Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

January 13, 2025

Medfield Select Board
Town of Medfield
459 Main Street
Medfield MA 02052

RE: Medfield- BRP\WMA
WMA Permit #: #9P3-2-20-175.02
Program: Water Management Act
Final Permit Modification

Dear Board Members:

Please find the attached documents:

- Findings of Fact in Support of the Final Water Management Act Permit Modification; and,
- Final Water Management Act Permit Modification #**9P3-2-20-175.02** for the Town of Medfield in the Charles River Basin.

The signature on this cover letter indicates formal issuance of the attached document. If you have any questions regarding this information, please contact Jennifer D'Urso at jen.durso@mass.gov or me at (617) 780-1962 or via e-mail at duane.levangie@mass.gov.

Very truly yours,

Duane LeVangie, Chief
Water Management Program
Bureau of Water Resources

Ecc: Maurice Goulet, Director of Public Works
Lydia Olson Massachusetts Rivers Alliance
Jennifer Pederson, Massachusetts Water Works Association
Heather Miller, Charles River Watershed Association
Anne Carroll, Department of Conservation and Recreation-Office of Water Resources

DEP BWR - CERO - All Documents/ Medfield-217500- WMA Final Permit 1-13-2025
DEP BWR - Permit Renewals - All Documents/Medfield – 2175000 - WMA Final Permit-1-13-2025

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 EJ at the telephone number listed below.

Español Spanish

Este documento es importante y debe ser traducido de inmediato. Si necesita este documento traducido, comuníquese con la Directora de Diversidad de MassDEP al número de teléfono que aparece más abajo.

Português Portuguese

Este é um documento importante e deve ser traduzido imediatamente. Se precisar de uma tradução deste documento, entre em contato com o Diretor de Diversidade da MassDEP nos números de telefone listados abaixo.

繁體中文 Chinese Traditional

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼聯絡 MassDEP 多元化負責人。

简体中文 Chinese Simplified

本文件非常重要，应立即翻译。如果您需要翻译这份文件，请用下面列出的电话号码与 MassDEP 的多元化主任联系。

Ayisyen Kreyòl Haitian Creole

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradwi l imedyatman. Si ou bezwen dokimar sa a tradwi, tanpri kontakte Direktè Divèsite MassDEP la nan nimewo telefòn endike anba.

Việt Vietnamese

Tài liệu này rất quan trọng và cần được dịch ngay lập tức. Nếu quý vị cần dịch tài liệu này, xin liên lạc với Giám đốc Đa dạng của MassDEP theo các số điện thoại ghi dưới đây.

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះគឺសំខាន់ហើយគួរត្រូវបានបកប្រែភ្លាមៗ។ ប្រសិនបើអ្នកត្រូវការឱ្យគេបកប្រែឯកសារនេះ
សូមទាក់ទងមកនាយកផ្នែកពិពិធកម្មរបស់ MassDEP តាមលេខទូរស័ព្ទខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

Kel dukumentu li é inpurtánti y debe ser traduzidu imidiatamenti. Se bu meste di kel dukumentu traduzidu, pur favor kontakta Diretor di Diversidádi di MassDEP na numeru abaxu indikadu.

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 4.21.2023) 310 CMR 1.03(5)(a)

Русский Russian

Это важный документ, и он должен быть безотлагательно переведен. Если вам нужен перевод данного документа, пожалуйста, свяжитесь с директором по вопросам многообразия (Diversity Director) компании MassDEP по указанному ниже телефону.

العربية Arabic

هذه الوثيقة مهمة ويجب ترجمتها على الفور. اذا كنت بحاجة الى هذه الوثيقة مترجمة، يرجى الاتصال بمدير التنوع PMassDE على أرقام الهواتف المدرجة أدناه.

한국어 Korean

이 문서는 중요하고 즉시 번역해야 합니다. 이 문서의 번역이 필요하시다면, 아래의 전화 번호로 MassDEP 의 다양성 담당 이사에 문의하시기 바랍니다.

հայերեն Armenian

Այս փաստաթուղթը կարևոր է և պետք է անմիջապես թարգմանվի:
Եթե Ձեզ անհրաժեշտ է այս փաստաթուղթը թարգմանել, դիմեք MassDEP-ի բազմազանության տնօրենին ստորև նշված հեռախոսահամարով:

فارسی Farsi Persian

این سند مهم است و باید فورا ترجمه شود.
اگر به ترجمه این سند نیاز دارید، لطفا با مدیر بخش تنوع نژادی MassDEP به شماره تلفن ذکر شده در زیر تماس بگیرید.

Français French

Ce document est important et devrait être traduit immédiatement. Si vous avez besoin de ce document traduit, veuillez communiquer avec le directeur de la diversité MassDEP aux numéros de téléphone indiqués ci-dessous.

Deutsch German

Dieses Dokument ist wichtig und sollte sofort übersetzt werden. Sofern Sie eine Übersetzung dieses Dokuments benötigen, wenden Sie sich bitte an den Diversity Director MassDEP unter der unten aufgeführten Telefonnummer.

Ελληνική Greek

Το παρόν έγγραφο είναι σημαντικό και θα πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του παρόντος εγγράφου, παρακαλούμε επικοινωνήστε με τον Διευθυντή Διαφορετικότητας του MassDEP στους αριθμούς τηλεφώνου που αναγράφονται παρακάτω.

Italiano Italian

Comunicazione per parti che non parlano inglese. Questo documento è importante e dovrebbe essere tradotto immediatamente. Se avete bisogno di questo documento tradotto, potete contattare il Direttore di Diversità di MassDEP al numero di telefono elencato di seguito.

Język Polski Polish

Dokument ten jest ważny i powinien zostać natychmiast przetłumaczony. Jeśli potrzebujesz przetłumaczonej wersji dokumentu, prosimy o kontakt z dyrektorem ds. różnorodności MassDEP pod jednym z numerów telefonu wymienionych poniżej.

हिन्दी Hindi

यह दस्तावेज महत्वपूर्ण है और इसका तुरंत अनुवाद किया जाना चाहिए. यदि आपको इस दस्तावेज़ का अनुवाद करने की आवश्यकता है, तो कृपया नीचे सूचीबद्ध टेलीफोन नंबरों पर मासडेप्स डाइवर्सिटी के निदेशक से संपर्क करें.

Contact Deneen Simpson 857-406-0738
Massachusetts Department of Environmental Protection
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TTY# MassRelay Service 1-800-439-2370 • https://www.mass.gov/environmental-justice
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Findings of Fact in Support of
Water Management Permit Modification # 9P3-2-20-175.02
TOWN OF MEDFIELD

The Department of Environmental Protection (the Department or MassDEP) has completed its compliance review of the 2010 Water Management Act Permit (the 2010 Permit) issued to the Town of Medfield (the Town or Medfield). The Department is issuing the Modified Water Management Permit #9P3-2-20-175.02 (the "Modified 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 Modified WMA Permit supersedes the 2010 Permit. The Department makes the following Findings of Fact in support of the attached Modified WMA Permit and includes herewith its reasons for issuing the Modified WMA Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11, and 310 CMR 36.00. The Modified 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 Modified WMA Permit, after notice and hearing, in accordance with the provisions of 310 CMR 36.29(1).

Medfield's Water Withdrawal History

Medfield is registered for an annual average daily withdrawal volume of 0.11 million gallons per day (MGD) from Wells 1 and 2 in the Charles River Basin and 0.92 MGD from Wells 3 and 4 in the Boston Harbor Basin. Medfield's total combined registered volume between the two basins is 1.03 MGD.

In 1991, MassDEP issued a Water Management Act Permit (the 1991 Permit) to Medfield in the Charles River Basin authorizing the Town to use Well 6 as an additional source. The 1991 Permit also authorized Medfield to withdraw an additional 0.27 MGD in the Charles River Basin from Well #6 for a potential total system-wide an annual average daily volume of up to 1.30 MGD.

In 2003, MassDEP issued Medfield a permit modifying the 1991 Permit (the 2003 Permit). The 2003 Permit reflected the transfer of the Medfield State Hospital Wellfield and its associated permitted annual average daily withdrawal volume of 0.20 MGD[1] in the Charles River Basin. In 2010, MassDEP issued Medfield a renewed permit (the 2010 Permit). On August 15, 2022, MassDEP issued to Medfield an Order to Complete (the OTC) outlining the specific information the Department needed to review the Town's compliance with the 2010 Permit. On March 15, 2023, March 11, 2024, and June 5, 2024, Medfield responded to the OTC.

[1] To date the Town has not used the Medfield State Hospital Wellfield.

The Permit Extensions

Medfield's permit was issued on February 26, 2010 with an expiration date of February 28, 2029. The permit was then extended for 4 years by Section 173 of Chapter 240 of the Acts of 2010, as amended by chapter 238 of the Acts of 2012, the Permit Extension Act. The expiration date was further extended by 462 days due to COVID No. 42, "Order Resuming State Permitting Deadlines and Continuing to Extend the Validity of Certain State Permits," issued on July 2, 2022. The permit was further extended by an additional two years by Section 280 of Chapter 238 of the Acts of 2024, to June 5, 2036.

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.

Water Management Regulation Revisions

In 2010, the Executive Office of Energy and Environmental Affairs (EEA) convened the Sustainable Water Management Initiative (SWMI) for the purpose of incorporating the best available science into the management of the Commonwealth's water resources. SWMI was a multi-year process that included a wide range of stakeholders and support from the Departments of Environmental Protection, Fish and Game, and Conservation and Recreation. In November 2012, the *Massachusetts Sustainable Water Management Initiative Framework Summary* (http://www.mass.gov/eea/docs/eea/water/swmi-framework-nov-2012.pdf) was released.

On November 7, 2014, the Department adopted revised Water Management Regulations at 310 CMR 36.00 that incorporate elements of the SWMI framework and the Water Conservation Standards adopted by the Massachusetts WRC. The regulations reflect a carefully developed balance to protect the health of Massachusetts' water bodies while meeting the needs of businesses and communities for water.

Without limitation, the Department has incorporated the following into Water Management permitting:

- Safe yield determinations for the major river basins based on a new methodology developed through SWMI (see the Safe Yield in the Charles River Basin section of this document). For more information on the Safe Yield methodology, go to the November 28, 2012 SWMI Framework Summary and Appendices;

- Water needs forecasts for public water suppliers developed by the Department of Conservation and Recreation, Office of Water Resources (DCR), using a methodology reviewed and approved by the Massachusetts WRC;
- Water supply protection measures for public water supplies including Zone II delineations for groundwater sources, and wellhead and surface water protection measures as required by Massachusetts Drinking Water Regulations (310 CMR 22.00);
- Water conservation and performance standards reviewed and approved by the WRC in July 2018 (Details on the 2018 Massachusetts Water Conservation Standards | Mass.gov); including without limitation;
    - performance standard of 65 residential gallons per capita day or less;
    - performance standard of 10% or less unaccounted-for-water;
    - seasonal limits on nonessential outdoor water use;
    - a water conservation program that includes leak detection and repair, full metering of the system and proper maintenance of the meters, periodic review of pricing, and education and outreach to residents and industrial and commercial water users; and
- Environmental protections developed through SWMI, including without limitation;
    - protection for coldwater fish resources;
    - minimization of withdrawal impacts in areas stressed by groundwater use; and
    - mitigation of the impacts of increasing withdrawals.

Safe Yield in the Charles River Basin This Modified 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 Charles River Basin is 65.2 million gallons per day (MGD), and total registered and permitted withdrawals are 44.12 MGD. The maximum withdrawals that are authorized in this permit, and all other permits currently under review by the Department within the Charles River Basin, will be within the safe yield and may be further conditioned as outlined in the regulations.

Findings of Fact for Permit Conditions in Medfield's Modified 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.
Special Condition 1 of the 2010 Permit provided that from March 1, 2010 through February 28, 2029, Medfield was authorized to withdraw from its permitted groundwater sources in the Charles River Basin an annual average daily volume of 1.39 MGD. This permitted volume was in addition to the 0.11 MGD that the Town is authorized to withdraw from its registered sources. Thus, the 2010 Permit gave Medfield a total authorized annual average daily volume for its Charles River Basin sources of up to 1.50 MGD. Special Condition 1 of the 2010 Permit also established a total authorized volume for the Town's sources in both the Charles River and Boston Harbor Basins of 1.50 MGD. See Table 1.

Table 1: Medfield's 2010 Total Authorized Water Withdrawals from the Charles River and Boston Harbor Basins in Million Gallons Per Day (MGD)

	Registered Volume	2010 Permitted Volume	Total Authorized Volume
Charles River Basin	0.11	1.39	1.50
Boston Harbor Basin	0.92	0.00	0.92
System Wide	1.03	N/A	1.50

The 2010 Permit noted that a water needs forecast (WNF) had not been prepared for Medfield by the Department of Conservation and Recreation (DCR) because of questionable data in the Town's Annual Statistical Reports (ASRs). Specific concerns included unaccounted for water (UAW) that exceeded an average of 20% and inconsistencies between different parts of the ASRs that were reviewed. As a result, the volumes set forth in Special Condition 1 of the 2010 Permit were interim allocations.

Medfield's Recent Water Use has been significantly below its total authorized volume in the Charles River Basin, the Boston Harbor Basin and system wide as set forth in the 2010 Permit and the Town's Registrations. See Table 1 and Table 2.

Table 2: 2019-2023 Annual Average Withdrawal Volumes (MGD)

Year	Charles River Basin	Boston Harbor Basin	Total
2023	0.76	0.35	1.11
2022	0.86	0.26	1.12
2021	1.01	0.09	1.10
2020	0.97	0.18	1.15
2019	0.80	0.26	1.06

The Water Management Regulations, as revised in 310 CMR 36.03, define baseline to mean 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:

1. baseline cannot be less than a permittee's registered volume;
2. baseline cannot be greater than the permittee's authorized volume for 2005; and
3. 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 volumes are calculated for each individual basin as well as a system wide baseline. Under this definition, Medfield's baselines are: 1.03 MGD in the Charles River Basin which is the Town's 2005 withdrawal volume plus 5%; 0.92 MGD in the Boston Harbor Basin, which is the Town's registered volume in that basin; and a combined value of 1.46 MGD which is the Town's 2003-2005 average withdrawal rate plus 5%. Medfield's recent withdrawals have been below its baseline volumes in the Charles River Basin, the Boston Harbor Basin and system wide.

In light of its recent water use, Medfield has agreed to limit its permitted volume in the Charles River Basin to 0.96 MGD, thereby reducing its total authorized volume in the Charles River Basin to 1.07

MGD, 0.04 MGD above its baseline. In light of Medfield's failure to address its high unaccounted for water value and obtain a WNF, MassDEP has determined that it is appropriate to limit Medfield's system wide total authorized volume to its system wide baseline of 1.46 MGD at this time. Because Medfield has not yet obtained a Water Needs Forecast (WNF) from DCR, these volumes remain interim allocations.

Special Condition 1 of the Modified WMA Permit also requires the Town to submit to DCR within four years of the effective date of the Modified WMA Permit documentation in accordance with the Policy for Developing Water Needs Forecasts for Public Water Suppliers and Communities and Methodology for Implementation, effective December 13, 2007, and as revised on March 9, 2017. DCR needs this information to prepare a WNF for Medfield.

Special Condition 1 further provides that: at any time after the Town obtains a WNF from DCR, Medfield may file a request for a permit amendment requesting to increase its permitted volume in the Charles River Basin and/or its total system wide authorized volume provided that:

a. the permitted volume requested in the Charles River Basin is no more than 1.39 MGD;
b. the total requested system wide authorized volume is consistent with the WNF and no more than 1.50 MGD; and
c. Medfield is in compliance with the provisions of this permit pertaining to:
    i. the performance standards for residential gallons per capita day (RGPCD) and Unaccounted for Water (UAW),
    ii. water conservation,
    iii. seasonal restrictions on nonessential outdoor water use, and
    iv. minimization of impacts to groundwater depleted subbasins.

Special Condition 1 also provides that any request for such a permit amendment must include a plan to mitigate the additional volume requested above baseline with direct mitigation strategies being fully evaluated before indirect mitigation strategies are considered, and a proposal to implement additional water conservation measures that go beyond the standard measures and that are not being implemented as of the effective date of the Modified WMA Permit.

Special Condition 2, Maximum Authorized Daily Withdrawal Volumes from Each Withdrawal Point.

Special Condition 2 of the Modified WMA Permit reflects the MassDEP-approved Zone II maximum daily pumping rate for each of Medfield's permitted wells based on prolonged pumping tests. Withdrawals in excess of these maximum daily rates require prior approval from the Department. In recent years, Medfield has not exceeded the maximum authorized withdrawal volume for any of its permitted sources.

Special Condition 3, Groundwater Supply Protection.

Special Condition 3 of the 2010 Permit required Medfield to exercise best efforts to encourage Dover and Sherborn to adopt land use controls to protect the portion of the Zone IIs of Medfield's wells that extends into those communities. Dover has adopted the necessary groundwater protection measures. Medfield has exercised best efforts to have Sherborn adopt the necessary land use controls. However, MassDEP records indicates that it is not clear that Sherborn's Southwest Water Supply Protection

District covers the portion of Medfield's Zone IIs that extend into Sherborn. As a result, Special Condition 3 of the Modified WMA Permit requires Medfield to continue to exercise best efforts to encourage Sherborn to adopt land use controls to protect the portion of the Zone IIs of Medfield's wells that extend into Sherborn.

Special Condition 4, Performance Standard for Residential Gallons Per Capita Day Water Use (RGPCD).
The RGPCD Performance Standard for all public water supplier permittees is 65 gallons per day (GPD). Special Condition 4 of the Modified WMA Permit requires Medfield to meet this performance standard. Special Condition 4 also provides that if Medfield cannot meet this performance standard, it must meet the Functional Equivalence requirements outlined in Appendix A. Although it did not comply with this performance standard in 2018 and 2020, the Town has met the RGPCD standard of 65 gpd in 2021, 2022. and 2023.

Special Condition 5, Performance Standard for Unaccounted for Water (UAW).
The Town of Medfield's Performance Standard for Unaccounted for Water (UAW) in the 2010 WMA Permit is 10%. The Town's Performance Standard in the Modified WMA Permit is 10% or less of overall water withdrawal for two of the most recent three years throughout the permit period. Since Medfield has consistently not been able to meet this performance standard and currently has a permit with an interim allocation due to high UAW, Special Condition 5 of the Modified WMA Permit provides that on or before March 31, 2025, Medfield shall complete Step 1 of the Functional Equivalence requirements based on the AWWA/IWA Water Audit and Loss Control Programs Manual of Water Supply Practices M36, which is set forth in Appendix B of the Modified WMA Permit.

If the Data Validity Score of that Level 1 M36 Audit is 51 or greater, Medfield shall then conduct a Level 2 Data Validity and a Component Analysis of their system, based on guidance found here: Water Research Foundation component analysis (http://www.waterrf.org) and develop and submit a UAW Plan to MassDEP by September 30, 2025. See Appendix B for steps to take of the Data Validity Score is 50 or below. Special Condition 5 also requires Medfield to continue to meet the requirements set forth in Appendix B until the Town meets the 10% UAW performance standard for four consecutive years and the audit validity scores are at least level 3 for the same four years in accordance with the requirements of Appendix B.

Special Condition 6, Seasonal Limits on Nonessential Outdoor Water Use.
Special Condition 6 of the 2010 Permit required Medfield to impose seasonal limits on nonessential outdoor water use. The Modified WMA Permit updates that special condition. The limitations on seasonal nonessential outdoor water in Special Condition 6 of the Modified WMA Permit are based on:

- The August net groundwater depletion (NGD)[2] where the permittee's groundwater sources are located;

[2] 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.*

- 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 Modified WMA Permit replaces the drought triggered restriction with a 7-day low flow value that triggers more stringent restrictions on non-essential water use.

Special Condition 6 of the Modified WMA Permit provides that each year, Medfield 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 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 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 Medfield selects the streamflow approach, it has been assigned the USGS local stream gage of #01103500-Charles River at Dover, MA. The local gage streamflow triggers at this site are 170 cubic feet per second (cfs) for May and June and 62 cfs for July, August, and September. Should the reliability of flow measures at the Charles River gage be so impaired as to question its accuracy, Medfield may request 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 Charles River at Dover MA gage is 30 cfs.

The Town shall update its Water Restriction Bylaw to include the restrictions on nonessential seasonal outdoor water use required by Special Condition 6 of the Modified WMA Permit and submit a copy of that Bylaw 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 Bylaw to include the restriction required by Special Condition 6, whichever first occurs, the Town shall commence implementation of the seasonal restrictions on nonessential outdoor water use required by Special Condition 6.

Medfield may choose to implement limits on nonessential outdoor water use that are stricter than those required by Special Condition 6 of the Modified WMA Permit. This permit condition does not confer enforcement authority on the permittee.

Special Condition 7, Requirement to Report Raw and Finished Water Volumes.
Special Condition 7 of the Modified WMA Permit ensures that the information necessary to evaluate compliance with the conditions included in the Modified WMA Permit is accurately reported.

Special Condition 8, General Water Conservation Requirements.
Special Condition 8 of the Modified WMA Permit incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the Water Resources Commission (WRC) in July 2018. (Details on the 2018 Massachusetts Water Conservation Standards | Mass.gov).

Special Condition 9, Minimization.
Water Management Act Permittees with groundwater sources in subbasins having a net groundwater depletion (August NGD) of 25% or greater are required to develop a plan to minimize the impact of their withdrawals. Charles River Subbasin 21116 where Well 6 (05G) is located has an August NGD of 37%[3]. As a result, Special Condition 9 of the Modified WMA Permit requires the Town to develop and implement a Minimization Plan.

Medfield has no hard piped interconnections with another approved public water supplier (PWS). In an emergency, Medfield can interconnect with Walpole via a hydrant-to-hydrant connection on Plain Street or with Norfolk via a hydrant-to-hydrant connection on Orchard Street. Like Medfield, both Walpole and Medfield have groundwater sources with an August NGD greater than 25%. Given this situation, MassDEP has determined that purchasing water from Walpole or Norfolk is not a viable environmentally beneficial minimization option at this time. Medfield's only source located in a subbasin with an August NGD less than 25% is the Medfield State Hospital Wellfield. MassDEP evaluated the Medfield State Hospital Wellfield as an option but determined that use of the Medfield State Hospital Wellfield would potentially change the GWC of Subbasin 21125, the subbasin in which it is located and is also not a viable environmentally beneficial option.

MassDEP review shows that Medfield has no surface water supply impoundments. MassDEP has therefore determined that surface water releases do not need to be addressed as part of Medfield's Minimization Plan.

To satisfy the minimization requirement, Special Condition 9 of the Modified WMA Permit requires the implementation of additional cost-effective conservation measures that go beyond these standard conservation measures. In its response to the OTC, the Town proposed to complete the installation of an advanced metering infrastructure system including the meter interface units, the fixed data collection equipment, and the software, as well as the completion of a M36 audit.

As of March 2024, the Town reported that it had completed installation of 48% of the necessary meter communication modules and that installation of the fixed network data collection equipment had been delayed due to supply chain issues. Special Condition 9 of the Modified WMA Permit provides that on or before February 28, 2025, the Town shall exercise best efforts to obtain residential access and

[3] Medfield's registered sources in the Charles River Basin are in Subbasin 21127 which has an August NGD of 40%.

complete installation of the remaining communication modules as well as the fixed network data collection equipment. Special Condition 9 also provides that on or before February 28, 2025, Medfield shall submit a report on the status of the installation of the advanced metering infrastructure system. Special Condition 9 additionally provides that on or before February 28, 2025, the Town shall submit a plan and schedule for implementing other capital improvements and other conservation measures aimed at reducing UAW and RGPCD that go beyond the standard measures. Special Condition 9 further requires the Town to implement the plan and schedule as approved by MassDEP.

Special Condition 10, Mitigation.
Water Management Act Permittees whose total authorized volume exceeds their baseline volume are required to develop and implement a plan to mitigate the impact of their withdrawals above the baseline volume. Special Condition 1 of the Modified WMA Permit limits the Town's total authorized volume in the Charles River Basin to 1.07 MGD, 0.04 MGD, above Medfield's Charles River Basin baseline volume of 1.03 MGD. Special Condition 9 of the Modified WMA Permit requires Medfield to mitigate the impact of its withdrawal above its Charles River Basin baseline volume adjusted by the amount of wastewater discharged to the groundwater in the basin, or 0.0349 MGD, 34,900 gallons per day (gpd).

Table 3: Medfield 's Mitigation Volume Calculation
Total Authorized Charles River Basin Volume above Baseline = 0.04 MGD • Total Authorized Charles River Basin Volume above Baseline: 1.07– 1.03 = 0.04 MGD
Adjustment for Wastewater Discharge to Local Groundwater = 0.0051 MGD • 15% of increased withdrawals are delivered to areas with on-site septic systems: 0.04 MGD x 0.15 (15%) = 0.006 MGD (6,000 gallons per day (gpd)) • 85% of water delivered to areas with on-site septic systems returns to groundwater: 0.006 MGD x 0.85 (85%) = 0.0051 MGD (5,100 gpd)
Amount to be Mitigated after Adjustment for Wastewater Discharge to Local Groundwater 0.0349 MGD • Total authorized volume above baseline (0.04 MGD) – adjustment for wastewater • discharge to local groundwater (0.0051 MGD) = 0.0349 MGD (34,900) gpd.

Permittees subject to the mitigation requirement must fully evaluate all direct mitigation options before relying on indirect mitigation strategies. MassDEP has discretion to accommodate existing permittees who may need to withdraw more than their baseline volume before they can provide the required mitigation.

To satisfy the mitigation requirement, Medfield identified one option that would provide more than enough direct mitigation, the Harding Street infiltration/inflow (I/I) removal project. However, Medfield informed MassDEP that it would take the Town three years to complete the Harding Street I/I Removal Project and five years to complete monitoring to verify the volume of I/I actually removed by that project. Special Condition 10 of the Modified WMA Permit therefore provides that: on or before December 31, 2027, Medfield shall complete the Harding Street I/I Removal Project, and on or before December 31, 2029, Medfield shall submit to MassDEP a monitoring report that documents the actual volume of I/I that was removed as a result of the Harding Street I/I Removal Project.

In light of the time that it will take the Town to complete the Harding Street I/I Removal Project, Medfield also provided documentation to MassDEP evidencing that the Town had acquired 33.1 acres

of land for water supply, conservation, and recreational purposes in 2008. MassDEP reviewed the Town's submission and determined that this 2008 land acquisition would provide more than enough indirect mitigation and that the Town could on rely on this indirect mitigation, until the Town is able to provide direct mitigation by completing the Harding Street I/I Removal Project.

Coldwater Fishery Resource (CFR) Protection.
Water Management Act Permittees with withdrawals that may impact the streamflow of a CFR (identified on subbasin maps) are required to evaluate methods for reducing impacts on CFRs through feasible optimization. The Town's only sources with the potential to impact a CFR are Medfield's registered sources in Boston Harbor Subbasin 21016. The Modified WMA Permit for the Town's Charles River Basin sources does not require Medfield to evaluate strategies for reducing CFR impacts from these registered only wells.

Response to Comments.
The Draft Modified WMA Permit was noticed in the Massachusetts Environmental Monitor for public comment from September 11, 2024 through October 11, 2024. On October 11, 2024, the Massachusetts Rivers Alliance (MassRivers), the Charles River Watershed Association, (CRWA), the Neponset River Watershed Association (NepRWA), and the Town of Medfield (the Town or Medfield) submitted comments on the Draft Modified WMA Permit.

Response to the Comments submitted by MassRivers, CRWA, and NepRWA.
MassDEP response to the comments submitted by MassRivers, CRWA, and NepRWA are set forth below.

Comments from the Watershed stakeholders raised concerns about MassDEP's safe yield methodology used in permitting, a methodology that determines safe yield on an annual time step and at the major basin level rather than a subbasin level. Comments pertaining to the safe yield methodology or other implementation policies developed as part of the Sustainable Water Management Initiative (SWMI) are not within the scope of individual Water Management permits.

MassDEP continues to work with all constituents to review programmatic requirements in forums outside of the development of individual permits. Comments on regulatory and policy issues and comments addressing modifications that are not aligned with current regulations are not included in this Findings of Fact.

Both MassRivers and NepRWA expressed concern about the impact of Medfield's registered withdrawals from the Boston Harbor Basin including impacts on coldwater fishery resources and groundwater depleted subbasins located in the Boston Harbor Basin. CWRA echoed their concerns. They urge MassDEP to address these impacts in the Modified WMA Permit, a permit that is tasked with regulating the Town's withdrawals from its permitted sources in the Charles River Basin. The issue of additional regulation of registered sources in another basin is outside the scope of this individual permitting decision, a decision that focuses on the Town's permitted sources in the Charles River Basin.

MassRivers and CWRA expressed concerns that Medfield violated several of the conditions set forth in the Town's 2010 Permit. These concerns include the Town's failure to comply with the performance standards for residential gallons per calendar day (RGPCD) and Unaccounted for Water (UAW), the

failure to obtain a Water Needs Forecast (WNF) from the Department of Conservation and Recreation's Office of Water Resources (DCR), and Medfield's delays in submitting UAW Compliance Plans. MassRivers urged MassDEP to take enforcement against the Town of Medfield. CWRA urged MassDEP to require Medfield to develop a corrective action plan to reduce UAW. The decision of whether to initiate enforcement against a permittee or require a corrective action plan is within the discretion of MassDEP. The issue of whether MassDEP should exercise that discretion in a particular case is outside the scope of this individual permitting decision.

MassRivers and CWRA urge MassDEP to require Medfield to do more to reduce the impact of its withdrawals on groundwater depleted subbasins in the Charles River Basin. MassDEP agrees. That is why Special Condition 9 of the Modified WMA Permit provides that: "On or before February 28, 2025, the Town shall submit a plan and schedule for implementing additional capital improvements and additional conservation measures aimed at reducing UAW and RGPCD that go beyond the standard measures. Thereafter, the Town shall implement the plan and schedule as approved by MassDEP."

In its comments, MassRivers and CWRA suggest additional water conservations measures that Medfield could implement such as the use of calendar-based restrictions on nonessential outdoor water use restrictions rather than streamflow triggered restrictions. NepRWA's comments also include suggestions for additional water conservation including increased outreach, incentives and conservation pricing. We urge Medfield to consider the suggestions made by MassRivers, CWRA and NepRWA as it develops the required plan for additional conservation measures. MassDEP has sent the Town a copy of the comments submitted by MassRivers, CWRA and NepRWA so that Medfield can consider their suggestions when preparing the required plan and schedule for implementing additional improvements and conservation measures aimed at reducing UAW and RGPCD.

Response to the Town's Comments.
In its comments, the Town stated that it agreed to limit its permitted volume in the Charles River Basin to 0.96 million gallons per day (MGD), thereby holding its total authorized volume in the Charles River Basin to 1.07 MGD, 0.04 MGD above its Charles River baseline volume. The Town also stated that it did not agree to reduce its total authorized system wide volume from the 1.50 MGD specified in the 2010 Charles River WMA Permit to 1.46 MGD, its system wide baseline volume.[4] The Town noted that it had agreed to provide 0.04 MGD of direct mitigation through the Harding Street infiltration and inflow removal project (the Harding Street I/I project). The Town will complete the Harding Street I/I project by December 31, 2027 and verify the volume of infiltration and inflow removed by December 31, 2029.

Given the Town's recent water use and high Unaccounted for Water (UAW), MassDEP has determined that it is appropriate to issue a Modified WMA Permit that limits the Town's total system wide authorized volume to its baseline volume 1.46 MGD, unless and until Medfield obtains a WNF that supports a higher volume. In making this determination, MassDEP notes that the total system wide authorized volume of 1.50 MGD set forth in the 2010 Permit was an interim allocation, because the Department of Conservation and Recreation's Office of Water Resources (DCR) determined that it was unable to prepare a Water Needs Forecast (WNF) for Medfield because of problems with its data.

[4] In its comments, NepRWA, expresses support for the reduction in the total authorized system wide volume to 1.46 MGD.

As a result, the 2010 Permit required Medfield to submit to DCR on or before March 1, 2014, documentation in accordance with the Policy for Developing Water Needs Forecasts for Public Water Suppliers and Communities and Methodology for Implementation effective December 13, 2007. The 2010 Permit made it clear this documentation must address the issues identified by the DCR which resulted in Medfield receiving an interim allocation. Medfield did not comply with this requirement and to date has not submitted to DCR the required documentation.

Like the 2010 Permit, the Modified WMA Permit requires Medfield to submit the required documentation DCR needs to prepare a WNF within four years. Once Medfield submits the required documentation, the Modified WMA Permit allows Medfield to apply for an amendment to increase the total system wide authorized volume up to 1.50 MGD provided the Town obtains a WNF that supports this increase.

Waiting for DCR to issue a WNF is particularly appropriate in this case, because the Town's system wide volume has not exceeded 1.15 MGD since 2019. Given Medfield's recent water use, MassDEP has determined that the Town should be able to meet its customers needs while it collects the information to obtain a WNF. This approach allows DCR to issue a WNF that will determine whether Medfield actually needs a total system wide authorized volume in excess of the Town's system wide baseline of 1.46 MGD, before MassDEP issues a permit that authorizes such a system wide volume. This approach also gives Medfield time to complete the Harding Street Project and verify the actual volume of infiltration and inflow removed before it is authorized to withdraw more than its system wide baseline of 1.46 MGD.

Changes to Special Condition 6, Seasonal Restrictions on Nonessential Outdoor Water Use. MassDEP has modified the language in Special Condition 6 to reflect the definition of nonessential outdoor water use set forth in the Water Management Act Regulations, 310 CMR 36.03.

A Change was also made to the Permit expiration date, due to the additional two years added by Section 280 of Chapter 238 of the Acts of 2024. The new Permit expiration date is June 5, 2036.

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

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: 9P3-2-20-175.02 **RIVER BASIN**: Charles

PERMITTEE: Town of Medfield

EFFECTIVE DATE: January 13, 2025

PERMIT EXPIRATION DATE: June 5, 2036

NUMBER OF WITHDRAWAL POINTS: 2

USE: Public Water Supply

DAYS OF OPERATION: 365

LOCATIONS

Table 1: Withdrawal Point Identification

Source Name	PWS Source ID Code
Well # 6	2175000-05G
State Hospital Wellfield	2175000-0BG*

*The final PWS Source ID Code will be assigned when the final approval letter is issued

SPECIAL PERMIT CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Town of Medfield (the Town or Medfield) to withdraw water from the Charles River Basin at the rate described below in Table 2. The permitted volume is in addition to the 0.11 million gallons per day (40.15 million gallons per year) previously authorized to Medfield under Water Management Act Registration 2-20-175.01 for withdrawal from Wells 1 and 2 in the Charles River Basin. The permitted volume is an interim allocation 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 until a water needs forecast (WNF) is completed for Medfield by the Department of Conservation and Recreation (DCR).

Within four (4) years of the date of issuance of this Modified Water Management Act Permit (the Modified WMA Permit), Medfield shall submit to DCR documentation in accordance with the Policy for Developing Water Needs Forecasts for Public Water Suppliers and Communities and Methodology for Implementation, effective December 13, 2007, and as revised on March 9, 2017. In particular, this documentation is necessary to further address those issues identified by the DCR which resulted in Medfield receiving an interim allocation.

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 Withdrawal Volumes From the Charles River Basin

Permit Periods		Total Raw Water Withdrawal Volumes			
		Permit		Permit + Registration	
		Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
Period One	1/13/2025 - 6/5/2029	0.96	350.40	0.96+0.11 = 1.07*	390.55
Period Two	6/6/2029 - 6/5/2036	0.96	350.40	0.96+0.11 = 1.07*	390.55

*Medfield's withdrawals from its sources in the Charles River Basin are limited to 1.07 MGD until such time as the Town evaluates its direct mitigation options as outlined in this Special Condition and receives Department approval to increase its Charles River Basin withdrawals up to 1.39 MGD based on additional approval of direct mitigation volumes or approval to increase based on indirect mitigation credits
In addition to the limitations outlined above in Table 2 for the Charles River Basin, this permit limits system wide annual average daily withdrawals from all of Medfield's sources including its registered sources in the Boston Harbor Basin as set forth in Table 3. Medfield may withdraw up to the maximum shown in Table 3 from its Charles River Basin sources, provided withdrawals from its Boston Harber Basin sources are adjusted so that Medfield's total withdrawals do not exceed the system wide volumes shown in Table 3 above. Similarly, Medfield may withdraw the maximum authorized by the Town's Boston Harbor Registration, 0.92 MGD, provided that the Town's total withdrawals from both basins do not exceed the system wide volumes shown in Table 3 above.

Table 3: Maximum Authorized Annual Average System Wide Withdrawal Volumes From the Charles River and Boston Harbor Basins		
	Daily Average (MGD)	Total Annual (MGY)
1/13/2025 to 6/5/2029	1.46*	390.55
6/6/2029 to 6/5/2036	1.46*	390.55

*Medfield's combined withdrawals from its sources in the Charles River Basin and the Blackstone River Basin are limited to 1.46 MGD until such time as the Department approves an increase in the Town's total system wide authorized volume in response to a permit amendment application that is submitted in accordance with the provisions of this Special Condition.

Any time, after the Town obtains a WNF from DCR, Medfield may file a request for a permit amendment requesting to increase its permitted volume in the Charles River Basin and/or its system wide total authorized volume provided that:

- the permitted volume requested in the Charles River Basin is no more than 1.39 MGD;
- the total requested system wide authorized volume is consistent with the WNF and no more than 1.50 MGD; and
- Medfield is in compliance with the provisions of this permit pertaining to:
  the performance standards for residential gallons per capita day (RGPCD) and Unaccounted for Water (UAW),
  water conservation,
  seasonal restrictions on nonessential outdoor water use, and
  minimization of impacts to groundwater depleted subbasins.

Any request for such a permit amendment must include a plan to mitigate the additional volume requested with direct mitigation strategies being fully evaluated first and a proposal to implement additional water conservation measures that go beyond the standard measures and that are not being implemented as of the effective date of the Modified WMA Permit.

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 4 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 withdrawals from the individual withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

Table 4: Maximum Daily Withdrawal Volumes

Source Name	PWS Source ID Code	Maximum Daily Rate (MGD)
Well # 6	2175000-05G	1.58
State Hospital Wellfield	2175000-0BG*	0.50

*The final PWS Source ID Code will be assigned when the water quality sampling plan and the final approval letter are issued.

3. Groundwater Supply Protection

Within one year of the effective date of the Modified WMA Permit, the Town of Medfield shall submit documentation to MassDEP that it has exercised best efforts to encourage the Town of Sherborn to enact groundwater supply protection measures in accordance with 310 CMR 22.21(e) to protect the portion of the Zone II of its groundwater sources that extends into Sherborn. Until its groundwater sources are fully protected, the Town of Medfield shall continue to exercise best efforts to have the Town of Sherborn adopt the required groundwater protection measures in conjunction with new source approvals, monitoring waiver applications, water management act permit reviews or amendments, and sanitary survey stipulations.

4. Performance Standard for Residential Gallons Per Capita Day Water Use

The Town of Medfield's Performance Standard for residential gallons per capita day (RGPCD) is 65 gallons. The Town 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 ASR 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. If Medfield is not in compliance with the RGPCD Performance Standard, it shall be in compliance with the Functional Equivalence Requirements set forth in Appendix A.

5. Performance Standard for Unaccounted for Water

The Town of Medfield'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 the Town does not meet this Performance Standard, it shall be in compliance 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.

On or before March 31, 2025, Medfield shall meet Step 1 of the Functional Equivalence Requirements based on the AWWA/IWA Water Audits and Loss Control Programs Manual of Water Supply Practices M36, which is set forth in Appendix B of the Modified WMA Permit. If the Data Validity Score of that Level 1 M36 Audit is 51 or greater, Medfield shall then conduct a Level 2 Data Validity and a Component Analysis of their system, based on guidance found here: Water Research Foundation component analysis (http://www.waterrf.org) and develop and submit a UAW Plan to MassDEP by September 30, 2025. See Appendix B for steps to take of the Data Validity Score is 50 or below. Thereafter, Medfield shall continue to meet the Functional Equivalence Requirements set forth in Appendix B, until the Town meets the 10% UAW Performance Standard for four consecutive years and maintains a water audit validity score of at least level 3 for the same four years, in accordance with requirements of Appendix B.

The Town of Medfield is required to report its UAW in its ASR so as to document compliance with the Performance Standard. The Town'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.

Nothing in this Modified WMA Permit shall prevent a Permittee who meets the UAW Performance Standard from developing and implement a water loss control program following the AWWA M36 Water Audit and Loss Control Programs. Permittees implementing a water loss control program based on

AWWA M36 annual water audits and guidance shall continue to report UAW annually as required in the ASRs for public water suppliers.

6. Seasonal Limits on Nonessential Outdoor Water Use

The Town of Medfield shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in Table 5 below. The Town shall be responsible for tracking stream gages and recording and reporting when restrictions are implemented if streamflow triggered restrictions are implemented. See Table 6. The Town shall also 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.

Restricted Nonessential Outdoor Water Uses

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 5: Restrictions for Permittees meeting the 65 RGPCD Standard for the preceding year RGPCD ≤ 65 as reported in the ASR and accepted by MassDEP
Calendar triggered restrictions May 1 through September 30 Nonessential outdoor water use is restricted to: 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 01103500 –Charles River at Dover, MA falls below 7-day the low flow statistic **30 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 **30 cfs** for seven (7) consecutive days.
Streamflow triggered restrictions Nonessential outdoor water use is restricted to: a) **two (2) days per week** before 9 A.M. and after 5 P.M. when USGS stream gage 01103500 –Charles River at Dover, MA falls below: a) May 1 – June 30: **170 cfs** for three (3) consecutive days b) July 1 – September 30: **62 cfs** for three (3) consecutive day**s** b) **one (1) day per week** before 9 A.M. and after 5 P.M. when USGS stream gage 01103500 –Charles River at Dover, MA falls below the 7-day low flow statistic **30 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.
Restrictions 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 May 1 through September 30 Nonessential outdoor water use is restricted to **one (1) day per week** before 9 A.M. and after 5 P.M.
Streamflow triggered restrictions Nonessential outdoor water use is restricted to **one (1) day per week** before 9 A.M. and after 5 P.M. when USGS stream gage 01103500 –Charles River at Dover, MA falls below: c) May 1 – June 30: **170 cfs** for three (3) consecutive days d) July 1 – September 30: **62 cfs** for three (3) consecutive day**s** Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.

Table 6: Instructions for Accessing Streamflow Information
If Medfield chooses Streamflow Triggered Restrictions, Medfield 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 (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 #01103500 Charles River at Dover, MA. • 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.
Medfield 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 triggered restrictions during the next calendar year.

Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions

Medfield 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.

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 Medfield has already implemented water use restrictions that conform to the applicable restrictions and those restrictions are still in force.

The Town shall update its Water Restriction Bylaw to include the restrictions on seasonal outdoor water use required by Special Condition 6 and submit a copy of that Bylaw 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 Bylaw to include the restriction required by Special Condition 6, whichever first occurs, the Town shall commence implementation of the seasonal restrictions on outdoor water use required by Special Condition 6.

7. Requirement to Report Raw and Finished Water Volumes

The Town shall report annually on its ASR the raw and finished water volumes for individual withdrawal points.

8. Water Conservation Requirements

At a minimum, the Town shall implement the following conservation measures in Table 7. Compliance with the water conservation requirements shall be reported to the Department upon request, unless otherwise noted below.

Table 7: Minimum Water Conservation Requirements
Leak Detection
1. At a minimum, conduct a full leak detection survey every three years. The first full leak detection shall be completed no later than 3 years from the date of the last documented leak detection survey
2. Conduct leak detection of the entire distribution system within one year whenever the percentage of UAW increases by 5% or more (for example an increase from 3% to 8%) over the percentage reported on the ASR for the prior calendar year. Within 60 days of completing the leak detection survey, 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.
3. Conduct field surveys for leaks and repair programs in accordance with the AWWA Manual 36.
4. The Town shall have repair reports available for inspection by the Department. The Town 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 and 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 Medfield's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. The Town shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.
Metering

Table 7: Minimum Water Conservation Requirements
1. Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2. The Town shall maintain its system as 100% metered. All water distribution system users shall have properly sized service lines and meters that meet AWWA calibration and accuracy performance standards as set forth in AWWA Manual M6 – Water Meters.
3. The Town shall have an ongoing program to inspect individual service meters to ensure that all service meters accurately measure the volume of water used by its customers. The metering program shall include regular meter maintenance, including testing, calibration, repair, replacement and checks for tampering to identify and correct illegal connections. The plan shall continue to include placement of sufficient funds in the annual budget to calibrate, repair, or replace meters as necessary.
Pricing
1. The Town shall maintain a water pricing structure that includes the full cost of operating the water supply system. The Town shall continue to evaluate rates annually at a minimum and adjust costs as needed. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices.
2. The Town shall continue to implement an increasing block rate structure.
Residential and Public Sector Conservation
1. The Town 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.
2. The Town to continue to meter and bill for water used by contractors using fire hydrants for pipe flushing and construction.
3. The Town shall continue to ensure that water conserving fixtures and landscaping practices are incorporated into the design of new municipal capital projects.
Industrial and Commercial Water Conservation
1. The Town reports that it has limited industrial or commercial properties.
Public Education and Outreach
1. The Town shall implement water conservation and education efforts designed to educate the Town's water customers on ways to conserve water. Without limitation, Medfield's plan may include the following actions: a) Include in bill stuffers and/or bills, a work sheet to enable customers to track water use and conservation efforts and estimate the dollar savings; b) Public space advertising/media stories on successes (and failures); c) Conservation information centers perhaps run jointly with electric or gas company; d) Speakers for community organizations; e) Public service announcements; radio/T.V./audio-visual presentations; f) Joint advertising with hardware stores to promote conservation devices; g) Use of civic and professional organization resources; h) Special events such as Conservation Fairs;

Table 7: Minimum Water Conservation Requirements
i) Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and j) Provide multilingual materials as needed.
2. Upon request of the Department, the Town of Medfield 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.

9. Minimization

To minimize the impact of its Charles River basin withdrawals on groundwater depleted subbasins, the Town shall implement water conservation measures that go beyond the standard measures by taking the following actions:

The Town shall complete installation of its advanced metering system as follows:

- On or before February 28, 2025,the Town shall exercise best efforts to obtain residential access and complete installation of the remaining communication modules and complete installation of the fixed network data collection equipment.

- On or before February 28, 2025, the Town shall submit to MassDEP a report on the status of the installation of the advanced metering infrastructure system.

On or before February 28, 2025, the Town shall submit a plan and schedule for implementing additional capital improvements and additional conservation measures aimed at reducing UAW and RGPCD that go beyond the standard measures. Thereafter, the Town shall implement the plan and schedule as approved by MassDEP.

10. Mitigation

To provide indirect mitigation for its authorized volume above baseline, Medfield provided documentation to MassDEP evidencing that the Town had acquired 33.1 acres of land for water supply, conservation, and recreation purposes in 2008. MassDEP reviewed the Town's submission and determined that 2008 this land acquisition would provide more than enough indirect mitigation and that the Town could on rely on this indirect mitigation until the Town could implement direct mitigation. To provide direct mitigation, the Town shall take the following additional actions:

- On or before December 31, 2027, Medfield shall complete the Harding Street I/I Removal Project and notify MassDEP of its completion in writing; and

- On or before December 31, 2029, Medfield shall submit to MassDEP a monitoring report that documents the actual volume of I/I that was removed as a result of the Harding Street I/I Removal Project.

General Permit Conditions (applicable to all Permittees)

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 up to the authorized volume 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 MassDEP to enter and examine any property, inspect and monitor the withdrawal, and 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 MassDEP 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 MassDEP approves such transfer in writing, pursuant to a transfer application on forms provided by MassDEP requesting such approval and received by MassDEP 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 submit annually, on a form provided by MassDEP, a certified statement of the withdrawal. Such report is to be received by MassDEP by the date specified by MassDEP. Such report must be mailed or hand delivered to the address specified on the report form.
7. **Duty to Maintain Records** The Permittee shall be responsible for maintaining withdrawal records as specified by this permit.
8. **Metering** Withdrawal points shall be metered. Meters shall be calibrated annually. Meter shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
9. **Amendment, Suspension or Termination** The Department may amend, suspend or terminate this permit in accordance with M.G.L. c. 21G or 310 CMR 36.29

APPEAL RIGHTS AND TIME LIMITS

Any person aggrieved by this decision may request an adjudicatory hearing on this Permit 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 its 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 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 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 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.

EXEMPTIONS

The filing fee is not required if the appellant is a municipality (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

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.

_____ _____

Duane LeVangie Date
Water Management Program Chief
Bureau of Water Resources

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

MassDEP will consider PWS 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 by December 31, 2023, 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.