



Natural Resource Network

Connecting Research, Teaching and Outreach

Does Open Space Pay?

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Does Open Space Pay?

Recent studies of some New Hampshire communities shed new light on the economic value of open-space lands. The University of New Hampshire Cooperative Extension and the Rockingham County Conservation District recently completed economic studies of two communities, Fremont and Deerfield. UNH Cooperative Extension also helped residents of Stratham complete a similar study, and a study of Dover was completed by Kingsley, et al, in 1993.

The cost of community services (COCS) process was used to compare residential, commercial, industrial and open-space land use categories in each community. The process was developed by the American Farmland Trust, an organization working to protect agricultural lands throughout the country. The COCS method has also been applied to communities in New York, Connecticut, Massachusetts and Rhode Island.

■ How does the COCS process work?

A fiscal analysis is completed for a given year using all of the revenues and expenses by line item of a community's budget. These are assigned proportionately to the town's residential, commercial, industrial and open-space land use components.

Open-space lands are defined in the Deerfield, Fremont and Stratham studies as those enrolled in the Current Use Assessment program. In the Dover study, open-space lands are defined as land enrolled, or eligible to be enrolled, in the Current Use Assessment Program.

The proportionate cost assignments are made by using best judgement, reviewing town records for the given fiscal year, and/or by assigning costs based on the assessed value represented by each land use component. After all of the expenditures and revenues are totaled by land use, a ratio of revenues to expenditures is calculated.

For example, in the Fremont case study, 90% of the 1994 fire department expenses were apportioned to residential demands, 5% to commercial and industrial land uses, and the remaining 5% to open space. The decision to apportion fire department costs at these levels was made by reviewing the fire department report and assigning a percentage of the total costs based on the number of calls and time committed for residential, commercial/industrial or open space.

■ Profiles of the Communities Studied

Stratham

1983 population	2,846
1993 population	5,224
Net change in population	2,378 (83 percent increase)
Land area	9,155 acres
1994 current use acreage	3,174 (35 percent of the land area)
1994 total school enrollment (grades K-12)	1,104
1994 total number of housing units	2,080 (approximately)

Stratham is a small residential community with a significant concentration of mixed commercial development along Route 33. These include department and grocery stores, car dealerships, assorted fast food stores and small strip malls. Residential development is primarily low density single family construction though there were 310 condominium housing units in 1994.

Fremont

1983 population	1,443
1993 population	2,703
Net change in population	1,260 (87 percent increase)
Land area	11,152 acres
1994 current use acreage	7,096 (64 percent of the land area)
1994 total school enrollment (grades 1-12)	520
1994 total number of housing units	1,100 (approximately)

Fremont is primarily a residential community with a limited number of mixed industrial and commercial land uses. The primary industry is the Spaulding and Frost Company, a wood products manufacturer that has been in the town for more than a century. Other industries and commercial enterprises include a number of sand and gravel quarries, and two small convenience stores.

Deerfield

1983 population	2,085
1993 population	3,194
Net change in population	1,109 (53 percent increase)
Land area	33,447 acres
1994 current use acreage	17,585 (52 percent of the land area)
1994 total school enrollment (grades 1-12)	621
1994 total number of housing units	1,800 (approximately)

Deerfield is primarily a rural, residential community with some seasonal home development on Pleasant Lake. This community has the largest land area of those studied. Commercial properties are very limited and include two convenience stores. A large Public Service of New Hampshire power line substation and the P. K. Lindsay Company, a manufacturer of compressors, are the primary industries.

Dover

1983 population	22,786
1993 population	25,500
Net change in population	2,714 (12 percent increase)
Land area	16,244 acres
1994 current use acreage	5,694 (35 percent of the land area)
1994 total school enrollment (grades 1-12)	3,348
1995 total number of housing units	11,600 (approximately)

Dover is the most developed of the communities studied with sewer and water services for much of the community. Industries include a mix of old and new, large and small. Commercial development is equally diverse and extensive. Residential properties include high density, single and multifamily dwellings as well as low density single family construction in more rural settings.

■ What do the results tell us?

The table indicates the results of the COCS studies. In each community residential land use revenues were exceeded by expenditures. In Fremont, for every dollar of income generated from the residential sector during 1994, \$1.04 was spent in services. The expenditure in Stratham was \$1.14, and Deerfield and Dover residential expenditures were both higher at \$1.15. In all communities, revenues exceeded expenditures in the commercial/industrial and open-space land use components. Fremont expended 94 cents, Stratham 19 cents, Deerfield 22 cents, and Dover 63 cents for each dollar generated by the commercial and industrial land use component. For open-space land uses, Fremont expended 36 cents, Stratham 40 cents, Deerfield 35 cents, and Dover 94 cents for each dollar of revenue generated.

Results of Cost Of Community Services Studies In Four New Hampshire Towns

Community	Land Use Categories	Revenues	Expenditures	\$ Ratio
Fremont, NH 1994	Residential	\$3,317,928	\$3,457,376	1 : 1.04
	Commercial/Industrial	\$69,798	\$65,325	1 : .94
	Open Space	\$19,188	\$6,835	1 : .36
Deerfield, NH 1994	Residential	\$4,878,823	\$5,630,510	1 : 1.15
	Commercial/Industrial	\$531,547	\$119,209	1 : .22
	Open Space	\$57,679	\$20,155	1 : .35
Dover, NH 1992	Residential	\$19,317,362	\$22,124,828	1 : 1.15
	Commercial/Industrial	\$6,178,059	\$3,905,609	1 : .63
	Open Space	\$488,628	\$457,661	1 : .94
Stratham, NH 1994	Residential	\$6,939,002	\$7,957,296	1 : 1.15
	Commercial/Industrial	\$1,339,275	\$256,696	1 : .19
	Open Space	\$20,498	\$8,132	1 : .40

While each town in NH has a unique blend of land uses and subsequent revenues and expenditures, these studies do point out some fiscal consistencies that are likely to apply in most circumstances. Residential land uses very often cost communities more than they generate in revenues. Traditional residential housing brings with it a tremendous cost load in the way of community services, roads, landfills, and schools. There are examples of residential development that carry their own fiscal weight. Housing for the elderly and recreational/seasonal housing are frequently cited.

It is also commonly assumed that commercial and industrial land uses are most often assets. They often require little in the way of services and yet are relatively big ticket items in terms of tax revenue. Exceptions to this also exist. Commercial and industrial developments may require substantial fire and police department expansions. Those departments have the trait of continually expanding along with growth in commercial and industrial land uses. That may be reflected in the Dover numbers.

What probably is a surprise to many is that open-space lands also are often a net asset to New Hampshire communities. Keep in mind that the only lands used for COCS studies in Fremont and Deerfield, and most of the land in the Dover study were those enrolled in the state's Current Use program. Granted, Current Use lands in New Hampshire communities generate little in the way of tax revenues. On the other hand, they cost next to nothing in the way of services. These trends have been consistently demonstrated wherever COCS studies have been done.

■ What are the implications?

Cost of community services studies clearly demonstrate that open space can be an economic asset that contributes to the stability of community tax rates. While there are many critics of open space as a contributor to gross revenues and property taxes, these studies demonstrate otherwise. Clearly each community should assess their own fiscal situation from both sides of the balance sheet, both revenue and costs. Open space, and particularly Current Use lands, may be net assets when taxes generated are compared to the cost of services they require.

When considering the fiscal impacts of various land use components, analysts should also consider the role that open space lands can play in avoiding high-cost land uses. Consider open space conversions to single family residential use. If land is taken out of open space and converted to housing, it will often cost far more than is generated in taxes. Therefore, the positive revenue ratio of open space lands in many communities is complimented by additional "cost avoidance" benefits.

This has been supported by other well-documented fiscal impact studies in New Hampshire communities. A 1990 fiscal impact analysis of housing costs in Milford estimated that the community needed to raise \$2,072.95 for each new three bedroom home above and beyond taxes and fees generated by homeowners. The study went on to state that Milford needed to attract seven average industrial or commercial business taxpayers to offset every 10 three bedroom home. A 1989 study by Statewide Program of Action to Conserve the Environment (SPACE) compared the taxes generated and community costs of a 330 acre Londonderry apple farm enrolled in Current Use to those generated if the open space were converted to a 290 single family residential housing development. As a working farm enrolled in Current Use, it was generating \$18,830 per year above the cost of services it required from the town. By contrast, the development would have cost the community \$643,710 per year (\$2,219.69 per home) above and beyond taxes and fees generated.

What can communities do?

■ A fiscal analysis

Each community in New Hampshire has a different mix of residential, commercial, industrial and open-space land-use components. The results of the Fremont, Stratham, Deerfield and Dover studies may not be applicable to other towns. Therefore, a first step may be some type of fiscal impact investigation. Cost of community services studies are relatively easy to do and can be completed by volunteers. Other examples of fiscal impact analysis models are available from University of New Hampshire Cooperative Extension, Regional Planning Commissions and other sources.

■ Find out what's left

Where are the remaining undeveloped lands which are suitable for open space consideration? This really boils down to doing some kind of inventory. It may be a formal natural resources inventory which looks at farmlands, big blocks of open space, wildlife corridors, etc. Help is available through UNH Cooperative Extension, Regional Planning Commissions and private firms for this kind of effort. Informal inventories may be just as effective. The objectives of either approach should be to identify natural resources and sections of the community that are unique, functioning, threatened and/or that fit into an ongoing or planned mosaic of protected lands.

■ Encourage open-space protection

Several methods can be used to encourage open space protection in communities. These include educational programs, voluntary land protection efforts and, to a lesser extent, regulatory controls. Public officials are key players. It helps to be able to demonstrate to them and the public that open-space protection is vital and has economic justification.

■ Make your efforts known to the community and landowners

Public information should be an ongoing part of any community land-protection effort. Keeping the people informed stimulates interest, energy, and support in these kinds of projects. It also helps landowners know that their land is being examined, that no 'taking' is in the works, and encourages them to participate in the process.

■ Initiate educational programs for landowners

Educational opportunities for landowners might include workshops on Current Use Assessment, voluntary land-protection techniques and estate planning. UNH Cooperative Extension, the Society for the Protection of New Hampshire Forests, private land trusts and other sources are available for assistance.

■ Identify landowners who need help now

There are many landowners in our communities, often elderly, who would like to pass their 'family' land on to the next generation. Others simply want assurance that it will remain undeveloped when they're gone. They often do not know where to turn for guidance. Conservation commissions and local land-protection groups can act as a catalysts to connect these folks with professionals.

■ Initiate a voluntary land protection program

Current Use is not a permanent land protection tool. Just look at what happened in the 1980's to large blocks of open space, much of which was enrolled in Current Use. Communities that have experienced significant development pressures must initiate local land protection efforts soon if they hope to retain significant blocks of open space for future generations. Voluntary permanent land protection measures which keep it privately owned and on the tax rolls are ideal. The sale or donation of development rights through conservation easements are the most economical, proven long-term tool available.

■ Establish significant and consistent funding sources

Funding sources which are significantly large and consistent are no doubt the most difficult issue to secure for most communities. Fiscal impact analysis such as the cost of community services study can be used to demonstrate that there may be sound fiscal reasons for communities to invest in permanent open-space protection measures. There are options, including all or part of the Current Use penalty tax. If development is costing a community a great deal of tax revenue, it may be possible to make a case for avoiding these costs by investing in land protection. Broad public support and a well-founded plan of action are vital.

Bibliography

American Farmland Trust. Is Farmland Protection a Community Investment? How to Do a Cost of Community Services Study. Washington, DC. 1993.

Auger, P.A. Open Space Pays. Natural Resource Lecture Series. University of New Hampshire Cooperative Extension, Rockingham County Conservation District and Rockingham County Planning Commission cooperating. Brentwood, NH. 1995.

Deschaine, P., J. Stuart, G. Batchelder, and P.A. Auger. Cost of Community Services Study. Stratham, NH. February, 1991.

Howe, G.W., D.C. Seavey. Case Study: Sunnycrest Orchard. University of New Hampshire Cooperative Extension Service. Durham, NH. 1978.

Kingsley, E., R. Cooksey, and S. Annett. Cost of Community Services Fiscal Impact Analysis: City of Dover. Student paper prepared for course taught by the Department of Resource Economics and Development, University of New Hampshire. Durham, NH. December, 1993.

Lincoln Institute of Land Policy. Is Land Conservation Bad for the Tax Base? Landlines, p. 6. Cambridge, MA. 1993.

Statewide Program of Action to Conserve the Environment. Tax Scenario: Conversion of Londonderry Apple Farm Under Current-Use to Single Family Residential Use. August, 1989.

Thomas, H.L. The Economic Benefits of Land Conservation. Technical Memo, Dutchess County Planning Department. Poughkeepsie, NY. February, 1991.

Turner, S.J. The Fiscal Impact Worksheet Developed for the Town of Milford, New Hampshire. Milford, NH. February, 1990.

The Natural Resource Network Research Reports

The Natural Resource Network presents this material as a part of a series of research reports and publications of interest to educators, resource professionals, landowners and the public. Additional copies are available from the University of New Hampshire Cooperative Extension Forestry Information Center, 131 Main Street, Nesmith Hall, Durham, NH 03824.

The mission of the Natural Resource Network is to enhance interaction among the natural resource research, teaching, and outreach communities in New Hampshire by providing an ongoing mechanism for identifying, addressing and communicating natural resource issues.

Natural resource professionals are working toward improved ways to conserve and use the natural resources of New Hampshire. The Natural Resource Network was formed to improve the interaction among researchers and those who provide outreach education in many kinds of programs. Teachers, outreach professionals and resource managers can bring research-based education to diverse audiences. At the same time, those audiences, or consumers, identify issues and needs for educational programs which can be addressed by controlled research. Well informed and knowledgeable professionals, free-flowing exchange of information, an advantageous and gratifying professional environment, and natural resource planning are goals of the Natural Resource Network.

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