be (in CT) 190,000 gpa (gallons per acre) which means that they would have some 38 million gallons on site per year. He also stated for the record that he has the most recent current status (2006) for Affordable Housing (AH) procedure list from the State and the Town of East Lyme is listed as having 4.21% Affordable Housing (AH). This was submitted and entered into the record as **Exhibit 79**. He said that he also wanted to note for the record that they have heard that community septic systems are rarely used in Connecticut and that he does not know where the judge got that from as community septic systems are very, very common in Connecticut. He said that they are very common and that State Law talks about them in Chapter 138 of the Regional Plan of Conservation and Development and actually talks about funding being made available for multi-family housing community septic systems. They are common and again they would have to be approved by the DEP so that there would be no risk to public health and safety. He submitted a portion of the 2005-2010 Plan of Conservation and Development for Connecticut which was entered into the record as **Exhibit 80**. He noted that this also confirms the concept that Mr. Miller was talking about and the need for Smart Growth.

Mr. Nickerson called upon Attorney Geraghty.

Attorney Geraghty, representing the interveners said that he wanted to express his muted outrage of the presentation of the applicant tonight and that he thinks that this should have been given at the first presentation so the interveners could review it. He said that he would take the position that there are procedural errors from the applicant and that it is essentially a sandbag in the eleventh hour. That being said he said that he had some questions for some of the presenters. He then asked Mr. Miller when he was retained.

Mr. Miller said that he did not have the exact date, but that it was sometime in August.

Mr. Geraghty asked if it was after the application was filed.

Attorney Foley said that he believed that the application was filed on April 12, 2007.

Mr. Geraghty asked Mr. Miller if he was aware that Exit 75 and Exit 76 including the entrance to Oil Mill Road will be eliminated with the completion of Route 11.

Mr. Miller said that he did not include that.

Mr. Geraghty said to Mr. Miller that he had asked him if he was aware of it.

Mr. Miller said no.

Mr. Geraghty asked Mr. Hesketh the Traffic Engineer for the applicant when he was retained.

Mr. Hesketh said approximately August 15, 2007.

Mr. Geraghty said that he referred to Level service C and asked what that means to a lay person.

Mr. Hesketh said that Level service C in layman's terms is a very acceptable level of service. He said that one of the biggest disservices that highway (could not hear on tape) and traffic engineers did was to equate level of services to letter grades that children would bring home from school but level service C is very acceptable as a designer; one would design for a level of service D during peak hours.

Mr. Geraghty asked if the way that the scale operates is that A is worse than C.

Mr. Hesketh said that A would be the best and F would be the worst.

Mr. Geraghty asked the total number of vehicle trips that were calculated over 24 hours.

Mr. Hesketh said that on a daily basis there would be a total of 10,348 – a trip being either an entering or an exiting move.

(Note: a lot of this conversation is not audible.)

Mr. Geraghty said that he would put on his different hat as former counsel for the Montville Water Pollution Control Authority and former Attorney for the Town of Waterford. Regarding the water issue, there is no pipeline in the ground. The only thing that is there is an agreement that the Town would provide 50,000 gpd if the project was built. With regard to Montville it is not that a customer stopped the need for water but that they found another resource. What is there is additional capacity available from New London but that does not mean that it is readily accessible to this site. He said that he would submit that it is a long involved process and that he was involved in discussions with the Mohegan's and did not survive long enough as an attorney for the Town to see that happen. He then asked Mr. Lowry when he was retained by the applicant.

Mr. Lowry said that their company was originally retained in 2002 and more recently in July of 2007.

Mr. Geraghty asked Mr. Lowry if he did any different work for this application.

Mr. Lowry asked different than what?

Mr. Geraghty said: than the work that he did in 2002.

Mr. Lowry said no, basically the same, a review of the existing conditions and mitigations measures and perhaps more detail of the mitigation measures.

Mr. Geraghty asked Mr. Lowry if those mitigation measures were sort of generic mitigation measures – correct.

Mr. Lowry said that was correct – discussions involved the nature of the site and what would be appropriate to achieve the desired conditions in terms of protection of water resources.

Mr. Geraghty said that there were no specific designs for the protection of water resources related to the development itself.

Mr. Lowry said that there have been measures placed on the plan showing the types of locations that would be mitigated and considered. He said that this would not be in terms of a detailed design. (difficult to hear)

Mr. Geraghty said that he had some testimony on retention on site, he said that he assumes and to correct him if he is wrong, that is taking roof run-off and perhaps parking run-off and directing back into the ground so that it does not leave the site – is that correct.

Mr. Lowry said that the term that he used is 'recharge' and not retention as retention pertains to holding something in a state and they are not really talking about retention. Recharge is more practical for run-off.

Mr. Geraghty said they believe that it might be practical to have recharge on this site – is that correct.
Mr. Lowry said for a certain (cannot make out tape)
Mr. Geraghty asked if when he made that conclusion that he took into account the sewer/septic system.
Mr. Lowry said that they would still be able to recharge on-site with a septic system.
Mr. Geraghty asked if he performed a specific calculation or if this is more of a generic presentation.
Mr. Lowry said that it is more of a generic and the testimony has said that.

Mr. Geraghty said that they subpoenaed Mr. McDonnell to bring all of the test pit data with him this evening. He submitted the subpoena which was entered into the record as **Exhibit 81** – subpoena to WMC Engineering to submit the test pit series.

Mr. McDonnell said that he has submitted this for the record previously this evening. (Exhibit 65)
(Note: the tape is difficult to make out as people were not speaking directly into the microphones)

Mr. Geraghty asked Mr. McDonnell if he has to design the system to have the capacity and leaching area based on the site and the gallons.

Mr. McDonnell said in a sense.

Mr. Geraghty asked if based on that how much acreage area would be needed.

Mr. McDonnell said that there are a lot of variables and it is based on hydraulics and the system would have to be designed and he could not pick a size now.

Mr. Geraghty asked Mr. McDonnell to look at Exhibit 61 and to tell him what the existing grade would be from the top portion to the bottom (of an area Mr. Geraghty pointed out)

Mr. McDonnell said that it would be approximately 10%.

Mr. Geraghty asked what the gradient would be when it was constructed.

Mr. McDonnell said that again it is dependent upon many factors and typically the groundwater gradient is 3% to 5% to 7% and they have not designed the system so he could not answer that.

Mr. Geraghty asked if he ever designed a system where he had a 15% grade.

Mr. McDonnell said that he has designed systems that are a 15% grade but the finished grade was not 15%.

Mr. Geraghty asked if the system that was designed for the mall is substantially less than the use that would be here.

Mr. McDonnell said that it depends as it could be greater, it depends upon the mall and the traffic.

Mr. Geraghty asked how many trips per month would be required for a large tanker to take the sludge.

Mr. McDonnell said that he did not know.

Mr. Geraghty asked with regards to the perc test if he (could not hear) used(?) previous information from Fuss & O'Neill.

Mr. McDonnell said no.

Mr. Geraghty asked if he provided the video to Mr. Russo.

Mr. McDonnell said no.

Mr. Geraghty asked if it was his idea.

Mr. McDonnell said no.

Mr. Geraghty asked what the minimum size of the tank is.

Mr. McDonnell said that he is not a designer (could not hear).

Mr. Geraghty asked if it would be the size of a mini van or a football field.

Mr. McDonnell said that he was not sure of that.

Mr. Geraghty asked so – if he was not sure if it was feasible.

Mr. McDonnell said that he could guarantee that it is feasible – it is just a matter of cost.

Mr. Geraghty said that another comment was brought up regarding the effluent at the New London system. The issue was if raw sewage was being discharged and it was stated that when it operates within its' designed capacity it functions properly and releases treated wastes into the Thames River but when it functions over capacity it releases waste as raw sewage. It is not sludge but waste that is not properly treated. He said that he has a letter from Mr. Dunn to submit - this was entered as **Exhibit 82** – Letter from Michael Dunn to Mark Nickerson dated 9/13/07. He said that this letter acknowledges that there is a cliff on the property and that they can see that it is closer to the roadway and 70' from the river. He also said that some of the wetlands are where some roads would cross and if they look at the detail they would see that this is so unreliable that they cannot approve it. He said that they contend that this area should not be developed at all and that when they look at the environmental issues he thinks that they should deny the application. He said that he wanted to introduce two court cases involving Mr. Russo on the issue of

the credibility of Mr. Russo where one judge said that he could not find him credible. He said that very rarely would a judge say that on the record. The two cases are Landmark vs. TMK Associates and ?? (could not hear). He also submitted the Landmark decision by Judge Quinn. These were entered into the record as **Exhibit 83**.

Donald Gerwick, PE, LS with Gerwick Meeen, 1020 Hartford Turnpike, Waterford, CT said that he had three things to submit for the record. He submitted the 1989 Fuss & O'Neill Report dated 1989 which was entered into the record as **Exhibit 84**. The next item that he submitted was the Fuss & O'Neill Subsurface Site Plan dated 6/1/89 which was entered into the record as **Exhibit 85** and lastly a letter from Mr. Gerwick dated 9/13/07 to the Zoning Commission with five attachments (A-E citing health and safety issues) which was entered into the record as **Exhibit 86**. (Copy of Exhibit 86 attached at end of minutes) He stated that each application is unique and that he submits that this site has a lot of issues of concern that were not put into the record. He said that the applicant has not submitted an accurate detailed topography, no wetland delineation certified by a Soil Scientist, no certification by any Surveyor on the record plans indicating that the wetlands depicted were field located by a survey crew, no confirmation from the Town that the entire project area is eligible for municipal sewers and little or no real world data in the area of the 'alternate on-site septic area'. He further said that there are no grades on the record plans for any roads. What they did submit is that a significant number of the test holes are missing from the 'S' series test holes. He calls this the 'devil in the details' and feels that this type of lack of detail is troubling. He noted comparisons from the Fuss & O'Neill report and the test data that was omitted. He asserted that they do need greater detail than what they have presented to date and that they could review his report so that the public would have a chance to speak.

Mr. Nickerson asked the Commission if they had any questions for Mr. Geraghty or Mr. Gerwick –
Hearing none –

Mr. Nickerson called for comments from the public on things that they have not heard before –

Cheryl Karg, 20 Hill Road said that she lives near Calkins Road and that the Town only maintains the paved area and that she and her family maintain the grass area. She said that when trees fell there and they called the Town to come and remove them that the Town told them that they would not pick them up so they had to do it themselves.

Mr. Nickerson called upon the applicant for their closing statement.

Mr. Salerno said that he had a question for Mr. Russo. He asked him how he came up with the 1720 units as they have had applicants come before them before and their figures were based on affordability and the break even point.

Mr. Russo said that he looked at the land and the number of units that the property could support along with the characteristics of the land, the constraints map and a host of things.

Attorney Zizka said that in closing that he has always been struck that in the many times that he has come here that they always start by pledging allegiance to the flag and he has thought about that in terms of how much they have changed as it was not long ago in the 50's and 60's that they looked at the people who developed their land as a good thing. It is only recently, as of late that we have heard how people who want to develop their land are greedy or that they are doing it out of greed. After the war they looked at people who provided housing as doing a good thing. Mr. Russo is doing the same thing, he is doing what the constitution and the flag allows. He said that he realizes that if they had their druthers that they would like to have the land all left as open space but they have to realize that there has to be a balance and that there is a mechanism to do that if they want that land left and that is that you buy it. He said that they are not suggesting that the Town do that as the opportunity has been there for years for the Town to do that, it has just been that the Town has not wanted to pay the market value of the property and they are not complaining about that. What Mr. Russo wants to do now is to provide among other things AH for a lot of people. Because Mr. Russo wants to do something, he should not be chastised or called greedy, there should be some understanding of what the constitution allows and the flag allows. When they talk about the number of units, he said that after 30 years that it is too late to talk about preserving the property and by saying no, no, no, so that the property can be protected by denying him his rights, is wrong. They have three acre zoning for this property and if it were developed that way it would be clear cut. They should work to do something together. There has been criticism regarding presenting information upfront. They have been here many

times before and the Commission has said no many times before so it would be foolish to spend hundreds of thousands of dollars here when they are looking to get to Step II. He said that it is acceptable to work this way for an Affordable Housing application. He said that he hates to say that people in glass houses should not throw stones but he recalls asking Mr. Geraghty way back in August for a copy of Mr. Gerwicks' report and he did not get it – he got it on September 6, 2007 so they should not complain about us withholding information and then withhold information from us. He asked that they not criticize them when they are doing the same thing. (Note: the tape ran out here) Regarding the application he said that they need not fear as if the soils and other site considerations cannot support such development of this site, then it will not get to Step II as it has to go before the DEP and a host of other agencies. He thanked them for their time and commended them and asked that they allow them to get to Step II.

Mr. Nickerson called for any other questions from the Commissioners –
Hearing none –

Mr. Nickerson called for a motion to close these public hearings.

****MOTION (1)**

Mr. Salerno moved that all four (4) Public Hearings be closed.

Ms. Carabelas seconded the motion.

Vote: 6 – 0 – 0. Motion passed.

Mr. Nickerson closed these four (4) public hearings at the stroke of midnight.

Respectfully submitted,

Karen Zmitruk,
Recording Secretary

Exhibit 86

Sept. 13, 2007

East Lyme Zoning Commission
Town Hall
Niantic, CT 06357

RE: Riverview Heights VI

Dear Commissioners;

In response to additional review of the record file and comments of the applicant and/or his representatives, Gerwick Mereen LLC on the behalf of The Friends of The Oswegatchie Hills Nature Preserve, Inc. would like to include into the record the comments of following attachments;

- Attach. A Health & Safety Issues
- Attach. B Applicant submitted Information of Soil Analysis
- Attach. C Comparison of Applicants Submitted Data and Omitted Data
- Attach. D Estimated Natural Capacity of Designated Alternative On-Site Septic Area
- Attach. E Capacity of Natural Soils Depend on Several Elements

On behalf of The Friends of The Oswegatchie Hills Nature Preserve, Inc., I thank you for your consideration of the above.

Donald W. Gerwick, P.E., L.S.

Attachment - Zoning 9/13/07

ATTACHMENT A

Health & Safety Issues

What we believe the applicant has not submitted that is relevant to any determination of this application, with regards to health and safety;

HEALTH

- A. Accurate detailed topography (Almost all Towns and other permitting entities require at least a 2 foot contour interval; 10 foot contours supplied based on USGS quadrangle maps)
- B. No Wetland delineation certified by a Soil Scientist. Without such on certification the record plans there is no way to confirm completeness or accuracy of the wetlands depicted.
- C. No Certification by any Surveyor on the record plans, indicating that the wetlands depicted were field located by a survey crew. Without such certification there is again no way to confirm accuracy.
- D. No confirmation from the Town that the entire project area is eligible for municipal sewers.
- E. No confirmation, from any entity, that they will have access to adequate water supply for consumption and fire fighting purposes.
- F. Little to no real world data in the area of the “alternate on-site septic area”. Information submitted is incomplete and not representative of overall results, as well as not being in the area noted on the record plans.

SAFETY

- G. No grades on the record plans for any roads. These are needed to assure that roads have acceptable maximum grades, to insure appropriate access for emergency vehicles (fire, police, medical; especially important due to large areas of steep slopes greater than 25%, with some areas of the site exceeding 60% slopes.)
- H. Proof that they have clear and uncontested title to a strip of land that separates their property from the limits of what the Town of East Lyme considers an accepted Town Road.

ATTACHMENT B

Applicant Submitted Information on Soil Analysis (Fig. 2-2A of power point)

- A. This figure depicts limited test hole data on a Soil Analysis Map indicated to be prepared by WMC Consulting.
- B. This figure shows test hole data, that while close to the proposed alternate on site septic system area, is not within the area.
- C. A number of test holes identified as “B” series of test holes appear to be missing, as there are significant gaps in the numbering system.
- D. A significant number of test holes are missing from the “S” series test holes.

ATTACHMENT C

Comparison of Applicants Data and Omitted Data

("S" series only as those are the only test hole data that we have complete copies of).

- A. The West Area on the soil Analysis Plan delineates 8 test holes, only 2 of which are less than 60" in depth with the shallowest being 48". **This partial data set would lead one to believe that 75% of the test holes had depths greater than 72" (or 60").**

- B. The B series appears to be incomplete and we do not have copies of that test data and their locations.

- C. The S series is clearly incomplete. 1 test hole of the S series is included. In fact an additional 23 test holes were conducted and recorded previously in the same area. As we have copies of this data and their locations we have used them for comparison.

- D. Of the 23 additional test holes not included (24 with 7S that was included) only 5 of the 23 have data that reveals no ledge shallower than 60" and in fact 13 have depth 48" or less.

- E. **Of the S series, 54% of all the test holes in the area have depths to ledge of 48" or LESS.**

- F. **Of the S series, 79% have depths that include ledge at depths of less than 60". Therefore only 21% of the S series had depths greater than 60" compared to the presented data that indicated 75%.**

Note: As it would be my belief that the "B" series is incomplete, and I do not have access to what I must believe is the entire data set, I have not included the "B" series in the percentiles of E. and F.

ATTACHMENT D

Estimated Natural Capacity of Designated Alternative On-Site Septic Area

- A. A Connecticut D.E.P. review in 2004 of a nearby, on-site area (with similar soils), concluded that the natural capacity of a 510 foot length of system area had a capacity of 2,644 gallons per day (gpd) which would equate to approximately 8.8, 2 bedroom residential units. (Bureau of Water Management, Review Comments, dated Sept. 30, 2004 previously submitted as part of the record)
- B. The approximate length available in the designated area is roughly 1,800 feet, total (although I believe that it is likely that a more detailed analysis would find that less is actually useable).
- C. Based on a total of 1,800 feet of length, using the DEP review numbers as a guide, one might reasonably expect that the area designated would have about 3.53 times the capacity of the northern area reviewed by DEP in 2004. In this scenario, the area would yield a natural capacity of about 9,333 gpd.
- D. **This approximates 31.1, 2 bedroom units, not 1,500 units, of available natural capacity.** I believe that this apparent discrepancy casts grave doubt on the assumption that this area is suitable for such intense development.

In Summary

If the applicant wants to assert, that the designated area is adequate for such intense development, he should be compelled to conduct thorough and complete testing of this area, witnessed by the DEP or the Ledge Light Health District. A detailed analysis should be performed that would include all relevant constraints, including depth to ledge, depth to seasonal high ground water, and permeability of the soils, along with accurate locations of test data and detailed topography at no less than 2 foot contour intervals.

ATTACHMENT E

Capacity of Natural Soils Depend on Several Elements

1. Depth of flow area – May be Restricted by depth to ledge or seasonal high water tables.
2. Length of Flow area – May be restricted by contours (systems need to be level), natural obstructions such as ledge and wetlands or man made obstructions such as structures.
3. Natural flow rate of soils, know as the permeability of soils.
4. Slope of land or restrictive elements such as ledge or high water.
5. Systems are normally controlled by worst case, not averages. Example if many of the test holes were to be noted as having shallow depth to water those would “control” the design, they are not generally averaged with intermittent better or deeper test holes.

Applicant Submitted very limited data (depth of ledge only) in areas other than where the alternate on-site system is proposed.

Without definitive information published data such as surficial geology maps and Soil Conservation Service data, are routinely used by many engineers for preliminary assessments.