The Commonwealth of Massachusetts
Water Resources Commission
100 Cambridge Street, Boston, MA 02114

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

The Town of Groton's Request to Expand its Water System

WRC Decision
September 12, 2024

Decision

On September 12, 2024, the Massachusetts Water Resources Commission (WRC), in a vote unanimous of those present, found that the Town of Groton's request to expand its water system to supply the Groton Dunstable Regional High School and properties in Groton and Dunstable was insignificant under the Interbasin Transfer Act (ITA). The volume of the approved interbasin transfer is 28,555 gallons per day (gpd).

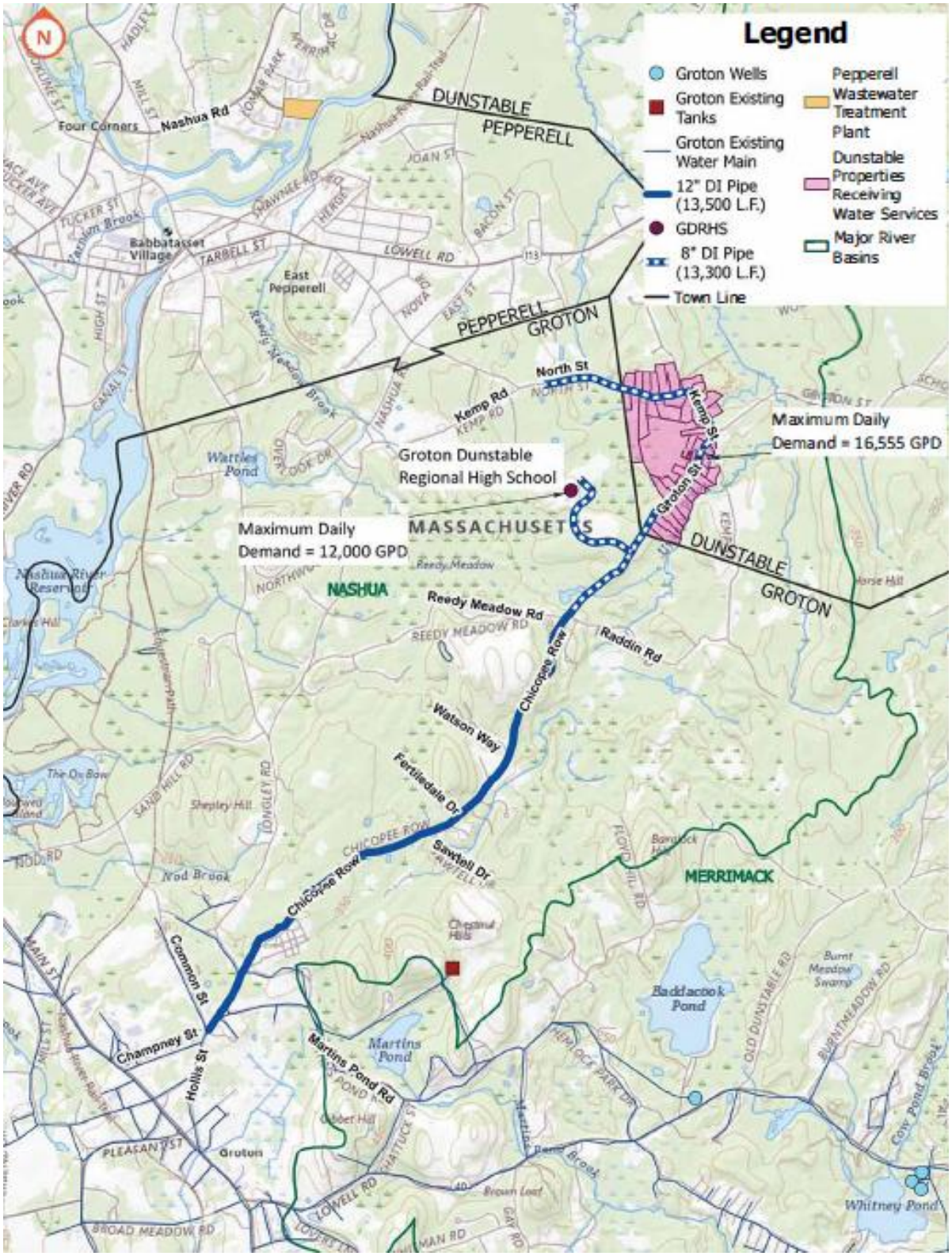
Background

On June 19, 2024, the Massachusetts Water Resources Commission (WRC) received a Request for Determination of Insignificance (RDI) under the Interbasin Transfer Act (ITA; M.G.L. Chapter 21 §§ 8B8D) from the Town of Groton (the Town). The WRC discussed this project at its August 8, 2024 and September 12, 2024 meetings.

The Town has land area in the Merrimack River and Nashua River Basins. The Groton Water Department, which has its water supply sources in the Merrimack River Basin, is proposing to provide water supply to the Groton Dunstable Regional High School (GDRHS) in Groton and properties in Groton and Dunstable. The GDRHS discharges its wastewater to the Pepperell Wastewater Treatment Plant (WWTP) in the Nashua River Basin, and the properties in Dunstable also discharge wastewater to the Nashua River Basin. As water and wastewater will be crossing both a municipal and a river basin boundary, this triggers the ITA and will require review and approval by the WRC. The water used by the properties located in Groton and a portion of the water used at the GDRHS will remain within the Town of Groton and is therefore not subject to review under the ITA, as it will not cross a municipal boundary.

The Town is proposing to expand its water system in order to supply clean water to the GDRHS and properties in Groton and Dunstable affected by per- and polyfluoroalkyl substances (PFAS) contamination. Unacceptable levels of PFAS have been detected in the school's private wells. MassDEP has determined this contamination resulted from a 2003 fire on the school's campus. As a result, the GDRHS is legally responsible for

Figure 1: Groton's Water Supply Sources and Project Area



providing clean drinking water for its students, faculty, and surrounding properties in Groton and Dunstable, whose private wells are also contaminated with PFAS.

This RDI was evaluated against the applicable criteria of 313 CMR 4.08(3), Criteria for Determining Insignificance of the ITA regulations. An Environmental Notification Form was submitted to the Massachusetts Environmental Policy Act (MEPA) Office and it was determined that an Environmental Impact Report was not required. The supply of water to the properties in Dunstable located in the Nashua River Basin is a water supply interbasin transfer. The supply of water to the GDRHS causes an interbasin transfer of wastewater, because GDRHS discharges its wastewater to the Pepperell WWTP in the Nashua River Basin.

In 2012, the WRC approved a Request for Determination of Insignificance from the Town for a maximum interbasin transfer of 363,000 gallon per day (gpd) of wastewater. A sewer collection system was proposed to be constructed in both the Lost Lake and Four Corners areas of Groton, with wastewater discharge to the Ayer WWTP in the Nashua River Basin. In a March 2024 letter to the WRC, the Town of Groton proposed to relinquish the 322,505 gpd estimated demand for the Lost Lake wastewater collection area which has not been constructed and proposed to only retain the 40,495 gpd approval for the Four Corners wastewater collection area which has been constructed. This will reduce the approved Present Rate of Interbasin Transfer from 363,000 gpd to 40,495 gpd and free up additional volume that can be considered as Insignificant.

Proposed Transfer

The Town prepared an estimate of the water needs for the domestic and irrigation needs of GDRHS and for the properties located in Groton and Dunstable. As previously mentioned, water used for irrigation at GDRHS and by the properties located in Groton will be discharged within the Town and is therefore not subject to ITA review. The total estimated demand is 60,495 gpd. Of the total demand, 28,555 gpd is subject to ITA review, determined as follows:

GDRHS has separate meters for irrigation water and potable water. Flow data from these meters from 2019-2022 was reviewed to account for a four-year spread of consumption data from pre-pandemic to post-pandemic conditions (but prior to when usage decreased in 2023 due to the detection of PFAS). Usage was reported as a monthly total and divided by the number of workdays within a month to reflect the usage during a normal school week. The average daily demand (ADD) of potable water (i.e., for indoor use) is 4,600 gpd. The maximum daily potable water usage was 11,562 gpd in February 2020, which is an outlier in the data set, and represents a 44% increase above the next highest usage of 8,029 gpd in October 2021. The maximum daily demand (MDD) for potable water was conservatively estimated at 12,000 gpd.

The impacted properties in Dunstable are not connected to a public water system; therefore, existing consumption data were not available. Demand was estimated employing three industry-standard consumption methods, including Title 5, Residential Gallons Per Capita Day (RGPCD), and the Water Research Foundation’s Residential End

Uses of Water. The Title 5 method provided the highest (most conservative) estimate of maximum daily demand at 16,555 gpd.

Therefore, the net amount of proposed new interbasin transfer subject to the ITA is 28,555 gpd. Table 1 shows a summary of these flows.

Table 1: Breakdown of Flows by Service Area (in gpd)

Location	GPD
GDRHS Domestic Flow	12,000
Dunstable Residents	16,555
Total Proposed New Transfer	**28,555**

Analysis

To assist the WRC in making its decision, staff worked closely with the proponent on the requirements of the ITA for this proposal and consulted with other agency staff. The Town's RDI was reviewed by staff from the Department of Conservation and Recreation (DCR), the Massachusetts Department of Environmental Protection (MassDEP), and the Massachusetts Department of Fish and Game's Division of Fisheries and Wildlife (MassWildlife) against the criteria for Insignificance listed in the ITA regulations, 313 CMR 4.08(3). For an explanation of the criteria and a description of how they have been met, refer to Attachment 1.

The Town's drinking water supply wells draw from and may potentially impact the Cow Pond Brook watershed in the Merrimack River Basin. Therefore, the Insignificance criterion for a transfer that is primarily derived from streamflow, which states that the proposed volume, including any previously approved transfers, must be less than five percent of the unimpacted 95% exceedance flow, was applied. Using the U.S. Geological Survey's StreamStats application, the unimpacted 95% exceedance flow is estimated at 2.26 cubic feet per second (cfs). Taking five percent of this flow and converting it to gallons per day yields 73,000 gpd as the maximum allowable volume available that may be considered Insignificant.

The existing transfer of wastewater from the Four Corners area of the Town combined with the GDRHS/Dunstable proposed new demand provides a cumulative interbasin transfer amount of 69,050 gpd. Table 2 shows a summary of the cumulative transfer.

Table 2: Summary of Town of Groton's Interbasin Transfer Request

Location	GPD
Four Corners – Previously Approved Transfer	40,495
GDRHS and Dunstable – Proposed Transfer	28,555
Total ITA Request	**69,050**

Since the proposed 69,050 gpd of cumulative jurisdictional flow is less than the Insignificant volume of 73,000 gpd, the proposal meets this criterion. Table 3 shows a summary of this information.

Table 3: Summary of Town of Groton's Interbasin Transfer Request

Flow Rates	Flow (cfs)	Flow (gpd)
Unimpacted 95% exceedance flow	2.260	1,460,575
5% of unimpacted 95% exceedance flow	0.113	73,000
Proposed Interbasin Transfer flow	0.107	69,050

The volume considered Insignificant in the 2012 Lost Lake Determination of Insignificance was 363,000 gpd but as noted above, the current maximum volume that can currently be considered Insignificant is 73,000 gpd. The larger previous Insignificant volume was determined at a different analysis point than the current Insignificant volume. In addition, the ITA regulations were revised in 2018, including revisions to the Insignificance criteria. Lastly, the 2012 Determination of Insignificance was also contingent on a streamflow release plan which was to be implemented after the construction of the Lost Lake wastewater collection system. These factors account for the difference between the previous and current Insignificance volumes.

The nearest WWTP that relies on streamflow for wastewater assimilation is the Nashua WWTP which is 10 river miles downstream of Groton and discharges to the Merrimack River. The 7-day low flow that occurs every 10 years (7Q10) is used for determining wastewater discharge permits. For a transfer to be Insignificant, the 7Q10 flow must not be significantly diminished or prolonged. To ensure that this flow is not compromised, the proposed cumulative transfer of 0.107 cubic feet per second (cfs) was compared to the 7Q10 for the Merrimack River at the treatment plant of 784.1 cfs. The proposed transfer is three orders of magnitude smaller than the 7Q10 at the treatment plant, making any impacts unlikely to be discernible.

The following special resource values exist in the vicinity of the project area as mapped by the applicant: Areas of Critical Environmental Concern, Article 97 Protected Areas, DFW Coldwater Fisheries Resources, Federal Wild and Scenic River, NHESP Estimated Habitats of Rare Wildlife, NHESP Priority Habitats of Rare Species, vernal pools, and wetlands. None of the resource areas listed are anticipated to be impacted by this project. Construction will occur entirely within the public right of way, within the paved roadway and roadway shoulders. All disturbed areas will be restored to their preconstruction condition or restored with loam and seed. Environmental protection measures will be used

to mitigate impacts to wetland resources areas during construction, including sediment control devices (i.e., filter sock and silt fence), and dewatering bags used to treat trench dewatering discharge. In May 2024, per its comments on the Environmental Notification Form filed with MEPA for this project, MassWildlife determined that this project as proposed is exempt from review under the Massachusetts Endangered Species Act (MESA).

WRC Decision

After reviewing the proposal and the comments received, **the WRC finds that Groton's proposal to expand its water system, resulting in a new interbasin transfer of 28,555 gpd and a cumulative transfer of 69,050 gpd, is Insignificant under the ITA.**

Attachment 1
Request for Determination of Insignificance
The Town of Groton's Request to Expand its Water System

Criterion	Proposal Meets?	Explanation
(a) Is less than 1 MGD	Meets	Proposed interbasin transfer is 28,555 gpd.
(b) Is temporary, of short duration and for a purpose other than water supply or wastewater service	Not Applicable	Proposal is long-term for water supply purposes.
(c) Cumulative, approved transfers, including the proposed amount, are less than 5% of the unimpacted 95% Exceedance Flow	Meets	The cumulative transfer volume is less than 5% of the unimpacted 95% Exceedance Flow.
(d) Cumulative, approved annual amount of the transfers, including the proposed amount, are less than 1% of the average annual precipitation on the drainage area of the water body, and less than 5% of the drought year inflow[1] to the water body	Not Applicable	The transfer is primarily derived from streamflow.
(e) The 7Q10 flow, when relied upon in a program of pollution abatement, will not be significantly diminished or prolonged	Meets	Changes to downstream flow are expected to be negligible from the current condition as a result of the transfer.
(f) Special resource values will not be adversely affected	Meets	Special resource values in the area are not anticipated to be affected by this transfer.

[1] Drought year inflow is the drought basin yield: the annualized Q90 streamflows in a water source based on averaging estimated near natural monthly Q90 streamflows. It is an estimation of the water that would be available in a river basin that is unimpacted by water withdrawals during the probable driest period that is likely to occur.

Criterion	Proposal Meets?	Explanation
(g) Measures to protect instream flows have been taken where appropriate and achievable, and any such measures are proposed as part of the application	Meets	Changes to downstream flow are expected to be minimal as a result of the transfer. The Groton Water Department proposes to continue its water conservation measures to minimize demand.
(h) The Commission shall consider the cumulative impacts of all past, authorized or proposed transfers on streamflows in the donor basin	Meets	The previously approved wastewater transfer for the Four Corners area of Groton has been considered and included in the analyses for this proposed transfer.