Electronic Delivery
October 24, 2023

Sherborn Zoning Board of Appeals
Sherborn Town Hall
19 Washington Street
Sherborn, MA 01770

Re: Additional Comments on Farm Road Homes -
Evaluation of Revised Stormwater Management Plan
Farm Road Homes 40B Development Project
55-65 Farm Road
Sherborn, MA

Chairman Novack:

Mary and I have composed this brief letter as a follow up to our letter dated October 3, 2023 which provided a detailed critique of the information and plans provided for the Farm Road Homes project being proposed by Fenix Partners Farm Road, LLC (Fenix) at the abutting 53-55-65 Farm Road property.

This (again) is intended to call out additional information we would like the Zoning Board of Appeals (ZBA) to consider during their review of this project, and we ask that this information be provided to the third party reviewer retained by the Town for their use and consideration. Although three (3) weeks have passed we feel there has been little or no progress made by the applicant in answering our numerous questions and concerns about stormwater, septic systems, off-site discharges, and other issues related to the project plan.

Efficacy and Status of Stormwater Management Plan

Our previous letter dated October 3, 2023 identified greater than ten (10) series omissions and errors in the Stormwater Management Plan (the Plan) provided to the Town of Sherborn for this development. Not surprisingly, the applicant has filed a new/revised stormwater report that forces all parties involved in this project (including those retained by private parties and by the Town) to re-start their review process anew.

Despite the glaring nature of the errors and omissions, and the fact that we have at great personal time and expense taken the time to call them out, several of these issues have remained unchanged in their new/revised Plan. We are extremely concerned about the application's reliance on incomplete or inaccurate information, and their extrapolation of data from one point to another in this unique geologic/hydrogeologic setting.

The following items which serve as the basis for the applicant analyses of the Plan represent some of our more serious concerns and have not yet been addressed – despite being called out now in two separate reviews of the submitted Plans.

- The "Detailed Mounding Analyses" contained in **both the original and revised Plans** relies on assigned hydraulic conductivity values on the 1.0E+01 feet per day order of magnitude – a value that allows the applicant to apply the characteristics of well-sorted beach sands to material that has otherwise been characterized as till. The reality is that unsaturated hydraulic conductivities are generally an order-of-magnitude (or more!) below those values in till ice-contact deposits.

- The "Detailed Mounding Analyses" contained in **both the original and revised Plans** employs a thickness of the aquifer of between 16 and 20 feet – values which are not supported by the observed bedrock depths in those instances where the applicant bothered to actually conduct test pits – some of which actually confirmed bedrock in the areas of some drainage basins at depths as shallow as 7 feet below grade.

- The "Detailed Mounding Analyses" contained in **both the original and revised Plans** employs a narrative which claims the "aquifer depth" of "up to 50 feet" has been . . . "estimated based on the overall site assessment" in this part of Sherborn. These values and narrative are not substantiated by **any on-site subsurface exploration of record for this property.** We are not aware of any test hole, boring, or other subsurface excavation that failed to encounter bedrock at a depth of anything approaching 50 feet and feel this is a gross mischaracterization of surficial deposits at the project site.

- The Plan indicates forty-two (42) test holes were advanced, but we still cannot locate a record for Test Hole 55-9N in any submittal and would appreciate obtaining a copy of it, along with other test pit data not provided (e.g., is there a test pit log for DHTP 55-1?). We would also like to request a simple summary sheet of all test holes conducted across the 53-55-65 Farm Road parcels along with a column to confirm if they were witnessed by any municipal representative, or other third party.

- The Plan indicates that several of the forty-two (42) test holes have not (as of yet) been advanced – see 65-7 and SWTP-2 – this represents 5% of the total test pit data set – clearly a sign that not all front end engineering and design work has been completed for this project.

- **Both the original and revised Plans** have features on their plans with incomplete or blank information – mainly in the former of sanitary sewer line and manholes without proposed elevations, inverts, etc.

- Despite the wildly ranging soil type, depth to bedrock, and estimated high groundwater elevations, **both the original and revised Plans** appear to rely on testing at only two (2) of the proposed stormwater basins. That means that only about one-half (50%) of the proposed system setting has actually been subjected to *critical* field inspection and testing work.

- Despite being identified in our previous October 3, 2023 letter, **both the original and revised Plans** reference the construction of four (4) houses – this is absurd that even with prompting the applicant is unable to correctly identify their own project as actually containing 32 units!

- Both the original and revised Plans reference "Control Ponds" in a manner synonymous with "Control Points" as stormwater control features, and reference off-site discharges to the north and northwest, despite the Control Pond discharge description citing the "53 Farm Road driveway culvert" system – **how can this feature be considered part of the Plan when the 53 Farm Road property is not owned by the applicant or considered part of this Plan?**

- Despite our concerns of errors and omissions, **both the original and revised Plans** reference standards and compliance with "OHSA" – an apparent reference to the Occupational Safety and Health Administration (OSHA)?

- Despite our concerns of errors and omissions, **both the original and revised Plans** reference incorrectly ascribe various Zip Codes to the Town of Sherborn – for the record, the one and only Zip Code for the Town of Sherborn is 01770.

- Despite our concerns of errors and omissions, **both the original and revised Plans** reference standards and compliance with US EPA's Construction General Permit (CGP) of 2012 – an apparent reference to an outdated version of US EPA's CGP requirements which were most recently updated as of February 17, 2022.

- The Plans call for removal of "excessive snow" from a large snowstorm to the Town Snow Dump. Ignoring the fact that Sherborn may not actually have a Town Snow Dump, this reliance calls into question the suitable size of this project for this Town given that there are no snow stockpile/storage areas on the property – a routine planning and civil engineering consideration, not to mention best management practice - for at least the last two (2) decades in New England. The revised plans subsequently forwarded to the Town in response to previous comments account for approximately 10,000 square feet (SFT) of snow storage area – **an area that would have to have snow stacked to a height of more than 24 feet to accommodate our "average" annual snowfall.**

- Despite our concerns of errors and omissions, **both the original and revised Plans** provide an incorrect address for the Massachusetts Department of Environmental Protection's (MassDEP's) Northeast Regional Office which is located at 150 Presidential Way, Woburn, MA 01801.

- Despite our concerns of errors and omissions, **both the original and revised Plans** provide an incorrect phone number for emergency release notification to MassDEP which is (888) 304-1133.

- None of the new or revised stormwater management plans identify the construction, installation, or management of ground-mounted solar arrays, or changes in stormwater runoff that will occur from the clearing of the land for these installations.

- None of the new or revised stormwater management plans identify the groundwork necessary, or increased stormwater runoff, associated with building drilling pads and installing a total of six (6) independent private water supply wells – nor do plans exist for managing the drilling spoils or development/purge water within the stormwater management plans.

- Although some narrative exists related to the maintenance costs for the stormwater system, no such language or provisions appear to have been contemplated for the ground-mounted solar arrays, or the access/cart part maintenance that will provide access to the arrays through the field of private water supply wells.

- None of the new or revised stormwater management plans identify the tree removal necessary, or indicate the increased stormwater runoff, associated with constructing the large, combined septic system in the middle of what is now a dense, mature forest.

- Finally, **the revised Plan is lacking owner's signatures/certifications and dates** on Pages E-1 and F-8 of the Plan and should therefore be considered incomplete.

Status of Utility and Combined Septic System Plan

As of the date of this submittal, we have not seen any design plans or specifications for the combined septic system, but even just its location is enough to cause serious concern about our groundwater and thew quality of water in the wetlands which exist between the 45 Farm Road and 53-55-65 Farm Road parcels. **This means that more than half of the allotted time for a comprehensive permit review has expired and no final plans for the septic system have been offered, and scant information is available about other subsurface utilities being installed as part of this project's infrastructure.**

During the last three (3) years of following this applicants' multiple versions of plans so closely is that we had to hire an expert, Scott Horsley, who performed an initial analyses of one of the previous iterations of the 53-55-65 Farm Road development scheme by Fenix. His evaluation demonstrated that the following conditions would occur at and downgradient of the 53-55-65 Farm Road property as the result of the development plans at that time:

1> The septic system installed at 53 Farm Road would result in concentrations of nitrates above 10 milligrams per liter (mg/l) at the property line. In fact, this analyses covered both the "53 Farm Road" property plans for a septic system and the conceptual 40B project septic plans. These findings – which were conservative in nature and did not account for any stormwater infiltration related to these projects - concluded that multi-directional pollution would occur from such development including:

   a. concentrations of 23.9 mg/l at the southwest property line – the direction of multiple private wells, including those currently being relied on by the residents/occupants at 48, 49, 52, 53, 54, 55, and 64 Farm Road; and

b. concentrations of 19 mg/l at the western property line – the direction of 49 Farm Road, the MassDEP-approved Zone II for the Town Center public water supply wells, and the associated wetland features and habitat.

A reproduction of this evaluation is contained as Attachment A. Since that time, Mr. Horsely is updating his findings to address the added repercussions of the stormwater infiltration that will have the undesired effect of "pushing" the existing and proposed septic system discharges towards the private residential wells that service existing neighborhood dwellings at 48, 49, 52, 53, 54, 55, 58, and 64 Farm Road – likely exacerbating the previously-modelled conclusions from September 2022. A final version of this review will be forwarded immediately to your Board upon receipt for distribution to all parties of record and interested stakeholders.

Another potential cause for concern is the fact that he Applicant's original soil plan and test pit work was conducted in April 2021 at a time of historically-low streamflow conditions see across New England - a time period that likely represented some of the lowest recorded groundwater elevations in the last 30+ years. We are including here a graphical representation of historical streamflow averages as compiled and presented by the United States Geological Survey (USGS) as a means to demonstrate that those values should not be considered reliable for the purpose of design and permitting a new septic system for the Farm Road Homes 40B project:

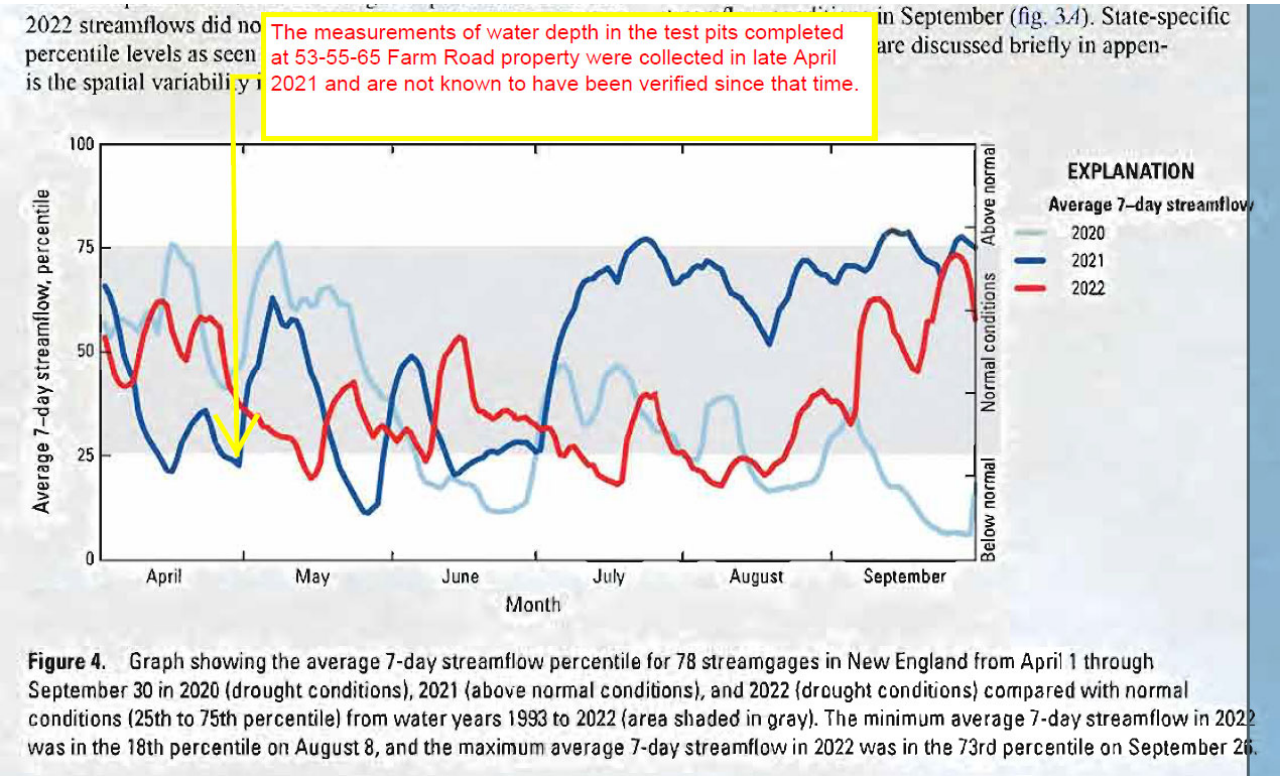

Figure 4. Graph showing the average 7-day streamflow percentile for 78 streamgages in New England from April 1 through September 30 in 2020 (drought conditions), 2021 (above normal conditions), and 2022 (drought conditions) compared with normal conditions (25th to 75th percentile) from water years 1993 to 2022 (area shaded in gray). The minimum average 7-day streamflow in 2022 was in the 18th percentile on August 8, and the maximum average 7-day streamflow in 2022 was in the 73rd percentile on September 26.

(annotated Figure courtesy of USGS's 2022 Drought in New England publication)

Furthermore, the original and revised summaries of test pit information include assumptions which place estimated high groundwater elevations below the depth of bedrock observed in the corresponding test pits completed in the middle of the project (TP-R 8/10 and TP-R9). This runs contrary to <u>all other test pit excavation work completed at this site that encountered groundwater at or above the bedrock surface.</u>

The design drawing provided for this site include numerous instances where subsurface stormwater line, catch basins/sumps, or septic lines will need to be installed at elevations below the observed elevation of the bedrock surface. **This is a tremendous concern for us and our neighbors** given the results of other current and recent projects in Sherborn that caused serious contamination of nearby groundwater supply wells with metals such as Manganese as the result of ledge disruption (e.g., Wildwood neighborhood, Maple/Green Lane neighborhood). It is also interesting to note that none of the Plan's stormwater modelling addressed or considered potential Manganese as a dissolved/suspended constituent despite its prevalence in bedrock, and the demonstrated likelihood of ledge disruption and bedrock drilling for new wells, as well as the likelihood of stormwater system infiltration.

Recommendations and Requests

We remain very, very concerned that the Town of Sherborn ZBA, as well as other Town Boards and Commissions, are still having to review and critique incomplete and/or erroneous plans, despite given the applicant numerous opportunities to fix obvious errors and omissions. Despite this opportunity, the application, as received, reviewed, **and revised** remains an incomplete and erroneous submittal. Our review of how other municipalities handle such matters confirms that the ZBA is not without recourse in these matters and can seek relief until such time that these gross errors and omissions have been addressed. We believe it would not be unprecedented to demand at least another 90 days – or more – in light of the fact that portions of the application remain unsigned by the applicant as of the date of this submittal!

We still believe that the common-scheme restriction remains a "threshold" consideration and should continue to be evaluated in light of its potential implications on this total project. We also contend that such issues as "Building Massing" and "Environmental Resources" are actually **not integrated** with adjoining properties and should have been called out as such during the preliminary design process completed pursuant to 760 CMR 56.04.

We also offer the following recommendations to the Zoning Board of Appeal in light of the continued failure of the applicant to provide detailed and complete plans for the Farm Road Homes project:

- The ZBA should provide the applicant with the opportunity to voluntarily withdraw their application until such time that all engineering plans are complete; all errors, omissions, calculations, and representations are confirmed to be complete, accurate, and representative; and the data is compiled and in a form digestible to the ZBA and other Town boards, their experts, and the public at large.

- The ZBA should ensure that the third-party reviewer is aware of these errors and omissions and retains a log of the same to ensure that the record reflect the outrageous and unprecedented level of effort extended to this applicant to accommodate them in this instance.

- The ZBA should task any third-party reviewer with validating all data and calculations presented by the applicant given the errors, omissions, and misrepresentations made in both the original and revised Plans under consideration for this project.

- The ZBA should seek advice from town counsel and/or HCA directly about Sherborn's obligations to act upon this application under MGL c. 40B in light of the litany of errors, omissions, and incomplete information provided for this project to-date – no Town should be forced to approve any project without due process for design and permitting under any circumstances.

The regulations clearly state in 760 CMR 56.05(3) that "a hearing shall not extend beyond 180 days from the date of opening the hearing, **presuming that the Applicant has made timely submissions of materials** . . .." and we feel that it is not unreasonable for the Town to request an extension of the mandated timeline for reviewing this project as more than half of the allotted time has already now passed and no complete, accurate, or final plans have been presented for the on-site septic systems/leach fields. We therefore feel that the ZBA (and other Town Boards and Committees) are entitled to such an extension – and such an extension should be voluntarily granted by the applicant for the amount of time ultimately takes for them to provide a fully complete and accurate copy of the engineering plans for this development – inclusive of those prepared for the on-site septic systems .

Having both served as elected officials and volunteers for this Town, we feel the applicant's inability to adhere to such basic, fundamental principles is disquieting and continues to raise serious concerns about the validity of any scientific and engineering representations being made by the applicant for this project in their Plans. We continue to question how such obvious inaccuracies and erroneous representations of site conditions like depth to bedrock, groundwater elevations, depth to water, soil type, hydraulic permeability, and saturated thickness be ignored when the Town Boards and Commissions have been tasked with eliminating any risk(s) to public health arising from the project under consideration? We do not believe that – at this time, any Town Board, Committee, or third party expert can rely on or validate any of the conclusions when the applicant shows little or no regards to such fundamental standards of care.

We also remain astonished that Fenix has at no point discussed reducing the overall size or scope of this project to something more suitable and aligned with other property development along the Farm Road and Great Rock Road neighborhoods. Such an action may go a long way towards assuaging fears and concerns related to the risk(s) of public harm that the current project appears to pose given the enormity of its impact on the valuable and limited resources of clean potable water in this portion of Town.

Thank you very much for your attention in these matters. We appreciate having this opportunity to table more of our concerns - concerns shared by many of our neighbors within the Farm Road and Great Rock Road neighborhoods - and look forward to your deliberations on this project.

Most respectfully,

Brian D. Moore
Mary O. Moore
49 Farm Road
Sherborn, MA 01770

Attachment A

Reproductions of Expert Report
dated September 27, 2022

Scott Horsley
Water Resources Consultant
39 Chestnut Street • Boston, MA 02108 • 508-364-7818

September 27, 2022

VIA EMAIL

Mr. Brian Moore
49 Farm Road
Sherborn, MA

Re: 55 and 65 Farm Road, Sherborn, MA

Dear Brian:

At your request I have conducted a water quality impact and nitrogen loading analysis associated with the proposed development at 55 and 65 Farm Road, Sherborn, MA. The proposed project is located adjacent to your property and is hydrologically upgradient from you. I understand that you have a private drinking water supply well on your property.

The Sherborn Health Regulations require a detailed review of water quality impacts. Section 10.3 states that, "all distances shall be increased where required by conditions peculiar to a location or by other Town Regulations or By-Laws". The Health Regulations also require an "Environmental Health Impact Report" for all developments that exceed 2000 gallons/day.

I have applied the nitrogen loading method as outlined in MADEP's "Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading 310 CMR 15.216". These guidelines stipulate that for proposed wastewater flows exceeding 2000 gallons per day adjacent to areas served by private drinking water wells that nitrate-nitrogen concentrations must be maintained below 10 mg/liter.

To determine groundwater flow directions on the subject property I plotted groundwater elevations provided by the applicant's consultant, Creative Land Development. A series of test pits shown on the site plans provide estimated seasonal high groundwater (ESHGW) elevations. Utilizing this data I constructed water table maps showing groundwater flow in a westerly direction towards your property.

Based upon these groundwater flow directions I delineated two Areas of Impact (AOI). These include the AOI for lots 1, 2, 3, and 4 (see figure 1) and another AOI for the 40B Conceptual Overlay Plan prepared by Creative Land Development dated April 26, 2022 (see figure 2).

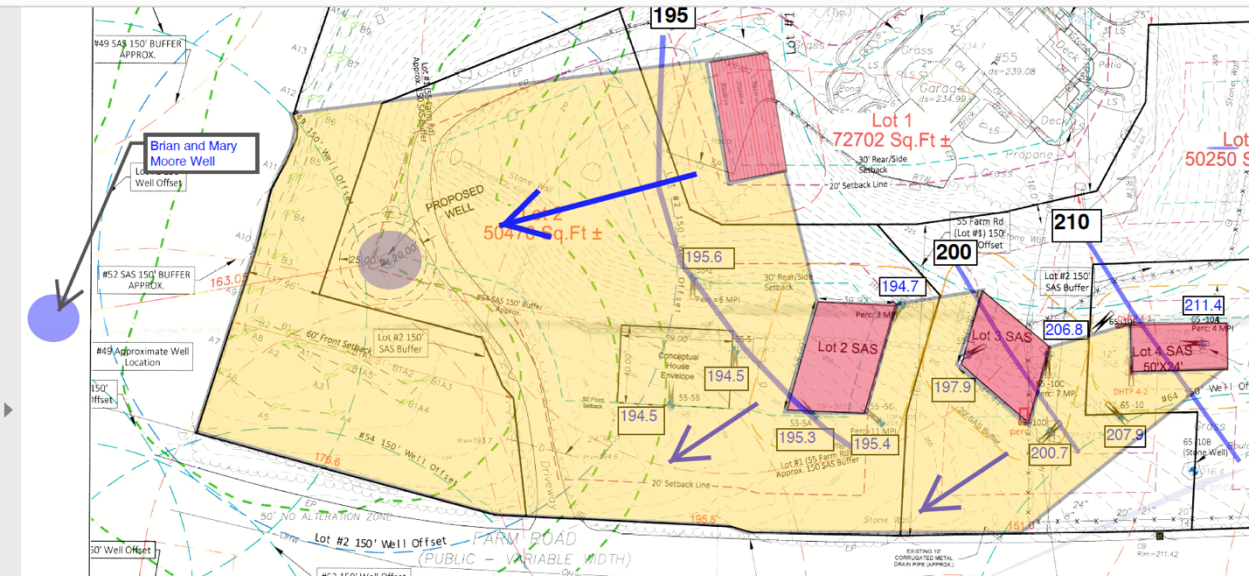

Figure 1 - Area of Impact - Lots 1 - 4

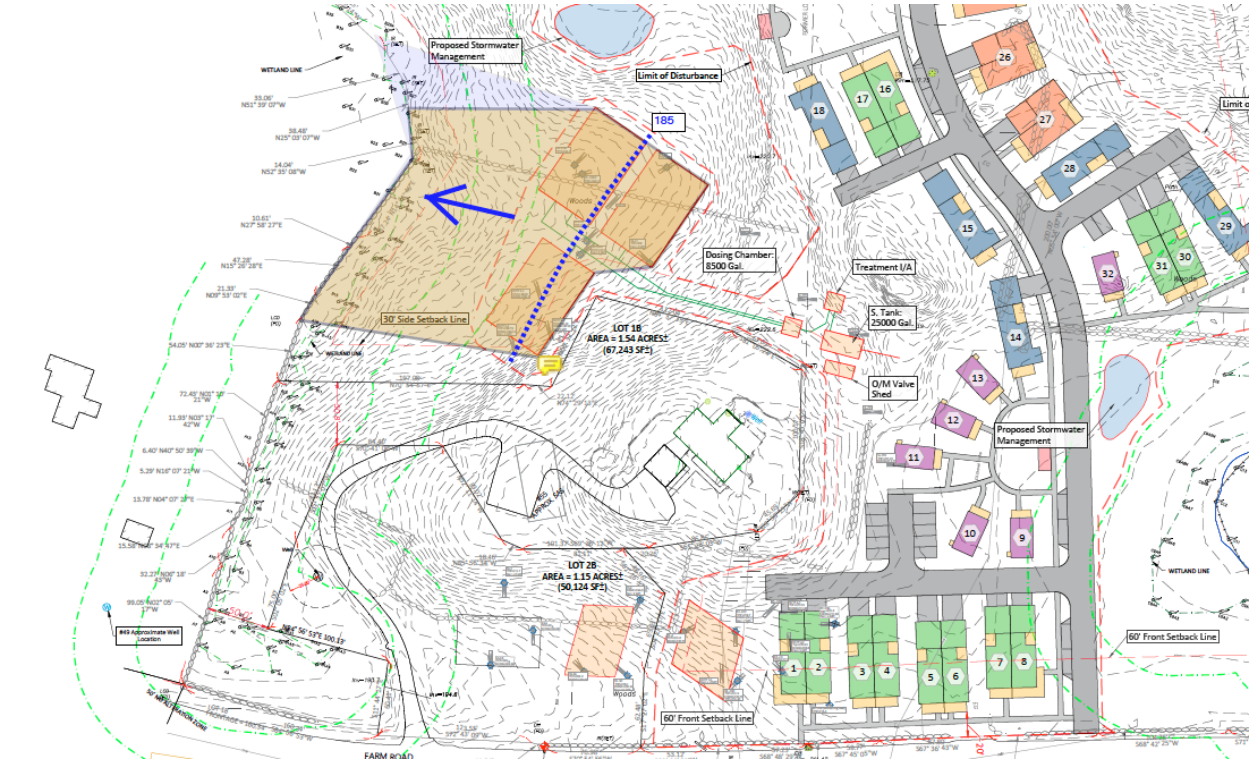

Figure 2 - Area of Impact - Conceptual 40B Plan

I then calculated the resulting nitrogen concentrations at the downgradient property boundary with your parcel (see Table 1). This analysis indicates that the proposed

wastewater discharges will result in nitrate-nitrogen concentrations in excess of the drinking water standard of 10 mg/liter at the property boundary and on your land. This analysis is conservative in that it does not account for fertilizer applications and stormwater runoff losses.

Table 1 - Nitrogen Loading Calculations

	Lots 1 - 4		Conceptual 40B Project	
recharge rate	10	inches/year	10	inches/year
recharge	49920	CF/year	34167	CF/year
	374400	gals/year	256250	gals/year
	1417104	liters/year	969906	liters/year
Title 5 flow	2200	gals/day	8360	gals/day
	3039355	liters/year	11549549	liters/year
Total flow	4456459	liters/year	12519455	liters/year
Wastewater	35	mg/liter	19	mg/liter
	106377425	mg/year	219441431	mg/year
	106.4	kg/year	219.4	kg/year
Concentration	23.9	mg/liter	17.5	mg/liter

Please call me with any questions that you might have.

Sincerely,

Scott W. Horsley
Water Resources Consultant