

Can You Ace Your River Report Card?

An Applicant's Guide to Protecting Water Quality

Did you know that polluted runoff is slowly killing our rivers and that you can make a difference by applying simple, low cost development practices? What's good for the environment can also save you money and improve property value!

What is Polluted Runoff?

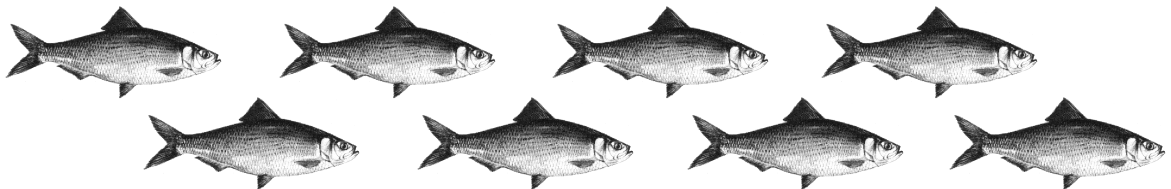
As runoff from rain and melted snow moves over and through the ground, it picks up natural and human-made pollutants and deposits them into our lakes, rivers, wetlands and other waterbodies.

These pollutants include: fertilizers, herbicides and insecticides from our lawns and farms; oil, grease, toxic chemicals, road salt and sand from our roads and parking lots; eroded sediment from our earth-moving activities; and bacteria and nutrients from our livestock, pet wastes and faulty septic systems.

Land development can increase the volume of polluted runoff, degrading water quality in our rivers and waterbodies.

Cumulative impacts from polluted runoff cause destruction and loss of aquatic plants, animals, fish and shellfish, drinking water, and swimming, fishing and boating spots.

(see last page for more information ♠)



Turn the page to see if you can ace your River Report Card . . .

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Clean Water Act Section 604(b) Grant





Low Impact Development

Low impact development mimics predevelopment site hydrology by using design techniques that store, infiltrate, evaporate, and detain runoff. This reduces runoff, promotes groundwater re-charge, and protects nearby waterways.

Section I

Do you encourage natural water filtration by:

- Using alternatives to impervious surfaces? 🐦 (such as grid and block pavers, or porous or penetratable pavement)
- Reducing driveway areas — making them as narrow and short as possible or using shared driveways? 🐦 🐦
- Avoiding development or clearing of vegetation on steep slopes? 🐢
- Using onsite natural grades and vegetation to encourage natural drainage? 🐢 🐦
- Using rain gardens/bioretention areas? (vegetated areas that collect, treat, and infiltrate stormwater) 🐦
- Avoiding cutting and filling near rivers and wetlands? 🐦
- Using grass swales instead of paved curbing? 🐦 🐦
- Reducing lawn areas by designating low mow and no mow areas? 🐦

Section II

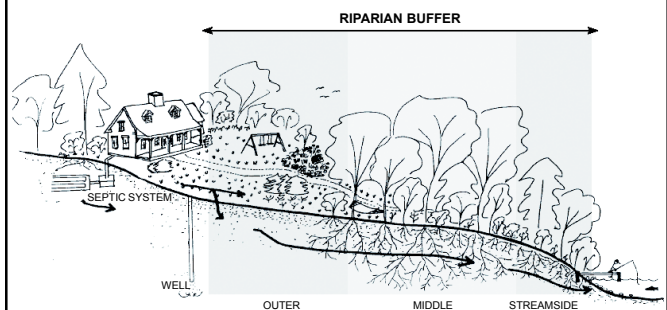
Do you protect water quality and habitat by:

- Providing a stormwater management plan to the commissions if disturbing more than one acre? 🐢
- Designing your landscape to avoid or minimize the use of pesticides and fertilizers near water bodies?
- Incorporating the 2002 *Connecticut Guidelines for Erosion & Sediment Control*? 🐢
- Maintaining an untouched vegetated buffer strip at the edge of all water bodies? 🐦
- Leaving dense shrubs and brush for mosquito-eating birds and insects?
- Limb trimming instead of tree cutting to enhance water views?
- Leaving a buffer of undisturbed land around suspected vernal pools? 🐦

Protecting Your River

A THREE-ZONE BUFFER SYSTEM

The most effective backyard buffer has three zones:



Streamside

From the water to the top of the bank. Protects the bank and offers habitat. The best buffer has mature forest but large shrubs may be a better choice where trees have collapsed a bank. Let it grow and let it go for the best protection.

Middle Zone

From the top of the bank inland. Protects stream water quality and offers habitat. Varies in width depending on size of stream and the soil type, slope and use of nearby land. The best buffer has trees, shrubs, and perennial ground plants. It can allow some clearing for recreational use.

Outer Zone

Includes the yard, garden, or woods between your home and the rest of the buffer. Traps sediment. Play areas, gardens, compost piles, and other common residential activities are suitable here.

*Illustration and caption provided by Adair Mulligan
The Connecticut River Joint Commissions*

www.crjc.org

**Section III
Bonus Questions — Did You:**

- Catch rain water before it runs off by: ✂
 - a) Using vegetated roofs and/or
 - b) Using rain barrels and cisterns to collect rain water?
- Use xeriscaping-landscaping practices that minimize water usage. ✂

**Section IV
Please continue if your plan includes
multiple lots and/or disturbs
more than five acres.**

Does your plan . . .

- Cluster development, set aside conservation land? ✂
- Make roads as narrow as possible? 🐸 ✂
- Use 90-degree angle parking for less pavement per vehicle? 🐸
- Propose parking space for average use rather than peak times and promote shared parking? 🐸
- Reduce the amount of impervious cover and avoid disturbing land adjacent to rivers and wetlands? 🐸 🐸
- Add sunken rain collection gardens in the middle of cul-de-sacs or parking lots? 🐸 🐸
- Make cul-de-sac turnarounds as small as possible?

Did You . . .

- Apply for a stormwater permit with Connecticut Department of Environmental Protection? 🐸 🐸
- Implement the Best Management Practices suggested in the *2004 CT's Stormwater Quality Manual*? 🐸
- Remove curbing from the perimeter of paved areas, allowing sheet flow of stormwater to move over vegetated areas to encourage runoff infiltration?
- Designate a snow-dump area away from the river's edge?
- Designate separate parking areas and paths for heavy equipment to minimize compaction and encourage infiltration?
- Prepare an oil/hazardous waste spill contingency plan to prevent and respond to any potential releases during construction? ✂



Rooftop without gutters!

Water cascades into the vegetated area beneath that is designed to hold and infiltrate water.
http://nemo.uconn.edu/reducing_runoff/roof_page.htm

**Scoring. Add up checked questions
in Sections I-III and match your
results below.**

15 checks or more Congratulations! **A!!**
 13 Pretty good **B**
 12 Average **C**
 11 or below You can do better!

**Scoring for multiple lots and/or
disturbing more than five acres,
add up Sections I-IV and match your
results below.**

27 checks or more Congratulations! **A!!**
 24 Pretty good **B**
 21 Average **C**
 18 or below You can do better!

For more information, try these links:

Connecticut Department of Environmental Protection Stormwater Fact Sheet

1) *General Permit for Stormwater and Dewatering Wastewater from Construction.*

Where there is a disturbance of *one or more acres*, applicants need to comply with permit requirements. If there is a one- to five-acre disturbance, applicants only need to obtain written approval from local commissions to comply with permit requirements. For disturbance over five acres, registration with the DEP is required.

http://dep.state.ct.us/pao/general_fact/listgen.htm#StormCommercialGP

2) *The 2002 Connecticut Guidelines for Erosion and Sediment Control.*

For construction activities. This manual meets Connecticut's Soil Erosion and Sediment Control Act by providing information on the history of erosion and sediment controls and listing specific erosion and sediment control measures. Advise applicants to review and implement this manual before construction.

<http://www.dep.state.ct.us/wtr/wetlands/errata.htm>

3) See *The 2004 Connecticut Stormwater Quality Manual* for information on Best Management Practices (BMPs) that comply with the above permits and guidelines. This manual provides guidance to commissions and applicants by suggesting BMPs for proposed developments to reduce pollution, control and reduce runoff and provide other stormwater treatment practices. Advise applicants to review and implement this manual before construction.

<http://www.dep.state.ct.us/wtr/stormwater/strmwtrman.htm>

4) *Stormwater from Small Municipal Separate Storm Sewer Systems (MS4) General Permit.*

Commissions of towns covered by this general permit must comply by adopting into their regulations post-construction management measures for applications within their towns. Towns should include reference to the Stormwater Manual.

<http://dep.state.ct.us/pao/download.htm#MS4GP>

For more information or additional copies,
call HVA at 860-672-6678,

or write to P.O. Box 28, Cornwall Bridge, CT 06754,
or visit www.hvatoday.org and click on "For Municipalities"

POLLUTED RUNOFF

<http://www.dep.state.ct.us/olisp/coastalnonpoint>
<http://www.epa.gov/OWOW/NPS>
<http://www.epa.gov/owow/nps/urban.html>
http://nemo.uconn.edu/publications/fact_sheets/nemo_fact_sheet_2_s.pdf
<http://www.conservect.org/ctrivercoastal/manuals.shtml>

STORMWATER MANAGEMENT

http://www.dep.state.ct.us/olisp/coastalnonpoint/urban_links.htm#Stormwater
<http://www.epa.gov/greeningepa/stormwater>

IMPERVIOUS SURFACE ALTERNATIVES

http://nemo.uconn.edu/impervious_surfaces/planning_design.htm
http://nemo.uconn.edu/reducing_runoff/case_studies/case_studies_runoff.htm
http://nemo.uconn.edu/reducing_runoff/parking_lots.htm

VEGETATIVE BUFFERS

<http://www.crjc.org/riparianbuffers>
<http://www.dep.state.ct.us/olisp/manual/manualsection3.pdf#page=21>
http://www.stormwatercenter.net/Assorted%20Fact%20Sheets/Tool3_Buffers/BufferZones.htm
<http://www.epa.gov/region4/water/nps/projects/nc97-1.htm>
<http://www.ct-botanical-society.org>
http://nemo.uconn.edu/case_studies/watertown_ct_cs.htm

LOW IMPACT DEVELOPMENT

<http://www.epa.gov/owow/nps>
<http://www.epa.gov/owow/nps/lid/lidnatl.pdf>
<http://www.lowimpactdevelopment.org>

ADDITIONAL SITES

Bioretention

<http://www.epa.gov/owow/nps/bioretention.pdf>

Cluster Development

<http://www.plannersweb.com/articles/are015.html>

Connecticut Statues

<http://cga.ct.gov/lco>

Conservation Organizations

<http://www.hvatoday.org>
<http://www.caciwc.org>
<http://www.cwp.org>
<http://www.riversalliance.org>

Driveways

http://nemo.uconn.edu/reducing_runoff/driveways

Green rooftops

http://nemo.uconn.edu/reducing_runoff/roof_page.htm
<http://www.epa.gov/owow/nps/roofcover.pdf>

Landscape/Green Building

<http://dep.state.ct.us/wst/recycle/greeland.htm>

Non-Point Pollution Workshop

<http://nemo.uconn.edu>

Oil/Hazardous Waste Spill Prevention

<http://dep.state.ct.us/wst/oilspill>
<http://dep.state.ct.us/wst/p2/vehicle/spccplans.pdf>

Rain gardens

<http://www.raingardens.org/Index.php>

Road Salt Alternatives

http://www.forester.net/sw_0107_environmental.html

Snow Disposal

<http://www.dep.state.ct.us/wtr/guide/snowdisp.htm>

Street Sweeping

http://www.dep.state.ct.us/wst/solidw/street_sweepings.pdf

Wetlands

http://www.dep.state.ct.us/olisp/coastalnonpoint/wetlands_links.htm