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January 5, 2011

Town of Old Saybrook, Planning Commission and Staff
302 Main Street
Old Saybrook, Connecticut 06475-1741

RE: The Preserve - Proposed Preliminary Open Space Subdivision Plan Modification

Dear Commissioners and Planners:

At the request of the Connecticut Fund for the Environment, Rema Ecological Services, LLC (REMA) has reviewed information available on the proposed modifications of the Preliminary Open Space Subdivision Plan, in the vicinity of the three "residential "pods", two to be added, in the vicinity of Bocum Road and Ingham Hill Road, and West PRD, to be modified. We are concerned that development of these pods prior to the much larger, interior parcel, will limit the prudent and feasible alternatives open to the applicant to meet concerns at that stage. Such a situation could result in an approval of a design with adverse impacts that might otherwise have been avoided. It may well result in the omission of valuable open space that would have been in the best interest of the town to include We note that key baseline information is missing, needed for planning of an open space subdivision. The Ingham Hill Road area and the portion of the West PRD (now to be developed) were originally to have been part of the proposed open space, based on the planning process in 2005, and were accordingly not analyzed in detail for potential adverse impacts from residential development. For the Bocum Road pod, not part of the original Special Exception Application, data is especially lacking.

1.0 BASELINE RESOURCE INFORMATION

Landscape level analysis is lacking in this application. REMA's earlier reports emphasized the importance of landscape level analysis for conservation of ecological integrity; it is key for a number of the most sensitive wildlife species and important from a natural heritage



value standpoint, a key consideration for the Planning Commission. The effects of the proposed new pods on ecological integrity have not been analyzed, for example the fragmentation of the vernal pool cluster near Bocum Road. Spotted turtles in particular need groups of connected wetlands (present on the site and declining throughout Connecticut per the 2004 Klemens report). Roadways and treated lawns result in elevated mortality of migrating vernal pool amphibians.

The proposed location of the Ingham Hill Pod, if left as open space per Preliminary Open Space Subdivision Plan Modification, would have linked to the existing Open Space south of Ingham Hill Road. This area was to be a focal point for open space used by the public, with a nature center with a covered pavilion (not longer in the plan).

Site-specific ecological information is also lacking, needed by the Planning Commission to assess the value as open space of the proposed Ingham Hill development pod, the Bocum Road pod (aka Pianta parcel), and the proposed expansion areas in the West PRD. *Rock outcrops and large glacial erratics* have not been mapped. Each of these three areas have bedrock close to the surface (based on test pit data) and rugged topography. These characteristics are frequently associated with striking, aesthetically valuable rock features and balds with attractive views, mosses, lichens, and rock formations. They are excellent for hiking, photography, and even landscape painting – all criteria to be considered by the commission, as they may make open space particularly valuable for the public as open space.

Additional *wildlife data* is also needed before these craggy areas are reassigned to residential land uses. Bedrock features are often key habitat components valuable for wildlife for dens and basking. Bobcats in particular usually den in rocky highlands (though they feed mostly in wetlands). Ravens nest on rock faces. These rocky habitats usually support reptile populations, sometimes uncommon or rare, such as the harmless and fascinating hognose snake. None of these wildlife species are compatible with residential development, though hiking uses are compatible. Wildlife communities associated with high quality bedrock-dominated areas contribute natural heritage value to the town of Old Saybrook, and they should be part of the open space set-aside within the overall Preserve property.

Vernal pools are recognized as natural features desirable for protection in open space, as discussed in 2005 REMA and 2004 and 2005 Klemens testimony. Because vernal pool salamanders are unable to dig their own burrows, they make excellent use of crevices in



rocky woods, because burrows abandoned by other animals are often in short supply. In our experience the highest amphibian egg mass densities are consistently found in vernal pools in the vicinity of rocky terrain. This consideration is particularly important in the Bocum Road and Ingham Hill pods, with vernal pools in close proximity to development (e.g. #16, #29, #31, #34, and # 34). Would the proposed homes impact suitable adjacent rocky upland forested amphibian upland habitat? Would there be mortality from nearby pesticide use, road kill during migrations? To what extent are reduced upland habitats likely to reduce vernal pool vernal pool productivity? Such information is especially needed for the Bocum Road pools and pod. Existing data indicates very high value- and presence of special concern box turtles in the Ingham Hill pod (Pools 16 and 31), but potential impacts have not been analyzed at either site.

Careful vegetation surveys are essential for decisions regarding appropriate locations of open space in open space subdivisions. Critical vegetation communities are frequently associated with bedrock outcrops, though some (mostly well-shaded) outcrops are low in diversity, dominated by catbriar (Similar spp), for example. For the West PRD, prior fieldwork identified *Opuntia humifusa* (prickly pear) in several sunny, rocky areas (previously not to be developed, now Condo Units #8 and #9). Areas with prickly pear are very likely also to support other plants of the bedrock outcrop plant community, which has multiple potential uncommon species, of interest to the public. This community type is also aesthetically very attractive, with mosses lichens, and interesting rock shapes. Mapping of bedrock outcrops would be a good start, but this has not been done in any of the proposed pods.

Rocky terrain that is shallow to bedrock is poorly suited for agriculture are also likely to support a high proportion of mature hardwood trees, a high frequency of den trees and snags, and low levels of invasives, and, accordingly, elevated wildlife value.

2.0 EROSION AND WATER QUALITY ISSUES

The Review by Nathan L. Jacobson & Associates, dated 12-30-2010, stressed two concerns for all three pods, all tied to the rugged terrain: steep topography and the potentially marginal soil conditions for proposed individual septic systems (instead of a community system per the original preliminary open space plan). Evaluation of potential adverse impacts from residential development in these areas is also greatly hindered by lack of conceptual stormwater management plans.



REMA points out that the severity of adverse impacts to wetlands, for each of these two concerns, is elevated because adjacent wetland resources are low in nutrients and largely fed by groundwater discharge, as headwaters wetlands. Vernal pools, seeps, and intermittent streams all have low *dilution potential*. Potential severity of potential adverse impacts is elevated in the Ingham Hill vernal pools, #16 and #31, which were documented by Dr. Klemens as highly productive.

In the Ingham Hill and Bocum Road Ponds multiple areas with proposed activities (lawns and driveways) also fall within the 100 foot upland review area (URA) Accordingly these ecological communities are especially vulnerable both to septic effluent, lawn runoff, and to eroded sediment. For example the proposed lawn in Lot 2 overlaps the URA of the headwaters wetland between Lots 2 and 3 in the Ingham Hill Pod. Test pit data is unavailable for this lot (and many others), needed to evaluate potential adverse impacts from septic leachate. Lots #1, 2, 3, 11, and 12 impinge on the URA of Vernal Pools #16 and #31. [REMA testimony in 2005 elaborated on the vulnerability of headwaters wetlands and the importance of their protection, from a landscape and watershed perspective.]

Lack of Conceptual Stormwater Management Plans and Inadequate Buffers

Jacobson review also criticized the lack of even conceptual stormwater management plans for any of the three pods. Although the proposed home locations in the West PRD parcel are not very close to wetlands, it is unclear whether there could be adverse impacts without such a conceptual plan. In the other two pods, multiple overlaps with the URA, adverse impacts are estimated to be likely, without a stormwater plan that shows how they are avoided. For example, in the proposed Bocum Road (aka Pianta) pod, vernal Pool #37 appears very vulnerable, due to the proximity of the cul-de sac. As noted in the Jacobson review, developed portions of Lots #7, #8, #9, and #10 contribute drainage to Vernal Pool #34. Lot #8 impinges on the URA of Vernal Pool #29. How will runoff with fertilizers and potential pesticides and road runoff constituents be diverted without altering the hydrology of these pools? Eliminations of multiple lots is one option, but it may be more prudent from a planning perspective to include the entire Bocum Road and Ingham Hill Pods in the overall open space set-asides, for the whole large Preserve property.

Steep Topography and Septic System Placement

Questions were raised as to steep grades of multiple driveways and access roads, with grades uncertain due to missing spot elevations). Grade necessitates deep cuts (Lots #12 &



#13), Ingham Hill Pod. This is a planning concern because sedimentation and erosion control falls under the jurisdiction of the Planning Commission. The close link between S & E risks and grade is widely understood by regulators as well as soil scientists. The lack of even a conceptual stormwater management plan further hinders the commission in assigning the sedimentation and erosion risks associated with these hilltop lots needing deep cuts and extensive grading.

Many of the test pits for septic systems are on very steep slopes (hatched on the plans). A sizable swath of forest must be cut down and soil disturbed to build a septic system, with a time lag before soils are stabilized, varying in length per season. For example, the proposed house in Lot 12 in the Ingham Hill pod is to be built on a steep slope along an old roadway, upgradient (north) of a linear wetland. The most suitable test pits suggest that the septic system will be built on a very steep forested slope, also upgradient of the wetland to the south.

Similarly in Lot 10, the limited available test pit data also shows that the gently sloping potential location for a septic system had multiple pits with bedrock within 48 inches: test pits 14-3, 14-4, 14-5, and 14-6 in Lot 14. Test Holes 111-6 and 111-7 do have suitable soils with deeper bedrock, but are located on a very steep slope upgradient of the wetland to the southeast, although across the road.

Originally the West PRD was intended to be served by a community septic system. The change to multiple small septic systems is very problematic because test pit data shows that almost all test pits have bedrock within 48 inches (non-conforming, with associated risks to wetland resources). The applicant has not conformed to the conditions for a preliminary open space subdivision plan if septic system feasibility has not been demonstrated.

3.0 CONCLUSION

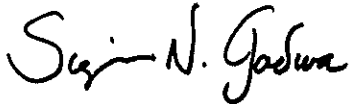
It is our professional opinion that the proposed application for modifications does not provide a basis for set-asides of open space, consistent with town regulations. As configured, given the available information, the proposed changes are reasonably likely to cause adverse impacts to multiple wetlands and ecological communities. The the three pods that are the subject of this application warrant a assessment of ecological impacts , and a full assessment of natural resource values.



Please call us if you have any questions on the above.

Respectfully submitted,

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