



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

September 30, 2024

Ivan Pagacik, Chairman 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 Act
Action: Permit Amendment

Dear Mr. Pagacik:

Please find attached the following:

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

If you have any questions and would like to meet to discuss the permit, please contact me at duane.levangie@mass.gov or Madelyn Morris at madelyn.morris@mass.gov.

Sincerely,

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

Enclosures

Ecc: Littleton Board of Selectmen

Matt Silverman, Littleton Water Department

Todd Richards, Melanie Cheeseman, & Misty-Anne Marold, Massachusetts Division of Fisheries & Wildlife

Kevin MacKinnon, Weston & Sampson

Lydia Olson, MassRiver's Alliance,

Jennifer Pederson, Massachusetts Water Works Association

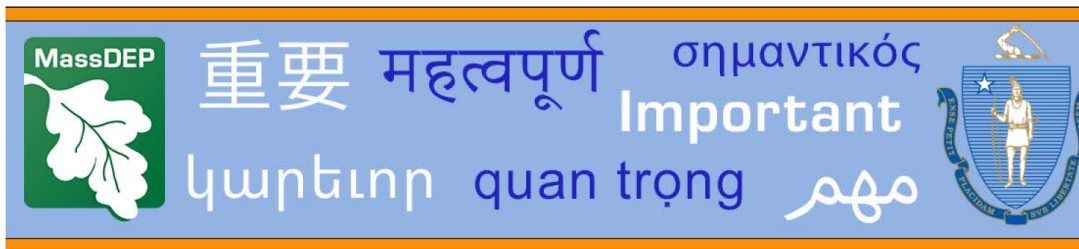
Marielle Stone & Robert Bostwick, MassDEP Worcester Office

[https://massgov.sharepoint.com/:f/r/sites/DEP-BWR/DWPArchive/CERO/Littleton-2158000- FINAL WMA Permit Amendent-9P213158.02-9-30-2024](https://massgov.sharepoint.com/:f/r/sites/DEP-BWR/DWPArchive/CERO/Littleton-2158000-FINAL%20WMA%20Permit%20Amendment-9P213158.02-9-30-2024)

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Việt Vietnamese

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ប្រទេសកម្ពុជា Khmer/Cambodian

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ហើយកម្មវិធីត្រូវបានបកប្រែភ្លាមៗ។
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកដ្ឋានយុត្តិធម៌បរិស្ថានរបស់
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Kriolu Kabuverdianu Cape Verdean

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

Contact Deneen Simpson 857-406-0738

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100 Cambridge Street 9th Floor Boston, MA 02114

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العربية Arabic

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Finding of Fact in Support of Permit Amendment 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 2023 permit amendment application submitted by the Littleton Water Department (Littleton or the Town)¹. As part of this review, the Department reviewed Littleton's compliance with the Amended Water Management Act Permit issued in 2021 (the 2021 Amended WMA Permit). The Department requested additional information in an Order to Complete (OTC) dated November 28, 2023 and a Supplemental OTC dated May 21, 2024. The Town provided responses to the OTCs on January 5, 2024 and June 13, 2024, respectively.

The Department issues the Second Amended Water Management Act Permit #9P-2-13-158.02 (the "Second Amended 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 Second Amended WMA Permit supersedes the 2021 Amended WMA Permit. The Department makes the following Findings of Fact in support of the attached Second Amended WMA Permit and includes herewith its reasons for issuing the Second Amended WMA Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11, and 310 CMR 36.00. The Second Amended 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 Second Amended 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)²,

¹ Littleton also submitted an application to renew its Water Management Act Permit in 2017. MassDEP will review Littleton's permit renewal application when it conducts the renewal process for all applications in the Merrimack River Basin currently scheduled to begin in 2026.

² Well 2-1, Well 2-2, and Well 2-3 are listed as Beaver Brook Well 2.1 (2158000-05G), Beaver Brook Well 2-2(2158000-06G), and Beaver Brook 2-3(2158000-06G) in the 2021 Amended WMA Permit and the Second Amended WMA Permit.

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 its sources. The maximum total authorized volume (registered and permitted) resulting from the issuance of the 1997 WMA Permit is 1.46 MGD.³

In 2017, Littleton submitted an application to renew the 1997 WMA Permit. The 2017 permit renewal application is still pending.⁴ MassDEP will review the 2017 permit renewal application when it begins the renewal process for all applications in the Merrimack River Basin.

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 withdrawals that exceed a defined baseline withdrawal volume. Mass DEP will include these requirements when it issues a final decision on Littleton's 2017 permit renewal application.

On November 21, 2017, the Department of Conservation and Recreation's Office of Water Resources (DCR) issued a new Water Needs Forecast (the 2017 WNF) for Littleton. The 2017 WNF set forth two projections for Littleton's future water needs. The first projection assumed that Littleton would comply with the 65 Residential Gallons Per Calendar Day (RGPCD) Performance Standard and the 10% Unaccounted for Water (UAW) Performance Standard (the 65/10 WNF), and the second projection assumed that the Littleton's current trends at the time DCR issued its forecast with regard to the RGPCD and UAW Performance Standards would continue (Current Trend WNF). The 2017 65/10 WNF identified demand would be 1.23 MGD in 2024, 1.25 MGD in 2029 and 1.26 MGD in 2034. The 2017 65/10 WNF included a 5% buffer to account for uncertainty in the forecast of 5% or 0.06 MGD and thus would allow MassDEP to authorize a total volume of up to 1.32 MGD in the final five years of the Renewed WMA Permit (Table 1).

Table 1 DCR Water Needs Forecast

Year	65/10 WNF (MGD)	Current Trend WNF(MGD)
2017	1.05	1.03
2024	1.23	1.22
2029	1.25	1.23
2034	1.26 With 5% buffer (0.06) = 1.32*	1.24 With 5% buffer (0.06) =1.30*

Unless and until DCR issues a new WNF, MassDEP will update the section of the 2021 Amended WMA Permit setting out the Maximum Authorized Withdrawal Volume to reflect the projections set forth in the 2017 WNF when it issues the final decision on Littleton's permit renewal application.

³ On May 7, 2015, MassDEP issued a five year review permit (the 2015 WMA Permit) that maintained the authorized volumes set forth in the 1997 Permit.

⁴ Littleton also has permit application under review in the Concord River Basin for a proposed new source.

In 2021, MassDEP issued the 2021 Amended WMA Permit to Littleton that increased the maximum pumping rate for the Beaver Brook Wells. The 2021 Amended WMA Permit maintained the other conditions in the 1997 WMA Permit including the maximum total authorized volume resulting from the issuance of the 1997 WMA Permit, 1.46 MGD. Littleton's recent water use has been substantially below the total authorized volume of 1.46 MGD set forth in the 1997 WMA Permit, the 2021 Amended WMA Permit and the maximum volume envisioned by DCR in the 2017 WNF, 1.32 MGD (Table 2).

Table 2 Recent Water Use

Year	Annual Average Daily Withdrawal MGD
2023	1.16
2022	1.13
2021	0.98
2020	0.90
2019	0.90

In 2023, Littleton filed a permit amendment application to add an additional source, the Trumbull Well.⁵ Littleton wanted to add this source to provide a safe source of drinking water for certain 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 total authorized volume set forth in the 2021 Amended WMA Permit: 1.46 MGD or the highest projection set forth in DCR's 2017 WNF 1.32 MGD. On June 26, 2024, MassDEP issued a Draft Second Amended WMA Permit. No formal comments were received on the Draft permit.

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 Second Amended WMA Permit has been modified from the Draft Second Amended WMA Permit to reflect 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 (MassWildlife) 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

⁵ The Trumbull Well was formally referred to as the Taylor Street Well because it will be located on Taylor Street.

Management Permit under MESA (321 CMR 10.23). On September 6, 2024, MassWildlife issued CMP-8379, File No. 23-4202, RC 85971 (the MESA CMP). The Second Amended WMA Permit has been modified from the Draft Second Amended WMA Permit to reflect applicable conditions of the MESA CMP.

Permit Expiration Date

The Second Amended WMA Permit has the same expiration date as set forth in the 2021 Amended WMA Permit, November 30, 2018. That expiration date reflects 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 will be administratively continued until MassDEP issues a final decision on the 2017 permit renewal application. Note that renewed permits in the Merrimack River Basin will 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 Second Amended 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 80.22 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 Second Amended 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 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 Amended WMA Permit provided the Town with a total authorized volume of 1.46 MGD. This volume is based on the water needs forecast (WNF) prepared by the Department of Conservation and Recreation Office of Water Resources (DCR) for issuance of the 1997 WMA Permit. Special Condition 1 of the Second Amended Permit maintains that volume. MassDEP will update Littleton's total authorized volume to reflect the latest WNF issued by DCR when it makes a final decision on Littleton's 2017 permit renewal application. As of the effective date of the Second Amended WMA, the 2017 WNF is the latest WNF issued by DCR.

Special Condition 2: Maximum Authorized Daily Withdrawals From Each Withdrawal Point.

Special Condition 2 of the Second Amended WMA Permit sets the maximum daily withdrawal rate for each source that was included in the 2021 Amended Permit. WMA Special Condition 2 also includes the new source, the Trumbull Well. 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 (MassWildlife) 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 Second Amended WMA Permit provides that Littleton may not exceed the maximum pumping rate for the Trumbull Well set by MassWildlife 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 provides that Littleton shall 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. Littleton has notified MassDEP that it needs at least two more years of water level monitoring to assess the impact of the increased pumping of the Beaver Brook Wells. Special Condition 3 further provides that after Littleton conducts at least two additional years 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 provides that Littleton shall provide documentation during the WMA Permit renewal process that it satisfies the Best Efforts 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 Efforts requirement in 2015 when the 1997 WMA Permit was modified and in 2024 in connection with the permit amendment process. Special Condition 4 of the Second Amended WMA Permit maintains the Best Efforts requirement. Littleton will have to exercise these Best Efforts again when the permit is renewed.

The Second Amended 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 Best Efforts to encourage Harvard and Boxborough to enact the necessary groundwater protection requirements during the permit amendment process. Littleton will have to exercise these Best Efforts again when the permit is renewed.

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

Special Condition 5 of the 2021 Amended WMA Permit requires Littleton to meet the performance standard for residential gallons per capita day (RGPCD) of 65 gallons. 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 has been 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 %
2023	47	12.0 %
2022	54	16.0%
2021	50	13.4%
2020	56	10.9%
2019	54	11.9%

Special Condition 5 of the Second Amended WMA Permit maintains the RGPCD performance standard of 65 gallons.

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% and required Littleton to comply with that performance standard for two out of every three years. Special Condition 6 of the 2021 Amended WMA Permit provided that if Littleton failed to meet this requirement beginning in 2019, 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 beginning in 2019. 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.

Special Condition 6 of the Second Amended WMA Permit maintains the 10% UAW Performance Standards set forth in the 2021 Amended WMA Permit and Appendix B. Special Condition 6 maintains 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 Second Amended WMA Permit has been modified from the Draft Second Amended Permit to reflect the requirements of the ITA Decision. To this end, Special Condition 6 requires Littleton to update its water loss control program to include the extension into Boxborough.

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 and Appendix B. Special Condition 6 provides that on or before the date it is required to submit its Annual Statistical Report (ASR), Littleton shall submit to MassDEP 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 2021 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 Second Amended WMA Permit maintains this requirement.

Special Condition 8, Seasonal Limits on Nonessential Outdoor Water Use.

Special Condition 8 of the 2021 Amended WMA Permit allows Littleton to choose to implement seasonal restrictions on nonessential outdoor water use based on the calendar or streamflow. Special Condition 8 of the 2021 Amended WMA Permit provides that if Littleton chooses the streamflow option it shall rely on the USGS local stream gage #01099500, Concord River below River Meadow Brook at Lowell. Although it gives Littleton the same options and relies on the same USGS local stream gage as set in Special Condition 8 of the 2021 Amended WMA Permit, Special Condition 8 of Second Amended WMA updates the restrictions. The seasonal limitations on nonessential outdoor water use in Special Condition 8 of the Second Amended Permit are based on:

- The August net groundwater depletion (NGD)⁶ where the permittee's groundwater sources are located;
- The permittee's compliance with the RGPCD performance standard during the preceding year;
- The permittee's choice to implement restrictions either continuously throughout the irrigation season, or only when streamflow falls below trigger levels at an assigned USGS local stream gage; and
- The Second Amended WMA Permit establishes a 7-day Low Flow value that triggers more stringent restrictions on non-essential water use.

As stated earlier each year, Special Condition 8 of the Second Amended WMA Permit provides that Littleton may choose one of two options for implementing nonessential outdoor watering restrictions:

1. Calendar triggered restrictions: Restrictions shall be implemented from May 1st through September 30th. Many public water suppliers will find this option easier to implement and enforce than the streamflow triggered approach.
2. Streamflow triggered restrictions: Restrictions shall be 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 1st through September 30th. At a minimum, restrictions shall commence when streamflow falls below the trigger for three consecutive days. Once implemented, the restrictions shall remain in place until streamflow at the assigned USGS local stream gage meets or

⁶ 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*.

exceeds the trigger streamflow for seven consecutive days. The streamflow triggers are based on flow levels that are protective of habitat for fish spawning during the spring and for fish rearing and growth during the summer.

If Littleton selects the streamflow approach, it shall rely on local stream gage #01099500 Concord River below River Meadow Brook at Lowell. The local gage streamflow triggers at this site are 427 cubic feet per second (cfs) for May and June and 156 cfs for July, August, and September. Should the reliability of flow measures at the Concord River gage be so impaired as to question its accuracy, Littleton may request, subject to MassDEP's review and approval, to transfer to another gage to 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 in order to provide additional protection to streamflows 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 the Concord River below River Meadow Brook at Lowell gage is 71 cfs.

Littleton may choose to implement limits on nonessential outdoor water use that are stricter than those required by the Second Amended WMA Permit. This permit condition does not confer enforcement authority on the permittee.

The ITA Decision requires 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 Second Amended WMA Permit modifies the Draft Second Amended WMA Permit to provide that Littleton shall update and implement these additional restrictions in accordance with the requirements of the ITA Decision.

Special Condition 8 of the Second Amended WMA Permit requires Littleton to update its water regulations governing nonessential outdoor water use to align with the required seasonal restrictions on nonessential outdoor water use as soon as possible but no later than May 1, 2025. 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

Special Condition 9 of the 2021 Amended WMA Permit incorporates the Water Conservation Requirements set forth in the five year review permit (the 2015 WMA Permit) issued by MassDEP on May 7, 2015. 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 Second Amended WMA Permit updates this condition to reflect the Water Conservation Standards as revised in 2018 and the ITA Approval.



Department of Environmental Protection

100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

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 30, 2024

PERMIT EXPIRATION DATE: November 30, 2018⁷

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	To be assigned
Beaver Brook Well 2.2	2158000-06G		

⁷ The Second Amended WMA Permit has the same expiration date as set forth in the 2021 Amended WMA Permit, November 30, 2018. That expiration date reflects 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 will be administratively continued until MassDEP issues a final decision on Littleton 's pending 2017 permit renewal application.

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 Withdrawal Volumes

5-Year Periods		Total Raw Water Withdrawal Volumes			
		Permit		Permit + Registration	
		Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
Period One Years 2-5	3/6/1997 to 11/30/1999	0.42	153.30	1.25	457.88
Period Two Years 6-10	12/1/1999 to 11/30/2004	0.50	182.50	1.33	487.08
Period Three Years 11-15	12/1/2004 to 11/30/2009	0.59	215.35	1.42	519.93
Period Four Years 16-20	12/1/2009 to 11/30/2018 ⁸	0.63	229.95	1.46	534.53

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.

⁸ See footnote 7.

Table 3: Maximum Authorized Daily Withdrawal Volume

Well Name	PWS Source ID Code	Maximum Daily Rate
Whitcomb Wellfield #3 ⁹	2158000-08G	0.86 MGD
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-XXX	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 (MassWildlife) 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 condition 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 MassWildlife amend the MESA CMP to increase the maximum pumping rate. Notwithstanding anything to the contrary in this Second Amended WMA Permit, Littleton shall not exceed the maximum pumping rate for the Trumbull Well set by MassWildlife 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 required by Special Condition 3 of the 2021 Amended WMA Permit and submit a report on that monitoring by December 31st of each year. After Littleton completes at least two additional years 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.

⁹ Whitcomb Wellfield #3 is a replacement for the Whitcomb Tubular Wellfield (2158000-01G). The maximum approved pumping rate for the Whitcomb Wellfield #3 is a combined rate with the Whitcomb GP Well #1,

Special Condition 4: Groundwater Supply Protection

Littleton shall provide documentation during the WMA Permit renewal process that it has satisfied the Best Efforts 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. MassDEP will contact Littleton during the permit renewal process to complete this requirement.

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 beginning in calendar year 2019, 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 a 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.

On or before the date it is required to submit its Annual Statistical Report (ASR) each year, Littleton shall submit to MassDEP a report documenting compliance with the Functional Equivalence Requirements 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.

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.

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 1st through September 30th as outlined in Table 4 below. Littleton shall be responsible for tracking streamflow gages and recording and reporting when restrictions are implemented if triggered restrictions are implemented.

Littleton shall document compliance with the seasonal limits on nonessential outdoor water use annually in its ASR and indicate whether it anticipates implementing calendar triggered restrictions or USGS streamflow triggered restrictions during the next year.

Nothing in this Second Amended WMA Permit shall prevent Littleton from implementing water use restrictions that are more restrictive than those set forth in this permit.

Nonessential Outdoor Water Use and Water Use Restrictions

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.

Nonessential outdoor water uses that are subject to mandatory restrictions include:

- irrigation of lawns via sprinklers or automatic irrigation systems;
- filling swimming pools;
- washing of vehicles, except in a commercial car wash or as necessary for operator safety; and
- washing exterior building surfaces, parking lots, driveways, or sidewalks, except as necessary to apply surface treatments such as paint, preservatives, stucco, pavement, or cement.

The following uses may be allowed, before 9 A.M. and after 5 P.M. when mandatory restrictions are in place:

- irrigation to establish a new lawn and new plantings during the months of May and September; and
- irrigation of lawns, gardens, flowers, and ornamental plants by means of a hand-held hose.

Table 4: Seasonal Limits on Nonessential Outdoor Water Use

For Permittees meeting the 65 RGPCD Standard for the preceding year RGPCD $\leq$ 65 as reported in the ASR and accepted by MassDEP	
Calendar Triggered Restrictions	Nonessential outdoor water use is allowed: a) Two (2) days per week before 9 A.M. and after 5 P.M.; and b) one (1) day per week before 9 A.M. and after 5 P.M. when USGS stream gage 01099500 –Concord River below River Meadow Brook at Lowell falls below 7-Day Low Flow statistic of 71 cfs for three (3) consecutive days. Once streamflow triggered restrictions are implemented, they shall remain in place until streamflow at the gage meets or exceeds 71 cfs for seven (7) consecutive days.
Streamflow Triggered Restrictions	Nonessential outdoor water use is allowed: a) Two (2) days per week before 9 A.M. and after 5 P.M. when USGS stream gage 01099500 Concord River below River Meadow Brook at Lowell falls below: • May 1 – June 30: 427 cfs for three (3) consecutive days • July 1 – September 30: 156 cfs for three (3) consecutive days b) one (1) day per week before 9 A.M. and after 5 P.M. when USGS stream gage 01099500 Concord River below River Meadow Brook at Lowell falls below 71 cfs for three (3) consecutive days. Once implemented, the 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 RGPCD $>$ 65 as reported in the ASR and accepted by MassDEP	

Calendar Triggered Restrictions	Nonessential outdoor water use is allowed one (1) day per week before 9 A.M. and after 5 P.M.
Streamflow Triggered Restrictions	Nonessential outdoor water use is allowed one (1) day per week before 9 A.M. and after 5 P.M. when USGS stream gage 01099500 Concord River below River Meadow Brook at Lowell falls below: • May 1 – June 30: 427 cfs for three (3) consecutive days • July 1 – September 30: 156 cfs for three (3) consecutive days Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.

Streamflow Information is available at the USGS National Water Information (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. 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, permittees must use the mean daily streamflow from the proceeding day when tracking streamflows. Mean daily streamflow gage readings are available at the USGS NWIS Web Interface at USGS Current Conditions for Massachusetts Streamflow • Scroll down to #011099500 Concord River below River Meadow Brook at Lowell • Click on the gage number. • Click on “Legacy Real Time Page”. • Scroll down to “Provisional Data Subject to Revision-Available data for this site” and click on the drop-down menu. • Click on “Time-series Daily data” and hit GO. • Scroll down to the “Available Parameters” box. Within the box, be sure “00060 discharge (Mean)” is checked, then under “Output Format” click “Table” and hit GO. • Scroll down to “Daily Mean Discharge, cubic feet per second” table and find the current date on the table. • Compare the cubic feet per second (cfs) measurement shown on the table to the cfs shown under Streamflow Triggered Restrictions above Littleton shall document compliance with the Seasonal Nonessential Outdoor Water Use Restrictions annually in its Annual Statistical Report (ASR) and indicate whether it anticipates implementing calendar triggered restrictions or streamflow restrictions during the next year.	
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In addition to the restrictions set forth in Table 4, Littleton shall 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.

Public Notice of Water Use Restrictions

Littleton 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 15th 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.
- For drought triggered restrictions, whenever the Secretary declares a drought in the Northeast Drought Region

Notice to customers shall include the following:

- A detailed description of the restrictions and penalties for violating the restrictions;
- The need to limit water use, especially nonessential outdoor water use, to ensure a sustainable drinking water supply and to protect natural resources and streamflow for aquatic life; and
- Ways individual homeowners can limit water use, especially nonessential outdoor water use.

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 Water Use Restrictions Form on the MassDEP website. Notice to MassDEP need not be provided if Littleton has already implemented water use restrictions that conform to the applicable restrictions and those restrictions are still in force.

Littleton shall update its Water Restriction Regulations to include the restrictions on seasonal outdoor water use required by Special Condition 8 and submit a copy of those regulations to MassDEP as soon as possible and no later than May 1, 2025. Beginning May 1, 2025, or the date that the Town updates its Water Restriction Regulations to include the restriction required by Special Condition 8, whichever first occurs, Littleton shall commence implementation of the seasonal restrictions on 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 5.

Table 5 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 <u>AWWA Manual 36</u> .
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: - Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection. - Leaks of less than 3 gallons per minute at hydrants or appurtenances shall be repaired as soon as possible. - 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.

Table 5 Minimum Water Conservation Requirements
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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.
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Lawn and Landscape

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

Public Education and Outreach

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| <ol style="list-style-type: none">1. Littleton shall continue to implement a Water Conservation Education Plan. Littleton's Water Conservation Education Plan shall be designed to educate the Town's water customers on ways to conserve water. Without limitation, Littleton's plan may include the following actions:<ul style="list-style-type: none">○ 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 rebates on water efficient appliances and plumbing, provides information on water wise landscaping.4. At a minimum, Littleton shall continue its current public education program. |
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Table 5 Minimum Water Conservation Requirements

GENERAL PERMIT CONDITIONS (applicable to all permittees)

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 before that date the Department has received a renewal permit 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 and all 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 any property 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 MGL c 21G ss 15-17, MGL c 111 ss 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 a transfer application 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 established by 310 CMR 36.37.
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. Such report must be mailed or hand delivered to:

Department of Environmental Protection
Water Management Act Program
100 Cambridge Street 9th Floor
Boston, MA 02114

7. **Duty to Maintain Records** The permittee shall maintain withdrawal records and other information in sufficient detail to demonstrate compliance with this permit.

8. **Metering** If the withdrawal point included within the permit is not yet metered, it shall be metered within one year of the date of issuance of the permit. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.

APPEAL RIGHTS AND TIME LIMITS

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 1.00 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 a 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 permit applicant, unless such person notifies the permit applicant 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 must be sent to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
100 Cambridge Street, 9th Floor
Boston, MA 02114

In addition, the Department’s fee transmittal form, together with a valid check 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.

WAIVER

MassDEP may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of MassDEP that the fee will create an undue financial hardship. A person seeking a

waiver must file, together with the hearing request, an affidavit setting forth the facts which support the claim of undue hardship.



September 30, 2024

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

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.