

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

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

January 30, 2017

David Panagore, Town Manager
Provincetown Town Offices
260 Commercial Street
Provincetown, MA 02657

RE: Town of Provincetown
PWS ID#: 4242000
Water Management Permit 9P-4-22-242.01
Action: WMA FINAL Withdrawal Permit
Renewal

Dear Mr. Panagore:

Please find attached the following:

- Findings of Fact in Support of the FINAL Permit Decision, and
- Water Management Act FINAL Permit #9P-4-22-242.01 for the Provincetown Water Department, Provincetown, Massachusetts.

If you have any questions concerning this letter, please contact Richard Friend at 617-654-6522 or e-mail at richard.friend@state.ma.us.

Very truly yours,

Rebecca Weidman
Director, Division of Watershed Management
Bureau of Water Resources

Cc: R. Rondeau, MassDEP, SERO
Provincetown Board of Selectmen, 260 Commercial Street, Provincetown, MA, 02657
Ecc: Cody Salisbury, Provincetown Water Dept.: csalisbury@provincetown-ma.gov
Tom Cambereri, Cape Cod Commission: tcambereri@capecodcommission.org
Jen Pederson, Mass. Water Works Assoc.: MWWA@verizon.net
Mark White, Environmental Partners: mnw@envpartners.com
Julia Blatt, Mass Rivers Alliance: juliablatt@massriversalliance.org

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

Contact the MassDEP Diversity Office at 617-556-1161. TTY# MassRelay Service 1-800-439-2370. <http://www.mass.gov/eea/agencies/massdep/service/justice/> (Version 3.30.15)



1 English:

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



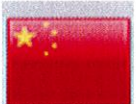
2 Español (Spanish):

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



3 Português (Portuguese):

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



4(a) 中國（傳統）(Chinese (Traditional)):

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與 MassDEP 的多樣性總監聯繫。



4(b) 中国（简体中文）(Chinese (Simplified)):

本文件非常重要，应立即翻译。如果您需要翻译这份文件，请用下面列出的电话号码与 MassDEP 的多样性总监联系。



5 Ayisyen (franse kreyòl) (Haitian) (French Creole):

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradui imedyatman. Si ou bezwen dokiman sa a tradui, tanpri kontakte Divèsite Direktè MassDEP a nan nimewo telefòn ki nan lis pi ba a.



6 Việt (Vietnamese):

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



7 ព្រះរាជាណាចក្រកម្ពុជា (Kmer (Cambodian)):

ឯកសារនេះមានសារៈសំខាន់និងគួរត្រូវបានបកប្រែភ្លាមៗ ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនង ឬទោសជាថ្មីក្នុងការទាក់ទងទៅនឹង MassDEP នៅលេខទូរស័ព្ទដូចមានរាយនាមខាងក្រោម។



8 Kriolu Kabuverdianu (Cape Verdean):

Es documento é importante e deve ser traduzido imidiatamente. Se bo precisa des documento traduzido, por favor contacta Diretor de Diversidade na MassDEP's pa es numero indicode li d'boche.



9 Русский язык (Russian):

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



10 العربية (Arabic):

هذه الوثيقة الهامة وينبغي أن تترجم على الفور. إذا كنت بحاجة إلى هذه الوثيقة المترجمة، يرجى الاتصال مدير التنوع في MassDEP على أرقام الهواتف المدرجة أدناه.

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

Contact the MassDEP Diversity Office at 617-556-1161. TTY# MassRelay Service 1-800-439-2370. <http://www.mass.gov/eea/agencies/massdep/service/justice/> (Version 3.30.15)



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 مدیر MassDEP 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.



18 Język Polski (Polish):

Dokument ten jest ważny i powinien być natychmiast przetłumaczony. Jeśli potrzebujesz tego dokumentu tłumaczone, prosimy o kontakt z Dyrektorem MassDEP w różnorodności na numery telefonów wymienionych poniżej.



19 हिन्दी (Hindi):

यह दस्तावेज़ 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 FINAL Water Management Permit #9P-4-22-242.01 Town of Provincetown

The Department of Environmental Protection (the Department) makes the following Findings of Fact in support of the attached Water Management Permit #9P-4-22-242.01, and includes herewith its reasons for issuing the Final Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11. The issuance of this permit is in response to a water withdrawal permit renewal application submitted by the Town of Provincetown Water Department, (Provincetown) for the purpose of public water supply.

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.

The Permit Extensions

Expiration dates for all Water Management permits were extended for four years by Chapter 240 of the Acts of 2010 and as amended by Chapter 238 of the Acts of 2012, collectively known as the Permit Extension Act (PEA). Provincetown's initial WMA permit was issued April 11, 2012, during the period that all permits on Cape Cod were extended. To keep Provincetown on the same permit renewal schedule as all permittees on Cape Cod, the Department accepted a permit renewal application from Provincetown pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7). The Department ran public notice of this renewal application on April 22, 2015 and received no comments.

In a letter on September 25, 2015, the Department informed Provincetown 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 Cape Cod Basin fully understood the new Water Management Regulations (discussed below), and to give proper consideration to all permit renewal applications within the basin. On December 21, 2016 the Department issued a draft renewed permit to Provincetown, and published notice of the draft permit in the December 21, 2016 Environmental Monitor. No comments were received.

The expiration date for all permits going forward in the Cape Cod Basin will be November 30, 2030, in order to restore the staggered permitting schedule set forth in the regulations.

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, the Department adopted revised Water Management Regulations at 310 CMR 36.00 that incorporate elements of the SWMI framework and the Water Conservation Standards adopted by the Massachusetts WRC. The regulations reflect a carefully developed balance to protect the health of Massachusetts' water bodies while meeting the needs of businesses and communities for water.

Without limitation, the Department has incorporated the following into Water Management permitting:

- Safe yield determinations for the major river basins based on a new methodology developed through SWMI (see the Safe Yield in the Cape Cod Basin section of this document);
- Water needs forecasts for public water suppliers developed by the Department of Conservation and Recreation, Office of Water Resources (DCR), using a methodology reviewed and approved by the Massachusetts WRC;
- Water supply protection measures for public water supplies including Zone II delineations for groundwater sources, and wellhead and surface water protection measures as required by Massachusetts Drinking Water Regulations (310 CMR 22.00);
- Water conservation and performance standards reviewed and approved by the WRC in July 2006 and revised in June 2012 (<http://www.mass.gov/eea/docs/eea/wrc/water-conservation-standards-rev-june-2012.pdf>), including without limitation:
 - performance standard of 65 residential gallons per capita day or less;
 - performance standard of 10% or less unaccounted-for-water;
 - seasonal limits on nonessential outdoor water use;
 - a water conservation program that includes leak detection and repair, full metering of the system and proper maintenance of the meters, periodic review of pricing, and education and outreach to residents and industrial and commercial water users; and
- 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.

The Water Management Act

Section 7 of the WMA requires that the Department issue permits that balance a variety of factors including:

- Reasonable protection of existing water uses, land values, investments and enterprises;
- 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.

Safe Yield in the Cape Cod Basin

This permit is being issued under the safe yield methodology adopted by the Department on November 7, 2014, and described in the regulations at 310 CMR 36.13. As of the date of issuance of this permit, the safe yield for the Cape Cod Basin is 266.0 million gallons per day (MGD), and total registered and permitted withdrawals are 51.8 MGD, leaving 214.2 MGD potentially available. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Cape Cod Basin, will be within the safe yield and may be further conditioned as outlined in the regulations.

Mitigation, Minimization and Coldwater Fisheries Resources

Provincetown has not requested to withdraw above its Baseline volume of 0.85 MGD, therefore no mitigation is required. Minimization is not required because Cape Cod has no delineated subbasins and therefore no 25% Net Groundwater Depletion subbasins. There are no Coldwater Fisheries Resources identified at this time that can be affected by Provincetown's withdrawal.

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 Provincetown's permit does not imply that water conservation is not important for resource protection, and Provincetown should still take every opportunity to encourage water conservation, especially during the high use summer season.

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 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 is its registered volume of 311.62 million gallons per year (MGY), or an average daily volume of 0.85 million gallons per day (MGD). This WMA permit does not authorize additional withdrawal above the registered volume on an average annual basis. From 2011 to 2015 the average annual withdrawal rate did not exceed 0.70 MGD.

Special Condition 2, Maximum Authorized Daily Withdrawals from Each Withdrawal Point, specifies the maximum daily volume expressed in millions of gallons per day that may be withdrawn from each of Provincetown's permitted sources. The maximum authorized daily withdrawal for any of Provincetown's sources is equal to the approved Zone II rate for that source.

Special Condition 3, Zone II Delineations, all of Provincetown's permitted sources have approved Zone II's delineated.

Special Condition 4, Wellhead Protection Provincetown is in compliance with MassDEP's Best Effort Requirement 310 CMR 22.21(1).

Special Condition 5, Performance Standard for Unaccounted for Water for all PWS permittees is 10% or less and has been a condition in Provincetown's permit since 2012. Their DEP-reviewed UAW values show high UAW has been and continues to be a problem.

Provincetown Unaccounted for Water

2011	2012	2013	2014	2015	Average
20%	20%	18%	17%	20%	19%

Provincetown has been working in recent years to identify causes and remedies for its high UAW. In 2010 every service line in system was inspected for length, material and integrity, and in 2014 and 2015 meter pits were installed for service lines with substandard material. Service meters are 99.5% radio-read and are read monthly to more readily identify problems. Meters are replaced based on a 15-year life cycle.

Provincetown was one of 15 public water suppliers that received a Level 1 (top-down) M36 water audit under a SWMI grant. They received a validity score of 65, indicating that a Level 2 audit was appropriate, including identifying the sources of real losses identified in the Level 1 audit. The 2015 M36 audit identified 37.822 MG of total water loss, of which 36.795 MG was real losses though leaks and tank overflows.

The Water Department has performed extensive leak detection on water mains and service connections, although leaks are difficult to detect due to the soil conditions. In 2014, they identified and repaired 24 leaks on service connections for an estimated savings of 6 million gallons per year. Provincetown is planning to measure nighttime flow in the winter in isolated zones of the distribution system to identify areas for further leak detection efforts.

Should Provincetown be unable comply within the timeframes in the permit they must meet the Functional Equivalence requirements based on the AWWA/IWA Water Audits and Loss Control Program, Manual of Water Supply Practices M36, as outlined in Appendix A.

Special Condition 6, Water Conservation Requirements, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts adopted by the MA Water Resources Commission in July 2006 (updated in 2012) and required by the Regulations at 310 CMR 36.28.

Special Condition 7, Seasonal Limits on Nonessential Outdoor Water Use, requires Provincetown to implement nonessential outdoor water use restrictions from May 1 to September 30. The town can choose to implement the restrictions based on either the calendar (all summer) or only when groundwater levels in a U.S. Geological Survey monitoring well fall below certain defined levels for at least 60 consecutive days. Provincetown has the authority to implement outdoor water use restriction under the Provincetown General By-Laws, Section 14, "Water Use Restriction By-Law".

Special Condition 8, Requirement to Report Raw and Finished Water Volumes ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

In the event of any conflict or ambiguity between the preceding Findings and the permit, the permit language shall control.



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

This FINAL permit is issued pursuant to the Massachusetts Water Management Act 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-4-22-242.01 **Basin:** Cape Cod

PERMITTEE: Town of Provincetown
260 Commercial Street
Provincetown, MA 02657

EFFECTIVE DATE: January 30, 2017

EXPIRATION DATE: November 30, 2030

NUMBER OF WITHDRAWAL POINTS: Groundwater: 2 Surface Water: 0

USE: Public Water Supply

DAYS OF OPERATION: 365

SOURCE LOCATIONS:

Authorized Withdrawal Points

Source Name	PWS Source ID
North Union	4242000-06G
Field Wellfield	4242000-07G

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Town of Provincetown to withdraw water from the Cape Cod Basin at the rate described in Table 1. The permit does not authorize annual withdrawals above the registered rate.

The authorized volume is expressed in millions of gallons, both as an average daily withdrawal rate per year and as a total annual withdrawal volume for each year of the period of the permit term. The Department of Environmental Protection will use the raw water withdrawal volume from all authorized withdrawal points to assess compliance with the withdrawal volumes.

Table 1: Authorized Raw Water Withdrawal Rates

5-Year Periods		Permit		Registration + Permit	
		Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
Period One Years 1-5	01/25/2017 - 11/30/2020	0	0	0.85	311.62
Period Two Years 6-10	12/1/2020 - 11/30/2025	0	0	0.85	311.62
Period Three Years 11-15	12/1/2026 - 11/30/2030	0	0	0.85	311.62

2. Maximum Authorized Daily Withdrawals from Each Withdrawal Point

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed in Table 2 without specific advance written approval from the Department. The authorized maximum daily volume is the combined rate for the two sources. In no event shall the combined withdrawals from these permitted withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

Table 2: Authorized Maximum Daily Withdrawal Volumes

Source Name	PWS Source ID	Maximum Daily Rate (MGD)
North Union Field Wellfield	4242000-06G and 4242000-07G	0.734

3. Zone II Delineations

Provincetown's two permitted wells have a single Zone II area and single Zone II maximum daily pumping rate approved by the Department (Table 2). No further Zone II work is required as a condition of this permit.

4. Wellhead Protection

Provincetown is in compliance with its wellhead protection requirements.

5. Performance Standard for Unaccounted for Water

Provincetown's Performance Standard for Unaccounted for Water (UAW) is 10% or less of overall water withdrawal for 2 of the most recent years 3 throughout the permit period. Provincetown shall be in compliance with this performance standard by December 31, 2019 or, if Provincetown does not meet the standard, shall be in compliance with the functional equivalence requirements (Appendix A).

6. Water Conservation Requirements

At a minimum, Provincetown shall implement conservation measures listed in Table 3. Compliance with the water conservation requirements shall be reported to the Department upon request or at the time of permit renewal unless otherwise noted below.

Table 3: Minimum Water Conservation Requirements	
Leak Detection	
1.	At a minimum, conduct a full leak detection survey every three years. See also Special Condition 5.
2.	Conduct leak detection of the entire distribution system within one year whenever the percentage of UAW increases by 5% or more (for example an increase from 3% to 8%) over the percentage reported on the ASR for the prior calendar year. Within 60 days of completing the leak detection survey, submit to the Department a report detailing the survey, any leaks uncovered as a result of the survey or otherwise, dates of repair and the estimated water savings as a result of the repairs.
3.	Conduct field surveys for leaks and repair programs in accordance with the <u>AWWA Manual 36</u> .

Table 3: Minimum Water Conservation Requirements
<p>4. Provincetown shall have repair reports available for inspection by the Department. Provincetown shall establish a schedule for repairing leaks that is at least as stringent as the following:</p> <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. ○ 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. <p>Leaks shall be repaired in accordance with Provincetown's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. Provincetown shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.</p>
Metering
<p>1. Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.</p>
<p>2. Provincetown reports its system is 100% metered. All water distribution system users shall have properly sized service lines and meters that meet AWWA calibration and accuracy performance standards as set forth in <u>AWWA Manual M6 – Water Meters</u>.</p>
<p>3. Provincetown shall have an ongoing program to inspect individual service meters to ensure that all service meters accurately measure the volume of water used by your customers. The metering program shall include regular meter maintenance, including testing, calibration, repair, replacement and checks for tampering to identify and correct illegal connections. The plan shall continue to include placement of sufficient funds in the annual budget to calibrate, repair, or replace meters as necessary.</p>
Pricing
<p>1. Provincetown shall maintain a water pricing structure that includes the full cost of operating the water supply system. Provincetown shall evaluate rates at a minimum every three to five years and adjust costs as needed. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices.</p>
<p>2. Provincetown shall not use decreasing block rates. Decreasing block rates which charge lower prices as water use increases during the billing period, are not allowed by M.G.L. Chapter 40 Section 39L.</p>
Residential and Public Sector Conservation
<p>1. Provincetown shall meet the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code.</p>
<p>2. Provincetown shall meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.</p>
<p>3. Provincetown reports that all municipally owned public buildings have water saving devices. Provincetown shall continue to ensure that water savings devices are installed in all municipal buildings as they are renovated, and shall ensure water conserving fixtures and landscaping practices are incorporated into the design of new municipal capital projects.</p>
Commercial Water Conservation
<p>1. Provincetown shall ensure water conservation practices in all development proposals, particularly low flow devices and water-wise landscaping practices.</p>
Public Education and Outreach
<p>1. Provincetown shall continue to implement its water conservation and education efforts designed to educate the Town's water customers on ways to conserve water. Without limitation, Provincetown's plan may include the following actions:</p> <ul style="list-style-type: none"> ○ Include in bill stuffers and/or bills, a work sheet to enable customers to track water use and

Table 3: Minimum Water Conservation Requirements

<ul style="list-style-type: none">○ conservation efforts and estimate the dollar savings;○ Public space advertising/media stories on successes (and failures);○ Conservation information centers perhaps run jointly with electric or gas company;○ Speakers for community organizations;○ Public service announcements; radio/T.V./audio-visual presentations;○ Joint advertising with hardware stores to promote conservation devices;○ Use of civic and professional organization resources;○ Special events such as Conservation Fairs;○ Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and○ Provide multilingual materials as needed.
2. Upon request of the Department, the Town of Provincetown shall report on its public education and outreach effort, including a summary of activities developed for specific target audiences, any events or activities sponsored to promote water conservation and copies of written materials.

7. Seasonal Limits on Nonessential Outdoor Water Use

Provincetown shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in Table 4. Provincetown shall be responsible for tracking groundwater levels and drought declarations and recording and reporting when restrictions are implemented. See Table 4 for *Instructions for Accessing U.S. Geologic Survey Groundwater Level and Massachusetts Drought Advisory Website Information*. Provincetown shall also document compliance with the summer limits on nonessential outdoor water use annually in its Annual Statistical Report (ASR).

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

Water Uses Restrictions

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

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

The following uses may be allowed when mandatory restrictions are in place:

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

Water uses NOT subject to mandatory restrictions are those required:

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

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 420206070045901 (TSW 89) Truro, 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 TSW 89 begins on March 1 of each year. 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).

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

March	April	May	June	July	Aug	Sept
12.00	11.86	11.99	12.14	12.37	12.51	12.56

And:

- b) A Drought Advisory or higher is declared for Cape Cod by the MA Drought Management Task Force.

Instructions for Accessing U.S. Geologic Survey Groundwater Level and Massachusetts Drought Advisory 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 420206070045901 (TSW 89) Truro, MA and click on the station number.
- 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 Advisory information is available at the Massachusetts Department of Conservation and Recreation (DCR) Drought Status Website at

<http://www.mass.gov/eea/agencies/dcr/water-res-protection/water-data-tracking/drought-status.html>

- Under "Drought Status Reports", click on "drought map" on the right-hand side of the page. The color coded map displays the six drought regions in Massachusetts. Restrictions are implemented when a Drought Advisory, Watch, Warning or Emergency is announced through the DCR website.

Public Notice of Water Use Restrictions

Provincetown 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

<http://www.mass.gov/eea/agencies/massdep/water/watersheds/municipal-water-use-restrictions.html>

Notice to customers and MassDEP need not be provided if Provincetown has already implemented water use restrictions that conform to the applicable restrictions and those restrictions are still in force.

8. Requirement to Report Raw and Finished Water Volumes

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

GENERAL 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 the Department at reasonable times to enter and examine any property or inspect and copy any 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 the Department pursuant to M.G.L. c. 21G, s. 15-17, M.G.L. c. 111, s. 160, or any other enabling authority.
- 5. Transfer of Permits** This permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to a transfer application on forms provided by the Department requesting such approval and received by the Department 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 36.33.
- 6. Duty to Report** The permittee shall submit annually, on the electronic Annual Statistical Report (eASR) accessed through the Department's eDEP website, a statement of the withdrawal. Such report must be submitted annually by the date identified on eDEP each year, unless the permittee has explicit permission from the MassDEP Drinking Water program for an extension of time.

7. **Duty to Maintain Records** The permittee shall be responsible for maintaining withdrawal records in sufficient detail to assess compliance with the conditions of this permit.
8. **Metering** All withdrawal points included within the permit shall be metered. Meters are to be calibrated annually.
9. **Amendment, Suspension or Termination** The Department may amend, suspend or terminate the permit in accordance with M.G.L. c. 21G and 310 CMR 36.29.

APPEAL RIGHTS AND TIME LIMITS

This permit is a decision of the Department. Any person aggrieved by this decision and any person who has been allowed pursuant to 310 CMR 1.01(7) to intervene in the adjudicatory proceeding that resulted in this decision may request an adjudicatory hearing. Any such request must be made in writing, by certified mail or hand delivered, and received by the Department 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 city or town 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 the Department.

CONTENTS OF HEARING REQUEST

The request for a hearing shall state specifically, clearly and concisely the facts which are the grounds for the appeal, the relief sought, and any additional information required by 310 CMR 1.01(6)(b) or other applicable law or regulation. For any person appealing this decision who is not the applicant, the request must include sufficient written facts to demonstrate status as a person aggrieved and documentation to demonstrate previous participation where required.

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

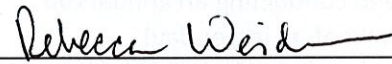
The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

EXEMPTIONS

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

WAIVER

The Department may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of the Department 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.


Rebecca Weidman, Director
Division of Watershed Management
Bureau of Water Resources

1/30/17
Date

Appendix A – Functional Equivalence with the 10% Unaccounted for Water Performance Standard

MassDEP will consider PWS permittees who cannot meet the 10% UAW performance standard to be functionally equivalent, and in compliance with their permit, if they have an on-going program in place that ensures “best practices” for controlling water loss. The water loss control program will be based on annual water audits and guidance as described in the *AWWA/IWA Manual of Water Supply Practices – M36, Water Audits and Loss Control Programs* (AWWA M36).

If, as of **December 31, 2019**, 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.

1. Conduct an annual “top down” water audit, calculate the data validity level/score using AWWA Water Loss Control Committee’s Free Water Audit Software, and submit the AWWA WLCC Free Water Audit Software: Reporting Worksheet and data validity score annually with its Annual Statistical Report (ASR).
 - If a PWS’s data validity level/score is less than Level III (51-70), steps recommended through the audit(s) shall be taken to improve the reliability of the data prior to developing a long-term program to reduce real and apparent water losses.
 - Data with a validity score of 50 or less are considered too weak to be used to develop a component analysis or for infrastructure planning and maintenance.
 - Developing data with an acceptably strong validity score can be a multi-year process.
2. When the data validity score meets the Level III (51-70) requirement, the permittee shall conduct a component analysis to identify causes of real and apparent water loss and develop a program to control losses based on the results of the component analysis. The Permittee shall submit the component analysis and water loss control program with a proposed implementation schedule to the Department.
3. Continued implementation will be a condition of the permit in place of meeting the 10% UAW performance standard.
4. Upon request of the Department, the permittee shall report on its implementation of the water loss control program.

A PWS permittee may choose to discontinue the water loss program implementation if UAW, as reported on the ASR and approved by DEP, is below 10% for four consecutive years, and the water audit data validity scores are at least Level III (51-70) for the same four years.

NOTE FOR SMALL SYSTEMS: For small systems with less than 3,000 service connections or a service connection density of less than 16 connections per mile of pipeline, the Unavoidable Annual Real Loss (UARL) calculation and the Infrastructure Leak Index (ILI) developed as the final steps of the top down water audit may not result in valid performance indicators, and may not be comparable to the UARL and ILI calculations for larger systems.

However, these small systems can benefit from developing reliable data and conducting an annual top down water audit. Small systems can rely on the real losses (gallons per mile of main per day) performance indicator developed in the water audit as a measure of real water loss when developing a water loss control program. The M36 Manual discusses the audit process for small systems, and includes a chapter to guide small systems in understanding the results of their audits and in developing a water loss

control program (*Manual of Water Supply Practices – M36, Fourth Edition, Chapter 9: Considerations for Small Systems*, pp. 293-305).

MassDEP UAW Water Loss Control Measures: Permittees who do not have MassDEP approved Water Loss Control Programs in place by 6th calendar year after 2019 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. Suppliers will be able to present:

- Reasons why specific measures are not cost effective because the cost would exceed the costs of alternative methods of achieving the appropriate standard;
- Alternative 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 Functional Equivalence Plan; and
- When applicable, an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship.

