BETTER SITE DESIGN FOR DEVELOPERS

HCP SITE DESIGN GUIDELINES

One of the most cost-effective ways to manage stormwater is to use Better Site Design techniques to minimize impervious cover and allow for natural infiltration of runoff. The Better Site Design (BSD) guidelines described here can be used in conjunction with other structural infiltration practices to meet the performance standards of the Etowah Aquatic HCP runoff limits program (see "Etowah Aquatic HCP Runoff Limits Program" at www.etowahhcp.org). Use of these approaches can provide win-win benefits for water quality and developers' bottom lines by reducing stormwater runoff and reducing construction and maintenance costs at the same time. Design specifications for many of the techniques discussed below are included in the Georgia Stormwater Management Manual.

As part of the Etowah Aquatic HCP, participating local governments have edited (or will edit) their development codes to encourage, and give flexibility to, developers to minimize impervious cover. This simple, illustrated fact sheet outlines several methods that developers can use to minimize impervious surface and better manage stormwater runoff through infiltration on development sites.

STREETS AND PARKING

MINIMIZE PAVEMENT WIDTHS FOR RESIDENTIAL STREETS: Design residential streets for the minimum required pavement width needed to support travel lanes, on-street parking, and emergency, maintenance, and service vehicle access. Widths should be based on traffic volume and desired speed.

- 24 ft (back of curb to back of curb) for roads with parking on one side of street.
- 26 ft for roads with parking on both sides of street.
- 20 ft for roads with no on-street parking.

DIRECT RUNOFF FROM ROADS TO SWALES OR INFILTRATION AREAS:

- Use swales as an alternative to curb and gutter; or if curb is used, add curb cuts that direct runoff to swales.
- Use planting strips or swales with amended soils to promote plant health and stormwater infiltration.
- Design so that runoff moves down-gradient along the length

of the strip or swale and is filtered by soil along the way. Incorporate an overflow pipe into the design if necessary.

- Use rock and vegetated systems in areas where velocities may be too high for standard vegetation practices.
- Use permeable pavements for low traffic areas (parking areas, sidewalks).
- For more information on swales as a stormwater management practice, refer to the Etowah Aquatic HCP Runoff Limits Manual and the Georgia Stormwater Management Manual.

CUL-DE-SACS:

- Minimize the number of residential street cul-de-sacs and incorporate landscaped areas to reduce imperviousness.
- Recommend 35 ft radius, or the minimum required for emergency vehicles, on cul-de-sacs.
- Use alternative cul-de-sacs designs such as hammerheads and loop roads.
- Allow vegetated islands that infiltrate runoff in the center of cul-de-sacs.

PARKING:

Minimize the size and imperviousness of parking areas. Local governments in the Etowah may have maximum limits on parking, rather than minimums.

- Minimize both the overall size of the lot and the size of individual spaces.
- Incorporate compact car spaces into lot designs.
- Use pervious materials in overflow areas.

For more information, please contact:
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PROVIDE STORMWATER TREATMENT FOR PARKING LOT RUNOFF:

- Design landscaped areas such as traffic islands to serve as infiltration areas.
- Integrate stormwater management into the parking lot design.
- For more information on bioretention and other stormwater management practices, refer to the Etowah Aquatic HCP Runoff Limits Manual and the Georgia Stormwater Management Manual.

USE ALTERNATIVE DRIVEWAY DESIGNS AND SURFACES:

- Use of shared driveways, permeable pavements and two-track, grassed designs.

CONSERVATION DESIGNS

USE CONSERVATION SUBDIVISIONS WHERE FEASIBLE:

Conservation subdivisions are open space development incorporating smaller lot sizes to minimize total impervious area, reduce total construction costs, conserve natural areas and promote watershed protection.

- All local governments participating in the Etowah Aquatic HCP have passed, or will pass, ordinances permitting conservation subdivisions.
- It is easier and cheaper to meet the Etowah Aquatic HCP runoff limits using a conservation subdivision design than a conventional design.
- For more information, see www.etowahhcp.org/planning/cs.htm.

USE CLUSTERED DESIGNS WHERE CONSERVATION SUBDIVISIONS ARE NOT FEASIBLE:

In some cases, depending on zoning and availability of sewer service, it is not possible to build a conservation subdivision that meets local regulations. In these cases it is still helpful to follow the principles of conservation subdivision design to the extent possible:

- Preserve as much of the site as possible in an undisturbed state.
- Cluster homes to minimize imperviousness associated with roads.
- Minimize setbacks to reduce driveway lengths.
- Consider placement of infiltration areas in the original site design.

SIDEWALKS AND ROOFTOPS

SIDEWALKS:

- Where practical, consider locating sidewalks on only one side of the street and providing common walkways linking pedestrian areas.

- Where a suitable alternative path system exists, consider eliminating sidewalks.
- Eliminate sidewalks around the perimeter of a cul-de-sac.
- Use trails to link subdivisions together.
- Sidewalks may be constructed of pervious materials, provided they meet American Disability Act requirements.

ROOFTOP RUNOFF:

- Direct rooftop runoff to pervious areas such as yards, open channels, or vegetated areas and avoid routing rooftop runoff to the roadway and stormwater conveyance system (disconnection of rooftop runoff must ensure no basement seepage or impacts to septic systems or wells).
- Convey runoff through a vegetated channel, swale, or filter strip to an appropriate management practice.
- Place downspouts at least 10 feet away from the nearest impervious surface.
- For more information on management of stormwater runoff, see the Etowah Aquatic HCP Runoff Limits Manual and the Georgia Stormwater Management Manual.

Helpful links:

Etowah Aquatic HCP:	www.etowahhcp.org
Georgia Stormwater Management Manual:	www.georgiastormwater.com
Metro North Georgia Water Planning District's Site Planning Tool:	www.northgeorgiawater.com/pdfs/CH2M-SW/SiteReviewTool_1.1_BLANK.xls

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