

Streamlines

A Newsletter for North Carolina Water Supply Watershed Administrators

SUSTAINABILITY HOW IT IS ACHIEVABLE.

The term “sustainability” has been discussed in the planning world for a number of years. There are many definitions, perceptions and interpretations of what sustainability means. Most, if not all of them, are right. In addition, the concept of sustainability is discussed using different meanings, beliefs and goals. In this article we will explore some of these complexities and how what we do in the name of watershed planning is directly related to achieving sustainability. The most widely used definition

of sustainability comes from the 1987 United Nations World Commission on Environment and Development, commonly called the Bruntland Report: **“Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.”** This could be summed up in the term *INTERGENERATIONAL EQUITY*. When applying this to water supply watershed protection, it could be said that protecting watersheds through planning

now ensures that the *future* water supply needs will not be compromised by our current lifestyle demands.

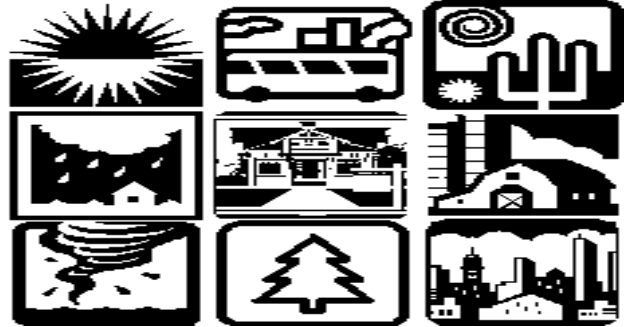
As watershed administrators and planners, we are promoting sustainability when we use the following practices:

Cluster development, stream buffers, open space, low impact development and site planning concepts.

All of these practices have deep roots in the concept of sustainability. However, it of-

ten seems that this theory runs counter to many present day economic, financial and societal values. As watershed planners we face complex and difficult decisions as we attempt to balance opposing issues. Scott Campbell, a researcher at Rutgers University, states that “planners must reconcile not two, but at least three conflicting interests if they are to achieve sustainability: To grow the economy, distribute the growth fairly, and in the process not degrade the ecosystem.”

(See Sustainability on page 2)



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DID YOU KNOW?:

MINOR VARIANCES- Please remember that local governments that have issued minor variances to their water supply program requirements during the year are responsible for submitting a summary of those variances to the Division of Water Quality by January 1st of the following year.

INSPECTION FORMS- The Water Supply Watershed Protection Rules require that runoff control structures, such as wet detention basins, be inspected annually to insure they are being maintained and are functioning as originally designed. We have an inspection form available for you to use. It can be downloaded from our website or an electronic copy in Word format can be Emailed to you. See website and Email contact information on page 4 of this newsletter.

Sustainability (Continued from page 1)

Integrating the “three Es” of sustainability – Environment, Economics and Equity, presents a challenge. Some refer to the “three Es” as a Planner’s Triangle (see below). The Planner’s Triangle is represented not by three corners, but rather by three intersecting “arcs of conflict.” Often planners must deal with the competing interests represented along each of the arcs.

The points, or ovals, between each “arc of conflict” represent goals: **Environmental Protection**; **Economic Growth and Efficiency**; and **Social Equity**.

As watershed administrators we deal with these goals on a regular basis and it may seem that they are almost never balanced. But we do have the ability to modify the approach we take to achieve these goals and formulate solutions to the complicated types and pressures of development.

As noted previously, many of the components within Water Supply Watershed Protection Ordinances and overlay districts already promote sustainability. **Clustering** (see the June 1996 Streamlines issue, available on our website, for more information) has many sustainability-

based benefits, including conservation of open space, concentration of buildings, roads and infrastructure; reduction of impervious surfaces, and larger stream buffer areas. In addition, allowing the same number of dwelling units or more in a concentrated area may help a developer to meet an economic goal, while helping to achieve a societal need of improved housing for moderate income families. This example shows how the conflicting interests of sustainability can be balanced through a practice such as clustering. It must be remembered, however, that for clustering to maintain its environmental benefits it must be sited appropriately. If a cluster is located too close to a sensitive environmental area, the gains can be offset by deterioration in environmental resources.

The use of streamside **buffers** provides another example of promoting sustainability-based practices within a watershed. The use of buffers as a watershed protection tool was discussed in the March 1998 issue of Streamlines. Vegetated buffers play a vital role in protecting water quality by reducing erosion and trapping nutrients and pollutants. Under the Water Supply Watershed Protection Rules, minimum buffer

widths are required on perennial waters. Some municipalities have elected to apply wider buffers, while others apply these buffers to all waters within their jurisdiction, not just perennial wa-

BASIC ELEMENTS OF SUSTAINABLE COMMUNITIES

From Five Es Inc. <http://www.eeeee.net/ee01012.htm>

ENVIRONMENTAL INTEGRITY

- Living within ecological limits
- Protecting natural resources
- Responsible consumption patterns
- Measurable carrying capacity indicators: water and air quality, species diversity, adequate open space, etc.

QUALITY OF LIFE

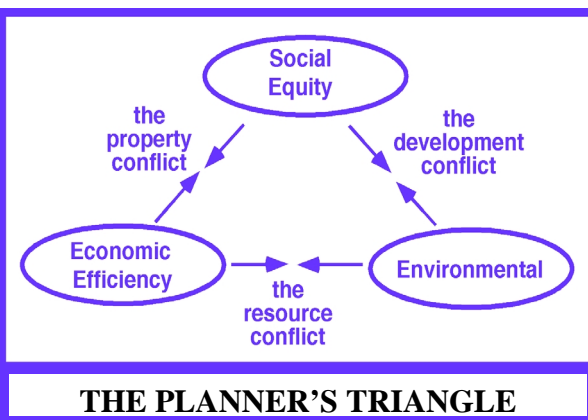
- Connection to place
- Diversity
- Cooperation
- Health
- Education
- Efficient, affordable, accessible transportation
- Effective communication systems
- Links connecting work to home
- Intra/inter generational equity
- Pluralism and tolerance
- Honoring various culture
- Compassion

ECONOMIC SECURITY

- Local, regional economic viability
- Economic justice/equity
- Long-term economic goals (intergenerational foresight)

DEMOCRATIC PARTICIPATION

- Power within community
- Belief in change
- Democracy
- Accountability
- Responsibility
- Personal dignity
- Communication



ters. These municipalities have recognized the added aesthetic and environmental benefits of buffer areas. Maintaining buffers with mature, natural vegetation may be one of our most effective tools for achieving watershed sustainability.

For many local governments, buffer areas have also become recreational and economic assets. Buffers can provide passive recreational opportu-

(See Sustainability on page 3)

Sustainability (Continued from page 2)

nities, improve property values and reduce property losses from flooding in adjacent floodplains. By providing a diverse range of activities, buffers promote intergenerational equity, or sustainability.

Another example of promoting sustainability through watershed protection is the use of **effective site planning** and **Low Impact Development (LID)**. Articles in the May 1998 and the Winter 2000 issues of Streamlines address these concepts. Using site planning within a watershed context allows for the identification, recognition and integration of natural features. A first step in site planning is conducting an inventory, or gathering information about the natural features on the project site. This will help in understanding the relationships of the existing conditions on site and their relationship to the larger watershed. By giving intentional thought to the resources (including topography, hydrology, soil type, etc.) and the use of the land prior to design and construction, as opposed to thinking of it as blank slate, the conditions in and around the project area can be maintained or improved. The potential for improved water quality will also be increased.

Combining site planning concepts with LID concepts goes a step farther toward achieving the goals, or “integrating the three E’s”, of sustainability. LID uses a comprehensive approach to managing on-site runoff and its impacts to the larger landscape. While site planning looks at the big picture, LID looks inward to the discrete parcel,

SUSTAINABILITY RESOURCES ON THE WEB

There are numerous sites addressing sustainable development on the INTERNET. Many private sector, non-profit and public institutions have established substantial web sites that provide literature, examples of success stories, model codes and ordinances. Below are a selected set of some of the more comprehensive sites.

American Forests City Green Initiative – www.americanforests.org/ufc/cgreen/cgad.html
American Planning Association – www.planning.org/plnginfo/GROWSMAR/gindex.html
Center for a Sustainable Economy – www.sustainableeconomy.org
Center for Watershed Protection – www.cwp.org
Center of Excellence for Sustainable Development – www.sustainable.doe.gov
Community Development Society – comm-dev.org/
Five E's Unlimited – www.eeeee.net
Florida Sustainable Communities Center – sustainable.state.fl.usFlorida
Livable Communities – www.livablecommunities.gov
Natural Resources Leadership Institute – www.ces.ncsu.edu/depts/agecon/PIE/nrli/
Rocky Mountain Institute – www.rmi.org
Smart Growth Network – www.smartgrowth.org
Sustainable Communities Center – sustainable.state.fl.us
Sustainable Development Institute – www.susdev.org/
Sustainable USA Network – www.sustainableusa.com/
Terrain: A Journal of the Built & Natural Environments – www.terrain.org/
World Resources Institute – www.wri.org

identifying features and characteristics that can help minimize runoff, erosion, sedimentation and other associated problems. Lots can incorporate natural features to minimize these impacts. For example, small depressions in side yards of adjacent homes can become bio-retention cells or “rain gardens.” Connecting these depressions can create stormwater swales. Both are effective at slowing the rate of stormwater movement and reducing runoff volume. Other vegetation can be maintained on site to improve cooling in the summer and heating efficiency in the winter. Additionally, lots with ma-

ture, established vegetation tend to sell for higher amounts. Using effective site planning and LID can beneficially affect goals in the Planner’s Triangle.

A combination of the practices highlighted in this article and past issues of Streamlines can help to achieve sustainability in our water supply watersheds. These are simple, effective ways to balance the goals of the Planner’s Triangle.

Implicit throughout this article are the basic elements of sustainable communities which are listed on page two. As watershed administrators and planners, it is fundamental that we recognize and strive to include each of these elements in our daily work. The planning process depends on them. Incorporating these elements with the aforementioned practices highlighted in this article will help us move closer to achieving the goal of sustainability.

Information for this article was obtained from:

1. Berke, Philip and Maria Manta. Planning for Sustainable Development - Measuring Progress in Plans. Lincoln Institute of Land Policy Working Paper, 1999.
2. Campbell, Scott. Green Cities, Growing Cities, Just Cities? Planning and the Contradictions of Sustainable Development. APA Journal, Summer 1996.
3. Zachary, Jill. Sustainable Community Indicators - Guideposts for Local Planning. Community Environmental Council, Inc. 1995.

“HUMAN SETTLEMENTS ARE LIKE LIVING ORGANISMS. THEY MUST GROW, AND THEY WILL CHANGE. BUT WE CAN DECIDE ON THE NATURE OF THAT GROWTH — ON THE QUALITY AND THE CHARACTER OF IT — AND WHERE IT OUGHT TO GO.” JAMES HOWARD KUNTSLER, HOME FROM NOWHERE.

A Newsletter for North Carolina
Water Supply Watershed
Administrators

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1617 Mail Service Center
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Address Correction
Requested

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

**Division of Water Quality
Regional Office Contacts for
the Water Supply Program**

In the last issue of Streamlines we provided the contact information for our Central Office staff. The following is a list of contact information for our Regional Offices. If you are not sure which Region covers your area, you can check a map on the following website: <http://eshn.state.nc.us/regions.htm>.

Asheville Regional Office
Jim Reid (828) 251-6208
59 Woodfin Place
Asheville, NC 28801

Fayetteville Regional Office
Ricky Revels (910) 486-1541
225 Green Street
Suite 714/Systel Building
Fayetteville, NC 28301-5043

Mooresville Regional Office
John Lesley (704) 663-1699
919 North Main Street
Mooresville, NC 28115

Raleigh Regional Office
Ken Schuster (919) 571-4700
3800 Barrett Drive
Raleigh, NC 27609

Washington Regional Office
Jim Mulligan (252) 946-6481
943 Washington Square Mall
Washington, NC 27889

Wilmington Regional Office
Rick Shiver (910) 395-3900
127 Cardinal Drive Extension
Wilmington, NC 28405-2845

Winston-Salem Regional Office
Abner Braddy (336) 771-4600
585 Waughtown Street
Winston-Salem, NC 27107

Workshops Planned !

Some watershed administrators have expressed an interest in refresher training and/or training for new employees on the Water Supply Watershed Protection Program and its components. We plan to hold workshops across the state in the upcoming months. Topics will include Program Administration, Buffers, Stormwater Controls and Density Issues to name a few. Please help us to prepare for these workshops by letting us know what topics are of interest to you, as well as how many on your staff would be interested in attending. This will help us determine workshop locations. Email your information to liz.kovasckitz@ncmail.net or call Liz at (919) 733-5083, ext. 572. Additional information on the workshops will be mailed out soon. We look forward to seeing you!

Tennis Anyone?

Some materials used for tennis court surfaces are being promoted as porous. Unless a tennis court is constructed using a grass surface, the area covered by the court should be counted toward impervious surface area under the Water Supply Watershed Protection Program Rules. If you have any questions on this topic please contact us!

