



BETTER SITE DESIGN FOR LOCAL OFFICIALS

HCP SITE DESIGN GUIDELINES

The bottom line regarding stormwater is that:

- Stormwater should not be discharged untreated into streams, jurisdictional wetlands, sole-source aquifers, or sensitive areas.
- Local governments should encourage on-site infiltration of stormwater in development regulations and by strengthening stormwater ordinances.
- Development regulations should encourage the 'treatment train' approach to stormwater management by promoting the use of a series of distributed techniques rather than large structural controls.

One objective of the Etowah Habitat Conservation Plan is to protect imperiled aquatic species in the Etowah basin by reducing and managing the volume of stormwater runoff generated by developed areas. One of the most cost-effective ways to manage stormwater is to use Better Site Design (BSD) to minimize impervious cover and allow for natural infiltration of runoff. BSD techniques are inexpensive, non-structural, layout and landscaping based methods for reducing impervious surface and facilitating the infiltration of stormwater runoff. The BSD guidelines described in this fact sheet can be used in conjunction with other structural infiltration practices to meet the objectives of the Etowah Aquatic HCP, including the performance standards of the HCP Runoff Limits Program (see "Etowah Aquatic HCP Runoff Limits Program" at www.etowahhcp.org). BSD 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 may want to revise their development codes to encourage, and give flexibility to, developers to minimize impervious cover and facilitate infiltration of runoff. A recent study by the University of Georgia found that many local governments in the Etowah basin have development regulations in place that prevent or discourage developers from using BSD (see HCP Stormwater Technical Committee Report at www.etowahhcp.org). This fact sheet outlines several ways that local governments can revise their development codes to allow and encourage the use of BSD.

RESIDENTIAL STREETS

Set maximum pavement and ROW widths for residential streets: Allow wider ROWs for streets using swales or bioretention:



Set maximum pavement and Right Of Way (ROW) widths for residential streets: Development codes should be revised to allow for streets with 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. Recommended widths are:

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

Development codes should allow ROW widths to be based on the methods chosen to manage stormwater runoff.

- Allow wider ROWs for streets using swales or bioretention and narrower ROWs for streets using curb & gutter.

For more information, please contact:



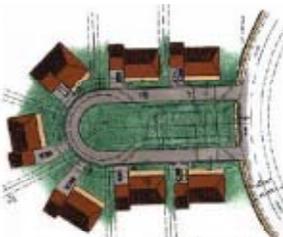
Encourage streetscape designs that treat stormwater runoff as close to the source as possible:



Encourage the directing of street runoff from roads to swales or infiltration areas: Development regulations should encourage streetscape designs that treat stormwater runoff as close to the source as possible. Examples of revisions are:

- Allow for the grading of streets towards shoulders so that runoff flows to infiltration areas.
- Allow planting strips along roadways that use amended soils to promote plant health and stormwater infiltration.
- Develop design specifications that effectively move runoff down-gradient along the length of the strip or swale and use soil to filter runoff along the way.
- Designs should incorporate overflow pipes if necessary.
- Allow designs with or without curb & gutter.
- Regulations should include the use of rock and vegetated systems in areas where velocities may be too high for standard vegetation practices.
- Allow for the use of permeable pavements in low traffic areas such as parking areas and sidewalks.
- Allow for the use of tree pits as infiltration areas.

Minimize impervious surface in cul-de-sacs:



Minimize impervious surface in cul-de-sacs: Develop regulations that encourage developers to minimize the number of residential street cul-de-sacs and to incorporate landscaped areas into cul-de-sacs to reduce their imperviousness. The radius of cul-de-sacs should be the minimum required to accommodate emergency and service vehicles. Examples of recommendations for cul-de-sacs and other turnarounds are:

- Recommend 35 ft radius, or the minimum required for emergency vehicles, on cul-de-sacs.
- Allow alternative turnaround designs such as hammerheads and loop roads.
- Allow vegetated islands that infiltrate runoff in the center of turnarounds.

PARKING AREAS

Minimize impervious surface in parking lots:



Minimize impervious surface in parking lots: Existing parking ratios should be reviewed to see if lower ratios are warranted. Some recommended revisions are:

- Update existing ratios so they are based on actual demand.
- Set maximum parking ratios instead of minimums.
- Allow developers to “ghost in” additional spaces. In the future, if demand requires it, owners should be able to increase the size of their parking lot without going through the entire planning approval process. In these cases, stormwater management should be designed for maximum possible impervious surface area.

Permit the use of pervious materials in overflow areas:



Develop parking regulations that reduce the imperviousness of parking lots by providing compact car spaces, minimizing stall dimensions, incorporating efficient parking lanes, and using pervious materials in spillover areas. Code revisions may include:

- Maximum parking stall dimension requirements.
- Allow compact car spaces as a percentage of the total parking spaces.
- Require wheel stops, rather than curbs, at the end of parking stalls
- Permit the use of pervious materials in overflow areas.
- Provide incentives for structured parking.

For more information, please contact:



Provide stormwater treatment for parking lot runoff:



Base parking code regulations on need and surrounding land uses: Commercial parking areas can often be reduced in size based on shared parking arrangements with surrounding businesses and vicinity to public transportation routes. Recommendations are to:

- Allow lower parking requirements where mass transit is available or shared parking arrangements are made.
- Incorporate language permitting and encouraging shared parking into ordinances.
- Allow shared parking when a new development adjoins an existing development.
- Provide model shared parking agreements.

Encourage alternative driveway designs and surfaces:



Encourage treatment of parking lot runoff: Encourage the use of bioretention areas, filter strips, landscaped traffic islands and/or other practices that encourage infiltration of runoff.

- Encourage stormwater infiltration practices in parking lot landscaping regulations.
- Require a minimum percentage of parking lot area to be landscaped.
- Eliminate irrigation and curb & gutter requirements for landscaped islands used as bio-infiltration areas.

Encourage alternative driveway designs and surfaces: Allow alternative driveway surfaces and designs to reduce driveway imperviousness.

- Allow the use of shared driveways, permeable pavements and two-track, grassed designs.

CONSERVATION DEVELOPMENT

Promote conservation subdivision design:



Promote conservation subdivision design: Adopt conservation subdivision ordinances that minimize total impervious area, reduce total construction costs, conserve natural areas, provide community recreational space, and promote watershed protection. Conservation subdivision ordinances should:

- Permit cluster development by-right; do not require additional plan review and public hearings.
- Eliminate minimum lot sizes.
- Be density neutral.
- Allow reduced lot size for detached housing on public water and sewer, with the condition that the applicant must demonstrate a workable design that does not increase yield allowed by zoning.
- Relax permit fee requirements for cluster submittals.
- Provide incentives such as reduced permit fees to encourage clustering.
- Include a minimum open space requirement.
- Encourage site planners to incorporate natural hydrological features such as drainage and infiltration areas into subdivision designs.

For more information, please contact:



Manage open space in conservation subdivisions:



Manage open space in conservation subdivisions: Clearly specify how community open space will be managed and designate a sustainable legal entity responsible for managing both natural and recreational open space. The following recommendations should be considered:

- Define allowable and prohibited uses of open space
- Require establishment of legal entities that can effectively manage open space.
- Ensure that the enabling legislation of Home Owners Associations (HOA), and other legal entities, is adequate to cover required management of open space. Adequate HOA documents should contain provisions for mandatory membership, annual assessments, reserve funds for capital improvements, lists of improvements/ common areas to be maintained, and provisions for collecting and enforcing assessments.

Relax side yard and front setback requirements in conservation subdivisions:



Relax side yard and front setback requirements in conservation subdivisions: Reduce side yard setbacks and allow narrower frontages to reduce total road length and overall site imperviousness in the community. Reduce front setback requirements to minimize driveway lengths and overall lot imperviousness. Consider the following revisions concerning lot dimension requirements:

- Set maximum and minimum setbacks and frontages. Setbacks should be related to the methods chosen to treat street runoff (larger for streets using swales or bioretention, narrower for streets using curb & gutter).
- Minimum side yard setbacks should be based on the fire code. This will provide maximum design flexibility without sacrificing safety and emergency access.
- Waive lot frontage requirements on private streets so long as there is a HOA agreement in place.

Provide design standards for sidewalks that promote infiltration:



Provide design standards for sidewalks that promote infiltration: Promote flexible design standards for residential subdivision sidewalks.

- Allow sidewalks on only one side of the road at the discretion of the Planning Commission and in consideration of density and traffic volume issues.
- Where a suitable alternative path system exists, sidewalks should not be required.
- Provide incentives for developments that promote connectivity.
- Allow sidewalks constructed of pervious materials, provided they meet American Disability Act requirements.
- Do not require sidewalks around the entire perimeter of a cul-de-sac.

Manage runoff from rooftops:



Manage runoff from rooftops: Develop ordinances that encourage rooftop runoff to be directed to pervious areas and avoid routing rooftop runoff to impervious surfaces such as roads and parking areas.

- Policies must include provisions that ensure runoff does not seep into basements or impact septic systems or wells.
- Regulations should require that runoff drains continuously through a vegetated channel, swale, or filter strip to the property line or BMP.
- Downspouts should be at least 10 feet away from the nearest impervious surface.

For more information, please contact: