

# NEPONSET RIVER WATERSHED ASSOCIATION

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Ellen Roy Herzfelder  
EOEA  
100 Cambridge Street  
Boston, MA 02114

RE: Ponkapoag Golf Course Drainage and Irrigation Improvements  
MEPA #10573

Dear Secretary Herzfelder,

I have had the opportunity to review the FEIR for the above referenced project and am writing to offer comments on behalf of the Neponset River Watershed Association.

At the outset, I would like to say that provided more time, the Association could complete a more thorough review of the FEIR as befits the sensitivity of the resources at stake. I have also heard from several other prospective commenters, that they will not be filing comments, or will be filing only perfunctory comments, because more time is needed to complete a thorough review. I would therefore, ask the proponent to extend the comment period for this project by an additional four weeks. This does not seem like an undue delay in light of the seven year hiatus since submission of the DEIR.

The FEIR represents a substantial improvement over the level of analysis presented in the DEIR, however, we feel that any number of critical areas have been insufficiently evaluated, and one major alternative entirely overlooked. And therefore we feel compelled to ask that you require preparation of an SEIR.

## **Minimum Instream Flow Thresholds**

The inclusion of a 0.28 CFSM minimum instream flow threshold in the operating procedure for the water withdrawal is a positive first step, but is insufficient to protect water quality and aquatic life in Ponkapoag Brook, and even more importantly to protect critical drinking water supplies in Dedham, Westwood and Canton.

There are now two public water supply wells whose state permits include streamflow thresholds below which pumping of those sources must cease The Dedham-Westwood Water District's Fowl Meadow Well and the more upstream Canton Well #9. The streamflow threshold for both these wells are enforced based on flow measurements at a USGS maintained gauge located on the Neponset River at Greenlodge Street. This gauge is immediately downstream of the confluence of Ponkapoag Brook and the Neponset River. As such, the increased withdrawal at the Golf Course will affect not only the hydrology of Ponkapoag Brook and the Neponset River, but also the operation of the Dedham-Westwood Fowl Meadow Well and Canton's Well #9.

The 0.28 CFSM criteria developed by the WRC for Canton Well #9 was intended to ensure that the cumulative impact to the river of opening Well #9 would not cause more frequent closure of the downstream the Dedham-Westwood Water District's Fowl Meadow Well due to further lowering of streamflows. The Dedham-Westwood Well is governed by its own, less stringent streamflow threshold, of 0.13 CFSM.

Neither of these thresholds (0.28 or 0.13 CFSM) represents an acceptable "minimum" level of instream flow for the protection of aquatic life, nor did the WRC develop these thresholds based on any site specific indicators of instream flow needs. In fact, at the time the Canton threshold was adopted, DFG (then DFWELE) recommended a streamflow threshold of 0.5 CFSM, otherwise known as the Aquatic Base Flow, as the minimum threshold to protect aquatic life. More recent decisions by DEP in the Ipswich River WMA permits and in the new WMA Policy Guidance validate the use the Aquatic Base Flow threshold (0.5 CFSM) as the appropriate standard for regulating nonessential outdoor water uses.

Even if one were to disregard this emerging consensus around the ABF standard, and instead rely on the same logic that the WRC used in setting the 0.28 CFSM criterion for Canton's Well #9, the resulting streamflow number would be higher than 0.28 CFSM. Where the threshold for Canton was higher than the threshold for Dedham-Westwood, so too would the threshold for the Golf Course be higher than the threshold for Canton.

Therefore, the Association strongly recommends that EOE and DEP require operation of the irrigation system be based on a streamflow threshold of 0.5 CFSM.

### **Measurement of Instream Flow**

Whatever instream flow criterion is selected, the appropriate location for monitoring instream flow is not the outlet of Ponkapoag Pond, but rather at the intersection of the Brook and the downstream property line of the course, near Washington Street. Placing the monitoring station in this position would capture the combined effect of both the surface and any groundwater withdrawal on the Brook. A new computation of watershed area at this more downstream location will be necessary to translate the CFSM based criterion into a CFS based management threshold.

The FEIR should be lauded for its commitment to interconnect the streamflow gauge and the irrigation system to make the cessation of water withdrawals automatic. In addition to this automatic link, the operation of the irrigation system should also be reduced manually, if readings at the Greenlodge Street Gauge fall below the applicable streamflow threshold.

### **Additional Analysis of Hydrology**

Conceptually, the revised weir plate design seems to be a substantial improvement over the previous plan, however the explanation of the operation of this new outlet and particularly the hydrographs of the remodeled conditions are insufficiently described to determine if these calculations are accurate. Schematics of the existing and proposed weirs should be shown, and a narrative provided to explain what methods and assumptions were used to prepare the hydrographs, and how evaporation, precipitation and runoff were computed. For example the narrative seems to indicate a flat assumption of 65% of precipitation ran off to the pond. What was the basis for this assumption? Given that one would generally assume 50% of total precipitation in a watershed evaporates, the assumption that 65% of precipitation ends up in the pond seems optimistic. While these computations may, in fact be accurate, it is not possible to determine if this is so by reading the FEIR. The SEIR should present a clear water budget analysis as a basis for estimating pond elevations and water available for pumping and downstream discharge.

### **Impact of Drainage Improvements on Groundwater Recharge**

The drainage improvements will presumably have the effect of moving water more quickly from the course to downstream areas. What will be the effect of these changes on peak runoff rates leaving the site and on groundwater recharge at the site?

### **Total Requested Withdrawal and Initiation of Water Conservation Measures**

What is the actual size in gallons of the WMA permit being requested? The FEIR seems to indicate that the Course is requesting a WMA permit for 43 MGY, but is not specific on this point. It also seems to indicate that only 35 MGY is needed during a drought year.

The Course should be lauded for their proposed water conservation measures, which will reduce water use to 35 million gallons, at least during drought years. However, we are concerned that these water conservation measures will be implemented only during drought years. We are also concerned that the precipitation based drought definition will not be sufficient given that the streamflow problem in the Neponset Valley is not a problem declining rainfall, but rather a problem of declining streamflow in the face of constant rainfall levels.

The water conservation program for the Course should be triggered not only by the occurrence of a precipitation based drought, but also during any instance where instream flow measured in the Brook or at Greenlodge Street Gauge drop below the 0.5 CFSM criterion. I would point out that under the new WMA guidance this is the criterion by which all nonessential water uses supplied by public water supplies are to be not only restricted, but rather totally discontinued. It would seem only fair to take the more modest step of simply restraining Course irrigation under these conditions.

The proponent describes several times, the catastrophic impact to the Course of not watering at a minimum of 35 million gallons per year, citing the expense of rebuilding portions of the course and closing it for long periods to allow grass to reestablish itself. I must observe that these arguments seem somewhat specious, given that by their own indication, the Course has been operating since its inception with as little as 7.5 million gallons per year, and I am not aware of any repeated and protracted closures of the course due to lack of watering. By contrast, the impacts to aquatic life and human health and safety due to reduced streamflows or closing of public supply wells are far more irreversible than any potential damage to the Course. Because of this, I would argue that the proponent should be required to develop a conservation plan that saves additional water.

Finally, the FEIR seems to argue that an additional 36 MGY can be removed from the Pond/Brook with “no impact to anything.” However, at the end of the day, unavoidable fact of the matter is that there will be 36 million gallons less available to either the Pond and the Brook because it is being applied to the course. In a Brook this size or even the Neponset River itself, particularly coming in the summer months, this is a substantial amount of water, and it cannot be obtained without impact.

### **Mitigation of Increased Withdrawals**

In the WMA and IBTA Permits for Canton’s Well #9, streamflow thresholds were not the only measures required to protect the health of the Neponset and its tributaries. In addition, 2:1 mitigation was required for every gallon of water diverted from the watershed. Now six years later, it common practice for DEP to require 4:1 mitigation in stressed basins. The only way to overcome that fact that the Course will be creating a net increase in water withdrawal, even under a water conservation scenario, is for the Course to mitigate this increased water withdrawal at a 4:1 ratio through additional, potentially offsite, measures in the areas of water conservation, stormwater recharge and inflow/infiltration reduction. Unless EOEA and DEP require such mitigation, this project will result in a net loss of flow in a stressed basin. I would urge EOEA and DEP to require the same mitigation of a nonessential golf course use that they would require of essential public water supply uses.

### **Groundwater Withdrawals**

One of the most serious shortcomings of the FEIR is in the analysis of groundwater withdrawals. The FEIR implies that the impact of groundwater withdrawals is mitigated in part because one proposed well is in the Fore River Watershed and the other is in the Neponset. I would point out however, that surface and groundwater divides in the Neponset Valley seldom coincide, and in fact both wells are located in the same aquifer, and that aquifer appears, on cursory examination, to be flowing back into the Neponset River Watershed.

The FEIR also suggests that because the “capture area” of the wells does not intersect the Brook or other sensitive receptors, that the wells are not impacting those resources. However, in all likelihood, the wells are intercepting water that otherwise would make its way to those same resource areas.

Those points aside, the FEIR fails to consider an important alternative that may be quite effective in reducing the impact of the withdrawal on the Brook and Pond: using the wells as the primary source of supply and the surface withdrawal as a backup. Because this is a seasonal withdrawal, and because the impacts of groundwater withdrawal are significantly buffered by the relatively slow movement of groundwater, using the groundwater withdrawals as the primary source may have significantly less seasonal impact than using the surface withdrawal as the primary source. This may be especially so, if measures were initiated to increase groundwater recharge in the “capture areas” by mitigating existing impervious surfaces.

#### **Wetlands**

While the focus of our review was not wetland impacts, it appears that the elimination of 19,000 SF of BVW is proposed with no replication. While we understand that this is a limited project, such projects are not simply exempt from the requirements of the act. An evaluation should be undertaken of the feasibility of replicating the lost BVW. If appropriate replication areas are not available on site, any number of offsite replication possibilities can be found in the Neponset Wetlands Restoration Plan.

Thanks you for considering these comments and please feel free to contact me at the address above if we can be of further assistance.

Sincerely,

  
Ian Cooke  
Executive Director