



OVERVIEW OF COST BENEFIT STUDY OPTIONS FOR LAND USE DECISIONS

The types of analyses that examine costs and benefits of land use decisions include fiscal impact analyses, Cost of Community Services (COCS) studies, cost of open space analyses, and tax base studies. Fiscal impact studies look at primary and secondary impacts of development, but do not assess the benefits privately owned working and conserved lands contribute to the community. COCS studies compare the average fiscal costs of a community's major land uses in a real place and real time. Factors to consider in choosing a methodology include whether measuring current conditions (COCS), historic conditions (tax base studies), or a seeking a predictive model, as in traditional fiscal impact analysis. A full fiscal impact analysis may cost 10 times or more than a COCS.

The quantifiable economic benefits and costs avoided depend very much on the type of lands - forest, farm, wetlands, or meadow - being assessed.

Measures quantified in recent studies include:

- surrounding home values,
- infrastructure costs,
- local economic growth,
- cost avoidance,
- carbon offsets,
- water supply protection,
- scenic views,
- flood control,
- fish and wildlife habitat,
- aesthetics,
- carbon sequestration,
- waste water absorption,
- erosion control,
- agricultural crop production,
- job creation.

RECENT COST BENEFIT STUDIES OF LAND USE DECISIONS

Smart Growth America. *Americans Want Smarter Growth. Here's How to Get There.*

<http://smartgrowthamerica.org/greetings.html>

A growing body of research shows that protecting open space makes fiscal sense. There is a common myth that development is good for the local bottom line. But in fact, new residential development demands more in services than it contributes in taxes, and existing residents typically foot the bill. Over 70 "cost of community services" studies conducted nationwide show that residential development costs a municipality more in maintenance costs than farmland and open space.

For example, in a study of costs in Skagit County, Washington, developed land required \$1.25 in county services for each \$1 of revenue it produced; agricultural land only required 51 cents in services for each \$1 of property tax revenue. Farmland and open space conservation also have indirect positive tax benefits such as increasing nearby property values, increasing revenues from tourism and reducing costs for flood control and water supply. Bond rating institutions, which rate overall financial health of municipalities, are now rewarding communities with better bond ratings when they have farmland protection programs.

Smart growth also delivers savings in infrastructure costs. A recent analysis by Robert W. Burchell and David Listokin of Rutgers University determined that modest increases in development density could reduce total capital costs by 25-60 percent for roads and 15-40 percent for water and sewer infrastructure. Another study by the USEPA showed that compact infill development projects would demand roughly 90 percent less infrastructure costs than comparable greenfield sites. Such development would also generate 48-61 percent less traffic and roughly 50 percent fewer nitrogen oxides, volatile organic compounds and carbon dioxide emissions.

Today over 200 New Urbanist developments have been build and occupied all across America. Because of their excellent design, such properties tent to sell out quickly and command a \$5,000-30,000 price premium above nearby units of comparable size, according to a recent Urban Land Institute study.

American Farmland Trust. Farmland Information Center. *Fact Sheet: Cost of Community Services Study. August 2007.*

http://www.farmlandinfo.org/farmland_preservation_literature/index.cfm?function=article_view&articleID=27757

Communities pay a high price for unplanned growth. Scattered development frequently causes traffic congestion, air and water pollution, loss of open space and increased demand for costly public services. This is why it is important for citizens and local leaders to understand the relationships between residential and commercial growth, agricultural land use, conservations and their community's bottom line. Cost of Community Services (COCS) studies help address three claims that are commonly made in rural or suburban communities facing growth pressures:

1. Open lands – including productive farms and forests –are an interim land sue that should be developed to their “highest and best use.”
2. Agricultural land gets an unfair tax break when it is assessed at its current value for farming or ranching instead of at its potential use value for residential or commercial development.
3. Residential development will lower property taxes by increasing the tax base.

20 years of COCS studies – Median Results: for every \$ in tax reveune

- Commercial and industrial land use costs \$0.29
- Working and open land cost \$0.37
- Residential costs \$1.19

The findings of COCS studies are consistent with those of conventional fiscal impact analyses, which document the high cost of residential development and recommend commercial and industrial development to help balance local budgets. What is unique about COCS studies is that they show that agricultural land is similar to other commercial and industrial uses. In every community studies, farmland has generated a fiscal surplus to help offset the shortfall created by residential demand for public services. This is true even when the land is assessed at its current, agricultural use.

They can help local leaders discard the notion that natural resources must be converted to other uses to ensure fiscal stability. They also dispel the myths that residential development leads to lower taxes, that differential assessment programs give landowners an “unfair” tax break and that farmland is an interim land use just waiting around for development.

NOTE: none of these studies were done in Vermont

The Trust for Public Land, *Conservation: An Investment That Pays 2009*
http://www.tpl.org/tier3_cd.cfm?content_item_id=23056&folder_id=188

Farms, ranches, and forests are among the most common U.S. lands to be developed. For more than 15 years economists have been assessing the net economic benefit to communities of developing such lands. These “costs of community services” (COCS) studies are a subset of a much larger field known as fiscal analysis. The studies weigh anticipated economic benefits from various forms of development against the cost of delivering infrastructure and services to the development, such as schools, roads, and fire and police protection.

The American Farmland Trust (AFT) has conducted many of these studies and continues to promote them. AFT lists 128 COCS studies completed in 25 states between 1989 and 2007. Averaging the results of those studies reveals that for every dollar communities realized from residential development, they had to deliver \$1.16 in services. On average, lands developed for commercial or industrial use required communities to deliver only \$0.29 in services for every dollar realized. But keeping land in agriculture is also cost effective, the research suggests. On average, farms and ranches demanded only \$0.37 in community services for each dollar of economic benefit. Specific results differ from community to community, of course. But in general, results show that delivering services to residential development almost always costs more than the community can expect to realize in taxes and other benefits. The results also show that keeping the land in ranching, farming, or forestry often produces nearly as much net economic benefit to a community as commercial or industrial development.

More generally, researchers have identified four economic benefits that can come from protecting

productive agricultural land. These include:

- a viable, local agricultural industry with employment opportunities,
- rural and environmental amenities, including viewsheds and wildlife habitat,
- local and national food security, and
- orderly and fiscally sound development of rural land.

Smart Growth America.org

A recent five-year study by researchers at Rutgers University and the Brookings Institute that found the nation could save hundreds of billions of dollars and preserve 4 million acres of land over the next quarter century by channeling development into existing urban areas and compact new towns.

Center for Land Use Education. *An Innovative Tool for Managing Rural Residential Development: A Look at Conservation Subdivisions.* Land Use Tracker. Volume 2, Issue 1. Summer 2002.

Benefits of Conservation Subdivisions:

- Achieves a community goal of preserving open space at the same density standard as is outlined in current ordinances.
- Establishes an open space network, if done within the context of a comprehensive plan and these types of developments/subdivisions are purposefully linked together. Continuous open space (farmland, forest or other natural resources) allows for greater benefits for the environment, i.e., habitat preservation for wildlife, and for a local economy if dependent on agriculture and/or tourism. This open space network also can extend and join recreational trails.
- None of the land is taken for public use unless the developer/owners want it to be.
- Does not require public expenditure of funds.
- Does not depend on landowner charity.
- Does not involve complicated regulations for shifting rights to other parcels.
- Does not depend upon the cooperation of two or more adjoining landowners to make it work.
- Provides a quality residential and recreational environment.

Source: Better Designs for Development in Michigan and Minnesota Land Trust and University of Minnesota 2001.

Limitations:

- Conservation subdivisions are not a panacea. Used alone they cannot fully accomplish goals related to establishing and preserving open space or managing residential development.
- These subdivisions should connect to a broader network of conservation areas, if not a community will have a chopped up landscape.
- Conservations subdivisions not attached to already developed areas and not connected to services can result in poor land use practices.

- If one goal of your community is to create affordable housing, conservation subdivisions may not provide this housing option. Many conservation subdivisions are expensive, and are marketed to “high end consumers.” On the other hand, there is no reason why these types of subdivisions cannot include more affordable housing.
- If a goal of the community is to promote development that is less dependent on the automobile, conservation subdivisions may not help.
- Technical assistance is important. Poorly designed conservation subdivisions may not achieve open space goals of the community.

Raymon Mohamed. *The Economics of Conservation Subdivisions: Price Premiums, Improvement Costs and Adsorption Rates.* Urban Affairs Review, Vol. 41, No. 3, January 2006, 376-399.

http://www.landchoices.org/conservationsubs/consubs_pdfs/consubs_economics1.pdf

This article addresses the issue by examining price premiums, investment costs and adsorption rates for lots in conservation versus those in conventional subdivisions. The results show that lots in conservation subdivisions carry a premium, are less expensive to build and sell more quickly than lots in conventional subdivisions. The results suggest that designs that take a holistic view of ecology aesthetics, and a sense of community can assuage concerns about higher density.

Their (conservation subdivisions) advantages over conventional “cookie-cutter” subdivisions include reduced land consumption, less damage to the environment and the preservation of open space.

Although the research reported in this article does not ascertain the exact profits associated with conservation subdivisions, an examination of price premiums, improvement costs, and time on the market permits a ranking of the profitability of conservation subdivisions relative to other designs.

...this article is an accounting of benefits and costs only from the perspective of developers;...

In addition to preserving agricultural land, open space is now expected to serve important ecological roles by providing natural habitat, reducing runoff volumes, limiting landscaping and lawn maintenance, and providing natural cooling. These ecological benefits in turn translate into higher levels of residential satisfaction.

...attracted some controversy. ...that conservation subdivisions are sometimes built in greenfields highlights a criticism of these subdivisions; their potential to promote leapfrogging and socioeconomic disparities. ...noted that residents in conservation subdivisions may place restrictions on the use of farming inputs and eventually oppose farming altogether.

Compared subdivisions in South Kingstown, RI. Results (not verbatim)

- Conservation subdivisions carry additional value ranging from 12-16% per acre over lots in conventional subdivisions.
- Lots in conservation subdivision sold for \$122,000-\$125,000 per acre versus \$107-109,000.
- Lots with public water and sewer sell for more.
- Lots in conservation subdivisions cost on average about \$7,400 less to produce than lots in conventional subdivisions.

- The lots in conservation subdivisions (9.1 months) sold in about half the time as lots in conventional subdivisions (17.0 months) must be advantageous to the cash flow of developers.

Marginal Property Tax Effects of Conservation Easements: a Vermont Case Study

Jonathan R King, Christopher M Anderson. *American Journal Of Agricultural Economics*

Malden:November 2004. Vol. 86, Iss. 4, p. 919-932

<http://www.jstor.org/pss/4492782>

One of the few case studies undertaken in Vermont found that because conserved land is no longer taxed at market rates, private conservation easements do increase property tax rates in the short run. But by looking only at the increase in adjacent property values and avoided municipal service and infrastructure costs (and not the many other factors that might be evaluated), the authors concluded that conserved lands are at worst tax-neutral or tax-suppressing in the long run.

The Market for Transportation-Land Use Integration: Do Developers Want Smarter Growth than Regulations Allow? Jonathan Levine, Aseem Inam. *Transportation Amsterdam:November 2004. Vol. 31, Iss. 4, p. 409-427, www.kluweronline.com/issn/0049-4488/*

Transportation and land use research of the past decade has focused in large part on the question of whether manipulating land uses in the direction of "smart growth" alternatives can reduce vehicle miles traveled (VMT) or otherwise improve travel behavior. Yet the notion of "manipulating" land uses implies that the alternative is somehow self-organized or market-based. This view appears to underestimate the extent to which current planning interventions in the United States - largely focused on lowering development densities, mandating ample road and parking designs, and separating land uses - impose an auto-oriented template on most new development. This article studies, through a national survey (676 respondents) of US developers' perceptions of the market for pedestrian- and transit-oriented development forms. Overall, respondents perceive considerable market interest in alternative development forms, but believe that there is inadequate supply of such alternatives relative to market demand. Developer-respondents attribute this gap between supply and demand principally to local government regulation. When asked how the relaxation of these regulations would affect their product, majorities of developers indicated that such liberalization would lead them to develop in a denser and more mixed-use fashion, particularly in close-in suburban locales.

The Trust for Public Land, The Economic Benefits of Land Conservation, 2007

Study after study of parks and natural lands throughout the United States finds that property values for homes adjacent to open space are increased by approximately twenty percent.

In Yarmouth, Maine, residents voted for a bond to purchase land to avoid development after learning that service and infrastructure costs would exceed tax revenues annually by \$140,000, while outright purchase of the land could be achieved by paying \$67,000 annually for twenty years.

“The Effects of Development and Land Conservation on Property Taxes in Connecticut Towns,” prepared for the Trust for Public Land by Ad Hoc Associates, May 1995. http://www.tpl.org/tier3_cdl.cfm?content_item_id=1137&folder_id=827

According to this analysis, tax rates are not lower in towns with the most business property. On average, tax rates were lower in the groups with less business property, and higher in the groups with more business property.

This indicates that tax rates tend to be higher--rather than lower--in towns that have the most commercial activity. Similar studies in Connecticut, New Hampshire, Maine, and Vermont have found similar patterns: in general, average residential tax bills are higher in municipalities that have the most commercial and industrial development.

On the surface, this finding seems to contradict both conventional wisdom and the fiscal impact studies cited previously that show that commercial and industrial developments are tax-positive. Several points should be considered in explanation:

* *Commercial/industrial development and residential development go together.* Residential growth, which costs more than it pays, accompanies jobs.

* *In general, communities with larger tax bases offer more services.* As mentioned earlier, larger communities often provide more services. In some cases, additional services are required to deal with the additional demands of growth and there is no net benefit to residents. In other cases, an additional level of service provides new or improved benefits to residents (such as 24-hour police protection or a municipal swimming pool).

* *The charts show the relationship between total amounts of commercial development and tax bills.* Clearly, a town would be better off if it could have a high proportion of tax-positive development and a low proportion of tax-negative development. Although there are certainly instances of towns receiving commercial tax base while the neighboring towns assumed responsibility for supporting the work force, in the long run it is likely that towns that get commercial development will also get at least some associated residential development.

* *In general, commercial and industrial developments do not appreciate as rapidly as residential property or open land.* A commercial development that represented 10 percent of the tax base initially may, over time, represent only 5 percent of the tax base--due only to differences in rates of appreciation.

Community Choices, Thinking Through Land Conservation, Development and Property Taxes in Massachusetts,” prepared for the Trust for Public Land by Ad Hoc Associates, 1998.

http://www.tpl.org/tier3_cdl.cfm?content_item_id=1075&folder_id=827

In the *short term*, the permanent protection of land generally results in a tax shift. In the *long term*, land conservation helps control property taxes by limiting increases in municipal services.

When deciding between conservation and the development of individual properties, voters need to consider not only the cost to taxpayers but also the extent to which conservation helps achieve community goals. Key considerations include the extent to which conservation increases property values of other land, supports or stabilizes the local economy, protects the water supply or important wildlife habitat, or provides recreational benefits to residents. It is also important to consider likely alternative uses of the property and their compatibility with community goals.

AMERICAN FARMLAND TRUST, 2007, REVIEW OF FISCAL IMPACT STUDIES RELEVANT TO THE HIGHLANDS REGION OF MASSACHUSETTS

<http://www.thetrustees.org/assets/documents/highland-communities-initiative/Fiscal-Impact-Study.pdf>

Ad Hoc Associates' studies analyze the relationship between land conservation, development and property taxes in New York, Maine, Vermont, Massachusetts and Connecticut. They investigate both short-term and long-term impacts of different types of land uses on the overall tax base as well as on the actual tax bills paid by town residents. They are a useful tool to measure the relationship of property tax rates to socioeconomic and land use indicators.

Ad Hoc's studies bear out the widely held assumption that, in the short run, development increases the tax base by adding property value, whereas land protection does not provide additional tax revenue and may reduce the tax base. However, in the long term, they find that open land requires a much lower level of services than developed land, limiting increases to municipal budgets and associated spending over time. Thus, they show that tax rates correlate with the type and degree of development in a town, and that more developed towns typically have higher tax rates. These findings support the findings of COCS studies, which show that farm, ranch and forest lands are important commercial land uses that help balance community budgets. Working lands are not just vacant land waiting around for development.

American Agricultural Economics Assoc. 2001, *Measuring Interactions Among Urban Development, Land Use Regulations and Public Finance*

<http://ageconsearch.umn.edu/handle/20774>

In this paper, a theoretical model is developed to analyze the interactions among residential development, land use regulations, and public financial impacts (public expenditure and property tax). A simultaneous equations system with self-selection and discrete dependent variables is estimated to determine the interactions for counties in the five western states (California, Idaho, Nevada, Oregon, and Washington). The results show that county governments are more likely to impose land use regulations when facing rapid land development, high public expenditure and property tax. The land use regulations, in turn, decrease land development, long-run public expenditure, and property tax at the cost of higher housing prices and property tax. During the period of 1982-1992, land use regulations reduced developed areas by 612,800 acres or 8.8 % of the developed area of five western states in 1992, but increased housing price by \$5,741 per unit under "stringent" regulations and \$1,319 per unit under "low" regulations. Because it costs money to develop and implement land use regulations, land use regulations increased public expenditure and property tax in the short run, during the period of 1982-1987. However, in the long-run (1982-1992), land use regulations actually reduce public expenditure and property taxes because the regulations reduce developed areas.