TOWN OF BELMONT
CONSERVATION COMMISSION
Town Hall
Belmont, Massachusetts 02478

December 3, 2003

Mr. William Brownsberger
Chair
Board of Selectmen

Mr. Joseph Barrell
Chair
Planning Board
Town of Belmont

Dear Sirs:

The Conservation Commission is grateful for this opportunity to convey our position with respect to the development of the O'Neill parcel, known as the "Belmont Uplands."

The Uplands parcel is a significant part of the Alewife Green Corridor and Reservation, and is a resource not just for Belmont, but for the whole region including Arlington, Cambridge and Somerville. Decisions we make for this land have regional implications. The Uplands should be evaluated regionally. The value of the land to the region as diverse and productive open space will accrue to generations long after ours.

VEGETATION
In eastern Massachusetts, this parcel is a unique stand of predominantly silver maple (Acer Saccharinum). From detailed satellite surveys, this piece of land can be identified as a rare spot where forested wetland and Oak/Maple/Birch forest merge. It is the last place in the Boston basin where these two important habitats merge.

The silver maple fills a specific role. The newly broken buds are an important food source for many birds at the critical time of late winter. The shoots are a high value food source for beaver, second only to alders. The trees provide cavities for nesting wildlife and the shallow fibrous root system is very effective at stabilizing soils with high water tables. The soils and the vegetation of the Uplands filter and eliminate pollutants from air and water

WILDLIFE
A bird survey and a mammal tracking survey of the reservation found 90 species of birds including 45 species nesting and also evidence of 19 mammals including muskrat and mink. Nineteen species of animals found in the reservation specifically require both wetland habitat and upland for survival.

This diversity can exist only because of the size, shape and microclimate of the silver maple upland bordering on the substantial wetland and as an integral part of the whole larger Greenway.

PEOPLE, EDUCATION AND RECREATION
We learned a very important lesson from an elementary school teacher in Cambridge. "It is not often that urban school students have the opportunity to study our natural world outside. . . .Children must develop a sense of caring for the natural environment at an early age or be at risk for never developing an appreciation for nature."

The Alewife Reservation is the only area of its size and type accessible by public transit to students of Arlington, Cambridge, Boston, Belmont and surrounding towns. The Commission feels that the Uplands is an essential component of the reservation and should not be developed.

More detail, based on comments received in several well-attended meetings, follows this letter in our "Evaluation of the Natural Attributes of the Belmont Uplands." (Appendix A)

CONDITIONS FOR DEVELOPMENT

The Conservation Commission joins the Belmont Alewife Study Commission in urging that every option for acquiring and preserving the Uplands be pursued. If complete preservation is not possible and development is to take place, the development must take place with certain conditions.

Consideration must be given to the already deficient condition of our infrastructure in this area. We know that leaking sewers are causing degradation of surface waters including Little Pond and may present a health risk.

The Conservation Commission recommends the Town adopt the "Preliminary Conditions for Development" in Appendix B. These should be included in any zoning changes and agreements enabling the residential use of the O'Neill parcel.

We will, of course, follow up as our role dictates and we are most willing to participate further in this process as you request.

Respectfully,

THE CONSERVATION COMMISSION

Michael A. Flamang
Chair

Appendix A

EVALUATION OF THE NATURAL ATTRIBUTES OF THE BELMONT UPLANDS

By the Belmont Conservation Commission

"We protect the beauty and character of our natural settings."

"We will be an environmentally responsible community and conserve our natural habitats."

From Vision Statement, Town of Belmont

Recommendation

The members of the Conservation Commission feel that the citizens of Belmont would be surrendering something valuable and irreplaceable were they to agree to development of the Uplands. In view of the ecological value of the Silver Maple Forest, the important wildlife, and the wildlife habitat that is documented in the materials that were presented to the Conservation Commission, and the proximity of the Uplands to the Alewife Reservation, the ideal plan is to have the entire Uplands preserved in perpetuity as a protected natural area. This means it would become an extension of the resource areas and related wildlife and bird habitat of the Alewife Reservation. We believe that this could be possible if public and private organizations worked to acquire the site.

Environmental Value of the Uplands

As the Conservation Commission considered the fate of the Uplands, we came to understand that the Uplands contains a highly fragile forest ecosystem which functions in relation to the neighboring wetlands in support of greater biodiversity than either forest or wetlands could sustain alone. Not only the Uplands, but also the Alewife Reservation, would be severely affected by the residential development plan under consideration.

Development of the Uplands site will almost certainly inflict serious losses upon existing threatened populations of wildlife in an area well beyond its immediate borders and will eliminate the unique forest there.

The Uplands are surrounded by wetlands on three sides. The fourth side of the O'Neill property on the other side of Acorn Park Drive also contains wetlands. Negative effects on the wetlands on the site are to be expected, because fire roads and the building intrude well into the buffer.

Removal of the existing forest may also have a variety of unfortunate undesirable environmental effects for residents of the development and the neighborhood.

In his report on the value of the Uplands, Wetlands Scientist Charles Katuska concludes: "In general, comparable sites within the Boston Basin are, if present at all, extremely rare. In this specific context, the upper reaches of the Mystic River watershed, this site is unique." Mr. Katuska goes on to say: "The floodplain forest present at this site retains, in spite of and possibly because of its history of disturbance, a broad suite of environmental functions and values. Flood storage, flood desynchronization, water quality attenuation, and wildlife habitat functions appear to have both local and regional value and the possibility for additional heritage value, recreational value, and educational value cannot be overlooked. Fragmentation of the reorganizing forest remnant on the site is not likely to have a positive impact on any of the environmental functions and values present."

Effects of Development

If extensive development alters the Uplands, environmental degradation can be expected in the following areas.

Wetlands buffer. While the "project footprint" according to O'Neill has decreased its presence in the 100-foot buffer (referred to as the "Buffer" as defined under the WPA and the State Regulations), a part of the project is located in the Buffer. The encircling 18-foot wide fire road is located within the Buffer, as are certain of the six prongs of the proposed building and lawn and other landscaped areas. This may eliminate the protection of wetland and stream resource areas which the Buffer is supposed to provide pursuant to both the WPA and the various studies on the role that buffer areas play in protecting wetland areas and wildlife habitat upon such wetlands. Some degree of degradation from intrusion by humans, pets, automobile toxins, etc. is inevitable if the project is built in this sensitive area.

Stormwater runoff. In the proposed residential plan a building covers much of the site where there was once soil to absorb, hold, and percolate stormwater. The residential plans attempt to compensate for the loss of soil function by providing detention tanks for stormwater designed to meet the DEP Stormwater Management Standards. The project meets ". . . DEP's Stormwater Management Standards, including reduction of peak discharge rates . . . by the required 80% removal rate." (Fay, Spofford & Thorndike, with the assistance of the BSC Group)

However, despite the planned use of detention tanks, the Conservation Commission is concerned that once the project is built, there will be a greater volume of stormwater runoff from the site than now exists. The developer's plans do not address the stormwater storage capability of the forest of silver maple trees that would be removed under the developer's plans. Silver maple trees are deliberately planted by foresters in areas prone to flooding and grow naturally in very wet locations such as floodplains. "Floodplain forests are diverse natural communities that experience seasonal floods. Along major rivers, these forests are typically dominated by silver maple trees. . . . Floodplain forests dissipate and absorb a considerable amount of water during floods, helping to buffer surrounding and downstream lands from flood damage. With the loss of these forests, the collective losses of other streamside wetlands, and increased area of impervious surfaces through water sheds, the intensity and amplitude of floodwaters has increased. . . ." (From Natural Communities of New Hampshire, a fact sheet prepared by the NH Natural Heritage Program, a bureau in the Division of Forests & Lands in the New Hampshire Department of Resources and Economic Development).

Flooding. In addition, we note that generalized mapping prepared by FEMA indicates that the majority of the site is subject to flooding in the 100-year event and that only a central "island" remains above the level of the 100-year flood. Both FEMA and the DCR (formerly the MDC) are in the process of updating the 100-year flood plain. The existing 100-year flood plain includes Acorn Park Drive, which itself has been seriously flooded 3 times within the past 50 years alone. As proposed, a portion of the footprint of the project is right up against the 100-year floodplain line currently designated by FEMA. Moreover, much of the Buffer and the encircling fire road would be under water in a 100-year flood.

Pollutants. Vegetation traps sediments that bind, and in some cases chemically break down, pollutants into nontoxic compounds, thereby improving water quality in the drainage basin. "The Uplands site serves as a 'sink' for airborne pollutants. Nutrients (nitrogen, phosphorus) and heavy metals are adsorbed onto soil particles or sequestered in the biomass of the forest's living tissue. The undeveloped Uplands parcel recharges groundwater, sustaining wetlands onsite, as well as Little Pond, Little River, through a cleaner, more natural and ultimately beneficial hydrologic system."

Sewage. "Beyond the ecological impacts to water quality from the loss of the forest, there is a larger problem. Substantial sewage flows from any development scenario, residential or commercial, will exacerbate existing water quality." (Katuska) The Vanasse Hangen Brustlin report states, ". . . the municipal system currently experiences surcharging at the downstream Flanders Road MWRA meter during high-flow rain events." Since Cambridge has denied a sanitary sewer tie-in for the residential project, sewage from any Uplands development would travel through Belmont's Little Pond neighborhood. This neighborhood is on the Town's list for sewer work as it is experiencing serious sewer failures at the current time. Without a complete rebuild to correct leaks, cross-connections, collapses, and to carry a heavier flow, the water quality of Little Pond and Little River is threatened during severe weather events, as is the well being of Winn Brook residents.

Air quality. Trees and plants remove carbon dioxide from the air, and produce oxygen, improving air quality in the area. Removal of the trees is removal of a valuable air purifying system especially beneficial to the neighboring community.

Climate. Forest shade provides cooling effects to contiguous areas, mitigating reflected heat from the highway. The forest also creates microclimates that provide varied habitats.

Noise. Forests provide a buffer with some degree of sound insulation to nearby areas and neighborhoods, which may otherwise suffer an increase in highway noise.

Wildlife/biodiversity. We expect that development of Uplands will inflict serious losses upon decreasing populations of wildlife in an area well beyond its immediate borders. Due to the depth to the parcel, the Uplands serves as a refuge for wildlife from the broader area around it. Once the Uplands are gone certain animals will leave the area. Also, some wetland animals need areas that are drier to survive. For example, two reptile species found in the area, the Painted Turtle and the Common Snapping Turtle, use areas beyond 200 feet from the wetland edge. (Boyd, L. 2001. Buffer Zones and Beyond: Wildlife Use of Wetland Buffer Zones and Their Protection under the Massachusetts Wetland Protection Act. Dept. of Natural Resource conservation University of Massachusetts, Amherst, MA)

Although under significant stress from invasive or nonnative species, the mixed association of forest stands, scrub-shrub wetlands, and small marshes provides a diverse patchwork of habitat types with value for a wide variety of urban and suburban wildlife species. Some of these require both the wetlands and upland areas for year-round survival. The loss of the Uplands will mean that certain species will leave the general area altogether. Among the developed areas of the metro Boston area there are pockets of green acreage and wooded areas. Some are connected by green corridors while others are isolated but near enough to each other to sustain birds, a number of permanent residents, and species which migrate through the area.

The Biodiversity Study of Alewife Reservation Area incorporates surveys funded by the Riverways Program of the Massachusetts Department of Fisheries, Wildlife, and Environmental Law Enforcement. These surveys document the large number of species living in the Alewife Area. The survey area includes both the Uplands and the wetlands adjacent to the Project. The authors of the Biodiversity Study of Alewife Area include:

*Charles Katuska, a certified Professional Wetlands Scientist, who has a
Masters of Forest Science from Yale University,
*David Morimoto, Ph.D., Program Director, Lesley University's Natural
Sciences and Mathematics Department, and
*Peter Alden, author of 14 nature books including the National Audubon
Society Field Guide to New England.

The Biodiversity Study provides documentation for:
*Nineteen species that have been identified as specifically requiring both wetlands and uplands habitat for their survival.
*Over 80 different species of birds including great blue heron, pheasants, hawks, owls and woodcocks which breed, migrate, winter or visit the Alewife Reservation and adjacent areas.
*Sixteen wild mammal species including beaver, muskrat, weasel, fox and mink.
*The flora including the Uplands silver maples, which constitute a rare forest in this region.

Environmental education opportunity. The location within the metropolitan area and close to the Alewife line makes the Uplands forest an ideal educational site for inner city school children, college students and other area residents, helping to stimulate curiosity about and a critical awareness of the natural world in which we live.