



Charles River Watershed Association

BY FAX AND MAIL

May 24, 2005

Secretary Ellen Roy Herzfelder  
Executive Office of Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Attn: Nicholas Zavalas, MEPA Unit

***Re: Draft Environmental Impact Report, Waldenwoods, Milford, MA  
EOEA No. 13389***

Dear Secretary Herzfelder:

The Charles River Watershed Association has reviewed the above-referenced draft environmental impact report (EIR) and submits the following comments on this planned residential development project and development of recreational fields on adjacent town land. The project will preserve 216 acres on two parcels via a permanent conservation restriction to be held by the Milford Conservation Commission and another as yet unnamed party.

The project is located in the headwaters of the Charles River. The Upper Charles basin is highly stressed. This project will result in a net water deficit to this headwaters area. Upstream of the Milford Wastewater Treatment Facility (MWTF), the Charles River already has extremely low flows, in part due to Milford Water Company's surface water withdrawals at Echo Lake and regional sewerage. In some of the upper reaches above Milford Pond, CRWA and United States Geological Survey (USGS) have documented dry riverbed conditions in the summer. Milford Pond is severely impacted by aquatic vegetation and sediments, in part due to low flows. A Target Fish Community assessment by MA Division of Fisheries and Wildlife is now underway in the Charles River. Data recently collected indicate that this upper part of the Charles River watershed has a highly impacted fish community and that the fish population is comprised of generalist fish species that are more typical of a pond fish community than a flowing river. Only 2% of the fish are river fish, as opposed to pond species, like carp.

Echo Lake and the Charles River are public water supply sources and the majority of the site is classified as an outstanding resource water (ORW) of the Charles River. Several wetlands on the site are classified as Class A ORWs. Drainage from the site is both northerly toward Echo Lake and southerly toward the Charles. The site also

contains rare species habitat. The project will alter almost 50 acres and 18.45 acres will be rendered impervious.

Turf and Irrigation: According to the DEIR at 6-4, every two residential units will have ¼ acre of turf and landscape. With 83 buildings, this translates to close to 21 acres of turf and landscape for the residences alone, exclusive of the common areas. The playing fields will have 8.5 acres of maintained turf.

The amount of turf in this project should be drastically reduced. Little of the water used for lawn and field irrigation is returned to the aquifer and compacted lawns in themselves are relatively impervious surfaces hindering recharge. Landscaping plans should be included in the FEIR and the proponent should commit to reducing the amount of turf, using drought tolerant fescues and xeriscaping, and to minimizing the removal of trees to reduce water demand in the summer when groundwater is stressed and streamflows are low. Most of streamflow in the summer is provided by groundwater. Reduction in the amount of turf has the added benefit of reducing fertilizer and pesticide use.

The FEIR should discuss the total amount of turf and how it will be irrigated. The FEIR should also explain how the estimate of 3,320 gpd of irrigation water for the residential units was derived. The proponent should commit to using in-ground sprinklers only where absolutely necessary. It is unclear from the Irrigation Conservation Plan (DEIR Appendix E) whether the sprinklers will be under the control of individual unit owners, or will be operated through a centralized system. The FEIR should clarify this and if under individual control, it should discuss its residential education program to reduce irrigation use and commit to annual maintenance (in addition to leak detection) of the systems.

While the project agrees to comply with watering restrictions imposed by the Milford Water Company (MWC),<sup>1</sup> development of a drought management plan should also be required tied to precipitation levels. We suggest that the proponent look at the Mount Auburn Cemetery's plan for guidance. The proponent should also commit to no outside watering between the hours of 8:00 a.m. and 7:00 pm. when evapotranspiration is highest.

The project is proposing to drill approximately five bedrock irrigation wells to meet irrigation needs (3 for the residential area and two for the playing fields). DEIR at 6-5. CRWA is concerned about the connection between bedrock withdrawals and groundwater levels. A recent study by the United States Geological Survey (USGS) shows that where there is "vertical connectivity" between the bedrock fracture and the surface layers, bedrock wells behave similarly to groundwater wells and will create a cone of depression that draws down the water table and surface waters for which groundwater provides baseflow. In such cases, the impacts of well withdrawals on surface waters-- wetlands and streams -- is very similar to the effects of groundwater wells. See, Lyford, Carlson and Hansen, *Delineation of Water Sources for Public-Supply*

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<sup>1</sup> This commitment may be largely ineffectual since bans are rarely imposed and odd-even day watering has been found not to reduce water use, and in some cases, actually increases water use.

*Wells in Three Fractured-Bedrock Aquifer Systems in Massachusetts* (USGS 2003). Notably, of the nine bedrock wells studied by USGS, seven had significant impacts on surface waters in the vicinity of the wells approximately equal to the effects that would occur with groundwater wells.

The Water Resources Commission's 2002 *Lawn and Landscape Water Conservation Addendum* to its 1992 *Water Conservation Standards for Massachusetts* and its *Guide to Lawn and Landscape Water Conservation* (2002) recognize that private irrigation wells can have localized environmental impacts. The Department of Environmental Protection (DEP) is concerned about the impacts of irrigation wells as evidenced by the requirement in the Ipswich River watershed water withdrawal permits that communities make these wells subject to the same outdoor watering restrictions as those on public water supply or face further restrictions tied to streamflow. More and more straws in the same aquifer will cumulatively have an impact on the river. The FEIR should discuss the location and number of irrigation wells, withdrawal rates and analyze potential impacts to both ground and surface waters. All irrigation wells should be metered so withdrawal volumes can be measured. A monitoring program to assess impacts to surface waters from the irrigation wells should also be required. Comprehensive baseline data needs to be collected now, otherwise a monitoring program is unlikely to be effective.

The state's guidance articulates the policy that in the hierarchy of water uses, lawn and landscape irrigation comes last: "Water used for maintaining landscapes and lawns should not be used at the expense of public health and safety or the environment." *Id.* Every effort should be made to minimize outdoor water use.

For irrigation, rainwater should be harvested from rooftops and stored in cisterns for lawn use. Irrigation wells should only be used to supplement captured rainwater. The amount of turf irrigated by automatic sprinklers should be quite limited and the proponent should commit to relying on rainfall only for irrigation in the majority of turf areas. Lawn areas should be allowed to go dormant in times of low rainfall, rather than using well water on these areas. We note that lawns "green up" again with rainfall and this could also be an important component of the project's water conservation/education program. Lastly, with adequate loam depth and drought-tolerant fescues, once a week watering is all that should be necessary for the areas that are irrigated by inground sprinklers. The proponent should commit in the MEPA process and through the drought management plan to reducing the amount of turf, the amount of acreage that is irrigated, and to minimal irrigation of land that is irrigated.

The proponent should explore the use of artificial turf on the playing fields to reduce the irrigation water demand. While artificial turf provides somewhat lower wildlife and biological diversity values, and can in some cases increase heating, it requires no irrigation, pesticides, herbicides or fungicides, and it facilitates stormwater recharge. On balance, at this site, it may be a benefit to use artificial turf.

#### Rare Species Habitat

Field surveys approved by the Natural Heritage and Endangered Species Program are currently underway for the entire site. The FEIR should discuss the results, and

include a draft of the conservation permit. The impacts of habitat fragmentation and measures to avoid or minimize impacts should also be discussed

A north-south pedestrian connection between the project's two access roads from Route 85 is proposed. Water and sewer lines will apparently be located underneath the path. The FEIR should discuss the habitat impacts of this. At a minimum, the path should be narrow and unpaved. Any plan to light the path and its impacts on wildlife should be discussed in the FEIR.

### Stormwater Management

Effective stormwater management for this site is key. According to the DEIR at 4-1, the majority of the site ultimately drains south to the Charles River, while the northern area drains to Echo Lake. Given its sensitive location, CRWA believes that this project can and should go beyond the minimum requirements of the DEP Stormwater Management Policy and that the proponent should commit to using low impact development techniques in the project's design and construction.

The FEIR should contain significantly more detailed information about stormwater management and an assessment of the short and long-term impacts to surface waters. The overall design and strategy of the stormwater management plan is rudimentary and does not reflect the current best stormwater management practices. For instance, a goal for this project should be to decentralize stormwater collection and infiltration to the greatest extent possible. This can be done using basic low impact development techniques on every residential unit, including infiltration trenches at the end of driveways, grassed swales and rain gardens. Additionally, there should be significantly longer flow paths for stormwater, as opposed to the pipes currently proposed. Catch basins should also be fitted with hoods to reduce oil and grease contamination. Detention basin A, which is close to the wetlands buffer zone and the Charles should be relocated. We note that there is no discussion of wetland #22 in the DEIR. An important component of stormwater management is public education and the proponent should commit to educational signage at detention basins and other structural BMPs, as well as mailings (instead of just public notices) to residents on the importance of proper stormwater management.

The proponent has agreed at the request of the Milford Conservation Commission to capture rooftop runoff from some of the residential units and direct it to wetlands. The FEIR should discuss treatment of the first flush of rainwater, which contains contaminants and debris, and how wetland erosion and sedimentation from the discharge will be prevented. The DEIR at 4-22 states that in addition to directing a portion of the runoff to the wetlands, the project will infiltrate rooftop runoff. The FEIR should show the units and discuss the amount of infiltration that can be achieved.

The operation and maintenance plan (O & M) should be strengthened. It should include a snow removal plan and annual catch basin cleaning. Catch basins and stormceptor units should be inspected monthly and pavement sweeping should be done four times a year between March 1 and November 1. The O&M plan should be recorded with the deed.

## Water Conservation

MWC's water withdrawal permit, along with 14 other withdrawal permits in the Charles, is currently being revised by DEP. Based on DEP's Water Management Act Policy and Guidance (April 2004) and several draft permits, MWC will be required to keep residential water use at or below 65 gallons per capita per day (gpcd). A seasonal cap limiting the amount of water from May-September will also be included in MWC's permit. The FEIR should discuss how the project will meet the 65 gpcd performance standard. We note that while the DEIR states that water conservation measures will include low flow toilets and showerheads, these are already required under the State Plumbing Code. In response to CRWA's ENF comments on low flow appliances, the proponent stated that it was not installing washing machines, but "would investigate" installation of low flow dishwashers. The proponent should commit to using low water use dishwashers in the FEIR.

## Conservation Restriction

A draft of the conservation restriction (CR) is contained in Appendix A of the DEIR. The proponent states in the DEIR that the CR will be held by two entities (DEIR at 4-20), one of which is the Milford Conservation Commission. CRWA recommends that the second holder of the CR be a non-profit land trust or environmental group with involvement in the area, as opposed to another town entity or a state agency. We suggest in B. Prohibited Uses, subsection 8 that division or conveyance of part of the Open Space parcels be prohibited, rather than making it contingent on the prior written permission of the grantee(s). In the Reserved Rights section, we suggest eliminating horseback riding from the recreational uses in view of the sensitive location and public water supply uses.

Please feel free to call me if you have any questions.

Sincerely,

Margaret Van Deusen  
Deputy Director

cc: Milford Board of Selectmen  
Milford Conservation Commission  
Milford Planning Board