

HOUSE No. 348

The Commonwealth of Massachusetts

PRESENTED BY:

Josh S. Cutler

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act relative to greywater recycling.

PETITION OF:

NAME:	DISTRICT/ADDRESS:	DATE ADDED:
<i>Josh S. Cutler</i>	<i>6th Plymouth</i>	<i>2/19/2021</i>
<i>Tommy Vitolo</i>	<i>15th Norfolk</i>	<i>8/2/2021</i>

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By Mr. Cutler of Pembroke, a petition (accompanied by bill, House, No. 348) of Josh S. Cutler for legislation to establish plumbing code regulations that provide building owners with guidelines for reusing greywater for toilet flushing and subsurface irrigation. Consumer Protection and Professional Licensure.

The Commonwealth of Massachusetts

**In the One Hundred and Ninety-Second General Court
(2021-2022)**

An Act relative to greywater recycling.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 Section 1. Chapter 142 of the General Laws is hereby amended by inserting after section
2 22 the following section:

3 Section 23. Regulating single family greywater recycling systems and mandating
4 greywater recycling in new multifamily construction projects in the commonwealth.

5 A. Purpose

6 a. The purpose of this section is to establish regulations that provide building owners with
7 guidelines for simple, cost-effective options for reusing greywater for toilet flushing and
8 subsurface irrigation.

9 b. This section is intended to encourage water conservation, and re-use in communities
10 across the commonwealth, save money, increase the effective water supply, and protect public
11 health and water quality.

12 B. Applicability

13 a. This section applies to multi-family buildings utilizing less than 3,000 gallons of water
14 per day.

15 b. This section applies to the reuse of greywater inside buildings regulated by the
16 Uniform State Plumbing Code.

17 c. Greywater reuse must comply with all applicable local ordinances and codes, and state
18 statutes and regulations including, but not limited to, the Uniform State Plumbing Code.

19 d. The use of a greywater recycling and irrigation system does not serve as an alternative
20 to the use of an approved on-site sewerage system or connection to an approved public sewer for
21 greywater disposal at any building, including buildings using waterless toilets.

22 C. Administration

23 a. The local board of health for all cities and towns in the commonwealth shall implement
24 this section under the authority of 248 CMR 10.24. In the event that a local board of health does
25 not implement this section, the provisions of this section shall nonetheless apply to greywater
26 reuse for toilet flushing and irrigation in that jurisdiction.

27 b. If a local board of health is unable to adjust its resources to implement and enforce this
28 section in accordance with subsection (a) of this section, the provisions of Section 23 shall
29 continue to apply to greywater reuse for toilet flushing and irrigation in that jurisdiction.

30 c. The local board of health is authorized to establish fees for greywater recycling system
31 permits under this section, and the local health officer is authorized to collect fees to implement
32 this section.

33 d. Nothing in this section prohibits the adoption and enforcement of more stringent
34 regulations by a local board of health.

35 D. Definitions

36 a. These definitions apply throughout this section unless the context clearly requires
37 otherwise.

38 i. Blackwater is wastewater containing fecal matter and urine. It is also known as brown
39 water, foul water, or sewage. It is distinct from greywater or sullage, the residues of washing
40 processes. Blackwater should not be used in the home because of the high risk of contamination
41 by bacteria, viruses and other pathogens.

42 ii. Greywater is defined as wastewater from showers, bathtubs, hand washing lavatories,
43 sinks that are not used for disposal of hazardous or toxic ingredients, sinks that are not used for
44 food preparation or disposal, and clothes-washing machines. Greywater does not include
45 wastewater from the washing of material, including diapers, soiled with human excreta or
46 wastewater that has come in contact with toilet waste.

47 iii. Greywater irrigation system means an integrated system of components located on the
48 property it serves, on or nearby property where it is legally allowed to be used, that conveys
49 greywater from the building where it originates and provides irrigation of plants.

50 iv. On-site sewage system means an integrated system of components located on or
51 nearby the property it serves that conveys, stores, treats, and/or provides subsurface soil
52 treatment and dispersal of sewage. It consists of a collection system, a treatment component or
53 treatment sequence, and a soil dispersal component. An on-site sewage system also refers to a

54 holding tank sewage system or other swage system that does not have a soil dispersal
55 component.

56 v. Public sewer system means all facilities used in the collection, transmission, storage,
57 treatment, or discharge of any waterborne waste, whether domestic in origin or a combination of
58 domestic, commercial, or industrial wastewater. A public sewer system may also be called a
59 sanitary sewer system.

60 vi. Single family residence means one single-family house that is not used for
61 commercial or other nonresidential purposes as defined by 780 CMR.

62 vii. Tier 1 greywater system means a greywater recycling and irrigation system with a
63 maximum design flow of 400 gallons per day, as documented by the local building official
64 during the permitting phase, serving a single-family residence. A Tier 1 system serves a single-
65 family residence connected to an approved public sewer system or on-site sewage system.

66 viii. Tier 2 greywater system means a greywater recycling and irrigation system serving a
67 residential or nonresidential building. A Tier 2 system only serves a building connected to an
68 approved public sewer system or large on-site sewage system.

69 E. General Requirements applicable to all Tiers

70 a. Construction of a greywater system, including storage and disposal systems, must
71 comply with this chapter and any more stringent requirements of the State Code.

72 b. Greywater does not contain hazardous chemicals derived from activities such as
73 cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo
74 labs or similar hobbyist or home occupational activities.

75 c. The design goal for a greywater recycling system is to store greywater for no longer
76 than 24 hours.

77 d. This section will allow the reuse of kitchen sink water with approval from the local
78 building official. It is required that kitchen sink water be applied subsoil or contained within a
79 rat-proof outlet shield.

80 e. Towns or cities may not further limit the use of greywater described in this section by
81 rule or ordinance.

82 F. Tier 1 Greywater Systems allow private residential direct reuse of greywater for a flow
83 of less than 400 gallons per day. This section shall not require a permit for applying less than 400
84 gallons per day of private residential greywater originating from a residence for the residence s
85 toilet flushing, household gardening, composting, or landscape irrigation if the following
86 conditions are met:

87 a. The greywater originates from a single family dwelling;

88 b. Human contact with greywater and soil irrigated by greywater is avoided;

89 c. Greywater is applied in a manner that minimizes the potential for contact between
90 greywater or soil irrigated with greywater and domestic pets;

91 d. A constructed greywater distribution system provides for overflow and/or diversion
92 into the sewer system or on-site wastewater treatment and disposal system;

93 G. Tier 1 Greywater Requirements. A greywater system may only be connected to the
94 public sewer system or on-site sewage system if the following requirements are met:

95 a. The connection must be in the line between the house stub-out for the on-site
96 wastewater treatment and disposal system and the on-site treatment tank.

97 b. The greywater system is constructed so that if blockage, plugging, or backup of the
98 system occurs, greywater can be directed in to the sewage collection system or onsite wastewater
99 treatment and disposal system, as applicable except as provided for under 4, below. The
100 greywater system may include a means of filtration to reduce plugging and extend system
101 lifetime;

102 c. The greywater distribution system shall be designed so that 100% of the greywater can
103 be diverted to the sewer system or on-site wastewater treatment and disposal system during
104 periods of non-use of the greywater system. For residential use an onsite wastewater treatment
105 facility for blackwater treatment and disposal, the use of a greywater system does not change the
106 design, capacity, or reserve area requirements for the onsite wastewater treatment facility at a
107 residence, and ensures that the facility can handle the combined blackwater and greywater flow
108 if the greywater system fails or is not fully used. The greywater system shall be designed with
109 two valved zones, each of which can accommodate the full expected greywater volume.
110 Providing the greywater system passes a flow test in each zone, the capacity of the on-site
111 system may be reduced, or in the instance that an approved composting toilet system is present,
112 eliminated;

113 d. Greywater diverter valves shall be downstream from traps and vents in plumbing that
114 leads to septic or sewer;

115 e. The greywater is stored in tanks per 248 CMR 10.03(b)

116 f. and the tanks:

- 117 i. Are clearly labeled as nonpotable water;
- 118 ii. Utilize biodegradable nontoxic dye to color the greywater to identify it in contrast to
119 potable water;
- 120 iii. Restrict access, especially to children;
- 121 iv. Are covered to eliminate habitat for mosquitoes and other pests;
- 122 v. Are able to be cleaned;
- 123 vi. Are sited outside of a floodway; and
- 124 vii. Meet the structural requirements of the 2004 American Water Works Association
125 standards;
- 126 g. The greywater system uses piping clearly identified as a nonpotable water conduit,
127 including identification through the use of painted purple pipe, purple pipe or pipe taped with
128 purple metallic tape;
- 129 h. The greywater system is operated to maintain a minimum vertical separation distance
130 of at least 5 feet from the point of greywater application to the top of the seasonally high
131 groundwater table;
- 132 i. Greywater applied by surface irrigation does not contain water used to wash diapers or
133 similarly soiled or infectious garments unless the greywater is disinfected before irrigation;
- 134 j. Application of greywater is managed to minimize standing water on the surface and to
135 ensure that the hydraulic capacity of the soil is not exceeded, for example by splitting the flow,
136 moderate application rates, and generous mulching;

137 k. The greywater is applied at a rate that will not result in ponding or pooling or will not
138 cause runoff across the property lines outside of the site where it was generated or onto any
139 paved surface;

140 l. Surface application of greywater is not used for irrigation of food plants which have an
141 edible portion that comes in direct contact with greywater;

142 m. Surface irrigation for greywater is only by flood or drip irrigation. Containment within
143 horticultural basins or swales is encouraged for flood irrigation;

144 n. The greywater is not disposed of using a spray distribution system;

145 o. the greywater is not discharged into a river corridor as defined by 302 CMR 3; and

146 p. the greywater use within cities or towns complies with all applicable local ordinances.

147 q. No reduction in the size of the on-site septic system will be allowed when using a
148 greywater system.

149 r. Builders of single family dwellings are allowed by right to:

150 i. Install plumbing in new housing to collect greywater from all allowable sources; and

151 ii. Design and install a subsurface greywater system around the foundation of new
152 housing to minimize foundation movement or cracking.

153 s. Greywater shall only be used:

154 i. For flushing toilets;

155 ii. For gardening inedible food plants;

156 iii. For composting; or
157 iv. For landscaping at a single family dwelling.
158 t. The installer of the greywater system must advise the owner of basic operating and
159 maintenance procedures including any effects on the on-site septic system.

160 u. Greywater use must not create a nuisance or damage the quality of surface water or
161 groundwater. If greywater use creates a nuisance or damages the quality of surface water or
162 groundwater, the permitting authority may take action to protect the surface or groundwater.

163 H. Tier 2 Greywater Systems are for greywater systems that process over 400 gallons but
164 under 3,000 gallons of water per day. This category includes commercial, multifamily, and
165 institutional systems. They follow the same requirements as Tier 1 above, with the additional
166 requirement that Tier 2 Greywater Systems require a standard permit. The department of
167 environmental protection in conjunction with the Department of Public Health and
168 Massachusetts Plumbing Board of the commonwealth shall promulgate guidelines for Tier 2
169 Greywater Systems.

170 I. Permits

171 a. Permits shall be issued by the local regulatory authority for a reasonable fee.

172 J. Enforcement

173 a. The local health officer shall enforce these rules and may initiate enforcement actions
174 against the system owner or other person causing or responsible for the violation of these rules
175 including system failure. Enforcement actions may include, but are not limited to, fines for each
176 day the violation continues, requiring a person to stop work on any greywater system, or to divert

177 the greywater to the approved public sewer system or on-site sewage system serving the
178 building, until all permits, approvals, and registrations required by rule or statute are obtained.

179 b. Enforcement orders issued under this section shall be in writing and shall include the
180 violation and the corrective action required, and the name, business address, and phone number
181 of an appropriate staff person who may be contacted regarding the order.

182 c. Enforcement orders shall be personally served in the manner of service of a summons
183 in a civil action or in a manner showing proof of receipt.

184 K. Waivers

185 a. The local health officer may grant a waiver from specific requirements of this section if
186 the officer determines:

187 i. That the waiver requested is the minimum deviation from the specific requirements of
188 this chapter that is necessary for the conditions; and

189 ii. The alternative approach proposed by the person requesting the waiver is consistent
190 with the requirements and intent of these rules.

191 L. Applicable Building Types

192 a. This section shall apply as a mandatory regulation to all new multifamily building
193 construction projects, as defined in 780 CMR for one and two family units and multifamily units,
194 and all significant multifamily addition or renovation projects over 10,000 square feet and as
195 defined by the Massachusetts Building Code.

196 M. Effective date

197 a. This section shall take effect on January 1, 2016.

198 Section 2. Chapter 248 of the Code of Massachusetts Regulations Section 10.03 of the
199 Uniform State Plumbing Code is hereby amended by replacing the definition of Gray-water. with
200 the following:

201 A. Greywater is defined as wastewater from showers, bathtubs, hand washing lavatories,
202 sinks that are not used for disposal of hazardous or toxic ingredients, sinks that are not used for
203 food preparation or disposal, and clothes washing machines. Greywater does not include
204 wastewater from the washing of material, including diapers, soiled with human excreta or
205 wastewater that has come in contact with toilet waste.