



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
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

April 20, 2022

South Shore Country Club
Attn: Jacob Silva, Superintendent
274 South Street
Hingham, MA 02043

Town: Hingham
WMA Permit #: 9P4-4-19-131.03
Program: Water Management Act
Action: Permit Renewal

Dear Mr. Silva:

Please find the following attached:

- Findings of Fact in Support of the renewal of Permit #9P4-4-19-131.03; and
- Water Management Act Permit #9P4-4-19-131.03 for South Shore Country Club.

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

Sincerely,

Duane LeVangie
Water Management Program
Bureau of Water Resources

ecc: Kelly Cardoza, Avalon Consulting Group Sylvia Schuler, Hingham Conservation Comm.
Julia Blatt & Sarah Bower, Mass Rivers Alliance Joe Fisher, Hingham Select Board
Samantha Woods, Weir River Watershed Association
Jim McLaughlin and Patti Kellogg, MassDEP SERO

mass.gov.sharepoint.com\W:\SERO\2022\Hingham-9P441913103-WMA Final Permit-2022-04-20

This information is available in alternate format. Contact Glynis Bugg at 617-348-4040.

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Massachusetts Department of Environmental Protection
One Winter Street, Boston MA 02108 • Phone: 617-292-5751
Communication For Non-English Speaking Parties
 - 310 CMR 1.03(5)(a)



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):

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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。



4(b) 中国（简体中文）(Chinese (Simplified)):

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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 đã dạng tại các số điện thoại được liệt kê dưới đây.



7 ប្រទេសកម្ពុជា (Kmer (Cambodian)):

ឯកសារនេះគឺមានសារៈសំខាន់និងគួរត្រូវបានបកប្រែភ្លាម។ ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនងរដ្ឋាករជាតិសាមគ្គីភាព MassDEP នៅលេខទូរស័ព្ទដែលបានរាយខាងក្រោម។



8 Kriolu Kabuverdianu (Cape Verdean):

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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.

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**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 번역해야 합니다. 당신이 번역이 문서가 필요하다면 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 فوراً ترجمه شده است. اگر شما نیاز به این سند ترجمه شده، لطفاً با ما تماس تنوع مدير 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.

**16 Ελληνική (Greek):**

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):**

Questo documento è importante e dovrebbe essere tradotto immediatamente. Se avete bisogno di questo documento tradotto, si prega di contattare la diversità Direttore di MassDEP ai numeri di telefono elencati di seguito.

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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 Water Management Permit #9P4-4-19-131.03 South Shore Country Club

The Department of Environmental Protection (“MassDEP” or “the Department”) has completed its review of the South Shore Country Club (“South Shore”) Water Management Act (WMA) permit renewal application. This review was conducted in regard to the permit for South Shore to withdraw water from the Boston Harbor Basin. The Department hereby issues Water Management Permit #9P4-4-19-131.03 (the “Permit”) in accordance with the Water Management Act (M.G.L. c. 21G). The Department makes the following Findings of Fact in support of the attached Permit, and includes herewith its reasons for issuing the Permit and for the conditions of approval imposed, as required by M.G.L. c. 21G, § 11, and 310 CMR 36.00. The Permit is being issued since such action is necessary for the promotion of the purposes of M.G.L. c. 21G. The Department may modify, suspend or terminate the Permit, after notice and hearing, for violations of its conditions, of M.G.L. c. 21G, or of regulations adopted or orders issued by the Department, and when deemed necessary for the promotion of the purposes of the Water Management Act.

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

Withdrawal Description and History

The South Shore Country Club has operated a golf course in Hingham since 1922 and expanded the course from three to 18 holes in 1952. On November 7, 2007, the Department and South Shore entered into an Administrative Consent Order (ACO). The ACO followed the Department’s Golf Course Initiative, which was undertaken to ascertain which existing golf course withdrawals exceeded the WMA threshold without proper authorization under the Act. The Golf Course Initiative revealed that the Town of Hingham operated South Shore and was irrigating approximately 53 acres of turf, lawn, and ornamentals, but an application to register the course’s historic water withdrawal had not been filed with the Department. The ACO required South Shore to apply for a WMA permit, and on February 19, 2009, the WMA permit was issued. All Boston Harbor Basin water withdrawal permits were scheduled to expire on February 28, 2010, and South Shore filed to renew its permit on November 19, 2009. However,

as a result of permit extensions issued by the Department (see “Permit Extensions” below), South Shore’s existing permit continues in force and effect until the Department issues a final decision on the permit renewal application.

On August 1, 2019, the Department sent South Shore a Permit Renewal Order to Complete (OTC) that outlined additional information necessary for South Shore to complete the Boston Harbor Basin permit renewal process. South Shore responded to the OTC on October 8, 2019.

This permit renewal does not authorize a change in withdrawal sources or withdrawal volumes. No permit conditions have been added or removed; however, modifications were made to Special Condition 3 to reflect updates to the WMA Program’s Seasonal Demand Management Plan.

Permit Extensions

South Shore’s Boston Harbor Basin permit was issued on February 19, 2009 and was originally set to expire on February 28, 2010, unless a permit renewal application was filed. South Shore filed to renew its permit on November 19, 2009. The Department published notice of the permit renewal application in the Environmental Monitor on January 27, 2010 and on September 5, 2018. No comments on the permit were received.

South Shore was issued two Interim Permits extending the expiration date of the permit an additional year each time. During the term of the second Interim Permit, the expiration dates for all Water Management permits were extended for four years by Chapter 240 of the Acts of 2010 and further extended by Chapter 238 of the Acts of 2012, collectively known as the Permit Extension Act. In addition, in a letter dated March 28, 2016, the Department informed South Shore 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 new Water Management Regulations (promulgated in November 2014), 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), South Shore’s existing permit continues in force and effect until the Department issues a final decision on the permit renewal application. The expiration date for all permits going forward in the Boston Harbor Basin will be February 28, 2030, in order to restore the staggered permitting schedule set forth in the regulations.

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:

- Impact of the withdrawal on other water sources;
- Safe yield determinations for the major river basins based on a new methodology developed through SWMI (see description that follows);
- 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.
- 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 calculation for the Boston Harbor Basin is 54.9 million gallons per day (MGD), and total registered and permitted withdrawals are 37.94 MGD. The

maximum withdrawals that are 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 conditioned as outlined in the regulations. Withdrawal authorizations are further limited by other factors, such as the impact to local resources, water quality constraints, pumping rate limits placed on individual sources, and the regulatory requirement that permit holders demonstrate a need for the water.

Findings of Fact for Special Permit Conditions

The following Findings of Fact for the special conditions included in the Permit generally describe the rationale and background for each special condition in the Permit. This Findings of Fact also explain any changes to special conditions from prior permits, when applicable. This summary of permit special conditions is not intended to, and should not be construed as, modifying any of the permit special conditions. In the event of any ambiguity between this summary and the actual permit conditions, the permit language shall control.

Special Condition 1, Maximum Authorized Annual Average Withdrawal Volume, authorizes an annual average withdrawal volume of 20.6 million MGY of water, or 0.098 MGD over 210 days annually from its two source ponds and wellfield in the Boston Harbor Basin. Water is withdrawn from the Hole #9 Wellfield that consists of four groundwater wells manifolded together, and two ponds (Pond #7 and Pond #14), both of which are natural, unlined ponds. The Pond #7 withdrawal volume is reported as the total annual withdrawal volume in the South Shore’s Annual Report Forms (ARFs), because withdrawals from both the Hole #9 Wellfield and Pond #14 are fully discharged into Pond #7, and the Pond #7 withdrawals are applied to the course.

The authorized volume of 20.6 MGY remains unchanged in the renewed permit. In its 12-year permit history, South Shore reported an annual withdrawal volume in exceedance of 20.6 MGY only once, which was in 2010 (27.23 MGY). The table below provides the five most recently reported years of South Shore’s withdrawal volumes.

South Shore 2016-2020 Annual Withdrawal Volumes (MGY)

South Shore Country Club	2016	2017	2018	2019	2020
Reported Withdrawal*	16.40	12.48	11.69	9.49	18.33

*Reported withdrawal volume from Pond #7

Special Condition 2, Maximum Authorized Daily Withdrawal from Authorized Withdrawal Points, authorizes a maximum daily withdrawal volume of 0.60 MGD from the Hole #9 Wellfield; 0.57 from Pond #7; and 0.38 from Pond #14. The reported maximum daily volumes in the South Shore’s ARFs have never exceeded these volumes. Recent maximum daily withdrawal volumes are provided in the table below.

2016-2020 South Shore Maximum Daily Withdrawal Volumes (MGD)

Year	2016	2017	2018	2019	2020
Reported max daily volume, Hole #9 Wellfield	0.47	0.45	0.33	0.23	0.41

Reported max daily volume, Pond #7	0.54	0.48	0.41	0.40	0.38
Reported max daily volume, Pond #14	0.00	0.00	0.24	0.22	0.26

Special Condition 3, Water Conservation and Seasonal Demand Management Plan, requires South Shore to continue implementing the Seasonal Demand Management Plan (SDMP) that it submitted to the Department in 2009, titled *Irrigation Management, Water Conservation, and Seasonal Demand Management Plan for South Shore Country Club, Town of Hingham*. This plan was incorporated into the previous permit, and its conditions and requirements will remain in effect in the renewed permit.

The SDMP requires implementation of Best Management Practices for water conservation and course management. The SDMP also requires water-use reductions between May 1st and September 30th when the Massachusetts Drought Management Task Force declares a Drought Level 1 (“Mild”, formerly “Advisory”) or higher (Level 2-Significant, Level 3-Critical, or Level 4-Emergency) for the Drought Region in which the golf course is located (see <https://www.mass.gov/service-details/drought-regions>).

An addition has been made to the previous permit’s SDMP requirements in accordance with updates to the Department’s Seasonal Demand Management Plan since 2009. Namely, water-use reductions shall also be implemented at times when streamflow falls below a designated low-flow value at an assigned, web-based, real-time U.S. Geologic Survey (USGS) stream gage from May 1st through September 30th. This change will require that reductions commence when the streamflow falls below the low-flow value for three consecutive days. The streamflow-triggered response actions shall be consistent with the drought-triggered response actions at a Drought Level 1 (Mild). 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”, is the median value of the annual 7-day low flows for the period of record for the assigned gage.

South Shore has been assigned the following USGS stream gage: #01105638, Weir River at Leavitt Street at Hingham, MA. The 7-day low flow at this site is 0.62 cubic feet per second (cfs). Should the reliability of the flow measurement at the Weir River gage be so impaired as to question its accuracy, South Shore may request the Department’s review and approval to transfer to another gage to trigger restrictions. The Department reserves the right to require use of a different gage.

South Shore shall be responsible for tracking the Massachusetts Drought Management Task Force drought declarations and recording when drought-triggered restrictions are implemented. South Shore shall also be responsible for tracking streamflows and recording when streamflow-triggered restrictions are implemented. The permit includes tracking instructions. Within 14 days of implementing water use reductions for the first time in a calendar year, South Shore shall notify the Department by submitting the MassDEP Notification of Water Use Reductions Form for Golf Courses (<https://www.mass.gov/files/documents/2018/10/25/restrict-golfcourse.pdf>).

Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins. Pursuant to 310 CMR 36.22, a permit applicant with a groundwater source(s) in a subbasin having August net groundwater depletion (NGD) of 25% or greater shall submit a plan to minimize the impacts of the withdrawals to the greatest extent feasible.

One of South Shore's three sources, Pond #14, is located in a subbasin with an August NGD above 25% (subbasin 21038, which has an NGD of 113%); however, minimization requirements do not apply to surface water sources. South Shore's groundwater source is in a subbasin in which an August NGD has not been established. Therefore, minimization measures are not required.

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

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

The calculated baseline withdrawal volume for South Shore is 20.6 MGY or 0.098 MGD, which is equal to its authorized use. This volume is based on South Shore's 2003 withdrawal volume plus a 5% buffer. The 2003 withdrawal volume was reported in South Shore's February 5, 2008 WMA permit application and is the only year during the baseline period for which withdrawal records are available.

Within its 12-year permit history, South Shore's reported water use exceeded 20.6 MGY only once, in 2010. In its October 18, 2019 OTC response, South Shore indicated that it does not anticipate its demand will exceed the baseline volume in the future, and it noted several BMPs that have been implemented since 2010 to prevent further exceedances. Therefore, a mitigation plan is not required. If the baseline volume is exceeded in the future, South Shore will need to mitigate the additional volume and may need to apply for a new permit for the increased withdrawal.



Department of Environmental Protection

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Secretary

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Commissioner

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

This issuance of Permit #9P4-4-19-131.03 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: 9P4-4-19-131.03

RIVER BASIN: Boston Harbor Basin

PERMITTEE: South Shore Country Club
274 South Street
Hingham, MA 02043

ISSUANCE DATE: April 20, 2022

EXPIRATION DATE: February 28, 2030

TYPE AND NUMBER OF WITHDRAWAL POINTS:
Groundwater: 1
Surface Water: 2

USE: Golf Course Irrigation

DAYS OF OPERATION: 210 (April – October)

LOCATIONS:

Table 1. Withdrawal Point Identification

Source Well Name	Source ID
Hole #9 Wellfield	WM12364-03G
Pond #7	WM12364-01S
Pond #14	WM12364-02S

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes South Shore Country Club to withdraw 20.60 million gallons per year (MGY) of water, or an average of 0.098 million gallons per day (MGD) over a 210-day season from the Boston Harbor Basin, as shown in Table 2. The Pond #7 withdrawal volume shall be reported as the total annual withdrawal volume in the WMA Annual Report Forms.

Table 2. Authorized Withdrawal Volumes – Boston Harbor Basin

Permit Periods		Permit	
		Daily Average (MGD)	Annual Total (MGY)
Period One Years 1-5	4/20/2022 to 2/28/2025	0.098	20.60
Period Two Years 6-10	3/1/2025 to 2/28/2030	0.098	20.60

2. Maximum Authorized Daily Withdrawal Volume from Withdrawal Points

Withdrawal from South Shore Country Club's permitted withdrawal points are not to exceed the approved maximum daily volumes in Table 3 without specific advance written approval from the Department.

Table 3. Maximum Daily Withdrawal Rates (MGD)

Well Name	Source ID	Maximum Daily Rate
Hole #9 Wellfield	WM12364-03G	0.60 MGD
Pond #7	WM12364-01S	0.57 MGD
Pond #14	WM12364-02S	0.38 MGD

3. Water Conservation and Seasonal Demand Management Plan

South Shore Country Club shall be responsible for implementing the *Irrigation Management, Water Conservation, and Seasonal Demand Management Plan for South Shore Country Club, Town of Hingham*, attached as Appendix A of this Permit. The conditions and requirements of this plan are incorporated into this permit and made enforceable hereunder.

GENERAL PERMIT CONDITIONS (applicable to all Permittees)

No withdrawal in excess of 100,000 gallons per day over the registered volume (if any) shall be made following the expiration of this permit, unless before that date the Department has received a renewal permit application pursuant to and in compliance with 310 CMR 36.00.

1. Duty to Comply The Permittee shall comply at all times with the terms and conditions of this permit, the Act and all applicable State and Federal statutes and regulations.

2. **Operation and Maintenance** The Permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw up to the authorized volume so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The Permittee or the Permittee's agent shall allow personnel or authorized agents or employees of MassDEP to enter and examine any property, inspect and monitor the withdrawal, and inspect and copy any relevant records, for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by MassDEP pursuant to M.G.L. c. 21G, §§ 15-17, M.G.L. c. 111, § 160, or any other enabling authority.
5. **Transfer of Permits** This permit shall not be transferred in whole or in part unless and until MassDEP approves such transfer in writing, pursuant to a transfer application on forms provided by MassDEP requesting such approval and received by MassDEP at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.37.
6. **Duty to Report** The Permittee shall submit annually, on a form provided by MassDEP, a certified statement of the withdrawal. Such report is to be received by MassDEP by the date specified by MassDEP. Such report must be mailed or hand delivered to the address specified on the report form.
7. **Duty to Maintain Records** The Permittee shall be responsible for maintaining withdrawal records as specified by this permit.
8. **Metering** Withdrawal points shall be metered. Meters shall be calibrated annually. Meter shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
9. **Amendment, Suspension or Termination** The Department may amend, suspend or terminate this permit in accordance with M.G.L. c. 21G or 310 CMR 36.29.

APPEAL RIGHTS AND TIME LIMITS

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

No request for an appeal of this permit shall be validly filed unless a copy of the request is sent by certified mail, or delivered by hand to the local water resources management official in the community in which the withdrawal point is located; and for any person appealing this decision, who is not the applicant, unless such person notifies the permit applicant of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to MassDEP.

CONTENTS OF HEARING REQUEST

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

FILING FEE AND ADDRESS

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

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

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

EXEMPTIONS

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

WAIVER

MassDEP may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of MassDEP that the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request, an affidavit setting forth the facts which support the claim of undue hardship.



Duane LeVangie
Water Management Program
Bureau of Water Resources

April 20, 2022
Date

APPENDIX A

IRRIGATION MANAGEMENT, WATER CONSERVATION, AND SEASONAL DEMAND MANAGEMENT PLAN FOR SOUTH SHORE COUNTRY CLUB, TOWN OF HINGHAM

1. South Shore Country Club (“South Shore”) shall implement the Seasonal Demand Management Plan (SDMP) in Table A-1 below. This timed approach shall be used to reduce water use during Drought Levels 1, 2, and 3 by limiting the length of irrigation cycles. Under a Drought Emergency, mitigation actions are determined by the Governor’s Emergency Proclamation.

Table A-1. SDMP Time Table for Irrigation Reductions

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	10	Full cycle	10	Full Cycle	10	100%	10
Mild Drought or WMA Permit Trigger is reached	Full cycle	10	80%†	8	50%†	5	0%*	
Significant Drought	Full cycle	10	60%†	6	0%			
Critical Drought	Full cycle	10	40%†	4				
Emergency **	TBD		0%				0%	

† Irrigation use 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.
** Additional actions to be determined by the Governor’s Emergency Proclamation.

In addition to Drought Declarations, low streamflow shall also serve as a trigger for water-use reductions. Reductions shall be implemented at times when streamflow falls below a designated low-flow value at an assigned, web-based, real-time U.S. Geologic Survey (USGS) stream gage from May 1st through September 30th. This change will require that reductions commence when the streamflow falls below the low-flow value for three consecutive days. The streamflow-triggered response actions shall be consistent with the drought-triggered response actions at a Drought Level 1 (Mild). 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”, is the median value of the annual 7-day low flows for the period of record for the assigned gage.

South Shore has been assigned the following USGS stream gage: #01105638, Weir River at Leavitt Street at Hingham, MA. The 7-day low flow at this site is 0.62 cubic feet per second (cfs). Should the reliability of the flow measurement at the Weir River gage be so impaired as

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to question its accuracy, South Shore may request the Department’s review and approval to transfer to another gage to trigger restrictions. The Department reserves the right to require use of a different gage.

South Shore shall be responsible for tracking the Massachusetts Drought Management Task Force drought declarations and recording when drought-triggered restrictions are implemented. South Shore shall also be responsible for tracking streamflows and recording when streamflow-triggered restrictions are implemented. Table A-2 provides tracking instructions. Within 14 days of implementing water use reductions for the first time in a calendar year, South Shore shall notify the Department by submitting the MassDEP Notification of Water Use Reductions Form for Golf Courses (<https://www.mass.gov/files/documents/2018/10/25/restrict-golfcourse.pdf>).

Table A-2. Instructions for Accessing U.S. Geologic Survey Streamflow and Massachusetts Drought Advisory 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 quarter-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 01105638 – Weir River at Leavitt Street at Hingham, 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 “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 in the table to the 7-day low flow trigger for water-use reductions (**0.62 cfs**).

Drought information is available at the Massachusetts Department of Conservation and Recreation (DCR) Drought Status Website at <https://www.mass.gov/guides/drought-management-in-massachusetts#-current-status->

- The color coded map displays the seven drought regions in Massachusetts. Restrictions are implemented when a Drought Level 1, 2, 3 or 4 is announced in your region through the DCR website.

2. South Shore Country Club shall continue to implement the following Best Management Practices (BMPs) for water conservation and course management.

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- Regular inspection of the course is conducted to determine irrigation needs, and staff is trained to monitor soil moisture conditions as well as turf stress conditions.
- A weather station at South Shore Country Club is connected to the PC-based central computer and satellite communications network which controls the irrigation system. Reference evapotranspiration figures are computed daily by the weather station, and refined by the crop coefficient for the turfgrass varieties planted on the golf course. Information from the weather station is integrated with data collected from other remote wind and rain sensors on the golf course by the central control computer. This information enables the central controller to pause or cancel irrigation cycles when climatic conditions preclude the need for irrigation, or prevent its efficient application. The computer programs can identify specific areas of the golf course and the conditions of these areas to implement shutdowns by communicating to the various satellite computers on the golf course.
- The pump station at South Shore Country Club is a fully automatic, variable frequency drive (VFD) unit, controlled by a programmable logic controller, equipped with modem communication to the central irrigation computer. The VFD matches pump motor speed and power usage to the continually varying demands of system flow. The pump station controls include safety circuits, which, among other functions will retire the operation of the pumps in the event of a main line pipe failure. This safety feature prevents substantial quantities of water from flowing to waste and avoiding significant erosion damage in the event of pipe failure.
- Distribution of the irrigation water from the pump station onto the golf course is by an extensive network of PVC piping that carries the water through large main lines to feeder lines around the property. The water is distributed by individually controlled low-pressure sprinklers, which lower pump horsepower requirements thus reducing power usage over shorter operational run times. Low-pressure sprinklers also minimize aerosol drift of water beyond the intended target turf areas irrigating only the in-play areas of the golf course. Sprinklers are short radius units spaced at close intervals. This arrangement produces the highest distribution uniformity, which equates to the most efficient use of water. This close spacing is also critical for distribution in potentially windy sites. Sprinkler heads with individual control and short radius throw, allow site-specific application of irrigation based on computed moisture needs. The implementation of these types of sprinkler equipment avoids the waste of water that could come from large radius heads run in multiple blocks.
- Typical irrigation applications are made from 9:00 pm to 5:00 am during the calmer wind conditions and out of the heat of the day.
- In place of overhead irrigation, hand watering and hand syringing are used during the day to combat localized dry spots and to cool hot areas. These practices prevent loss of turf and the resultant increased use of water to reestablish lost turf.
- Dew is removed by dragging surfaces to return moisture to the plants and avoid disease conditions.
- Surfactants and wetting agents are used to alleviate surface tension of the soils to limit water loss.

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- Turf is aerated on a regular basis to increase the percolation of water into the soil.
- Mulch materials are used in planting beds to improve water-holding capacity.
- Turf height is raised during dry weather and drought conditions.
- A Turf Management Plan has been developed and is implemented.
- Water use is 100% metered and source meters are regularly calibrated.
- Employee training is provided for water conservation and management and system maintenance.
- Maintenance of the irrigation system is conducted on a regular basis. The irrigation system is checked on a continuous basis for proper orientation and leaks. The superintendent or designated technician inspects the property on a regular basis to identify leaks, distribution abnormalities, or problems with irrigation operation. Immediate corrective actions are taken when problems are discovered including: improper sprinkler head adjustment; clogged or leaking heads, pipes and fittings; obstacles, including plant material, which obstruct the trajectory of the spray stream. The goal of this process is to repair leaks and to realign sprinklers so that pavement areas are not watered. Other regular maintenance activities include: wear and tear parts management; periodic upgrades of control system; maintenance and repair of the pump station; flow meter monitoring and record keeping; cross training of employees in maintenance and monitoring.
- All employees at South Shore Country Club are made aware of the need for water conservation, including potable water conservation. Potable water use is monitored to reduce water use wherever possible. The following is a list of common practices implemented by employees within the clubhouse and maintenance facilities with regard to potable water use: staff are trained to report leaking or dripping faucets (indoors and outdoors), toilets, pipes, etc. to maintenance staff; staff are trained to know where water shutoffs are located within their work area so if a pipe break occurs, staff will shut off the appropriate valve or call maintenance staff immediately; staff are trained for personal water conservation such as don't leave faucets running.