

MEMORANDUM

To: Sherborn Zoning Board of Appeals (ZBA)
From: Sherborn Board of Health (BOH)
Subject: Notes Regarding BOH Decisions Pertaining to The Fields at Sherborn and Additional Recommendations to the ZBA
Date: March 7, 2016

This memorandum is being provided to give an overview of the types of issues considered by the BOH in its decision-making process. At its March 2, 2016 meeting, the Board voted to authorize the Chair to prepare this memorandum as an aid to the ZBA. The information presented herein was raised at various BOH meetings at which The Fields at Sherborn project was formally discussed and also via numerous submittals made to the BOH records. A myriad of other details from the discussions have not been captured on paper plus these notes are somewhat rough, in the interest of conveying the information quickly.

The project experienced many changes over the course of the BOH meetings. Most changes appeared to be made in response to:

- information that was developing over the time period; and
- concerns raised at the meetings.

The Applicant had requested that the BOH evaluate the septic system on its own, “bifurcated” from an integrated project and site evaluation that looks at public health issues for overall well and septic performance. Standard procedure for the BOH is to review well and septic plans together for previously undeveloped sites with proposed new construction, such as this project. Due to the Comprehensive Permit aspect of this project, the BOH made evaluations according to Title 5 regulations for septic systems, BOH regulations for septic systems, BOH regulations for water supply, and BOH regulations for environmental health impact review for projects other than a single family dwelling on a single lot. Of particular note about this process is the following:

- water supply was evaluated from the standpoint of the acceptability of installing the wells and testing for baseline quantity and quality only;
- environmental health review compliance was evaluated in terms of whether the required activities were performed, not on the outcome of the reviews;
- specific findings of environmental health related reviews were incorporated into septic impact evaluations (as discussed below); and
- the Environmental Health Permit was considered to be superseded by the Comprehensive Permit, if granted.

Of particular importance to the BOH’s deliberations was the acknowledgement in 310 CMR 15 that specific site/project conditions can warrant additional analyses, that achieving the purpose or intent of

the regulation is appropriate, and that local authorities may formulate more stringent regulations to suit their local needs:

15.003: Coordination with Local Approving Authorities

(1) In general, full compliance with the provisions of 310 CMR 15.000 is presumed by the Department to be protective of the public health, safety, welfare and the environment. Specific site or design conditions, however, may require that additional criteria be met in order to achieve the purpose or intent of 310 CMR 15.000.

(3) Local approving authorities may enact more stringent regulations to protect public health, safety, welfare and the environment only in accordance with M.G.L. c. 111, § 31.

According to MassDEP, there are fewer than 20 towns in Massachusetts that have both on-site water supplies and septic systems throughout town. In Sherborn, there are only a few homes and one senior housing development along Kendall Avenue at the northern border of town that are served by an off-site, municipal water supply.

Furthermore, MassDEP acknowledges that systems sized for something other than a single family dwelling are likely to warrant extra evaluation beyond standard Title 5 requirements:

For design flows of 2000 gpd or greater, the local approving authority or DEP may require a site-specific mass balance analysis for the area of impact. The mass balance analysis must demonstrate that the groundwater quality standard of 10 mg/l total nitrogen and 10 mg/l nitrate nitrogen will be met at the downgradient credit land property boundary, or at the nearest downgradient sensitive receptor. (From Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading, per 310 CMR 15.218.)

According to the Applicant, “Title 5 does not make a distinction between design criteria for private well or public water towns.” It is the BOH’s understanding that this is because it is up to local Boards of Health to promulgate regulations appropriate to their unique circumstances. Among Massachusetts towns that have on-site private wells and septic systems, Sherborn is not alone in terms of having regulatory provisions that are more stringent than Title 5.

It is the BOH’s view that the various analyses presented to it are all in some agreement that nitrogen compound levels will significantly exceed drinking water standards in the overburden groundwater downgradient of the soil adsorption systems (SAS), between the SAS and extending to the side of, into, or beyond the “impacted wetlands”. There was some variation in the prediction of the location of the septic effluent plume. The assessment of impacts to wells and property lines is complicated by evidence of bedrock fractures’ alignment; both the alignment and the variability in predicted Area of Impact (AOI) patterns; and unknown exact bedrock fracture patterns. However, the BOH views the different analyses as representing the range of conditions that may be realized on the site; no one outcome has been selected.

If new information becomes available about the proposed project, the BOH is willing to take it into consideration pursuant to revisiting its decisions.

Multiple evaluations (CLAWE, BETA, Nobis, Horsley) show that significant levels of nitrate (the wastewater quality parameter used to represent septic effluent discharge impacts) are anticipated in areas of the overburden on the site:

- It is known that there will be significant nitrogen loadings (i.e., through a gross mass balance) based on the design volume of discharge, rainfall recharge rates, and standard nitrate/nitrogen content in such wastewater.
- The site's sandy soils do not promote retention or adherence of nitrogen compounds; thus it travels in the groundwater.
- Dynamics of flow from the septic system leaching fields are *somewhat* agreed upon when the same input data, as supplied by the Applicant, are used.
- There are a number of assumptions used in the analyses. Slight variations may result in changes to the path of travel and other distribution.
- The analyses have been similar for the 2 soil absorption system (SAS) designs.
- A significantly different approach to the analysis (dispersion analysis) still shows problematic impacts to the overburden aquifer. (Dispersion analysis is a relative analysis within itself; the numerical predictions cannot be readily compared to AOIs.)

Evidence of connection between the bedrock fractures, from which wells in town draw their drinking water supply, to overburden soils includes:

- yields of wells in area indicate that fractures are not small nor constrained;
- fracture analysis shows that the preponderance of bedrock fractures are oriented vertically, increasing the likelihood of significant connection with overburden groundwaters;
- fracture and photolineament analyses show a dominant east/west alignment but that other directions are present too.

When future wells are pumping, they might accentuate the draw of groundwater from the septic AOI (plume). Flow in bedrock is already typically much faster than flow in overburden.

Other observations include:

- distances are relatively small on this site;;
- the discharge AOI is clearly present (as evidenced by the various scenarios provided by the different hydrogeologists);
- the AOIs have levels of contaminants at 2-3.5 times the drinking water standard of 10 mg/l for nitrates (Note that routine consumption of water at the limit is not advised and the CDC recommends that infants drink no more than 5 mg/l. Treatment to remove nitrates (and which may or may not include removal of other contaminants of concern) is expensive and requires monitoring to ensure proper performance. Nitrate treatment methods include distillation, ion exchange, and reverse osmosis.);
- AOI maps look precise but are estimates;

- wells are in close proximity to the AOIs, especially of the most southeastern wells, but of the wells in general when the overburden-to-bedrock fracture connections are considered;
- much attention has been given to the wells located on-site since it is believed that at least one will likely be impacted and the number of people potentially impacted is large;
- however, there is particular concern for the neighbor's well to the west of the SASs, given
 - indications of groundwater flow in that direction by limited information (and not contradicted by other data from that property) and/or
 - by the oval protective radius recently developed by Horsley that took into account estimated bedrock fracture characteristics.

Contingency Plans

Another key area of BOH concern is what the contingency plans might be in the event that a problem with drinking water quality is identified at a later date, especially given that:

- there are no municipal services upon which to rely;
- alternatives to the current proposal appear costly;
- maintenance, operation, repair, and emergency funds seem insufficient at currently proposed levels.

The current plan is to meter water use and assess fees accordingly.

- If fee is only for water usage and comparable to rates of Eastern Massachusetts municipalities (see http://www.boston.com/yourtown/specials/water/massachusetts_water_usage_map/), the average water usage fees range from about \$200 to \$1300 per year and might be a function of whether landscape watering is included.
- The applicant has mentioned using Natick water rates, which average \$316 per year, yielding an annual water/wastewater management system budget of approximately \$10,000.
- According to a Tighe & Bond Inc. water-and-sewer-rate survey for 2010 of Massachusetts cities and towns, the average Massachusetts household paid \$638 per year for sewer service. If similar fees are also charged for wastewater, there will be another \$20,000 per year in water and wastewater funds.

Costs for a wastewater treatment facility if the Title 5 septic system is inadequate (from a 2010 report by the Barnstable County Wastewater Cost Task Force

http://www.ccwpc.org/images/educ_materials/wwreports/cape_cod_ww_costs--4-10.pdf)

- construction = \$630,000 capital cost (~\$20,000 per residence)
- O&M = \$130,000 per year (~\$4,000 per residence)

<u>Capacity</u>	<u>Unit Construction Cost</u>	<u>Unit O&M Cost</u>
10,000 gpd	\$70 per gpd of capacity	\$13 per gpd of average flow

Water supply treatment is highly dependent upon the mix of contaminants present.

Local Board of Health Regulations: I. Sewage Disposal

1. Section 3.2 – Pre-Construction Requirements

Condition: *Subsurface sewage disposal systems shall not be constructed until all major plumbing has been installed in a dwelling or structure generating sanitary wastes.*

Waiver Request: System will be installed independent of the building permit process; building construction and or septic system construction may commence prior to the other; it is agreed that no Occupancy Permit for any units shall be granted until septic system is complete, tested, and certified for use by design engineer.

Motion: To recommend that the ZBA grants a waiver to allow construction of the sewage disposal system prior to completion of all units, with the conditions that: (i) no Certificate of Compliance can be issued until the sewage disposal system has been completed and the Health Agent and design engineer have certified compliance, a full as-built plan has been provided, and appropriate testing of the system has been completed; (ii) the Board of Health has the right to negotiate an appropriate order of construction requirements and inspections once more details of the project are known and to take into consideration 3rd party fees to provide inspections to this atypically large project (via either a custom fee schedule or 3rd party inspections); and (iii) construction out-of-order per Section 3.2 is at the Applicant's risk.

2/29/16 Approved 2-0-1 (with Dr. Hunnewell abstaining)

BOH Considerations:

- Factors supporting request: complex project, site activity staging, pumped system

BOH Recommended Conditions:

- Modification to original request: ... certified for use by design engineer **and by the BOH's Health Agent or designated representative**
- Specific requirements and definition of appropriate measures shall be approved by BOH once project details (of sequencing, timing, etc.) are available
- Wells will be installed and tested for quantity and baseline quality first
- Health Agent inspection provisions for each individual unit
 - Health Agent still checks for bedroom count in units and adequacy of gravity feed from buildings to septic tank
 - Additional fees will be required for scale of Health Agent services
- During full build-out, the septic tanks are not to be used as tight tanks

2. Section 7.0 – System Size and Design

Condition: (multiple)

Waiver Request: System as designed conforms to all applicable MADEP Title V requirements.

Motion: To recommend that the ZBA grants a waiver to allow the SAS line size to be of a diameter consistent with pressure dosing system requirements as opposed to gravity fed line requirements.

1/26/16 Approved 2-0-1 (with Dr. Hunnewell abstaining)

- 2/29/16 The Agent felt the application meets the local regulation, which already has an accommodation for pressure dosed systems. The Board agreed with the Agent's assessment, but no re-vote was taken.

BOH Considerations:

- No waiver to BOH requirements needed because, for example,
 - minimum pipe length, maximum trench/line length, leaching area for 8360 gallons, expansion leaching area, trench spacing and elevation differences, etc. requirements met
 - septic tank(s), distribution box(es), and leaching area(s) provided
 - there is an engineering need for the stone size specified to accompany pressure dosing (see 7.3)
 - size of pipe varies from the standard to accommodate pressure dosing system (see 7.3)

BOH Recommended Conditions:

- As with all systems, no pervious cover over system at time of construction or thereafter (this will also be addressed by the special conditions associated with 3.2)

3.a Section 7.1 – Leaching Area Size

Condition: Any room above the first floor shall be considered to be a bedroom.

Waiver Request: For the Kirkland, first floor master plan, which has a second floor study, a waiver is requested for the unit to be classified as a 2 bedroom unit. In so much as the Sherborn BOH determines that any other final plan represents additional bedrooms beyond the plan representation, a waiver is requested. Applicant agrees that appropriate deed restrictions and condo document restrictions be added to ensure compliance with approved septic system bedroom count.

Note: Given the latest version of unit layouts and mix specified by the Applicant, the first sentence of the request above is no longer applicable.

Motion: To recommend that the ZBA grants a waiver to allow the bedroom count for the project with the dwelling units as proposed to be limited in the Master Deed and with deed restrictions to 76 bedrooms.

- 2/29/16 Denied 3-0, based on the fact that the dwellings' sizes and other characteristics are comparable to single-family dwellings in Sherborn that are held to the 3-bedroom-minimum standard.

BOH Considerations:

- Abbey Road does not apply here; occupancy restricted to 55+ for Abbey Road
- TFS dwellings are comparable to most homes in Sherborn in terms of overall size, layout, and occupancy potential
- BOH seeks to maintain consistency in how flow evaluations are applied and thus 3-bedroom minimum considered as appropriate to these attached single-family dwellings as they are to stand-alone single-family dwellings
- Protective measure in the event that the spaces are used differently than as might be specified in a Master Deed
- Master Deed provisions are not enforceable by BOH

- MassDEP is clear that water meter readings are not part of the determination for residential leaching area size
- Applicant provided information about bedroom counts for projects in other Eastern Massachusetts towns for which deed restrictions were used for bedroom counts, but:
 - all of the examples provided do not have on-site wells and all but one are connected to either municipal sewers or to wastewater treatment facilities
 - their circumstances avoid the risks of co-locating the 2 groundwater-related systems
 - furthermore, private and municipal wastewater treatment plants offer the opportunity to further diagnose and address dwelling discharge issues (e.g., ability to identify whether residents are putting things down the drain that should be managed via another route and to follow up with education, enhanced monitoring, and/or additional treatment)
- BOH appreciates TFS' efforts to adhere to BOH standards:
 - consistency with standard evaluations for rooms above the first floor (i.e., are all bedrooms)

3.b Section 7.2.3 – Septic Tank Design

Condition: Septic system tanks shall be designed as if garbage grinder were installed

Waiver Request: Septic system as designed meets MADEP Title V requirements, and a deed/condo restriction will be added prohibiting the use of garbage grinders.

Condition B: Leaching rates and trench lengths

Waiver Request: System as designed conforms to all applicable MADEP Title V requirements.

Motions: Not made since waivers not required; however, note conditions below

BOH Considerations:

- meets BOH requirements IF
 - 76 bedrooms (per BOH count) and
 - garbage grinders are not installed and there are deed recordings to that effect
- importance of reserve capacity in the tanks:
 - frequency of power outages
 - periods of high flow (e.g., holidays);
 - temporary cessation of pumping to the SASs while parts of the system are being serviced or awaiting repair
- if a garbage grinder is installed in any unit or units, the undigested material can interfere with the performance of the system (e.g., clog lines and leaching area); this could compromise the handling of some or all of the entire system's flows
- this issue is just one example of why a WWTF would be good for tracking system use (e.g., inappropriate use) and performance

BOH Recommended Conditions:

- Due to size of system and risk to the entire volume of flow that could be caused by grinder use anywhere within the project (as noted above), BOH recommends all or some combination of the following measures:

- install postings beneath all kitchen sinks, in a location and of a size/visibility to be noted by anyone considering installing a garbage grinder at that location
- install a filter(s) to be able to detect whether garbage grinders are being used
- set other criteria for testing (e.g., grease, which may also affect septic system performance) – risers installed in D-boxes can allow for sampling
- of course, standard no-garbage grinders deed recordings and specifications in Master deed plus standard garbage grinder inspection prior to issuance of each unit's Occupancy Permits

4. Section 8.0 – Vertical Grades and Cover

Condition: A depth of at least five (5) feet of pervious material in natural soil shall be maintained below the bottom of the leaching area.

Waiver Request: The system as designed conforms to all applicable MADEP Title V requirements.

Motion: That vertical clearance will not be determined until on-site data is collected from the monitor wells on 3/1/16 and an estimated adjusted seasonal groundwater is applied, with agreement between the Health Agent and the Applicant's engineer. This extension was suggested by the Applicant.

2/29/16 Agreed 3-0 (Note that this motion also applies to Title 5 determination of vertical clearance compliance)

Motion: To recommend that the ZBA grants a waiver to the requirement of Section 8.0(2) and allows the proposed soil absorption system to be located in an area where groundwater is less than 5-feet below natural surface grade.

3/2/16 Denied 2-0 (Dr. Hunnewell was absent).

BOH Considerations:

- one of the most important local protection measures because:
 - naturally deposited soil is considered by septic/soil scientists to provide superior 'cleansing' to fill
 - not an uncommon requirement for Massachusetts towns with on-site well and septic
 - project density (i.e., density and magnitude of effluent) warrants maximum protection

Condition: Finished grade over the disposal area ... no more than two (2) feet

Waiver Request: The system as designed conforms to all MADEP Title V requirements.

Motion: To recommend that the ZBA grants a waiver to allow the proposed design with cover exceeding the required 2-foot minimum/maximum.

1/26/16 Denied 3-0

BOH Considerations:

- optimal cover between 9 inches and 2 feet
 - confirming what has been the long-standing understanding of the BOH, at a 2015 conference attended by the Health Agent, one presentation (based on university research) noted that less than 2 feet is important for aerobic conditions in soils

- surrounding the leaching lines (the venting option proposed by the Applicant only addresses the lines) and to enable shallow roots of grasses, etc. to reach the leachate and aid, to some degree, in excess nutrient (e.g., nitrogen compounds) uptake
- an engineered solution is believed feasible
 - options may include alternative grading over the SASs, more than 2 fields, and/or stepped trenches
 - engineered solutions are preferred to granting waivers (and have been employed by the Applicant to eliminate the need for several other waivers originally requested)
- venting systems were considered as possible means to offset the evapotranspiration impedance posed by the additional cover depth
 - researched by the Peer Reviewers
 - still provisional under Title 5; thus the BOH does not have the authority to determine the validity of application here
 - operation of pressure dosing system (which is what is proposed) causes a form of venting of the lines only (e.g., drain-back causes some suction but for line volume of air only)

BOH Recommendations:

- Applicant is proposing to use a wildflower mix on the SAS cover; claim that it will root as do perennial field grasses
- grass cover is preferred to gardens
 - is more stable (with potential for deeper roots) and thus helps to avoid erosion
 - grasses permit periodic mowing, which would keep out vegetation (e.g., trees) with too large and deep of roots
- long term, routine irrigation on the SAS fields is not recommended
 - frequent watering promotes shallow root growth
 - shallow roots make grasses less drought tolerant, thereby increasing the risks of erosion

5. Section 10.1 – Minimum Distances

Condition: No leaching area shall be less than one hundred fifty (150) [feet] from a well located downhill from such leaching area.

Waiver Request: The System as designed conforms to all applicable MADEP Title V requirements.

Motion: To recommend that the ZBA grants a waiver to allow the sewage disposal system to be located 147-feet from existing well serving 257 Washington Street.

1/26/16 Denied 2-0 (Dr. Hunnewell had left the meeting earlier and was not present for this vote.)

BOH Considerations:

- no neighbor shall be compromised by a new system
- an engineered solution is believed possible to eliminate the need for the waiver

Motion: To withdraw the 1/26/16 vote to recommend against this waiver request since the system was re-designed and this waiver is no longer needed.

2/29/16 Agreed 3-0, no waiver needed

6. Section 10.2 – Minimum Distances

Condition: No leaching area shall be less than twenty (20) feet from a property line

Waiver Request: (not specified)

Motion: To recommend that the ZBA grants a waiver to allow the sewage disposal system to be located 17.5-feet from the property line with 257 Washington St.

1/26/16 Denied 2-0 (Dr. Hunnewell had left the meeting earlier and was not present for this vote.)

BOH Considerations:

- no neighbor shall be compromised by a new system
- an engineered solution is believed possible to eliminate the need for the waiver

Motion: To withdraw the 1/26/16 vote to recommend against this waiver request since the system was re-designed and this waiver is no longer needed.

2/29/16 Agreed 3-0, No Waiver Needed

7. Section 13.0 – Manholes and Cleanouts

Condition: ... and in any event there shall be cleanouts or manholes at a minimum of 150 feet apart.

Waiver Request: (not specified)

Motion: Subject to the addition of a cleanout in the 190-foot length of pipe (so no distance exceeds 150-feet between a cleanout or manhole) and with the condition that the Peer Review (BETA) confirms this is in compliance with Title 5, as agreed to by the Applicant, no waiver is needed.

2/29/16 Agreed 3-0

BOH Considerations:

- not all of the proposed septic lines are force mains – applies to gravity fed lines from the dwellings to the septic tank
- good maintenance practice, even for force mains (drain back, clogs, etc.)

8. Section 13.0.1 – Septic Tank Location

Condition: No septic tank shall be located more than 50 feet from the structure that it serves.

Waiver Request: (not specified)

Motion: To recommend that the ZBA grants a waiver to allow the proposed septic tank to be located more than 50-feet from structure(s) it serves, conditional to the Health Agent's approval of the appropriateness of the proposed septic tank location.

2/29/16 Approved 3-0

BOH Considerations:

- in recognition of the multi-unit nature of the project and the application-specific impracticality of this aspect of the regulation (which is oriented to single family homes on a single property),

the BOH has allowed locations greater than 50 feet from a dwelling for multi-unit projects sharing a septic tank.

BOH Recommended Conditions:

- the Health Agent must inspect the appropriateness of the septic tank location within the overall septic system design

Local Board of Health Regulations: II. Domestic Water Supply

INTRODUCTION

The Applicant's request was to follow MassDEP Private Well Guidelines. The BOH evaluated the proposed wells largely on the basis of BOH regulations because:

- MassDEP's Guidelines are not regulations; and
- Sherborn's regulations are based upon model regulations developed by MassDEP.

Overall issues for the BOH regarding the project's water supply as proposed include:

- Recommendations for approval of the locations and background quantity and quality testing of the wells is not meant to indicate BOH assurance of the long term quantity and quality of the water supplied. In particular, quality issues are addressed under the septic system decisions/recommendations and under preliminary recommendations below for a long-term water quality testing regime.
- Well installation is undertaken at the risk of the applicant given the BOH's determination about groundwater quality risks posed by the septic system. Also, if MassDEP classifies the water supply as a Public Water Supply (PWS), the currently proposed wells may not meet PWS requirements.
- Applicant must confirm with MassDEP that any well or combination of wells does not constitute a PWS before the BOH can issue an Occupancy Permit for any dwelling. MassDEP's assessment must be provided in writing.
- BOH considers the project's water supply to be a "Semi-public" supply (per its regulations)
 - project is essentially proposing a well field
 - taken together, is 8+ times the threshold for a MassDEP PWS
 - only reason it might not be a PWS would be through legal construct of ownership of and maintenance access to the wells
 - precautions to protect a large, important, and not readily replaced supply are not provided for by private well regs
 - PWS wells have larger zones of protection and still have lots of testing
 - primary threat to drinking water quality is the proximity of the large septic system (as discussed elsewhere)
 - density of discharge may promote prolonged wetting in the soils – enables virus and bacteria survival
 - actions of one residence can impact the performance of the whole septic system, thus putting more people at risk than with a single family septic system
- A more typical PWS-like sampling and analysis regime
 - would better protect the health of residents than would the proposed quarterly testing – some constituents can have negative or harmful health impacts in a shorter period of time than 3 months

- Quality testing requirements will depend upon the final project design (e.g., will advanced wastewater treatment be employed, will the size of the project be reduced, etc.)
- all wells should be tested because of the uncertainty of bedrock fracture connections to the contaminated plume in the overburden
- Possible initial water quality sampling schedule frequency
 - Monthly: bacteria, fecal coliform, nitrates (note that nitrate is a typical marker for other septic contaminants that may be present)
 - Quarterly: metals, volatile organic chemicals
 - Semi-Annually: semi-volatiles, sodium
 - Annually: pesticides, perchlorate, 1-4 dioxane
 - adjust the schedule as trends are identified
 - do not adjust the schedule to be less stringent until some form of steady state is reached across the property (at least 2 years from full build-out, given groundwater travel rate)
- As with all wells in town, Health Agent inspections of installation and testing are required.
- If any explosives are needed during project development (e.g., for blasting or well development), the BOH strongly recommends against the use of perchlorate-containing explosives because perchlorates are:
 - known to contaminate groundwater when used for these activities;
 - highly toxic at low levels;
 - mobile in groundwater.

As you may or may not know, and although our project meets all standards and Title 5 requirements, we have agreed to monitor (in any way acceptable to reviewers or BOH) 2 on site wells and 2 offsite wells that are near the SDS. We have also agreed to bond the expense of these new wells, or preemptively relocate the wells on our neighbor's property prior to starting the project (at our cost). Please note, that although these are the closest wells, they still not are in violation of Title 5.

This can be a condition (if acceptable to 2 neighbors) of the Comprehensive Permit.

Regards,



Ben Stevens
The Fields at Sherborn, Manager

9. Section 6.0(E) – Well Location

Motion: To recommend that the ZBA grants a waiver to allow offsets between wells of 60-feet rather than the required minimum of 75-feet due to prior approval of such by the State for the 40B project on Whitney Street and due to additional yield testing to be performed. This recommendation is conditional to implementation of the latest testing regime proposed by the Applicant and supplemented by Peer Reviewer and Nobis Engineering recommendations, including but not limited to: (i) a minimum 48-hour pump test for all wells simultaneously; (ii) monitoring the draw-down of the 2 neighbors wells (247 Washington Street and 257 Washington Street) throughout the pump test; and (iii) staggering when the pumping of each well is turned off and closely/precisely measuring any responses to such in all other wells, for the purposes of assessing well interconnections and influences.

2/29/16 Agreed 3-0

BOH Considerations:

- the quantity/yield testing regime proposed by the Applicant was reviewed and approved by the Peer Reviewer
- the additional testing proposed will help to assess yields
- the wells are not viewed as individual private wells but rather are part of a well field
- the Applicant will be installing water meters to measure each individual dwelling's water usage, which may then aid in addressing future supply and demand issues
- per Sherborn regulations, the irrigation well has the same requirements as wells used for potable water and wells must be dedicated to either irrigation or potable use

BOH Recommended Conditions:

- evaluate information obtained from the well drilling activity and from the early portions of the well pumping to determine whether the pump test should be extended and how the well shutdowns should be timed/coordinated
- low flow fixtures should be used to the maximum extent possible
- provisions must be made in preparation for the event that the long term yields of the wells are less than what was predicted based on the short term testing proposed

10. Section 17.3 – Laboratory Tests (Quality Testing)

Motion: To recommend that the ZBA rejects the request to allow quality tests per the State Private Well Guidelines and instead requires, for the initial rounds of testing, water quality testing as specified in the local regulations for Domestic Water Supply. Additional testing will be recommended by the BOH for on-going testing pending project approval and final design specifications.

2/29/2016 Agreed 3-0

Local Board of Health Regulations: III. Public and Environmental Health Review Regulations for Other than a Single Family Dwelling on a Single Lot

INTRODUCTION

BOH Considerations were similar for the requirements under the Environmental Health Review (EHR) part of the regulations (III):

- Originally, EHR requirements were not being addressed but, as the project progressed, various elements were completed.
- SBOH regulations are oriented to single family dwellings on a single lot. To accommodate larger developments, the EHR requirement was established. This parallels MassDEP provisions for systems between 2,000 and 10,000 gallons per day which are meant to cover situations between single family size flows and the 10,000 GPD threshold for wastewater treatment systems that are regulated by MassDEP instead of the local BOH.
- Applicant has provided some of the information and agreed to provisions (e.g. simultaneous pumping of all site wells for quantity testing) that address others.
- Stormwater analyses are required by the Planning Board and Conservation Commission as well; the Applicant addressed these other requirements directly. The Peer Reviewer has assured the BOH that its requirement regarding changes to stormwater flow onto and off of the site has been met for the purpose of preventing: (i) flooding that negatively impacts a neighboring dwelling, well, septic, roadway safety, etc. or (ii) diminished recharge of neighboring properties' groundwater.

11. Section 3.1 – Environmental Health Impact Report (EHIR)

Motion: To recommend that the ZBA grants a waiver to the requirement for an EHIR. The Board noted that the requirements for the EHIR have been met through various submittals to the Town by the Applicant and others.

3/2/16 Denied 2-0-1 (with Dr. Hunnewell abstaining)

12. Section 3.2 – Environmental Health Permit

Motion: To recommend that the ZBA grants a waiver to the requirements of Section 3.2, on the grounds that the ZBA's Comprehensive Permit, if issued, will encompass the Environmental Health Permit's purposes.

3/2/16 Approved 2-0-1 (with Dr. Hunnewell abstaining)

13. Section 12.0 – Drainage

Motion: To recommend that the ZBA grants a waiver to the requirements of Section 12.0. The Board noted that drainage evaluations required been met through various submittals to the Town by the Applicant and that this was confirmed by the Peer Reviewer. Thus, this waiver is not needed.

3/2/16 Denied 2-0-1 (with Dr. Hunnewell abstaining)

14. Section 13.0 – Earth Removal Standards

Motion: To recommend that the ZBA grants a waiver to the requirements of this section. The Board noted that although some requirements of Section 13.0 have been met by other submittals to the Town, there are other requirements that will apply during the entire process of the project.

3/2/16 Denied 2-0-1 (with Dr. Hunnewell abstaining)

Other

15. Financial Guarantees

Motion: To recommend that the ZBA includes as a condition of a Comprehensive Permit, if granted, the requirement that the Applicant meets Board of Health specifications for financial guarantees for the sewage disposal system and private water supply including: (i) establishment of an Operation and Maintenance Fund; (ii) establishment of a Working Capital Fund; and (iii) establishment of a Reserve Fund.

3/2/16 Approved 3-0

16. Individual Motions that Contributed to the Title V Bedroom Count for the Project

Motion: That each unit be considered to have 3-bedrooms so that the total room count of the project is 96 bedrooms (with a total design flow of >10,000 gpd).

2/29/16 Agreed 3-0

Additional Motion: At a minimum, each unit is viewed as having 3-bedrooms, but it could also be a higher count.

2/29/16 Agreed 3-0

17. Testing Requirements under I.5.0

Condition: (Multiple requirements)

Waiver Request: System testing for design purposes is complete with the filing of the septic application and peer review response, no additional predesign testing is required.

- Regarding the number of deep test pits in the SAS area
 - consider the 2 SASs to each be part of one field because of the consistent soils across numerous site pits and pits in the adjacent SAS areas
 - advantage to future system performance by minimizing disturbance to naturally deposited soils
 - no waiver required