Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston MA 02114 | **Phone**: 617-292-5500

Maura T. Healey
Governor

Kim Driscoll
Lieutenant Governor

Rebecca Tepper
Secretary

Bonnie Heiple
Commissioner

September 16, 2026

Dick Taylor, Chair
Board of Commissioners
Littleton Water Department
P.O. Box 2406
Littleton, MA 01460

Littleton\ BWR\WMA
WMA Permit # 9P-2-13-158.02
Program: Water Management
Action: Permit Renewal

Dear Mr. Taylor:

Please find attached the following:

1. Findings of Fact in Support of the FINAL Water Management Act Permit Decision; and,
2. FINAL Renewed Water Management Act Permit #9P-2-13-158.02 for the Littleton Water Department in the Merrimack River Basin.

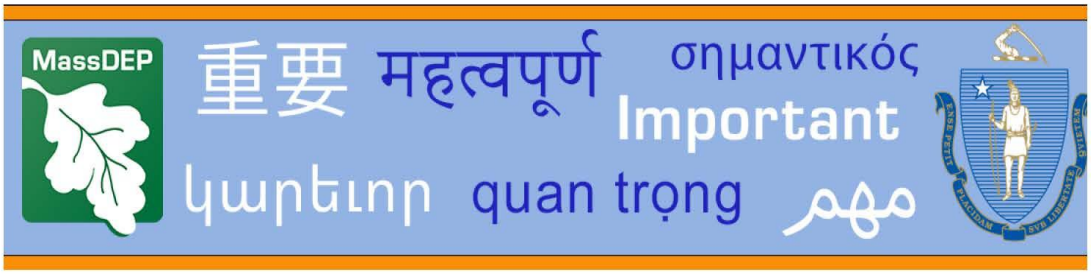
The signature on this cover letter indicates formal issuance of the attached documents.
If you have any questions and would like to meet to discuss the permit, please contact me at duane.levangie@mass.gov or call (617) 780-1962.

Sincerely,

Duane LeVangie, Chief
Water Management Act Program
Bureau of Water Resources

Ecc: Littleton Board of Selectmen
Matt Silverman, Littleton Water Department
Todd Richards, Melanie Cheeseman, & Misty-Anne Marold, MA DFW
Kevin MacKinnon, Weston & Sampson
Lydia Olson & Melissa Shapiro, Massachusetts Rivers Alliance
Jennifer Pederson, Massachusetts Water Works Association
Lauren Thistle, MassDEP Worcester Office-Drinking Water Program

https://massgov.sharepoint.com/:f:/r/sites/DEP-BWR/DWPArchive/CERO/Littleton-2158000- FINAL WMA Renewed Permit 9P21315802-09-16-2026-rvsd



Communication for Non-English-Speaking Parties

This document is important and should be translated immediately.

If you need this document translated, please contact MassDEP's Director of Environmental Justice at the telephone number listed below.

Español Spanish

Este documento es importante y debe ser traducido inmediatamente. Si necesita traducir este documento, póngase en contacto con el Director de Justicia Ambiental de MassDEP (*MassDEP's Director of Environmental Justice*) en el número de teléfono que figura más abajo.

Português Portuguese

Este documento é importante e deve ser traduzido imediatamente. Se você precisar traduzir este documento, entre em contato com o Diretor de Justiça Ambiental do MassDEP no número de telefone listado abaixo.

繁體中文 Chinese Traditional

本文檔很重要，需要即刻進行翻譯。
如需對本文檔進行翻譯，請透過如下列示電話號碼與 MassDEP 的環境司法總監聯絡。

简体中文 Chinese Simplified

这份文件非常重要，需要立即翻译。
如果您需要翻译这份文件，请通过下方电话与 MassDEP 环境司法主任联系。

Ayisyen Kreyòl Haitian Creole

Dokiman sa a enpòtan epi yo ta dwe tradui l imedyatman. Si w bezwen tradui dokiman sa a, tanpri kontakte Direktè. Jistis Anviwònmantal MassDEP a nan nimewo telefòn ki endike anba a.

Việt Vietnamese

Tài liệu này và quan trọng và phải được dịch ngay. Nếu quý vị cần bản dịch của tài liệu này, vui lòng liên hệ với Giám Đốc Phòng Công Lý Môi Trường của MassDEP theo số điện thoại được liệt kê bên dưới.

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះមានសារៈសំខាន់
ហើយគប្បីតួរត្រូវបានបកប្រែភ្លាមៗ.
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកផ្នែកយុត្តិធម៌បរិស្ថានរបស់
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយដូចខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

Es dokumentu sta important i tenki ser tradusidu immediatamenti. Se nho ta presisa ke es dokumentu sta tradisidu, por favor kontata O Diretor di Justisia di Environman di DEP ku es numero di telifoni menxionadu di baixo.

Contact Deneen Simpson 857-406-0738
Massachusetts Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114
TTY# MassRelay Service 1-800-439-2370 • https://www.mass.gov/environmental-justice
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

Русский Russian

Это чрезвычайно важный документ, и он должен быть немедленно переведен. Если вам нужен перевод этого документа, обратитесь к директору Департамента экологического правосудия MassDEP (MassDEP's Director of Environmental Justice) по телефону, указанному ниже.

العربية Arabic

هذه الوثيقة مهمة وتجب ترجمتها على الفور.

إذا كنت بحاجة إلى ترجمة هذه الوثيقة، فيرجى الاتصال بمدير العدالة البيئية في MassDEP على رقم الهاتف المذكور أدناه.

한국어 Korean

이 문서는 중대하므로 즉시 번역되어야 합니다.
본 문서 번역이 필요하신 경우, 매사추세츠 환경보호부의 "환경정의" 담당자 분께 문의하십시오. 전화번호는 아래와 같습니다.

հայերեն Armenian

Այս փաստաթուղթը կարևոր է, և պետք է անհապաղ թարգմանել այն:
Եթե Ձեզ անհրաժեշտ է թարգմանել այս փաստաթուղթը, դիմեք Մասաչուսեթսի շրջակա միջավայրի պահպանության նախարարության (MassDEP) Բնապահպանական հարցերով արդարադատության ղեկավարին (Director of Environmental Justice)՝ ստորև նշված հեռախոսահամարով

فارسی Farsi Persian

این نوشتار بسیار مهمی است و باید فوراً ترجمه شود.
اگر نیاز به ترجمه این نوشتار دارید لطفاً با مدیر عدالت محیط زیستی MassDEP در شماره تلفن ذکر شده زیر تماس بگیرید.

Français French

Ce document est important et doit être traduit immédiatement. Si vous avez besoin d'une traduction de ce document, veuillez contacter le directeur de la justice environnementale du MassDEP au numéro de téléphone indiqué ci-dessous.

Deutsch German

Dieses Dokument ist wichtig und muss sofort übersetzt werden. Wenn Sie eine Übersetzung dieses Dokuments benötigen, wenden Sie sich bitte an MassDEP's Director of Environmental Justice *(Direktor für Umweltgerechtigkeit in Massachusetts)* unter der unten angegebenen Telefonnummer.

Ελληνική Greek

Το έγγραφο αυτό είναι πολύ σημαντικό και πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του εγγράφου αυτού, παρακαλώ επικοινωνήστε με τον Διευθυντή του Τμήματος Περιβαλλοντικής Δικαιοσύνης της Μασαχουσέτης στον αριθμό τηλεφώνου που αναγράφεται παρακάτω

Italiano Italian

Questo documento è importante e deve essere tradotto immediatamente. Se hai bisogno di tradurre questo documento, contatta il Direttore della Giustizia Ambientale di MassDEP al numero di telefono sotto indicato.

Język Polski Polish

Ten dokument jest ważny i powinien zostać niezwłocznie przetłumaczony. Jeśli potrzebne jest tłumaczenie tego dokumentu, należy skontaktować się z dyrektorem ds. sprawiedliwości środowiskowej MassDEP pod numerem telefonu podanym poniżej.

हिन्दी Hindi

यह दस्तावेज महत्वपूर्ण है और इसका अनुवाद तुरंत किया जाना चाहिए। यदि आपको इस दस्तावेज का अनुवाद कराने की जरूरत है, तो कृपया नीचे दिए गए टेलीफोन नंबर पर MassDEP के पर्यावरणीय न्याय निदेशक से संपर्क करें।

Contact Deneen Simpson 857-406-0738
Massachusetts Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114
TTY# MassRelay Service 1-800-439-2370 • https://www.mass.gov/environmental-justice
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston MA 02114 | **Phone**: 617-292-5500

Maura T. Healey
Governor

Kim Driscoll
Lieutenant Governor

Rebecca Tepper
Secretary

Bonnie Heiple
Commissioner

Finding of Fact in Support of FINAL Renewed Permit Issuance
Water Management Permit # 9P-2-13-158.02
LITTLETON WATER DEPARTMENT

The Department of Environmental Protection (the Department or MassDEP) has completed its review of the permit renewal application dated November 20, 2017 submitted by the Littleton Water Department (Littleton or the Town). As part of this review, the Department also reviewed Littleton's compliance with the Amended Water Management Act Permit issued to Littleton in 2024. The Department requested additional information in an Order to Complete (OTC) dated July 11, 2025. The Town provided responses to the OTC on March 5, 2026. A draft permit was available for public comment from August 22 – September 22, 2026 and no comments were received on the draft.

The Department issues this Renewed Water Management Act Permit #9P-2-13-158.02 (the "Renewed WMA Permit") in accordance with the Water Management Act (M.G.L. c. 21G) and the regulations promulgated thereunder at 310 CMR 36.00. The Renewed WMA Permit supersedes the 2024 Amended WMA Permit. The Department makes the following Findings of Fact in support of the attached Renewed WMA Permit and includes herewith its reasons for issuing the Renewed WMA Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11, and 310 CMR 36.00. The Renewed WMA Permit is being issued since such action is necessary for the promotion of the purposes of M.G.L. c. 21G. The Department may amend, suspend, or terminate the Renewed WMA Permit, after notice and hearing, in accordance with the provisions of 310 CMR 36.29(1).

Littleton's Withdrawal History

Littleton currently holds a Water Management Act Registration (2-13-158.03) for an average annual daily withdrawal volume of 0.83 million gallons per day (MGD), from six groundwater sources in the Merrimack River Basin: Whitcomb GPW #1(2158000-02G), Spectacle Pond Well (2158000-04G), Well 2.1 (2158000-05G), Well 2.2 (2158000-06G), Well 2.3 (2158000-07G), and Whitcomb Wellfield #3 (2158000-08G).

In 1997, MassDEP issued Littleton a Water Management Act Permit (the 1997 WMA Permit) that authorized Littleton to withdraw an additional 0.63 MGD from all its sources. The

maximum total authorized volume (registered plus permitted) resulting from the issuance of the 1997 WMA Permit is 1.46 MGD.

MassDEP revised the Water Management Act Regulations, 310 CMR 36.00, in November 2014 to require permittees where applicable to address the impact of its withdrawals on groundwater depleted subbasins and to mitigate for withdrawals that exceed a defined baseline withdrawal volume. These requirements are included in this Renewed WMA permit.

Littleton requested as part of this renewal process that the Department of Conservation and Recreation's Office of Water Resources (DCR) prepare a new Water Needs Forecast for Littleton. DCR provided Littleton a Draft WNF on March 23, 2026 (the 2026 WNF) which set forth two projections for Littleton's future water needs. The first projection assumed that Littleton would comply with the 65 Residential Gallons Per Capita Day (RGPCD) Performance Standard and the 10% Unaccounted for Water (UAW) Performance Standard (the 65/10 WNF), and the second projection assumed that Littleton's current trends at the time DCR prepared its forecast with regard to the RGPCD and UAW Performance Standards would continue (Current Trend WNF). The 2026 65/10 WNF identified a demand of1.42 MGD thru 2029 and 1.46 MGD through 2034. The 2026 65/10 WNF also included a potential 5% buffer (0.07 MGD) to account for uncertainty in the forecast and 0.21 MGD for new development in Littleton that could result in a total demand of up to 1.74 MGD in the final five years of the Permit's term (Table 1).

Table 1: 2026 DRAFT DCR Water Needs Forecast

Permit Term	65/10 WNF (MGD)	Current Trend WNF(MGD)
2026 – 2029	1.42	1.35
2030 - 2034	1.46 With 5% buffer (0.07) & 0.21 MGD[i] = 1.74	1.39 With 5% buffer (0.07) & 0.21[i] MGD = 1.67

From 2020 to 2024 (Table 2), Littleton's average annual withdrawals increased by 0.40 MGD, a 44% increase. As shown above, more growth is expected in the coming years.

Table 2: Recent Water Use

Year	Annual Average Daily Withdrawal MGD
2024	1.30
2023	1.16
2022	1.13
2021	0.98
2020	0.90

In 2023, Littleton filed a permit amendment application to add an additional source, the Trumbull Well, to provide a safe source of drinking water for identified customers located

in Boxborough and to provide redundancy for its own system. Littleton and Boxborough have entered into an Intermunicipal Agreement that provides for Littleton to supply up to 65,000 gallons per day (GPD) to customers located in Boxborough. Given Littleton's recent water use, MassDEP has determined that Littleton will be able to supply this additional 65,000 GPD without exceeding the 1.46 MGD total authorized volume set forth in the 2024 Amended WMA Permit.

MassDEP also recognizes that future growth in water demand may not occur precisely as forecasted. Therefore, this permit may authorize withdrawals of up to the maximum authorized withdrawal at any time during the life of the permit provided that Littleton has the advance written approval of the Department and is meeting all other permit conditions. Specifically, Littleton may increase annual average daily withdrawals to 1.46 MGD prior to 2030 if Littleton is meeting:

- RGPCD of 65, or all RGPCD functional equivalence requirements;
- UAW of 10%, or all UAW functional equivalence requirements;
- Seasonal limits on nonessential outdoor water use; and
- Water conservation requirements as included in this permit.

Volumes above 1.46 MGD will require Littleton to obtain a new WMA permit (WM03) from MassDEP.

Other Agency Review

Because Littleton's sources are all in the Merrimack River Basin and will supply water to some customers located in the section of the Town of Boxborough that is within the Concord River Basin, the interconnection with Boxborough required approval from the Water Resources Commission (WRC) under the Interbasin Transfer Act (ITA). On September 12, 2024, the WRC voted to approve the interbasin transfer with conditions, which are reflected in the WRC's ITA Decision. The renewed WMA Permit reflects applicable conditions of the ITA Decision.

On June 7, 2024, the Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife (Mass Wildlife) determined that the construction and pumping of the Trumbull Well will result in a Take of a state listed species, the Blanding's Turtle, (Threatened) under the Massachusetts Endangered Species Act (MESA: 321 CMR 10). Given this determination, construction and pumping of the Trumbull Well required a Conservation and Management Permit under MESA (321 CMR 10.23). On September 6, 2024, Mass Wildlife issued CMP-8379, File No. 23-4202, RC 85971 (the MESA CMP). The renewed WMA Permit reflects applicable conditions of the MESA CMP.

Permit Expiration Date

The Second Amended WMA Permit had the same expiration date as set forth in the 2021 Amended WMA Permit, November 30, 2018. That expiration date reflected the expiration date of the original 1997 WMA Permit as extended by the Permit Extension Act. Section 173 of Chapter 240 of the Acts of 2010, as amended by Sections 74 and 75 of Chapter 238 of the Acts of 2012. The Second Amended WMA Permit was administratively continued until MassDEP issued this Renewed WMA Permit. This and all renewed permits in the Merrimack River Basin have an expiration date of November 30, 2034.

The Water Management Act (M.G.L. c. 21G)

The Water Management Act (Act) requires the Department to issue permits that balance a variety of factors including without limitation:

- Impact of the withdrawal on other water sources;
- Water available within the safe yield of the water source;
- Reasonable protection of existing water uses, land values, investments and enterprises;
- Proposed use of the water and other existing or projected uses of water from the water source;
- Municipal and Massachusetts Water Resources Commission (WRC) water resource management plans;
- Reasonable conservation consistent with efficient water use;
- Reasonable protection of public drinking water supplies, water quality, wastewater; treatment capacity, waste assimilation capacity, groundwater recharge areas, navigation, hydropower resources, water-based recreation, wetland habitat, fish and wildlife, agriculture, flood plains; and
- Reasonable economic development and job creation.

Safe Yield in the Merrimack River Basin

This Renewed WMA Permit is being issued under the safe yield methodology adopted by the Department on November 7, 2014, and described in the regulations at 310 CMR 36.13. As of the date of issuance of this permit, the safe yield for the Merrimack River Basin is 900.40 MGD, and total registered and permitted withdrawals are 80.11 MGD. The maximum withdrawals authorized in this permit, and all other permits currently under review by the Department within the Merrimack River Basin, will be within the safe yield and may be further conditioned as outlined in the regulations. The Renewed WMA Permit is not allocating any increase in the total authorized volume, so this permitting decision is not changing the current allocated volumes in the Merrimack River Basin.

Findings of Fact for Permit Conditions in Littleton 's Water Management Act Permit

The following Findings of Fact for the special conditions included in the Renewed WMA Permit generally describe the rationale and background for each special condition in the permit. This summary of permit special conditions is not intended to, and should not be construed as modifying any of the permit special conditions. In the event of any ambiguity between this summary and the actual permit conditions, the permit language shall control.

Special Condition 1: Maximum Authorized Annual Average Withdrawal Volumes.
The issuance of the original 1997 WMA Permit and the 2021 and 2024 Amended WMA Permits provided the Town with a total authorized volume of up to1.46 MGD. This volume has been maintained based on the water needs forecast (WNF) prepared by the Department of Conservation and Recreation Office of Water Resources (DCR) in 2026. The 2026 DCR-WNF identified a potential total use in 2034 of as much as 1.74 MGD, which includes a 5% buffer, and additional volumes Littleton has agreed to provide to users in Boxborough, all of which is anticipated to push demand beyond 1.46 MGD during the term of this permit. Volumes above 1.46 MGD will require Littleton to apply for and obtain a new WMA permit (WM03) from MassDEP.

Special Condition 2: Maximum Authorized Daily Withdrawals from Each Withdrawal Point.
Special Condition 2 of the renewed WMA Permit sets the maximum daily withdrawal rate for each source that was included in the 2024 Second Amended Permit including the new source, the Trumbull Well (09G). As noted above in Other Agency Review, the Trumbull Well is subject to regulation under the MESA CMP. The MESA CMP establishes certain conditions that Littleton must comply with before the Trumbull Well goes online and certain conditions that Littleton must comply with once the Trumbull Well commences operation. Special Condition 2 requires Littleton to comply with these conditions.

Special Condition 2 sets the maximum daily rate for the Trumbull Well at 0.53 MGD, the rate approved by MassDEP as part of the permit amendment process. To minimize the impact that the pumping of Trumbull Well may have on necessary feeding, breeding, migrating, sheltering, and overwintering habitat for the Blanding's Turtle, a state-listed threatened species pursuant to MESA, the MESA CMP reduces the maximum pumping rate to 0.265 MGD for at least the first three years of operation. The MESA CMP also provides that at any time after the Trumbull Well has been operating for three years and has fulfilled the MESA CMP requirements, the Town may request that the Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife (Mass Wildlife) amend the MESA CMP to increase the maximum pumping rate up to the maximum pumping rate of 0.53 MGD if Littleton can demonstrate that any impacts to ephemeral wetland features do not impact critical habitat use or that any such impacts can be mitigated (MESA CMP SC#3). Special Condition 2 of the Renewed WMA Permit provides that Littleton may not exceed the maximum pumping rate for the Trumbull Well set by Mass Wildlife in the MESA CMP or in subsequent amendments to the MESA CMP.

Special Condition 3: Water Level Monitoring.
Special Condition 3 of the 2021 Amended WMA Permit required Littleton to implement water level monitoring of surface water levels in the isolated wetlands resource area adjacent to the Beaver Brook Wells and report on that monitoring on December 31st of each year. Littleton has submitted reports documenting the water level monitoring performed in 2021, 2022 and 2023 and 2024. Special Condition 3 of the renewed WMA permit further

provides that after Littleton conducts at least one additional year of monitoring, the Town may include in its monitoring report a written request that the monitoring requirement be reduced or eliminated.

Special Condition 4: Groundwater Supply Protection.
Special Condition 4 of the 2021 Amended WMA Permit required that Littleton provide documentation during the WMA Permit renewal process that satisfied the Best Effort requirement pursuant to 310 CMR 22.21(1)(c) for the Zone II area of the Whitcomb Wells that extends into the Towns of Boxborough and Harvard. Littleton satisfied the Best Effort requirement in 2015 when the 1997 WMA Permit was modified and in 2024 in connection with the permit amendment process.

The Renewed WMA Permit authorizes Littleton to use a new source, the Trumbull Well. The Town already protects the portion of the Zone II of the Trumbull Well that is located within the Town of Littleton. A portion of the Zone II of the Trumbull Well is located within Harvard and Boxborough. Littleton has exercised its Best Efforts to encourage Harvard and Boxborough to enact the necessary groundwater protection requirements during the permit renewal process.

Special Condition 5: Performance Standard for Residential Gallons Per Capita Day Water Use.
Special Condition 5 of the renewed WMA Permit requires Littleton to meet the performance standard for residential gallons per capita day (RGPCD) of 65 gallons or less. Special Condition 5 also requires Littleton to report its RGPCD water use annually in its Annual Statistical Report (ASR) and document compliance with this Performance Standard in its ASR. Littleton was in compliance with this performance standard for the last 5 years (Table 3).

Table 3: Residential Gallons Per Calendar Day (RGPCD) and Unaccounted for Water (UAW)

Year	RGPCD	UAW %
2024	51	23%
2023	47	12 %
2022	54	16%
2021	50	13%
2020	56	11%
2019	54	12%

Special Condition 5 of the Renewed WMA Permit maintains the RGPCD performance standard of 65 gallons or less.

Special Condition 6: Performance Standard for Unaccounted-for Water (UAW).

Special Condition 6 of the 2021 Amended WMA Permit established an Unaccounted-for Water (UAW) Performance Standard of 10% or less and required Littleton to comply with that performance standard for two out of every three years. Special Condition 6 of the 2024 Amended WMA Permit provided that if Littleton failed to meet this requirement, it would have to meet the Functional Equivalence Requirements based on the AWWA/IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices and set forth in Appendix B.

Littleton did not meet the 10% UAW Performance Standard for two of the last three years. See Table 3. Littleton was, therefore, required to comply with the Functional Equivalence Requirements beginning in 2022 and to continue to meet these requirements until UAW, as reported on the ASR and approved by the Department, is below 10% for four consecutive years, and the water audit data validity scores are at least Level III (51-70) for the same four years. See Appendix B of the 2021 Amended WMA Permit. To fulfill this requirement, Littleton completed an AWWA M36 Water Audit in 2022 and 2023 and developed a water loss control program based on the components analysis set forth in those audits. Littleton is also conducting an M36 Audit on its 2025 data.

Special Condition 6 of the Renewed WMA Permit maintains the 10% UAW Performance Standard and the requirement that if Littleton does not meet the 10% UAW Performance Standard for two of the last three years, it must meet the Functional Equivalence requirements as set forth in Appendix B. Littleton is therefore required to continue to meet the Functional Equivalence requirements.

Special Condition 6 of the Renewed WMA permit requires Littleton to update its water loss control program to include the extension into Boxborough in order to comply with the ITA decision.

On June 13, 2024, Littleton submitted a water loss control program and implementation schedule based on the components analysis set forth in its 2022 and 2023 M36 Water Audit as required by the 2021 Amended WMA Permit. Special Condition 6 provides that with its Annual Statistical Report (ASR) submittal, Littleton provide a report documenting the implementation of its water loss control program and updating its implementation schedule based on its progress in reducing real and apparent water loss, information gained through implementation of the water loss control program, its latest leak detection survey and the components analysis in its latest water audit. Special Condition 6 also requires Littleton to continue to implement the water loss control program, update its schedule, and report on its implementation on or before the date it is required to submit each ASR, unless and until it meets the preconditions for discontinuing the water loss control program set forth in Appendix B.

Special Condition 7: Requirement to Report Raw and Finished Volumes.
Special Condition 7 of the 2024 Amended WMA Permit requires Littleton to report annually in its ASR the raw water volumes and finished water volumes for the entire water system and

the raw water volumes for individual water withdrawal points. Littleton has complied with this requirement. Special Condition 7 of the renewed WMA Permit maintains this requirement.

Special Condition 8: Limits on Nonessential Outdoor Water Use.
Littleton's Nonessential Outdoor Water Use Restrictions ("Restrictions") are based on whether the permittee's reported RGPCD for the previous year met the RGPCD Performance Standard of 65 residential gallons per capita day of less (see Special Condition 5).

In addition, outdoor water use restrictions for permittees with wells in subbasins[ii] that are 25% or more August net groundwater depleted (Aug NGD)[iii] are set to minimize withdrawals from depleted subbasins. All of Littleton's wells are in subbasins with August NGD more than 25% and, therefore, nonessential outdoor water use is limited to 1 or 2 days per week.

Each year, Littleton shall choose one of two options for implementing nonessential outdoor water use restrictions:

- **Calendar triggered restrictions** are in place from May 1 through September 30. Many public water suppliers find this option easier to implement and enforce than the streamflow triggered approach.
- **Streamflow triggered restrictions** are implemented at those times when streamflow falls below designated flow triggers measured at an assigned, web-based, real-time U.S. Geologic Survey (USGS) stream gage from May 1 through September 30. At a minimum, restrictions commence when streamflow falls below the trigger for three consecutive days. Once implemented, the restrictions remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for seven consecutive days.

If Littleton selects the streamflow trigger approach, it has been assigned **USGS Gage 01099500**– **Concord River below Meadow Brook, Lowell, MA**. The May-June streamflow trigger is **427** cubic feet per second (cfs), and the July-September streamflow trigger is **156** cfs. Should the reliability of flow measurement at this gage be so impaired as to question its accuracy, the permittee may request that MassDEP review and approve the transfer to another gage that will trigger restrictions. MassDEP reserves the right to require use of a different gage.

- **The 7-Day Low-flow Trigger**, at which restrictions increase is incorporated into both Calendar and Streamflow Triggered restrictions to provide additional protection when flows are very low. The 7-day low flow trigger is based on the median value of the annual 7-day low flows for the period of record. The 7-day low flow trigger for **USGS Gage 01099500** is **71** cfs.

The permittee may choose to implement limits on nonessential outdoor water use that are stricter than those required by the permit.

To the extent feasible all summer outdoor water use should take place before 9 a.m. and after 5 p.m. when evaporation and evapotranspiration rates are lower.

In addition, The ITA Decision required that Littleton impose additional restrictions on nonessential outdoor water use in accordance with the state guidance on nonessential outdoor water use at various drought levels set forth in the Massachusetts Drought Management Plan, whenever the Secretary of Energy and Environmental Affairs (the Secretary) declares a drought in the Northeast Drought Region. These additional restrictions appear in Table 9 of the December 2023 Massachusetts Drought Management Plan and are already a part of the Town's Drought Management Plan. Special Condition 8 of the Renewed WMA Permit requires that Littleton implement these additional restrictions in accordance with the requirements of the ITA Decision.

Guidance for Permittees Concerning Enforcement Authority
This permit condition does not confer enforcement authority to the Permittee. For Permittees that do not have the necessary local enforcement authority, MassDEP has developed a Model Outdoor Water Use Bylaw/Ordinance to help municipalities implement nonessential water use restrictions. The Model Bylaw also includes options for regulating private wells and in-ground irrigation systems. See Model Water Use Restriction Bylaw/Ordinance Update | Mass.gov.

DEP strongly advises Permittees to consult with Town or City Counsel to ensure adoption of an appropriate, enforceable and legally valid bylaw that will meet municipal/district needs.

Nothing in the permit shall prevent the Permittee from implementing water use restrictions that are more stringent than those set forth in this permit.

Note that if the permittee holds a Water Management registration, **the nonessential outdoor water use restrictions in this permit supersede restrictions in the permittee's registration**.

Special Condition 9: Water Conservation Requirements
Special Condition 9 of the 2021 Amended WMA Permit incorporated the Water Conservation Requirements set forth in the permit issued by MassDEP as part of a five-year review on May 7, 2015 (the 2015 WMA Permit). The 2015 WMA Permit reflected the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the WRC in July 2006 as revised in 2012. Special Condition 9 of the Renewed WMA Permit updates this condition to reflect the Water Conservation Standards as revised in 2018 and the ITA Approval.

Special Condition 10: Minimization
Permittees with groundwater sources in subbasins having an August Net Groundwater Depletion (NGD) of 25% or greater are required to develop a plan to minimize the impacts of their withdrawals. Littleton's wells are in subbasins with NGD greater than 25%. As a result, the renewed WMA Permit requires the town to develop and implement a minimization plan.

Littleton evaluated minimizing depletion of groundwater during the late summer bioperiod (July-September) by optimizing use of the Town's withdrawal points located in subbasins (or major basins) that are net groundwater depleted, if any, or by use of any feasible alternative source(s) or interconnection(s). Unfortunately, all of the Town's withdrawal points fall within August NGD subbasins. Littleton continues to pursue a withdrawal source in the Concord River Basin, namely the Cobbs Wells, which is in a less negatively impacted groundwater withdrawal category, but in the same biological category.

Use of an interconnection is not feasible from both a neighboring supply standpoint, and an economic standpoint.

Littleton (in partnership with the Westford Water Department) has implemented a protocol for low flow releases at Spectacle Pond and Forge Pond impoundments to aid in improving streamflow. This protocol depends on instream flow monitoring stations that measure water elevation/level along with upstream and downstream flows and predicted/historical precipitation to determine whether a release should be performed.

In addition, Littleton has:

- Established a rebate program for residential consumers.
- Evaluates the water structure annually and uses a tiered system to encourage conservation.
- Completed an annual system water audit and will continue to do so moving forward.
- Customers are billed monthly and provided water consumption history in gallons.
- A remote meter reading system has been installed.
- Completed a residential and nonresidential meter replacement program in 2023.

Special Condition 11: Mitigation of Impacts for Withdrawals that Exceed Baseline Withdrawals, requires mitigation where feasible for withdrawals over a baseline volume. Baseline withdrawal means the volume of water withdrawn during calendar year 2005 plus 5%, or the average annual volume withdrawn from 2003 through 2005 plus 5%, whichever is greater provided that:

(a) baseline cannot be less than a permittee's registered volume;
(b) baseline cannot be greater than the permittee's authorized volume for 2005; and
(c) if, during the period from 2003 to 2005, the permittee's withdrawals from the water source were interrupted due to contamination of the source or construction of a

treatment plant, the Department will use best available data to establish a baseline volume from the water source.

Baseline Withdrawal and Mitigation Calculation: Littleton's baseline is 1.11 MGD, their 2003-2005 average use plus 5%. Littleton's existing and renewed withdrawal volumes both exceed 1.11 MGD, therefore mitigation is required.

The summary below outlines Littleton's mitigation requirement based on the volume requested in their permit renewal application (1.46 MGD). The mitigation calculation assumes that Littleton's future withdrawals will continue to be discharged to local groundwater in the same geographic distribution of on-site septic systems as currently exists. The wastewater adjustment factor takes into account the volume of water above baseline that is returned to the ground as wastewater within the same major basin and in a different major basin (Littleton's septic systems are in both the Merrimack and Concord basins). MassDEP assumes that 85% of water delivered to customers with septic systems will be returned to the ground thus reducing the amount of mitigation needed. After calculating the adjustment for authorized withdrawals over baseline that will be returned through local groundwater discharge, Littleton's total mitigation requirement will be up to 93,660 gallons per day. Direct mitigation is considered first, and if that is not sufficient, indirect credits are then calculated and added to the total direct mitigation credits.

TABLE 4: LITTLETON MITIGATION VOLUME CALCULATION

Littleton Mitigation Volume Calculation
Permitted volume above Baseline = 0.35 MGD • Permitted amount above Baseline: 1.46 – 1.11 = **0.35 MGD**
Merrimack River Basin – same Major Basin
• 72% of withdrawals above baseline are delivered to areas with on-site septic systems in the Merrimack: 0.35 MGD x 0.72 (72%) = 0.252 MGD
• 85% of water delivered to areas with on-site septic systems returns to groundwater: 0.252 MGD x 0.85 (85%) = 0.2142 MGD, or **214,200 gallons per day** (GPD)
Concord River Basin – Outside Major Basin (applying a 43% Location Adjustment Factor, or LAF)
• 28% of withdrawals above baseline are delivered to areas with on-site septic systems in the Concord basin: 0.35 MGD x 0.28 (28%) = 0.098 MGD
• 43% LAF for water delivered to areas with on-site septic systems returns to groundwater: 0.098 MGD x 0.43 (43% LAF) = 0.04214 MGD, or **42,140 gallons per day** (GPD)
Total Wastewater Adjustment: 214,200 GPD + 42,140 GPD = 256,340 GPD or 0.25634 MGD
Amount remaining to be Mitigated following Adjustment for Wastewater Discharge = 0.093660 MGD (93,660 GPD) • Permitted amount above baseline (0.35 MGD) – adjustment for wastewater discharge to local groundwater (0.25634 MGD) = 0.09366 MGD or **93,660 GPD.**

Mitigation measures that have been put into place since January 1, 2005, and that are still operable or effective, are eligible components of a Mitigation Plan.

Direct Mitigation, which will improve streamflow as a result of increased groundwater recharge, decreased stormwater runoff to streams, or surface water releases, must be considered first in mitigation planning.

Littleton documented one direct mitigation project, a stormwater BMP at 550 King Street, with a recharge rate of 10,300 GPD, or 0.0103 MGD. This is the only direct mitigation credit identified.

Indirect mitigation is based on a qualitative credit system, where 1 credit = 10,000 GPD of mitigation. Land protection is given a value of 0.2 mitigation credits per acre of protected land. Littleton acquired 58.4 acres of land around the Trumbull Well for water supply protection, of which 11.54 is the Zone 1 wellhead protection area, which is not eligible for indirect credits, leaving 46.86 acres eligible for water land protection credit. Littleton's 46.86 acres of protected land at 0.2 credits per acre translates into 9.772 mitigation credits, which with each credit equal to 10,000 GPD, results in 97,772 GPD in indirect mitigation. When combined with the 10,300 GPD in Direct Mitigation identified above, results in 108,072 GPD in total mitigation, which therefore meets the 93,660 GPD mitigation requirement. Please see Appendix C.

Other Considerations

Coldwater Fishery Resources.

Permittees with withdrawals that impact streamflow at a CFR (identified on basin maps) must evaluate reducing impacts to CFRs through feasible optimization. The Town has no sources that affect streams identified as a coldwater fishery resource at this time. The Modified WMA Permit does not contain a condition requiring Littleton to evaluate strategies for reducing CFR impacts.

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston MA 02114 | **Phone**: 617-292-5500

Maura T. Healey
Governor

Kim Driscoll
Lieutenant Governor

Rebecca Tepper
Secretary

Bonnie Heiple
Commissioner

FINAL WATER WITHDRAWAL PERMIT
MGL c 21G

This permit is issued pursuant to the Massachusetts Water Management Act for the sole purpose of authorizing the withdrawal of a volume of water as stated below and subject to the following special and general conditions. This permit conveys no right in or to any property beyond the right to withdraw the volume of water for which it is issued.

PERMIT NUMBER: 9P-2-13-158.02 **RIVER BASIN**: Merrimack

PERMITTEE: Town of Littleton Water Department

EFFECTIVE DATE: September 16, 2026

PERMIT EXPIRATION DATE: November 30, 2034

NUMBER OF WITHDRAWAL POINTS: Groundwater: 7

USE: Public Water Supply

DAYS OF OPERATION: 365

SOURCES:

Table 1: Withdrawal Point Identification

Well Name	PWS Source ID	Well Name	PWS Source ID
Whitcomb GP Well #1	2158000-02G	Beaver Brook Well 2.3	2158000-07G
Spectacle Pond Well	2158000-04G	Whitcomb Wellfield #3	2158000-08G
Beaver Brook Well 2.1	2158000-05G	Trumbull Well	2158000-09G
Beaver Brook Well 2.2	2158000-06G		

SPECIAL PERMIT CONDITIONS

Special Condition 1: Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Littleton Water Department (Littleton or the Town) to withdraw water from its sources in the Merrimack River Basin at the rates described below (Table 2). The volume reflected by this rate is in addition to the 0.83 million gallons per day (MGD) previously authorized to the Littleton Water Department under Water Management Act registration #2-13-158.03. The total authorized volume is expressed both as an annual average daily withdrawal rate (million gallons per day or MGD), and as a total annual withdrawal volume (million gallons per year or MGY) for each five-year period of the permit term.

The Department of Environmental Protection (MassDEP or the Department) bases these withdrawal volumes on the raw water withdrawn from the authorized withdrawal points and will use the raw water amount to assess compliance with the registered and permitted withdrawal volumes.

Table 2: Maximum Authorized Annual Average Withdrawal Volumes

Permit Periods	Permit		Registration + Permit	
	Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
9/16/2026 to 11/30/2029	0.59	215.35	0.83 + 0.59 = 1.42	304.58 +215.35 = 519.93
12/1/2029 to 11/30/2034	0.63	229.95	0.83 + 0.63 = 1.46	304.58 + 229.95 = 534.53

With advance written approval from the Department, Littleton may be authorized to increase annual average daily withdrawals to the maximum authorized (1.46 MGD) prior to 2030 if Littleton is meeting:

- Residential Gallons Per Capita Day (RGPCD) of 65 or less, or all RGPCD functional equivalent requirements in Special Condition 5;
- Unaccounted-for-water (UAW) of 10% or less, or all UAW functional equivalence requirements in Special Condition 6;
- Seasonal limits on nonessential outdoor water use in Special Condition 8; and
- Water conservation requirements in Special Condition 9.

Special Condition 2: Maximum Authorized Daily Withdrawals from Each Withdrawal Point

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed below in Table 3 without specific advance written approval from MassDEP. The authorized maximum daily volume is the approved rate of each source. In

no event shall the combined withdrawal volumes from the individual withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

Table 3: Maximum Authorized Daily Withdrawal Volume

Well Name	PWS Source ID Code	Maximum Daily Rate
Whitcomb Wellfield #3[1]	2158000-08G	0.86 MGD (Combined)
Whitcomb GP Well #1	2158000-02G	
Spectacle Pond Well	2158000-04G	0.94 MGD
Beaver Brook Well 2.1	2158000-05G	0.29 MGD
Beaver Brook Well 2.2	2158000-06G	0.29 MGD
Beaver Brook Well 2.3	2158000-07G	0.07 MGD
Trumbull Well	2158000-09G	0.53 MGD*

*The Trumbull Well is subject to regulation under the Conservation and Management Permit issued by the Natural Heritage and Endangered Species Program within the Division of Fisheries and Wildlife (Mass Wildlife) on September 6, 2024, CMP-8379, File No. 23-4202, RC 85971 (the MESA CMP). The MESA CMP establishes certain conditions that Littleton must comply with before the Trumbull Well goes online (Phase I Conditions) and certain conditions that Littleton must comply with once the Trumbull Well commences operation (Phase II Conditions and Phase III Conditions). Littleton shall comply with all these conditions.

Special Condition 2 sets the maximum daily rate for the Trumbull Well at 0.53 MGD, the rate approved by MassDEP as part of the permit amendment process (Table 3). To minimize the impact that the pumping of Trumbull Well may have on necessary feeding, breeding, migrating, sheltering, and overwintering habitat for the Blanding's Turtle, a state-listed threatened species pursuant to MESA, the MESA CMP reduces the maximum pumping rate to 0.265 MGD for at least the first three years of operation. The MESA CMP also provides that at any time after the Trumbull Well has been operating for three years, the Town may request that Mass Wildlife amend the MESA CMP to increase the maximum pumping rate. Notwithstanding anything to the contrary, Littleton shall not exceed the maximum pumping rate for the Trumbull Well set by Mass Wildlife in the MESA CMP or in subsequent amendments to the MESA CMP.

Special Condition 3: Water Level Monitoring

Littleton shall continue to conduct the water level monitoring in the wetland resource area near the Beaver Brook Wells and submit a report on that monitoring by December 31st of each year. After Littleton completes at least one additional year of water level monitoring, Littleton may include in its monitoring report a written request that the water level monitoring requirement be reduced or eliminated along with a detailed explanation of the reasoning behind the request. Upon receipt of such a request, MassDEP will consider a reduction in or end of the monitoring requirement.

Special Condition 4: Groundwater Supply Protection

Littleton has demonstrated that the town has satisfied the Best Effort requirement pursuant to 310 CMR 22.21(1)(e) for the Zone II area of the Whitcomb Wells and the Zone II area of the Trumbull Well that extend into the Towns of Boxborough and Harvard. The Boxborough Board of Health's 2021 Wellhead Protection Regulation meets the requirements of the Massachusetts Wellhead Protection Regulations 310 CMR 22.21(2). Littleton has met the Best Effort requirement for requesting the town of Harvard to incorporate wellhead protection into town bylaws.

Special Condition 5: Performance Standard for Residential Gallons Per Capita Day Water Use

Permittee's performance standard for residential gallons per capita day (RGPCD) is 65 gallons. Permittee is required to report its RGPCD water use annually in its Annual Statistical Report (ASR) and document compliance with this performance standard in its ASR. The Town shall report its RGPCD and the calculations to derive that figure as part of its ASR including without limitation, the source of the data used to establish the service population and the year in which the data was developed. See Appendix A for additional information on the requirements if the performance standard for RGPCD is not met.

Special Condition 6: Performance Standard for Unaccounted-for Water

Littleton's Performance Standard for Unaccounted-for Water (UAW) is 10% or less of overall water withdrawal for two of the most recent three years throughout the permit period. If Littleton does not meet this standard, Littleton shall comply with the Functional Equivalence Requirements based on the AWWA IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices as outlined in Appendix B.

Since 2022, Special Condition 5 of the 2021 Amended WMA required Littleton to comply with the Functional Equivalence Requirements. To satisfy the Functional Equivalence Requirements, Littleton conducted an M36 Water Audit in 2022 and 2023. On June 13, 2024, Littleton submitted a water loss control program and implementation schedule based on the components analysis set forth in the 2022 and 2023 water audits. Before Littleton begins supplying water to customers in Boxborough, Littleton shall update its water loss control plan to cover the extension to Boxborough. Littleton shall continue to meet the Functional Equivalence Requirements including implementation of the water loss control program until it meets the preconditions for discontinuing this effort set forth in Appendix B.

Littleton is required to report its UAW in its ASR so as to document compliance with this performance standard. Littleton's ASR shall include the calculation to derive that figure

including without limitation the source of data used, the methodology for calculating UAW and any assumptions used in making the calculation. Littleton shall submit to MassDEP with the ASR a report documenting compliance with the Functional Equivalence Requirements, if necessary, including the implementation of its water loss control program and updating its implementation schedule based on its progress in reducing real and apparent water loss, information gained through implementation of the water loss control program, and its latest leak detection survey and water audit.

Special Condition 7: Requirement to Report Raw and Finished Water Volumes

Littleton shall report annually on its ASR the raw water volumes and finished water volumes for the entire water system and the raw water volumes for individual withdrawal points.

Special Condition 8: Seasonal Limits on Nonessential Outdoor Water Use

Littleton shall limit nonessential outdoor water use through mandatory restrictions from May 1 through September 30, as outlined in Table 3 below. Littleton shall be responsible for tracking streamflow gages and recording and reporting when restrictions are implemented (see Table 4). The permittee shall document compliance with the limits on nonessential outdoor water use annually in its ASR.

Table 4: Limits on Nonessential Outdoor Water Use

For Permittees Meeting the 65 RGPCD Standard for the Preceding Year When RGPCD was 65 or below as reported in the ASR and accepted by MassDEP, choose either Calendar Triggered Restrictions or Streamflow Triggered Restrictions from this section of the Table
CALENDAR Triggered Restrictions
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m.: a. **Two (2) days per week**, unless, b. **USGS Gage 01099500** – Concord River below Meadow Brook at Lowell, MA falls below **71 cfs** for three (3) consecutive days, then one (1) day per week is allowed. Once streamflow triggered restrictions are implemented, they shall remain in place until streamflow at gage meets or exceeds **71 cfs** for seven (7) consecutive days.
STREAMFLOW Triggered Restrictions
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m.: a. **Two (2) days per week** when **USGS Gage 01099500** – Concord River below Meadow Brook at Lowell, MA falls below: • **427 cfs** for three (3) consecutive days from May 1 – June 30, and • **156 cfs** for three (3) consecutive days from July 1 – September 30, unless, b. USGS Gage **01099500** falls below **71 cfs** for three (3) consecutive days at any time from **May 1 – September 30**, then one (1) day per week is allowed.

Once implemented, restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.
For Permittees NOT Meeting the 65 RGPCD Standard for the Preceding Year When RGPCD was above 65 as reported in the ASR and accepted by MassDEP, choose either Calendar Triggered Restrictions or Streamflow Triggered Restrictions from this section of the Table
CALENDAR Triggered Restrictions
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m. **one (1) day per week.**
STREAMFLOW Triggered Restrictions
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m. one (1) day per week when **USGS Gage 01099500** – Concord River below Meadow Brook at Lowell, MA falls below: • **427 cfs** for three (3) consecutive days from **May 1 – June 30**, and, • **156 cfs** for three (3) consecutive days from **July 1 – September 30**. Once implemented, restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.

Table 5: Tracking Streamflow through the USGS Website

Instructions for Accessing Streamflow Website Information If the Permittee chooses Streamflow Triggered Restrictions, the Permittee shall be responsible for tracking streamflows and recording and reporting to MassDEP when restrictions are implemented.
Streamflow information is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts streamflows in real time, i.e., the most recent, usually quarterly hourly, reading made at each USGS stream gage. Seasonal Limits on Nonessential Outdoor Water Use are implemented when the mean daily streamflow falls below the designated trigger for 3 consecutive days. The mean daily flow is not calculated until after midnight each day when the USGS computes the hourly data into a mean daily streamflow. As a result, the Permittee must use the mean daily streamflow from the preceding day when tracking streamflows. Mean daily streamflow gage readings are also available by following the instructions on MassDEP's USGS Stream Gage and Well-Monitoring Data webpage. (USGS Stream Gage and Well-Monitoring Data | Mass.gov)

Should the reliability of flow measurement at the USGS Gage 01099500 – Concord River below Meadow Brook at Lowell, MA be so impaired as to question its accuracy, Littleton

may request MassDEP's review and approval to transfer to another gage to trigger restrictions.

MassDEP reserves the right to require the use of a different gage.

In addition to the restrictions set forth in Table 4, Littleton shall also impose additional restrictions on nonessential outdoor water use in accordance with the state guidance on nonessential outdoor water use at various drought levels set forth in the Massachusetts Drought Management Plan issued in December 2023, whenever the Secretary of Energy and Environmental Affairs (the Secretary) declares a drought in the Northeast Drought Region. These additional restrictions appear in Table 9 of the 2023 Massachusetts Drought Management Plan and are already a part of the Town's Drought Management Plan. Please see below.

Table 9 of the 2023 Massachusetts Drought Management Plan

State Drought Condition (by Region)	Nonessential Outdoor Water-Use Restrictions
Level 1 (Mild Drought)	1 day per week watering, after 5 p.m. or before 9 a.m. (to minimize evaporative losses)
Level 2 (Significant Drought)	Limit outdoor watering to hand-held hoses or watering cans, to be used only after 5 p.m. or before 9 a.m.
Level 3 (Critical Drought)	Ban on all nonessential outdoor water use
Level 4 (Emergency Drought)	Ban on all nonessential outdoor water use

Nonessential Outdoor Water Use means a use that is not required:

a. for health or safety reasons, including public facilities used for cooling such as splash pads and swimming pools, and for washing of boats, engines, or marine equipment to prevent negative saltwater impacts or the transfer of invasive aquatic species;
b. by permit, license, statute or regulation;
c. for the production of food, including vegetable gardens, and fiber;
d. for the maintenance of livestock;
e. to meet the core functions (those functions essential to the commercial operations) of a business, including but not limited to:
    1. plant nurseries as necessary to maintain stock;
    2. golf courses as necessary to maintain greens and tees, and limited fairway watering per 310 CMR 36.07(2)(c)2.a. through c.;
    3. venues used for weddings or similar special events that limit watering to hand-held hose or drip irrigation as necessary to maintain gardens, flowers and ornamental plants;
    4. professional washing of exterior building surfaces, parking lots, driveways and/or sidewalks as necessary to apply surface treatments such

as paint, preservatives, stucco, pavement, or cement in the course of construction, reconstruction or renovation work;

f. for irrigation of public parks before 9:00 a.m. and after 5:00 p.m.,
g. for irrigation of public and private recreation fields, including those operated by schools, colleges, universities and athletic associations, before 9:00 a.m. and after 5:00 p.m.,
h. for irrigation of publicly funded shade trees and trees in the public right-of-way; or
i. to establish a new lawn as necessary to stabilize soil in response to new construction or following the repair or replacement of a Title 5 system.

Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions
The Permittee shall notify its customers of the restrictions and the consequences of failing to adhere to the restrictions.

- **For calendar-triggered restrictions**, customers shall be notified by April 15 each year.
- **For streamflow-triggered restrictions**, when streamflow at the assigned USGS local stream gage falls below a streamflow trigger for three consecutive days, customers shall be notified as soon as possible, but within three days of implementing the restrictions.

Notice that restrictions have been put in place shall be filed each year with MassDEP within 14 days of the restriction's effective date. Filing shall be in writing on the form "Notification of Water Use Restrictions" available on MassDEP's website (Outdoor Water Use Restrictions for Cities, Towns, and Golf Courses | Mass.gov.)

Enforcement Authority
This permit condition does not confer enforcement authority to the permittee. If Littleton does not have appropriate enforcement authority, then beginning as soon as possible, but no later than 24 months after issuance of the permit, the permittee shall establish enforceable restrictions limiting nonessential outdoor water use.

Beginning May 1, 2027, Littleton shall commence implementation of the seasonal restrictions on nonessential outdoor water use required by Special Condition 8. In its Intermunicipal Agreement with Littleton, the Town of Boxborough has agreed that customers located within Boxborough will be subject to Littleton's restrictions on nonessential outdoor water use.

Special Condition 9: Water Conservation Requirements.

At a minimum, Littleton shall implement the following conservation measures. Compliance with the conservation requirements shall be reported to MassDEP upon request unless otherwise noted in Table 6.

Table 6: Minimum Water Conservation Requirements

System Water Audits and Leak Detection
Littleton shall continue to conduct leak detection surveys on the entire distribution system annually.
1. Within 60 days of completing the leak detection survey, Littleton shall submit to the Department a report detailing the survey, any leaks uncovered as a result of the survey or otherwise, dates of repair, and the estimated water savings as a result of the repairs.
2. Littleton shall conduct field surveys for leaks and repair programs in accordance with the AWWA Manual 36.
3. Littleton shall have repair reports available for inspection by MassDEP. Littleton shall repair leaks as promptly as feasible to control water loss. Littleton shall establish a schedule for repairing leaks that is at least as stringent as the following: o Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection. o Leaks of less than 3 gallons per minute at hydrants or appurtenances shall be repaired as soon as possible. o Leaks of less than 3 gallons per minute shall be repaired in a timely manner but in no event more than 6 months from detection except that leaks in freeway, arterial or collector roadways shall be repaired when other roadwork is being performed on the roadway.
Leaks shall be repaired in accordance with Littleton's priority schedule including leaks up to the property line, curb stop or service meter as applicable. Littleton shall have water use regulations in place that require all owners of property served by the system including property located in Boxborough to expeditiously repair leaks on their property.
Metering.
1. Littleton shall continue to calibrate all source and finished water meters at least annually and report the date of calibration on the ASR. 2. Littleton shall maintain its system as 100% metered.
Pricing.
1. Littleton shall continue to implement full cost pricing. 2. Littleton shall continue to implement an increasing block rate structure. 3. Littleton shall continue to bill at least quarterly. 4. Littleton shall continue to evaluate its rate structure annually.
Residential and Public Sector Conservation.
Littleton shall continue to ensure that the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code are met when buildings are constructed or renovated.

Littleton reports that all public buildings are equipped with water saving devices. Littleton shall continue to provide advice to municipal officials on water conservation.

Littleton shall continue to meter and bill contractors for the use of fire hydrants for pipe flushing and construction and shall continue to do so.

Industrial and Commercial Water Conservation

Littleton shall continue to advise industrial and commercial customers on how they can work with Office of Technical Assistance to save water.

Lawn and Landscape

Littleton shall enforce the required seasonal restrictions on nonessential outdoor water use.

Public Education and Outreach

1. Littleton shall continue to implement a Water Conservation Education Plan. Littleton's Water Conservation Education Plan shall be designed to educate the Towns's water customers on ways to conserve water. Without limitation, Littleton's plan may include the following actions:
    - Annual work sheets included in water bills or under separate cover to enable customers to track water use and conservation efforts and estimate the dollar savings;
    - Public space advertising/media stories on successes (and failures);
    - Conservation information centers perhaps run jointly with electric or gas company;
    - Speakers for community organizations;
    - Partner with garden clubs, or other private and non-profit organizations to promote efficient water use;
    - Provide information on water-wise landscaping, gardening, efficient irrigation, and lawn care practice;
    - Public service announcements; radio/T.V./audio-visual presentations;
    - Joint advertising with hardware stores to promote conservation devices;
    - Water conservation workshops for the general public;
    - Use of civic and professional organization resources;
    - Special events such as Conservation Fairs;
    - Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and
    - Provide multilingual materials as needed.
2. Upon request of the Department, Littleton shall report on its public education and outreach effort, including a summary of activities developed for specific target audiences, any events or activities sponsored to promote water conservation and copies of written materials.

3. Littleton reports that its public education program relies on bill stuffers, social media, public service announcements, and postings around the Town. Littleton distributes information to enable customers to calculate their water use and compare it to 65 RGPCD standard, provides re abates on water efficient appliances and plumbing, provides information on water wise landscaping.
4. At a minimum, Littleton shall continue its current public education program.

Special Condition 10: Minimization

Littleton shall minimize the impacts of all of its groundwater withdrawals by continuing to implement the following measures:

- A rebate program for residential consumers.
- Evaluates the water structure annually and uses a tiered system to encourage conservation.
- An annual system water audit.
- Monthly billing that includes water consumption history in gallons.
- Use of a remote meter reading system.
- A residential and nonresidential meter replacement program.

Special Condition 11: Mitigation

Littleton is required to mitigate 0.094 MGD for its permitted withdrawals over baseline in the Merrimack. The mitigation requirement will be met with 0.0103 MGD (10,300 GPD) in direct mitigation achieved via a stormwater project on King Street (see Appendix C). This is the only direct mitigation credit identified.

Littleton acquired 46.86 acres of land around the Trumbull Well for water supply protection. Littleton's 46.86 acres of protected land at 0.2 credits per acre translates into 9.772 mitigation credits, which with each credit equal to 10,000 GPD, results in 97,772 GPD in indirect mitigation. When combined with the 10,300 GPD in Direct Mitigation identified above, results in 108,072 GPD in total mitigation, which therefore meets the 93,660 GPD mitigation requirement. See Appendix C for outline of mitigation credits.

GENERAL PERMIT CONDITIONS (applicable to all permittees except Cranberry permits)
No withdrawal in excess of 100,000 gallons per day over the registered volume (if any) shall be made following the expiration of this permit, unless the Department has received a timely permit renewal application pursuant to 310 CMR 36.00.

1. **Duty to Comply:** The permittee shall comply at all times with the terms and conditions of this permit, the Act, the Water Management Act regulations at 310 CMR 36.00, and all other applicable State and Federal statutes and regulations.

2. **Operation and Maintenance:** The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw water so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections:** The permittee or the permittee's agent shall allow personnel or authorized agents or employees of the Department to enter and examine at reasonable times any property, facility, operation, equipment or activity involving the withdrawal of water, and to inspect and copy any relevant records, for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency:** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by the Department pursuant to M.G.L. c. 21G, §§ 15-17, M.G.L. c. 111, §§ 160, or any other enabling authority.
5. **Transfer of Permits:** This permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to the submittal of a transfer application in accordance with 310 CMR 36.33 on forms provided by the Department requesting such approval and received by the Department at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee as set forth in 310 CMR 4.00.
6. **Duty to Report:** The permittee shall complete and submit annually, on a form provided by the Department, all of the information required by said form including, without limitation, a certified statement of the withdrawal. Such report shall be received by the Department by the date specified on the form each year. For public water supplier permittees, the report form is the MassDEP Drinking Water Program Public Water Supply Annual Statistical Report.
7. **Annual Compliance Fee:** The permittee shall submit any applicable annual compliance fee as established in 310 CMR 4.00.
8. **Duty to Maintain Records:** The permittee shall maintain withdrawal records and other information in sufficient detail to demonstrate compliance with this permit.
9. **Metering:** All withdrawal points included within the permit shall be metered. Meters are to be calibrated annually. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
10. **Amendment, Suspension or Termination**: The Department may amend, suspend or terminate the permit in accordance with M.G.L. c. 21G and 310 CMR 36.29.

NOTICE OF APPEAL RIGHTS

Any person aggrieved by this decision may request an adjudicatory hearing by timely filing a Notice of Claim for an Adjudicatory Appeal ("Notice of Claim") in accordance with 310 CMR 36.37 and 310 CMR 1.01 within twenty-one (21) days of receipt of this Permit. The Notice of Claim shall state specifically, clearly, and concisely the facts that are grounds for the appeal, the relief sought, and any additional information required by applicable law or regulation. A copy of this Permit shall be included with the Notice of Claim. No request

for an appeal of this permit shall be validly filed unless a copy of the request is sent at the same time by certified mail, or delivered by hand, to the local water resources management official in the community in which the withdrawal point is located; and for any person appealing this decision, who is not the Permittee, unless such person notifies the Permittee of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to the Department.

The Notice of Claim and supporting documentation, including a copy of the fee transmittal form and a copy of the check, must be sent by certified mail or hand delivered to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
100 Cambridge Street, Suite 900
Boston, MA 02114

In addition, the Department's fee transmittal form, together with a valid check or money order made payable to the Commonwealth of Massachusetts in the amount of $100 for the appeal filing fee, if required, must be mailed to:

Commonwealth of Massachusetts Lock Box
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The Notice of Claim may be dismissed if the filing fee is not paid unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city, town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Duane LeVangie, Chief
Water Management Program
Bureau of Water Resources
MassDEP

September 16, 2026
Date

Appendix A – Functional Equivalence with the 65 Residential Gallons Per Capita Day Performance Standard

MassDEP will consider public water supply permittees who cannot meet the 65 RGPCD performance standard to be functionally equivalent, and in compliance with their permit, if they have an on-going program in place that ensures "best practices" for controlling residential water use as described below.

If the permittee fails to document compliance with the RGPCD performance standard in its Annual Statistical Report (ASR), or in any ASR thereafter, then the permittee must file with that ASR a Residential Gallons Per Capita Day Compliance Plan (RGPCD Plan) which shall include, at a minimum:

1. A description of the actions taken during the prior calendar year to meet the performance standard;
2. An analysis of the cause of the failure to meet the performance standard;
3. A description of the actions that will be taken to meet the performance standard which must include, at a minimum, at least one of the following:
    a) a program that provides water saving devices such as faucet aerators and low flow shower heads at cost;
    b) a program that provides rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets), or
    c) the adoption and enforcement of an ordinance, by-law, or regulation to require the installation of moisture sensors or similar climate related control technology on all automatic irrigation systems;

    and may include, without limitation, the following:
    d) the use of an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation;
    e) a program that provides rebates or other incentives for the installation of moisture sensors or similar climate related control technology on automatic irrigation systems;
    f) the adoption and enforcement of an ordinance, by-law, or regulation to require that all new construction include water saving devices and low water use appliances;
    g) the adoption and enforcement of an ordinance, by-law, or regulation to require that all new construction minimize lawn area and/or irrigated lawn area, maximize the use of drought resistant landscaping, and maximize the use of topsoil with a high water- retention rate;
    h) the implementation of a program to encourage the use of cisterns or rain barrels for outside watering;
    i) the implementation of monthly or quarterly billing.
4. A schedule for implementation; and
5. An analysis of how the planned actions will address the specific circumstances that resulted in the failure to meet the performance standard.

If the permittee is already implementing one or more of these programs, it must include in its RGPCD plan the continued implementation of such program(s), as well as implementation of at least one additional program. All programs must include a public information component designed to inform customers of the program and to encourage participation in the program.

RGPCD plans may be amended to revise the actions that will be taken to meet the performance standard. Amended RGPCD plans must include the information set forth above.

If a RGPCD plan is required, the permittee must:

1. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD plan annually at the time it files its ASR, and
2. continue to implement the RGPCD plan until it complies with the performance standard and such compliance is documented in the permittee's ASR for the calendar year in which the standard is met.

Appendix B – Functional Equivalence: 10% Unaccounted for Water Performance Standard

MassDEP will consider PWS permittees who cannot meet the 10% UAW performance standard to be functionally equivalent, and in compliance with their permit, if they have an on-going program in place that ensures "best practices" for controlling water loss. The water loss control program will be based on annual water audits and guidance as described in the AWWA/IWA *Manual of Water Supply Practices – M36, Water Audits and Loss Control Programs* (AWWA M36).

If the permittee fails to document compliance with the Unaccounted for Water performance standard (UAW of 10% or less for 2 of the 3 most recent years throughout the permit period), then the permittee shall develop and implement a water loss control program following the *AWWA M36 Water Audits and Loss Control Programs* within 5 full calendar years of failing to meet the standard as follows:

1. Conduct an annual "top down" water audit, calculate the data validity level/score using AWWA Water Loss Control Committee's Free Water Audit Software, and submit the AWWA WLCC Free Water Audit Software: Reporting Worksheet and data validity score annually with its Annual Statistical Report (ASR).
    - If a PWS's data validity level/score is less than Level III (51-70), steps recommended through the audit(s) shall be taken to improve the reliability of the data prior to developing a long-term program to reduce real and apparent water losses.
    - Data with a validity score of 50 or less are considered too weak to be used to develop a component analysis or for infrastructure planning and maintenance.
    - Developing data with an acceptably strong validity score can be a multi-year process.
2. When the data validity score meets the Level III (51-70) requirement, conduct a component analysis to identify causes of real and apparent water loss and develop a program to control losses based on the results of the component analysis.
3. Within 5 full calendar years of failing to meet the standard, submit the component analysis and water loss control program with a proposed implementation schedule to the Department.
4. Continued implementation will be a condition of the permit in place of meeting the 10% UAW performance standard.
5. Upon request of the Department, the permittee shall report on its implementation of the water loss control program.

A PWS permittee may choose to discontinue the water loss program implementation if UAW, as reported on the ASR and approved by the Department, is below 10% for four

consecutive years, and the water audit data validity scores are at least Level III (51-70) for the same four years.

NOTE FOR SMALL SYSTEMS: For small systems with less than 3,000 service connections or a service connection density of less than 16 connections per mile of pipeline, the Unavoidable Annual Real Loss (UARL) calculation and the Infrastructure Leak Index (ILI) developed as the final steps of the top down water audit may not result in valid performance indicators, and may not be comparable to the UARL and ILI calculations for larger systems.

However, these small systems can benefit from developing reliable data and conducting an annual top down water audit. Small systems can rely on the real losses (gallons per mile of main per day) performance indicator developed in the water audit as a measure of real water loss when developing a water loss control program. The M36 Manual discusses the audit process for small systems, and includes a chapter to guide small systems in understanding the results of their audits and in developing a water loss control program (*Manual of Water Supply Practices – M36, Fourth Edition, Chapter 9: Considerations for Small Systems*, pp. 293-305).

MassDEP UAW Water Loss Control Measures: If the permittee is required to develop a Functional Equivalence Plan for the 10% Unaccounted for Water Performance Standard, and the permittee does not have a MassDEP-approved Water Loss Control Program in place within 5 full calendar years of failing to meet the standard, the permittee will be required to implement the MassDEP UAW Water Loss Control Measures outlined below:

- An annual water audit and leak detection survey, as described in the AWWA M36 Manual, of the entire system.
  - Within one year, repair 75% (by water volume) of all leaks detected in the survey that are under the control of the public water system;
  - Thereafter, repair leaks as necessary to reduce permittee's UAW to 10% or the minimum level possible.
- Meter inspection and, as appropriate, repair, replace and calibrate water meters:
  - Large Meters (2" or greater) – within one year
  - Medium Meters (1" or greater and less than 2") – within 2 years
  - Small Meters (less than 1") - within three years
  - Thereafter, calibrate and or replace all meters according to type and specification.
- Bill at least quarterly within three years.
- Water pricing structure sufficient to pay the full cost of operating the system.

Hardship - A permittee may present an analysis of the cost-effectiveness of implementing certain conservation measures included in the MassDEP UAW Water

Loss Control Measures and offer alternative measures. Any analysis must explicitly consider environmental impacts and must produce equal or greater environmental benefits.

A permittee's hardship analysis shall:

- Document economic hardship and present an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship;
- Present reasons why specific measures are not cost-effective because the cost would exceed the costs of alternative methods of achieving the appropriate standard; and
- Propose specific conservation measures that would result in equal or greater system-wide water savings or equal or greater environmental benefits than the conservation measures included in the MassDEP UAW Water Loss Control Measures.

MassDEP will review a permittee's detailed, written analysis to determine whether unique circumstances make specific Best Management Practices (BMPs) less cost-effective than alternatives, or infeasible for the permittee.

Appendix C – Mitigation

Direct Credit – Stormwater Project

Criteria Type	Criteria Name	Supporting Documentation	Attachment	Indirect or Direct	Estimated Indirect Credit	Estimated Mitigation Volume (MGD)	Guidance Document Used to Determine Credits
Stormwater	550 King Street	•TEC, Inc. Stormwater Report For 550 King Street, August 2023 •MassDEP Stormwater Calculator Export •Signed Applicant Certification for Stormwater BMP Direct Mitigation Credit	Attachment 13	Direct	–	0.0103	b2-Stormwater BMP Mitigation Credit-FINAL-4-23-2021

Indirect Credit – Land Protection

Site	Parcel Area (Acres)	Owner	Assessors Map/Lot numbers	Parcel Purchase Date	Effective Date of Conservation Restriction/ Easement	Term of Conservation Restriction/ Easement	Book and Page Numbers of Deed	Water Supply Protected Land Area (acres)
Trumbull Well Land (R10-14-0)	58.4	Town of Littleton	R10-14-0	December 6, 2021	December 6, 2021	In perpetuity	79319/596,79319/597 and 79319/598	46.86

Littleton's Indirect Mitigation Credit (Water Supply Protection Land)	
Town acquired Parcel R10-14-0, 58.4 (58.4 acres) minus ineligible 11.54 acres of Zone 1 = 46.86 acres eligible for credit.	1 credit = 10,000 gpd 1 acre = 0.2 credits= 2,000 gpd 46.86 acres x 2,000 gpd/ acre = 97,720 gpd (0.09772 MGD) of indirect credit

Littleton's Total Direct and Indirect Mitigation Credit	
Direct Credit (Stormwater BMP)	0.0103 MGD
Indirect Credit (Water Supply Protection Land)	+0.09772 MGD
Total Mitigation Credit	**= 0.10802 MGD**

END NOTES

[i] Estimated demand provided by Littleton developer of 550 King St./410 Great Road.

[ii] Subbasins used for WMA permitting are the 1,395 subbasins delineated by the U.S. Geological Survey in Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover, and Water Quality for Massachusetts Stream Basins (Weiskel et al., 2010, USGS SIR 2009-5272). The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion (NGD) to mean the unimpeded median flow for August minus 2000-2004 groundwater withdrawals plus 2000-2004 groundwater returns described by U.S. Geological Survey in Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover and Water Quality for Massachusetts Stream Basins. A subbasin is groundwater, depleted if it has an August NGD of greater than 25%.

[iii] The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion to mean the unimpeded median flow for August minus 2000-2004 groundwater withdrawals plus 2000-2004 groundwater returns described by U.S. Geological Survey in Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover and Water Quality for Massachusetts Stream Basins.