

Streamlines

A Newsletter for North Carolina Water Supply Watershed Administrators

WATERSHED BASED LAND PLANNING PRESERVING THE CHARACTER OF THE LAND

The first step a local government can take in improving their planning for water quality protection is implementing a watershed based development review technique. Better review can translate into better site design. Incorporating the actions identified below and discussed in detail throughout this issue into the planning process will help to preserve the character of the land. These actions are: 1) Get to know the land; 2) Explore alternative management tools; 3) Utilize visioning and community design; and 4) Prepare for hydrologic change. To meet these goals designers must scrutinize every aspect of a site, but by doing better site design is ensured. This article will discuss ways that watershed administrators can incorporate and implement techniques aimed at improving site design at local watershed scales.



GET TO KNOW THE LAND

Before the streets, utilities, buildings and driveways are drafted, a thorough understanding of a site must be gained.

The major objective is to minimize the total amount of site disturbance in the watershed while maximizing the number of units that can fit on any given site, without negatively affecting the watershed.

Even very low-density development can result in considerable site disruption. Long winding roads, large stormwater detention facilities and excessive building footprints all encourage unnecessary disturbance that affects water quality. Visit projects under construction; actual disturbance is almost always greater than what appears on plans.

Assuming the maximum number of lots or units has been agreed upon, the challenge is to arrange them in the best possible manner while respecting the site's character. It is important to visualize what the site or subdivision will look like at build

out. Recognizing which natural features will remain and which will have to be altered is difficult to do. On two dimensional subdivision plats, regular rectangular lots are easy to comprehend, but topography does not always allow rectangular lots.

Ownership lines that follow existing features on the site, such as streams, or tree lines or natural contour breaks can help to avoid the cookie-cutter look and encourage a more natural and environmentally sensitive development.

EXPLORE ALTERNATIVE MANAGEMENT TOOLS

An easement to protect natural areas and open space from further development is called a conservation easement. Many localities use conservation easements to help protect wetland areas and sensitive habitats. In addition, the State provides tax credits for lands that are protected by conservation easements and benefit water quality. These tools are effective in prevent-

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ing construction in sensitive areas, including floodplains, ridge lines, and sloped areas outside the building envelope. By promoting these techniques early in the site planning process, areas that benefit from conservation easements may be more available and more easily incorporated into the development plan for the site.

UTILIZE VISIONING AND COMMUNITY BASED DESIGN

One technique being used more often is to develop a design manual for site plans. A design manual outlines, in graphic and narrative form, community goals for development. Examples in the design manual can reflect community visions and design goals for how an area would ideally look. The design manual also allows for the comparison of development approaches in graphical form. Principles that may appear in a design manual for development in a watershed can include impervious surface limits, density goals, street design, and the location of “build-to” lines and other prescriptive measures.

PREPARE FOR HYDRO-LOGIC CHANGE

Where stormwater manage-

ment structures are required, they should be designed to complement the site and existing natural drainage-ways should be retained. Retention basins should be used when excess stormwater runoff is expected and all basins should require both landscaping and main-

tenance management plans. Regular inspections need to be performed throughout the year to ensure that the systems are functioning properly. As an added bonus, stormwater ponds when designed to resemble natural ponds can provide an aesthetic benefit to the community and be incorporated

Book Review – Rural By Design - Randell Arendt

With contributions by: Elizabeth A. Brabec, Harry L. Dodson, Christine Ried, and Robert Yaro.

In 1994, Randall Arendt and others in the conservation design field created a document that would become the “bible” for many planners dealing with rapidly urbanizing suburban and rural areas of the United States. The book, provides numerous case studies of how many communities have dealt with the issues of change and growth. The cumulative and secondary effects brought about by these issues are also discussed. Detailed strategies for managing these issues in rural areas are provided throughout the book. Mr. Arendt states:

“Professional planners throughout much of the country are beginning to feel the effects of citizens’ initiatives based on a growing public awareness that the special qualities of their small towns are being needlessly eroded by conventional sprawl development. The slowly rising tide of public dissatisfaction with typical suburban approaches to new development in small towns can be distinguished in many cases from purely antigrowth attitudes and certain valid, but more specific, environmental concerns.”

The book, a more than 400-page primer on the conservation design movement, is divided into four parts and twenty-two chapters which can be read by practicing planners looking for specific examples, or by interested citizen planners interested in its entirety. Examples of chapter topics include; Common Qualities of Traditional Towns, Future Prospects Among Alternative Patterns, Evolution from Village to Town, Commercial Infill along Major Streets, Development of Town Centers, and Street Design for Rural Subdivisions.

Each chapter provides practical answers to many day to day problems that crop-up in the planning world. This book makes complex, technical issues understandable to the lay reader, encouraging broader participation in community development, and presents these issues in a thoroughly interesting and often entertaining way.

As summarized by Tony Hiss, author of *The Experience of Place*, “If you are a fan of strip malls, pedestrian-free gated subdivisions, twelve-lane freeways and treeless horizons - avoid this book. If however you live, work, and build in a suburb or small town and like the sense of community that tree-lined streets, shops close to home, and trails and lakes a stroll away bring with them, this is the hope filled, how to manual you’ve been waiting for.”

The book is available at the American Planning Associations, Planner’s Book Service, and can be found at this web site, <http://www.planning.org/bookstore/>



into recreational and community open space plans.

Incorporating the use of natural drainage systems allows for a more integrated approach to stormwater management. An integrated system of preventive control measures can be an alternative to the use of traditional piped systems. This allows for the management of both the quantity and quality of runoff simultaneously, which is of critical importance for adequately protecting urbanized watersheds.

A site may contain many natural sub-drainage areas. This can make treating stormwater runoff more efficient and cost-effective. Employment of a variety of best management practices to capture sediments and pollutants before entering surface water significantly reduces the likelihood of problems.

Site planning for an individual parcel using an integrated system approach requires the creation of a site specific management plan that employs a combination of preventive measures, source reduction practices, and control measures to comply with the legal requirements. Preventive measures reduce the impacts of stormwater runoff on surface water through changes in design,

operations or management and help to prepare for anticipated hydrologic changes to the larger area. Minimizing land coverage and impervious surface, for example, will allow greater infiltration of runoff, reduce runoff quantity and improve quality.

Each site has a unique set of characteristics and requirements, therefore, each site should have a specifically designed stormwater plan utilizing available resources to meet stormwater objectives.

CONCLUSION

Site plan designs to preserve water quality in a watershed can include the following: minimization of

impervious surfaces, inclusion of cluster development in upland areas, minimization of disturbance of vegetation and preservation of natural drainage patterns.

Watershed based land planning should try to incorporate the four goals described within this article. The goals are consistent with development laws and regulations. Stormwater runoff goals should include preventing pollutants from being generated, reducing the effects of pollutants at their source, maximizing the effectiveness of control measures, and improving the quality of runoff entering surface waters.

WATER SUPPLY WATERSHED WORKSHOPS WERE A HIT!

Thanks to all who attended the Water Supply Watershed Protection Workshops this September and October. Over 100 people participated in the five regional meetings. Buffer management, stormwater administration, development requirements and innovative techniques, and duties of the watershed administrator and watershed review board were the primary topics discussed. There was also plenty of great conversation on the innovative ways of implementing the program. The participants also received a workbook that contained a wealth of items we hope will help the day-to-day operations of your water supply watershed protection ordinance. Please check our website for updates on sources of information for the Division of Water Quality's rules and contacts.



Again, the Local Government Assistance Unit appreciates you attending the workshops. We got a lot out of the workshops and hope you did as well. If you were not able to attend, don't worry, we will be addressing suggestions, questions and innovative local programs in future issues of Streamlines. Stay tuned and thank you for your comments.

Resources;

Arendt, Randall, *Rural by Design*, APA Planners Press, 1994

Schueler, Thomas, *Site Planning for Urban Stream Protection*, The Center for Watershed Protection, 1995

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N.C. Division of Water Quality
Local Government Assistance Unit
1617 Mail Service Center
Raleigh, NC 27699-1617

Phone: (919) 733-5083, ext. 366
Fax: (919) 715-5637
Email: milt.rhodes@ncmail.net

Address Correction
Requested

Check us out at: [http://h2o.
enr.state.nc.us/wswp/](http://h2o.enr.state.nc.us/wswp/)

WHAT'S HAPPENING?

Environmental Management Commission– EMC meets on October 12 and December 14 in Raleigh, Archdale Building. They do not meet in November. Water Quality Committee meets the day before the EMC.



American Planning Association National Conference, March 10-14, 2001, New Orleans, LA.

WELCOME MEGAN OWEN

The Local Government Assistance Unit welcomes Megan Owen. She joined us in September and looks forward to meeting her contacts in her regions of the Water Supply Watershed Protection program. She has counties K thru Z and cities A thru G. Megan originally hails from Indianapolis, Indiana, but her academic interests have moved her from coast to coast. She earned her BA in Urban Studies and Planning from University of California at San Diego and her Masters degree in Regional Planning from UNC– Chapel Hill. She currently resides in Carrboro with her boxer pup, Cali.



DID YOU KNOW?