



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

September 7, 2023

Daryn J. Brown
Braintree Municipal Golf Course
101 Jefferson Street
Braintree, MA 02184

Town: Braintree
Program: Water Management Act (WMA)
WMA Permit #: 9P-4-19-040.01
Action: Final Permit

Dear Mr. Brown:

Please find the following attached:

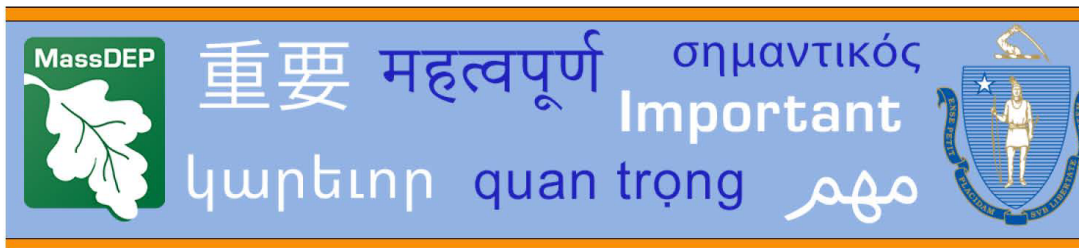
- Findings of Fact in Support of the application of permit #9P-4-19-040.01; and,
- Water Management Act Permit #9P-4-19-040.01 for the Braintree Municipal Golf Course.

If you have any questions regarding this information, please contact Linjun Yao at (781) 686-3862 or via e-mail at Linjun.Yao@mass.gov.

Sincerely,

Duane LeVangie, Chief
Water Management Program
Bureau of Water Resources

ecc: Samantha Woods, North and South Rivers Watershed Association
Julia Blatt and Sarah Bower, Massachusetts Rivers Alliance
[mass.gov.sharepoint.com/W:DWPArchive\SERO\2023\Braintree-Braintree GC-WMA Final Permit-2023-9-7](https://mass.gov/sharepoint.com/W:DWPArchive\SERO\2023\Braintree-Braintree GC-WMA Final Permit-2023-9-7)



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

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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 Anviwònmanal 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
ហើយកម្មវិធីត្រូវបានបកប្រែភ្លាមៗ។
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកដ្ឋានយុត្តិធម៌បរិស្ថានរបស់
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយនាមខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

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

Contact Deneen Simpson 857-406-0738

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.

հայերէն 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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Findings of Fact in Support of FINAL Water Management Permit #9P-4-19-040.01 Braintree Municipal Golf Course

The Massachusetts Department of Environmental Protection (MassDEP) has completed its review of the Braintree Municipal Golf Course's ("BMGC") Water Management Act (WMA) permit application of May 4, 2022, for increased water withdrawal from the Boston Harbor Basin. The new permit will supersede BMGC's current WMA permit. The Department hereby proposes to issue Water Management Permit #9P-4-19-040.01 (the "Permit") in accordance with the Water Management Act (M.G.L. c. 21G) and the regulations promulgated thereunder at 310 CMR 36.00. The Department makes the following Findings of Fact in support of the attached FINAL Permit and includes herewith its reasons for issuing the Final Permit and for 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 amend, suspend or terminate the Permit, after notice and hearing, in accordance with the provisions of 310 CMR 36.29(1).

Braintree Municipal Golf Course Water Withdrawal History

Braintree Municipal Golf Course (BMGC) is an 18-hole golf course located in Braintree, Massachusetts. BMGC was first issued a Water Management Act permit on June 1, 1991, for its withdrawal from its man-made onsite Irrigation Pond in the Boston Harbor Basin at a rate of 12.0 million gallons over 240 days, or 0.05 million gallons per day (MGD). BMGC's actual withdrawal volumes were consistently above the permitted allocation of 0.05 MGD. At that time, MassDEP did not take enforcement for exceedances of less than 100,000 gpd. In 2014, the WMA regulations were clarified to expressly provide that any exceedance over the permitted volume required submission of an application for a new permit. As part of the renewal process, MassDEP issued an Order to Complete (OTC) dated August 28, 2019, that was intended to address BMGC's exceedance of its permitted volume. BMGC submitted a response to the OTC on February 3, 2020. Due to the increased volume, BMGC submitted a new WMA permit application on May 4, 2022, proposing to increase the withdrawal volume to 20.0 MGY or 0.10 MGD over a reduced withdrawal period (removing November) through recognition of their permitted surface water withdrawal point.

Permit History and Expiration Date

BMGC's 1991 WMA permit was initially scheduled to expire on February 28, 2010. The Department accepted a timely renewal application from BMGC on November 27, 2009. MassDEP issued an interim permit on February 28, 2010 to provide time for review of the renewal application. The interim permit was valid for one year from the date of issuance until February 28, 2011. Subsequently, the Permit Extension Act, Section 173 of Chapter 240 of the Acts of 2010, as amended by Sections 74 and 75 of Chapter 238 of the Acts of 2012, extended the interim permit by four years to February 28, 2015.

On January 9, 2015, the Department informed BMGC that the Department would need additional time before making a determination on the application in order to ensure that all permit renewal applicants in the Boston Harbor Basin fully understood the 2014 amendments to the Water Management Regulations (discussed below), and to give proper consideration to all permit renewal applications within the basin. Pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7), BMGC's interim permit continues in force and effect until the Department issues a final decision on the permit renewal application.

The Department published notice of the permit renewal application in the Environmental Monitor on September 5, 2018. No comments were received.

In accordance with 310 CMR 36.17(1), the expiration date for all new permits in the Boston Harbor Basin will be June 5, 2031.

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 methodology developed through SWMI (see the Safe Yield in the Boston Harbor Basin section of this document);
- 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 Boston Harbor 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 for the Boston Harbor Basin is 54.9 million gallons per day (MGD), and total registered and permitted withdrawals are 37.12 MGD. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Boston Harbor Basin, will be within the safe yield and may be further conditioned as outlined in the regulations.

Findings of Fact for 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 FINAL permit. This summary of special conditions is not intended to, and should not be construed as, modifying any of the 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, reflects the permitted withdrawal volume of 0.1 million gallons per day (MGD) over 214 days (April – October) during the irrigation season for a total annual volume not to exceed 20.0 million gallons per year. The BMGC requested in its permit renewal application that the irrigation withdrawal period be reduced by removing the month of November and the new permit application requested the annual authorized withdrawal volume be increased from 12.0 MGY to 20.0 MGY to reflect the long-standing irrigation practice at the course. The new permit reflects this change by increasing the maximum authorized annual average daily withdrawal volume from 0.05 MGD to 0.10 MGD while decreasing the withdrawal period to 214 days.

Special Condition 2, Maximum Authorized Daily Withdrawal from Withdrawal Point, reflects the volume of surface water withdrawal expressed as a maximum daily rate for the designated wells included in the permit. Withdrawals in excess of these maximum daily rates require approval from the Department. BMGC requested that the withdrawal point listed be updated to accurately reflect their withdrawal source on the property, which has been replaced by a 7-acre, 43-million-gallon man-made pond (WM4855-01S). The new permit reflects this change by relocating the authorized withdrawal point while maintaining its maximum authorized daily withdrawal volume at 0.648 million gallons which was formerly authorized. Over the past five years of record (2017-2021), the average maximum daily volume was 0.385 MGD. Withdrawals in excess of this maximum daily rate require the prior written approval of the Department.

Former Special Condition 2, Metering, has been removed from the Special Conditions and moved to the General Conditions of this FINAL permit. The General Conditions requires that meters on the water withdrawal points be calibrated annually. A copy of the most recent calibration report and the date of calibration should be submitted with the ARF. BMGC has submitted calibration reports since 2020 with their ARFs.

Special Condition 3, Water Conservation Requirements

The water conservation practices utilized at the BMGC, submitted as part of its new permit application, have been combined with the Best Management Practices that BMGC has implemented (according to the Seasonal Demand Management Plan included in Special Condition 4). This combination constitutes the water conservation requirements of the new permit.

Special Condition 4, Seasonal Demand Management Plan

Consistent with sound water conservation practices, permitted golf courses will be required to implement a drought-triggered Seasonal Demand Management Plan (SDMP) as a condition of their Water Management Permit. The SDMP, at a minimum, restricts nonessential outdoor water use between May 1st and September 30th when the Secretary of the Executive Office of Energy and Environmental Affairs declares a drought Level 1 (Mild Drought) or higher for the region in which the golf course is located.

The SDMP shall also be implemented at times when streamflow falls below a designated flow trigger measured at an assigned, web-based, real-time 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. The streamflow-triggered response actions shall be consistent with the drought-triggered response actions at the Mild Drought level. 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 low-flow statistic being applied, referred to as the “7-day low-flow statistic,” is the median value of the annual 7-day low flows for the period of record for the assigned gage. The 7-day low flow statistic may respond more quickly to low-flow conditions than the State’s Drought Level Declaration.

BMGC has been assigned the USGS stream gage # 01105583 – Monatiquot River at East Braintree, MA. The 7-day low flow at this site is 1.5 cubic feet per second (cfs). Should the reliability of the flow measurement on the Monatiquot River at East Braintree gage be so impaired as to question its accuracy, BMGC may request an alternate USGS stream gage for triggering water use restrictions based on detailed, site-specific data for a period of one year or more, provided to the Department for its review and approval. The burden of an alternate stream trigger justification and demonstration is incumbent on the proponent. MassDEP reserves the right to require use of a different gage in cases where an assigned local USGS gage is down because of equipment failure, abandonment or is otherwise inoperable.

BMGC shall be responsible for tracking the Massachusetts Drought Levels and recording when drought-triggered restrictions are implemented. BMGC shall also be responsible for tracking streamflow and recording when streamflow-triggered restrictions are implemented. See the SDMP in Table 5 and attached USGS Water Alert instructions for tracking information (Appendix A).

The SDMP is intended to address the necessary minimums of acceptable demand management required as dry conditions begin to impact our environment from May through September. Of particular importance in developing the SDMP and in evaluating its effect on the golf course's irrigation, is the recognition of nonessential outside water uses. MassDEP considers the irrigation of tees and greens as essential uses, but fairways and roughs less so.

Section C of the SDMP provides three options for water use reduction. Two options for water use reduction are in table format with the third option being an open-ended alternative approach. The Acres Table requires that BMGC identify the number of acres it irrigates for tees and greens, fairways, roughs, landscaping and ornamentals, along with a percent reduction per unit area with worsening drought. The Time Table requires that BMGC identify irrigation in timing reduction cycles.

As part of the Order to Complete responses, BMGC submitted a SDMP using the Time Table reductions. MassDEP has accepted BMGC's proposed SDMP and it is included as a condition of this FINAL permit.

BMGC requested to remove the USGS stream gage # 01105583 as a drought trigger location for this SDMP condition of the permit. MassDEP evaluated the impact of using the 7-day low-flow trigger versus the Massachusetts Drought Declarations from 2019 through 2022 on the number of days that restrictions would have been triggered. Based on our evaluation of the declared droughts and the 7-Day Trigger for the period of 2019-2022, there is very little difference on when restrictions would occur. Thus, this permit will leave the condition as originally identified.

Please note that all permitted golf courses are required to notify MassDEP when SDMP or other required restrictions are put in place. Copies of the notification forms for golf courses can be found at <https://www.mass.gov/info-details/outdoor-water-use-restrictions-for-cities-towns-and-golf-courses>.

Special Condition 5, Mitigation of Impacts for Withdrawals that Exceed Baseline

Withdrawals, requires mitigation of the impacts of withdrawals above the permittee's baseline, which is based on withdrawals made during 2003-2005. The calculated baseline withdrawal volume for BMGC is 0.05 MGD, based on 2005 authorized withdrawal volume. BMGC's average annual water use between 2016 and 2021 was 0.083 MGD, which indicated that system-wide withdrawal volumes have been above BMGC's baseline volume. BMGC's permit application request indicates that BMGC's water withdrawals are expected to exceed the 0.05 MGD baseline during the permit period. The mitigation volume is calculated as $0.10 - 0.05 = 0.05$ MGD.

With the new permit application, BMGC submitted a mitigation plan to address the 0.05 MGD increase over baseline with Direct Mitigation. MassDEP identified that the Rain Garden project described in their submission could potentially qualify as a direct mitigation credit provided additional information was submitted. MassDEP requested that the information necessary to complete the *Stormwater BMP Direct Mitigation Credit Methodology* be supplied. In its OTC response, BMGC stated that the information necessary to complete the *Stormwater BMP Direct Mitigation Calculator* was unavailable.

BMGC instead plans to mitigate their additional withdrawals through participation in the Audubon Cooperative Sanctuary Program (ACSP) which would provide indirect mitigation sufficient for the increased withdrawals over baseline. BMGC has been approved by the ACSP's certification for the Site Assessment / Environmental Planning, Wildlife and Habitat Management, and Water Conservation, plans to apply ACSP's certifications of Water Quality Management. Within 3 years of the issuance of this permit, BMGC must complete the application for this certification to qualify for six indirect mitigation credits, which is equivalent to 60,000 gallons per day. The Department will confirm BMGC's efforts to secure these certifications and maintain them during the term of the permit.

Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins, requires permittees with permitted groundwater sources in subbasins¹ with a net groundwater depletion (NGD) of 25% or more during August to minimize their withdrawal impacts on those subbasins to the greatest extent feasible, through an extension of water conservation and demand management that go beyond standard the Water Management Act permit requirements.

Since BMGC's withdrawal source is a man-made irrigation pond, minimization is not required by this 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 Braintree Municipal Golf Course's withdrawals in subbasin #21221 do not impact any waters that MA Division of Fisheries and Wildlife has identified as supporting coldwater fish at this time.

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).



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Executive Office of Energy & Environmental Affairs

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Commissioner

FINAL WATER WITHDRAWAL PERMIT

#9P-4-19-040.01

Braintree Municipal Golf Course

This renewal of Permit #9P-4-19-040.01 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-4-19-040.01

RIVER BASIN: Boston Harbor

PERMITTEE: Braintree Municipal Golf Course
101 Jefferson Street
Braintree, Massachusetts 02184

EFFECTIVE DATE: September 7, 2023

EXPIRATION DATE: June 5, 2031

NUMBER OF WITHDRAWAL POINTS: 1
Surface water: 1

USE: Golf Course Irrigation

DAYS OF OPERATION: 214 April – October

LOCATION(S):

Source	Source ID	Latitude	Longitude	Location
Irrigation Pond	WM4855-01S	42° 12' 00"	71° 00' 40"	101 Jefferson St., Braintree

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This Permit authorizes Braintree Municipal Golf Course to withdraw water from the Boston Harbor Basin at the rate described below (Table 1). The permitted volume is expressed both as an annual average daily withdrawal rate (million gallons per day or MGD), and as a total annual withdrawal volume (million gallons per year or MGY).

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

Table 1. Maximum Authorized Annual Average Withdrawal Volumes

Permit Periods	Total Water Withdrawal Volumes	
	Daily Average (MGD)	Total Annual (MGY)
9/7/2023 to 6/5/2026	0.1	20.0
6/6/2026 to 6/5/2031	0.1	20.0

2. Maximum Authorized Daily Withdrawals from Withdrawal Point

Withdrawals from withdrawal points are not to exceed the approved maximum daily volume listed below (Table 2) without specific advance written approval from MassDEP.

Table 2. Maximum Daily Withdrawal Volumes

Source	Maximum Daily Rate (MGD)
WM4855-01S	0.648

3. Water Conservation Requirements

The Water Conservation Practices Utilized at Braintree Municipal Golf Course, submitted as part of its renewal application, has been combined with the Best Management Practices that Braintree Municipal Golf Course indicated as being implemented (according to the Seasonal Demand Management Plan included in Special Condition 4). This combination constitutes the water conservation requirements of this permit.

Table 3. Water Conservation Requirements

a. Metering 100% of water use, and calibrating source meters annually.
b. Implementation of an irrigation system inspection and maintenance program that includes the following on a routine basis: <ul style="list-style-type: none">• Leak detection and repair: Daily monitoring of the golf course to ensure no leaks throughout the system are present.

<ul style="list-style-type: none">• Weekly Sprinkler head maintenance and replacement to ensure proper trajectory, pressure, and rotation.• Weekly cleaning or replacing clogged nozzles.
c. Use of portable soil moisture sensors and golf weather apps to increase the efficiency of the irrigation system
d. Irrigating in the early morning or evening hours when evaporation rates are at their lowest, to extent practicable to maintain the turf
e. Regular aerating of turf to increase the percolation of water into the soil
f. Use of mulch materials in planting beds to improve water-holding capacity of the landscaping
g. Use of environmentally safe wetting agents to improve water infiltration and minimize evaporation
h. Use of low water use or native drought tolerant plants to the greatest extent practicable
i. Employee training in water conservation and management

4. Seasonal Demand Management Plan

Braintree Municipal Golf Course shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in the Seasonal Demand Management Plan (SDMP). At a minimum, restrictions shall commence when the Secretary of the Executive Office of Energy and Environmental Affairs declares a Level 1- Mild Drought or higher for the region in which the golf course is located.

The SDMP shall also be implemented at times when streamflow falls below a designated flow trigger measured at an assigned, web-based, real-time U.S. Geologic Survey (USGS) groundwater 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 low-flow statistic being applied, referred to as the “7-day low-flow statistic,” is the median value of annual 7-day low flows for the period of record for the assigned gage. The 7-day low-flow statistic is expected to respond more quickly to low-flow conditions than the Drought Level Declaration.

Braintree Municipal Golf Course has been assigned USGS stream gage # 01105583 – Monaquot River at East Braintree, MA. The 7-day low flow at this site is 1.5 cubic feet per second (cfs). BMGC may request an alternate USGS stream gage for triggering water use restrictions based on detailed, site-specific data for a period of one year or more, provided to the Department for its review and approval. The burden of an alternate stream trigger justification and demonstration is incumbent on the proponent. MassDEP reserves the right to require use of a different gage in cases where an assigned local USGS gage is down because of equipment failure, abandonment or is otherwise inoperable.

Braintree Municipal Golf Course selected a time-reduction approach, which requires that the club reduces irrigation by time (Table 4).

Golf permittees must notify MassDEP within 14 days of the effective date for triggering and implementing their SDMP. Notification is required for the initial implementation only once each year. Copies of the notification forms for golf courses can be found at <https://www.mass.gov/info-details/outdoor-water-use-restrictions-for-cities-towns-and-golf-courses>

Table 4. Braintree Municipal Golf Course Time-Reduction in its SDMP

Irrigating for Shorter Durations as Drought Severity Increases Reduced Minutes in Irrigation Cycles								
Massachusetts Drought Levels	Irrigated Tees & Greens		Irrigated Fairways		Irrigated Roughs		Irrigated Landscape & Ornamentals	
	Percent	Time (min.)	Percent	Time (min.)	Percent	Time (min.)	Percent	Time (min.)
Normal	Full cycle	32	Full cycle	25	Full Cycle	20	100%	20
Mild Drought or 7-Day Low Flow Trigger is reached	Full cycle	32	80%†	20	50%†	10	0%*	
Significant Drought	Full cycle	32	60%†	15	0%			
Critical Drought	Full cycle	32	40%†	10	0%			
Emergency **	TBD		0%		0%			

† Irrigation shall not occur between the hours of 9 a.m. and 5 p.m., except that hand-watering of hot spots may occur at any time

* Courses whose core business includes a special event venue may continue to irrigate gardens, flowers and ornamental plants by means of hand-held hose or drip irrigation during a Mild, Significant, or Critical Drought.

** Mitigation actions to be determined by the Governor’s Emergency Proclamation.

5. Mitigation of Impacts for Withdrawals that Exceed Baseline Withdrawals

The Braintree Municipal Golf Course is required to mitigate for any increase in withdrawals above the permittee’s baseline of 0.05 MGD. Since BMGC has a permit that authorizes 0.10 MGD in withdrawals, mitigation is required by this permit for 0.05 MGD.

The Permittee shall mitigate its additional withdrawals through participation in the Audubon Cooperative Sanctuary Program (ACSP) which will provide indirect mitigation sufficient for the increased withdrawals over baseline. BMGC has been approved by the ACSP’s certifications of the Site Assessment\Environmental Planning, Wildlife and Habitat Management, and Water Conservation. Within 3 years of the issuance of this permit, BMGC must complete the application for ACSP’s certification of Water Quality Management, to qualify for six indirect mitigation credits, which is equivalent to 0.06 MGD. Once the ACSP recognitions are obtained, BMGC shall maintain those required ACSP recognitions during the term of this permit.

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 water so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The Permittee or the Permittee's agent shall allow personnel or authorized agents or employees of the Department to enter and examine any property over which Permittee has authority, title or control, for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by the Department pursuant to M.G.L. c. 21G, §§ 15-17, 310 CMR 36.00, M.G.L. c. 111, § 160, or any other enabling authority.
5. **Transfer of Permits** This permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to a transfer application on forms provided by the Department requesting such approval, received by the Department at least thirty (30) days before the effective date of the proposed transfer, and otherwise in accordance with the requirements of 310 CMR 36.33. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.33(5).
6. **Duty to Report** The Permittee shall submit annually, on a form provided by the Department, a certified statement of the withdrawal. Such report is to be received by the Department by the date specified by the Department. Such report must be submitted as specified on the report form.
7. **Duty to Maintain Records** The Permittee shall be responsible for maintaining withdrawal records and all other records as specified by this permit.
8. **Metering** Withdrawal points shall be metered. Meters shall be calibrated annually. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
9. **Right to Amend, Suspend or Terminate** The Department may amend, suspend or terminate the permit in accordance with M.G.L. c. 21G and 310 CMR 36.29.

APPEALS

Any person aggrieved by this decision may request an adjudicatory hearing on this Permit by timely filing a Notice of Claim for an Adjudicatory Appeal ("Notice of Claim") in accordance with 310

CMR 36.37 and 310 CMR 1.01 within twenty-one (21) days of its receipt of this Permit. The Notice of Claim shall state specifically, clearly and concisely the facts that are grounds for the appeal, the relief sought, and any additional information required by applicable law or regulation. A copy of this Permit shall be included with a Notice of Claim. No request for an appeal of this Permit shall be validly filed unless a copy of the request is sent at the same time by certified mail, or delivered by hand, to the local water resources management official in the community in which the withdrawal point is located; and for any person appealing this decision, who is not the Permittee, unless such person notifies the Permittee of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to the Department.

The Notice of Claim and supporting documentation must be sent by certified mail or hand delivered to:

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

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

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

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



Duane LeVangie
Water Management Program Chief
Bureau of Water Resources

September 7, 2023

Date

Appendix A – Instructions for Accessing Streamflow Website Information

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 01105583 – Monaquot River at East Braintree, 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.

Braintree Municipal Golf Course shall document compliance with the Seasonal Nonessential Outdoor Water Use Restrictions annually. All permitted golf courses must notify MassDEP within 14 days of the effective date for triggering and implementing their SDMP. Notification is required for the initial implementation only each year. Copies of the notification forms for golf courses can be found at <https://www.mass.gov/info-details/outdoor-water-use-restrictions-for-cities-towns-and-golf-courses>.