Water Quality Considerations
Proposed Purchase of Unisys Land, White Pond, Concord

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Water quality studies of White Pond were conducted between 1987 and 1990 to assess causes and corrective measures for reported algal blooms. Results are described in four reports submitted to the Concord Board of Health and White Pond Advisory Committee. Water quality issues related to the proposed purchase of adjacent land from Unisys Corp are summarized below:

(1) Because White Pond is relatively deep and groundwater fed, it has potential for excellent water quality to support recreational uses and fisheries. Its average transparency of 17 feet exceeds that measured in 94% of Massachusetts lakes.

(2) Occasional algal blooms, periods of reduced clarity, and loss of oxygen from bottom waters are symptoms that the Pond's water quality is threatened by eutrophication, or excessive nutrient loading. Important nutrient sources include surface runoff from developed watersbed areas, leachate from onsite wastewater disposal systems adjacent to the Pond, and erosion of steep shorelines.

(3) Limited historical data suggest that nutrient and algae levels in White Pond have increased since the early 1970's. Pond water quality is already threatened by existing nutrient sources. The existing average phosphorus concentration in the Pond is about three times that estimated to have occurred under pristine conditions (before any land development). Further increases in nutrient loading must be avoided to protect existing quality and uses. White Pond (as we know it and use it) cannot continue to function as treatment system for urban runoff and septic leachate.

(4) Approximately half of the 40-acre Unisys Parcel lies within the surface watershed of White Pond (see attached Figure). Development of this parcel would increase the total area of residential land in the White Pond watershed from 38 to 58 acres and would decrease tbe total area of undeveloped land from 69 to 49 acres. Residential development would generate the following additional sources of nutrients and other water quality contaminants:

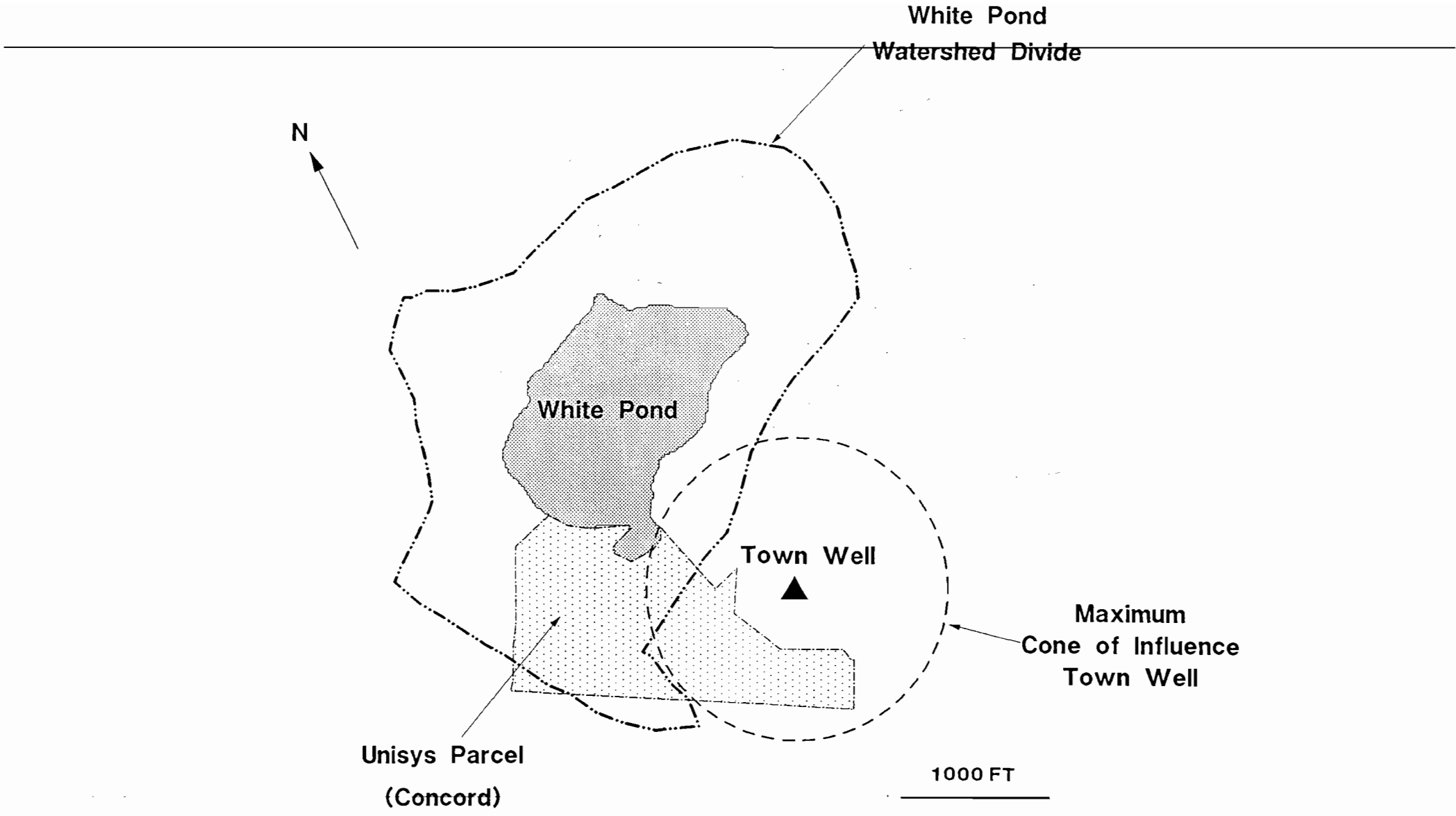
(a) runoff and erosion from construction sites;
(b) runoff from impervious surfaces and landscaped areas after construction is completed;
(c) seepage from onsite sewage disposal systems.

While certain measures could be taken to minimize these additional sources, the Pond does not have the ability to process any new nutrient sources without risking significant deterioration in water quality. Development of a golf course would impose equal or greater water quality risks.

(5) Considering that both the Unisys parcel and White Pond are important sources of recharge for the Town's White Pond well (see attached Figure), the option to purchase the land at a reasonable price is very attractive. Purchasing and maintaining the land would provide an effective, longterm means to protect both the Pond and the water supply.

(6) If purchased by the Town, options for public access and use of the Unisys Land need to be explored. Limited recreational use would not necessarily be inconsistent with protecting water quality.

(7) Although conservation and recreation seem to be the most appropriate uses for the site, that portion (~50%) outside of the White Pond watershed could be developed without impacting the Pond. This portion is within the recharge area for the Town Well, however. Potential problems related to access and water-supply impacts would have to be addressed.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