HB311 - Committee to Study Rail Trail Best Management Practices

- NH Department of Environmental Services
- Land Resources Management
- Wetlands Bureau
- February 14, 2022

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Focus of presentation- NHDES Wetlands BMPs

Remediation by rule

Trails Notice & BMPs

Application Standards & BMPs

Remediation Permit by rule

Wetlands Permit by Rules:
Work can take place in NHDES wetlands jurisdiction under RSA 482-A without a permit when Env-Wt 307 Conditions are met:

1) Protection of Water Quality
2) Protection of fisheries & breeding areas;
3) Protection against Invasive Species
4) Protection of Rare, T & E species & habitat
5) Standard Dredge & Fill conditions

Remediation Permit by rule

Wetlands Permit by Rule:
Env-Wt 309.02(k)
Undertaking Site Remediation approved by NHDES pursuant to Env-Or 600 <u>where:</u>

1. Information supplied to WMD - Clearly identifies all jurisdictional areas
2. Clearly describes activities to occur in jurisdiction; &
3. Provide written notice to DES Wetlands bureau and local governing body.

Remediation – Shoreland Permit by Notice

Env-Wq 1406.15 Shoreland Permit by Notification

(1)Clearly identified impacts in the protected shoreland;

(2)Activities in protected shoreland;

(3) Provide written notice to DES Wetlands bureau and local governing body.

Trails Notice & BMPs

Trails Statutory Permit by Notice (SPN) process & BMPs

Notice Qualifying Criteria:

1. Maintain, repair, or replace an existing legal trail
2. No change in location, configuration, dimensions, or construction type
3. No work will be done in standing or flowing water;
4. For process & other size details- see FORM here: NH Online Forms System - Trails Notification Statutory Permit-by-Notification (SPN). Version 2.3

Trails Notice & BMPs

Trails Statutory Permit by Notice (SPN) process & BMPs

NHDES-W-06-040

TRAILS NOTIFICATION
STATUTORY PERMIT-BY-NOTIFICATION (SPN)
Water Division/Land Resources Management
Wetlands Bureau
Check the Status of your Notification

RSA/Rule: RSA 482-A:3, XII / Env-Wt 308.04(c); Env-Wt 517

NAME OF ORGANIZATION UNDERTAKING ACTIVITIES:

Administrative Use Only	Administrative Use Only	☐ SPN complete and project as described conforms with all applicable requirements. ☐ SPN incomplete and/or project as described does not conform with all applicable requirements.
		File No.: Initials:
		Check No.: Amount:

Terms in **bold font** are defined on the attached instructions page.

SECTION 1 - PROJECT CRITERIA (Env-Wt 517.08(a))

Is the proposed activity limited to repair and/or replacement of out-of-water components of an existing legal **boardwalk**? ☐ Yes ☐ No

If you answered "Yes", you do not need to obtain a wetlands approval or permit. If you answered "No", continue to the next question.

Does the project consist only of maintenance, repair, or replacement of an existing legal **trail** or pathway where there will be no change in location, configuration, dimensions or construction type and no work will be done in standing or flowing water? ☐ Yes ☐ No

If you answered "Yes", continue to Section 2. If you answered "No", continue to Section 1A.

SECTION 1A - CRITERIA FOR TRAIL, PATHWAY AND TRAIL BRIDGE PROJECTS (Env-Wt 517.04, Env-Wt 517.06(a))

☐ N/A (Not Applicable): If the project involves only a **boardwalk**, check N/A and continue to Section 1B.

a. Does the project include **wetland** crossings that:
- Impact more than 3,000 square feet per crossing?
- Have a trail width exceeding 20 feet?
- Have a **fill** width that has not been minimized and/or, exceeds 50 feet per crossing when measured at the toe of the trail side slope? Or
- Exceed 60 feet in length per crossing, measured along the centerline of the proposed access way?

☐ Yes ☐ No

If the project does not include a **wetland** crossing, check N/A for "not applicable" and continue to question b: N/A ☐

[Notification Statutory Permit-by-Notification (SPN). Version 2.3]

Trails Statutory Permit by Notice(SPN) process & BMPs

Trail Handbook Outline (nhstateparks.org)

BEST MANAGEMENT PRACTICES

For Erosion Control During Trail Maintenance and Construction

NH Trail Construction and Maintenance Manual

Keep trails out of the water; and water out of the Trails

STATE OF NEW HAMPSHIRE
Department of Resources and Economic Development
Division of Parks & Recreation
Bureau of Trails

Trails Statutory Permit by Notice(SPN) process & BMPs

Trail Handbook Outline (nhstateparks.org)

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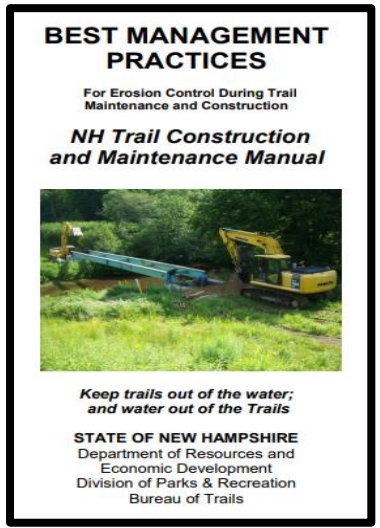
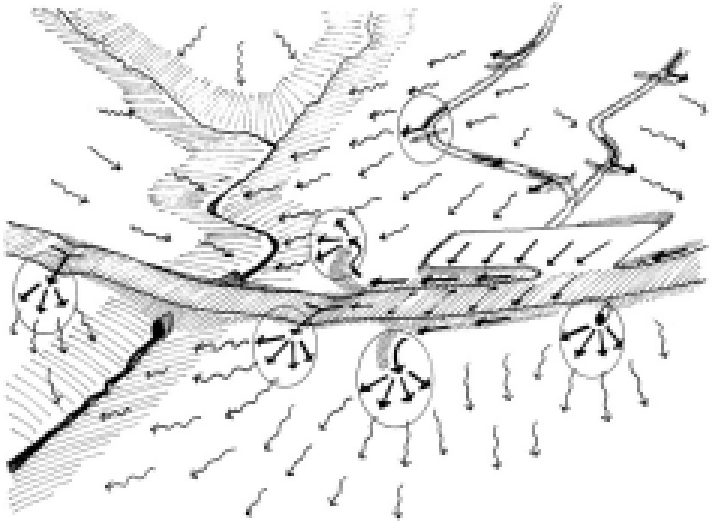


Trails Statutory Permit by Notice(SPN) process & BMPs

Trail Handbook Outline (nhstateparks.org)

Best Management Practices Goals

- ❑ Designed to imitate / protect natural functions of forests and reduce erosion of materials.
- ❑ Disperse concentrated water flow.
- ❑ Minimize the risk of sediment / pollutants getting into waterbodies and wetlands.
- ❑ Provide a safe, stable, trail system.
- ❑ Well-built trail will provide access while conserving natural resources.

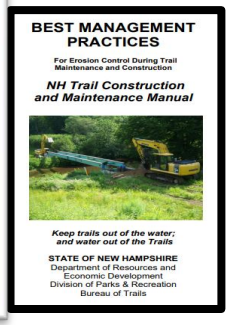


Trails Statutory Permit by Notice(SPN) process & BMPs

Trail Handbook Outline (nhstateparks.org)

Pre-Development BMPs

Site Planning + Site Evaluation = Avoiding and minimizing impacts to Wetlands



Why is Erosion a Problem?

- Results in sedimentation of wetlands, streams, rivers, lakes.
- Detrimental effect on water quality, fish, smaller organisms.
- Creates ruts, bumps, potholes, washouts that can make trails impassible.
- Causes increased cost to repair issues.

Common BMPs During Construction

- ❑Coir Logs
- ❑Water Bars
- ❑Silt Fence
- ❑Mulch Berms
- ❑Vegetation

Example BMPs – Culverts

Trails Statutory Permit by Notice(SPN) process & BMPs

Trail Handbook Outline (nhstateparks.org)

Culverts

Culverts are used to allow water to pass beneath the trail from one side to the other.

Culverts should be installed when:

- the trail needs to cross a small brook, or seasonal runoff which isn't big enough to require a bridge.
- the water volume in a ditch requires it to be drained to the opposite side of the trail.

Culvert Strengths:
Provide for a smooth uninterrupted trail.

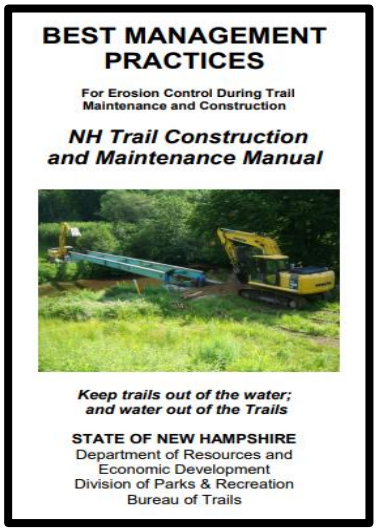
Culvert Weaknesses:
Require regular inspections and cleaning;

Failure caused by lack of maintenance or a heavy rain event can be expensive to repair;

Are more easily plugged by beavers than bridges.

Examples of good trail drainage management includes:

- Culverts & cross-drains
- Ditches to drain water from trail
- Well-constructed trail foundation material
- Reduced water concentration



Application standards & BMPs

Planning & Data Screening Required

References: Env-Wt 306 & Env-Wt 307

(6) For dredge projects, also determine whether the subject property is contaminated;

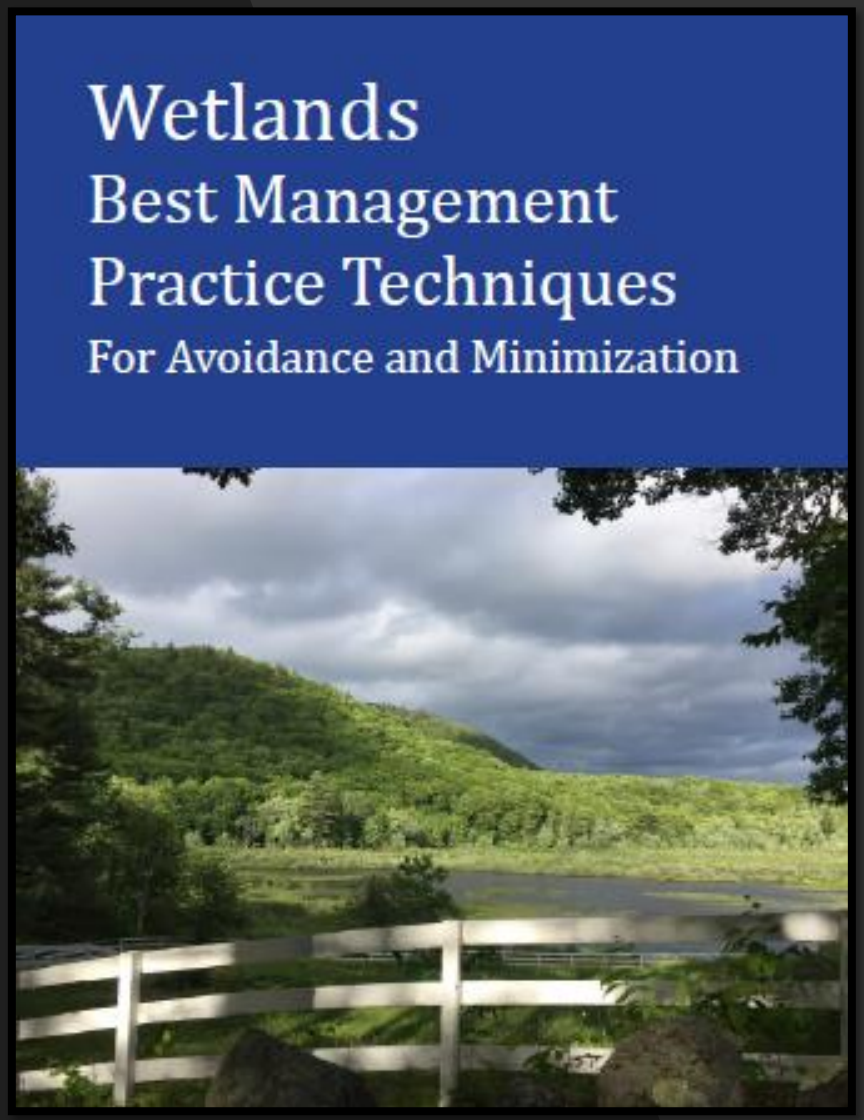
Env-Wt 307.03 Protection of Water Quality Required.

(a) No activity shall be conducted in such a way as to cause or contribute to any violation of:

- (1) The surface water quality standards specified in RSA 485-A:8 or Env-Wq 1700;
- (2) The ambient groundwater quality standards established under RSA 485-C;
- (3) The limitations on activities in a sanitary protective area established under Env-Dw 302.10 or Env-Dw 305.10; or (4) Any provision of RSA 485-A, Env-Wq 1000, RSA 483-B, or Env-Wq 1400 that protects water quality.

- Review of online NHDES Data screening for *potentially contaminated sites.*
- For dredge projects
- & all projects to meet Water Quality standards & Ambient Groundwater quality standards.

Application standards & BMPs



Chapter 5 – Bike Paths, Footpaths, Trails and Boardwalks

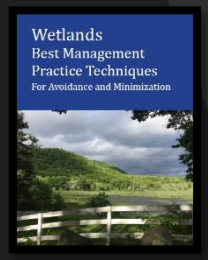
Bike paths, footpaths, trails and boardwalks are excellent means of showcasing wetlands and the natural environment, particularly for people who may not otherwise enjoy natural areas. It is NHDES' responsibility to protect wetland areas from unnecessary and undesirable impacts and intrusions into wildlife habitat. Good planning and design simultaneously protect wetlands and provide opportunities for recreational use of the environment.

Planning and Site Selection

Bike paths are unique in that they require long, undivided stretches of land. These are most commonly in the form of former railroad beds or utility easements. It is not a surprise that these stretches of land may include many wetlands and may even follow a larger river or stream. Other smaller trails and paths may specifically be proposed to enhance an area that is set aside for conservation or recreation, which is also likely to have wetland habitat. For all projects, in order to protect wetlands, and their functions and values, it's important for the planner to do the following:

- Research and evaluate the area to decide if the trail will be able to accommodate all projected users without degrading the natural resources. Not all wetland areas can support all types of paths while maintaining wildlife values. If this can't be accomplished, it may be necessary to downsize the project or look for an alternative route for the path or trail. Be sure to take safety standards into consideration when choosing a

Chapter 5 - Wetlands-bmp-manual.pdf (neiwpcc.org)



Application standards & BMPs

- Use Natural contours
- Use retaining walls
- Use BMPs to handle stormwater

Design

Good trail design is critical to help prevent unnecessary and detrimental impacts to wetlands, whether the trail is constructed on a previously disturbed railroad bed or on an undisturbed natural area. The following are general tips to avoid wetlands and minimized impacts:

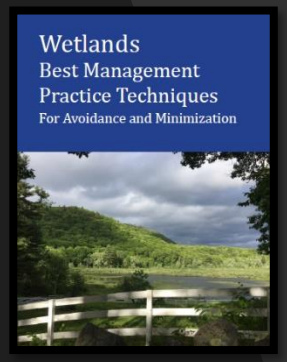
Grading

- Utilize natural land contours to avoid excessive fill.
- Design retaining walls in areas of steep or irregular topography to minimize the amount of cut and fill needed alongside a path.
- Utilize best management practices for handling stormwater runoff on steeper grades and trail sides to minimize erosion, sedimentation and potential damage to the trail.

Maintaining Habitat Values

- Preserve the natural character of the area, while making it available for recreational use.
- Skirt sensitive wetland areas and provide for views from the periphery instead of bisecting wetlands.
- Preserve natural vegetative transition zones within and around wetlands.
- Use lookouts and overlooks to enjoy wetlands instead of crossing sensitive areas.
- Be sensitive to the wildlife that uses the area.
- Propose limited access to sensitive areas for bird-watching, nature study and non-motorized boating.
- Build outside of areas used by sensitive species and critical wetland areas, such as special aquatic sites.
- Avoid disturbing all rare plants and wildlife.

Human recreational activity in an area may directly impact wildlife and reduce the quality of the habitat provided. Human activities can disturb sensitive habitats, like wetlands, and disturb or displace wildlife. Flushing wildlife raises and animals' stress level and increases energy consumption. If repeated frequently, such disturbance can impact reproduction and survivorship. Environmental fact sheet: Habitat-Sensitive Site Design and Development Practices to Minimize the Impact of Development on Wildlife.

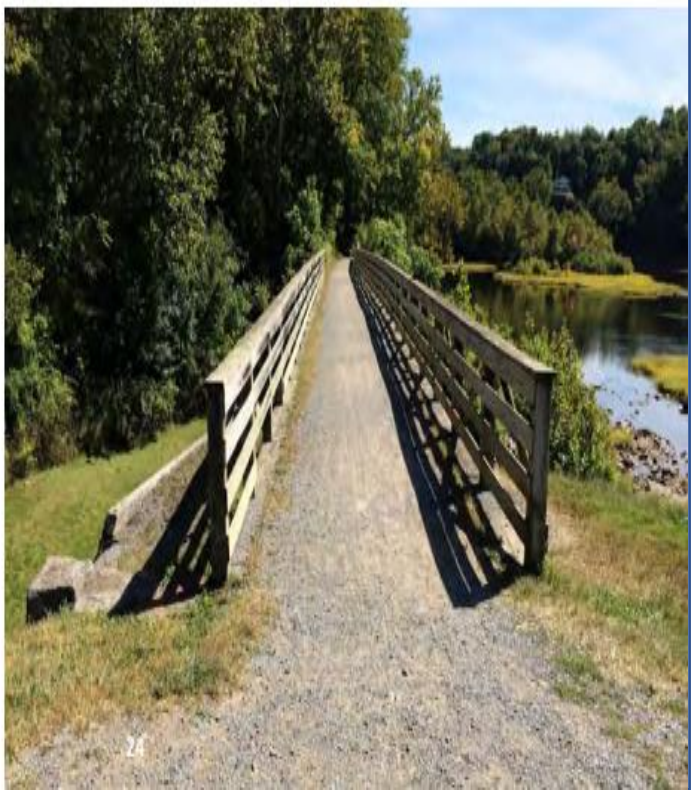


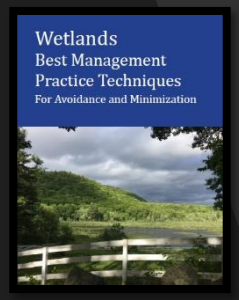
Application standards & BMPs

- Use existing structures
- Timber bridges & elevated boardwalks good options
- Use Wildlife passage structures

Wetland Crossings (see Chapter 7 for more detail)

- Utilize existing structures and pathways, wherever possible.
- If crossing a sensitive habitat or creating a new trail, keep the crossing as narrow as possible.
- Timber bridges and elevated boardwalks are good options.
- Utilize wildlife passage structures.
- Elevate boardwalks, observation decks and bridges to minimize disturbance to wetland vegetation, as well as to protect wetlands underneath.
- General rule of thumb: elevate the boardwalk to a minimum 1:1 height to width ratio.





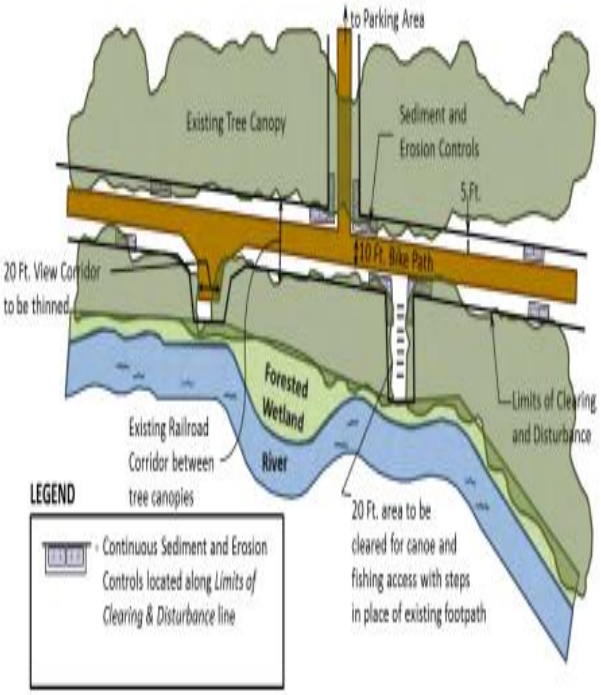
Application standards & BMPs – Example –p. 29

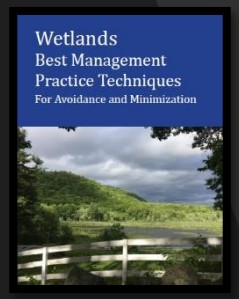
- Plan example Revised to consolidate impact areas.
- Fishing & boat access areas grouped.

Example 5.5b: View Corridors and Access Areas - Revised Plan

How wetland impacts were minimized:

- √ The view corridor was incorporated into the canoe and fishing access area, thereby limiting human disturbance to one 40-foot area instead of two separate 20-foot areas.
- √ The habitat remains unfragmented and intact.
- √ Plantings were added in areas where the existing vegetation was sparse.





Application standards & BMPs – Chapter 7 - Stream & Wetland Crossings

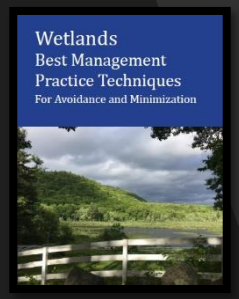
Key Design Features:

Stream Crossing Design (nh.gov)

Hydraulic Capacity - Ability of structure to accommodate flows

Geomorphic Compatibility - Long term compatibility of stream crossing with the river channel & sediment deposit processes 02_28_18_Geomorph_Handout_Final.pdf (state.nh.us)

Aquatic Organism Passage- Can fish & other aquatic animals move through the crossing without barriers www.des.nh.gov/sites/g/files/ehbemt341/files/documents/aquatic-organism-passage.pdf

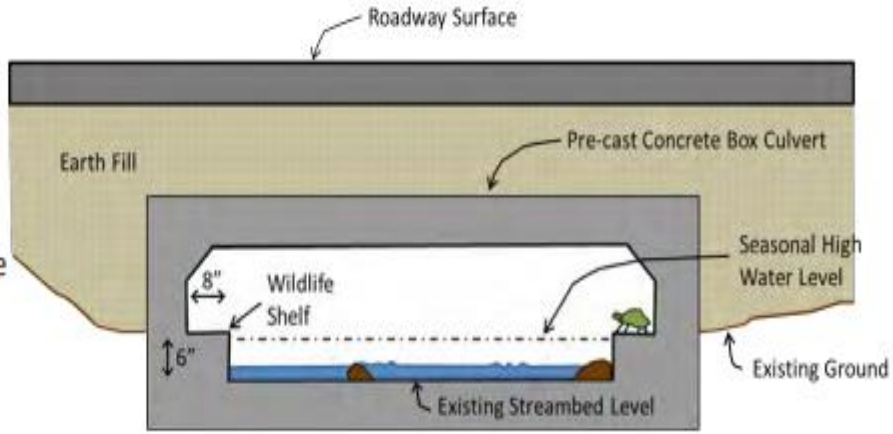


Application standards & BMPs – Chapter 7 - Stream & Wetland Crossings

Project Example-
Designed to allow for water flows, Aquatic organism passage
& wildlife passage.

Example 7.6: Modified Box Culvert Crossing

While a modified box culvert with a shelf may need to be special ordered, they are available or can be built. The designer may consider adding concrete or stone blocks inside a standard culvert to build wildlife passage shelves.



2' x 8' MODIFIED BOX CULVERT

How wetland impacts were minimized:

- √ This structure allows movement of water.
- √ There is a shelf for small amphibians (frogs, salamanders, etc.) to use for travel inside the structure.
- √ The shelf is level with the final soil grade, which allows small mammals easy access and use.
- √ The shelf adds little cost to the overall project when incorporated from the beginning.

Summary

Permit by Rule or PBN

Remediation w/o a permit

Or 600

Trails Notice & BMPs

DNCR NH Trail Construction & Maintenance BMPs (for Erosion Control)

Wetlands Standard process

Wetland BMPs for A/M

Hydraulic capacity, Geomorphic & AOP

NHDES Wetlands Permitting Contact Information

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