

To: Inland Wetlands and Watercourses Commission, Town of Waterford
From: Arlene Sherman
Date: January 26, 2023

Thank you for the opportunity to testify concerning the proposed trailer park construction on the two flag lots behind Clark Lane. Starting east of the homes along Clark Lane, all Town of Waterford citizens have the pleasure and blessing of the substantial, diverse, and pristine ecosystem at the head waters of Fenger Brook. This Brook is associated with a significant riparian ecosystem, supporting a great variety of wildlife, forest pools (including vernal pools), wetland vegetation and mature tree growth. It is accessible via Bates Forest Park Road, and its network of well used trails is used for passive recreation by citizens of both Waterford and New London. It sends clean water downstream to the lower tidal estuary and Alewife Cove. These are invaluable and extremely vulnerable coastal resources. The headwaters of Fenger Brook are an important town resource; their protection should be a top priority. I earnestly request that this commission make sure this area remains intact and that it will not be damaged by the proposed trailer park development in any way. This headwaters wetland system is the base of the food chain for myriad living creatures, and it deserves protection and stewardship.

This proposed trailer park will be a rental property, and 30 % (14 units) will be designated 'affordable' with the remaining 34 trailers rented at market rate. The proposal is for a dense footprint with minimal greenspaces and trees and a substantial proportion of tarmac, roofs and other impervious infrastructure.

The spreader proposed for the bioretention basin for the trailer project has multiple design issues and flaws. Due to the large area needing drainage the developers have designed a large mitigation pond system (approximately 1/3 the size of the development) discharging via a single, huge, not vegetated, 60-foot-wide level spreader covered by 18-inch deep rip rap. It is necessary from an engineering standpoint and due to the large volume to be discharged. Rocks and geotextile fabric will slow discharge velocities and reduce initial erosion. However, the spreader is totally unnatural and unable to polish the remaining pollutants, in contrast to small, vegetated level spreaders. The discharge from the proposed spreader goes directly to one sixty foot wide section of riparian wetlands along Fenger Brook, whereas under existing conditions groundwater discharge and

runoff is spread out over a distance of over 1000 feet. Wetland trees and shrubs down gradient of the level spreader will die due to flooded oxygen-deprived root systems. Unfortunately this size of level spreader is not 'forest friendly' and creates a negative impact further downstream as well. It will not finish the job of removing the remaining pollutants from the substantial runoff, after treatment in this very large storm water management system. The level spreader will also not reduce total runoff volume, such that the down gradient stream channels will erode, releasing nutrient-laden sediment into the stream. The nitrogen and phosphorous from the widened and then eroded stream banks will enter Alewife Cove causing algae blooms and killing aquatic life on its way to Long Island Sound.

According to our expert, Ms. Gadwa, the performance of the bioretention basin in particular will be compromised by the very large run off volume from the proposed trailer roofs, the trailer park tarmac, and snow melt, as well as from about 1300 feet of Clark Lane. The water will be too deep, preventing vegetation development; vegetation is a key design component of a bioretention basin. In addition the deep water of the bioretention basin coupled with the wetland and mature forest die off leading to the loss of the insect eating birds, bats and amphibians, (due to wetland habitat loss) will increase mosquito populations and the threat of mosquito borne illness such as EEE and West Nile viruses.

This mitigation area and its huge spreader will treat runoff from the catch basins along this section of Clark Lane as well as the runoff from all the impervious surfaces in the trailer park, over 5 acres total. Currently runoff from this section of Clark Lane is directed easterly into upland forest about 400 feet from Fenger Brook, able to naturally attenuate the toxicants, pollutants and nutrients. The new system will force all the remaining pollutants and water into one direction/area versus the natural dispersion of these runoff elements. The concentration of pollutants is a measurable function of the amount of traffic (cars, trucks, buses, emergency vehicles) that travel a road. Clark Lane is one of two north to south routes in Waterford and is extremely congested with daily heavy traffic. The trailer park plan suggests that Clark Lane runoff be directed into the trailer park bioretention basin, which due to the design is an inefficient system for the removal of pollutants and will add strain and additional adverse impact to the Fenger Brook, presently high quality upland wetland system. Excessive water volume in this mature wetland area will create a die-off of mature trees and undergrowth. As dead roots decompose nutrients are released



into groundwater. The estuary and Alewife cove in particular are adversely impacted by increased nutrient loading.

Adverse hydrologic impacts on wetlands and Upland Review Area will result from:

- 1) Reduced runoff and groundwater discharge from the northern two thirds of the Trailer Park and Clark Lane into the adjacent forest and wetlands, and
- 2) Diversion of groundwater into utility trenches and the permeable road underlayment. The reduced water supply is likely to make the vernal pools dry up sooner, and may eliminate breeding by mosquito eating animals (salamanders, frogs, turtles). Impacts on the food chain will spread in domino fashion with different animals unable to eat and survive, as each area of the wetland is damaged. This mature wetland depends on conditions remaining close to normal and in balance, similar to the conditions under which it sustained itself and thrived in the past. We know it is thriving based on water testing results and observations of fauna and flora.



Fenger Brook is home to many fish such as the migratory American Eel, Large Mouth Bass, Pumpkinseed, Redfin Pickerel, and Tessellated Darter, per 2010 CTDEEP Fisheries data. On its way to Alewife Cove and finally to Long Island Sound, Fenger Brook crosses under Route 1, which is the only major highway intersection. The fact that it does not come in contact with a lot of highway/auto pollution is what keeps it in its pristine state. Along Fenger Brook riparian wetlands include mature red maple forest, marshes, vernal pools, and diverse plant species. Spotted salamanders, wood frogs, turtles, bats, and birds, (including pileated woodpecker), reside in this wetland. Significant ledge outcroppings include dens for bobcats, fisher cats, coyotes and deer. The undeveloped Fenger Brook headwaters also has a significant population of skunk, muskrat, and raccoon.

Tree and soil removal for the trailer project clearing, is expected to damage the present mature woodland in the upland review area and adjacent offsite wetland. Trees will not adapt to hydrologic changes and will die due to drought or flooding, as discussed in the first paragraph. Weakening of tree root systems will result from too much water flowing into the southeastern swamp areas, adjacent to the storm water management system (SMS). Trees in the wetland buffer on the north side will suffer from reduced groundwater discharge and runoff. With fewer

mature trees, air temperature will rise, and wind velocities will increase, adding to the stress on vegetation and fauna that presently thrive in this wetland area.

Considering the fragility of this significant ecosystem in Waterford, that benefits all citizens and their families, and Long Island Sound, I would appreciate the commission taking into the account the following:

1. The wetland buffer adjacent to the trailer park should be larger than 50 feet to protect the wetland from destruction from human interference. Along the northeastern area of the property there is no wetland buffer and that must be remedied.
2. Storm water from Clark Lane should not be added to storm water from the trailer project as it will overwhelm the wetland.
3. The developer should identify the species and size of all trees larger than 18 inches (DBH). The developer must have a plan to minimize tree mortality and its effect on the wetland functions and values. It is critical to avoid a ghost forest. In addition the mature tree roots along the present property boundaries must be noted and roots preserved to prevent die off.
4. With less volume, the level spreader from the mitigation pond can be more 'forest friendly', with a shorter riprapped section, and more polishing of pollutants by vegetation and soils, better protecting the wetlands and Fenger Brook. Another large issue is that the discharge water from the spreader is directed continually in one direction to Fenger Brook which will irreparably harm and undermine the wetland.
5. The projected die off of trees will be followed by loss of their associated insects, animals and wildlife. Tree losses will increase the temperature in the surrounding area. More woody plantings are needed within the project limits, especially on the west side of the storm water management system.
6. The trailer park should be constructed with infiltrators to capture and infiltrate clean roof runoff and reduce the volume discharged to the storm water basins.
7. Due to the shallow bedrock or hardpan, some of the soils in this area are especially prone to drought and tree disease or pests like gypsy moth disease.

8. Due to the high water table, an underdrain is needed for the bioretention basin, which will continuously siphon groundwater to the detention basin, and reduce the ground water supply to the adjacent wetland.
9. Modify project design to prevent drought in the upland review area and reduced water supply to the wetland. The developer must address the change in water distribution from the discharge by the large spreader – excessive water addition to a mature wetland will create unwanted die off as the water is redistributed.
10. Please address the increase heat due to the loss of trees from clear cutting and expected additional mortality due to hydrologic changes. The developer must consider making room for the addition of more tree plantings of varied species.
11. Please consider reducing runoff volume by reducing trailer density, which would also have the benefit of reducing overcrowding, and augmenting the currently inadequate areas of outdoor living space next to housing units.
12. There is significant concern about light pollution, a physical impact, from the proposed 10-foot street lamps. The continual operation of lights through the night will disorient wetland fauna and flora: birds, insects, amphibians, bats, and trees. A large body of research shows that foraging and life cycles will be severely disrupted often causing unnatural and premature death, adding to the stress on this headwaters wetland area.
13. The developer insists on building the northern entry road over a 25-inch water main serviced by Veolia Water Company and the City of New London, after he has been advised to not develop on top of the water main or near it. This water main serves 75% of New London County. The developer was asked to do this in case of a pipe break and necessary repair. The Veolia water experts asked that no blasting occur. The developer refused to accommodate the suggestions of not putting the 75% of water users at risk. This water main has broken 4 times in the past.
14. Please show the areas intended for snow removal and storage on a plan. There are no appropriate fields for snow storage and the concentrated salt and other pollutants will infiltrate and adversely affect the wetlands as the snow melts.

15. Please have developer address the dumping potential into the wetland upland review area, down the steep fill slope, since the developer provides no area for renters to get rid of their belongings when they move. All kinds of debris and activity such as pollutants, furniture, household excess, car oil changes will be put in the wetland area if a removal service is not provided continually and monitored.
16. There is a drop off, up to 8 feet, on the east side of the trailers. Besides the danger of the drop, this is an attractive area for dumping as it is a steep drop into the wetland buffer. How will the developer manage this situation and continually monitor?
17. Will the developer allow pets? Since there are minimal open areas for pet relief and exercise, the best solution would be to not allow pets as the excess manure and outside cat behavior will upset the wetland balance.
18. Since there is no proposed playground and minimal open areas for children to play, children will be likely to play in adjacent forested, wetland buffer area and wetland areas, and will be at risk, on the steep fill slopes and among downed trees. If the detention basin can be reduced in size, by dispersed runoff discharges into the forest to the west, could a playground be built there?
19. Referencing Jordan Brook Watershed Management Plan, 2000, it states in table 4, that out of all the residential home uses, mobile home trailers are the top creators of the most imperviousness (25% of roof and paved areas) of land uses.

I am aware that development is inevitable and I am in support of homes that are affordable. In this case the developer appears to be putting a square peg in a round hole. His project is overly dense with not enough green area for appropriate protection of the land, the wetland, and the down gradient estuary. The wetland is for everyone to benefit from and must be protected, per Connecticut Statute, Chapter 440, Sections 27A-38. This developer has not so far shown that the expected physical wetland impacts from this excessively crowded plan can be avoided. There is not enough room for what he has in mind economically. This overly dense trailer project only provides 14 affordable homes, to offset the potential environmental damage to the fragile and irreparable, when destroyed, headwaters ecosystem.