

Living Streamside in the Broadstreet Hollow:

Frequently Asked Questions about Undertaking Various Projects Near the Stream, June 2003

Everyone wants their stream to look and be healthy. Stream health can be measured ecologically by the plants and animals that live in it, but also by its riparian (stream-side) buffer area and the stability of its bed and banks. A stable stream is one that 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 short periods of time. Streams are very sensitive to anthropogenic (man-made) disturbances, and if stream related projects do not take the necessary precautions, a stable stream can quickly become unstable. Experience has shown that some stream related projects that have been performed in the past have done far more harm than good to the nation's waterways. Studies that have focused on some of these projects have contributed to the development of new technology to better work with the natural ability of streams to remain stable over time.

The following are answers to some of the questions most commonly asked by homeowners about activities they are considering undertaking that may impact the health and stability of streams. Where you may need more information, contacts are provided. Please contact your local Soil and Water Conservation District office for site-specific information. We have also noted those activities that may not be beneficial to overall stream health. This information constitutes some of the best professional guidance available today.

If you seek to:

1). Construct a private bridge for vehicles or foot-traffic over the stream, or install a culvert under a driveway or along a stream:

Resource Guidance: Efforts should be made to avoid widening or narrowing the stream beyond its naturally stable width. Often, you can observe stable conditions in a reach nearby. Each stream has a stable set of dimensions (width, depth and cross sectional area), which are necessary to maintain effective sediment and water transport. Widening or narrowing can lead to stream instability that could also eventually undermine the bridge. To minimize the potential for erosion or other problems, try to locate a bridge at a narrow and straight reach, and not on a bend. A bridge functions much better than a culvert as a stream crossing, so bridges are preferable to culverts wherever possible. A bridge should span the entire stream to reduce potential erosion damages and prevent debris from catching on the bridge in a flood. If a culvert is absolutely necessary, the size and placement are critical to maintaining stream stability and ensuring the culvert stays in place and minimizes impact on fish passage. DEC's Habitat Unit staff can advise you on size and placement. Multiple culverts (two or more) are rarely permitted.

Permits: *Depending on the specific conditions of a stream crossing (bridge or culvert) project, permits are required from the Army Corps of Engineers (ACOE), the New York State Department of Environmental Conservation (DEC) and the New York City Department of Environmental Protection (DEP). An ACOE 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). Because the streambed or banks will be disturbed, stream crossing construction requires an Article 15 Stream Disturbance Permit from the DEC. Depending upon whether or not there are any drainage features (streams or wetlands) on the property that will be involved as a result of the project, it may require a Crossing, Piping and Diversion Permit (DEP). Also, if the bridge is part of new construction that involves disturbance of more than 1 acre, it must be reviewed under the DEC stormwater State Pollution Discharge Elimination System (SPDES) program. If the project will disturb more than 2 acres, it may need a Stormwater Pollution Prevention Permit (SPPP) from DEP.

Contacts: Start by contacting the DEC Habitat Unit staff to determine which state permits are needed. In Region 4 (Greene and Delaware Counties), contact Jerry Fraine at 607-652-7366, or in Region 3 (Ulster and Sullivan Counties), contact Jack Isaacs at 845-256-3087. For DEC Stormwater permits in Region 4 contact Peter Freehafer at 518-357-2381, and in Region 3 contact Patrick Ferracane, at 914-322-1835, X357. At DEP, contact Brenda Drake at 845-657-2390.

2). Divert water from a stream:

Resource Guidance: Any diversion of water from a stream, especially during warmer summer months, can negatively impact downstream ecology by reducing the amount of cool water available to aquatic life. This condition can be especially urgent when streamflows are naturally at their lowest levels and trout are in survival-mode. Improper installation of pumps or waterlines can also disturb the streambed or banks, and potentially initiate erosion problems that can worsen over time and move up- and downstream to neighboring properties. Finally, water taken from the stream for use nearby will eventually return to the stream, often warmer or containing substances (i.e., lawn chemicals, salts, oils or soap from cars or driveways) that may further stress fish and other aquatic life, or reduce water quality for downstream users.

Permits: Any diversion must be reviewed by DEC.

Contacts: Contact the DEC Habitat Unit. In Region 4 (Greene and Delaware Counties), contact Jerry Fraine at 607-652-7366, or in Region 3 (Ulster and Sullivan Counties), contact Jack Isaacs at 845-256-3087.

3). Pave or repave a driveway near a stream:

Resource Guidance: By not allowing water to slow down and sink into the ground, impervious surfaces (i.e., pavement and buildings) and associated land drainage improvements that occur from development can accelerate rain runoff into streams, changing the amount and timing of water they receive and in effect deliver it all in a big “flush.” Generally, by the time a watershed exceeds approximately 10% impervious land cover, the streams that capture the runoff are already impaired. A particular concern in the Broadstreet Hollow is localized streambed or bank erosion that a poorly drained impervious surface can encourage. Localized scour and erosion problems can, quickly or slowly, move upstream or downstream and cause your property or a neighbor’s property to erode. Designing “stream friendly” drainage for existing or new impervious surfaces can reduce stream damages from stormwater runoff.

Permits: A DEC Article 15 stream disturbance permit may be required. Seek DEC guidance if the impervious surface is within 50 feet of the stream. If the disturbance is more than 1 acre, it must be reviewed under the DEC stormwater State Pollution Discharge Elimination System (SPDES) program as well. If the project will disturb more than 2 acres, it may need a Stormwater Pollution Prevention Permit (SPPP) from DEP. New driveways being paved for the first time will be required to have a setback from the stream under DEP's regulations.

Contacts: Start by contacting the DEC Habitat Unit to determine what state permits are needed. In Region 4 (Greene and Delaware Counties), contact Jerry Fraine at 607-652-7366, or in Region 3 (Ulster and Sullivan Counties), contact Jack Isaacs at 845-256-3087. For DEC Stormwater permits, in Region 4, contact Peter Freehafer at 518-357-2381, and in Region 3 contact Patrick Ferracane, at 914-322-1835 X357. At DEP, contact Brenda Drake at 845-657-2390.

4). Cut or trim streamside (riparian) vegetation on the streambank:

Resource Guidance: Stable streambanks in the Catskills usually require woody vegetation. Shrub and tree roots provide holding power for streambank soils that can't be beaten by grasses or herbs. For a more thorough discussion on the role of vegetation in stabilizing streambanks, see Broadstreet Hollow Stream Management Plan Volume I, Section 3.4 and Volume II, Section 2.2.2. To maximize stream bank stability as well as ecological and aesthetic benefits of streamside, or riparian, vegetation, discontinue mowing and allow a buffer of vegetation to grow, or plant woody vegetation.

If you are removing a log jam (a pile of trees that have fallen into the stream and are trapping more trees and stream sediment): this requires technical assistance to ensure that the removal process does not initiate new stream erosion in an upstream or downstream direction. These jams can cause considerable property damage. While biologically they may actually be beneficial to the stream, resource management agencies understand the property damage they can cause, and will work with you towards the most beneficial solution.

If you are removing individual trees, they must be cut up into smaller pieces and removed from the stream so they won't get caught further downstream and cause or worsen another log or debris jam. If the log jam or falling trees are not on your property, but are causing damage to your property, you must coordinate with your neighbor.

Permits: The DEC will require an Article 15 Stream Disturbance Permit if the project will disturb the bed or banks of the stream.

Contacts: *Seek technical assistance from the DEC Habitat Unit. In Region 4 (Greene and Delaware Counties), contact Jerry Fraine at 607-652-7366, or in Region 3 (Ulster and Sullivan Counties), contact Jack Isaacs at 845-256-3087. DEP Stream Management Program staff can provide assistance, contact Beth Reichheld at 845-340-7512, or contact your local Soil and Water Conservation District: in Greene County, Rene Van Schaack at 518-622-3620; in Ulster County, Gary Capella at 845-883-7162, ext. 5.*

5). Stabilize an eroding streambank:

Resource Guidance: Stream bank stabilization is a common need in the Broadstreet Hollow valley. As the management plan has revealed, there are eroding streambanks along the Broadstreet Hollow Stream that threaten water quality, private property and public and private infrastructure (i.e., bridges, culverts and roads). Care should be taken in designing the work to ensure that you don't over-widen the stream, narrow or encroach upon the stream, and that you do not borrow from nearby gravel bars in the stream for fill material. Seek technical assistance to identify the set of causes of your streambank instability problem so that the solution addresses the causes, and seek a solution that does not transfer the erosion problem up- or downstream. The agencies referenced below can advise you. Neighboring properties may need to be involved.

Permits: *Streambank stabilization will require a DEC Article 15 Stream Disturbance Permit. An ACOE 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); the DEC can advise you about determining these limits.*

Contacts: *Start by contacting the DEC Habitat Unit to determine what state permits are needed. In Region 4 (Greene and Delaware Counties), contact Jerry Fraine at 607-652-7366, or in Region 3 (Ulster and Sullivan Counties), contact Jack Isaacs at 845-256-3087. DEP Stream Management Program staff can provide assistance, contact Beth Reichheld at 845-340-7512, or contact your local Soil and Water Conservation District: in Greene County, Rene Van Schaack at 518-622-3620; in Ulster County, Gary Capella at 845-883-7162, ext. 5.*

6). Build a house or other structure:

Resource Guidance: Siting a new home near a stream can define your enjoyment of that stream and relationship to it. Proper location for homes and facilities must consider stream flooding behavior, no matter how high above or far back from the stream the location may appear during low flow. Because floodplain maps are not available in the Broadstreet Hollow valley, seek technical assistance to identify approximate floodplain boundaries, and design your site in as "stream friendly" a manner as possible. Give the stream room to flood, and to move (because a slow rate of erosion is a natural stream adjustment process), so you'll be able to enjoy it, as well as reduce home maintenance costs from stream erosion or flood inundation.

Permits: Of course, many permits are needed for new construction, and listing them is beyond the scope of this guidance document. If the house or structure is within 50 feet of a streambank, contact DEC to determine if an Article 15 stream disturbance permit is needed. If the house or driveway will be within 100 feet of a perennial (flows all year round) stream, you'll need an

Individual Stormwater Permit (DEP). If your project is to construct a single family residence and it will disturb more than 1 acre of land, you must submit a notice of intent to work and an erosion control plan to the DEC under their Stormwater State Pollution Discharge Elimination System (SPDES) program. If your project will disturb more than 2 acres, you'll need a Stormwater Pollution Prevention Permit (DEP). You will also need to follow State and local regulations, and should contact your Town code enforcement officer. In many communities, the building inspector serves in this capacity.

Contacts: For DEC Article 15 permits: In Region 4 (Greene and Delaware Counties), contact Jerry Fraine at 607-652-7366, or in Region 3 (Ulster and Sullivan Counties), contact Jack Isaacs at 845-256-3087. For DEC Stormwater permits, in Region 4, contact Peter Freehafer at 518-357-2381, and in Region 3 contact Patrick Ferracane, at 914-322-1835, X357. For DEP permits: Brenda Drake, 845-657-2390. Contact your Town clerk for the number of the local code enforcement officer, and/or building inspector

7). Extract gravel from the stream:

Resource Guidance: There was a common belief that cleaning gravel from streams is necessary to improve flood conveyance capacity and reduce flooding. Others wish to use the gravel for construction-related projects where clean gravel is needed. These are the considerations you should weigh: The stream must effectively be able to move both water and sediment delivered from the mountains to maintain its shape and provide optimum water quality and aquatic habitat. Therefore, any activity in a stream channel should consider its impact not only on moving water, but also on moving sediment (the gravel) to ensure these qualities of a functioning stream are preserved. Excavating gravel usually disturbs the sensitive balance that the stream maintains between its slope (steepness) and the amount and size of sediment it can move. If you are removing gravel to increase flood conveyance capacity, please consider that this has been found to be a damaging practice and if the stream is left to its own devices, the channel will eventually restore itself by moving accumulated gravels through and restoring its own flood conveyance capacity. If you are excavating gravel for construction-related projects, a non-stream source should be considered.

Permits: DEC rarely permits gravel removal. Any removal will require a DEC Article 15 Stream Disturbance Permit. An ACOE 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). The DEC can advise you about the need for an ACOE permit.

Contacts: Start by contacting the DEC Habitat Unit to determine what state permits are needed. In Region 4 (Greene County), contact Jerry Fraine at 607-652-7366, or in Region 3 (Ulster County), contact Jack Isaacs at 845-256-3087. You can also seek technical assistance from the DEC, your local Soil and Water Conservation District: in Greene County, Rene Van Schaack at 518-622-3620; in Ulster County, Gary Capella at 845-883-7162, ext. 5, and the DEP Stream Management Program, contact Beth Reichheld at 845-340-7512.