

DRAINAGE SYSTEM MAINTENANCE

Flood Protection for Your Community

Why Is Drainage System Maintenance Necessary?

Stream channels can lose their carrying capacities due to debris accumulation, sedimentation, and the growth of vegetation. One proven approach to preventing this is a community program to routinely inspect and clear debris from the drainage system. This work can be limited to removal of log jams, trash, fallen trees, shopping carts, trees growing in the channel, and similar debris that can dam a stream and cause flooding. At times, particularly following major storms, gravel removal will also be necessary. These efforts will benefit the community by easing the threat and damages of flooding.

What Is Required for a Drainage System Maintenance Plan?

- Define the area to be covered by the maintenance program. A drainage system consists of all watercourses and storage areas that handle stormwater from where it hits the ground to where it leaves the community. This includes gutters, downspouts, swales, streets, storm sewers, ditches, retention/detention basins, wetlands, streams, rivers, and lakes. Not all of these areas need to be included in a drainage system maintenance plan. At a minimum, the plan should address open channels and storage basins on both public and private property. Although the major emphasis will be on developed areas, sparsely developed tributaries often contribute to problems downstream and should not be ignored. Some municipalities may wish to include the entire drainage system in their plan--all streams, ditches, canals, storm sewers, basins, etc. If your community participates in the Community Rating System (CRS), make sure your plan is consistent with the CRS criteria.
- Identify problem areas. Make a list of the sites that require regular inspection, i.e. culverts, bridges, detention or retention basins, and other sites where gravel and debris naturally accumulate. Any stormwater or flood control structures should be included. For each site identified as a problem area, record the nature of the problem, the size of the site, the owner of the site (public or private), and a description of the area affected by problems at the site (private homes, roads, critical facilities, etc.). A baseline photograph of each site is also useful.
- Set an inspection schedule. Regular inspection of streams and channels is necessary for timely removal of accumulated debris. Two times a year, spring and fall, is recommended in developed areas. Some communities may wish to inspect problem areas more frequently and the entire drainage system on a less frequent basis. Sites that commonly flood should be inspected during or after all major storms.
- Assign responsibility for inspection. Identify the people or offices responsible for inspection. In most cases, this will be community employees. It is recommended that the municipality inspect all sites, even those for which someone else has maintenance responsibility.

- Define what categories of work will be performed under this program. Typical problems found in open channels include trash, tires, plastic containers, branches, and logjams. Trash and objects that obstruct flow should be removed from all channels. Minor accumulations of “naturally” occurring organic matter and vegetation can often be left in natural channels as long as it does not cause a flood problem. Human-made channels and structures may have additional maintenance requirements (mowing, pump repair, etc.). If gravel removal is to be performed as part of this program, this should be specified and time allowed for the permitting process. Some bank erosion problems will be reduced by removing debris that obstructs flow in the channel, but additional measures may be desired in many areas. Decide if streambank stabilization work will be performed as part of the drainage system maintenance program. Identify alternate sources of funding for stream maintenance work that will not be covered by this program.
- Identify parties responsible for debris removal. Drainage system maintenance will only be effective if the community has the authority to insure that debris is removed. This means that it is authorized either to enter the properties to perform maintenance or to order the owner to perform necessary maintenance. Debris removal may be the responsibility of the municipality, another agency (such as the Department of Transportation), or the landowner. These responsibilities should be clearly indicated in the plan. When the municipality will be working on private property, it is necessary to obtain permission from the land owners.
- Identify permit requirements. The U.S. Army Corps of Engineers has regulatory jurisdiction over all waterways and wetlands in the United States. Most stream maintenance work can be performed under a general Nationwide Permit, with minimal paperwork and delay. Any activity on protected waterways or freshwater wetlands requires a permit from the New York Department of Environmental Conservation. The state permit process requires paperwork and time, but is not intended to prohibit flood prevention work from being done. Use the permit process to obtain technical advice about the best way to do the work with the least disruption to the stream and stream banks. Your county Soil and Water Conservation District can provide assistance with identifying permit requirements and preparing permit applications.
- Keep records. Start a log to record inspection dates, problems identified, and re-inspection after problems are corrected. Citizen complaints and their resolution should be recorded. Photographs taken before and after any work are also useful.
- Budget. Initial maintenance programs—particularly those on waterways which have been neglected—will usually require more time, labor and cost. However, subsequent regular maintenance will involve smaller jobs, be less costly and less disturbing to the environment. The budget for implementation of a drainage system maintenance plan should include the cost of equipment, operators, and the disposal of material. Disposal options to consider include hauling, burning, burying, chipping, and firewood. The proposed scope of the drainage system maintenance program and the detailed description of problem areas will enable estimation of the annual expenditures necessary to implement this program. The anticipated expense should be included in the municipal budget.