Conservation Development: Costs and Savings[1]

Green, high-density developments are more cost effective to develop. In terms of investment, a 1974 estimate found high-density investment fell 44 percent below that needed for low-density, sprawl development (Real Estate Research Corp., 1974). More recently, an analysis completed by Robert Burchell and others at Rutgers University for the State of New Jersey compared typical development with a "planned development" alternative that would include a range of densities and housing types similar to green development patterns (Gersh, 1996). Projecting from 1990 to 2010, the analysis concluded that planned development could save taxpayers $9.3 billion in avoided capital, operation, and maintenance costs for roads, schools, and utilities. Meanwhile, 175,000 acres of land would also be saved.

Many studies have compared the costs associated with various development patterns. The South Carolina Coastal Conservation League (SCCCL), assisted by the Westvaco Development Corporation, compared the costs of developing a 96-acre parcel in a conventional pattern to the cost of developing the parcel using a high-density development pattern. The conventional development consisted of 242 single family homes on quarter-acre lots, a density of four units per acre, the highest density allowed in most residential zones (SCCL, 1993). The high-density plan consisted of 333 homes with a mix of single family, duplex, quadriplex, and single-family homes built on third-acre lots, creating an average density of 6.5 units per acre. In the high-density development, 240 residences were placed within walking distance of a bus line, thoughtful planning considering that bus service is considered workable when density reaches 6 or 7 units per acre.

The study found that the costs of developing the conventional plan would be $26,000 per lot, compared to $16,000 per lot for the high-density plan. The cost savings in the high-density development are primarily attributed to savings in per-lot land costs and site preparation costs such as excavating, landscaping, grading, and paving. These cost-savings would be passed on to buyers. A homebuyer looking to purchase a 1,500 square-foot home in the conventional development would pay $95,000, while a home of the same size and quality would cost $82,000 in the high-density plan, a savings of 14 percent.

In general, there are three main components of residential development infrastructure: 1) roadbuilding; 2) storm drainage; and 3) water and sewer service (Schueler, 1995). This infrastructure constitutes approximately half the cost of residential subdivision construction. Highdensity development typically reduces infrastructure demands. For example, road length can be cut by 50 to 75 percent. In addition, as previously mentioned, narrower road widths reduce road surface area by 25 to 35 percent.

---

[1] Excerpted from: *The Benefits of Green Development*. "Green Development Literature Search: Summary and Benefits Associated with Alternative Development Approaches." Located at the Smart Growth Network webpage, www.smartgrowth.org. The Smart Growth Network is a collaborative effort administered by the International City/County Management Association.

Considering that each linear foot of road constructed costs an average of $100, high-density development patterns can produce significant cost savings. Table 1 provides examples of the unit cost for development infrastructure (Schueler, 1995).

Table 1.
Unit costs of subdivision development

Subdivision Improvement Unit Cost	
Roads, Grading	$22.00 per linear foot
Roads, Paving (26-foot width)	$71.50 per linear foot
Roads, Curb, and Gutter	$12.50 per linear foot
Sidewalks (4 feet wide)	$10.00 per linear foot
Storm Sewer (24-inch)	$23.50 per linear foot
Driveway Aprons	$500 per apron
Parking Spaces	$1,100 per parking space ($2.75/sf)
Clearing (forest)	$4,000 per acre
Sediment Control	$800 per acre
Stormwater Management	$300 per lot (variable)
Water/Sewer	$5,000 per lot (variable)
Well/Septic	$5,000 per lot (variable)
Street Lights	$2.00 per linear foot
Street Trees	$2.50 per linear foot

Adapted from Site Planning for Urban Stream Protection, December 1995, prepared by Tom Schueler of the Center for Watershed Protection for the Metropolitan Washington Council of Governments.

References:

Gersh, Jeff. 1996. Subdivide and Conquer: Concrete, Condos, and the Second Conquest of the American West. The Amicus Journal. (Fall):14-20.

Real Estate Research Corporation. 1974. The Costs of sprawl. Executive summary of the report The Costs of Sprawl: Detailed Cost Analysis, for the Council on Environmental Quality; the Office of Policy Development and Research, Department of Housing and Urban Development; the Office of Planning and Management, Environmental Protection Agency. April.

Schueler, T.R. 1995. Environmental Land Planning Series: Site Planning for Urban Stream Protection. Department of Environmental Programs, Metropolitan Washington Council of Governments, 777 N. Capitol Street, Suite 300, Washington, D.C. 20002.

South Carolina Coastal Conservation League. 1993. Living the American dream: Density and home ownership. SCCL Land Development Bulletin. No. 3, March.