

High Risk Sites and Drinking Water Protection Areas

Certain land use activities and site characteristics restrict or preclude the use of some stormwater BMPs, particularly near groundwater and surface drinking water supplies. [Table 8-6](#) summarizes the suitability of stormwater BMPs based on the following factors:

- Land Uses with Higher Potential Pollutant Loads
- Contaminated sites
- Groundwater drinking water supply areas
- Surface drinking water supply areas

Land Uses with Higher Potential Pollutant Loads

Certain land uses or land use activities can result in higher potential stormwater pollutant loads. [Chapter 10 - General Design Guidance for Stormwater Infiltration Systems](#) identifies designated Land Uses with Higher Potential Pollutant Loads (LUHPPLs), which include a number of specific industrial and commercial uses and activities. Infiltration of stormwater from LUHPPLs is only allowed for the specific LUHPPLs identified in [Table 10-4](#), at the discretion of the review authority and under the conditions listed in [Chapter 10](#). An impermeable liner is generally required for stormwater BMPs that receive stormwater from LUHPPLs and that could potentially discharge to groundwater, including BMPs that intercept groundwater (Stormwater Pond and Wetland BMPs and wet water quality swales) and dry detention basins, to reduce the risk of groundwater contamination.

Contaminated Sites

As addressed in [Chapter 10 - General Design Guidance for Stormwater Infiltration Systems](#), infiltration of stormwater in areas with soil or groundwater contamination such as brownfield sites and urban redevelopment areas can mobilize contaminants. Infiltration BMPs should not be used where subsurface contamination is present from prior land use due to the increased threat of pollutant migration associated with increased hydraulic loading from infiltration systems, unless contaminated soil is removed and the site is remediated, or if approved by CT DEEP on a case-by-case basis. Filtering BMPs and dry water quality swales may be used in areas with subsurface contamination if designed with an underdrain system and impermeable liner. Other non-infiltration BMPs may also be used on such sites with an impermeable liner.

Groundwater Drinking Water Supply Area

Groundwater is a major source of drinking water in Connecticut for residences that rely on small private wells and larger water distributors. This applies to both water supply aquifers and Class GA and GAA groundwaters as defined by CT DEEP. Groundwater is also the source of dry weather flows (baseflow) in watercourses, which is critical for maintaining suitable habitat. It is important to maintain a high-quality recharge to groundwater in water supply aquifers and Class GA and GAA waters.

Infiltration of stormwater within Aquifer Protection Areas and other groundwater drinking water supply areas can potentially contaminate groundwater drinking water supplies. As discussed in [Chapter 10](#), aboveground Infiltration BMPs such as infiltration basins or bioretention systems designed for infiltration should be used for paved surface runoff to provide an opportunity for volatilization of volatile organic compounds to the extent possible before the stormwater can infiltrate into the ground. Subsurface Infiltration BMPs (i.e., infiltration trenches, infiltration chambers, dry wells, infiltrating catch basins) should only be used to infiltrate clean roof runoff.

Infiltration of stormwater within public or private wellhead protection areas (see minimum horizontal setback distances for public and private wells in [Recommended Minimum Horizontal Setback Distances for Stormwater Infiltration Systems](#)) should be limited to clean roof runoff only.

Surface Drinking Water Supply Areas

Surface waters that supply drinking water are especially susceptible to contamination by bacteria and other pathogens. Other contaminants-of-concern may be defined for specific water supply systems by the owner/operator or the State Department of Health. Stormwater BMPs for sites within drinking water supply watersheds should target these potential contaminants. The Public Health Code also requires a 100-foot separation distance between drainage or treatment practice outlets and public water supply tributaries.

Stormwater infiltration or surface stormwater discharges in close proximity to surface drinking water supply reservoirs or tributaries to such water supplies can threaten drinking water quality. Stormwater infiltration systems should be located a minimum distance horizontally from surface drinking water supplies as described in Chapter 10 ([Recommended Minimum Horizontal Setback Distances for Stormwater Infiltration Systems](#)). Infiltration of clean roof runoff is allowed within the horizontal setback distances. Outlets of stormwater BMPs should be located at least 200 feet from a public water supply reservoir and 100 feet from streams tributary to a public water supply reservoir, consistent with the Connecticut Public Health Code.

Table 8-6. High Risk Sites and Drinking Water Supply Area Suitability

BMP Category	BMP Type	Land Uses with Higher Potential Pollutant Loads	Contaminated Sites (2)	Groundwater Drinking Water Supply Areas (3)	Surface Drinking Water Supply Areas (4)
Infiltration BMPs	Infiltration Trench	(1)		Clean roof runoff only	(5)
	Underground Infiltration System	(1)		Clean roof runoff only	(5)
	Infiltration Basin	(1)		☹	(5)
	Dry Well	(1)		Clean roof runoff only	(5)
	Infiltrating Catch Basin	(1)		Clean roof runoff only	(5)
	Porous Asphalt	(6)	(6)	☹	(5)
	Pervious Concrete	(6)	(6)	☹	(5)
	Permeable Concrete Interlocking Pavers	(6)	(6)	☹	(5)
Filtering BMPs	Bioretention	(1)	(6)	☹	(5)
	Sand Filter	(1)	(6)	☹	(5)
	Tree Filter	(1)	(6)	☹	(5)
Stormwater Pond BMPs	Wet Pond	Liner required	Liner required	☹	(5)
	Micropool Extended Detention Pond	Liner required	Liner required	☹	(5)
	Wet Extended Detention Pond	Liner required	Liner required	☹	(5)
	Multiple Pond System	Liner required	Liner required	☹	(5)
Stormwater Wetland BMPs	Subsurface Gravel Wetland	Liner required	Liner required	☹	(5)
	Shallow Wetland	Liner required	Liner required	☹	(5)
	Extended Detention Shallow Wetland	Liner required	Liner required	☹	(5)

BMP Category	BMP Type	Land Uses with Higher Potential Pollutant Loads	Contaminated Sites (2)	Groundwater Drinking Water Supply Areas (3)	Surface Drinking Water Supply Areas (4)
	Pond/Wetland System	Liner required	Liner required	☹	(5)
Water Quality Conveyance BMPs	Dry Water Quality Swale	(1)	(6)	☹	(5)
	Wet Water Quality Swale	Liner required	Liner required	☹	(5)
Stormwater Reuse BMPs	Rain Barrel	☹	☹	☹	☹
	Cistern	☹	☹	☹	☹
Proprietary BMPs	Manufactured Treatment System	☹	☹	☹	(5)
Other BMPs and BMP Accessories	Green Roof	☹	☹	☹	☹
	Dry Extended Detention Basin	Liner required	Liner required	☹	(5)
	Underground Detention (no infiltration)	☹	☹	☹	(5)

Notes:

- (1) Infiltration of stormwater from Land Uses with Higher Potential Pollutant Loads (LUHPPLs) is only allowed for the specific LUHPPLs listed in [Table 10-4](#), at the discretion of the review authority and under the conditions listed in Chapter 10 (i.e., receive treatment by another BMP prior to infiltration).
- (2) Infiltration BMPs should not be used where site contamination is present unless contaminated soil is removed and the site is remediated, or if approved by CT DEEP on a case-by-case basis. An impermeable liner may also be required.
- (3) Aquifer Protection Areas and other groundwater drinking water supply areas. Infiltration within public or private wellhead protection areas should be limited to clean roof runoff only.
- (4) Infiltration systems should be located a minimum distance horizontally from surface drinking water supplies as described in [Table 10-3](#). Infiltration of clean roof runoff is allowed within the horizontal setback distances.
- (5) Outlets of stormwater BMPs should be located at least 200 feet from a public water supply reservoir and 100 feet from streams tributary to a public water supply reservoir.
- (6) Liner and underdrain required.

Legend	☹	Suitable
	(See notes)	Suitable under certain conditions or with design restriction as noted
		Generally not suitable