EPA: “Protecting Water Resources With Higher-Density Development”

For the entire report, visit http://www.epa.gov/smartgrowth/water_density.htm

I ran across this EPA report earlier this year. It helped me form some of my opinions about growth, density, water quality, etc.

Some Highlights:

Executive Summary:

> “…Taken together, these findings indicate that low-density development may not always be the preferred strategy for protecting water resources. Higher densities may better protect water quality—especially at the lot and watershed levels. To accommodate the same number of houses, denser developments consume less land than lower density developments. Consuming less land means creating less impervious cover in the watershed. EPA believes that increasing development densities is one strategy communities can use to minimize regional water quality impacts. To fully protect water resources, communities need to employ a wide range of land use strategies, based on local factors, including building a range of development densities, incorporating adequate open space, preserving critical ecological and buffer areas, and minimizing land disturbance.”

Low-Density Development—Critiquing Conventional Wisdom:

> “…If growth is coming to the region, limiting density on a given site does not eliminate that growth. Density limits constrain the amount of development on a site but have little effect on the region’s total growth (Pendall, 1999, 2000). The rest of the growth that was going to come still comes, regardless of density limits in a particular place. Forecasting future population growth is a standard task for metropolitan planning organizations as they plan where and how to accommodate growth in their region. They project future population growth based on standard regional population modeling practices, where wage or amenity differentials, such as climate or culture (Mills, 1994)—and not zoning practices such as density limits—account for most of a metropolitan area’s population gain or loss.5 While estimates of future growth within a particular time frame are rarely precise, a region must use a fixed amount of growth to test the effects of adopting different growth planning strategies because it still must understand the economic, social, and environmental impacts of accommodating a growing population. Absent regional coordination and planning, covering a large part of a region with density limits will likely drive growth to other parts of the region. Depending on local

> conditions, water quality may be more severely impaired than if the growth had been accommodated at higher densities on fewer sites."

Conclusions:

> "…Many communities assume that low-density development automatically protects water resources. This study has shown that this assumption is flawed and that pursuit of low-density development can in fact be counterproductive, contributing to high rates of land conversion and stormwater runoff and missing opportunities to preserve valuable land within watersheds.
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> The purpose of this study is to explore the effects of development density on stormwater runoff and to illustrate the problems with the assumption that low-density development is automatically a better strategy to protect water quality. To that end, three different development densities were modeled at the one-acre, lot, and watershed levels, as well as in the time series build-out examples. The modeling results suggest that low-density development is not always the preferred strategy for protecting water resources. Furthermore, the results seem to suggest that higher-density development could better protect regional water quality because it consumes less land to accommodate the same number of homes…"

Please, read the whole thing for yourself. The point is that low density development is not necessarily the best way every time to protect our resources. The study does not say that high-density every time is the answer either. It just challenges the conventional wisdom that low-density is always the best and high-density the worst. If x number of people are moving to an area like ours, which means they will build roughly one house per two people, it may be a better idea, at least for environmental concerns, to accommodate them in a more compact area.