



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

# Department of Environmental Protection

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**Bureau of Water Resources  
Division of Watershed Management  
Drinking Water Program**

**Policy on Antennas, Solar Sheets and/or Other Appurtenances Proposed to Be Attached to  
Public Drinking Water Storage Tanks or On Water Supply Land**

Effective Date: 12-31-2019

Policy #2019-01

Supersedes Policy #: DWP98-01

Approved by: Kathleen Baskin, Assistant Commissioner, Bureau of Water Resources

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**Purpose**

This policy is adopted to explain the position of the Massachusetts Department of Environmental Protection (MassDEP) Drinking Water Program regarding the installation of antennas, solar sheets and/or other appurtenances on, or adjacent to, water storage tanks. It is made necessary due to incidents which have resulted in damage to water storage tanks. Public drinking water storage tanks contain finished drinking water that will go directly to consumers. Therefore, MassDEP must safeguard the integrity of these tanks.

The Drinking Water Program has encountered a number of instances where the installation of structures and components, such as antennas, on tanks has compromised the public water supply's ability to deliver fit and safe water in accordance with M.G.L. c. 111, § 160.

**Applicability**

This policy applies to drinking water system personnel, any person installing or proposing to install antennas, solar sheets and/or other appurtenances to public drinking water storage tanks or on land owned or controlled by a public water system and MassDEP Drinking Water Program staff. This policy does not apply to land-based solar installations proposed on land owned or controlled by a public water system. See *Information to be Submitted to MassDEP for Proposed Solar and Wind Energy Projects on Lands Owned or Controlled By Public Water Systems for Drinking Water Purposes* and *Drinking Water Policy 11-01: Wind and Solar Energy Projects*

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

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*Proposed in Zone I at <https://www.mass.gov/service-details/drinking-water-policies-and-guidance>.*

M.G.L. c. 111, § 160, states that the department may “make rules and regulations and issue such orders as in its opinion may be necessary to prevent the pollution...and to ensure the delivery of a fit and pure water supply to all consumers.” In addition, M.G.L. c. 40, § 15B, states “[a] town, city, or district authorized to furnish water for domestic purposes, may, with the advice and approval of the state department of environmental protection...in its discretion, by lease, license, or other agreement, permit the construction and maintenance on any land under its control of towers, poles, wires, and other structures for the purpose of transmitting electronic power over lands and water held for water supply purposes; provided, that such lease, license or agreement will not, in the opinion of the said department, affect or interfere with the water supply; and provided, further, that said city, town, or district may, with the approval of said department, revoke said lease, license or agreement for cause to be determined by it.”

In addition, 310 CMR 22.04(1) states “[a]ny person proposing to construct a new public water system, operate a public water system or to substantially modify an existing public water system shall obtain the prior written approval of the Department,” and 310 CMR 22.04(4)(b) says that “no person shall operate a Public Water System unless such operation is in accordance with the terms and conditions of all Department permits and approvals.” Substantial modifications are defined in 310 CMR 22.00 as “any deviation from approved plans or specifications affecting capacity, hydraulic conditions, operating units, the functioning of water treatment processes or systems, or the quality of water delivered to consumers....” MassDEP has determined that the installation of antennas, solar sheets and/or other appurtenances on, or adjacent to, water storage tanks is a substantial modification.

As of the effective date of this policy, MassDEP will presume that a proposal for new construction of antennas, solar sheets and/or appurtenances to be attached to drinking water storage tanks or antennas and/or appurtenances to be constructed on any land under the control of the public water supplier, complies with the requirements of M.G.L. c. 111, § 160, and 310 CMR 22.00, if it has been reviewed and approved by the public water supplier in accordance with MassDEP guidelines, and the public water supplier certifies to MassDEP that it has determined that the proposal will not affect or interfere with the water supply. MassDEP reserves the right to revoke its presumptive approval if it subsequently determines that the installation does affect and/or interfere with the water supply.

## **Guidelines for Presumptive Approval**

Public water suppliers are advised to consult a professional engineer when installing or attaching antenna, solar sheets and/or other appurtenances on drinking water storage tanks.

Proposals for installations meeting these guidelines will be presumed not to affect or interfere with the water supply. The public water supplier should review each application for impact on the water supply and approve or disapprove in writing whether the proposed antenna, solar sheets or appurtenance may or may not be attached to a drinking water storage tank or antenna and/or appurtenances constructed on land under the control of the public water supplier.

1. Each application should be in writing and include, at a minimum, the following:
  - a. A map or drawing showing the location of the storage tank;
  - b. A description of where the antenna, solar sheets or appurtenance is to be attached;
  - c. A description of the method of attachment (e.g., bolting, welding, adhesion, etc.);
  - d. Documentation from the tank manufacturer or tank construction contractor indicating that the method of attachment will not affect or interfere with the provision of safe water and will not result in or cause structural damage, interior or exterior corrosion, opening in the tank, etc.; and
  - e. An operation, maintenance and access schedule and procedure.
2. The public water supplier should review the submitted application and determine whether:
  - a. The project will have an impact on the safety of the water supply;
  - b. The project and its proponent will comply with the criteria established by the tank manufacturer and construction contractor;
  - c. The size and location of any cable support or mounting devices will interfere with future cleaning and painting operations, or present sanitary, safety, or personnel hazards; and
  - d. Any surface preparation and/or touch-up painting of impacted areas in or outside of the tank will comply with tank manufacturer or tank construction contractor, AWWA, and other pertinent industry standards.
3. The public water supplier should approve or disapprove the application in writing and within 30 days of any approval submit a copy of the approval to the appropriate MassDEP Regional Office or scan and submit an electronic copy by email to [program.director-dwp@mass.gov](mailto:program.director-dwp@mass.gov), with a subject line of: Storage Tank Attachment approval. The submittal to MassDEP should be accompanied by a completed certification form (included with this package), and a copy of the agreement between the project proponent and the public water supplier.
4. The public water supplier and the project proponent should execute an agreement between them governing the terms and conditions of the installation. The agreement should include the following:

- a. An access provision that requires contractors to obtain approval from the public water supplier for all on-site visits;
- b. A requirement that if a tank is rehabbed, the project proponent is responsible for relocating antennas and other appurtenances in a timely manner while the tank work is being conducted;
- c. A requirement that the public water supplier perform a final inspection upon completion of construction to compare the completed construction against the plans and specifications;
- d. A requirement that the public water supplier conduct periodic inspections (at least monthly) of the water storage tank to ensure that the installation continues to present no impact to the drinking water system. Use the Drinking Water Program’s PWS monthly inspection log form located at <https://www.mass.gov/doc/pws-monthly-storage-tank-inspection-log-0/download> to document all inspections; and
- e. For projects involving the adherence of solar sheets to public drinking water storage tanks, the following conditions:
  - i. If the water storage tank is located within the Zone I, the project proponent must clearly demonstrate, through testing or through confirmation from the manufacturer, that there are no per- or poly-fluoroalkyl substances (PFAS) compounds in the solar sheets, adhesives, other components of the solar installation or maintenance practices. Written documentation that the system does not contain PFAS must be maintained in the public water supplier’s files for MassDEP review when requested.
  - ii. Solar sheeting on drinking water storage tanks may increase the temperature of the tank and the water in the tank. Care should be taken in selecting the type of solar sheeting and appurtenances to be used, managing the water in the tank and preventing detrimental impacts to the structural integrity of the tank.

### **Additional Guidance for Public Water Suppliers**

#### *Sanitary, Safety, and Structural Considerations*

Openings cut into tanks compromise the safety of the water in the tank, as well as damage the structural integrity of the tank.

Cables and antenna brackets or devices that are improperly mounted to ladders, across access openings, or on platforms create safety and OSHA deficiencies. These can also obstruct or hamper access to vents and manholes.

Brackets or mounting devices screwed directly into tubular columns can cause interior as well as exterior column corrosion and possible structural failure.

Improperly designed brackets can crumple during high winds.

### ***Future Maintenance***

Improper (or unperformed) touch up painting after the antenna or brackets are installed can lead to premature coating failure on the interior and exterior of the tank.

Cables, antennae, and mounting devices placed too close to tanks can make it difficult, if not impossible, to clean or paint behind them.

### ***Other***

Improperly mounted devices, solar sheets or antennas can create a potential liability should high winds, ice loading, seismic activity, electrical storms, or other similar events cause the installation to fail, damage the tank or surrounding support structures, or endanger nearby people. The attachment of these elements on drinking water storage tanks may affect the structural integrity of the tanks due to the added weight, changes in wind pressure and thermal cycling.