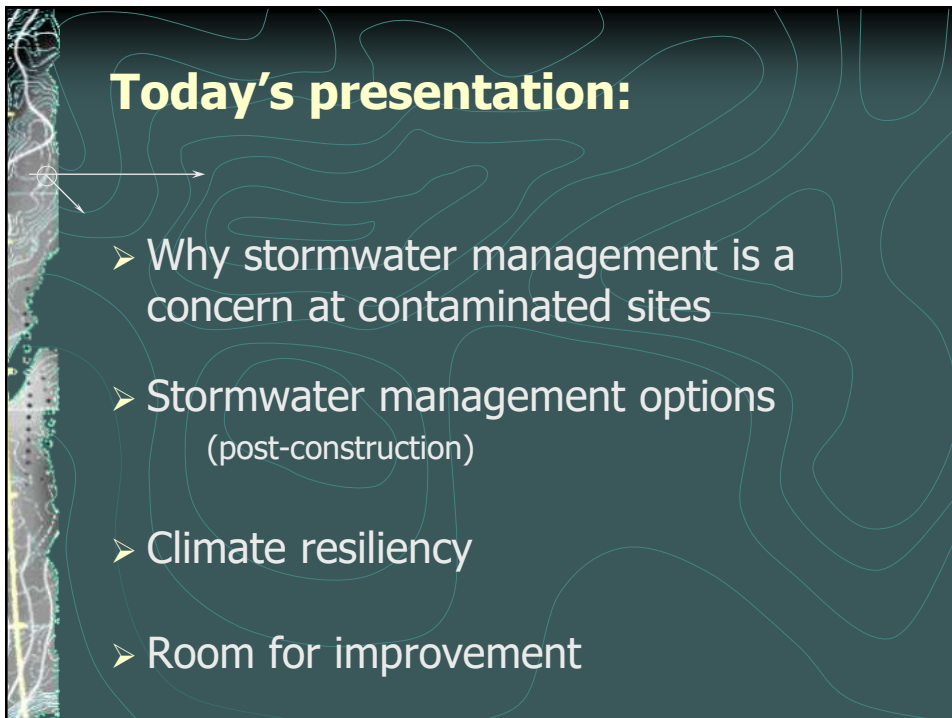




Stormwater Management at Contaminated Properties in NH

**NEWMOA Workshop
Redevelopment of Contaminated Properties &
Resolving Conflicts with Stormwater Requirements
September 26, 2019**

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Today's presentation:

- Why stormwater management is a concern at contaminated sites
- Stormwater management options (post-construction)
- Climate resiliency
- Room for improvement



Who will you be dealing with?

Hazardous Waste Remediation Bureau & Alteration of Terrain Bureau

- NHDES' stormwater management program
- You're in if:
 - $\geq 100,000$ SF of disturbance over a 10 year period
 - $\geq 50,000$ SF of disturbance over a 10 year period if any portion within protected shoreland
 - $\geq 2,500$ SF with grades $\geq 25\%$ within 50 feet of surface water



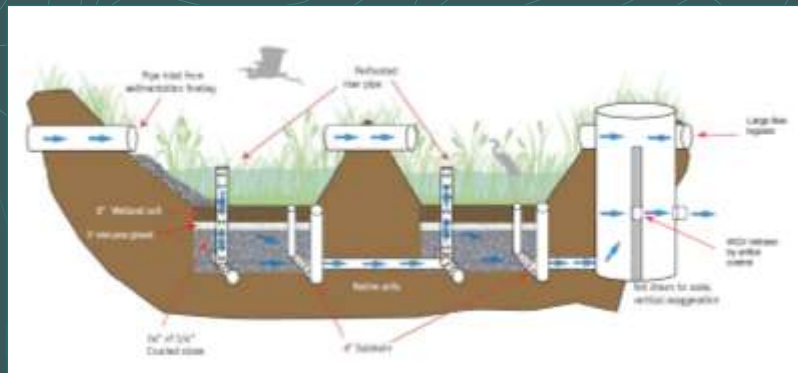
So what's the issue?

- Post-development peak runoff \leq pre-development peak runoff
- First choice for stormwater management is groundwater recharge
- Env-Wq 1507.02 (c)(2) prohibits groundwater recharge, infiltration, and certain filtration practices in areas that have contaminants in soil above Soil Remediation Standards and contaminants in groundwater above Ambient Groundwater Quality Standards

What are some of the options?

- Gravel wetlands (lined)
- Bioretention (lined)
- Others

Gravel Wetlands (lined)



Source: UNH Stormwater Center

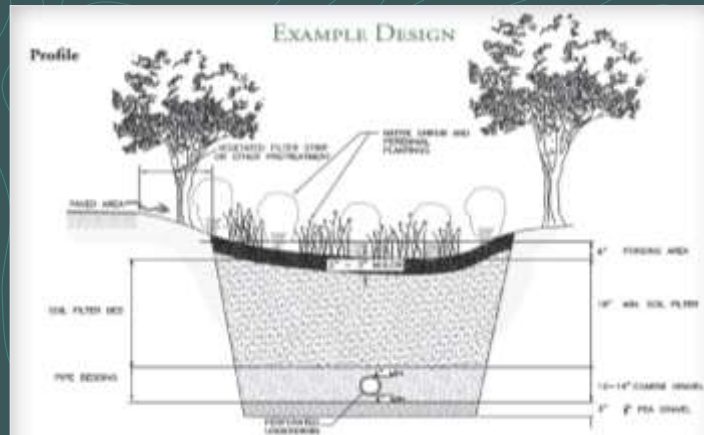
UNHSC Subsurface Gravel Wetland Design Specifications (Revised 2016)

https://www.unh.edu/unhsc/sites/default/files/media/unhsc_gravel_wetland_spec_6-2016.pdf

Gravel Wetland example





Bioretention (lined)




UNHSC Design Specifications for Bioretention Soil Mix (Revised 2017)
https://www.unh.edu/unhsc/sites/default/files/media/unhsc_bsm_spec_2-28-17_0.pdf

Bioretention examples




← Pretty




Utilitarian →

Contaminated or not, need to consider climate resiliency



- Consider increased frequency and amount of precipitation (i.e., use most current data)

NRCS "National Engineering Handbook" Part 630 – Hydrology (November 2015)
or Win TR-20 (version 3.10)



Source: New Hampshire Coastal Adaptation Workgroup

Contaminated or not, need to consider climate resiliency (cont.)

Northeast Regional Climate Center precipitation must be *increased by 15%* in coastal and Great Bay communities as recommended by the 2014 Science and Technical Advisory Panel report: Sea Level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire
<http://www.nhcrhc.org/stap-report/>



Source: New Hampshire Coastal Adaptation Workgroup
 2017 King Tide Photo Contest – Peter DiGeronimo

Room for improvement

- Applicants for AoT permits are not required to identify that a redevelopment site is a contaminated property
 - AoT staff now screen OneStop database
- Properties that are less than threshold may slip through cracks

Can't emphasize communication enough !





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