Protecting Drinking Water Sources While Implementing Your MS4 Permit

Ted Lavery
EPA New England
Drinking Water

U.S. Environmental Protection Agency


surface & ground water supplies
MS4 Permit Requirements to Protect Drinking Water Sources
Avoid direct discharges to Class A waters
Prioritize discharges to drinking water source areas
Include a plan to notify public water suppliers in the event of an emergency which has the potential to impact a water supply
Provide pretreatment and spill control


MS4 Permit Provisions that Protect Drinking Water Sources
Permit requires MS4s to develop a and implement a plan to notify public water suppliers in the event of an emergency which has the potential to impact a water supply as part of its Stormwater Management Plan (4.2.4)

Other Rules that Protect Groundwater Used for Drinking Water

NH setback requirements for BMP infiltration projects from Alteration of Terrain regulations

NH DES Underground Injection Control requirements

Local ordinances/bylaws

How Can MS4s Better Protect Drinking Water?

Identify drinking water sources potentially impacted

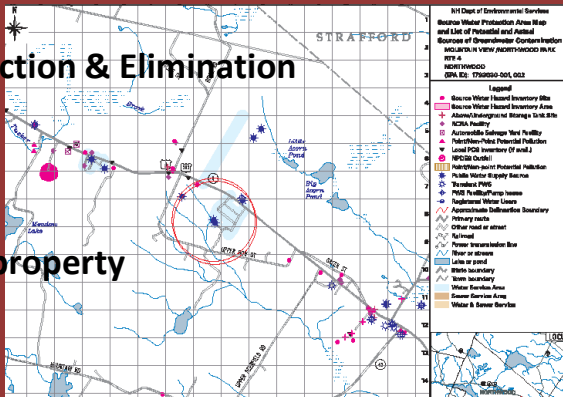
Prioritize discharges and infiltration needing treatment

Consider DW protection when developing:

- Illicit Discharge, Detection & Elimination Program

  Public edu program

  List of MS4-owned property for BMP retrofits



NH Alteration of Terrain Requirements for Stormwater BMPs

Wellhead Protection Setback

Minimum **75–400 ft** set-back between ***any stormwater treatment practice*** and public drinking water well depending on well production.

No filtering or infiltration practices allowed from gasoline dispensing areas at locations with DES registered USTs/ASTs

Infiltration practices prohibited in areas if stormwater comes from areas with USTs/ASTs or have contaminants in GW above ambient GW standards or soil standards.

No discharge from dry wells to public water area within **1,000 ft.** of a public wellhead protection area

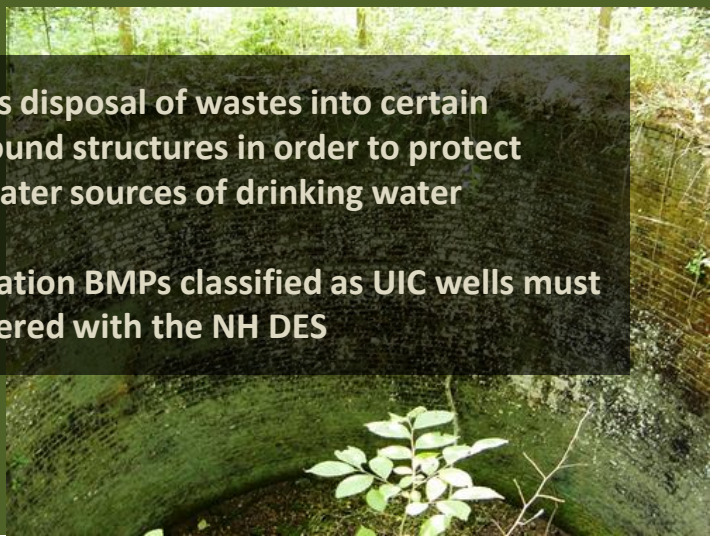
Surface Water Intake Setback

Discharge setback of a minimum of **100 ft** between ***any stormwater treatment practice*** and water supply intake protections areas. (Unless runoff from less than 0.5 acre)

No filtering or infiltration practices allowed from gasoline dispensing areas at locations with DES registered USTs/ASTs

Filtering practices must have 1 ft vertical separation between bottom of practice and seasonal high water table.

UIC Requirements



Regulates disposal of wastes into certain underground structures in order to protect groundwater sources of drinking water

All infiltration BMPs classified as UIC wells must be registered with the NH DES

UIC Requirements
Class V

A stormwater infiltration BMP is a Class V UIC well if it includes:

A well, dug hole, seepage pit, infiltration basin, etc. that is deeper than wide OR a piping system that collects & discharges fluids to the subsurface

Class V

Best Management Practices

Generally No rain gardens, vegetated buffers & swales, permeable pavement unless they have a distribution system designed to enhance filtration *and* discharge to the subsurface.

Maybe So infiltration trenches and basins qualify if they have a distribution system designed to enhance filtration *and* discharge to the subsurface.

Generally So commercially manufactured detention vault/chambers, drywells, deep sump and leaching catch basins, seepage pits, and improved sinkholes

Infiltration Design Considerations

Locate BMPs outside drinking water surface intake zone and wellhead protection areas

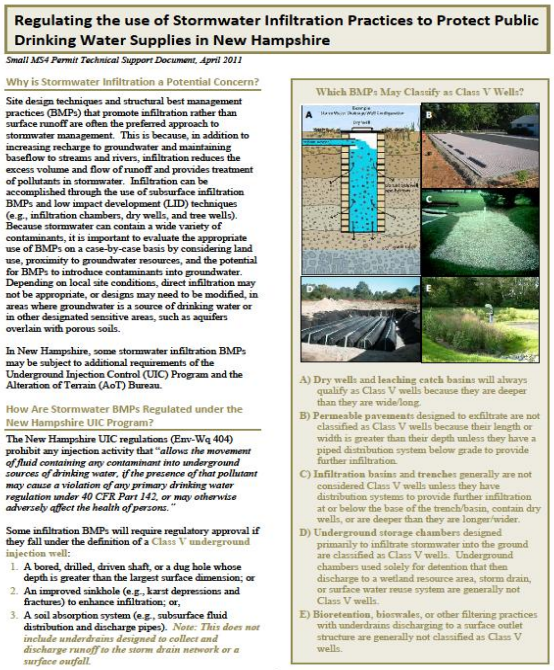
Design BMPs to remove contaminants of concern and consider site constraints

Pretreatment may be necessary to reduce pollutants

Select stormwater BMPs that can treat existing and future stormwater pollutants

Small MS4

Tech Support



Regulating the use of Stormwater Infiltration Practices to Protect Public Drinking Water Supplies in New Hampshire

Small MS4 Permit Technical Support Document, April 2011

Why is Stormwater Infiltration a Potential Concern?

Site design techniques and structural best management practices (BMPs) that promote infiltration rather than surface runoff are often the preferred approach to stormwater management. This is because, in addition to increasing recharge to groundwater and maintaining baseflow to streams and rivers, infiltration reduces the excess volume and flow of runoff and provides treatment of pollutants in stormwater. Infiltration can be accomplished through the use of subsurface infiltration BMPs and low impact development (LID) techniques (e.g., infiltration chambers, dry wells, and tree wells). Because stormwater can contain a wide variety of contaminants, it is important to evaluate the appropriate use of BMPs on a case-by-case basis by considering land use, proximity to groundwater resources, and the potential for BMPs to introduce contaminants into groundwater. Depending on local site conditions, direct infiltration may not be appropriate, or designs may need to be modified, in areas where groundwater is a source of drinking water or in other designated sensitive areas, such as aquifers overlain with porous soils.

In New Hampshire, some stormwater infiltration BMPs may be subject to additional requirements of the Underground Injection Control (UIC) Program and the Alteration of Terrain (AoT) Bureau.

How Are Stormwater BMPs Regulated under the New Hampshire UIC Program?

The New Hampshire UIC regulations (Env-Wq 404) prohibit any injection activity that *"allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that pollutant may cause a violation of any primary drinking water regulation under 40 CFR Part 142, or may otherwise adversely affect the health of persons."*

Some infiltration BMPs will require regulatory approval if they fall under the definition of a Class V underground injection well:

1. A bored, drilled, driven shaft, or a dug hole whose depth is greater than the largest surface dimension; or
2. An improved sinkhole (e.g., karst depressions and fractures) to enhance infiltration; or,
3. A soil absorption system (e.g., subsurface fluid distribution and discharge pipes). *Note: This does not include underdrains designed to collect and discharge runoff to the storm drain network or a surface outfall.*

Which BMPs May Classify as Class V Wells?

A) Dry wells and leaching catch basins will always qualify as Class V wells because they are deeper than they are wide/long.

B) Permeable pavements designed to exfiltrate are not classified as Class V wells because their length or width is greater than their depth unless they have a piped distribution system below grade to provide further infiltration.

C) Infiltration basins and trenches generally are not considered Class V wells unless they have distribution systems to provide further infiltration at or below the base of the trench/basin, contain dry wells, or are deeper than they are longer/wider.

D) Underground storage chambers designed primarily to infiltrate stormwater into the ground are classified as Class V wells. Underground chambers used solely for detention that then discharge to a wetland resource area, storm drain, or surface water reuse system are generally not Class V wells.

E) Bioretention, bioswales, or other filtering practices with underdrains discharging to a surface outlet structure are generally not classified as Class V wells.

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More >>

NH DES AoT Program:
http://des.nh.gov/organization/divisions/water/aot

NH Drinking Water Program:
http://des.nh.gov/organization/divisions/water/dwgb

EPA UIC "When Are Stormwater Discharges Regulated As Class V Wells?"
www.epa.gov/ogwdw000/uic/class5/pdf/fs_uic-class5_classvstudy_fs_storm.pdf

EPA Office of Water Memo "Clarification on which stormwater infiltration practices/technologies have the potential to be regulated as Class V wells by the UIC Program" June 13, 2008

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Contacts

Thank you

Ted Lavery
EPA New England
Drinking Water Source Protection
617-918-1683
lavery.ted@epa.gov

Denise Springborg
EPA New England
UIC Program
617-918-1681
springborg.denise@epa.gov

Michell Locker
NH DES - UIC Program
29 Hazen Drive; PO Box 95
Concord, NH 03302-0095
603-292-5859
mlocker@des.state.nh.us

Ridgely Mauck, PE
NHDES Alteration of Terrain Bureau
29 Hazen Dr; PO Box 95
Concord, NH 03302-0095
(603) 271-3434
mridgely@des.state.nh.us

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