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

October 10, 2023

Mr. Joseph F. Botaish, II, BOS Chairman
Town of Wrentham
79 South Street
Wrentham, MA 02093

Town: Wrentham
PWS ID# 4350000
WMA Permit #: Permit 9P-4-20-350.01
Program: Water Management Act
Action: Permit Modification

Dear Mr. Botaish:

Please find the following attached:

- Findings of Fact in Support of the modification of Permit #9P-4-20-350.01; and
- Water Management Act Permit #9P-4-20-350.01 for the Town of Wrentham.

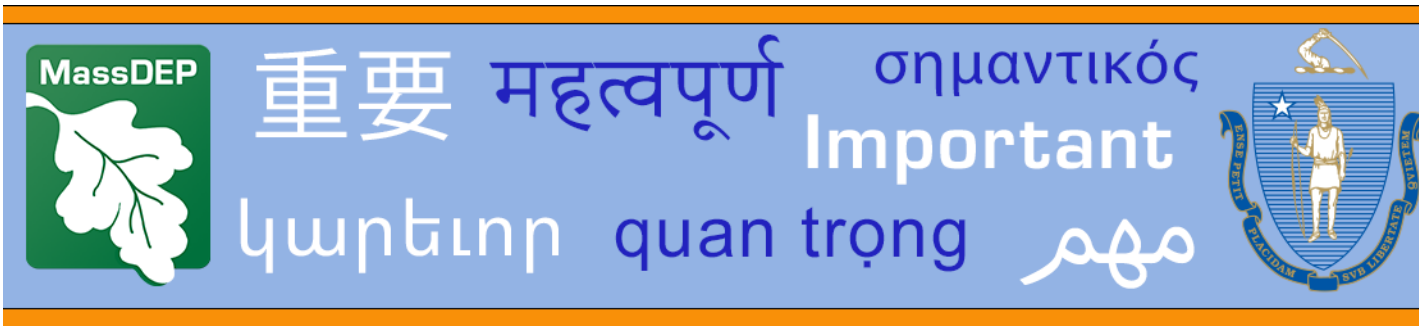
If you have any questions concerning this letter, please contact Julie Butler at Julie.Butler@mass.gov.

Sincerely,

Duane LeVangie
Water Management Program
Bureau of Water Resources

ecc: Anne Carroll, DCR OWR
Jennifer Pederson, MWWA
Brian Antonioli, Wrentham DPW
Taunton River Watershed Alliance
Julia Blatt and Sarah Bower, Mass Rivers Alliance
Zeus Smith, Charles River Watershed Association
Thomas Sexton, GZA
Jim McLaughlin, MassDEP SERO
Heidi Ricci, MA Audubon Society

mass.gov.sharepoint.com\:W:\DWPArchive\SERO\2023\Wrentham-4350000-9P42035001-Final WMA Permit-2023-10-10



Communication for Non-English-Speaking Parties

This document is important and should be translated immediately.

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

Español Spanish

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

Português Portuguese

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

繁體中文 Chinese Traditional

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

简体中文 Chinese Simplified

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

Ayisyen Kreyòl Haitian Creole

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

Việt Vietnamese

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

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះមានសារៈសំខាន់
ហើយគប្បីតួរត្រូវបានបកប្រែភ្លាមៗ។
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកផ្នែកយុត្តិធម៌បរិស្ថានរបស់
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយដូចខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

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

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

Русский Russian

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

العربية Arabic

هذه الوثيقة مهمة وتجب ترجمتها على الفور.

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

한국어 Korean

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

հայերեն Armenian

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

فارسی Farsi Persian

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

Français French

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

Deutsch German

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

Ελληνική Greek

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

Italiano Italian

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

Język Polski Polish

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

हिन्दी Hindi

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

Contact Deneen Simpson 857-406-0738
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Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Findings of Fact in Support of
Water Management Permit #9P-4-20-350.01
Town of Wrentham

The Department of Environmental Protection ("MassDEP" or "the Department") has completed its compliance review of the Town of Wrentham's ("Wrentham") Water Management Act (WMA) permit and has modified the permit to be consistent with the current Water Management Act regulations (310 CMR 36.00). This review was conducted in regard to the permit for Wrentham to withdraw water from the Charles River Basin. The Department hereby issues Water Management Permit #9P-4-20-350.01 (the "Permit") in accordance with the Water Management Act (M.G.L. c. 21G). The Department makes the following Findings of Fact in support of the attached Permit and includes herewith its reasons for issuing the Permit and for the conditions of approval imposed, as required by M.G.L. c. 21G, § 11, and 310 CMR 36.00. The Permit is being issued since such action is necessary for the promotion of the purposes of M.G.L. c. 21G. The Department may modify, suspend or terminate the Permit, after notice and hearing, for violations of its conditions, of M.G.L. c. 21G, or of regulations adopted or orders issued by the Department, and when deemed necessary for the promotion of the purposes of the Water Management Act.

The Department adopted revised Water Management Regulations at 310 CMR 36.00 on November 7, 2014, (described in greater detail below). Since that time, the Department has been working closely with each Water Management Act (WMA) permittee to fully consider all aspects of their individual situations and ensure thoughtful and implementable permits.

Withdrawal Description and History

The Town of Wrentham currently operates five groundwater wells; three groundwater wells within the Charles River Basin and two groundwater wells within the Taunton River Basin. Wrentham holds WMA Registration # 420350.01, originally issued September 29, 1988, which allocates 0.46 million gallons per day (MGD) from the Charles River Basin through April 6, 2023. Wrentham also holds WMA Registration # 425350.01, originally issued February 17, 1989, which allocates 0.38 MGD from the Taunton River Basin through April 6, 2023.

Wrentham's initial Water Management Permit for the Taunton River Basin was issued on June 1, 1991 and it was amended on August 19, 2002 to add the Crocker Pond Well. The permit was renewed on March 17, 2021. Wrentham is currently permitted to withdraw an additional 0.23 MGD from its sources in the Taunton River Basin.

Wrentham's initial Water Management Permit for the Charles River Basin was issued on December 21, 1990 and it was amended on August 22, 2002 to add the Lake Pearl Well, which was placed online in 2004. The permit was renewed on March 1, 2010 and authorizes Wrentham to withdraw an additional 0.46 MGD from its sources in the Charles River Basin. The Department is modifying the permit in accordance with 310 CMR 36.29 to make it consistent with the 2014 changes to the Water Management Act Regulations. Consistent with 310 CMR 36.31, the permit modification also includes an evaluation of Wrentham's compliance with the conditions in the permit issued on March 1, 2010.

On January 24, 2019, the Department sent Wrentham a Permit Renewal Order to Complete that outlined additional information necessary for Wrentham to complete the Taunton River Basin permit renewal process. Wrentham initially responded to the Order to Complete on October 16, 2019, with additional information submitted in February 2020. Because the information Wrentham provided for its Taunton River Basin permit renewal was relevant to the current Charles River Basin permit modification, the Department did not issue an Order To Complete; rather, the Department requested relatively little information via a May 16, 2022 email, to which Wrentham responded on July 27, 2022. Additional information was provided via email in September and October of 2022.

This permit modification does not authorize a change in withdrawal volume or withdrawal sources. The permit modifies and adds conditions based on the 2014 Water Management Regulation revisions described below. The permit modification also removes the "Water Quality, Wetlands Hydrology, Monitoring, and Hydrologic Monitoring" condition based on evaluation of the monitoring data, as described under "Findings of Fact for Special Permit Conditions" below.

Permit Extensions

The renewed Charles Basin permit issued on March 1, 2010, had an expiration date of February 28, 2029. In 2010, the permit was extended for two years by Section 173 of Chapter 240 of the Acts of 2010, the Permit Extension Act. In 2012, the Permit Extension Act was amended by Chapter 238 of the Acts of 2012, and the permit was again extended an additional two years to February 28, 2033. That date was further extended by 462 days due to COVID-19 Order No. 42, "Order Resuming State Permitting Deadlines and Continuing to Extend the Validity of Certain State Permits," issued on July 2, 2020. The expiration date for all permits going forward in the Charles River Basin will be June 5, 2034.

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

The WMA 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 description that follows);
- 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 (https://www.mass.gov/massachusetts-water-conservation-standards), 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;
- Environmental protections developed through SWMI, including without limitation;
    - protection for coldwater fish resources;
    - minimization of withdrawal impacts in areas stressed by groundwater use;
    - mitigation of the impacts of increasing withdrawals; and
- The special permit conditions in each Water Management Act permit.

Safe Yield in the Charles River Basin

This 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 calculation 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 conditioned as outlined in the regulations. Withdrawal authorizations are further limited by other factors, such as the impact to local resources, water quality constraints, pumping rate limits placed on individual sources, and the regulatory requirement that permit holders demonstrate a need for the water, which for public water systems is done through Water Needs Forecasts prepared by the Department of Conservation and Recreation.

Findings of Fact for Special Permit Conditions

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 Findings of Fact also explain any changes to special conditions from prior permits, when applicable. 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 Volume, authorizes an annual average withdrawal volume of 149.65 million gallons per year (MGY) or 0.46 MGD annually from Wrentham's sources in the Charles River Basin. This is in addition to the 0.46 MGD authorized under WMA Registration 420350.01, for a total potential authorized withdrawal of 0.92 MGD from the Charles River Basin. Wrentham is also registered (#425350.01) for 0.38 MGD and permitted (#9P425350.01) for 0.23 MGD in the Taunton River Basin.

Also note that Wrentham's combined system-wide authorized volume may be up to 1.23 MGD (as shown in the table below) rather than the sum of Wrentham's registered and permitted volumes. The system-wide volume is based on DCR's November 18, 2008 Water Needs Forecast (WNF) for Wrentham that assumes future water use based on 65 RGPCD and 10% UAW, plus an additional 5% to accommodate uncertainty in the growth projections, and/or to accommodate the water demand of a community that has met the 65 RGPCD and 10% UAW performance standards or has not met the performance standards, but has met the functional equivalence requirements included in this permit. MassDEP will use its permitting discretion to apply the 5% buffer as warranted during a review of the permit or through the approval of a permit amendment application.

Based on DCR's WNF, the Department proposes allocating the following combined system-wide withdrawal volumes.

Maximum Combined Annual Average Withdrawal from Charles and Taunton Basins

	2025	2030	2030 + 5% buffer
Projection	1.11 MGD	1.17 MGD	1.23 MGD

While the Department will be applying the DCR WNF to the combined allocation volume, the Department will continue to provide flexibility between the two basins by allowing Wrentham to withdraw its current permitted and registered volume of 0.92 MGD from its Charles Basin sources, provided withdrawals from the Taunton Basin sources are adjusted so as not to exceed the maximum combined withdrawal from the Charles and Taunton Basins as listed above. Wrentham's Taunton Basin permit renewal (issued March 17, 2021) was conditioned with similar flexibility.

Wrentham has reported withdrawals in compliance with the authorized annual average withdrawal volumes for the past 20 years.

Special Condition 2, Maximum Authorized Daily Withdrawals from each Withdrawal Point, reflects the volume of groundwater withdrawal expressed as a daily rate for each source included in the permits, according to the Department-approved Zone II rates. These values have not changed from the previous permit.

Special Condition 3, Zone II Delineations, requirements have been met and no further action is required as a condition of this permit.

Special Condition 4, Wellhead Protection, requirements have been met and no further action is required as a condition of this permit. Wrentham has demonstrated compliance with the wellhead protection requirements set forth in 310 CMR 22.21(2) for all permitted wells.

Special Condition 5, **Performance Standard for Residential Gallons Per Capita Day (RGPCD) and**
Special Condition 6, Performance Standard to Unaccounted for Water (UAW), are part of the *Water Conservation Standards for the Commonwealth of Massachusetts* adopted by the MA Water Resources Commission in July 2018 and can be found at https://www.mass.gov/massachusetts-water-conservation-standards.

The **Residential Gallons Per Capita Day** performance standard required of all PWS permittees is 65 RGPCD. Permittees that cannot meet the performance standard within the timeframe in the permit must meet Functional Equivalence requirements outlined in Appendix A.

Wrentham's RGPCD, 2017-2021				
2017	2018	2019	2020	2021
55	59	64	62	49

The **Unaccounted for Water** performance standard required for all PWS permittees is 10% for 2 out of every 3 years. Permittees that cannot comply within the timeframe in the permit must meet the Functional Equivalence requirements based on the *AWWA/IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices M36*, as outlined in Appendix B. As shown in the table below, Wrentham has not met the standard the past three years and would therefore be required to initiate the M36 audit process within one year of permit issuance. However, because this requirement was also in Wrentham's March 17, 2021 Taunton River Basin WMA Permit Renewal, Wrentham was required to initiate the M36 audit process by March 17, 2022. In a September 29, 2022 email to the Department,

Wrentham reported that it has completed an M36 Level 1 water audit and submitted the June 2022 audit report. The report identified the primary sources of UAW to be metering inaccuracies (in both the Town's source meters and customer meters) and systematic data handling errors. The report made the following recommendations to improve Wrentham's UAW: initiate a meter replacement program; perform a water loss component analysis; standardize meter-reading and recordkeeping practices; and increase the frequency of billing, water audits, and master meter calibrations. Wrentham noted that, thus far, it has scheduled a meter replacement program for January 2023 through January 2024, it will conduct a Level 2 audit this year as a follow-up to its Level 1 audit, and it is continuing with its annual leak detection and master meter calibration practices.

Wrentham's UAW, 2017-2021				
2017	2018	2019	2020	2021
11%	9%	21%	20%	23%

Special Condition 7, Seasonal Limits on Nonessential Outdoor Water Use, reflects the restrictions on nonessential outdoor water use from May 1st through September 30th. The options outlined in Special Condition 7 are based on whether reported RGPCD for the previous year was in compliance with the RGPCD Performance Standard (see Special Condition 5). In addition, outdoor water use by suppliers with wells in August net groundwater depleted subbasins[1], such as Wrentham, is limited to 1 or 2 days per week to minimize withdrawals from depleted subbasins.

Each year Wrentham 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 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.

Wrentham 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

[1] Subbasins used for WMA permitting are the 1,395 subbasins delineated by the U.S. Geological Survey (USGS) in *Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover, and Water Quality for Massachusetts Stream Basins* (Weiskel *et al.*, 2010, USGS SIR 2009-5272). The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion (NGD) to mean the unimpeded median flow for August minus 2000-2004 groundwater withdrawals plus 2000-2004 groundwater returns described by the USGS in Weiskel *et al*., 2010. A subbasin is groundwater depleted if it has an August NGD greater than 25%. Wrentham's Charles River Basin groundwater sources are in a subbasin with and August NGD of 57%.

June, and 62 cfs for July, August and September. Should the reliability of flow measurement at this gage be so impaired as to question its accuracy, Wrentham 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 gage is 30 cfs.

Note that Wrentham may always implement restrictions more stringent than those required by the permit.

Special Condition 8, Water Conservation Requirements, incorporates the previously referenced *Water Conservation Standards for the Commonwealth of Massachusetts*, reviewed and approved by the WRC in July 2006 and most recently revised in July 2018. Wrentham's October 16, 2019 completed Water Conservation Questionnaire indicated a few shortcomings in its metering program. Most notably, residential customers are not billed at least quarterly. Wrentham's renewed Taunton Basin permit required that Wrentham submit a plan within one year of permit issuance (by March 17, 2022) to begin quarterly billing within three years (by March 17, 2024). In a September 29, 2022 email to the Department, Wrentham reported that it recently bid a town-wide meter modernization program and meters will be replaced between January of 2023 and January of 2024. Wrentham plans to implement billing frequency changes thereafter, with the goal of achieving system-wide quarterly billing by March 17, 2024.

Special Condition 9, Requirement to Report Raw and Finished Water Volumes, ensures that the information necessary to evaluate compliance with the permit conditions is accurately reported. Wrentham's recent ASRs report only finished water volumes; however, in its October 16, 2019 response to MassDEP's Order to Complete, Wrentham confirmed that the finished withdrawal volumes reported in its ASRs are equal to each source's respective raw withdrawal volumes.

Special Condition 10, Mitigation of Impacts for Withdrawals that Exceed Baseline, requires mitigation, where feasible, of withdrawals over a baseline volume. Baseline withdrawal means the volume of water withdrawn during calendar year 2005 plus 5%, or the average annual volume withdrawn from 2003 through 2005 plus 5%, whichever is greater, provided that:

(a) baseline cannot be less than a permittee's registered volume;
(b) baseline cannot be greater than the permittee's authorized volume for 2005; and
(c) if, during the period from 2003 to 2005, the permittee's withdrawals from the water source were interrupted due to contamination of the source or construction of a treatment plant, the Department will use best available data to establish a baseline volume from the water source.

Baseline withdrawal volumes are calculated for each individual basin and for the system as a whole. The baseline withdrawal volumes for Wrentham are the registered volume in the Taunton Basin (0.38 MGD), the 2005 withdrawal from the Charles Basin plus 5% (0.74 MGD + 0.04 MGD = 0.78 MGD), and the system-wide baseline is Wrentham's 2005 system-wide withdrawal (1.03 MGD) plus 5%, which is equal to 1.08 MGD.

This permit authorizes Wrentham to withdraw up to 0.14 MGD above its Charles River Basin baseline. An 85% adjustment can be applied against the mitigation volume for systems with wastewater that is returned to the ground within the same major basin as the withdrawal, because the Department assumes 85% of the water withdrawn will be returned to the subsurface. All of Wrentham's wastewater is discharged through private septic systems and permitted groundwater discharges. After adjusting for this wastewater return, Wrentham's required mitigation volume in the Charles River Basin is 15% of 0.14 MGD, or 0.021 MGD. Wrentham is therefore required to prepare and implement a plan to mitigate 0.021 MGD for its increases over baseline in the Charles River Basin.

Mitigating the impacts of increasing withdrawals can be through direct or indirect mitigation activities. Direct mitigation activities can be volumetrically quantified and compared to the permittee's mitigation volume, whereas indirect mitigation activities will improve streamflow and/or fluvial habitat but cannot be volumetrically quantified. Accordingly, MassDEP assigns mitigation credits for indirect mitigation activities, in the amount of 0.01 MGD of mitigation per credit. Pursuant to 310 CMR 36.22(6), permittees shall first evaluate direct mitigation activities, which include, but are not limited to: surface water releases, stormwater recharge, and infiltration and inflow (I/I) removal from sewer systems.

Because a mitigation plan was also a requirement of Wrentham's Taunton Basin permit renewal, Wrentham submitted a mitigation plan that was included in that permit. The total mitigation credit included in that plan was 0.113 MGD, which exceeds the sum of the mitigation required in the Taunton Basin permit (0.034 MGD) and the current Charles Basin permit (0.021 MGD). The plan components for both basins are summarized below.

The mitigation plan identified stormwater recharge as its only direct mitigation option. I/I removal is not an option because all wastewater infiltrates locally; likewise, surface water releases are not feasible because Wrentham does not operate any reservoirs. Wrentham submitted the materials required by the Department for stormwater recharge credit, including the Stormwater BMP Credit Calculator spreadsheet and Stormwater BMP Credit Certification form. MassDEP reviewed the submitted materials and determined that the project (bioswales that are part of Wrentham's Madison Street Reconstruction) qualifies for 0.003 MGD (or 3,000 gallons per day) of mitigation. Construction was completed in June of 2020.

To fulfill its remaining mitigation requirements, Wrentham identified two potential indirect mitigation activities: the Town's Water Use Restriction Bylaw (which includes private well users) and Wetlands Protection Bylaw. In its October 16, 2019 OTC response, Wrentham noted that it was the first community in Massachusetts to implement a private well drought restriction bylaw, which served as a model for other communities. MassDEP reviewed the Water Use Restriction Bylaw and determined that it is eligible for 10 mitigation credits. The bylaw applies permit-required restrictions to private well users under the following conditions: from May 1st to September 30th; during a drought declaration issued by the Secretary of Energy and Environmental Affairs; and during a Drought Emergency declared by the Secretary of Energy and Environmental Affairs.

The Department reviewed the Wetlands Protection Bylaw and determined that it qualifies for 1 credit (or 0.01 MGD) for its enforceability, because it clearly defines jurisdictional areas and authorizes a fee schedule, violation fines, and enforcement authorities. In addition, Wrentham promulgated regulations that are required in the bylaw.

The Permit requires the continued implementation of the Water Use Restriction Bylaw. Should there be any changes to the bylaw during the life of the renewed permit, Wrentham is required to contact MassDEP about the changes so that it may evaluate their impact on Wrentham's mitigation requirements. The Permit does not require implementation of the Wetlands Protection Bylaw, because Wrentham's mitigation need (in both its Charles River Basin and Taunton River Basin permits) is met by the Water Use Restriction Bylaw and the stormwater BMP recharge described above.

Wrentham's submitted mitigation materials include its Stormwater BMP Credit Calculator Table, Stormwater Certification Form, Wetlands Protection Bylaw, and Water Use Restriction Bylaw. A summary table (Table 7) of Wrentham's mitigation plan is provided in the permit.

Special Condition 11, Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins, requires permittees with permitted groundwater sources in subbasins[2] with net groundwater depletion (NGD) of 25% or more during August to minimize their withdrawal impacts on those subbasins to the greatest extent feasible. Wrentham's Charles Basin groundwater sources are located in Subbasin 21034, which has an August NGD of 57%; therefore, this permit requires a Minimization Plan.

One way that permittees can potentially minimize groundwater withdrawal impacts is through shifting withdrawals to surface-water sources or groundwater sources in a subbasin with an August NGD below 25%. Shifting to surface-water sources is not an option for Wrentham, as its only other sources are wells in Subbasin 24098 of the Taunton River Basin, which has an August NDG of 20%. In its October 2019 OTC response, Wrentham noted that it is unable to shift withdrawals to its Taunton River Basin sources (Well #4 and Crocker Pond Well #6) due to the constraints of water quality, pumping capacities and other operational logistics. In response to the Department's request for further information via a May 16, 2022 email, Wrentham indicated that age-induced yield decreases have occurred in both wells; the wells cannot pump at their original capacities due to the risk of overdrawing water below their screens. Well #4 also had issues pumping up fines through the well screen at one time. The well casing was shortened and a higher screen was installed, which reduced the available water and the yield. In addition, both Wells 4 and 6 have elevated iron and manganese, which can encrust well screens and contribute to reduced capacity.

Another component of minimization planning is assessing conservation measures that can be feasibly implemented (in addition to the measures specified in Special Condition 8). In its October 16, 2019 OTC response, Wrentham submitted a Water Conservation Questionnaire that identified its current and anticipated conservation measures. The Department reviewed the questionnaire and had follow-up correspondence with Wrentham to finalize the measures in the Permit's Minimization Plan. The Minimization Plan is provided in Table 8 of the permit.

In its OTC response, Wrentham also proposed that a key component of its Minimization Plan could be development a new groundwater source in the Blackstone River Basin to serve West Wrentham. At the time of this permit issuance, Wrentham reports that it is in a site exploration phase and anticipates entering the New Source Approval (NSA) process in approximately two years. The Department has informed Wrentham that it will evaluate the proposed Blackstone source at the time the Town applies for a NSA. The Department understands that a Blackstone Basin source has the potential to minimize impacts in both the Charles and Taunton basins,

[2] See Footnote 1

provide relief on the Town's existing sources, and improve the reliability of the Town's supply. However, the site-specific environmental impacts of the new source withdrawals (e.g., impacts to a Biological Category, Groundwater Withdrawal Category, or a CFR) must be evaluated before the Department makes any determinations regarding source approval. Therefore, it is in Wrentham's best interests to consult the Department on potentially viable sites prior to the NSA process.

Water Quality, Wetlands Hydrology, Monitoring, and Hydrologic Monitoring, formerly Special Condition 11 of the previous permit, required Wrentham to monitor Lake Pearl and wetlands adjacent to Lake Pearl Well #5 (4350000-05G) and to submit annual reports to the Department in accordance with the "Wetlands Monitoring Plan, Lake Pearl Well #5" prepared by Weston and Sampson Engineers, dated November 2004. Reports were submitted annually from 2006 to 2010, after which water-level data continued to be collected monthly at seven monitoring sites through 2019.

MassDEP reviewed the available monitoring results. The data did not demonstrate pumping impacts or a lack thereof, largely because Lake Pearl is dammed. The monitoring reports noted that the predominant control on groundwater levels adjacent to the lake is the lake level, and the data appeared to indicate that the lake is dammed each year between early Spring and late Fall.

In response to the Department's request for information on the dam operation via a May 16, 2022 email, Wrentham explained that the Town inserts flashboards in Red Dam in the Spring for recreational and aesthetic purposes, and they are removed in the Fall for nuisance weed control and to allow maintenance of private docks and piers. Wrentham noted that this practice has been in place for many decades.

Given the heavy manipulation of the lake level, the lake and surrounding wetlands are a highly managed system and discerning pumping-induced trends is not feasible. The monitoring consequently does not serve a purpose. Therefore, this condition has been removed from the Permit.

Coldwater Fish Resource Protection was incorporated into the Water Management Regulations in November 2014. Coldwater Fish Resource Protection is not a condition of this permit because Wrentham's withdrawals do not impact any waters that MA Division of Fisheries and Wildlife has identified as supporting coldwater fish at this time.

Response to Comments on the DRAFT WMA Permit

On January 6, 2023, the Department received letters during the Draft WMA Permit public comment period: one submitted by the Massachusetts Rivers Alliance and the other by the Charles River Watershed Association. The comments in the two letters were very similar; therefore, the following discussion applies to both of them. The discussion summarizes the letters' five main comments and the Department's responses.

One of the main assertions in the comments was that the Permit "fails to promote the fundamental goals of the Water Management Act," such as safeguarding against over-allocation of water resources. The letters note that the Biological Category (BC) and Groundwater Withdrawal Category (GWC) of Wrentham's source subbasin are both a level 5, the highest of the SWMI BC and GWC levels; the letters also note the similar categorization of Wrentham's source subbasin in the Taunton River Basin (a BC 5 and GWC 4). In response, the Department

notes that Wrentham's source alternatives at this time are limited. The letters support Wrentham's new source exploration in the Blackstone River Basin (as described under Special Condition 11, above), and the Department agrees that it has potential to reduce impact on the Town's current source subbasins. However, as noted previously, the Department cannot make any determinations regarding source approval until an evaluation of the site-specific environmental impacts is possible. Thus, at the time of this permit issuance, the most viable means of minimizing Wrentham's withdrawal impacts are through the Permit requirements, of which the Department has given thorough consideration. The Department also wishes to note that the Permit does not increase Wrentham's authorized volume, and that WMA goals do not include lowering authorized volumes unless warranted by the system's Water Needs Forecast. Lastly, on the topic of WMA goals, the comments critiqued the Department's Safe Yield approach and proposed an alternative methodology. This issue cannot be addressed through changes to the Permit, as it would require regulatory revisions.

A second assertion in the comments was that the Permit does not adequately address UAW issues. The letters recommended that the Appendix B Functional Equivalence Plan (FEP) have an expedited timeline and focus more leak detection and repair. In response, the Department notes that it finds the FEP to be sufficiently robust and timely, and that it confirmed Wrentham fully understands and intends to comply with the FEP requirements in its October 2022 correspondence with the Town. The Department would also like to clarify that, while the Permit does include several leak detection and repair requirements, the water loss control program required by Special Condition 6 should rightly focus on metering and data management practices based on the M36 Level 1 audit findings, as described previously. The June 2022 audit report noted that the vast majority of UAW is attributed to those areas; therefore, a greater focus on leaks would not result in substantial UAW improvements. The report is publicly available should either commenting party wish to review it. Lastly, the Department notes that Wrentham's UAW values for 2021 (3%) and 2022 (8%) have both met the 10% Performance Standard and are marked improvement over prior years.

A third assertion in the comments was that the RGPCD standard is inappropriate for Wrentham and should be lowered. In response, the Department notes that it is following the statewide standard set forth in the Massachusetts Water Conservation Standards, as reviewed and approved by the Water Resources Commission (WRC), and that the standard has been a consistent requirement in WMA permits issued to public water suppliers. The Department would alter permit requirements following a WRC revision to the standard, but failing such action, the Department is not prepared to apply a lower RGPCD standards at this time.

A fourth assertion in the comments was that the Permit's nonessential outdoor water use restrictions are insufficient to protect the Charles River, and that the calendar trigger option should not be allowed because it fails to account for "abnormal seasonal conditions." In response, the Department would like to clarify that the calendar approach is more conservative than the streamflow approach, even during "abnormal" conditions. As shown in Table 5 of the Permit, nonessential outdoor water use is restricted to two days per week from May through September in the calendar approach, whereas use is restricted to two days per week in the streamflow approach only when the flow at the assigned gage falls below the trigger level from

May through September. The calendar approach can also be more effective due to the consistent, dependable timing of implementation. Moreover, the calendar trigger option does incorporate streamflow-triggered actions. As Table 5 indicates, use is restricted from two days to one day per week when streamflow falls below the 7-day low flow at the USGS stream gage for three consecutive days.

A fifth assertion in the comments was that the Permit's minimization and mitigation requirements are insufficient to protect the Charles River. The letters recommend the Department consider revising Wrentham's mitigation and minimization plans to include 1) future direct mitigation measures that benefit the source basin and 2) minimization measures that return water to streams. The letters included several specific comments regarding this assertion; those specifics and the Department's responses are as follows:

a. *Comment: Mitigation benefits should be specific to the subbasin(s) in which the permitted withdrawals occur.* Response: During SWMI the decision was made to grant the eligibility of mitigation activities outside source subbasins, considering that a failure to do so would significantly limit permittees' mitigation options, and because environmental improvements outside the subbasin were worthy of credit. Regarding mitigation activities out of the source's major basin: the Department will consider the proximity of the proposed mitigation to the withdrawal points in determining the equivalence of mitigation measures to the withdrawal impacts. Similar to out-of-subbasin mitigation, the Department determined that limiting mitigation to the source's major basin would be overly restrictive, particularly in communities like Wrentham which straddles four basins, and would fail to recognize worthy environmental improvements.

b. *Comment: There is no explicit provision in the regulations that prevents increases in environmental harm in already highly-stressed (BC 5/GWC 5) subbasins. The regulations fail to protect, and in fact incentivize further degradation of, the most stressed subbasins by providing a loophole around the otherwise-applicable requirement to demonstrate that there are no feasible alternatives and by omitting key considerations from MassDEP's determination of appropriate mitigation.* Response: This comment addresses concerns with the WMA regulations developed in 2014 and requests modification to the permit that is not aligned with the current Water Management Program regulations (310 CMR 36.00). Comments pertaining to the implementation of policies developed as part of the Sustainable Water Management Initiative (SWMI) are not within the scope of individual Water Management permits. The Department continues to work with all constituents to review programmatic requirements in forums outside of the development of individual permits.

c. *Comment: MassDEP only requires mitigation measures on water use over and above a provision in the SWMI regulations known as baseline, which exempts consideration of water already in use before the period of 2002-2005. This exemption, when coupled with the new SY methodology, essentially grandfathers the vast majority of water use from any environmental impact evaluation.* Response: The WMA permitting process does allow for the evaluation of authorized volumes during and prior to the baseline period. For instance, the process takes Water Needs Forecasts into account, which demonstrate

present and projected demand. If a permittee's use exceeds its WNF, the Department may consider lowering the permit's authorized volume below the baseline. The Department also notes that WMA permit applications for authorized volume increases did undergo rigorous review prior to SWMI. SWMI somewhat standardized the evaluation of withdrawal impacts; however, it did not initiate the WMA environmental review process.

d. *Comment: DEP has ignored many of the mitigation and minimization recommendations included in the 2015 Wrentham SWMI Grant report, such as releases from Lake Pearl.* Response: The Draft WMA Permit neglected to note that, while preparing the draft permit in the Spring of 2022, the Department requested that Wrentham follow up on the minimization actions that were proposed in the 2015 report by identifying which of those actions it could feasibly pursue. Wrentham did provide explanations of why the 2015 report's proposed options were not feasible at this time. In response to the draft permit comments, the Town reiterated its explanation via email regarding controlled releases from Lake Pearl. An excerpt of the Town's January 6, 2023 email is as follows:

> *"Lake Pearl is of high aesthetic and recreational (boating, beach, swimming) value, which bears directly on property values surrounding the lake, and the vistas which attract events to the busy restaurant/function facility on the lake. Any manipulation of lake levels for streamflow augmentation could result in litigation by those impacted. To maintain the high values of Lake Pearl, stream releases from the lake need to be avoided during the growing season."*

e. *Comment: Wrentham's Water Use Restriction (i.e., private well) Bylaw is retroactive and does not actively improve the current state of the subbasins upon which Wrentham relies*. Response: A private well bylaw most certainly applies to current and future water-use restrictions, and for this reason has been largely supported by Massachusetts watershed associations, both during and since SWMI.

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Executive Office of Energy & Environmental Affairs

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Secretary

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WATER WITHDRAWAL PERMIT
M.G.L. c. 21G

This issuance of Permit #9P-4-20-350.01 is approved pursuant to the Massachusetts Water Management Act (WMA) 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.

PERMIT NUMBER: 9P-4-20-350.01 **RIVER BASIN:** Charles River

PERMITTEE: Town of Wrentham
Wrentham Water Division
P.O. Box 658
Wrentham, MA 02093

ISSUANCE DATE: October 10, 2023

EXPIRATION DATE: June 5, 2034

TYPE AND NUMBER OF WITHDRAWAL POINTS:
Groundwater: 3
Surface Water: 0

USE: Public Water Supply

DAYS OF OPERATION: 365

LOCATIONS:

Table 1. Withdrawal Point Identification

Source Well Name	Source Code
Well #2	4350000-03G
Well #3	4350000-04G
Well #5	4350000-05G

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Town of Wrentham (Wrentham) to withdraw water from the Charles River Basin at the rate described below in Table 2. The volume reflected by this rate is in addition to the 0.46 million gallons per day (MGD) previously authorized to Wrentham under WMA Registration # 420350.01 for withdrawals from the Charles River Basin, and for the 0.38 MGD authorized under Registration # 425350.01 and the 0.23 MGD authorized under WMA Permit # 9P-4-25-350.01 for withdrawals from the Taunton River basin. The permitted volume is expressed both as an annual average daily withdrawal rate (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 (the Department) bases these withdrawal volumes on the raw water withdrawn from the authorized withdrawal points, and will use the raw water amount to assess compliance with the registered and permitted withdrawal volumes.

Table 2. Maximum Authorized Annual Average Withdrawal Volume in Charles Basin

	Total Raw Water Withdrawal Volumes			
Permit Periods	**Permit** Daily Average (MGD)	**Permit** Total Annual (MGY)	**Permit + Registration** Daily Average (MGD)	**Permit + Registration** Total Annual (MGY)
10/10/2023 to 6/5/2029	0.46	149.65	0.92	335.80
6/6/2029 to 6/5/2034*	0.46	149.65	0.92	335.80

*The original expiration date for this permit was February 28, 2029. The expiration date was extended by four years by St. 2010, c. 240, as amended by St. 2012, c.238, collectively known as the Permit Extension Act. The expiration date was further extended by 462 days due to COVID-19 Order No. 42, "Order Resuming State Permitting Deadlines and Continuing to Extend the Validity of Certain State Permits," issued on July 2, 2020.

In addition to the limitations outlined above in Table 2 for the Charles River Basin withdrawals, this permit limits system-wide withdrawals from all of Wrentham's sources to the volumes shown in Table 3. Wrentham may withdraw up to the maximum shown above from its Charles Basin sources, provided withdrawals from its Taunton Basin sources are adjusted so as not to exceed the system-wide volumes shown in Table 3.

Table 3. Maximum Authorized System-Wide Withdrawal Volumes from the Taunton and Charles River Basins

Permit Periods^	Daily Average (MGD)	Total Annual (MGY)
10/10/2023 to 2/28/2025	1.11	405.15
3/1/2025 to 2/28/2030	1.17 (1.23*)	427.05 (448.95)

^For consistency with Plainville's Taunton River Basin permit, the system-wide permit periods in Table 3 differ from the basin-specific periods in Table 2.

***With specific advance written approval from MassDEP, Wrentham is authorized to increase the maximum authorized annual system-wide withdrawal volume to 1.23 MGD provided that Wrentham is meeting the following Special Permit Conditions:**

- Residential Gallons Per Capita Day,
- Unaccounted for Water or all UAW Functional Equivalence Requirements,
- Seasonal Limits on Nonessential Outdoor Water Use, and
- Water Conservation Requirements.

2. Maximum Authorized Daily Withdrawal Volume

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed below without specific advance written approval from the Department. 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 Rates

Well Name	PWS Source ID Code	Maximum Daily Rate (MGD)
Well #2	4350000-03G	0.72
Well #3	4350000-04G	0.95
Well #5	4350000-05G	0.95

3. Zone II Delineation

Department records show that Well #2, Well #3 and Well #5 have an approved Zone II delineation; therefore, no further Zone II work is required.

4. Wellhead Protection

The Town of Wrentham has demonstrated compliance with the wellhead protection requirements set forth in 310 CMR 22.21(2) for all of its permitted wells.

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

Wrentham's performance standard for residential gallons per capita day (RGPCD) is 65 gallons or less. Wrentham shall be in compliance with this performance standard. If, at any time, Wrentham does not meet the RGPCD Performance Standard, it shall comply with the functional equivalence requirements set forth in Appendix A. Wrentham shall report its RGPCD water use annually in its Annual Statistical Report (ASR).

Note that Special Condition 7 limits summer nonessential outdoor water use to no more than 2 days per week when RGPCD for the previous year was 65 or below, and to no more than 1 day per week when RGPCD for the previous year was above 65.

6. Performance Standard for Unaccounted for Water

Wrentham's performance standard for Unaccounted for Water (UAW) is 10% or less of overall water withdrawals for 2 of the most recent 3 years throughout the permit period. If Wrentham does not meet the 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 M36*, as outlined in Appendix B.

Wrentham failed to meet the UAW standard for the past three years and was required to initiate the M36 audit process by March 17, 2022 under its Taunton River Basin permit (WMA Permit # 9P-4-25-350.01). Wrentham shall continue to comply with the Appendix B requirements.

Nothing in the permit shall prevent a permittee who meets the 10% performance standard from demonstrating compliance with the UAW performance standard by developing and implementing a water loss control program following the AWWA M36 Water Audits and Loss Control Programs.

Wrentham shall report its UAW percentage annually in its Annual Statistical Report (ASR). Permittees meeting the Performance Standard for Unaccounted for Water through implementation of a water loss control program based on AWWA M36 annual water audits and guidance shall continue to report UAW annually as required in the Annual Statistical Report for public water suppliers.

7. Seasonal Limits on Nonessential Outdoor Water Use

Wrentham shall limit nonessential outdoor water through mandatory restrictions from May 1st through September 30th as outlined in Table 5. To the extent feasible, all summer outdoor water use should take place before 9 a.m. and after 5 p.m. when evaporation and evapotranspiration rates are lower.

Table 5. Seasonal Limits on Nonessential Outdoor Water Use

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	Nonessential outdoor water use is restricted to: a) **two (2) days per week** before 9 am and after 5 pm; and b) **one (1) day per week** before 9 am and after 5 pm 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 am and after 5 pm when USGS stream gage 01103500 –Charles River at Dover, MA falls below: • May 1 – June 30: **170 cfs** for three (3) consecutive days • July 1 – September 30: **62 cfs** for three (3) consecutive days b) **one (1) day per week** before 9 am and after 5 pm 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	Nonessential outdoor water use is restricted to **one (1) day per week** before 9 am and after 5 pm.
Streamflow Triggered Restrictions	Nonessential outdoor water use is restricted to **one (1) day per week** before 9 am and after 5 pm when USGS stream gage 01103500 –Charles River at Dover, MA falls below: • May 1 – June 30: **170 cfs** for three (3) consecutive days • July 1 – September 30: **62 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.

Instructions for Accessing Streamflow Information

If Wrentham chooses Streamflow Triggered Restrictions, Wrentham shall be responsible for tracking streamflow and recording and reporting to MassDEP when restrictions are implemented.

Streamflow information is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts streamflow in real time, i.e., the most recent, usually quarter-hourly, reading made at each USGS stream gage.

Seasonal Nonessential Outdoor Water Use Restrictions are implemented when the mean daily streamflow falls below the designated trigger for 3 consecutive days. The mean daily flow is not calculated until after midnight each day when the USGS computes the hourly data into a mean daily streamflow. As a result, permittees must use the mean daily streamflow from the preceding day when tracking streamflow.

Mean daily streamflow gage readings are available at the USGS NWIS Web Interface at http://waterdata.usgs.gov/ma/nwis/current/?type=flow.

- Scroll down to 01103500 - Charles River at Dover, MA.
- Click on the gage number.
- Under "CHARLES RIVER AT DOVER, MA" click "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 "Discharge (mean)" is checked, then, under "Output Format" click "Table" and hit GO.

- Scroll down to the "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.

Wrentham 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 year.

Restricted Nonessential Outdoor Water Uses

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

- irrigation of lawns via automatic irrigation system or sprinklers;
- filling swimming pools;
- washing of vehicles, except in a commercial car wash or as necessary for operator safety; and
- washing of 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 when mandatory restrictions are in place:

- irrigation to establish a new lawn and new plantings during the months of May and September;
- irrigation of public parks and recreational fields before 9 am and after 5 pm;
- watering lawns, gardens, flowers and ornamental plants by means of a hand-held hose or drip irrigation system; and
- irrigation of lawns by means of a hand-held hose.

Water uses NOT subject to mandatory restrictions are those required:

- for health or safety reasons;
- by regulation;
- for the production of food and fiber;
- for the maintenance of livestock; or
- to meet the core functions of a business (for example, irrigation by golf courses as necessary to maintain tees, greens, and limited fairway watering, or irrigation by plant nurseries as necessary to maintain stock).

Public Notice of Seasonal Limits on Nonessential Outdoor Water Use Restrictions

Wrentham 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 Notification of Water Use Restriction Form at https://www.mass.gov/info-details/outdoor-water-use-restrictions-for-cities-towns-and-golf-courses.

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

8. Water Conservation Requirements

At a minimum, Wrentham shall implement the following conservation measures forthwith. Compliance with these water conservation requirements shall be reported to MassDEP upon request, unless otherwise noted below.

Table 6. Minimum Water Conservation Requirements

Leak Detection
1. At a minimum, conduct a full leak detection survey every three years. The first full leak detection survey 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 leak detection 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. Repair reports shall be kept available for inspection by MassDEP. The Permittee 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. o Leaks shall be repaired in accordance with the Permittee's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. o The Permittee shall have water use regulations in place that require property owners to expeditiously repair leaks on their property. The following exceptions may be considered: • Repair of leakage detected during winter months can be delayed until weather conditions become favorable for conducting repairs*; and • Leaks in freeway, arterial or collector roadways may be coordinated with other scheduled projects being performed on the roadway**.

Table 6. Minimum Water Conservation Requirements

*Reference: MWRA regulations 360 CMR 12.09 **Mass Highway or local regulations may regulate the timing of tearing up pavement to repair leaks.
Metering
1. Calibrate all source, treatment, and finished water meters at least annually and report date of calibration on the ASR.
2. One hundred percent (100%) metering of the system is required. 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 Permittee 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 and sealing meters, where possible, to identify and correct illegal connections.
4. Ensure sufficient funds in the annual budget to calibrate, repair, and replace meters as necessary.
Pricing
1. Establish a water pricing structure that includes the full cost of operating the water supply system. Full cost pricing recovers all costs as applicable, including: o pumping and distribution equipment cost, repair and maintenance; o water treatment; o electricity; o capital investment, including planning, design and construction; o land purchase and protection; o debt service; o administrative costs including systems management, billing, accounting, customer service, service studies, rate analyses and long-range planning; o conservation program including audits, leak detection equipment, service and repair, meter replacement program, automated meter reading installation and maintenance, conservation devices, rebate program, public education program; o regulatory compliance; and o staff salaries, benefits training and professional development.
2. Evaluate rates at a minimum every three to five years and adjust costs as needed.
3. The Permittee shall not use decreasing block rates. Decreasing block rates, which charge lower prices as water use increases during the billing period, are prohibited by M.G.L. Chapter 40 Section 39L.
4. Pursuant to the Permittee's plan (submitted to the Department via email on September 29, 2022) and the requirements of the Permittee's Taunton River Basin permit (WMA Permit # 9P-4-25-350.01), the Permittee shall implement quarterly meter reading and billing by March 17, 2024.
Residential and Public Sector Conservation
1. Permittee shall meet the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code.
2. Meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.
3. Permittee reports that it has installed water savings devices in all municipal buildings. The Permittee shall ensure that water conserving fixtures are incorporated into existing municipal buildings as they are renovated and into the design of all new municipal capital projects. The Permittee shall also

Table 6. Minimum Water Conservation Requirements

ensure that water conserving landscaping practices are incorporated into the design, construction management, and operation of public parks, playing fields and other facilities.
Industrial and Commercial Water Conservation
1. In its most recent (2021) ASR, the Permittee reported that 82% of all water distributed is for residential use, 12% for commercial use, and less than 1% for industrial use. The Permittee shall ensure water conservation practices, including the installation of WaterSense compliant low flow plumbing fixtures where applicable, and low water use landscaping, in all development proposals.
Lawn and Landscape
1. Develop and adopt or update as necessary, a water use restriction bylaw or regulation that authorizes enforcement of the seasonal limits on nonessential outdoor water use required by this permit. MassDEP has developed the "DEP Model Outdoor Water Use Bylaw/Ordinance" to help municipalities and water districts implement seasonal water conservation requirements. The Model Bylaw also includes options for regulating private wells and in-ground irrigation systems. See http://www.mass.gov/eea/agencies/massdep/water/regulations/model-water-use-restriction-bylaw-ordinance.html The Permittee's Water Use Restriction Bylaw (Art. 6.30, S. 4 of the Wrentham General Bylaws, rev. June 5, 2017) includes enforcement authority and establishes penalties for violations of the permit restrictions. It applies to both PWS customers and private well users.
Public Education and Outreach
1. Develop and implement an education plan, including elements in the following list, as applicable: o Billing that helps customers track, compare, and make sense of their use. o Target outreach to customers who may have a leak or who are using significantly more water than similar customers. o Offer indoor low-flow retrofit/rebate programs. o Provide information on "water-wise landscaping" and efficient irrigation and lawn care practices online and through model landscapes, workshops, local garden clubs, retailers, and environmental organizations. o Partner with local schools to develop age-appropriate curricula on the local water system and water conservation. o Use social media, online tools, public service announcements, and local events to promote water conservation and alerts. o Develop multilingual materials as needed. o Partner with garden clubs, farmers' markets, environmental organizations, energy utilities, and others on campaigns promoting wise water use.
2. Upon request of MassDEP, Permittee shall report on its public education and outreach efforts, 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. Requirement to Report Raw and Finished Water Volumes

Wrentham shall report annually on its ASR the raw water volumes and finished water volumes for the entire water system. Monthly raw water volumes for individual water withdrawal points shall be reported annually in the ASR.

10. Mitigation of Impacts for Withdrawals that Exceed Baseline

Wrentham is required to mitigate 0.021 MGD for its permitted withdrawals over its baseline volume in the Charles River Basin. To meet its mitigation requirement, Wrentham shall continue to implement Article 6.30, Section 4 of the General Bylaws of the Town of Wrentham, as revised June 5, 2017, entitled Water Use Restriction Bylaw. In the event that the Water Use Restriction Bylaw is modified, Wrentham shall notify the Department in writing within thirty days of the modification so that the Department may evaluate the impact on Wrentham's mitigation requirements. The notice shall provide the text and reasons for the change. Table 7 summarizes the activities in Wrentham's mitigation plan.

Table 7. Wrentham Mitigation Plan

Mitigation Activity	Direct or Indirect Mitigation	Credits*	Volumetric Conversion	Documentation
stormwater BMP recharge	Direct	0.3	0.003 MGD	Stormwater BMP Credit Calculator Table, Stormwater Certification Form for Madison Street Reconstruction Project bioswales (1.5 acres, 0.5" infiltration depth)
private well bylaw	Indirect	10	0.10 MGD	Water Use Restriction Bylaw (Art. 6.30, S. 4 of the Wrentham General Bylaws, rev. June 5, 2017)

*Wrentham's mitigation credits are shared between its Taunton River Basin permit (3.4 credits required) and this Charles River Basin permit (2.1 credits required).

11. Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins

Wrentham shall minimize the impacts of its groundwater withdrawals from sources in Subbasin 21034 as outlined in Table 8 of the Permit. Compliance with the Table 8 minimization measures shall be reported to the Department upon request.

Table 8. Wrentham Minimization Plan

o Continue to provide residential customers with high-efficiency products, such as faucet and shower flow restrictors.
o Continue to evaluate Wrentham's rate structure annually and increase rates for the highest rate block.
o Increase billing frequency to at least quarterly. As required per Special Condition 8, Wrentham shall implement quarterly billing system-wide by March 17, 2024.
o On water bills, continue to provide customers with water consumption information in gallons and show consumption history.
o Conduct a comprehensive audit of the water system every five years, at a minimum. As required per Special Condition 6 and described in Appendix B, Wrentham shall conduct an M36 water audit annually until its UAW is at or below 10% for four consecutive years.
o Develop and implement a meter replacement program to ensure that all nonresidential water use is properly accounted for. Wrentham plans to implement a meter replacement program between January 2023 and January 2024.

o Continue efforts to standardize Wrentham's meter reading system so that it is fully automated and remote. Wrentham will complete the standardization during its meter replacement program beginning in January 2023.
o Continue implementation of Water Use Restriction Bylaw (Art. 6.30, S. 4 of the Wrentham General Bylaws, rev. June 5, 2017) that extends seasonal limits on nonessential outdoor water use to private well users.

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 and in compliance with 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 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

This permit is a decision of MassDEP. Any person aggrieved by this decision may request an adjudicatory hearing. Any such request must be made in writing, by certified mail and received by MassDEP within twenty-one (21) days of the date of receipt of this permit.

No request for an appeal of this permit shall be validly filed unless a copy of the request is sent 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 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 MassDEP.

CONTENTS OF HEARING REQUEST

310 CMR 1.01(6)(b) requires the request to include a clear and concise statement of the facts which are the grounds for the request and the relief sought. In addition, the request must include a statement of the reasons why the decision of MassDEP is not consistent with applicable rules and regulations, and for any person appealing this decision who is not the applicant, a clear and concise statement of how that person is aggrieved by the issuance of his permit.

FILING FEE AND ADDRESS

The hearing request, together with a valid check, payable to the Commonwealth of Massachusetts in the amount of $100 must be mailed to:

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

The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

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

October 10. 2023

Duane LeVangie
Water Management Program
Bureau of Water Resources

Date

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 in its Annual Statistical Report (ASR), 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 with the 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), 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. The program shall include the following measures:

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, the permittee shall 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. The Permittee shall submit the component analysis and water loss control program with a proposed implementation schedule to the Department.
3. Continued implementation will be a condition of the permit in place of meeting the 10% UAW performance standard.
4. 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 DEP, 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).