



Town of Merrimack, New Hampshire

Community Development Department

603 424-3531

6 Baboosic Lake Road

Fax 603 424-1408

Town Hall - Lower level - East Wing

www.merrimacknh.gov

Planning - Zoning - Economic Development - Conservation

MEMORANDUM

Date: June 1, 2016
To: Robert Best, Chairman, & Members, Planning Board
From: Timothy J. Thompson, AICP, Community Development Director
Subject: **Brett W. Vaughn for the Brett W. Vaughn Revocable Trust (owner) and Allison Jenkins (owner)** – Continued conceptual discussion of a 17-lot cluster subdivision on 2 lots in the R-1 (Residential) District located at 123 Wilson Hill Road and South Grater Road. Tax Map 4A, Lot 023 and Tax Map 5A, Lot 001.

Background:

The subject properties comprise approximately 74.5 acres located at 123 Wilson Hill Road and South Grater Road in the R-1 (Residential) District. The applicant was before the Board most recently in April 2016 (see attached minutes and previous memos).

The applicant is back before the board currently for another conceptual discussion, this time on what appears to be a conventional 12 lot subdivision (there are still notes on the plan referencing cluster requirements, but the plan itself appears to be a conventional layout). According to the applicant's narrative, the applicant is still evaluating different subdivision options for the property.

Since the meeting in April, the applicant provided escrow for a peer review of the previously submitted Hydrogeological Report. The Town contracted with Emery and Garrett Groundwater, Inc (EGGI) who performed a peer review of the analysis (attached). The applicant plans to discuss this review at the June 7 meeting as well.

Discussion Topics:

In addition to the topic of water supply, the Board may wish to discuss the following items:

- Any potential waiver requests;
- Cul-de-sac length (concept plan indicates approximately 1,563 feet, which is longer than the required 1,200 feet from Section 4.12(c) of the Subdivision Regulations);
- Lot frontages for lots 5, 6, & 7 appear to be less than the required 250 feet required by the Zoning Ordinance for conventional lots;
- Grading, drainage, roadway slopes, sight distances, etc. (which at this stage would be too early for Staff to fully review);
- Any additional comments received from the Merrimack Conservation Commission, and any other municipal departments as applicable.

Staff reminds the Board that it cannot take final action on any waiver requests deemed necessary until a formal application is submitted to the Board at a future meeting. The applicant should be made aware that all final map/lot numbers for the proposed lots along with

the name of the road will need to be approved by the Fire Department and Assessing Department.

Ec: Brett Vaughn, Owner
Chad Branon, Engineer/Applicant
Building Department Staff
Kyle Fox, Director of Public Works
John Manuele, Fire Marshal
Loren Martin, Assessing Department

Cc: Planning Board File
Correspondence

Emery & Garrett Groundwater Investigations, LLC

***56 Main Street • P.O. Box 1578
Meredith, New Hampshire 03253
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May 4, 2016

Ms. Jillian Harris
Planning & Zoning Administrator
Merrimack Community Development Department
6 Baboosic Lake Road
Merrimack, NH 03054

**RE: Peer Review of Hydrogeologic Report for the Brett W. Vaughn Revocable Trust
Subdivision**

Dear Ms. Harris,

Emery & Garrett Groundwater Investigations, LLC (EGGI) was asked to perform a peer review of the Hydrogeologic Report submitted by HydroSource Associates, Inc. (herein referred to as HydroSource) and to evaluate testimony presented before the Merrimack Planning Board as it relates to the development of individual wells at the proposed Brett W. Vaughn Revocable Trust Subdivision in Merrimack, New Hampshire.

Specifically, EGGI has been asked by the Merrimack Planning Board to 1) provide an opinion as to whether there are sufficient groundwater resources present to develop individual wells to meet the onsite water demands of the proposed Subdivision, and 2) whether the development of individual wells at the Subdivision will adversely impact existing neighboring wells. Several abutters to the project have testified before the Board that they have had substantial difficulties obtaining the desired yield from their onsite wells, and are concerned that additional wells drilled for the Subdivision will compound their water problems.

As part of its evaluation, EGGI reviewed the following documents:

- Report entitled, "Desktop Assessment of Geology and Hydrogeology for the Brett Vaughn Subdivision, Merrimack, New Hampshire," prepared by HydroSource Associates, Inc. (undated).
- The Pre-Submission Narrative Back-up, prepared by Fieldstone Land Consultants, PLLC, dated December 28, 2015.
- Video Disk of the April 5, 2016 Planning Board Meeting (EGGI viewed the portion of the disk pertaining to Item #3 on the Agenda).
- Planning Board Draft Minutes for the April 5, 2016 Meeting.
- Planning Board Approved Minutes for the December 1, 2015 Meeting.

Review of the HydroSource Hydrogeologic Report

Overall, the hydrogeologic report prepared by HydroSource entitled, “Desktop Assessment of Geology and Hydrogeology for the Brett Vaughn Subdivision, Merrimack, New Hampshire,” is a reasonable assessment of the site geology performed in accordance with accepted hydrogeologic practices. *It is our understanding that there was no fieldwork component to the work performed by HydroSource and that the work was limited to a review of published data and available GIS datasets only.* To our knowledge, no wells have been drilled or tested as part of the Subdivision development process.

EGGI generally agrees with some of the HydroSource conclusions, including:

- The site will be served by bedrock wells; overburden deposits are not likely to be of sufficient depth and quality to yield sufficient groundwater for the development of overburden wells at the proposed Subdivision.
- The topographic setting, together with a lack of intersecting lineaments and mapped bedrock structures, suggests that the site is not underlain by extensively fractured bedrock.
- The simple “table top” recharge calculations that suggest sufficient water could be available for the Subdivision. (However, these recharge calculations are very generalized and may not be fully representative of what actually occurs on the property¹.)

Statistical reviews of existing well data, such as the one performed by HydroSource, are often difficult due to the limited amount of well data available proximal to the site. Not all of the wells drilled in the area have well data present in the NHDES GIS dataset. HydroSource reportedly gathered well data from an area within approximately one mile of the site to obtain a sample of 38 wells drilled in bedrock. The average yield of those wells, as cited by HydroSource, is 11.5 gpm. The numerical average (mean) is skewed higher by the inclusion of three wells that yielded 45-75 gpm. In our view, another more meaningful way to look at the data (that minimizes the influence of anonymously high values) is to consider the median well yields for the area viewed. The median well yield is only five gpm². HydroSource stated, “approximately 80% of the surrounding wells yield at least two gpm.” EGGI notes that actually eight of the 38 wells (approximately 20%) yielded less than one gpm, and of those, three wells produced no water. *Furthermore, the existing NHDES GIS Well Dataset shows two wells that yield less than 1 gpm are on, or adjacent to, the proposed Subdivision (Figure 1).*

Based on the data presented in the HydroSource report and a review of the topographic setting and existing NHDES Well Data, EGGI would conclude that this will be a challenging site to successfully develop individual wells. Specifically, EGGI would expect wells on several, if

¹ EGGI performed a cursory mass-balance calculation to evaluate the validity of the HydroSource recharge assessment. Using more conservative assumptions (i.e., recharge occurring only within the developed property and six inches of annual drought recharge) EGGI found that more water could enter the ground than would be withdrawn by normal domestic use of the proposed lots. This evaluation does not, however, assess whether each individual well can actually capture the overall available recharge. This assessment also does not indicate whether the drilling of wells will be successful or that individual well yields will be sustainable.

² Half of the wells in the dataset yielded more than 5 gpm and half of the wells yielded less than 5 gpm.

not the majority, of lots to be very deep (some ranging from 500- to more than 1,000-foot deep) in order to obtain a sufficient well yield. Some wells drilled at the Subdivision are likely not going to produce sufficient water at all for domestic purposes and may need to be hydrofracked or additional wells may need to be drilled on a single lot to generate a sufficient “collective” yield.

Review of Testimony at Planning Board Meetings

EGGI reviewed the video and minutes of the April 5, 2016 Planning Board Meeting that pertained to the question of developing wells at the proposed Subdivision. Mr. Claude Cormier, President and CEO of HydroSource testified about the results of the hydrogeologic study. Mr. Cormier essentially described the findings of the hydrostudy report and stated that the proposed Subdivision would use a small portion of the available recharge. When asked about potential impacts to abutting well users, Mr. Cormier described the chances of the Subdivision impacting water levels in the neighboring wells as “very low” because the interfering wells would have to 1) hit the same fracture; and 2) there is not enough time for the cone of depression from a domestic well to propagate out to neighboring wells.

At the April 5, 2016 and December 1, 2015 Planning Board Hearings, several abutting residents testified about problems involving their wells. Using the minutes from the meeting, EGGI compiled a summary of the abutters’ testimonies (Figure 1):

- 103 Wilson Hill Road – Resident reportedly ran out of water four to five times over the summer.
- 111 Wilson Hill Road – Resident has a 240-foot-deep well that reportedly yields 2.5 gpm, but runs out of water.
- 117 Wilson Hill Road – Multiple wells were drilled on this lot to obtain a low yield. One well is 600+ feet deep.
- 119 Wilson Hill Road – Three wells were drilled on this lot and hydrofracking was performed twice (with limited success). The current well is 1,460’ deep and yields 0.75 gpm.
- 121 Wilson Hill Road – There is a 400-foot-deep well that yields 0.75 gpm and is reportedly dry two months out of the year.

Discussion

In order for a bedrock fracture (or fracture network) to provide an adequate water supply for a domestic well, it has to have three key attributes: 1) sufficient recharge; 2) adequate water storage; and 3) the ability to transmit groundwater at a sufficient rate from the local area to supply the well. If a drilled well encounters a fracture that lacks any one (or more) of these components, the well will not reliably supply enough water to meet the long-term demands of a domestic well. In the case of a domestic well, sufficient recharge can be defined as the amount of water pumped from the well on an annual basis³ that is replenished from the infiltration of precipitation. Because the crystalline bedrock is essentially impermeable, the fracture network

³ Recharge does not usually occur uniformly each season or uniformly over any subdivision property (i.e., there is typically less recharge in summer) so it is often quantified on an annual basis.

has to have enough open void space to store enough of the water that infiltrates into the ground over the course of the year to meet the annual water demand of the household. In addition, a fracture(s) intercepted by a domestic well must have the capability to transmit water stored in the bedrock aquifer at a rate that refills the well in a timely manner. Hydrogeologists routinely evaluate the recharge, storage, and transmissivity characteristics of wells and aquifers.

The testimony of the abutting residents greatly expands the amount of well data available to help evaluate the hydrogeologic conditions of the underlying bedrock aquifers beyond what the NHDES Existing Well GIS dataset provided alone. The complaints and level of difficulty obtaining sufficient water outlined by the residents suggests that portions of the underlying bedrock aquifer in the vicinity of the proposed Subdivision lacks one or more of the key attributes necessary for the development of successful individual wells.

Although HydroSource and EGGI agree that it appears that adequate groundwater recharge may be available at this site (measured at a gross level) to meet the demand of the proposed Subdivision, EGGI needs to qualify this by stating that not all of the groundwater recharge may reach the underlying bedrock aquifers, and in fact, may remain “perched” in shallow overburden till deposits⁴ or run off the site. Furthermore, it is likely that most recharge will not be evenly distributed to all portions of the bedrock aquifer throughout the entirety of the project site. In other words, the full amount of calculated recharge is not likely to be available to all of the wells drilled on the Subdivision property.

At least three of the five residents who discussed issues regarding local groundwater availability described running out of water at some time during the year. While over pumping will dewater any well, the prevalence of complaints of running out of water raises the question of whether the bedrock fractures in this area lack the overall storage capacity to meet the water demands of the residents. If the fractures can't store enough water during the spring (when recharge commonly is abundant) water levels in the aquifer will be progressively lowered as pumping continues through the summer months when recharge rates are diminished, potentially leading to wells going dry on a seasonal basis.

Two of the residents described that multiple wells were needed on their property to obtain even low yields. This suggests that, in localized areas, the bedrock fractures are either absent or are not capable of delivering water at a sufficient rate to make a domestic well viable. To be fair, there are wells that reportedly yield as much as 30 gpm in the region, so there are water-bearing fractures in the vicinity that have greater transmissive properties. However, based upon the overall well data, these high yields would be the exception and are not to be expected at this project site.

EGGI would specifically like to counter Mr. Cormier's testimony that, in order for two bedrock wells to interfere they must hit the same fracture and, therefore, the possibility of interference is low since it is unlikely two wells would hit the same fracture. While it is true that two wells that encounter the same fracture will have the maximum interference, it is also true that wells intercepting different fractures can also be hydraulically interconnected and potentially

⁴ In fact, one resident testified that they get more water in their basement than they do in their well.

interfere with one another. The probability of two wells hitting interconnected fractures is much higher than hitting the exact same fracture.

In most fractured bedrock aquifer settings, Mr. Cormier's testimony regarding there being insufficient time (between short-duration pumping events) for the cone of depression to propagate out and adversely impact adjoining domestic wells is generally correct. However, the evidence presented to EGGI suggests that the fractured bedrock aquifers in the vicinity of the proposed Subdivision do not have the typical water-bearing qualities seen elsewhere in the regional area. The cone(s) of depression generated from domestic well pumping events in fracture networks with low transmissivity and limited storage will draw water deeper and further away from the well. If a fracture network lacks the ability to transmit water from the point of recharge to the well bore and has minimal storage capacity, repeated pumping events will progressively lower the water table in the vicinity of the well. Numerous low-yielding wells tapping such a low-storage fracture network can eventually lower the water table in the immediate surrounding area, potentially interfering with one another over time.

Conclusions and Recommendations

The hydrogeologic data reviewed by EGGI suggests that development of individual wells at the proposed Subdivision will be difficult, but not necessarily impossible. EGGI anticipates that wells drilled on individual lots will tend to be deep and low-yielding. Some lots may require multiple wells and/or hydrofracking to develop sufficient yield to support domestic demands for water.

Testimony from multiple abutters regarding difficulty with well yields, together with the preponderance of the hydrogeologic data evaluated for this study, raises serious questions as to the ability of the underlying bedrock to store and transmit groundwater from the point of recharge to individual well bores on a consistent, year-round basis. While it is clear some viable individual wells can be drilled in the area, several lots in the neighborhood appear to have wells that are incapable of meeting the full desired residential demand.

Without the collection of additional hydrogeologic data, EGGI cannot rule out the possibility that the addition of 11 to 17 new houses⁵ at the proposed Brett W. Vaughn Revocable Trust Subdivision will further exacerbate the present groundwater yield problems described by residents abutting the proposed development.

In light of the existing reports of groundwater problems, EGGI recommends that the Planning Board request from the Applicant a proposal for hydrogeologic testing to demonstrate to the Board's satisfaction that the development of additional houses at the proposed Subdivision will not adversely impact existing groundwater users. EGGI is very familiar with other jurisdictions on the U.S. East Coast that have requirements in place for such hydrogeologic testing prior to the approval of new Subdivisions – so models for this type of work currently exist. At a minimum, a proposal for hydrogeologic testing should involve drilling wells on 35-50% of the proposed lots and performing pumping tests on the new wells while monitoring water levels in a representative number of abutters' wells. A properly-designed and executed

⁵ Two different lot layouts were presented to the Planning Board that involved 11 and 17 lots each.

hydrogeologic study can obtain the data necessary to allow the Board to make an informed decision about the potential for this proposed Subdivision to impact the water availability of future lot owners on site and those abutters who depend upon these wells for water supply. It is, therefore, EGGI's professional opinion that enough evidence exists in this particular case to warrant such additional study before approving or rejecting this proposed development on the basis of water availability.

I hope this information is helpful. Please call if you have any questions regarding our review and findings.

Sincerely,

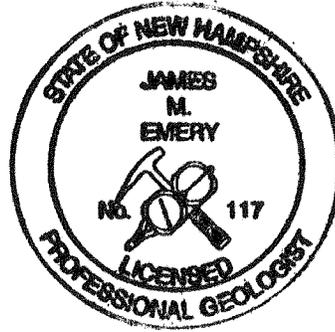


Jeffrey M. Marts, P.G.
Geologist



James M. Emery, P.G.
President/CEO

Enclosure:
Figure 1





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MERRIMACK PLANNING BOARD APPROVED MINUTES TUESDAY, APRIL 5, 2016

Planning Board members present: Alastair Millns, Tom Mahon (arrived 7:07 p.m.), Michael Redding (arrived 7:03 p.m.), Desirea Falt, and Alternates Nelson Disco and Jeff Sebring.

Planning Board members absent: Robert Best, Lynn Christensen and Vincent Russo.

Staff present: Planning and Zoning Administrator Jillian Harris and Recording Secretary Zina Jordan.

1. Call to Order

Alastair Millns called the meeting to order at 7:00 p.m. and designated Jeff Sebring and Nelson Disco to sit for Robert Best and Vincent Russo, respectively.

2. Planning & Zoning Administrator's Report

Regional Impact Determinations: College Bound Movers proposes to convert existing industrial warehouse space to self-storage space and construct a 4,800 square foot addition in front of Unit 1 of 14 Continental Boulevard.

David Labrecque proposes to permit a change of use to allow for seasonal landscape business uses to take place at 12 Wright Avenue.

The Board voted 4-0-0 to determine that College Bound Movers and the Labrecque/Greenwood site plans are not of regional impact, on a motion made by Nelson Disco and seconded by Desirea Falt.

3. Brett W. Vaughn for the Brett W. Vaughn Revocable Trust (owner) and Allison Jenkins (owner) - Continued conceptual discussion of a 17-lot cluster subdivision on 2 lots in the R-1 (Residential) District located at 123 Wilson Hill Road and South Grater Road. Tax Map 4A, Lot 023 and Tax Map 5A, Lot 001. This item is continued from the January 19, 2016, February 2, 2016, and March 1, 2016 meetings.

Michael Redding and Tom Mahon arrived at 7:03 and 7:07 p.m., respectively.

Attorney Greg Michael, Bernstein Shur, noted that, at its December 1, 2015, meeting, the Planning Board was concerned about water and wells. No wells have been dug. It is speculation that digging a new one would affect the neighbors. It was previously proposed to build 11 conforming lots of a minimum 2+ acres each on 60 acres. The Merrimack Conservation Commission (MCC) liked the idea of a cluster plan with the stipulations that there is sufficient water available for all lots without impact to abutters,

soils are adequate and would allow for each parcel to have a normally permitted septic system and that storm water can be properly managed on site. It would need a Zoning Board of Adjustment (ZBA) variance because there is no town water or sewer and a cluster is not permitted in that zoning area. A cluster's open space would abut Town conservation land/Grater Woods and create significant open space. The other possibility is to build an 11-lot traditional subdivision.

Chad Branon, Civil Engineer, Fieldstone Land Consultants, PLLC, said that 1½-2-acre cluster lots would closely meet lot size requirements, except that their geometry would differ from a traditional subdivision because of the frontage. Because the lot sizes would be large, they could support wells and septic systems.

Alastair Millns wanted an expert to say that digging wells and runoff would not impact abutters/neighbors.

Chad Branon is confident that he will have a detailed storm water management plan for the town consultants that would show he can mitigate impacts and obtain a NH Department of Environmental Services (DES) Alteration of Terrain Permit.

Chad Branon is asking the Planning Board whether it prefers an 11-lot traditional or a 17-lot cluster subdivision.

Claude Cormier, President/CEO, Hydrosorce Associates, Inc., explained his methodology for doing a hydro desktop assessment of geology and hydrology for an individual well on each lot. There are not large quantities of water because the permeability of the soil is too low. Bedrock wells would be needed, as in most of New England. It is the luck of the draw whether intercepted fractures meet the drilling. The available daily groundwater withdrawal is estimated at 6,000-8,000 gallons per day, which is a small percentage of the 150,000 gallons per day estimated to be available within the Aquifer in this Watershed. There is enough water for either the traditional or cluster option. Only a small amount of water out of what is in the aquifer at large is needed.

Jeff Sebring asked why the abutters are having problems if so much water is available. Claude Cormier said it depends on the whether the well intercepts fractures that could produce sufficient water. There is a broad spectrum of geology. This development (and the abutters) may have to drill more than one well or dig deeper wells to find a fracture that would produce water.

Tom Mahon asked who is responsible for drilling the initial well. Attorney Michael said there have been no discussions about that yet. Noting previous situations, Tom Mahon asked whether planning boards in other municipalities require that a well produce water before granting a building permit. Attorney Michael did not know. It is too speculative and beyond the Board's purview. The applicant must have water to get a Certificate of Occupancy (CO). One eventually finds water; it is just a matter of how much digging one must do.

Michael Redding said that fewer lots mean fewer wells and that larger lots offer more opportunities to find the right location, especially in the frontage area. At some point,

the cost of drilling is too much for the developer. Over time, supply may decrease from the minimum State standard because of usage. The Board must protect the community by creating “buyer beware”. Michael Redding preferred a traditional subdivision because there is more potential to locate a well. Nelson Disco and Alastair Millns agreed with Michael Redding that it is preferable to have fewer lots with fewer wells.

Claude Cormier explained how to judge whether there are more fractures in bedrock. He has submitted the Hydrosorce report, which the Board reviewed at the last meeting on this agenda item. Nelson Disco asked whether recharge water was included in the calculations. Claude Cormier said it was not. The amount of recharge in the bedrock system far outpaces anything on present or future wells. The only way one well can impact another is if the two wells intercept a fracture at the same point. If there is not enough water in an abutter’s well, it is not because of a well nearby, but because it did not intersect a fracture that produces enough water.

Alastair Millns asked about fracking, which Claude Cormier said sometimes works and sometimes does not, depending on the nature of the bedrock system. It is best to create a conduit to a fracture system nearby that already works well. Fracking will not work in solid rock that hits only tiny micro-fractures.

Nelson Disco wanted town consultants Emery & Garrett to review the Hydrosorce report and verify it. Attorney Michael stipulated that Emery & Garrett be given a copy of the tapes of this meeting in order to hear Claude Cormier’s testimony. The Board agreed.

Tom Mahon said part of the issue is whether future homeowners would do everything to protect the water available or let nature take its course. It is a matter of responsibility. This is one of the few remaining opportunities for the town to manage resources. The Board is being asked to add lots in an area where some homeowners have water problems.

Tom Mahon asked what minimum flow for a home the State recommends, which Claude Cormier said depends on depth and amount of storage. The standard is in a table in his report. 80% of the neighbors’ wells within one mile produce 2+ gallons a minute, which meets the State requirement of 1½-2 gallons a minute. Michael Redding stated that, because residential water is not used constantly, storage allows it to refill, even if the supply of water dwindles. A fracture may fill in over time, which may be causing the abutters’ problems.

Michael Redding said this is a preliminary phase; it is too soon to advocate for a traditional or cluster development. Desirea Falt likes a cluster because it has more protected area, but the lots have less room to find water. Attorney Michael disputed Nelson Disco’s assertion that the developed area is almost the same on both plans with the only difference being the number of lots. He offered to make open space on the cluster subdivision plan. The applicant has not decided whether to drill wells before creating the lots/homes, which Jeff Sebring suggested.

Public comment

Tony Cappuccio, 111 Wilson Hill Road, asked for the Board's consensus, which Attorney Michael opined was larger lots rather than a cluster. Tony Cappuccio noted that the requirement for low density residential is 2+ acres vs. 1 acre proposed for a cluster and that runoff can also be from lawn treatment/fertilizers and insecticides. Given the problem area, he suggested looking at the reasonable extreme, as is done with a 10-year flood, rather than looking at the mean and to look at existing wells for statistical purposes. For a cluster, he suggested requiring the applicant to provide an internal water system. If there is a negative impact on abutters, let them use that water system. Although he liked the idea, Alastair Millns said the problem with a pooled resource system is deciding who pays for and maintains it. Desirea Falt asked Tony Cappuccio how his well works. He said it is so-so. It is 240' deep and rated 2½ gallons, but it does not produce that much. The pump cuts out when there is a lack of water, so he must time his usage.

Jim Wood, 119 Wilson Hill Road, referred to a report done for him by Frederick Chormann, State Geologist & Director, NH Geological Survey, stating that a one-mile radius is too generous because of sand and the Souhegan River. Jim Wood drilled three wells; the latest is 1,460' deep. That proves it is not true that one can just drill and find water. One can drill only where the truck can reach. The hill is all rock. Frederick Chormann is also concerned about any chemicals in the water, even pills flushed down a toilet. The runoff would affect the Wood well. There is a 100' drop behind his property. Future neighbors must use only what breaks down naturally.

Michael Redding said only the subdivision presentation would demonstrate whether a traditional development is the lesser of two evils or a substantial sustainable solution.

Alastair Millns instructed staff to make the Hydrosource report available by electronic copy on the Town website and wanted the Emery & Garrett report to be available before the time of subdivision review, when abutters would be re-notified. Jillian Harris stated that typically Town consultant reviews are made after there is a formal submission, Attorney Michael preferred to do it earlier, although he must confer with his client. Tom Mahon suggested that the Board consult the October 19, 2015, MCC minutes to learn why they made their suggestions and preferences.

Jeff Sebring asked if the applicant ever discussed bringing water here with the Merrimack Village District (MVD). Tom Mahon said MVD does so only when asked by people on their proposed route. It is too expensive to bring water to 11-17 properties on rock, although Jeff Sebring opined that it might make a development cheaper to build.

Alastair Millns will send MVD a note asking if it wants to comment.

- 4. Shawn Farrell and Fieldstone Land Consultants, PLLC. (applicants) and Brett W. Vaughn Revocable Trust** - Review for reconsideration of a waiver for driveway slope part of the previous conditionally approved 3-lot subdivision. The parcel is located at 120, 122, & 124 Wilson Hill Road in the R-1 (Residential), and Aquifer Conservation Districts, and Wellhead Protection area. Tax Map 4A, Lot 004.



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MEMORANDUM

Date: January 12, 2016
To: Robert Best, Chairman, & Members, Planning Board
From: Jillian M. Harris, AICP, Planning & Zoning Administrator
Subject: **Brett W. Vaughn for the Brett W. Vaughn Revocable Trust (owner) and Allison Jenkins (owner)** – Conceptual discussion of a 17-lot cluster subdivision on 2 lots in the R-1 (Residential) District located at 123 Wilson Hill Road and South Grater Road. Tax Map 4A, Lot 023 and Tax Map 5A, Lot 001.

Background:

The subject properties comprise approximately 74.5 acres located at 123 Wilson Hill Road and South Grater Road in the R-1 (Residential) District. The applicant was before the Board in May 2015 for a preliminary discussion on a conventional 12-lot subdivision and again in December 2015 for a preliminary discussion on a 17-lot cluster subdivision (see attached).

The applicant is back before the board currently for another conceptual discussion on the 17-lot Cluster Subdivision presented in December 2015 for this same parcel. According to the applicant's narrative, in an attempt to satisfy the questions raised at the December meeting they have consulted professionals in the industry and would like to discuss a proposal with the Board which they believe addresses the two primary questions raised. Their understanding is that there are two main questions the Board is looking for them to address regarding water supply, the first being adequate water supply and the second being potential impacts to abutting properties.

This proposal will require Zoning Board of Adjustment relief for a Cluster Subdivision in the R-1 (Residential, by map) District (Section 3.08.2) and a Cluster Subdivision serviced by private septic and wells (Section 3.08.8).

The owner's existing house appears to remain on a 5.09 acre parcel and the proposed lots are surrounded by other residential property. The applicant included in their December submission "A Desktop Assessment of Geology and Hydrogeology for the Brett Vaughn Subdivision," produced by Hydrosources Associates, Inc. (see attached). The cluster subdivision concept plan is unchanged since the last submission and there were no new materials included with the submission, excluding the narrative dated December 28, 2015.

Discussion Topics:

In addition to the topic of water supply, the Board may wish to ask the applicant about any waiver requests they are considering. If the cul-de-sac is longer than 1,200 feet, a waiver would be necessary from Section 4.12(c) of the Subdivision Regulations. Other items for the Board to consider are grading, sloping, sight distances, landscaped perimeter buffer, etc. which at this stage would be too early for Staff to fully review. In addition, the Merrimack Conservation Commission and the Fire and Assessing Departments have provided preliminary comments for the Board to consider at this stage (see attached). Staff reminds the Board that it cannot take final action on any

waiver requests deemed necessary until a formal application is submitted to the Board at a future meeting. The applicant should be made aware that all final map/lot numbers for the proposed lots along with the name of the cul-de-sac will need to be approved by the Fire Department and Assessing Department.

Ec: Brett Vaughn, Owner
Chad Branon, Engineer/Applicant
Carol Miner and Fred Kelley, Building Department
Kyle Fox, Deputy Director of Public Works/Town Engineer
John Manuele, Captain, Merrimack Fire Department
Loren Martin, Assessing Department

Cc: Planning Board File
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MEMORANDUM

Date: November 24, 2015

To: Robert Best, Chairman, & Members, Planning Board

From: Jillian M. Harris, AICP, Planning & Zoning Administrator

Subject: **Chad E. Branon, P.E. of Fieldstone Land Consultants, PLLC. for Brett W. Vaughn Revocable Trust (applicant/owner)** – Pre-submission hearing for a conceptual subdivision of 17 residential lots located at 123 Wilson Hill Road in the R-1 (Residential) District. Tax Map 4A, Lot 023 & Tax Map 5A, Lot 001.

Background:

The subject properties comprise approximately 74.5 acres located at 123 Wilson Hill Road and South Grater Road in the R-1 (Residential) District. The applicant was before the Board in May 2015 for a preliminary discussion on a conventional 12-lot subdivision on Tax Map 4A, Lot 023 (see attached). The applicant is back before the board currently for a pre-submission discussion on a 17-lot Cluster Subdivision for this same parcel and the proposal now includes the addition of Tax Map 5A, Lot 001 as a portion of the proposed open space.

This proposal will require Zoning Board of Adjustment relief for a Cluster Subdivision in the R-1 (Residential, by map) District (Section 3.08.2) and a Cluster Subdivision serviced by private septic and wells (Section 3.08.8).

The owner's existing house appears to remain on a 5.09 acre parcel and the proposed lots are surrounded by other residential property. The applicant has included in their submission "A Desktop Assessment of Geology and Hydrogeology for the Brett Vaughn Subdivision," produced by Hydrosorce Associates, Inc. (see attached). This submission is in response to the Board's request for a hydrogeology study at the last pre-submission hearing for the conventional 12-lot subdivision on this parcel. The assessment summarizes that "overall, the information suggests that there is good likelihood the hydrogeologic conditions of the area could support individual bedrock well sources serving the residences that are planned for the development."

Discussion Topics:

The Board may wish to ask the applicant about any waiver requests they are considering. If the cul-de-sac is longer than 1,200 feet, a waiver would be necessary from Section 4.12(c) of the Subdivision Regulations. Other items for the Board to consider are grading, sloping, sight distances, landscaped perimeter buffer, etc. which at this stage would be too early for Staff to fully review. In addition, the Merrimack Conservation Commission has provided preliminary comments for the Board to consider at this stage (see attached). Staff reminds the Board that it cannot take final action on any waiver requests deemed necessary until a formal application is submitted to the Board at a future meeting.

The applicant should be made aware that all final map/lot numbers for the proposed lots along with the name of the cul-de-sac will need to be approved by the Fire Department and Assessing Department.

Ec: Brett Vaughn, Owner
Chad Branon, Engineer/Applicant
Carol Miner and Fred Kelley, Building Department
Kyle Fox, Deputy Director of Public Works/Town Engineer
John Manuele, Captain, Merrimack Fire Department
Loren Martin, Assessing Department

Cc: Planning Board File
Correspondence



Town of Merrimack, New Hampshire

Community Development Department
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Town Hall - Lower level - East Wing

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Planning - Zoning - Economic Development - Conservation

MEMORANDUM

Date: April 30, 2015
To: Robert Best, Chairman, & Members, Planning Board
From: Donna F. Pohli, Assistant Planner
Subject: **Fieldstone Land Consultants, PLLC (applicant) and Brett W. Vaughn Rev. Trust (owner)** – Pre-submission hearing for a conceptual subdivision plan for 12 residential lots located at 123 Wilson Hill Road in the R-1 (Residential) District. Tax Map 4A, Lot 023.

Background:

The subject property is an approximately 59.1 acre parcel located at 123 Wilson Hill Road in the R-1 (Residential) District. The proposed 12-lot subdivision would be serviced by on-site wells and subsurface septic systems. The owner's existing house appears to remain on a 27.8 acre parcel and the proposed lots are surrounded by other residential property. The applicant is before the Board for a pre-submission meeting to review the proposal and gain the Board's feedback.

The proposed lots would need to meet the required R-1 (Residential) lot and yard regulations per Section 3.02 of the Zoning Ordinance. Each lot must have 100,000 s.f. of contiguous upland area (some are labeled as 2.9 acres +/-), 250 ft. in frontage, and 300 ft. in depth. The proposed lot was approved for a lot line adjustment in June 2014, therefore resulting in the current 59.1 acre lot. The Town Council (at the recommendation of the Planning Board) approved the applicant's request to use a portion of South Grater Road as a driveway on January 9th, 2014.

Discussion Topics:

The Board may wish to ask the applicant about any waiver requests they are considering. If the cul-de-sac is longer than 1,200 feet, a waiver would be necessary from Section 4.12(c) of the Subdivision Regulations. Other items for the applicant to especially consider are grading, sloping, sight distances, etc. which at this stage would be too early for Staff to fully review. Staff reminds the Board that it cannot take final action on any waiver requests deemed necessary until a formal application is submitted to the Board at a future meeting.

The applicant should be made aware that all final map/lot numbers for the proposed lots along with the name of the cul-de-sac will need to be approved by the Fire Department and Assessing Department.

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