CLA Engineers, Inc.
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Re: **Inland Wetland Application #23-12: 1122 & 1124 Hartford Turnpike**
Proposed Construction of a Tree/ Lumber Facility

Application Review Comments:

The following are preliminary review comments regarding inland wetland permit application #C 23-12: 1122 & 1124 Haitford Turnpike, which was received by the Conservation Commission on December 7, 2023.

l) The site lies within the Niantic River Watershed basin. The tributary along the west and south sides is perennial, and discharges to Oil Mill Brook, a Class A trout stream. The Niantic River Watershed Protection plan identifies this location as a conservation priority area due to the riparian wetlands and perennial stream resources. The isolated wetland to the east side of the site is a known vernal pool breeding area. Protection of wooded buffer areas adjacent to the wetland resources is a recommended protective action to prevent future water quality degradation.

The propelty was cited for unauthorized clearing and grading of 0.5 acre of forested land in the upland review area last year. The proposed extent of clearing and wood chip stockpile/disposal area extends to the limits of that unauthorized clearing. The Conservation Commission may determine that wider forested buffer areas are necessary to protect the receiving wetlands and watercourses/ vernal pool from adverse impacts of the proposed commercial use.

2) The applicant has already expanded the wood chip surface area to the "proposed" limits in the south end of the site with an estimated depth of 4 inches. The owner was requested to stop conducting unauthorized activities in the upland review area until required permits for the facility and its components are issued. This activity is being conducted without required inland wetland authorization.
If this plan is approved, the applicant will have no activities within the 100 foot riparian corridor as shown on the plans and delineated by a timber fence.

3) Remove the wood chip berm shown on sheets 1, 2 & 3 and the note to maintain said berm. This was an erosion control measure for the prior unauthorized clearing extent and is within the proposed 50 ft. buffer area. The proposed clearing and grading activity will require independent temporaly and permanent sediment control measures.

New silt fence and wood chip berms have been shown.

4) The grading plan indicates removal of 2- 4 feet of eaith material from approximately 300 feet of ridgeline. No fill is proposed at the south end of the site. Will this material be removed from the property?

A new topographic survey has been provided to show current site conditions. Based on the new topography, the grading has been revised to provide a fairly balanced grading project.

5) Are the existing grade lines indicative of current site conditions or has the area been previously graded?
A new topographic survey has been provided to show current site conditions.

6) Low impact development measures should be implemented on this site plan to avoid concentration of post-development run-off. Use of rain gardens for the house roof run-off, vegetated swales along the edge of paved surfaces in the front of the structures, and relocation of the water quality basin closer to the edge of the commercial parking area is requested.

A rain garden has been added behind the house. A paved swale has been added along the edge of pavement to lead to an oil separator, as requested at the Commission meeting.

7) Reduction of the proposed impervious surface area is requested. A 24 ft. wide access lane is the minimum required in a commercial parking area; a 45 ft..wide access lane is proposed on the plan.
The pavement area has been reduced.

8) The underlying soils are highly permeable, Hinckley loamy sand over sand and gravel deposits. Sheet flow run-off from the paved area, in particular the water quality volume, will likely not reach the stormwater treatment basin in the basin's currently proposed location. The run-off will likely soak into the receiving soils and discharge along existing hydrologic gradients towards the brook. Can the basin be reconfigured, the size reduced and relocated to the edge of the proposed impervious parking area to collect and treat the water quality volume of stormwater run-off from the asphalt? Otherwise curbing and catch basins may be necessary to collect run-off from the parking surface and direct it to the water quality basin.
The new paved swale will outlet the runoff from the pavement area directly to the basin, via the oil separator and outlet pipe. We can have the applicant maintain spill kit on site that contains sorbent pigs and speedi dry.

9) What were the considerations for over-sizing the stormwater quality basin. Is on-site detention needed in this upper watershed, particularly considering the permeability of the sub-soil.?
Yes, on-site detention is needed, as during winter and early spring the ground can often be frozen during major storm events, and the upper watershed is where is where detention is most needed.

10) Permanent demarcation of the limits of parking and the wood storage & wood chip stockpile/disposal area should be included on the proposed site plan.
Sheet 2 shows timber fence to delineate the limits of the development.

11) Spill control and hydrocarbon containment measures are requested for the commercial machinery parking lot. The plan should clarify if outdoor maintenance and fueling of equipment is proposed to be conducted at this facility. Machinery maintenance has been observed on this site during previous site inspection reviews.
No outdoor maintenance and fueling of equipment is proposed to be conducted at this facility. All vehicle and equipment maintenance will be done off site at an appropriate facility. At times a flat tire or a belt has been replaced on-site, in order to be able to drive the vehicle to an off-site maintenance facility. We can have the applicant maintain spill kit on site that contains sorbent pigs and speedi dry. This has been noted on sheet 2, note 1

12) What is the maximum proposed depth of the wood chip disposal area within the upland review area of the vernal pool and the riparian wetland corridor? This is disposal and fill, not soil nourishment or stockpiling of processed wood for future use. What are potential impacts to soil acidity, groundwater and surface water quality? Is disposal in the floodway considered fill?
3 inches of wood chips are proposed to stabilize the surface, as called out on sheet 2. Any woodchips generated off-site, after that, will be stockpiled within a concrete block wall, and removed from the site. CLA has monitored several sites for 4-5 years with woodchip berms within 50 to 100 feet of

inland wetlands and watercourses and has not seen acidification in those resources. Acidification due to rotting wood tends to be limited to the soil in immediate contact with the wood.

The processing of wood chips is no longer part of this application and storage of woodchips on site will be limited to the enclosure designated on the plans.
The woodchips will be stored on site in a 30x54 foot concrete block enclosure. As this is a temporary storage facility and woodchips stored here will be trucked off site a regular intervals, CLA believes that there will not be sufficient time for these woodchips to decay and generate acidic runoff that could impact the adjacent streams. Regarding the woodchip layer that is currently on the site, CLA has inspected several sites over the past 10 years where woodchip berms were employed as erosion and sedimentation control within 50 to 100 feet of similar streams. Field observations indicate that these streams have not reflected changes in the flora or fauna or shown brown "tea color" water that is diagnostic of high organic matter content.

CLA notes that the stormwater treatment system shown will result in infiltration of stormwater and minimize the potential for runoff to enter the adjacent streams, thus this is not a likely source of acidification. The decaying woodchips on the soil surface may generate some organic acids that are products of wood decay but that decaying wood typically remains in the topsoil of the site and does not contribute to acidic groundwater.

13) Preliminary comments from the Planner question whether the processing and storage of wood chips is allowed under the zoning regulations. Please provide the revised statement of use and explanation of site activities as part of the inland wetland application.
There will be no wood chipping done on the site. Wood chips processed off-site will be stockpiled within a concrete block wall. Temporary storing of the woodchips is allowed with a Special Permit under section 15.2.13.

If you have any questions please do not hesitate to contact me.

Very truly yours,

Ellen M. Bartlett, PE, CPSWQ
LEED Accredited Professional