



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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

Maura T. Healey
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January 13, 2025

Board of Water Commissioners
Cotuit Fire District-Water Department
P.O. Box 451
Cotuit, MA 02365

PWS ID: # 4020003
Water Management Act Permit
WMA Permit #9P-4-22-020.02
Permit Renewal

Dear Board Members:

Please find the attached documents:

- Findings of Fact in Support of the Final Water Management Act Permit #9P-4-22-020.02; and
- Final Water Management Act Permit #9P-4-22-020.02 (Cape Cod Basin) for the Cotuit Fire District-Water Department.

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

Sincerely,

Duane LeVangie
Chief, Water Management Program
Bureau of Water Resources

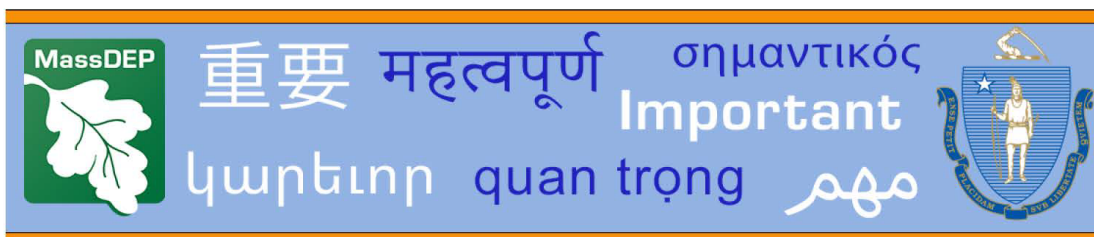
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[https://massgov.sharepoint.com/DEP-BWR/DWPWMA/Permit Renewals/Cape/Final Permits/Barnstable-4020003-Cotuit Final WMA Permit #9P-4-22-020.02-1.13.2025](https://massgov.sharepoint.com/DEP-BWR/DWPWMA/Permit%20Renewals/Cape/Final%20Permits/Barnstable-4020003-Cotuit%20Final%20WMA%20Permit%209P-4-22-020.02-1.13.2025)

Ecc: Jim McLaughlin, MassDEP SERO
 Anne Carrol, DCR
 Jen Pederson, MWWA
 Chris Wiseman, Cotuit Fire District, Water Superintendent
 Cape Cod Commission
 Andrew Gottlieb, Executive Director, Association to Preserve Cape Cod
 Lydia Olson, Massachusetts Rivers Alliance



Communication for Non-English-Speaking Parties

This document is important and should be translated immediately.

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

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简体中文 Chinese Simplified

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 的多元化主任聯繫。

Ayisyen Kreyòl Haitian Creole

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

Việt Vietnamese

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

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះគឺសំខាន់ហើយត្រូវបានបកប្រែភ្លាមៗ។ ប្រសិនបើអ្នកត្រូវការឱ្យគេបកប្រែឯកសារនេះ សូមទាក់ទងមកនាយកផ្នែកពិពិធកម្មរបស់ MassDEP តាមលេខទូរស័ព្ទខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

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



Contact Deneen Simpson 857-406-0738

**Massachusetts Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114**

TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>
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Русский Russian

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العربية Arabic

هذه الوثيقة مهمة ويجب ترجمتها على الفور. إذا كنت بحاجة إلى هذه الوثيقة مترجمة، يرجى الاتصال بمدير التنوع PMASSDE على أرقام الهواتف المدرجة أدناه.

한국어 Korean

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

հայերէն Armenian

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

فارسی Farsi Persian

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

Français French

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Deutsch German

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Ελληνική Greek

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

Italiano Italian

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

Język Polski Polish

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

हिन्दी Hindi

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

Contact Deneen Simpson 857-406-0738

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Findings of Fact in Support of Water Management Permit # 9P-4-22-020.02 Cotuit Fire District – Water Department

The Department of Environmental Protection (the Department or MassDEP) makes the following Findings of Fact in support of the attached Water Management Act (WMA) Permit #9P-4-22-020.02 and includes herewith its reasons for issuing the Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11. The issuance of the WMA permit is in response to the August 2010 permit renewal application by the Cotuit Fire District-Water Department (Cotuit or the District) in the Cape Cod Basin.

The Cotuit Fire District Withdrawal Summary

Cotuit operates two permitted sources and three registered sources in the Cape Cod Basin. Cotuit was issued its initial Cape Cod Basin Water Management Act (WMA) Permit on February 1, 1992, which was later modified in 2000 and 2008. In August 2010, Cotuit submitted a 20-year permit renewal application. In the fall of 2010, MassDEP determined that the Permit Extension Act applied to all Water Management Act permits and determined that issuing a new permit at that time would be premature.

Later in 2010, Cotuit applied for a new permit to increase their allocation. The new permit, which was issued on January 22, 2013, did not complete the permit renewal process but did increase their system-wide allocation to 0.64 MGD. Cotuit filed a new permit application on October 10, 2018 seeking to increase the total authorized withdrawal to 0.80 MGD. On December 20, 2018, Cotuit was issued a Permit Application Order to Complete (OTC) outlining specific information that was required to complete the new permit application. Cotuit submitted a response to the OTC in the spring of 2024. The response failed to identify the mitigation necessary to supply the 0.80 MGD requested and identified enough mitigation necessary to supply 0.63 MGD, thus reducing the current authorized volumes by 0.01 MGD. This permit potentially allows Cotuit to make withdrawals up to 0.80 MGD in the future by developing additional mitigation activities for review and approval by MassDEP and incorporating the additional approved mitigation into this permit through a permit amendment (BRPWM02).

Permit Extensions

The expiration dates for all Water Management permits were extended for four years by Chapter 240 of the Acts of 2010 as amended by Chapter 238 of the Acts of 2012, collectively known as the Permit Extension Act. In addition, in a letter of September 15, 2015, MassDEP informed Cotuit that the Department would need additional time before making a determination on the application. Pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7), Cotuit's permit continues in force and effect until the Department issues a final decision on the permit renewal application.

In accordance with 310 CMR 36.17(1), the expiration date for all new permits in the Cape Cod Basin will be March 6, 2032.

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 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 Cape Cod 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 Cape Cod Basin is 266.00 MGD, and total registered and permitted withdrawals are 51.34 MGD. The new permit will decrease the volume of withdrawals from the Cape Cod Basin by 0.01 MGD, and even if Cotuit obtains a permit amendment in the future with the necessary mitigation to increase withdrawals by 0.17 MGD, the allocation will not cause an exceedance of the Basin's safe yield.

Findings of Fact for Special Permit Conditions in Cotuit'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 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, Maximum Authorized Annual Average Withdrawal Volume, specifies the authorized annual average withdrawal volume for each period of Cotuit's WMA Permit. MassDEP policy where applicable is to base public water supply permits on the Department of

Conservation and Recreation (DCR) Office of Water Resources water needs forecasts (WNF). In a July 22, 2010 letter to the District, the DCR provided a final WNF for Cotuit. The DCR forecast was then modified by the Water Resources Commission's March 9, 2017, decision that *"for communities with significant seasonal populations (Cape Cod and Islands), a 10% buffer may be added to the projected average day demand for the final five-year period of the water needs forecast"*. The modified WNF for Cotuit forecast a 2030 demand of 0.73 MGD with an additional 10% buffer of 0.07 MGD for a total possible allocation of 0.80 MGD. DCR's WNF are set forth in Table 1 below.

Table 1: Cotuit DCR WNF of Average Daily Withdrawal Rates (MGD)

Permit Period	DCR WNF
1/13/2025-3/6/2029	0.69
3/7/2029-3/6/2032	0.73
With 10% Buffer	0.80

In 2018, Cotuit applied for a WMA permit to increase its maximum authorized annual average withdrawal volume in the Cape Cod Basin from 0.64 million gallons per day (MGD) to 0.80 MGD. However, Cotuit was unable to identify the mitigation necessary to obtain the full authorized withdrawal rate of 0.80 MGD. Therefore, Cotuit is being issued a WMA permit that limits their permitted volume to 0.36 MGD, for a total authorization of 0.63 MGD at this time. That volume may be increased to a system-wide authorization of 0.80 MGD, by obtaining a permit amendment (BRPWM02) that provides the necessary mitigation measures (see Special Condition 8). Cotuit has withdrawn below their 0.63 MGD authorized volume for four of the past five years. Please see Table 2.

Table 2: Cotuit's 2019-2023 Water Withdrawals (MGD)

2019	2020	2021	2022	2023	Average
0.56	0.67	0.55	0.55	0.46	0.56

Special Condition 2, Maximum Daily Withdrawals from Groundwater Withdrawal Points.

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed below without specific advance written approval from the Department. The authorized maximum daily rate is based on the approved Zone II rate.

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

Special Condition 4, Wellhead Protection. Cotuit is meeting the Best Effort Requirements of 310 CMR 22.21(2). No further Wellhead Protection work is required as a condition of this permit.

Special Condition 5, Performance Standard for Unaccounted for Water (UAW). Cotuit is required to meet 10% or less UAW for two of the three most recent years throughout the permit period. Cotuit is meeting this performance Standard. (Please see Table 3.) If, at any time, Cotuit

does not meet the UAW Performance Standard, it shall comply with the functional equivalence requirements set forth in Appendix A.

Table 3: Unaccounted for Water

Year	2023	2022	2021	2020	2019
UAW	2%	9%	9%	5%	7%

Special Condition 6, Seasonal Limits on Nonessential Outdoor Water Use, requires Cotuit to implement nonessential outdoor water use restrictions from May 1st through September 30th, beginning in 2025, when:

- Groundwater levels fall to the monthly 25th percentile for 60 consecutive days at the assigned groundwater monitoring well; and
- A Level 1- Mild Drought or higher is declared for the Cape Cod Region by the Secretary of Energy and Environmental Affairs.

If Cotuit selects the USGS monitoring well approach, it has been assigned USGS monitoring Well 413930070190901 (A1W 306) Barnstable, MA.

Cotuit shall notify MassDEP within 14 days of when restrictions are put in place.

Nothing in this permit prevents Cotuit from implementing additional water use restrictions.

Note that the Department encourages all PWS's to adopt the Massachusetts Drought Management Plan's recommendations during times of a declared drought (Please see Table 4 below). The current drought status across Massachusetts can be found at [Drought Status | Mass.gov](#). The map is updated monthly during a declared drought.

Table 4: Massachusetts Drought Management Plan Recommendations
At Level 1 - Mild Drought: <ul style="list-style-type: none">○ Outdoor watering with irrigation systems and sprinklers should be limited to no more than one day per week; and○ Watering with a handheld hose or watering can should be limited to after 5 pm or before 9 am (to avoid evaporative losses).
At Level 2 - Significant Drought: <ul style="list-style-type: none">○ Outdoor water use should be limited to handheld watering with a hose or a watering can after 5 pm or before 9 am (to avoid evaporative losses); and○ Filling swimming pools, washing cars and washing buildings should be prohibited.
At Level 3 - Critical Drought: <ul style="list-style-type: none">○ Outdoor water use should be eliminated.

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/>). Cotuit shall continue to meet these standards.

Special Condition 8, Mitigation. Permittees requesting an increase above their baseline withdrawal rate must undertake mitigation activities commensurate with the impact of their increased withdrawals. Cotuit's baseline withdrawal volume is its 2005 authorized volume of 0.58 MGD. A mitigation plan is required in the Cape Cod Basin for the difference between the request (0.80 MGD) and the baseline (0.58 MGD). However, an 85% wastewater adjustment can be applied against the volume required to be mitigated for systems with wastewater that is returned to groundwater through septic systems or a groundwater discharge facility within the same major basin as the withdrawals.

Table 5A summarizes Cotuit's mitigation requirement calculation for the volume that was requested in their permit application (0.80 MGD). Table 5B summarizes the credit provided by Cotuit's mitigation. Both summaries assume that Cotuit will continue to discharge all current and future withdrawals to on-site septic systems or groundwater discharge locations in the Cape Cod Basin. After the 85% wastewater adjustment, Cotuit's mitigation requirement to obtain an authorized withdrawal rate of 0.80 MGD is 0.033 MGD or 33,000 gallons per day. In this permit process, Cotuit provided only 0.0077 MGD (7,700 gallons per day) in mitigation.

Table 5A: Required Mitigation Volume Calculation for Cotuit at 0.80 MGD

Permit Request Above Baseline = 0.22 MGD
<ul style="list-style-type: none"> Permit amount above baseline: $0.80 \text{ MGD} - 0.58 \text{ MGD} = 0.22 \text{ MGD}$
Adjustment for Wastewater Discharge to Local Groundwater = 0.187 MGD
<ul style="list-style-type: none"> 100% of increased withdrawals are delivered to areas with on-site groundwater disposal systems: $0.22 \text{ MGD} \times 1.0 (100\%) = 0.22 \text{ MGD}$ 85% of water delivered to areas with on-site groundwater disposal systems returns to groundwater: $0.22 \text{ MGD} \times 0.85 (85\%) = 0.187 \text{ MGD}$
Amount to be Mitigated after Wastewater Adjustment = 0.007 MGD
<ul style="list-style-type: none"> Permitted amount above baseline (0.22 MGD) – adjustment for wastewater discharge to local groundwater (0.187 MGD) = 0.033 MGD, or 33,000 gallons per day

Table 5B: Provided Mitigation Volume Calculation for Cotuit at 0.63 MGD

Permit Request Above Baseline = 0.05 MGD
<ul style="list-style-type: none"> Permit amount above baseline: $0.63 \text{ MGD} - 0.58 \text{ MGD} = 0.05 \text{ MGD}$
Adjustment for Wastewater Discharge to Local Groundwater = 0.043 MGD
<ul style="list-style-type: none"> 100% of increased withdrawals are delivered to areas with on-site groundwater disposal systems: $0.05 \text{ MGD} \times 1.0 (100\%) = 0.05 \text{ MGD}$ 85% of water delivered to areas with on-site groundwater disposal systems returns to groundwater:

$0.05 \text{ MGD} \times 0.85 (85\%) = 0.043 \text{ MGD}$
Amount to be Mitigated after Wastewater Adjustment = 0.007 MGD <ul style="list-style-type: none">• Permitted amount above baseline (0.05 MGD) – adjustment for wastewater discharge to local groundwater (0.043 MGD) = 0.007 MGD, or 7,000 gallons per day

Cotuit was unable to identify any direct mitigation credits at this time. Cotuit did identify 0.77 indirect mitigation credits through Land Protection measures. One indirect mitigation credit is the equivalent of 10,000 gallons per day, or, in this case, 0.77 credits is equal to 7,700 gallons per day. Therefore, this permit authorizes an additional withdrawal volume of 0.36 MGD, for a total authorized volume of 0.63 MGD, which is the sum of Cotuit's baseline (0.58 MGD) wastewater returns (0.043 MGD) and mitigation (0.007 MGD). Please see below for a description of the mitigation provided.

Indirect Mitigation

Land Protection

Cotuit is eligible for 0.77 indirect mitigation credits (the equivalent of 7,700 gpd) for land acquired for water-supply conservation purposes. The parcel listed in Appendix B was acquired after 2005 and placed under the control of the Cotuit Water District with a Conservation Restriction on it as Water Supply Protection Land in a Zone II. The entire parcel (3.869 acres) qualifies for 0.77 credits, (3.869 acres* 0.2), and Cotuit submitted the required documentation for indirect mitigation credit, including the Applicant Certification for Land Protected for Mitigation Credit form, summary table, parcel maps, and deed citations.

Prior to making average annual withdrawals greater than 0.63 MGD from the Cape Cod Basin, Cotuit is required to develop additional mitigation activities for review and approval by MassDEP, incorporate the additional approved mitigation into this permit through a permit amendment (BRPWM02) and implement required mitigation activities.

Special Condition 9, Reporting Requirements, ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

Other WMA Considerations

Residential Gallons per Capita Day (RGPCD). In areas that experience significant seasonal fluctuations in residential population, as is the case in Cape Cod communities, calculation of an accurate RGPCD is difficult and has not been standardized to date. Therefore, at this time, MassDEP does not require that permittees on Cape Cod meet a specific RGPCD performance standard. The omission of a numerical standard from Cotuit's permit does not imply that water conservation is not important for resource protection, and Cotuit should still take every opportunity to encourage water conservation, especially during the high use summer season.

Coldwater Fishery Resources. The Water Management Regulations revised and promulgated in November 2014 also require WMA permits to address protection of Coldwater Fishery Resources (CFR). Coldwater Fish Resource protection is not a condition of this Permit, because

Cotuit's withdrawals do not impact any waters that the Massachusetts Division of Fisheries and Wildlife has identified as supporting coldwater fish at this time.

Minimization. The Water Management Regulations revised and promulgated in November 2014 require WMA permits for groundwater sources in subbasins with a net groundwater depletion of 25% or more during August, a groundwater depleted subbasin, to minimize their withdrawal impacts on those subbasins to the greatest extent feasible, through optimization of groundwater source use, surface water releases to improve streamflows, outdoor water use restrictions and water conservation programs that go beyond the standard Water Management Act permit requirements. Cotuit's sources are located in an area where there are no delineated subbasins; therefore, minimization is not a requirement of this permit.

Response to Comments

Cotuit's draft permit was posted in the Massachusetts Environmental Monitor from October 23, 2024 to November 23, 2024 for public comment. No comments were received.



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WATER WITHDRAWAL PERMIT #9P-4-22-020.02 Cotuit Fire District-Water Department

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-4-22-020.02

RIVER BASIN: Cape Cod

PERMITTEE: Cotuit Fire District-Water Department

EFFECTIVE DATE: January 13, 2025

EXPIRATION DATE: March 6, 2032

NUMBER OF WITHDRAWAL POINTS: 2

Groundwater: 2

Surface Water: 0

USE: Public Water Supply

DAYS OF OPERATION: 365

WITHDRAWAL POINT IDENTIFICATION

<u>Source Name</u>	<u>Source Code</u>
ES #4	4020003-05G
ES #5	4020003-06G

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.
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 Cotuit Fire District to withdraw water from the Cape Cod Basin at the rate described below (Table 1). Cotuit was previously authorized by WMA Registration #42202014 to withdraw 0.27 MGD from the Cape Cod Basin. The permitted volume is expressed both as an annual average daily withdrawal rate, MGD, and as a total annual withdrawal volume, million gallons per year (MGY), for each permit period over the term of this permit.

Table 1: Cotuit Fire District's Authorized Withdrawal Rates

Permit Period	Permit		Registration + Permit	
	Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
1/13/2025-3/6/2032	0.36	131.4	$0.27 + 0.36 = 0.63$	229.95
Prior to making withdrawals greater than 0.63 MGD from the Cape Cod Basin additional credit mitigation must be incorporated into this permit through a permit amendment (BRPWM02), and required mitigation activities must be implemented.				
TBD to 3/6/2032	0.53	193.45.00	$0.27 + 0.53 = 0.80$	292.00

2. Maximum Authorized Daily Withdrawals from Groundwater Withdrawal Points

Withdrawals from permitted groundwater withdrawal points are not to exceed the approved maximum daily volumes listed below without specific advance written approval from MassDEP (Table 3). The authorized maximum daily volume is the approved rate for the District's permitted groundwater sources combined or separately.

Table 3: Maximum Daily Withdrawal Volumes

Source Name	PWS Source Code ID	Maximum Daily Rate (MGD)
ES#4	4020003-05G	0.72 MGD
ES#5	4020003-06G	1.73 MGD

3. Zone II Delineation

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

4. Wellhead Protection

The Cotuit Fire District-Water Department is required to continue to meet the requirements of 310 CMR 22.21(2).

5. Performance Standard for Unaccounted for Water

The District's Performance Standard for Unaccounted for Water (UAW) is 10% or less for two of the most recent three years. If, at any time, Cotuit does not meet this Performance Standard, it shall comply with the functional equivalence requirements set forth in Appendix A. Nothing in the permit shall prevent a permittee who meets the 10% performance standard from developing and implementing a water loss control program following the *AWWA M36 Water Audits and Loss Control Programs*. All permittees shall continue to report UAW annually as required in the Annual Statistical Report for public water suppliers.

6. Seasonal Limits on Nonessential Outdoor Water Use

Cotuit shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in Table 4.

Cotuit shall be responsible for tracking groundwater levels and drought advisories and recording and reporting when restrictions are implemented if groundwater level triggered restrictions are implemented. See Table 4 for *Instructions for Accessing U.S. Geologic Survey Groundwater Level and Massachusetts Drought Advisory Website Information*. Cotuit shall also document compliance with the summer limits on nonessential outdoor water use annually in its Annual Statistical Report (ASR).

Nonessential Outdoor Water Use and Water Use Restrictions

Nonessential Outdoor Water Use means a use that is not required:

- (a) for health or safety reasons, including public facilities used for cooling such as splash pads and swimming pools, and for washing of boats, engines, or marine equipment to prevent negative saltwater impacts or the transfer of invasive aquatic species;
- (b) by permit, license, statute or regulation;
- (c) for the production of food, including vegetable gardens, and fiber;
- (d) for the maintenance of livestock;
- (e) to meet the core functions (those functions essential to the commercial operations) of a business, including but not limited to:
 - 1. plant nurseries as necessary to maintain stock;
 - 2. golf courses as necessary to maintain greens and tees, and limited fairway watering per 310 CMR 36.07(2)(c)2.a. through c.;
 - 3. venues used for weddings or similar special events that limit watering to hand-held hose or drip irrigation as necessary to maintain gardens, flowers and ornamental plants;
 - 4. professional washing of exterior building surfaces, parking lots, driveways and/or sidewalks as necessary to apply surface treatments such as paint, preservatives, stucco, pavement, or cement in the course of construction, reconstruction or renovation work;
- (f) for irrigation of public parks before 9:00 a.m. and after 5:00 p.m.,
- (g) for irrigation of public and private recreation fields, including those operated by schools, colleges, universities and athletic associations, before 9:00 a.m. and after 5:00 p.m.,

- (h) for irrigation of publicly-funded shade trees and trees in the public right-of way; or
- (i) to establish a new lawn as necessary to stabilize soil in response to new construction or following the repair or replacement of a Title 5 system.

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

- irrigation of lawns via sprinklers or automatic irrigation systems;
- filling swimming pools;
- washing of vehicles, except in a commercial car wash or as necessary for operator safety; and
- washing exterior building surfaces, parking lots, driveways, or sidewalks, except as necessary to apply surface treatments such as paint, preservatives, stucco, pavement, or cement.

The following uses may be allowed, before 9 am and after 5 pm, when mandatory restrictions are in place:

- irrigation to establish a new lawn and new plantings during the months of May and September; and
- irrigation of lawns, gardens, flowers, and ornamental plants by means of a hand-held hose.

Table 4 Seasonal Limits on Nonessential Outdoor Water Use

Permittee must at a minimum implement the following outdoor water use restrictions:

Groundwater level Triggered Restrictions from May 1st through September 30th

Nonessential outdoor water use is allowed no more than TWO DAYS per week before 9 am and after 5 pm whenever:

- a) Groundwater levels at USGS Monitoring Well 413930070190901 (A1W 306) Barnstable, MA decline to or below the groundwater trigger for 60 consecutive days. The monthly trigger levels are listed below and are the period of record monthly 25th percentile depth to water level values, as determined and published by the USGS. Restrictions could start on May 1, so monitoring of A1W 306 begins on March 1 of each year.

Trigger Values for Outdoor Water Use Restrictions (feet below land surface)

March	April	May	June	July	Aug	Sept
25.77	25.36	25.33	25.47	25.91	25.95	26.37

Once implemented, the restrictions shall remain in place until the daily value of the groundwater levels at the assigned USGS monitoring well have recovered to less than the trigger for 30 consecutive days (when the water table elevation has risen above the trigger level).

AND;

b) At Drought Level 1 (Mild Drought) or higher is declared by the Secretary of the Executive Office of Energy and Environmental Affairs for Cape Cod region. Once implemented, the restrictions shall remain in place while a Drought Level 1 or higher is in effect between May 1st and September 30th.

Instructions for Accessing U.S. Geologic Survey Groundwater Level and Massachusetts Drought Management Website Information

Groundwater level information is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts groundwater levels in real time, i.e., the most recent, usually hourly, water level measured and recorded at each USGS monitoring well.

Seasonal Limits on Nonessential Outdoor Water Use are implemented when the daily mean depth to water level exceeds the designated trigger for 60 consecutive days (*i.e.*, when the depth to water becomes larger than the trigger value as the water table elevation declines). The daily water level is compared to the trigger for that month. To determine if restrictions must be implemented on May 1 it is necessary to monitor the daily water level in March and April.

Mean daily groundwater level readings are available at the USGS NWIS Web Interface at http://waterdata.usgs.gov/ma/nwis/current/?type=gw&group_key=county_cd

- Scroll down to 413930070190901 (A1W 306) Barnstable, MA.
- Click on the station number.
- Click on the “Legacy Real Time Page”.
- On the pull-down menu “Available data for this site” choose “Daily data”.
- Under “Available Parameters ” click on “WaterLevel, BelowLSD (Mean)”.
- Under “Output Format” click on “Table” and enter the number of days of records (the default is 7 days; entering 60 will give you 60 days of data) and hit “GO”.
- The table provides the “Daily Mean Depth to water level, feet below land surface” for the most recent number of days chosen.
- Compare each day’s value to its month’s trigger value (25th percentile) in your permit. Outdoor water use restrictions must be implemented when the daily depth to water level is at or below the trigger for 60 consecutive days.

Drought information is available at the Massachusetts Department of Conservation and Recreation (DCR) Drought Status Website at [Drought Status | Mass.gov](http://DroughtStatus.Mass.gov)

- The color-coded map displays the drought regions in Massachusetts. Restrictions are implemented when a Mild, Significant, Critical or Emergency Drought is announced through the DCR website.

Public Notice of Water Use Restrictions

Cotuit shall notify its customers of the restrictions and the consequences of failing to adhere to the restrictions.

- For groundwater level-triggered restrictions, when the daily depth to water level at the assigned USGS monitoring well declines to or below the trigger for 60 consecutive days,

customers shall be notified as soon as possible, but within three days of implementing the restrictions.

Notice to customers shall include the following:

- A detailed description of the restrictions and penalties for violating the restrictions;
- The need to limit water use, especially nonessential outdoor water use, to ensure a sustainable drinking water supply and to protect natural resources; and
- Ways individual homeowners can limit water use, especially nonessential outdoor water use.

Notice that restrictions have been put in place shall be filed each year with MassDEP within 14 days of the restriction's effective date by completing and submitting to MassDEP the **Notification of Water Use Restrictions** form, which can be found at [Outdoor Water Use Restrictions for Cities, Towns, and Golf Courses | Mass.gov](#) . Notice to customers and MassDEP need not be provided if Cotuit has already implemented water use restrictions that conform to the applicable restrictions and those restrictions are still in force.

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

7. Water Conservation Requirements

At a minimum, Cotuit shall implement the following conservation measures in Table 5. Compliance with the water conservation requirements shall be reported to MassDEP upon request, unless otherwise noted below.

Table 5: Minimum Water Conservation Requirements	
System Water Audits and Leak Detection	
Cotuit shall perform a full leak detection program for its distribution system every three years.	
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.	
Conduct field surveys for leaks and repair programs in accordance with the AWWA Manual 36.	
Cotuit shall have repair reports available for inspection by MassDEP. Cotuit shall establish a schedule for repairing leaks that is at least as stringent as the following: <ul style="list-style-type: none">• 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.	

<ul style="list-style-type: none">• 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 Cotuit's priority schedule including leaks up to the property line, curb stop or service meter, as applicable.• Cotuit shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.
Metering
Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
Cotuit reports that its system is 100% metered.
Cotuit shall implement a program of repairing and replacing meters by size and time based on AWWA Standards .
Pricing.
Cotuit shall continue to implement a water pricing structure that includes the full cost of operating, maintaining and protecting the water supply system.
Cotuit shall continue to evaluate its rate structure annually.
Cotuit reports using an increasing block rate structure and shall continue to do so.
Residential and Public Sector Conservation
Cotuit shall continue to meet the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code.
Cotuit shall meter or estimate use of water from fire hydrants for pipe flushing, construction and other uses not related to fire fighting.
Cotuit shall continue to bill residential customers biannually. Cotuit shall read meters quarterly by 3/6/2027 and shall inform customers as soon as reasonably possible of any anomalies.
Cotuit reports that it has installed water savings devices in all new municipal buildings in the Cotuit Fire District service area. Cotuit reports that it will continue to install water saving devices in older buildings as they are repaired or renovated. Cotuit shall continue to ensure that water conserving landscaping practices are incorporated into the design, construction, management, and operation of public parks, playing fields and other facilities in the District.
Cotuit shall continue to ban the installation of outdoor irrigation systems.
Industrial and Commercial Water Conservation
Cotuit shall continue to review development proposals to ensure they contain water conservation practices including the installation of low flow devices and the incorporation of water-wise landscaping practices.
Public Education and Outreach
Cotuit shall continue to implement a public education plan that includes annual bill stuffers, information on water wise landscaping, gardening, efficient irrigation and lawn care

practices, a water conservation curriculum for the schools, public service announcements, multilingual materials, use of social media and in person events.

8. Mitigation

The baseline withdrawal volume for Cotuit in the Cape Cod Basin is its 2005 authorized volume of 0.58 MGD. A mitigation plan for 0.33 MGD was required to meet the requested allocation of 0.80 MGD. Cotuit identified 0.77 indirect mitigation credits or 7,700 gallons per day in mitigation through Land Protection measures. Each indirect credit is worth 10,000 gpd. Therefore, the indirect credits provided are worth 7,700 GPD, or 0.007 MGD. Please see Appendix B. Therefore, Cotuit is limited to an authorized withdrawal rate of 0.63 MGD at this time.

Prior to making average annual withdrawals greater than 0.63 MGD and up to 0.80 MGD from the Cape Cod Basin, Cotuit is required to develop additional mitigation activities for review and approval by MassDEP, and incorporate the additional approved mitigation into this permit through a permit amendment (BRPWM02).

9. Reporting Requirements

Cotuit 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.

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

1/13/2025

Date

Appendix A – 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 B – Cotuit Indirect Mitigation

Land Protection Summary Table

Parcel Area (acres)	Owner	Municipal Assessor's Map and Lot Numbers	Parcel Purchase Date	Book and Page Numbers of Deed	Effective Date of Conservation Restriction	Type Of Restriction	Conservation Restriction Book/Page	Indirect Mitigation Credits
3.869	Cotuit Fire District Water Department	036/039	12/18/2015	29344/148	6/10/2016	Perpetual	29714/274	0.77

**Total
credits:**

0.77