

# Department of Environmental Protection

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

Maura T. Healey Governor

Kimberley Driscoll Lieutenant Governor Rebecca L. Tepper Secretary

> Bonnie Heiple Commissioner

May 30, 2025

Nicole Dewberry Three Rivers Fire District – Water Department 6 Three Rivers Road P.O. Box 182 Three Rivers, MA 01080 RE: Three Rivers – BWR/WMA PWS ID Number: 1227003 WMA Permit #9P2-01-08-227.01

Dear Ms. Dewberry;

Please find the attached documents:

- Findings of Fact in Support of the Water Management Act Renewed Permit #9P2-01-08-227.01; and
- Water Management Act Renewed Permit #9P2-01-08-227.01 (Chicopee River Basin) for Three Rivers Fire District.

The signature on this cover letter indicates formal issuance of the attached document. If you have any questions regarding this information, please contact Emily Wilcox at emily.wilcox@mass.gov or me at (857) 276-5393 or via e-mail at <u>duane.levangie@mass.gov</u>.

Very truly yours,

Priane LeVaugie

Duane LeVangie, Chief Water Management Program Bureau of Water Resources

Ecc: Lydia Olson, Massachusetts Rivers Alliance Duane LeVangie, MassDEP- WMA Program Chief-Boston Jennifer Pederson, MWWA Andrew Kelly, MassDEP-Drinking Water Program Chief- Springfield

Sharepoint:\DWPWMA\Permit Renewals\Chicopee\Palmer-1227003-Three Rivers-Final WMA Permit-5-30-2025.

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# Communication for Non-English-Speaking Parties

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#### **Español Spanish**

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#### Português Portuguese

Este é um documento importante e deve ser traduzido imediatamente. Se precisar de uma tradução deste documento, entre em contato com o Diretor de Diversidade da MassDEP nos números de telefone listados abaixo.

#### 繁體中文 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聯絡 MassDEP 多元

#### 化負責人。 简体中文 Chinese Simplified

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#### Ayisyen Kreyòl Haitian Creole

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradwi I imedyatman. Si ou bezwen dokimar sa a tradwi, tanpri kontakte Direktè Divèsite MassDEP Ia 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

ឯកសារនេះគឺសំខាន់ហើយគួរត្រូវជានបកប្រែ ភ្លាមៗ។ ប្រសិនបើអ្នកត្រូវការឲ្យគេបកប្រែ ឯកសារនេះ

សូមទាក់ទងមកនាយកផ្នែកពិពិធកម្មរបស់ MassDEP តាមលេខទូរស័ព្ទខាងក្រោម។

#### Kriolu Kabuverdianu Cape Verdean

Kel dukumentu li é inpurtánti y debe ser traduzidu imidiatamenti. Se bu meste di kel dukumentu 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 9<sup>th</sup> Floor Boston, MA 02114 TTY# MassRelay Service 1-800-439-2370 • https://www.mass.gov/environmental-justice (Version revised 4.21.2023) 310 CMR 1.03(5)(a)

#### Русский Russian

Это важный документ, и он должен быть безотлагательно переведен. Если вам нужен перевод данного документа, пожалуйста, свяжитесь с директором по вопросам многообразия (Diversity Director) компании MassDEP по указанному ниже телефону.

#### Arabic العربية

هذه الوثيقة مهمة ويجب ترجمتها على الفور. اذا كنت بحاجة الى 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.

#### hայերեն 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։

#### Farsi Persian فارسی

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

#### **Français French**

Ce document est important et devrait être traduit immédiatement. Si vous avez besoin de ce document traduit, veuillez communiquer avec le directeur de la diversité MassDEP aux numéros de téléphone indiqués ci-dessous.

#### **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.

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### हिन्दी Hindi

यह दस्तावेज 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 मासडेप्स डाइवर्सिटी के निदेशक से संपर्क करें.

Contact Deneen Simpson 857-406-0738 Massachusetts Department of Environmental Protection 100 Cambridge Street 9<sup>th</sup> Floor Boston, MA 02114 TTY# MassRelay Service 1-800-439-2370 • <u>https://www.mass.gov/environmental-justice</u> (Version revised 4.21.2023) 310 CMR 1.03(5)(a)

# Department of Environmental Protection

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### Findings of Fact in Support of Permit Renewal Water Management Permit #9P2-01-08-227.01 Three Rivers Fire District – Water Department

The Department of Environmental Protection (the Department or MassDEP) makes the following Findings of Fact in support of Three Rivers Fire District (TRFD or TRFD's) attached Renewed Water Management Act (WMA) Permit #9P2-01-08-227.01 and includes herewith its reasons for issuing the Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11.

# **TRFD's Withdrawal History**

#### **Original Permit:**

TRFD is registered (#10822701) for an average annual daily withdrawal volume of 0.40 million gallons per day (MGD) from Well #1 in the Chicopee River Basin. On July 17, 2000, TRFD was issued a WMA Permit to add Well #3 but the permit did not authorize any increase in total authorized withdrawal volumes.

### Modified Permit:

TRFD's permit was modified on December 4, 2007, superseding the previously issued WMA Permit. The modified permit included WMA Performance Standards for all permittees that withdraw water from low stress or unassessed river basins. The Standards set residential gallons per capita day water use (RGPCD) of 80 gallons or less and Unaccounted for Water (UAW) of 15% or less. The 2007 modified permit also correctly specified the Zone II rate for Well #3 as a maximum daily withdrawal limit. The original permit erroneously listed the maximum daily withdrawal rate as a daily rate and an annual average.

### Permit Extension Act:

All Chicopee River Basin water withdrawal permits were originally intended to expire on May 31, 2013. The expiration date in the Chicopee Basin for all Water Management permits was extended for two years by Chapter 240 of the Acts of 2010 and further extended another two years by Chapter 238 of the Acts of 2012, collectively known as the Permit Extension Act. The expiration date for all permits going forward in the Chicopee River Basin will be May 31, 2033 in accordance with the staggered permitting schedule set forth in the regulations.

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#### Permit Renewal Application:

On June 7, 2016, MassDEP received a WMA 20-year permit renewal application from TRFD for their withdrawal in the Chicopee River Basin. The submitted application requested to maintain the permitted withdrawal volume of 0.0 MGD. Pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7), TRFD's existing permit continues in force and effect until the Department issues a final decision on the permit renewal application.

# The Water Management Act (M.G.L. c. 21G)

The Water Management Act (Act) requires MassDEP 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 https://www.mass.gov/doc/framework-november-2012/download was released.

On November 7, 2014, MassDEP adopted revised Water Management Regulations at 310 CMR 36.00 that incorporate elements of the SWMI framework, and the Water Conservation Standards adopted by the Massachusetts WRC. The regulations reflect a carefully developed balance to protect the health of Massachusetts' water bodies while meeting the needs of businesses and communities for water.

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

• Safe yield determinations for the major river basins based on a new methodology developed through SWMI (see the Safe Yield in the Chicopee River Basin section of this document or for more information on the Safe Yield methodology, go to the November 28, 2012 SWMI Framework Summary and Appendices);

Three Rivers Fire District – Water Department WMA Permit #9P2-01-08-227.01

- 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 <u>https://www.mass.gov/files/documents/2018/09/11/ma-water-conservation-standards-2018.pdf</u>\_including without limitation;
  - o 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;
  - o minimization of withdrawal impacts in areas stressed by groundwater use; and
  - mitigation of the impacts of increasing withdrawals.

# Safe Yield in the Chicopee River Basin

This permit is being issued under the safe yield methodology adopted by 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 Chicopee River Basin is 353.1 MGD, and total registered and permitted withdrawals are 204.43 MGD as of the date of issuance of this permit. The withdrawals authorized by this permit and all other permits within the Chicopee River Basin, will be within the safe yield of the Chicopee River Basin and may be further conditioned as outlined in the regulations.

### Findings of Fact for Special Conditions in TRFD'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 PERMIT CONDITIONS

### Special Condition 1, Authorized Annual Withdrawal Volume

Because actual withdrawals have been considerably below the registration volume, this permit authorizes no additional withdrawal volumes beyond the registered withdrawal volume of 0.40 MGD. This permit is necessary because one groundwater source (Well #3-03G) was added after the registration period.

# Special Condition 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 this Special Condition without specific advance written approval from the Department. The authorized maximum daily rate of the one permitted source (Well #3-03G) is 0.936 MGD and is based on the approved Zone II rate.

#### **Special Condition 3, Zone of Contribution Delineations**

This requirement has been met and no further delineations are required as a condition of this permit

#### **Special Condition 4, Water Supply Source Protection**

As a PWS separate from the Town of Palmer, TRFD is required to comply with MassDEP's Best Effort Requirement, 310 CMR 22.21(1). To date, TRFD has demonstrated Best Effort to the Town of Palmer to adopt wellhead protection bylaws for the TRFD Zone II, as required by the WMA Permit. However, the non-zoning floor drain discharge prohibition required under 310 CMR 22.21(1) remains outstanding. TRFD must contact the Town of Palmer to request adoption of this regulation and provide documentation of their efforts to MassDEP within 90 days of the issuance of this permit. Please refer to the *Best Effort Requirement Guide* for instructions on how to meet the *Best Effort Requirement <u>https://www.mass.gov/doc/wellhead-protection-guidance-best-effort-requirement-310-cmr-22211/download</u>. For any questions, please contact Catherine Sarafinas-Hamilton in the Drinking Water Program at <u>catherine.sarafinas-hamilton@mass.gov</u>.* 

# Special Condition 5, Performance Standard for Residential Gallons Per Capita Day Water Use

TRFD's performance standard for residential gallons per capita day (RGPCD) has been 80 gallons as of December 31, 2009. Since at least 2019, TRFD has been in compliance with the RGPCD Performance Standard of 80. Since the 2007 modified permit was issued, MassDEP established a new statewide Performance Standard for RGPCD of 65. This condition has been changed in the renewed WMA permit from 80 to 65 RGPCD, with a compliance date of December 31, 2026, and then every year thereafter. Those that cannot meet the performance standard will be required to meet the requirements of a RGPCD Compliance Plan, outlined in Appendix A.

### Special Condition 6, Performance Standard for Unaccounted for Water

TRFD's Performance Standard for unaccounted for water (UAW) has been 15% of overall water withdrawal as of December 31, 2009. Since the 2007 modified permit, MassDEP established a statewide Performance Standard for UAW of 10%. The renewed WMA permit for TRFD has changed the UAW from 15% to 10% and require that TRFD comply with the 10% Performance Standard for two out of every three years with a compliance date of December 31, 2026. The renewed WMA Permit provides that if TRFD fails to meet this requirement, TRFD will have to meet the Functional Equivalence requirements based on the AWWA/IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices, copied in Appendix B.

#### **Special Condition 7, Water Conservation Requirements**

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

#### Special Condition 8, Seasonal Limits on Nonessential Outdoor Water Use

This Special Condition reflects the restrictions on nonessential outdoor water use from May through September. The options outlined in this Special Condition are based on whether reported RGPCD for the previous year was in compliance with the RGPCD Performance Standard (see Special Condition 5, Performance Standard for RGPCD). In addition, outdoor water use by suppliers with wells in August net groundwater depleted<sup>1</sup> subbasins<sup>2</sup> is limited to 1 or 2 days per week to minimize withdrawals from depleted subbasins.

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

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

If TRFD selects the streamflow trigger approach, it has been assigned USGS stream #01176000 – Quaboag River at W. Brimfield, MA. The May-June streamflow trigger is 130 cubic feet per second (cfs), and the July-September streamflow trigger is 67 cfs. Should the reliability of flow measurement at this be so impaired as to question its accuracy, TRFD may request that MassDEP review and approve the transfer to another gage that will trigger restrictions. MassDEP reserves the right to require use of a different gage.

• **The 7-Day Low Flow Trigger**, at which restrictions increase, is incorporated into both Calendar and Streamflow Triggered restrictions in order to provide additional protection to streamflow's when flows are very low. The 7-day low flow trigger for TRFD is 29.71 cfs.

<sup>&</sup>lt;sup>1</sup> The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion (NGD) to mean the unimpeded median flow for August minus 2000-2004 groundwater withdrawals plus 2000-2004 groundwater returns described by U.S. Geological Survey in *Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover and Water Quality for Massachusetts Stream Basins*. A subbasin is groundwater, depleted if it has an August NGD of greater than 25%.

<sup>&</sup>lt;sup>2</sup> Subbasins used for WMA permitting are the 1,395 subbasins delineated by the U.S. Geological Survey in *Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover, and Water Quality for Massachusetts Stream Basins* (Weiskel *et al.*, 2010, USGS SIR 2009-5272).

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

#### Special Condition 9, Requirement to Report Raw and Finished Water Volumes

This condition ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

#### **Other Water Management Act Considerations**

#### Cold Water Fish Resources (CFR)

Permittees with withdrawals that impact streamflow of a CFR (identified on basin maps) must evaluate reducing impacts to CFRs through feasible optimization. TRFD's subbasin in the Chicopee Basin does not contain a CFR identified by the Department of Fish and Game (DFG) at this time. Therefore, CFR protection will not be incorporated into TRFD's renewed permit.

#### **Minimization**

Permittees with groundwater sources in subbasins having an August Net Groundwater Depletion (NGD) of 25% or greater are required to develop a plan to minimize the impacts of their withdrawals. TRFD's groundwater sources are located in subbasin 17036, which has August NGD of less than 25% (6.5%). Therefore, TRFD is not required to prepare a Minimization Plan at this time.

#### Mitigation

TRFD's baseline is 0.40 MGD, based on the registered volume. The permit renewal does not authorize TRFD to withdraw volumes that exceed its registered volume of 0.40 MGD. Therefore, no mitigation plan is required from TRFD at this time.

#### Responses to Public Comments

MassDEP published the Draft Permit for TRFD in the February 26, 2025 Environmental Monitor for review and comment. No comments were received.

# Department of Environmental Protection

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

Maura T. Healey Governor

Kimberley Driscoll Lieutenant Governor Rebecca L. Tepper Secretary

> Bonnie Heiple Commissioner

#### WATER WITHDRAWAL PERMIT 9P2-01-08-227.01 Three Rivers 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:** 9P2-01-08-227.01

**RIVER BASIN:** Chicopee River

PERMITTEE: Three Rivers Fire District – Water Department 6 Three Rivers Road P.O. Box 182 Three Rivers, MA 01080

EFFECTIVE DATE: May 30, 2025

EXPIRATION DATE: May 31, 2033

### NUMBER OF WITHDRAWAL POINTS: 1

Groundwater: 1 Surface Water: 0

**USE:** Public Water Supply

### DAYS OF OPERATION: 365

### LOCATION(S):

<b>Table 1: Withdrawal Point Identification</b>	
Source Name	PWS Source ID Code
Well #3	1227003-03G

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# **SPECIAL CONDITIONS**

#### 1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes Three Rivers Fire District (TRFD) to withdraw water from the Chicopee River Basin at the rate described below in Table 2. No increase in withdrawal volumes is authorized by this permit beyond the 0.40 million gallons per day previously authorized to TRFD under Water Management Act Registration #1-08-227.01.

Table 2: Authorized Withdrawals					
	<b>Total Raw Water Withdrawal Volumes</b>				
Permit	Permit		<b>Registration + Permit</b>		
Periods	Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)	
5/30/2025 to 5/31/2028	0.0	0.0	0.40	146.00	
6/1/2028 to 5/31/2033	0.0	0.0	0.40	146.00	

#### 2. Maximum Authorized Daily Withdrawals from each Withdrawal Point

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 maximum authorized daily volume is the approved rate of each source. In no event shall the combined withdrawals from the registered and permitted withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

Table 3: Maximum Daily Withdrawal Volumes		
Well Name	Well Name PWS Source ID Maximum Da	
	Code	Rate (MGD)
Well #3	1227003-03G	0.936

### 3. Zone of Contribution Delineations

Department records show that Well #1 and Well #3 both have MassDEP approved Zone II delineations. No further Zone II work is required as a condition of this permit.

#### 4. Water Supply Source Protection

#### **Wellhead Protection**

As a PWS separate from the Town of Palmer, TRFD is required to comply with MassDEP's Best Effort Requirement, 310 CMR 22.21(1). TRFD must contact the Town of Palmer to request adoption of outstanding regulations and provide documentation of their efforts to MassDEP within 90 days of the issuance of this permit.

### 5. Performance Standard for Residential Gallons Per Capita Day (RGPCD) Water Use

For all public water suppliers (PWSs), the performance standard for RGPCD is 65. TRFD shall be in compliance with this Performance Standard by December 31, 2026. Permittees that cannot comply with the RGPCD Performance Standard are required to develop and implement a functional equivalence program as set forth in Appendix A: *Functional Equivalence with the RGPCD Performance Standard*. TRFD shall report its RGPCD annually in its Annual Statistical Report (ASR).

#### 6. Performance Standard for Unaccounted for Water (UAW)

For all PWSs, the performance standard for UAW is 10% or less of overall water withdrawal for 2 of the most recent 3 years throughout the permit period. TRFD shall be in compliance with this Performance Standard by December 31, 2026. Permittees that cannot comply with the UAW Performance Standard are required to develop and implement the functional equivalence requirements based on the *AWWA/IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices M36*, as outlined in Appendix B. TRFD shall report its UAW annually in its Annual Statistical Report (ASR).

Nothing in the permit shall prevent a permittee who meets the 10% performance standard from demonstrating compliance with the UAW performance standard by developing and implementing a water loss control program following the AWWA M36 Water Audits and Loss Control Programs.

#### 7. Water Conservation Requirements

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

Table 4: Minimum Water Conservation Requirements	
System Water Audits and Leak Detection	
1. At a minimum, conduct a full leak detection survey every three years. The first f	
leak detection survey shall be completed no later than 3 years from the date of th	e last
documented leak detection survey.	
2. Conduct leak detection of the entire distribution system within one year whenever	er 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	n 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, d	lates
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>AWV</u>	NA
Manual 36.	

<ul> <li>4. TRFD shall have repair reports available for inspection by MassDEP. TRFD shall establish a schedule for repairing leaks that is at least as stringent as the following: <ul> <li>Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection.</li> <li>Leaks of less than 3 gallons per minute at hydrants and appurtenances shall</li> </ul></li></ul>	
be repaired as soon as possible.	
<ul> <li>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.</li> <li>Leaks shall be repaired in accordance with TRFD's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. TRFD shall have</li> </ul>	
water use regulations in place that require property owners to expeditiously repair	
leaks on their property.	
Metering	
1. TRFD shall continue to calibrate all source and finished water meters at least annually and report date of calibration on the ASR.	
<ol> <li>TRFD shall maintain its system as 100% metered.</li> </ol>	
3. TRFD shall have an ongoing program to inspect individual service meters to ensure that all service meters accurately measure the volume of water used by its 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.	
Pricing	
<ol> <li>TRFD shall have a plan and schedule for establishing and maintaining a water pricing structure that includes the full cost of operating the water supply system. Thereafter, TRFD shall implement the plan and schedule as approved by MassDEP. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices.</li> </ol>	
<ol> <li>TRFD 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.</li> </ol>	
Residential and Public Sector Conservation	
1. TRFD shall ensure that the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code are met when buildings are constructed or renovated.	
2. TRFD reports metering water used by contractors using fire hydrants for pipe flushing and construction and shall continue to do so.	
Industrial and Commercial Water Conservation	
1. TRFD shall continue to inspect industrial facilities and recommend the use of separate meters for process water where appropriate.	

#### **Public Education and Outreach**

- 1. TRFD shall implement water conservation and education efforts designed to educate the water customers on ways to conserve water. Without limitation, TRFD's plan may include the following actions:
  - Include in bill stuffers and/or bills, a work sheet to enable customers to track water use and conservation efforts and estimate the dollar savings;
  - Public space advertising/media stories on successes (and failures);
  - Conservation information centers perhaps run jointly with electric or gas company;
  - Speakers for community organizations;
  - Public service announcements; radio/T.V./audio-visual presentations;
  - Joint advertising with hardware stores to promote conservation devices;
  - Use of civic and professional organization resources;
  - Special events such as Conservation Fairs;
  - Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and
  - Provide multilingual materials as needed.
- 1. Upon request of the Department, TRFD 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.

### 8. Seasonal Limits on Nonessential Outdoor Water Use

TRFD shall limit nonessential outdoor water use through mandatory restrictions from May 1<sup>st</sup> through September 30<sup>th</sup> as outlined in Table 5.

TRFD 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 6 for *Instructions for Accessing U.S. Geologic Survey Groundwater Level and Massachusetts Drought Advisory Website Information.* TRFD 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.

For Permittees meeting the 65 RGPCD Standard for the preceding year		
RGPCD $\leq$ 65 as reported in the ASR and accepted by MassDEP		
Nonessential outdoor water use is allowed:		
	a) Seven (7) days per week before 9 am and after 5 pm; and	
	<ul><li>b) One (1) day per week before 9 am and after 5 pm</li></ul>	
Calendar	when USGS stream gage <b>01176000</b> – Quaboag River at W. Brimfield, MA	
Triggered	falls below <b>29.71 cfs</b> for three (3) consecutive days.	
Restrictions	Once streamflow triggered restrictions are implemented, they shall remain in place	
	until streamflow at the gage meets or exceeds <b>29.71 cfs</b> for seven (7) consecutive	
	days.	
	Nonessential outdoor water use is allowed seven (7) day per week before 9 am and	
	after 5 pm when USGS stream gage 01176000 – Quaboag River at W. Brimfield,	
	MA falls below:	
	a) May 1 – June 30: <b>130 cfs</b> for three (3) consecutive days	
Streamflow	b) July 1 – September 30: <b>67 cfs</b> for three (3) consecutive days	
Triggered	c) one (1) day per week before 9 am and after 5 pm	
Restrictions	when USGS stream gage 01176000 – Quaboag River at W. Brimfield, MA	
	falls below <b>29.71 cfs</b> for three (3) consecutive days.	
	Once implemented, the restrictions shall remain in place until streamflow at the gage	
	meets or exceeds the trigger streamflow for seven (7) consecutive days.	
For	Permittees NOT meeting the 65 RGPCD standard for the preceding year	
	RGPCD > 65 as reported in the ASR and accepted by MassDEP	
	Nonessential outdoor water use is allowed:	
	a) Two (2) days per week before 9 am and after 5 pm; and	
Calendar	b) <b>One (1) day per week</b> before 9 am and after 5 pm	
Triggered	when USGS stream gage 01176000 – Quaboag River at W. Brimfield, MA	
Restrictions	falls below <b>29.71 cfs</b> for three (3) consecutive days.	
Restrictions	Once streamflow triggered restrictions are implemented, they shall remain in place	
	until streamflow at the gage meets or exceeds 29.71 cfs for seven (7) consecutive	
	days.	
	Nonessential outdoor water use is restricted to: <b>Two (2) days per week</b> before 9 am	
	and after 5 pm when USGS stream gage 01176000 – Quaboag River at W. Brimfield,	
	MA falls below:	
<b>a</b> . <b>a</b>	• May 1 – June 30: <b>130 cfs</b> for three (3) consecutive days	
Streamflow	• July 1 – September 30: 67 cfs for three (3) consecutive days	
Triggered	• One (1) day per week before 9 am and after 5 pm when USGS stream gage	
Restrictions	01176000- Quaboag River at W. Brimfield, MA falls below <b>29.71 cfs</b> for	
	three (3) consecutive days.	
	Once implemented, the restrictions shall remain in place with stream flows at the	
	Once implemented, the restrictions shall remain in place until streamflow at the gage	
	meets or exceeds the trigger streamflow for seven (7) consecutive days.	

# Table 5: TRFD Seasonal Limits on Nonessential Outdoor Water Use May 1 to September 30

#### Table 6: Instructions for Accessing Streamflow Website Information

If TRFD chooses Streamflow Triggered Restrictions, TRFD shall be responsible for tracking streamflows and recording and reporting to MassDEP when restrictions are implemented. **Streamflow information** is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts streamflows in real time, i.e., the most recent, usually quarterly hourly, reading made at each USGS stream gage.

Seasonal Limits on Nonessential Outdoor Water Use are implemented when the mean daily streamflow falls below the designated trigger. The mean daily flow is not calculated until after midnight each day when the USGS computes the hourly data into a mean daily streamflow. As a result, permittees must use the mean daily streamflow from the preceding day when tracking streamflows.

**Mean daily streamflow gage** readings are available at the USGS NWIS Web Interface at <u>http://waterdata.usgs.gov/ma/nwis/current/?type=flow</u>.

- Scroll down to gage 01176000 Quaboag River at W. Brimfield, MA
- Click on the gage number.
- Click on Legacy real-time page.
- Scroll down to "Provisional Date Subject to Revision Available data for this site" and click on the drop-down menu.
- Click on "Time-series: Daily data" and hit GO.
- Scroll down to the "Available Parameters" box. Within the box, be sure "00060 Discharge (Mean)" is checked, then, under "Output Format" click "Table" and hit GO.
- Scroll down to "Daily Mean Discharge, cubic feet per second" table and find the current date on the table.
- Compare the cubic feet per second (cfs) measurement shown on the table to the cfs shown under Streamflow Triggered Restrictions above.

TRFD shall document compliance with the Seasonal Nonessential Outdoor Water Use Restrictions annually in its Annual Statistical Report (ASR) and indicate whether it anticipates implementing calendar triggered restrictions or streamflow triggered restrictions during the next year.

### Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions

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

- For calendar-triggered restrictions, customers shall be notified by April 15<sup>th</sup> each year.
- For streamflow-triggered restrictions, when streamflow at the assigned USGS local stream gage falls below a streamflow trigger for three consecutive days, customers shall be notified as soon as possible, but within three days of implementing the restrictions.

Notice that restrictions have been put in place shall be filed each year with MassDEP within 14 days of the restriction's effective date. Filing shall be in writing on the form "Notification of Water Use Restrictions" available on MassDEP's website. Should the reliability of flow measurement at the Quaboag River gage be so impaired as to question its accuracy, TRFD

may request MassDEP's review and approval to transfer to another gage to trigger restrictions. MassDEP reserves the right to require use of a different gage.

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

# 9. Requirement to Report Raw and Finished Water Volumes

TRFD does not currently have a filtration treatment system. Should treatment be added to the system TRFD shall report raw water volumes for each water withdrawal point and finished water for each filtration treatment system annually on its ASR.

### **10. Reporting Requirements**

TRFD 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. <u>Duty to Comply</u> 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. <u>Operation and Maintenance</u> 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.** <u>Entry and Inspections</u> 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. <u>Water Emergency</u> 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.** <u>**Transfer of Permits</u>** 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.</u>
- 6. <u>Duty to Report</u> 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. <u>Duty to Maintain Records</u> The Permittee shall be responsible for maintaining withdrawal records as specified by this permit.

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- 8. <u>Metering</u> 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.** <u>Amendment, Suspension or Termination</u> 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

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

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

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

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

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

The Notice of Claim may be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver.

#### **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

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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.

Onane hellaugie

May 30, 2025

Date

Duane LeVangie Water Management Program Chief Bureau of Water Resources

## Appendix A:

# <u>Functional Equivalence with the 65 Residential Gallons Per Capita Day Performance</u> <u>Standard</u>

MassDEP will consider PWS permittees who cannot meet the 65 RGPCD performance standard to be functionally equivalent, and in compliance with their permit, if they have an on-going program in place that ensures best practices for controlling residential water use as described below.

If the permittee fails to document compliance with the RGPCD performance standard in any Annual Statistical Report (ASR), then the permittee must file with that ASR a Residential Gallons Per Capita Day Compliance Plan (RGPCD Plan) which shall include, at a minimum:

- 1. A description of the actions taken during the prior calendar year to meet the performance standard;
- 2. An analysis of the cause of the failure to meet the performance standard;
- 3. A description of the actions that will be taken to meet the performance standard which must include, at a minimum, at least one of the following:
  - a) provide water saving devices such as faucet aerators and low flow shower heads at cost;
  - b) provide rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets), or
  - c) adopt and enforce an ordinance, by-law or regulation to require the installation of moisture sensors or similar climate related control technology on all automatic irrigation systems;

and may include, without limitation, the following:

- d) increasing block water rates or a seasonal water rates as a tool to encourage water conservation;
- e) provide rebates or other incentives for the installation of moisture sensors or similar climate related control technology on automatic irrigation systems;
- f) adopt and enforce an ordinance, by-law or regulation to require that all new construction include water saving devices and low water use appliances;
- g) adopt and enforce an ordinance, by-law or regulation to require all new construction to minimize lawn area and irrigated lawn area, maximize drought resistant landscaping, and maximize the use of topsoil with a high water retention rate;
- h) encourage the use of cisterns or rain barrels for outside watering;
- i) implementation of monthly or quarterly billing.
- 4. A schedule for implementation; and
  - 5. An analysis of how the planned actions will address the specific circumstances that resulted in the failure to meet the performance standard.

If the permittee is already implementing one or more of these measures, those must be included in the RGPCD plan for continued implementation, as well as implementation of at least one additional measure. The plan must include a public information component to inform customers of the plan and to encourage participation.

RGPCD plans may be amended to revise the actions that will be taken to meet the performance standard. Amended RGPCD plans must include the information set forth above.

This information is available in alternate format. Please contact MassDEP at 617-292-5500. TTY# MassRelay Service 1-800-439-2370 MassDEP Website: www.mass.gov/dep If a RGPCD plan is required, the permittee must:

1. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD plan annually at the time it files its ASR, and continue to implement the RGPCD plan until it complies with the performance standard and such compliance is documented in the permittee's ASR for the calendar year in which the standard is met.

#### <u>Appendix B</u> <u>Functional Equivalence with the 10% Unaccounted for Water (UAW) Performance</u> <u>Standard</u>

**Water Loss Control Program**: 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 Water Loss Control Program in place that ensures best practices for controlling water loss.

**Developing a Municipal Water Loss Control Program:** A permittee who fails to document compliance with the 10% UAW performance standard for 2 out of the 3 years during the permit period, shall develop a Municipal Water Loss Control Program in accordance with the *AWWA M36 Water Audits and Loss Control Program*. Within 5 full calendar years of failing to meet the standard, the permittee shall:

- 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 as an attachment to the 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 component analysis and long-term program to reduce real and apparent water losses.
    - i. 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.
    - ii. Developing data with an acceptably strong validity score can be a multiyear 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. Submit the Municipal Water Loss Control Program that includes an M36 component analysis and implementation schedule, and identifies implementation funding to the Department.
- 4. Upon request of the Department, the permittee shall report on its implementation of the water loss control program.
- 5. Continued implementation of the Program will be required in order for the permittee to be considered functionally equivalent with the 10% UAW performance standard and in compliance with their permit.

A PWS permittee may choose to discontinue the Municipal Water Loss Control 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 Water Loss Control Program:** If the permittee is required to develop a Water Loss Control Program in order to be to functionally equivalent with the 10% Unaccounted for Water Performance Standard, and the permittee has not developed a Municipal Water Loss Control Program that includes a component analysis and identifies implementation funding after 5 full calendar years of failing to meet the standard, the permittee will be required to implement the MassDEP UAW Water Loss Control Program measures outlined below:

- Complete an annual water audit and leak detection survey, as described in the AWWA M36 Manual, for 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
  - <u>Small Meters</u> (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.
- Review the permittee's water pricing structure and ensure revenues are 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 Water Loss Control Program 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 systemwide water savings or equal or greater environmental benefits than the conservation measures included in the MassDEP UAW Water Loss Control Program.

MassDEP will review a permittee's detailed, written analysis to determine whether unique circumstances make specific water loss control measures less cost-effective than alternatives, or infeasible for the permittee.