IEP inc.
ENVIRONMENTAL SCIENTISTS • PLANNERS • ENGINEERS

August 2, 1989 HART-12

Conservation Commission
Town Hall
Acton, Massachusetts 01720

Re: Proposed "Tire Barn" Project

Dear Commission Members:

This letter is intended to elaborate upon and further support IEP's position that the discretionary allowance of filling 4500 sf of Bordering Vegetated Wetland (with replacement) at the above-referenced site will adequately protect the interests of the Act, and that given the site-specific conditions it is a reasonable and appropriate action which meets the intent of the Regulations (310 CMR 10.00). IEP fully understands that the approval by the Commission to grant such losses is discretionary, and that there are concerns relative to man's ability at adequately replacing the functions provided. We believe, however, that given the past activities within the wetland portion proposed to be filled (i.e., filling, hydrologic and vegetation alterations), and the resulting disturbed soil, hydrologic and plant community characteristics and reduced wetland functioning capacity, there is high potential for replacing wetland functions by creating new wetland in accordance with the performance standards at 310 CMR 10.55(4)(b)(1-7). In support of this, outlined below is a brief summary of the manner in which the wetland is believed to presently function with respect to the protectable interests, and the potential for replacing those functions by wetland creation on the north edge of the wetland boundary.

Flood Control and Storm Damage Prevention: The subject wetland is not within the 100-year flood plain delineated by the Acton Flood Plain District Maps, thus its flood storage value is associated with the detention of runoff from surrounding uplands rather than of storing floodwaters from a stream overtopping its banks. The quantity of water which can be stored is limited by the wetland's size (<1 acre including the portion in Littleton) and topographic configuration, and is small relative to the storage in downstream basins. This minimal flood storage value notwithstanding, the proposed wetland replacement area will replace this storage capacity by creating an equal-sized area at the same grades as the lost area. Therefore, no decrease in wetland flood storage capacity will occur.

Ground Water Supply: Given its hydrogeologic setting, observed subsoil conditions (fluvial fine sands), and apparent depressed local water table, it is likely that this wetland functions seasonally to recharge the shallow ground water body, and that some ground water discharges to the wetland surface at some periods of high water tables. Although there is no known local ground water supply developed in the vicinity of the site, ground water flow paths are likely toward Nagog Pond and an indirect relationship could therefore be inferred. As a result of the fill material present over

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much of the wetland portion proposed to be altered, lowered hydraulic conductivities have likely reduced ground water interactions in this particular area. At any rate, the subsoil conditions in the proposed replacement area are conducive for maintaining such interactions, and therefore no appreciable changes in ground water recharge or discharge are expected from the proposed activities.

Water Supply: Although there presently appears to be an intermittent or ephemeral surface water connection between this wetland and Nagog Pond, the quantity of water supplied is incidental to the volume in the pond, and therefore the relationship between the wetland and this water supply is minimal. As stated in the NOI, it is proposed to direct runoff from the paved portions of the site to the Nagog Park closed drainage system to remove any concern for water quality impacts. Thus, no water supply impacts are anticipated.

Prevention of Pollution: The wetland has the potential to protect water quality principally by filtering and settling of contaminants in runoff and precipitation and by soil adsorption during infiltration. Again, most of the area proposed to be filled has reduced capacity for this function due to the previous filling. In general, a wetland's capacity to improve water quality is believed to increase with greater organic content in the soil, longer detention time in the wetland, and more diffuse rather than channelized flow. The area proposed for filling does not have organic soil, but rather is poorly drained mineral soil with evidence of gravely fill. Surface water detention times appear relatively short due to the gentle slope leading to an unrestricted concrete culvert. In short, while some water quality functions are likely to be provided by this wetland, the area proposed for alteration generally appears to have reduced capacity, and therefore its loss along with replacement will not appreciably impair the wetland's overall ability to maintain water quality.

Wildlife Habitat: As evidenced during the site visit, much of the area proposed for filling consists of a mixture of upland and wetland vegetation which has relatively recently colonized the disturbed soils. Goldenrods, grape, and poison ivy are dominant over roughly two-thirds of the area with scattered shrubs and saplings. The western portion consists of pole-size red maple and elm with a sparse understory. The area provides potential habitat for several songbird and small mammal species, none of which would be considered wetland-dependent. In general, wetland wildlife habitat quality here is considered relatively low and therefore the potential is good for compensating for its loss through wetland replacement.

Please understand that IEP is in no way attempting to refute the presumptions of significance for this wetland; we fully appreciate that virtually all wetlands have some value and that any value is likely to have significance. However, when determinations need to be made concerning whether a proposed filling should be permitted (provided, of course, that it complies with the standards of 310 CMR 10.00), we believe that wetland value assessment is

necessary. Since the intent of the Act and its Regulations is to protect wetland values, the discretionary allowance of altering up to the 5000 sf area of BVW is most appropriate when the wetland area to be lost or disturbed contributes relatively little to the protectable interests and there is a good potential for replacing wetland conditions. As described in the NOI, we believe that the hydrogeologic setting in the area proposed for wetland replacement is favorable for establishing the proper hydrology to support the proposed shrub and sapling wetland vegetation. Therefore, we believe that this case meets both criteria.

Thank you for your consideration of these points. We will be happy to discuss this further at your official meetings or again at the site if you wish.

Sincerely,

IEP, Inc.

Dennis J. Lowry

Dennis J. Lowry
Senior Wetland Ecologist

DJL/mmc