

MEMO

C-22-14

109R & 131 CLARK LANE

PUBLIC HEARING 01-26-23

EXHIBIT #64

To: Maureen Fitzgerald, Waterford Conservation Commissioners

From: Sigrun N. Gadwa, Principal, Carya Ecological Services, LLC

Date: February 22, 2023

RE: Waterford Cons. Comm. App # C 22-14, Clark Lane Proposed Residential Project; additional document for the hearing record: Pileated woodpecker photographed at 121 Clark Lane In August 2022 and discussion of indirect physical wetland impacts from proposed tree and habitat losses, e.g. due to loss of nutrient uptake by the trees

Pileated woodpecker is a large, striking-looking and uncommon Connecticut bird. It is a predator whose habitat is large, mature trees, in both wetlands and uplands. It feeds on tree grubs (beetle larvae) including deep-boring, large-bodied species and potentially lethal pests. The feeding activities of a group of pileated woodpeckers keep pest numbers down to moderate levels in the forest. This preserves the old growth component of the forested wetland, helping maintain a diversity of size/age classes. Forest structure is a physical wetland characteristic closely tied to wildlife support function, and nutrient uptake function. It is known that large, full-size living trees assimilate nutrientsⁱ and toxicants at a significantly higher rate than immature trees, since foliage volume is so much greater. Pileated woodpeckers are found only in landscapes with many mature trees, such as this one. Unfortunately, many of the largest trees in this forest lie within the development envelope, or in the adjacent zone where filling and/or cutting will cause mortality or dieback. Significantly diminishing its large tree habitat will adversely impact the large headwaters wetland system, which includes the wetlands on this site.

The Clark Lane Neighbors are requesting meaningful mitigation for this impact, namely a planting program including 75 additional native, full size hardwood trees, at multiple locations and 75 moderate size trees.ⁱⁱ Note that the proposed Bradford pears should not be planted as they are invasive. Other kinds of habitat losses, which also have indirect complex impacts on wetland wildlife function can be mitigated by plantings of smaller trees and shrubs. Shrubby prickly groundcover such as low juniper, and *Rosa rugosa*, and bayberry, will grow on the steep fill slopes, also providing a disincentive for children to climb down the slopes and improving safety. Trees could be planted in the buffer in areas currently occupied by invasive multiflora rose, after weed-whacking with a brush-cutter. These plantings will also form a vegetative screen, screening light and auditory disturbance, with significant benefits to the ecological community, especially birds and their caterpillar prey. Note that the Jordan Brook Watershed Management Plan recommends screening plantings.

ⁱ We are entering as exhibits a photo of a Pileated Woodpecker and an article from *Ecological Applications* (Pinay, Roque, & Fabre (Journal of Applied Ecology (1993) 30: 581-591. It describes in depth the uptake of nutrients by vegetation within forested buffers, in both upland and wetlands, as well as denitrification by nature forested wetland soils. Forest trees, especially the large ones, and forest soil, are an effective BMP for nutrient and toxicant removal as well as filtering fine sediment with associated nutrients, hydrocarbons, and metals. Water quality in Fenger Brook aka East Brook can be protected by preserving the forested land adjacent to it, and/or mitigating the unavoidable losses, consistent with the recommendations of Governor's Council for Climate on Change

ⁱⁱ Plantings can be small (2-3 foot size) to reduce costs. Small woody plantings typically do just as well as large ones, and catch up with them. They should be installed in rear yards of Clark Lane Homes, within 20 feet of property lines, where cutting extended under the drip line of existing trees, and at the base of the fill slopes, where filling covered over 40% of the area under the drip line. This applies to trees impacted by fill, or cut down, both by residences and next to the basins.

