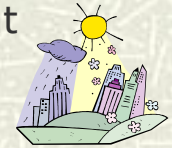
Infiltration Best Management Practices Guidance for Stormwater Management for the Etowah Habitat Conservation Plan

by Rose Mary Seymour, Tim Carter, Seth Wenger, Deborah Stewart and Michelle Richbourg



ETOWAH habitat conservation plan

The Etowah Habitat Conservation Plan

The Etowah River and its tributaries drain portions of 11 counties in Northern Georgia. The river joins the Coosa River which then flows into Lake Allatoona, a drinking water supply source. Currently, the Etowah watershed is experiencing rapid growth in human population, but the Etowah River is also home to at least 76 native fish species, making it one of the most biologically diverse rivers in the USA. Several of the species found in the Etowah are endemic to the area.

Many of the original native species, such as sturgeon, are already gone from the Etowah River, and the ranges of many of the surviving fish species have been reduced by historical land uses and reservoirs in the watershed.

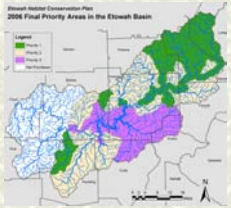
Three darter fish native to the Etowah – the Etowah, amber and Cherokee darters – are now protected by the federal Endangered Species Act. These species face many threats from the changing landscape. One of the greatest threats is stormwater runoff from newly developed suburban and commercial areas.

Etowah Darter

In cases, where Endangered Species need to be protected, individuals, businesses and local governments can design a Habitat Conservation Plan to describe how they will provide for the protection of a species. If the US Fish and Wildlife Service approves the Plan, it grants an Incidental Take Permit to the applicant. As long as the approved plan is followed by the applicant, they are not punished for any incidental loss of the species.

A regional Habitat Conservation Plan will streamline the process of on-going development activities as compared to every individual and company having to develop their own plan. This would require most or all of the local governments to adopt a set of ordinances that is based on the requirements of the regional Habitat Conservation Plan. Development projects in these jurisdictions would enjoy quicker approval, because they would be complying with an existing acceptable Habitat Conservation Plan.

In 2002, city and county governments within the Etowah watershed began working together to develop a regional Habitat Conservation Plan. Technical advisory groups were formed around specific issues such as preventing erosion from construction activities, post construction stormwater, stream buffers and water supply planning.



The Runoff Limits Program

The Runoff Limits Program was designed to be the solution to post-construction stormwater management for the regional Etowah Habitat Conservation Plan. Stormwater runoff from impervious surfaces is considered by some to be the greatest threat to imperiled fish in the Etowah basin. The Runoff Limits Program provides an additional set of performance standards for areas that support the most sensitive of the imperiled fish species beyond those already established for the Atlanta Metropolitan area. The Runoff Limit Program limits the volume of runoff that can leave a site and requires that any additional runoff created by impervious areas to be infiltrated into the soil on the site. This approach should result in post construction runoff volumes that are close to the runoff volumes that would occur if the land were in a healthy, mature forested condition. Retaining excess runoff on-site will also reduce the chemical loads to the streams significantly. The Runoff Limits Program provides a single, coherent set of regulations for the region for post construction stormwater.

The Runoff Limits Program first divides the watershed up into 3 priority levels. The different priority areas have different post construction on-site retention requirements with Priority 1 having the most stringent requirement, and Priority 3 areas requiring only the older version of stormwater management criteria be met. There would be limited areas of intense commercial development within Priority 1 areas that would have a different set of retention criteria to achieve because of their high percent of impermeable area.

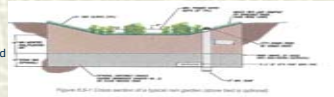
The Runoff Limits Manual

The Runoff Limits Manual is a manual that defines the Runoff Limits Program and provides technical guidance on the design of structural infiltration practices to manage stormwater that must be retained on-site. This poster presentation has the recommended structural practices with a diagram and definition of the best management practice as found in the Runoff Limits Manual. The Manual is currently in external review and should be published later in 2007.

Infiltration Best Management Practices in the Runoff Limits Manual

Bioretention Areas and Rain Gardens

Description: Excavated shallow surface depression planted with selected adapted or native plant materials to treat and capture runoff



Porous Pavements

Description: Porous pavements are permeable, structurally sturdy surfaces underlain by a stone bed which provides stormwater storage for infiltration below the pavement structure. The surface may be porous concrete, porous asphalt, or various structural pavers.

Infiltration Basins

Description: A shallow impoundment that stores and infiltrates runoff over a level, uncompacted area, with permeable soils.

Subsurface Infiltration Beds

Description: Subsurface Infiltration is the temporary storage and infiltration of stormwater runoff accomplished by placing an infiltration bed beneath a pervious or impervious surface layer such that the infiltration process occurs on an uncompacted subgrade.

Vegetated (Green) Roofs

Description: Vegetated roofs typically contain layers engineered growing media and drainage materials which are incorporated into a roof membrane and support plant communities which are tolerant of the extreme weather conditions found on rooftops.

Dry Wells or Seepage Pits

Description: Dry Wells, or Seepage Pits, are subsurface storage facilities that receive, temporarily store and infiltrate stormwater runoff primarily from rooftops.

Infiltration Trenches

Description: Excavated trench filled with stone aggregate used to capture and allow infiltration of stormwater runoff into the surrounding soils from the bottom and sides of the trench.

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