

THE COMMONWEALTH OF MASSACHUSETTS  
WATER RESOURCES COMMISSION

**Request for Determination of Insignificance  
Under the Interbasin Transfer Act  
MGL Chapter 21 Sections 8B-8D**

**Town of Charlton Water Supply Connection  
To Aquarion  
(formerly the Massachusetts American Water Company, Oxford)**

**WRC Decision  
December 12, 2002**

**Decision**

On December 12, 2002, the Massachusetts Water Resources Commission (WRC) found that the Town of Charlton's Request for a Determination of Insignificance under the Interbasin Transfer Act (M.G.L. Chapter 21 §§ 8B-8D) did not meet the criteria for insignificance listed in the Interbasin Transfer Act regulations 313 CMR 4.04(4). This project will need a full review under the Interbasin Transfer Act if Charlton wishes to pursue this proposal. This finding was made after review of the information provided through the application process and the issues raised during the review process.

**Review History**

On November 30, 2001, the WRC received a request for determination of insignificance from the Town of Charlton. Charlton was proposing to purchase water from the Massachusetts American Water Company in Oxford (now known as Aquarion). The water company's water supplies are located in the French River basin. Charlton has land area in both the French River basin and the Quinebaug River basin, therefore a portion of the water purchased is subject to the Interbasin Transfer Act.

After review of the application, WRC staff suggested that the proponent resubmit the application for a lesser amount, as the original application did not meet the criteria for insignificance, as listed in the Interbasin Transfer Act regulations, 313 CMR 4.04(4). The application was resubmitted on February 7, 2002. Additional information was requested in order to fully evaluate this request under the Act. The requested information was received on April 3, 2002.

Insert Figure 1

Based on evaluation of the information provided through the application process and the issues raised during the review process, WRC Staff recommended that the WRC find that this project does not meet the criteria for insignificance at the June 13, 2002 meeting.

Because Charlton needed time to address the serious water supply contamination issues within the Town, discussed below, the Charlton Water/Sewer Commission requested on several occasions that the WRC postpone voting on the Staff Recommendation. DEP, working with WRC staff and the town, drafted an Administrative Consent Order to begin to address these issues. This was sent to the Charlton Water/Sewer Commission in October 2002. **The WRC voted that this Request did not meet the criteria for determining insignificance listed in 313 CMR 4.04(4) and thus will need a full review under the Interbasin Transfer Act at its December 12, 2002 meeting.**

### **Background**

Charlton currently has no public water supply. Throughout the 1990's, extensive volatile organic compound contamination of private wells was discovered in the "Charlton City" section of town, the Route 20 corridor and the areas adjacent to the Massachusetts Turnpike Service Area 6W and Exxon LaMountain site in town (See Figure 1). ExxonMobil, the Massachusetts Turnpike Authority (MTA), and the Town of Charlton DPW Garage were identified as the primary responsible parties (PRP) for some of this contamination. However, no PRP is currently identified for the contamination of the Charlton City area<sup>1</sup>. There is also salt contamination in the aquifer near the Massachusetts Highway Department Garage on Route 20.

Remediation has begun at the MTA site. The other sites are in various phases of remediation planning. Exxon is currently providing carbon treatment or bottled water to the residences impacted by its sites; DEP has been providing bottled water and carbon treatment to the residents of the Charlton City area. This is inadequate to meet the long-term public health needs of the residents of Charlton.

In order to address the problem of contamination, Charlton is proposing to develop a public water supply system. The town's original solution was to purchase all the needed water from Mass. American Water Company, Oxford (now known as Aquarion). In November 2001, a Request for Determination of Insignificance to purchase 0.46 mgd was filed. Analyses of this request indicated that a full Interbasin Transfer Act review was necessary, as the original application did not meet the criteria for insignificance. Because of the immediate need for safe, potable water in Charlton, the town requested that the WRC consider a redesigned project for a lesser capacity, in order to meet short-term needs. After meeting with DEP, MEPA, and representatives from the town, the WRC agreed to this request on the condition that the Town begin the process for a full Interbasin Transfer review, including filing with MEPA and conducting an alternatives analysis to assure that all viable local sources have been developed. The town has identified two potential water supply sources within its boundaries and has been advised to begin the process of

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<sup>1</sup> DEP's investigation into the Charlton City contamination is ongoing.

investigating the development of these sources in order to address the criteria for Approval under the Interbasin Transfer Act (313 CMR 4.05).

The Interbasin Transfer request considered by the WRC under this Request for Determination of Insignificance is a proposal to purchase a lesser amount from Aquarion, in the French River basin. The capacity of the connection proposed under this request is 158,000 gallons per day (0.16 mgd). Charlton has land area in the French and Quinebaug River basins, so only a portion of the water purchased will constitute an Interbasin Transfer under the Act. *The amount of Interbasin Transfer considered under this request was 0.084 mgd.* This is based on the 53% of Charlton’s land area in the Quinebaug basin.

**Project Description**

Charlton is using State Revolving Funds to construct a water distribution system from the existing Aquarion system. The proposed system will consist of approximately 30,000 linear feet of 12- and 8-inch water mains, a 750,000 gallon storage tank and a booster pumping station. The original design called for two 300 gallon per minute (gpm) pumps (main pump and back-up). This has been revised in the latest submittal to require one 110 gpm main pump with a 300 gpm back-up pump. The back-up pump will be throttled back to 110 gpm when it is necessary for this pump to be in use. Portions of this project have already been constructed.

**Analysis of the Request**

Synopsis of Criteria for Insignificance

The following table summarizes the assessment of the proposal’s compliance with the criteria for insignificance.

**Table 1**

Criterion	Charlton’s Application
(a) Is not over 1 mgd	Meets
(b) Is less than 1 mgd on an annualized basis and is temporary, of short duration and for a purpose other than water supply use	Not Applicable
(c) Additional flow is less than 5% of the instantaneous flow	Does not meet
(d) The 95% exceedance flow, or the 7Q10 flow when relied in a program of pollution abatement, will not be diminished	Does not meet
(e) Special resource values will not be adversely affected	Does not meet
(f) The Commission shall consider the cumulative impacts of all past, authorized or proposed transfers on streamflows in the donor basin	Meets

## Streamflow/Hydrologic Impacts

The Town of Oxford is located along the mainstem of the French River. Water supply is withdrawn from three wells in the French River Basin by a private water company (Aquarion). Two of the wells are located in the Wellington Brook subbasin, which has a drainage area of about 3.6 square miles and flows directly into the French River. The other well is located in an unnamed tributary to the south with a drainage area of approximately 8.6 square miles. This also flows directly into the French River. Current withdrawals average 0.73 mgd, and about 97% of the withdrawals are returned to the French River Basin via septic systems and the Oxford Rochdale sewer district treatment plant within town. However, very little water is returned to the tributary subbasins from which the water is pumped.

A stream gage is located downstream on the French River, below Hodges Village Dam for which data is collected by the USGS, but not published in their annual report. This data is available on-line or from the USGS public information unit. Data from this gage was used for the streamflow analysis to evaluate the criteria for determining insignificance. The drainage area for this gage is 31.2 square miles, and data was adjusted using a drainage area ratio to a point downstream.

In April 2002, the WRC approved a request for Determination of Insignificance for a project to sewer portions of the town of Oxford. The proposed areas to be sewered were near, but not in, the Wellington Brook subbasin, where two of Oxford's wells are located. Due to concerns raised by the Department of Fisheries, Wildlife and Environmental Law Enforcement, Riverways Program, during the determination of insignificance for the Oxford sewer interbasin transfer, impacts have also been evaluated for the Wellington Brook tributary and the unnamed tributary from which the town's withdrawals and the proposed transfer are derived. Since these tributaries have no stream gage data, the USGS Streamstats program was used to estimate the 95% and 99% flow statistics for these subbasins.

Riverways is concerned that potential reductions in flow from increased withdrawals from the adjacent wells in these tributary subbasins will have a negative effect on summer low flows, particularly in the approximately half mile segment of wetlands on Wellington Brook from the water supply wells to the French River. They state that decreased streamflow through these wetlands during already stressful summer conditions will negatively affect the aquatic community and availability of aquatic habitat. In addition, according to Riverways, Wellington Brook at the town well area is considered both a Natural Heritage Endangered Species Program (NHESP) priority site and estimated rare and endangered species habitat. There are also three or four certified vernal pools near the confluence of Wellington Brook and the French River downstream of the town well. Also, the Wellington Brook subbasin upstream of the town well is considered Core Habitat by NHESP.

Two of the six criteria for determining insignificance under the Interbasin Transfer Act regulations are that less than 5% of the instantaneous flow can be withdrawn (transferred) and that the 95% exceedance flow or, the 7Q10 flow when used in a program of pollution abatement, will not be diminished. Because a wastewater treatment plant is located in Webster downstream from the transfer, the 7Q10 for plant at that site has been evaluated here. Daily flows are used to evaluate the instantaneous flow requirement for the French River. The streamflow statistics for the French River below the Hodges Village Dam and at the Webster/Dudley treatment plant are shown in the table below.

Table 2  
Impacts of the Proposed Transfer of 0.084 mgd  
on the French River Basin

Flow	Flow value in cubic feet per second (cfs)*	Potential Reduction in flow in percent
99% duration	8.3 cfs	1.6%
95% duration	13 cfs	1.0%
7Q10**	16.0 cfs	0.81%

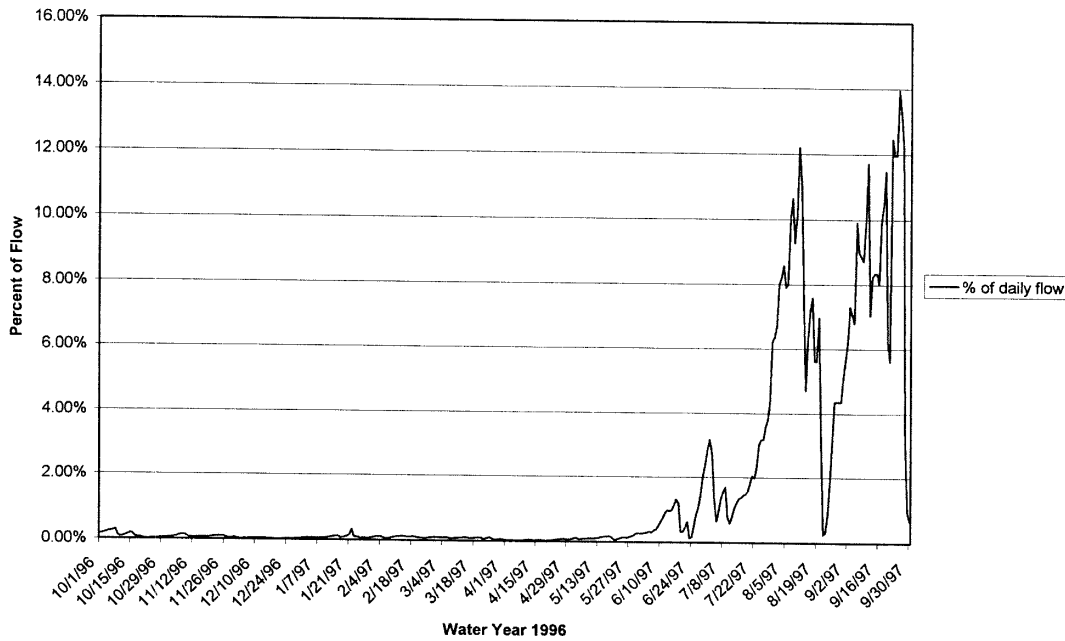
\*Based on Hodges Village gage and adjusted to a point just downstream of the outlet of the unnamed tributary

\*\*measured just upstream of the Webster/Dudley regional WWTF

In addition, the proponent submitted monthly flows from Hodges Village for the period 1962 – 1998 (POR, with years during which work was performed on the Dam eliminated). Monthly flows for 1997 were the lowest for that period. A further analysis of the daily flows for water year 1996 (October 1, 1996 – September 30, 1997) shows that the proposed transfer could be up to 14% of the flow.

Figure 2

Proposed Transfer of Water to Charlton as a Percent of Daily Flow in the French River at Hodges Village



The streamflow statistics estimated by the USGS Streamstats program for Wellington Brook and the unnamed tributary are shown in the tables below. The 99% exceedance flow is being used as a surrogate for the instantaneous flow in the tributaries. The potential impact of the total transfer is shown for each subbasin.

Table 3  
Impacts of the Proposed Transfer of 0.084 mgd on Wellington Brook

Flow	Flow value in cubic feet per second (cfs)	Existing Reduction in flow in percent*	Potential Reduction in flow due to transfer only, in percent
99% duration	0.14 cfs	685%	93%
95% duration	0.33 cfs	291%	39%

Table 4  
Impacts of the Proposed Transfer of 0.084 mgd on the Unnamed Tributary

Flow	Flow value in cubic feet per second (cfs)	Existing Reduction in flow in percent*	Potential Reduction in flow due to transfer only, in percent
99% duration	0.3 cfs	46%	43%
95% duration	0.68 cfs	20%	19%

\*Due to current water supply withdrawals transferred outside the subbasin.

Cumulative Impacts

The town of Oxford was recently approved to transfer wastewater from several locations in the French River Basin to the Blackstone River Basin. The following table illustrates the cumulative impact of the wastewater and proposed water supply transfers.

Table 5  
Cumulative Impact of Proposed Interbasin Transfer of 0.084 mgd and Approved Oxford Wastewater Interbasin Transfer of 0.06 mgd

Location	Cumulative Amount in mgd	Cumulative Reduction in 99% flow in percent	Cumulative Reduction in 95% flow in percent	Cumulative Reduction in 7Q10 flow in percent
French River	0.14	2.7%	1.7%	1.4%

Impacts to Special Resources

As stated above, staff for the Riverways program expressed concern that potential reductions in flow from increased withdrawals from the adjacent wells in these tributary subbasins will have a negative effect on summer low flows, in particular on Wellington Brook. This area considered both a Natural Heritage Endangered Species Program (NHESP) priority site and estimated rare and endangered species habitat. There are also three or four certified vernal pools near the confluence of Wellington Brook and the French River downstream of the town well.

The impacts in the tributaries shown below reflect current transfer of water from the subbasins to the mainstem as part of the water and wastewater distribution systems, as well as the proposed transfer. Impacts of existing withdrawals are regulated through the Water Management Act Program.

Table 6  
Impact of Proposed Interbasin Transfer of 0.084 mgd and Existing Water Supply Withdrawals on Tributary Subbasins

Location	Total Potential Withdrawal in mgd	Reduction in 99% flow in percent	Reduction in 95% flow in percent
Wellington Brook	0.72	795%	337%
Unnamed Tributary	0.17	90%	40%



## **Basis for Decision**

**The WRC finds that this project does not meet the criteria for insignificance based on the following facts:**

1. Impacts to daily flows on the French River exceed 5%
2. Subbasins providing water for the transfer are already impacted by withdrawals.
3. Impacts to the 95% and 99% flow durations in these subbasins are significant.
4. One subbasin contains special resources.

## **Other Issues**

The WRC is aware that Charlton has serious public health and safety issues and needs to find a short-term solution to address the water supply needs in the areas affected by VOC pollution. To this end, the WRC has directed its staff to work with the Town and DEP to find short-term solutions that will not need Interbasin Transfer approval. DEP has drafted an Administrative Consent Order to address Charlton's short- and long-term water needs.

In addition, Charlton has been informed that if it proposes to obtain water from Aquarion, the town will need to file a full Interbasin Transfer application for approval. This will involve filing an ENF with MEPA, developing an EIR and investigating and developing viable local water supply alternatives. The town will need to begin to develop local sources in order for a full IBT application to be considered.

As with any request for approval under the Interbasin Transfer Act, the anticipated request to purchase water from Aquarion will be evaluated against the eight criteria for approval in the IBT regulations, 313 CMR 4.05, including Criterion #5 "That reasonable instream flow in the river from which the water is transferred is maintained." Given the existing and potential impacts to streamflow, the Town should carefully consider all options before proceeding with the project proposed under this request.

## **Executive Order 385**

This Decision is consistent with EO 385, which has the dual objective of resource protection and sustainable development. The Decision does not encourage growth without adequate infrastructure, nor does it cause an unavoidable loss of environmental quality or resources.

# Town of Charlton

Mass Pike

6 W Service Area

Rte. 20

Charlton City

Town Of Charlton

Figure 1  
Areas impacted by contamination  
Charlton

