

May 15, 2019

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By Email

**Subject: Wetlands & Stormwater Review #4 for
Sterling Road 40B Project, Lancaster**

Dear Dan and Liz:

I am submitting a fourth peer review of the proposed Sterling Road 40B project, based on the May 7, 2019, letter to the Board by CEI. The emphasis of my current letter is on the negative impact to the now-confirmed vernal pool and to the downstream coldwater fishery, if the development is approved.

Comments

1. Vernal Pools

I have emphasized repeatedly, both in letters and public comments, that the site is likely to contain vernal pools (VPs). CEI has now determined during their most recent site inspection (5/1/19) that a 524-foot long VP lies within the banks of the intermittent stream. Multiple egg masses were photo-documented. The location of the stream was mapped using survey-grade GPS receivers. My illustration immediately below shows the CEI VP location superimposed on the applicant's subdivision plan.

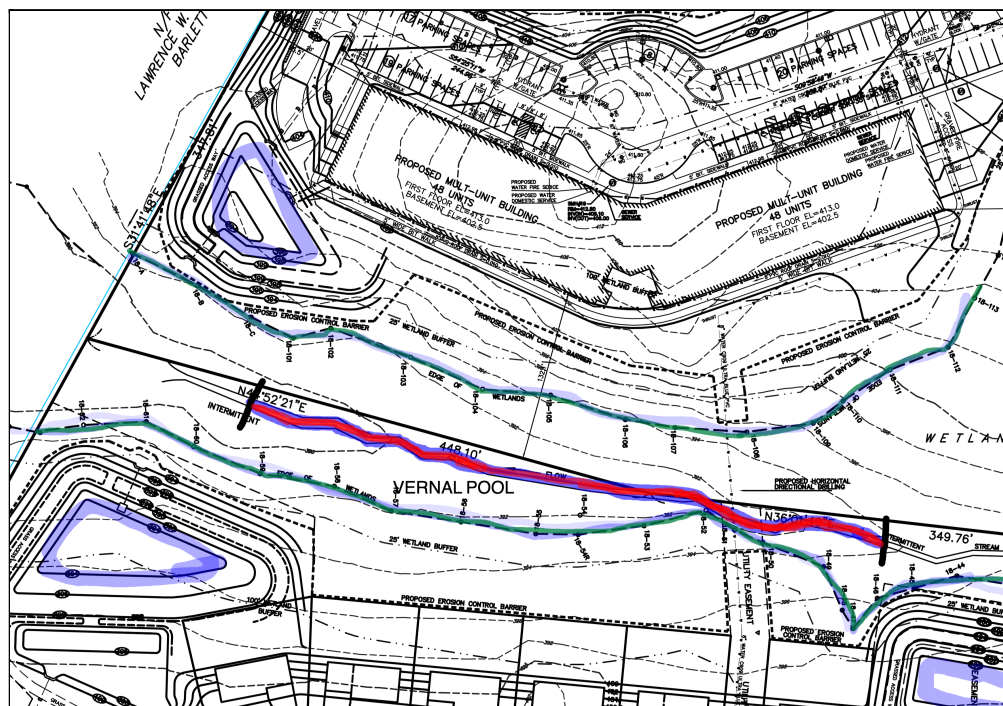


Figure 1. Vernal pool is shown in red, detention basins in light purple and wetland line in green.

The Board, through its consultant, now has both biological and physical evidence that this area meets the state certification criteria for a VP.

➡ **The Board needs to authorize CEI to submit the VP certification to Natural Heritage (NHESP). All field documentation has been gathered and CEI's completion of the form at this point should be fast and routine.**

In the meantime and until NHESP acts, the Board should proceed on the assumption that the area designated by CEI is a protected VP.

Referring to Figure 1 above, I note that the VP lies directly beside the discharge points for three proposed detention basins. This creates two problems. Outflow from the basins during storm events may destroy the viability of the VP, as (1) volume will increase post-development, and (2) effluent from the stormwater basins will contain pollutants, including higher pH, salts, hydrocarbons and herbicides/pesticides. **These combined disruptions will impair, if not destroy, the habitat required for VPs.**¹

➡ **The MassDEP Wetland Protection Act requires a 100-foot buffer around certified VPs, and provides VPs additional protection as Outstanding Resource Waters (ORWs). The ORW designation prohibits placement of detention basins within 50-feet of a VP. Yet the proposed project places two of the three basins within this 50-foot no-build zone, and all the basins within the 100-foot buffer. The design must be revised.**²

2. Wetland Water Budget

As I have emphasized in previous letters to the Board, the proposed project fails to include a water budget for wetlands--a basic requirement to ensure that no impacts occur. This requirement has been affirmed in recent MassDEP adjudicatory cases.³

Given the applicant has been uncooperative, Scott Horsley, a hydrologist (Horsley & Witten), was hired by others to conduct a water budget for the project. As I predicted in my last review, post-development water volume increases dramatically, whereas runoff velocity decreases. (These volumetric and velocity fluctuations are due to the increase in impervious area and the flow restriction from the basins.)

➡ **Horsley has determined that overall volume entering the stream will increase by more than 50%. Such an increase in flow would be extremely detrimental to the VP, potentially destroying its habit values due to disruption of water levels and impairment of water quality** (see topic 3 below for a discussion of water quality impacts).

3. Water Quality Impacts to the VP from Stormwater Discharges

I have previously noted that stormwater for the project is controlled by the use of detention basins. Three of the proposed basins are within ten (10) feet of the edge of BVW (in violation of the 25' no-disturb zone under the Town Bylaw). Even more damaging, basin discharge points lie 40 - 70-feet from the newly confirmed VP.

Further, because the applicant has not designed any water quality filtration, discharges will contain multiple pollutants, including higher pH, salts, hydrocarbons (gas and oil) and herbicides/pesticides from lawns and landscaping activities.⁴

¹ Elizabeth A. Colburn. *Vernal Pools* (2008). Pages 249, 250.

² See 310 CMR 10.02. No stormwater structures are allowed within 50-feet of a VP. In addition 310 CMR 10.05 states in part, "Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment..."

³ In the matter of David A. Bosworth Co., Inc., Recommended Final Decision, OADR Docket No. WET-2015-015 (Feb. 17, 2016)

⁴ Ibid 1., 249 and 253, 254.

In addition, the downgradient receptor for the stream is Goodridge Brook, a designated coldwater fishery. As currently designed, the project will release pollutants into both the VP and the intermittent stream; those discharges will be carried into the coldwater fishery, thereby negatively impacting native wild trout and other aquatic species.

 **Either the three basins that discharge into the stream should be moved so that said discharges do not occur, or extensive water quality filtration and volumetric controls must be provided.**

Summary

Although the applicant has been aware of these issues for months, the plan has not been revised. The confirmation of the VP--and its location--is a fatal discovery to the proposal as currently presented.

The basin locations are also a violation of the Town Wetland Bylaw, which restricts all activities to distances of more than 100-feet from any VP, whether certified or not. In addition, the Bylaw, which echoes the MassDEP regulations, disallows any impairment of a VP.⁵

The combined disruptions noted above will impair, if not destroy, the water quality and habitat required for VPs. Underlining this critical issue, and as noted on page 2 of this letter, MassDEP similarly does not allow impairment of an ORW (i.e., a VP).

Accordingly, for these reasons alone the plan is defective and should not be approved by the Board.

Please contact me with any questions or comments.

Very truly yours,



Patrick C. Garner
Wetland Scientist & Hydrologist

⁵ See Town bylaws, Chapter 215-2. Wetlands Protection.