Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
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Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

DRAFT

August 11, 2021

Walpole Water and Sewer Commissioners
Town Hall
135 School Street
Walpole, MA 02081

RE: Walpole-BWR\WMA
PWS Number 4307000
WMA Permit #9P-4-19-307.02
Action: Draft Renewed Permit

Dear Select Members:

Please find the attached documents:

- DRAFT Findings of Fact in Support of the Renewed Permit #9P-4-19-307.02; and
- DRAFT Water Management Act Permit #9P-4-19-307.02 (Boston Harbor Basin) for the Town of Walpole.

Consistent with 310 CMR 36.27 (6)-(8) of the revised Water Management Act Regulations promulgated on November 7, 2014, the Department will now publish notice in the Environmental Monitor that a DRAFT Permit is available for review and comment for 30 days. Notice of the public comment period will also be sent to all registrants, permittees and those having non-consumptive use statements within the Boston Harbor Basin. The Department expects to issue the final permit within 30 days of the close of the public comment period.

The signature on this cover letter indicates formal issuance of the attached document. If you have any questions regarding this information, please contact Duane LeVangie at (617) 292-5706 or via e-mail at duane.levangie@mass.gov .

Very truly yours,

Duane LeVangie

Duane LeVangie,
Water Management Program Chief
Bureau of Water Resources

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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Ecc: Jen Pederson, MWWA
Julia Blatt, Massachusetts Rivers Alliance
Sarah Bower, Massachusetts Rivers Alliance
Ian Cooke, Neponset River Watershed Association
Marilyn McCrory, Department of Conservation and Recreation-Office of Water Resources
Anne Carroll, Department of Conservation and Recreation-Office of Water Resources
Bernie Marshall, Walpole Water and Sewer Superintendent
Patti Kellogg, MassDEP
Michelle Regon, MassDEP

Communication For Non-English Speaking Parties - 310 CMR 1.03(5)(a)

Contact Michelle Waters-Ekanem, Diversity Director/Civil Rights: 617-292-5751 TTY# MassRelay Service 1-800-439-2370.
http://www.mass.gov/eea/agencies/massdep/service/justice/ (Version 3.30.15)

1 English:
This document is important and should be translated immediately. If you need this document translated, please contact MassDEP's Diversity Director at the telephone numbers listed below.

2 Español (Spanish):
Este documento es importante y debe ser traducido inmediatamente. Si necesita este documento traducido, por favor póngase en contacto con el Director de Diversidad MassDEP a los números de teléfono que aparecen más abajo.

3 Português (Portuguese):
Este documento é importante e deve ser traduzida imediatamente. Se você precisa deste documento traduzido, por favor, entre em contato com Diretor de Diversidade da MassDEP para os números de telefone listados abaixo.

4(a) 中國（傳統）(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與MassDEP的多樣性總監聯繫。

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5 Ayisyen (franse kreyòl) (Haitian) (French Creole):
Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradui imedyatman. Si ou bezwen dokiman sa a tradui, tanpri kontakte Divèsite Direktè MassDEP a nan nimewo telefòn ki nan lis pi ba a.

6 Việt (Vietnamese):
Tài liệu này là rất quan trọng và cần được dịch ngay lập tức. Nếu bạn cần dịch tài liệu này, xin vui lòng liên hệ với Giám đốc MassDEP đa dạng tại các số điện thoại được liệt kê dưới đây.

7 ប្រទេសកម្ពុជា (Kmer (Cambodian):
ឯកសារនេះគឺមានសារៈសំខាន់និងគួរត្រូវបានបកប្រែភ្លាម។ ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនងឆ្នោតជានាយក MassDEP នៅលេខទូរស័ព្ទដែលបានរាយខាងក្រោម។

8 Kriolu Kabuverdianu (Cape Verdean):
Es documento é importante e deve ser traduzido imidiatamente. Se bo precisa des documento traduzido, por favor contacta Director de Diversidade na MassDEP's pa es numero indicode li d'boche.

9 Русский язык (Russian):
Этот документ является важным и должно быть переведено сразу. Если вам нужен этот документ переведенный, пожалуйста, свяжитесь с директором разнообразия MassDEP по адресу телефонных номеров, указанных ниже.

10 العربية (Arabic):
هذه الوثيقة الهامة وينبغي أن تترجم على الفور. اذا كنت بحاجة الى هذه الوثيقة المترجمة، يرجى الاتصال مدير التنوع في PMassDE على أرقام الهواتف المدرجة أدناه.

11 한국어 (Korean):
이 문서는 중요하고 즉시 번역해야합니다. 당신이 번역이 문서가 필요하면 아래의 전화 번호로 MassDEP의 다양성 감독에 문의하시기 바랍니다.

12 հայերեն (Armenian):
Այս փաստաթուղթը շատ կարեւոր է եւ պետք է թարգմանել անմիջապես. Եթե Ձեզ անհրաժեշտ է այս փաստաթուղթը թարգմանվել դիմել MassDEP բազմազանությունը տնօրեն է հեռախոսահամարների թվարկված են ստորեւ.

13 فارسی (Farsi (Persian):
این سند مهم است و باید فورا ترجمه شده است.
اگر شما نیاز به این سند ترجمه شده، لطفا با ما تماس تنوع مدیر PMassDE در شماره تلفن های ذکر شده در زیر.

14 Français (French):
Ce document est important et devrait être traduit immédiatement. Si vous avez besoin de ce document traduit, s'il vous plaît communiquer avec le directeur de la diversité MassDEP aux numéros de téléphone indiqués ci-dessous.

15 Deutsch (German):
Dieses Dokument ist wichtig und sollte sofort übersetzt werden. Wenn Sie dieses Dokument übersetzt benötigen, wenden Sie sich bitte Diversity Director MassDEP die in den unten aufgeführten Telefonnummern.

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Το έγγραφο αυτό είναι σημαντικό και θα πρέπει να μεταφραστούν αμέσως. Αν χρειάζεστε αυτό το έγγραφο μεταφράζεται, παρακαλούμε επικοινωνήστε Diversity Director MassDEP κατά τους αριθμούς τηλεφώνου που αναγράφεται πιο κάτω.

17 Italiano (Italian):
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18 Język Polski (Polish):
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19 **हिन्दी** (Hindi):
यह दस्तावेज महत्वपूर्ण है और तुरंत अनुवाद किया जाना चाहिए. आप अनुवाद इस दस्तावेज़ की जरूरत है, नीचे सूचीबद्ध फोन नंबरों पर MassDEP की विविधता निदेशक से संपर्क करें.

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Findings of Fact in Support of DRAFT Permit Issuance
DRAFT Water Management Permit # 9P-4-19-307.02
Town of Walpole

The Department of Environmental Protection (the Department or MassDEP) makes the following Findings of Fact in support of the attached 2021 Draft Water Management Act (WMA) Permit Renewal #9P-4-19-307.02, and includes herewith its reasons for issuing the Draft Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11. The issuance of the 2021 Draft WMA permit is in response to the 2009 WMA permit renewal application by the Town of Walpole (Walpole or the Town).

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

The Town of Walpole Withdrawal Summary

Walpole is registered to withdraw 2.25 MGD from groundwater sources in the Boston Harbor Basin. On June 1, 1991, MassDEP issued the Walpole Water Department its original WMA permit which was then amended on May 13, 1992 to add two sources, and modified on January 10, 2001 to add conservation measures, land use controls, and remove wetlands monitoring requirements. Walpole currently has a total of eighteen permitted sources in the Boston Harbor Basin with a permitted withdrawal of 1.09 MGD, for a total maximum allowable withdrawal from the Boston Harbor Basin of 3.34 MGD.

The Permit Extensions

The original permit issued in 1991 had an expiration date of February 28, 2010. In 2010, an interim permit was issued extending the permit for a year while MassDEP reviewed the permit renewal application. That interim permit was then extended for 2 years to February 28, 2013, 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 extended an additional 2 years to February 28, 2015. Pursuant to M.G.L. c. 30A, Section 13, and 310 CMR 26.18(7), the permit continued in force until the date the Department issues a final renewed permit. The expiration date for all permits going forward in the Boston Harbor Basin will be February 28, 2030, in accordance with the staggered permitting schedule set forth in the regulations.

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.
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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, MassDEP 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, MassDEP 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 Boston Harbor Basin section of this document or 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 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 standards reviewed and approved by the WRC in July 2018 (https://www.mass.gov/doc/massachusetts-water-conservation-standards-2)/ 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; and
  - 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 Boston Harbor Basin

This permit is being issued under the safe yield methodology adopted by the MassDEP 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 Boston Harbor Basin is 54.9 million MGD, and total registered and permitted withdrawals are 37.94 MGD. Walpole's WMA Permit includes a reduction from the previously allocated volume in the Boston Harbor Basin and thus will not cause an exceedance of the Basin's safe yield.

Findings of Fact for Special Permit Conditions in the Town of Walpole's Water Management Act Permit

The Findings of Fact for the special conditions included in the permit generally describe the rationale and background for each special condition in the 2021 Draft WMA 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, Authorized Annual Average Withdrawal Volume, recognizes the 2.25 MGD Walpole is authorized to withdraw from its groundwater sources in the Boston Harbor Basin by its WMA Registration #4-19-307.01. Walpole's Water Management Act Permit, as most recently amended January 2001, increased their total allocated volume by the permitted withdrawal volume of 1.09 MGD. In a February 18, 2020 letter to the town, the Department of Conservation and Recreation's Office of Water Resources (DCR-OWM) provided their final Water Needs Forecasts (WNF) for Walpole. MassDEP policy is to allocate annual withdrawal rates based on the 65/10 DCR-OWM WNF. This decision reduces the permitted volume to 0.68 MGD, for a total authorized withdrawal of up to 2.93 MGD. Please see Table 1 below for Walpole's historic system-wide withdrawals, which are all below 2.93 MGD.

Table 1: Walpole Reported System-Wide Water Withdrawals 2014-2019

Year	2014	2015	2016	2017	2018	2019
Walpole System-wide Reported Withdrawals (MGD)	2.24	2.37	2.39	2.41	2.38	2.19

Special Condition 2, Maximum Daily Withdrawals from Groundwater Withdrawal Points, Walpole currently has eighteen permitted groundwater sources: Special Condition 2 specifies a maximum approved daily pumping rate for these permitted sources.

Special Condition 3, Zone II Delineations, Walpole's permitted groundwater sources have approved Zone IIs. No further Zone II work is required as a condition of Walpole's WMA Permit.

Special Condition 4, Wellhead Protection, Walpole has successfully adopted local zoning and non-zoning controls that prohibit all uses and activities cited in the MA Wellhead Protection Regulations 310 CMR 22.21(2).

Special Condition 5, Performance Standard for Residential Gallons Per Capita Day (RGPCD) Water Use, for all public water suppliers (PWSs) is 65. As shown in Table 2, Walpole met this Performance Standard in 2019 and 2017. Permittees that cannot comply with the RGPCD Performance Standard are required to develop and implement a functional equivalence program as set forth in Appendix A Functional Equivalence with the RGPCD Performance Standard.

Table 2: Residential Gallons Per Capita Day Water Use

Year	2019	2018	2017	2016	2015	2014
RGPCD	63	69	64	68	71	70

Special Condition 6, Performance Standard for Unaccounted for Water (UAW), for all PWSs is 10%. Walpole is required to meet 10% or less UAW for 2 of the 3 most recent years throughout the permit period. Walpole has been in compliance with this standard. See Table 3. Permittees that cannot comply with the UAW Performance Standard are required to develop and implement a water loss control program as set forth in Appendix B Functional Equivalence with the 10% UAW Performance Standard.

Table 3: Unaccounted for Water

Year	2019	2018	2017	2016	2015	2014
UAW	7%	7%	8%	7%	7%	4%

Special Condition 7, Water Conservation Requirements, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the Water Resources Commission in July 2018 (https://www.mass.gov/doc/massachusetts-water-conservation-standards-2/).

Special Condition 11, Reporting Requirements, ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

Special Condition 12, General Permit Conditions (applicable to all Permittees).

NEW PERMIT CONDITIONS

Special Condition 8, Seasonal Limits on Nonessential Outdoor Water Use, reflects the restrictions on nonessential outdoor water use from May through September. The options outlined in Special Condition 8 are based on whether reported RGPCD for the previous year was in compliance with the RGPCD Performance Standard (see Special Condition 5, Performance Standard for RGPCD). In addition, outdoor water use by suppliers with wells in August net groundwater depleted subbasins[1] is limited to 1or 2 days per week to minimize withdrawals from depleted subbasins.

Each year Walpole may choose one of two options for implementing nonessential outdoor watering restrictions.

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

If Walpole selects the streamflow trigger approach, it has been assigned USGS stream gage 01105000, Neponset River at Norwood, MA. The May-June streamflow trigger is 30 cubic feet per second (cfs), and the July-September streamflow trigger is 18 cfs. Should the reliability of flow measurement at this be so impaired as to question its accuracy, Walpole may request that MassDEP review and approve the transfer to another gage that will trigger restrictions. MassDEP reserves the right to require use of a different gage.

- **The 7-Day Low Flow Trigger**, at which restrictions increase, is incorporated into both Calendar and Streamflow Triggered restrictions in order to provide additional protection to streamflows when flows are very low. The 7-day low flow trigger for Walpole is 6.4 cfs.

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

Special Condition 9, Minimization

Permittees with groundwater sources in subbasins having an August NGD of 25% or greater are required to develop a plan to minimize the impacts of their withdrawals. All of Walpole's sources are in

[1] Subbasins used for WMA permitting are the 1,395 subbasins delineated by the U.S. Geological Survey in *Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover, and Water Quality for Massachusetts Stream Basins* (Weiskel *et al.*, 2010, USGS SIR 2009-5272). The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion (NGD) to mean the unimpeded median flow for August minus 2000-2004 groundwater withdrawals plus 2000-2004 groundwater returns described by U.S. Geological Survey in *Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover and Water Quality for Massachusetts Stream Basins.* A subbasin is groundwater, depleted if it has an August NGD of greater than 25%. All of Walpole's Boston Harbor Basin groundwater sources are in subbasin 24070, a subbasin with an August NGD of 43%, a groundwater depleted subbasin.

Subbasin 21016 or Subbasin 21150, with an August NGD of 84% and 127% respectively. Special Condition 9 therefore requires Walpole to implement a Minimization Plan.

Minimization Plans typically include:

1. a Desktop Optimization analysis of shifting withdrawals to other available sources outside the August net groundwater depleted subbasin(s);
2. an evaluation of options for water releases and returns to minimize streamflow impacts; and
3. an evaluation of implementing conservation measure that go beyond the standard WMA permit requirements to minimize the withdrawals and discharges needed to meet demand.

As stated earlier, all of Walpole's wells are in subbasins that have an August NGD that is greater than 25%. In this circumstance, the Minimization Plan is not required to include an evaluation of the impact of shifting withdrawals between subbasins. Likewise, the Minimization Plan does not need to address surface water releases, because Walpole has no surface water supply impoundments. The Minimization Plan is, however, required to identify additional cost-effective conservation measures adopted since 2005 that go beyond the standard WMA conservation requirements. To fulfill the minimization requirement, Special Condition 9 requires the Walpole to implement or continue to implement the following measures:

- Continue to implement retrofit/rebate services on water efficient plumbing fixtures and appliances for customers.
- Require new developers to install high efficiency products in their projects, in accordance with Walpole's Sewer and Water Regulations, Amendment #9, which was approved on August 14, 2017.
- Continue to implement a quarterly billing frequency.
- Continue to implement an increasing block water rate structure to encourage water conservation.
- Maintain its comprehensive water conservation website created for the town which includes the need for water conservation, as well as strategies consumers can use to reduce their water use indoors and outdoors.

Special Condition 10, Mitigation of Impacts for Withdrawals that Exceed Baseline[2], requires mitigation of the impacts of withdrawals above the permittee's baseline by direct and/or indirect mitigation activities. Walpole's Baseline in the Boston Harbor Basin is 2.53 MGD, their 2005 withdrawal volume plus 5%.

The mitigation volume calculation below assumes that Walpole's future withdrawals will be discharged to on-site septic systems at the same rate (30%) as current water withdrawals. A "wastewater adjustment" is calculated for water withdrawn that is returned to the ground as wastewater within the same major basin. MassDEP will assume that 85% of water delivered to customers with septic systems will be returned to the ground within the same major basin as the withdrawal, thus reducing the amount of mitigation needed. After calculating the adjustment for authorized withdrawals over baseline that will be returned to groundwater through septic system discharge (Step 2 below), Walpole's total mitigation requirement is up to 0.30 MGD (Step 3 below).

[2] Baseline is the volume of water withdrawn in 2005 plus 5%, or the average volume withdrawn from 2003 to 2005 plus 5%, which is greater. Baseline cannot be less than the registered volume and cannot be more than the authorized volume during the 2003-2005 period. For suppliers with authorizations in multiple major basins, baseline is computed for each basin and for the entire system.

Walpole's System-wide Mitigation Volume Calculation
Permitted amount above Baseline = 0.40 MGD • Permitted amount above Baseline: 2.93 – 2.53= 0.40 MGD
Adjustment for Wastewater Discharge to Local Groundwater = 0.102 MGD • 30% of increased withdrawals are delivered to areas with on-site septic systems: 0.40 MGD x 0.30 (30%) = 0.12 MGD • 85% of water delivered to areas with on-site septic systems returns to groundwater: 0.12 MGD x 0.85 (85%) = 0.10 MGD
Amount to be Mitigated after Adjustment for Wastewater Discharge to Local Groundwater = 0.30 MGD • Permitted amount above baseline (0.40 MGD) – adjustment for wastewater discharge to local groundwater (0.10 MGD) = 0.30 MGD or 300,000 gallons per day

Direct Mitigation, which will improve streamflow as a result of increased groundwater recharge, decreased stormwater runoff to streams, or surface water releases, must be considered first in mitigation planning. Walpole has an annual I/I removal program that is eligible for direct mitigation. Since 2005, Walpole has completed 12 investigation reports that include flow isolation and television inspection of sewer lines, inspections of topside sewer manholes, an analysis of collected field data, a cost-effectiveness analysis, and recommendations for sewer system improvements and rehabilitations. In addition, a town-wide flow metering program was conducted in 2010 to quantify and qualify I/I and to reassess problem areas.

Walpole completed these rehabilitation recommendations which targeted a peak infiltration of approximately 308,048 gallons per day (gpd) in 2007 (from 2005 Report-Year 1), 113,750 gpd in 2009 (from 2008 Report-Year 2), 58,383 gpd in 2011(from 2009 Report-Year 3), and 147,440 gpd in 2016 (2009-2014 Reports-Years 4-7). Per the WMA mitigation crediting guidance for I/I removals, 25% of the peak daily infiltration is eligible for direct mitigation credit in areas where rehabilitation has been completed. Therefore, the total direct mitigation credit for the rehabilitation work for I/I removal is 156,905 gallons. (Please see Appendix C.)

Since 2005, there have been four projects where stormwater BMPs have been installed that meet WMA's requirements for direct mitigation credit. These projects are: The Commons project, the West Street Parking Lot Improvements project, Cumberland Farms Redevelopment project, and the League School of Greater Boston Site Development project. Each of these projects have stormwater BMPs constructed after 2005 which infiltrate stormwater from impervious surfaces previously discharging to surface waters. The total combined direct mitigation credit for these projects is 0.014 MGD which was calculated using WMA's Stormwater BMP Direct Mitigation Calculator. A copy of the table from the Calculator and the Applicant Certification for Stormwater BMP Direct Mitigation Credit is provided in Appendix C. Walpole's total direct mitigation is 170,090 gallons.

Indirect Mitigation, activities that result in environmental improvements that will help to compensate for streamflow impacts, are required when a permittee has insufficient direct mitigation credit. Walpole received 15 indirect mitigation credits for their I/I Operations and Maintenance Plans and studies (5 credits) Wetlands Bylaw (3 credits) and a Stormwater Management Bylaw (7 credits).

Cold Water Fish Resources

The Water Management Regulations revised and promulgated in November 2014 also require WMA permits to address protection of Coldwater Fishery Resources (CFR) and mitigation of withdrawals above the baseline withdrawal volume.

Coldwater Fish Resource protection is not a condition of the WMA Permit. A CFR does exist a significant distance upstream of Walpole's sources in subbasin 21016 (Tubwreck Brook), however MassDEP does not believe these sources will impact the CFR at this time. Thus, Walpole does not have to perform a Coldwater Fishery Desktop Optimization evaluation at this time.

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DRAFT WATER WITHDRAWAL PERMIT
#9P-4-19-307.02
Town of Walpole

This permit is issued 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 beyond the right to withdraw the volume of water for which it is issued.

PERMIT NUMBER: 9P-4-19-307.02 **RIVER BASIN:** Boston Harbor

PERMITTEE: Town of Walpole

EFFECTIVE DATE: XXXXX, 2021
EXPIRATION DATE: February 28, 2030

NUMBER OF WITHDRAWAL POINTS: 18
Groundwater: 18

USE: Public Water Supply
DAYS OF OPERATION: 365

Table 1: Withdrawal Point Identification

Source Name	Source Code	Source Name	Source Code
Mine Brook #1	4307000-01G	Washington #4B	4307000-15G
Mine Brook #2	4307000-02G	Mine Brook #1A	4307000-16G
Mine Brook #3	4307000-03G	Mine Brook #2A	4307000-17G
Washington #5	4307000-08G	Mine Brook #3A	4307000-18G
Washington #6	4307000-09G	Mine Brook #5A	4307000-19G
Mine Brook #5	4307000-11G	Washington #2A	4307000-20G
Neponset #1	4307000-12G	Washington #2B	4307000-21G
Neponset #2	4307000-13G	Washington #3A	4307000-22G
Washington #4A	4307000-14G	Washington #3B	4307000-23G

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Town of Walpole (Walpole) to withdraw water from the Boston Harbor Basin at the rate described in Table 2 below. The permitted withdrawal rate is in addition to the 2.25 million gallons per day (MGD) previously authorized for Walpole under Water Management Act Registration #41930701. The permitted volume is expressed both as an 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 permit period. Walpole's baseline withdrawal for the purpose of triggering "Special Condition 10, Mitigation of Impacts for Withdrawals that Exceed Baseline Withdrawals" is 2.53 MGD.

The Department of Environmental Protection (MassDEP) will use the raw water withdrawal volume from all authorized withdrawal points to assess compliance with the registered and permitted withdrawal volumes.

Table 2: Authorized Withdrawals

Permit Periods	Total Raw Water Withdrawal Volumes			
	Permit		Registration + Permit	
	Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
XXXXX to 2/28/2025	0.53	193.45	2.25 + 0.53 = 2.78	1,014.7
3/1/2025 to 2/28/2030	0.68*	248.20*	2.25 + 0.68 = 2.93*	1,069.45*

*With advance written approval from the Department, Walpole may be authorized to increase annual average daily withdrawals to the maximum authorized (2.93 MGD) prior to 2025 if Walpole is meeting:

- Residential Gallons Per Capita Day (RGPCD) of 65 or less, or all RGPCD functional equivalence requirements in Special Condition 5;
- Unaccounted-for-water (UAW) of 10% or less, or all UAW functional equivalence requirements in Special Condition 6;
- Water conservation requirements in Special Condition 7; and
- Seasonal limits on nonessential outdoor water use in Special Condition 8.

2. Maximum Authorized Daily Withdrawals from Groundwater Withdrawal Points

Withdrawals from permitted withdrawal points are not to exceed the approved maximum daily volumes listed below without specific advance written approval from MassDEP (Table 3).

Table 3: Maximum Authorized Daily Withdrawal Rates		
Source Name	**Source Code**	**Max Day Rate (MGD)**
Mine Brook #1	(4307000-01G)	Combined rate of wells not to exceed 0.72.
Mine Brook #1A	(4307000-16G)	
Mine Brook #2	(4307000-02G)	Combined rate of wells not to exceed 1.15.
Mine Brook #2A	(4307000-17G)	
Mine Brook #3	(4307000-03G)	Combined rate of wells not to exceed 0.72.
Mine Brook #3A	(4307000-18G)	
Washington #5	(4307000-08G)	Combined rate of wells is not to exceed 1.58.
Washington #6	(4307000-09G)	
Mine Brook #5	(4307000-11G)	Combined rate of wells is not to exceed 0.72.
Mine Brook #5A	(4307000-19G)	
Neponset #1	(4307000-12G)	0.25
Neponset #2	(4307000-13G)	0.25
Washington #4A	(4307000-14G)	Combined rate of wells is not to exceed 0.58.
Washington #4B	(4307000-15G)	
Washington #2A	(4307000-20G)	0.432
Washington #2B	(4307000-21G)	0.432
Washington #3A	(4307000-22G)	0.432
Washington #3B	(4307000-23G)	0.432

3. Zone II Delineation

MassDEP records show that Walpole has approved Zone II delineations for its groundwater sources. Therefore, no further Zone II delineation work is required.

4. Wellhead Protection

MassDEP records show that Walpole has successfully adopted local zoning and non-zoning controls that prohibit all uses and activities cited in the MA Wellhead Protection Regulations. Therefore, no further wellhead protection work is required.

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

Walpole's Performance Standard for residential gallons per capita day (RGPCD) is 65 gallons or less. As a condition of the renewed permit Walpole will be required to meet 65 RGPCD within 2 full calendar years of the permit's issuance or adopt a plan to bring the system into compliance by the 5th year of the permit. If at any time after December 31, 2023 that Walpole does not meet the RGPCD Performance Standard, Walpole shall comply with the functional equivalence requirements set forth in Appendix A. Walpole shall report its RGPCD annually in its Annual Statistical Report (ASR).

6. Performance Standard for Unaccounted for Water

Walpole Performance Standard for Unaccounted for Water (UAW) is 10% or less of overall water withdrawal for 2 of the most recent years 3 throughout the permit period. If Walpole does not meet the standard by December 31, 2021, 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. Walpole shall report its UAW annually in its Annual Statistical Report (ASR).

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*.

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. Water Conservation Requirements

At a minimum, Walpole shall implement the following conservation measures forthwith. Compliance with the water conservation requirements shall be reported to MassDEP upon request, unless otherwise noted in Table 4.

Table 4: Minimum Water Conservation Requirements
System Water Audits and 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 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. Walpole shall have repair reports available for inspection by MassDEP. Walpole shall establish a schedule for repairing leaks that is at least as stringent as the following: • Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection. • Leaks of less than 3 gallons per minute at hydrants and appurtenances shall be repaired as soon as possible. • Leaks of less than 3 gallons per minute shall be repaired in a timely manner, but in no event more than 6 months from detection, except that leaks in freeway, arterial or collector roadways shall be repaired when other roadwork is being performed on the roadway. Leaks shall be repaired in accordance with Walpole's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. Walpole shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.
Metering
1. Walpole shall continue to calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2. Walpole shall maintain its system as 100% metered.
Pricing
1. Within sixty days of the effective date of this permit, Walpole shall submit to MassDEP for its review and approval a plan and schedule for establishing and maintaining a water pricing structure that includes the full cost of operating the water supply system.

Thereafter, Walpole shall implement the plan and schedule as approved by MassDEP. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices.
2. Evaluate rates at a minimum every three to five years and adjust costs as needed.
3. Walpole will continue to implement an increasing block rate structure.
4. Walpole shall continue to bill at least quarterly.
Residential and Public Sector Conservation
1. Walpole shall 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. Walpole reports metering water used by contractors using fire hydrants for pipe flushing and construction and shall continue to do so.
Industrial and Commercial Water Conservation
1. Walpole shall continue to inspect industrial facilities and recommend the use of separate meters for process water where appropriate.
Public Education and Outreach
1. Within thirty days of the effective date of this permit, Walpole shall submit to MassDEP a plan and schedule for the development and implementation of a water conservation education and outreach plan designed to educate customers on ways to conserve water. Without limitation, the plan may include the following actions: • 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; • Public space advertising/media stories on successes (and failures); • Conservation information centers perhaps run jointly with electric or gas company; • Speakers for community organizations; • Public service announcements; radio/T.V./audio-visual presentations; • Joint advertising with hardware stores to promote conservation devices; • Use of civic and professional organization resources; • Special events such as Conservation Fairs; • Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and • Provide multilingual materials as needed.
2. Thereafter, Walpole shall develop and implement the water conservation education and outreach plan and schedule as approved by MassDEP. Upon request of MassDEP, Walpole shall report on its public education and outreach efforts.

8. Seasonal Limits on Nonessential Outdoor Water Use

Walpole shall limit nonessential outdoor water use 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 am and after 5 pm when evaporation and evapotranspiration rates are lower.

TABLE 5:
Walpole Seasonal Limits on Nonessential Outdoor Water Use
May 1 to September 30

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 allowed: 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 01105000 –Neponset River at Norwood, MA falls below **6.4 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 6.4 cfs for seven (7) consecutive days.
Streamflow Triggered Restrictions	Nonessential outdoor water use is allowed: a) **Two (2) days per week** before 9 am and after 5 pm when USGS stream gage 01105000 –Neponset River at Norwood, MA falls below: • May 1 – June 30: **30 cfs** for three (3) consecutive days • July 1 – September 30: **18 cfs** for three (3) consecutive day**s** b) **one (1) day per week** before 9 am and after 5 pm when USGS stream gage 01105000 –Neponset River at Norwood, MA falls below **6.4 cfs** for three (3) consecutive days. Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.
For Permittees NOT meeting the 65 RGPCD standard for the preceding year RGPCD > 65 as reported in the ASR and accepted by MassDEP	
Calendar Triggered Restrictions	Nonessential outdoor water use is allowed **one (1) day per week** before 9 am and after 5pm;
Streamflow Triggered Restrictions	Nonessential outdoor water use is allowed one **(1) day per week** before 9 am and after 5 pm when USGS stream gage 01105000 –Neponset River at Norwood, MA falls below: • May 1 – June 30: **30 cfs** for three (3) consecutive days • July 1 – September 30: **18 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 Website Information
If Walpole chooses Streamflow Triggered Restrictions, Walpole shall be responsible for tracking streamflows and recording and reporting to MassDEP when restrictions are implemented.
Streamflow information is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts streamflows in real time, i.e., the most recent, usually quarterly hourly, reading made at each USGS stream gage. Seasonal Limits on Nonessential Outdoor Water Use are implemented when the mean daily streamflow falls below the designated trigger. 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 streamflows. **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 01105000 –Neponset River at Norwood, MA. • Click on the gage number. • Scroll down to "Provisional Date 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.
Walpole 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 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 of exterior building surfaces, parking lots, driveways or sidewalks, except as necessary to apply surface treatments such as paint, preservatives, 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;
- irrigation of gardens, flowers and ornamental plants by means of a hand-held hose or drip irrigation systems; 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 minimal fairway watering, or irrigation by plant nurseries as necessary to maintain stock).

Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions

Walpole 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 that restrictions have been put in place shall be filed each year with MassDEP within 14 days of the restriction's effective date. Filing shall be in writing on the form "Notification of Water Use Restrictions" available on MassDEP's website.

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

9. Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins

Walpole shall minimize the impacts of its groundwater withdrawals from sources in 21016 and Subbasin 21150 by implementing the following water conservation measures:

- Continue to implement retrofit/rebate services on water efficient plumbing fixtures and appliances for customers.
- Require new developers to install high efficiency products in their projects, in accordance with Walpole's Sewer and Water Regulations, Amendment #9, which was approved on August 14, 2017.
- Continue to implement a quarterly billing frequency.
- Continue to implement an increasing block water rate structure to encourage water conservation.
- Maintain its comprehensive water conservation website was created for the town which includes the need for water conservation, as well as strategies consumers can use to reduce their water use indoors and outdoors.

10. Mitigation of Impacts for Withdrawals that Exceed Baseline

Walpole is required to mitigate 0.3 MGD for its renewed permitted withdrawals over baseline (2.53 MGD) in the Boston Harbor Basin. This volume will be met partially with the direct mitigation credit for I/I removal at 156,905 gallons per day (GPD). Walpole also has 14,000 GPD which was calculated using WMA's Stormwater BMP Direct Mitigation Calculator from stormwater projects implemented in town, for a total direct mitigation credit of 170,905 GPD. (Please see Appendix C.)

Walpole received 14 indirect mitigation credits for their I/I Operations and Maintenance Plans and studies (4 credits) Wetlands Bylaw (3 credits) and a Stormwater Management Bylaw (7 credits).

Please see Appendix D. Walpole shall notify MassDEP should there be changes to the status of the mitigation measures. Table 6 contains a summary of Walpole's mitigation credits.

Table 6: Walpole Mitigation Credit	
Direct Mitigation	
Completed I/I Mitigation Projects - See Appendix C for I/I Mitigation Summary and Documentation Chart, Applicant Certification for Mitigation Credit, and Stormwater Project Summary and Certification	
Post 2005 Infiltration Removal	**Volume Credit (GPD)**
156,905 gallons per day	0.157
Post 2005 Stormwater Projects	
14,000 gallons per day	0.014
Indirect Mitigation - See Appendix D for Mitigation Summary and Documentation Chart and Applicant Certification for Mitigation Credit	**Credit (1 credit =10,000 GPD)**
Stormwater Management and Erosion Control Bylaw and Regulations– Chapter 499, Approved Spring 2007	7
Walpole Wetlands Protection Bylaw and Regulations– Chapter 561, Approved July 2019	3
I/I Removal Program Documentation	4
Total Mitigation Credit	**310,000 MGD**

11. Reporting Requirements

Walpole shall report annually as required by completing the electronic Annual Statistical Report (eASR) for public water suppliers and shall provide other reporting as specified in the Special Conditions above.

12. 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

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
Water Management Program Chief
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 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.

Appendix C - Direct Mitigation

Walpole received 0.157 gallons of direct minimization for I/I Removal, and 0.014 gallons for stormwater BMPs.

Walpole I/I Volumes					
Direct/ Indirect	**(inflow or infiltration)**	**Activity**	**Data Sources**	**Volume (MGD)**	**Credit Volume (MGD)**
Direct	infiltration	I/I Removal Program	2007 I/I report	0.308	0.077
Direct	infiltration	I/I Removal Program	2009 I/I report	0.113	0.028
Direct	infiltration	I/I Removal Program	2011 I/I report	0.058	0.015
Direct	infiltration	I/I Removal Program	2016 I/I report	0.147	0.037
			total	**0.616**	**0.157**

Altogether, a combined peak infiltration of 627,621 gpd has been removed. Per the WMA mitigation crediting guidance for I/I removals, 25% of the peak daily infiltration is eligible for direct mitigation credit in areas where rehabilitation has been completed.

Applicant Certification for
Infiltration and Inflow Removal Mitigation Credit

I hereby certify that:

1. I have compiled, evaluated and/or established all pertinent documents, instruments, records and information necessary to provide this certification, including the documents listed as attachments to this certification.
2. I have consulted with legal, technical and other qualified professionals, as necessary for me to make this certification, including Wright-Pierce.
3. The following is true:
    a. Wright-Pierce has reviewed all the documents that have been submitted to MassDEP in support of the infiltration and inflow removal mitigation credit.
    b. The Town of Walpole is in compliance with the requirements of 314 CMR 12.04(2) to develop and implement a MassDEP-approved plan to control infiltration and inflow to its sewer system ("I/I Plan").
    c. The Town of Walpole has established a funding mechanism for the full implementation of its I/I Plan throughout the life of WMA Permit #9P-4-19-307.02 (the "Permit").
    d. All removal work for which mitigation credit is sought occurred in or after 2005.
    e. All removal work for which mitigation credit is sought has been or will be conducted in accordance with MassDEP's Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Surveys, May 2017 ("DEAP's Guidelines").
    f. All removal work for which mitigation credit is sought utilizes removal methods that are reasonable based on the professional judgment of Wright-Pierce. Any estimates for which the estimation method and/or removal method is unknown or does not follow DEP's Guidelines have been clearly identified in the attached documents.
    g. All removal work for which mitigation credit is sought is or will be adequately operated and maintained after construction is completed.
4. I shall maintain a copy of all records, regardless of form (e.g., both printed and electronic) upon which I rely in making this certification until a final decision on this application has been issued by the Department and, if this application is approved, will do so thereafter in accordance with the permit conditions. Such records shall include without limitation all documents described in paragraph 1, above, and any supporting documents provided to me by, or relied upon by, such qualified professionals as I may consult in certifying as to the information set forth in paragraph 2, above.
5. I attest under the pains and penalties of perjury that the information contained in this certification and its attachments is, to the best of my knowledge and belief, true, accurate and complete. I am authorized to make this attestation on behalf of the permit applicant. I am aware that there are significant penalties for submitting false, inaccurate or incomplete information, including, but not limited to, the possibility of fine and imprisonment for knowing violations.
6. I am aware that submitting a false and misleading certification could lead to modification, suspension or revocation of any permit granted pursuant to this certification, as set forth in 310 CMR 36.29 and 36.43.

Attachments:

A. I/I Plan pursuant to 314 CMR 12.04 (2)

B. I/I Analysis report

C. I/I Removal Summary Table

D. Documentation of Post-Rehab Flow Monitoring

Signature of Applicant: _____ Date: 9/17/2020

Printed Name of Applicant: RICHARD MATSOW JR.

STORMWATER BMP DIRECT MITIGATION CALCULATOR

Only green cells can be edited. Gray cells are automatically populated or calculated.

ENTER the name of the WMA permit holder:		Walpole Department of Public Works				
STEP 1: ENTER Recharging BMP Name or Other Identifier	WALPOLE	STEP 3: ENTER the design infiltration depth (inches of runoff per 24-hour storm) the BMP infiltrates in 72 hours.	STEP 4: ENTER the acres of pre-2005 directly connected impervious surface connected to an infiltration BMP since January 1, 2005.	Percent of Annual Precipitation Infiltrated	Infiltration Credit (cubic feet/year)	Infiltration Credit (million gallons per day)
1 - The Commons	49.60	0.7	2.4	0.559	243,624	0.004993
2 - West Street Parking Lot	49.60	0.5	1.5	0.485	133,171	0.002729
3 - Cumberland Farms	49.60	1.8	0.8	0.748	113,930	0.002335
4 - League School	49.60	0.5	2.3	0.485	200,848	0.004116
	49.60			0.000	0	0.000000
	49.60			0.000	0	0.000000
	49.60			0.000	0	0.000000
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	49.60			0.000	0	0.000000
	49.60			0.000	0	0.000000
	49.60			0.000	0	0.000000
						0.014173

Applicant Certification for
Stormwater BMP Direct Mitigation Credit

I hereby certify that:

1. I have compiled, evaluated and/or established all pertinent documents, instruments, records and information necessary to provide this certification, including without limitation, the **Stormwater BMP Direct Mitigation Calculator** Excel workbook provided by MassDEP to calculate the volumetric mitigation credit for each stormwater infiltration Best Management Practice (BMP) for which credit is sought, using the following data:
   Provided by applicant:
   a) Area of existing directly connected impervious surface[1] re-directed to the BMP;
   b) Infiltration BMP's design infiltration depth (maximum inches of runoff per 24-hour storm infiltrated in 72 hours)
   Provided by DEP in Stormwater BMP Direct Mitigation Credit Calculator Excel form:
   c) Percent of annual precipitation infiltrated, based on the BMP design infiltration depth;
   d) Annual average precipitation for the town or city where the project is located.
2. I have consulted with legal, technical and other qualified professionals, as necessary for me to make this certification.
3. The following is true:
   a. All stormwater infiltration BMPs for which mitigation credit is sought were built on or after January 1, 2005 and receive runoff from directly connected impervious surface[1] constructed prior to 2005. All stormwater BMPs for which mitigation credit is sought have been designed and built in accordance with the Massachusetts Stormwater Handbook, whether inside or outside of a wetlands resource area;
   b. All stormwater for which volumetric credit is claimed is recharged to groundwater;
   c. The entire stormwater system for projects that include BMPs for which direct mitigation credit is sought conforms to the Massachusetts Stormwater Handbook, including an operation and maintenance plan.
   d. For stormwater projects located in wetlands or within MS4 jurisdictional areas that include BMPs for which credit is sought, the appropriate municipal authority has reviewed and approved the stormwater plans and specifications, including operation and maintenance plans.
4. I shall maintain a copy of all records, regardless of form (e.g., both printed and electronic) upon which I rely in making this certification until a final decision on this application has been issued by the Department and, if this application is approved, will do so thereafter in accordance with the permit conditions. Such records shall include without limitation all documents described in paragraph 1, above, and any supporting documents provided to me by, or relied upon by, such qualified professionals as I may consult in certifying as to the information set forth in paragraph 2, above.
5. I attest under the pains and penalties of perjury that the information contained in this certification and its attachments is, to the best of my knowledge and belief, true, accurate and complete. I am authorized to make this attestation on behalf of the permit applicant. I am aware that there are significant penalties for submitting false, inaccurate or incomplete information, including, but not limited to, the possibility of fine and imprisonment for knowing violations.

[1] Directly connected impervious surfaces are those whose runoff discharges to a surface water body.

6. I am aware that submitting a false and misleading certification could lead to modification, suspension or revocation of any permit granted pursuant to this certification, as set forth in 310 CMR 36.29 and 36.43.

Attachments:

A. Stormwater BMP Direct Mitigation Credit Calculator Excel spreadsheet

Signature of Applicant: _____ Date: 9/17/2020

Printed Name of Applicant: RICHARD MATHEWS JR

Appendix D – Indirect Mitigation

Walpole received 14 indirect mitigation credits met by a Stormwater Management Ordinance, Local Wetlands Protection Ordinance, Rules, and Regulations, (10 credits), its I/I Removal Program documentation (4 credits).

Walpole's I/I Removal Program Documentation				
Major Basin	**Year Completed**	**Data Sources**	**Activity Type (Infiltration or Inflow)**	**Credit**
Neponset	2007	Annual I/I Removal Program Investigation Report	Infiltration	1
Neponset	2009	Annual I/I Removal Program Investigation Report	Infiltration	1
Neponset	2011	Annual I/I Removal Program Investigation Report	Infiltration	1
Neponset	2016	Annual I/I Removal Program Investigation Report	Infiltration	1
			Total Credits	**4**

Walpole's Bylaw Credits		
Local Wetlands Protection Ordinance Approved 2019	1 credit for enforceability of the bylaw. 1 credit for jurisdiction to resource areas "*whether or not they border surface waters"* 1 credit for Extending Riverfront status to intermittent streams.	3 credits
Stormwater Management Ordinance Approved 2007	2 credits for the geographic extent of the Ordinance (entire municipality) 5 credits for projects 5,000 square feet and larger	7 credits
	Total Credits	**10**