



Cooling Towers

Options for Property Owners

A cooling tower is a heat rejection device which extracts waste heat to the atmosphere through the cooling of a water stream. Cooling towers play an integral part in either providing comfort in large commercial buildings or process cooling across an extensive range of applications. Cooling tower structures vary greatly in size and design. In general, cooling towers must at times release water in the form of “blowdown,” during winterization and other maintenance activities and/or during emergency overflows. When cooling towers are constructed in Fairfax County, the discharge can be plumbed to either the public sanitary sewer or storm drainage system.



Whether the cooling tower is connected to the sanitary sewer or storm drainage system, the discharge must be approved to ensure that applicable regulations are met. The water that discharges from a cooling tower may contain biocides, algaecides, corrosion and scale inhibitors, heavy metals, sediments and other pollutants. These pollutants, which are not typically treated before discharge to the storm drainage system or directly to local streams, can harm fish and wildlife and degrade water quality. What can cooling tower owners do to comply with the regulations? Please refer to the table below that details the options for cooling tower compliance:

Discharge Method	Who do I contact?	What are the requirements needed for discharge to either the storm or sanitary sewer system?
Sanitary Sewer System (see Figure 1 on back page)	Industrial Waste Section 703-550-9740 x1406252 Contact us for PLUS support at www.fairfaxcounty.gov/plan2build/plus	<ul style="list-style-type: none"> • A plumbing permit application for sewer connection must be submitted to the county’s Land Development Services Department. The application will be reviewed to determine if the proposed change meets the adopted plumbing, sanitary sewer, and sewage disposal codes. The discharge of some cooling water treatment additives is limited in certain areas of the county’s sanitary sewer system. • The review will include an assessment of the capacity of the sanitary sewer to accommodate the discharge flow and calculation of the availability fee for connection of the discharge to the sanitary sewer in accordance with Chapter 67.1, Section 67.1-10-2 of the Fairfax County code of ordinances. • A cooling tower discharge (blowdown) meter is required to ensure accurate flow measurement for sewer service billing per Chapter 67.1, Section 67.1-10(d) & (e) (see figure 1 on back page). Contact Fairfax Water at 703-698-5800 to obtain both the cooling tower sub-meter and the cooling tower discharge (blowdown) meter.
Storm Drainage System (see Figure 2 on back page)	Stormwater Planning Division 703-324-5500, TTY 711 SWPDMail@fairfaxcounty.gov	<ul style="list-style-type: none"> • Obtain a Virginia Pollutant Discharge Elimination System (VPDES) general permit for non-contact cooling water by calling the Department of Environmental Quality (DEQ) at 703-583-3800. Refer to the VPDES Non-Contact Cooling Water General Permit Regulation for more information, including fees and monitoring requirements: http://law.lis.virginia.gov/admincode/title9/agency25/chapter196/section70/ • While this is an option, potable water, while safe for human consumption, contains levels of copper and zinc that are generally higher than VPDES general permit for non-contact cooling water allows to be discharged. Therefore, cooling water will need to be treated before being discharged, which can be very costly.
Other Disposal System	Stormwater Planning Division 703-324-5500, TTY 711	Please contact SWPD to have an alternative method reviewed (i.e. reuse)

How does this affect my county building permit?

You will not be able to obtain a building permit until your discharge to the storm drain is authorized by VADEQ or your wastewater system discharge is authorized by Fairfax County:

- Storm Drain Discharge: submit your registration statement to DEQ <https://www.deq.virginia.gov/home/showpublisheddocument/4939/637484797928300000>
- Submit your information to DEQ’s Northern Regional Office at 13901 Crown Court, Woodbridge, VA 22193, 703-583-3800 and to the Fairfax County Stormwater Planning Division at SWPDMail@fairfaxcounty.gov.
- Sanitary Sewer Discharge: You may need to address review comments on plans that specify discharge to the sanitary sewer.





Cooling Towers

Options for Property Owners

What if I don't choose an option for my building's cooling tower?

Fairfax County routinely checks its storm drainage system (also known as MS4¹) for evidence of unauthorized discharges. County Code Section 124-9-3 prohibits the following illicit discharges:

- polluted discharges to state waters of the County unless a discharge has been approved by a state agency,
- discharges to the County MS4 of any substance other than naturally occurring surface or subsurface water,
- and unlawful connections that discharge any substance other than stormwater to the County MS4.

An unauthorized cooling tower discharge is considered an illicit discharge; therefore, owners of existing cooling towers shall remedy violations in a timely fashion.

Per County Code Section 124-8-3, each violation of the Stormwater Management Ordinance is punishable by, among other things, a civil penalty in an amount not to exceed \$32,500. Each day of a violation shall constitute a separate offense.

Va. Code § 62.1-44.5 states that: “[E]xcept in compliance with a certificate issued by the Board, it shall be unlawful for any person to discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances.”

The Regulation, at 9 VAC 25-31-50, also states that except in compliance with a VPDES permit, or another permit issued by the Board, it is unlawful to discharge the following into state waters; sewage, industrial wastes or other wastes.

Enforcement action to remedy unpermitted discharges to state waters may be taken by the VADEQ, which may involve statutory remedies including civil charges of up to \$32,500 per violation per day.

1 Fairfax County Municipal Separate Storm Sewer System (MS4) -

<https://www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/reports/ms4/va0088587-fairfax-permit.pdf>

Figure 1 - Cooling Tower Water Flow Diagram with Discharge to Sanitary Sewer

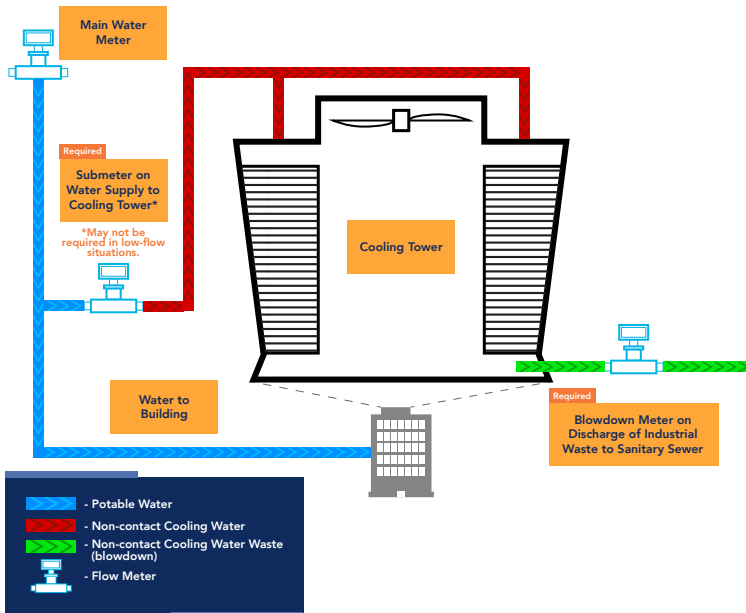


Figure 2 - Cooling Tower Water Flow Diagram with Discharge to Storm Drain

