



Guide to Stream Friendly Practices for Common Streamside Projects

Do you have a streamside issue created by erosion or stormwater runoff? Are you considering building a house or structure near a stream, landscaping your streamside area, or adding a road or walkway on your property? In this guide we have answered some frequently asked questions from local homeowners about streamside projects. We have attempted to provide stream-friendly considerations for each project and contact information for any permits or additional resources needed.

Everyone wants their stream to look and be healthy. Stream ecological health is not only measured by the plants and animals that live in it, but also by its riparian

(streamside) buffer area and the stability of its bed and banks. A stable stream does not undergo accelerated erosion. This means the stream does not move laterally (the banks remain stable), or vertically (the stream bed does not build up or cut down) over relatively short periods of time or during small floods.

Streams can be very sensitive to disturbances, and if stream-related projects are poorly planned and



Maintaining Healthy Streamside Vegetation is the Most Cost Effective Way to Protect Your Streambank

implemented, a stable stream can quickly become unstable.

Do I Need a Permit?

Before you begin any streamside project, first learn about what permits you might need. Here are some of the more common situations that require permitting, but this list is not all encompassing.

Failure to obtain the proper permits can result in hefty fines and even jail time!

DEC Protection of Waters/Stream Disturbance Permit: see below for each activity or see DEC guide at <http://www.dec.ny.gov/permits/6042.html>.

Crossing, Piping and Diversion Permit: (NYC DEP): Depending on how any drainage features (streams or wetlands) on the property will be involved as a result of the project; it may require a Crossing, Piping and Diversion Permit.

Freshwater Wetlands Permit: (NYS DEC) Wetlands 12.4 acres or larger require a permit for most disturbances within 100 feet.

NYS DEC Stormwater State Pollution Discharge Elimination System (SPDES) requires review of new construction involving a disturbance of more than 1 acre. A *stormwater pollution prevention plan* will need to

be developed for construction disturbances under the SPDES permit requirements.

Stormwater Pollution Prevention Permit (SPPP) (NYC DEP) is required, including submitting a stormwater or erosion plan if the project will disturb more than 2 acres within 100 feet of a watercourse or a slope exceeding 15%.

US Army Corps of Engineers Permit: An Army Corps permit is required when more than 25 cubic yards of fill material will be used below the "ordinary high water mark" (the approximate yearly flood level).



How do I Stabilize an Eroding Streambank?

Care should be taken in designing a streambank stabilization project so that you don't over-widen the stream, narrow or encroach upon the stream. Do not borrow from nearby gravel bars in the stream for fill material. If you are not careful, you can cause an erosion problem on your neighbor's property.

We recommend that you seek technical assistance from Ulster County Soil and Water Conservation District (SWCD) to identify the set of causes of your streambank instability problem and to develop a solution that does not transfer the erosion problem upstream or downstream. Neighboring properties may need to be involved. Take advantage of this free technical assistance. Contact information below.

NYS DEC Article 15 Stream Disturbance Permit is needed for streambank stabilization projects. An Army Corps of Engineers Permit may be required.

How Do I Pave or Repave a Driveway Near a Stream?

Impervious surfaces (i.e., pavement and buildings) and land drainage can accelerate rain runoff into streams, in effect delivering it all in a big "gush." Poorly drained impervious surfaces can encourage localized streambed or bank erosion. Even worse, localized erosion problems can move upstream or downstream and cause your property or a neighbor's property to erode. Some options for slowing runoff flows include maintaining a buffer of shrubs and trees, rain gardens, rain barrels, grassy swales, and retention areas. See Cooperative Extension websites: <http://rwqp.rutgers.edu/univ/nj/> or <http://www.rocklandcce.org/stormwater.htm>

NYS DEC Article 15 Stream Disturbance Permit: may be required. Seek DEC guidance if the impervious surface is within 50 feet of the stream.

How do I Construct a Private Bridge or Place a Culvert on the Stream?

Avoid widening or narrowing the stream beyond its naturally stable width. Each stream location has a set of dimensions (width, depth and cross sectional area and slope), which should be maintained to effectively pass the sediment and water transported during floods. Contact the Ashokan Basin Stream Management Program's SWCD staff for technical assistance.

Some design features you should consider:

- Bridges should be located at a narrow and straight reach, not on a bend.
- Bridges are preferable to culverts wherever possible.
- A bridge should span the entire stream and not block access to the flood plain if possible.
- Multiple culverts are rarely, if ever permitted as they tend to split the channel and collect debris.
- If a culvert is absolutely necessary, the size and placement are critical to the stability of the stream and the culvert as well as minimizing impact on fish passage. DEC's Habitat Unit staff can advise you on size and placement.

Three important design features DEC looks for to issue a permit are:

1. Single opening
2. Culvert is large enough to accommodate both the channel and flow up to the banks
3. The bottom of a culvert will be installed at least one foot below existing stream bed level.

NYS DEC Article 15 Stream Disturbance Permit is required.



Courtesy of Jack Isaacs, DEC

*Multiple Culverts clog with woody debris.
This should have been a bridge.*



How Should I Cut or Trim Streamside Vegetation or Debris on the Streambank?

Stable streambanks in the Catskills usually require woody vegetation. For maximum stream bank stability and ecological benefits, do not mow to the stream edge. If you have lawn at the stream edge, stop mowing along a wide streamside buffer, allow natural vegetation to grow in, and plant additional trees and shrubs. Maintain existing streamside shrubs and tree vegetation.



Courtesy of Jack Isaacs, DEC

Lack of Riparian Vegetation Can Result in Heavy Streamside Damage

Large woody debris is essential to the ecological health of your stream and plays an important role in maintaining the long-term stability of the stream. It also can be a recreational hazard or cause property damage. Consult DEC or SWCD if you are unsure whether to leave or cut streamside trees.

If you remove individual trees leaning over the stream, they should be cut up into smaller pieces and moved away from the stream so they won't get caught downstream in another debris jam. If a log jam or falling trees are not on your property, but are causing damage to your property, you must coordinate with your neighbor. If you are removing a log jam (a pile of trees in the stream that are trapping more trees and sediment), this requires technical assistance to prevent stream erosion upstream or downstream in the removal process. Free streamside landscape design and plant material may be available for streamside landowners through our Streamside Assistance Program. Contact the Ashokan Watershed Stream Management Program staff for more information.

NYS DEC Article 15 Stream Disturbance Permit: required if the project will disturb the bed or banks of the stream. Debris that can be cable-pulled from the top of the bank or cut up in stream without heavy machines (e.g. a tractor or bulldozer) can be done without a permit (a chainsaw is ok).

What Should I Consider When Building a House or Other Structure Near a Stream?

Building in a floodplain area is unsafe and often has negative consequences for the stream. Floodplains are uncontrollable areas that should be given due respect. Consider stream flooding and erosion behavior, not just how the location appears during low or average flows. Floodplain maps are not always accurate. Seek technical assistance from SWCD to identify local floodplain boundaries, and erosion hazard areas.

Climate change is expected to intensify rain events and increase the elevation of the 100 year flood. Design your site as far as possible from inundation and erosion hazards to keep yourself safe and protect your long term investment.



Courtesy of Jack Isaacs, DEC

Building too close to the stream with little vegetation can have disastrous results!

Do not build right next to the stream; give the stream room to flood and to move. A slow rate of erosion is a natural stream adjustment process. Giving the stream space allows you to enjoy your home more and reduce home maintenance time and costs resulting from erosion or flood inundation.

Permits: Many permits are needed for new construction, and we can't list them all here. You will need to follow State and local regulations, and contact your town code enforcement officer.

NYC DEC Article 15 Stream Disturbance Permit: is needed if the house or structure is within 50 feet of a streambank.

Individual Stormwater Permit: Needed from DEP if the house or driveway will be within 100 feet of a perennial (flows all year round) stream.



Important Contacts for Streamside Landowners

General Information:

Cornell Cooperative Extension of Ulster County
6375 State Route 28
Phoenicia, NY 12464
(845) 688-3047
www.esopuscreek.org

Streamside Problems, Restoration, Drainage Issues, Planting Design:

Ulster County Soil and Water Conservation District
(SWCD)
6375 State Route 28 Phoenicia, NY
(845) 688-3047

- or -

Times Square Professional Office Park
652 State Route 299 - Highland, NY 12529
(845) 883-7162

New York City Dept of Environmental Protection
(NYC DEP) Stream Management Program
Dan Davis, Project Manager/Geologist
71 Smith Avenue, Kingston, NY 12401
(845) 340-7839 ddavis@dep.nyc.gov

Stream Disturbance, Stormwater, and Wetlands Permit Applications and Forms:

New York State Department of Environmental
Conservation, (NYS DEC) Region 3
Environmental Permits Office
21 South Putt Corners Rd. New Paltz, NY 12561-1620
(845) 256-3054

Technical Issues:

Jack Isaacs, Habitat Manager, NYSDEC Reg.3
(845) 256-3087 (phone)
(845) 255-4659 (fax)

New York City Department of Environmental
Protection (DEP)
Water Supply Bureau
71 Smith Ave, Kingston, NY 12401

Individual Stormwater Permits, Stormwater Prevention Plans:

Joe Damrath, Environmental Analyst
(845) 340-7234 jdamrath@dep.nyc.gov

For Septic System Approval:

Christopher Costello (845) 340-7235,
ccostello@dep.nyc.gov

Permits involving wetlands over 12.4 acres, or dredg- ing/filling water bodies.

U.S. Army Corps of Engineers,
Albany Field Office
Amy Gitchell, Enforcement Officer
1 Bond St., Troy, NY 12180
(518) 270-0589

Town Floodplain Officers

Town	Phone Number	Town Website
Town of Shandaken	(845) 688-5008	http://www.shandaken.us/
Town of Olive	(845) 657-2015	http://www.town.olive.ny.us/
Town of Woodstock	(845) 679-2113 ext # 3	http://woodstockny.org/content/ Email: building@woodstockny.org
Town of Hunter	(518) 589-6209 ext 307	http://www.townofhuntergov.com/
Town of Lexington	(845) 989-6176 ext. 11	http://www.lexingtonny.com/government.htm