

## Creation of the Stormwater Banking Program (SBP), a Voluntary, Market-Based Mechanism to Improve Water Quality

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Multiple growth studies for Greenville County, as well as several nationwide publications, have shown that the Greenville-Spartanburg area is one of the fastest-growing regions of the country and is expected to continue to be so (Stone et al. 2010). A recent growth study completed by Clemson University's Strom Thurmond Institute indicates that Greenville County is consuming land at an alarming rate compared to population growth, and that if this growth trend continues a loss of hundreds of thousands of acres of currently-undeveloped land will be stripped of the hydrological benefits of natural vegetation and non-compacted soils (Campbell et al. 2007). To protect water quality as this type of fast-paced growth proceeds, site-level interventions are often employed. However, in the absence of land-use and transportation strategies, site-level design practices alone cannot protect aquatic ecosystems from decline (Cohn-Lee et al. 1992). An analysis of current regulatory conditions, land use trends, and water quality monitoring data in the Saluda-Reedy Watershed in South Carolina suggests that the best way to protect water quality while continuing to accommodate growth and development in our region is both to improve site-level measures of stormwater runoff management *and* to encourage more compact development near existing urban areas (SCDNR, 2008).

In an effort to protect water quality in Greenville County and the Saluda Reedy Watershed, Upstate Forever has partnered with local governments, universities, developers, and engineers to identify and develop a market-based mechanism that not only encourages better site-level design, but also incentivizes compact growth. During the development of the program, various developer incentives were researched and explored. Several were considered but eliminated either because they might result in unintended environmental degradation and/or were economically unviable. Consultation with Greenville County Staff and local developers revealed that a by-right residential density bonus could be an incentive that could benefit water quality while also providing economic and other community benefits.

During the past three years, in partnership with Greenville County Staff and Clemson University, Upstate Forever (UF) has been developing the voluntary, market-based Stormwater Banking Program (SBP), which offers developers a residential density bonus, within limited areas of the County, in exchange for (1) attaining a minimum pre-determined score on a Decision-Making Tool (DMT) which evaluates development projects based on their anticipated impacts to water quality and (2) paying a participation fee which will help generate funds to construct stormwater retrofits throughout the County.

The DMT is an evaluative and educational tool that contains a set of development-related characteristics that can be used to evaluate a development's impact to water quality at a site, neighborhood, and regional scale. The Site Scale Criteria of the DMT takes into consideration

factors including the anticipated soils, runoff generated, vegetation, and infiltration areas on site. The Neighborhood and Regional Scales of the DMT identify characteristics of a residential development that greatly reduce the impervious footprint per household. The characteristics on the Neighborhood and Regional Scales were chosen based on a review of nationwide studies and programs relating water quality degradation to urban sprawl and increased automobile use. In order to participate in the program, developers must earn at least a score of 70 on the DMT, with at least 40 of those 70 points coming from the Site Scale portion of the tool.

In addition to attaining at least the minimum participation score on the Decision-Making Tool, developers must also pay a participation fee to be eligible for the SBP. Fees will be paid to Greenville County and will be used to fund stormwater retrofits throughout the County. The fee paid is based on several factors: the score attained on the DMT (the higher the score the lower the fee), the number of additional lots allowed through participation in the program, and the average price of lots being sold in the development. The level of the fee is intended to profit the developer enough to incentivize participation, while generating enough funds for stormwater retrofits.

If the developer attains the minimum score necessary on the DMT and pays a participation fee, he/she becomes eligible to participate in the SBP and will be granted a density bonus of between 6-10 units per acre. Upstate Forever worked in close conjunction with Greenville County Planning Staff to determine where the program should operate as well as what density levels were appropriate in various locations throughout the County. In an effort to minimize sprawling development, a Priority Development Area (PDA) was identified that indicates where the program will operate in the County. The PDA includes subwatersheds in the County that were determined to be appropriate for the SBP. Selected subwatersheds were chosen based upon several criteria. Criteria included categorizations laid out in the Comprehensive Plan such as areas recommended at higher density levels, employment centers, centers of development, etc; the existence of major roads and/or transit corridors; and the inclusion of a municipality in the subwatershed. Density levels throughout the PDA are based upon recommendations made by staff in the Comprehensive Plan (a plan which was adopted by the Greenville County Council in December 2009).

This presentation will provide an overview of the items discussed above and will conclude with anticipated benefits and recommendations on how this program could be applicable to other regions.

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#### References

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