

The Local Government Fiscal Impacts of Land Uses in Athens-Clarke County:

Revenue and Expenditure Streams by Land Use Category

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About Dorfman Consulting

Jeffrey H. Dorfman earned a Ph.D. in agricultural economics from the University of California, Davis in 1989. Since then he has been a professor in the Department of Agricultural & Applied Economics at The University of Georgia. From 1998-2000 he was the founding director of the Center for Agribusiness and Economic Development at The University of Georgia. He has written one book, co-authored another, authored or co-authored over 50 academic articles, and published a number of pieces for popular press outlets. He is a recognized expert in the economics of growth, sprawl, green space, and farmland preservation. On these topics he has been invited to present talks around the nation, appeared on television, radio, and been quoted in numerous newspaper articles. He has worked for American Farmland Trust, the Turner Foundation, The Georgia Conservancy, 1000 Friends of Florida, and numerous local governments on growth related issues. In addition to his work on the economics of development issues, Dr. Dorfman also does research in the areas of Bayesian econometrics, productivity measurement, and e-commerce's effect on agribusiness. He consults on a range of economic and statistical issues for a variety of companies, government agencies, and non-profit organizations.

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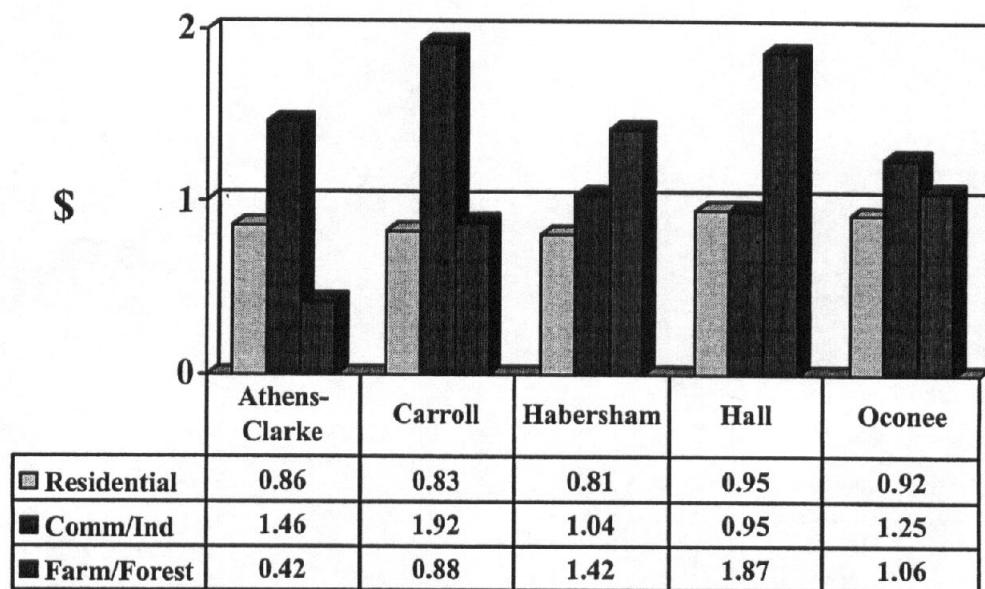
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Appendix – Focus on Comparable or Nearby Counties

Figure A3.

**Revenues per \$1 in Expenditures by Land Use
(County Government Only)**



The Local Government Fiscal Impacts of Land Uses in Athens-Clarke County

Athens-Clarke County is located in Northeast Georgia. It is a fairly urban county centered on the city of Athens, the county seat. Athens-Clarke County is one of the few unified governments in Georgia; the only separate municipality is the small town of Winterville on the eastern edge of the county. Athens-Clarke County had a total population of 101,489 according to the 2000 Census and is now probably closer to 110,000. Athens-Clarke County is a regional retail and employment center, drawing shoppers and workers from much of northeast Georgia, particularly the contiguously surrounding counties. Even with several very rapidly growing counties surrounding it, Athens-Clarke County continues to grow in population as well, at a rate of approximately 1% per year. The median household income was \$30,664 in 1999, about 15% below the state average. Athens-Clarke County has only about 9500 acres of farmland left, representing about 12% of the county land base (this does not count farmland used as research fields by the University of Georgia). There is little commercial agriculture left in the county and citizens mainly value farm and forest lands for their environmental and scenic amenities. Citizens are split on growth; some feel growth is good and more business is beneficial, while others would prefer land and historic preservation to new or re-development. Both sides would like a better understanding of the benefits and costs of growth.

Around the country, about one million acres of farmland per year are being developed. Local governments, especially in rural and suburban areas, often have difficulty funding the services that come with this development and are constantly looking to improve their financial health. Local government officials often believe that one solution to their government's financial difficulties lies through development, by increasing the property tax base; however, a growing body of empirical evidence shows that while commercial and industrial development can indeed improve the financial well being of a local government, residential development worsens it. While residential development brings with it new tax (and fee) revenue, it also brings demand for local government services. The average cost of providing these services exceeds the average revenue generated by the new houses in every case studied (American Farmland Trust).

Georgia is in the national spotlight for growth and development policies. The state government is trying to encourage and subsidize economic development, particularly in rural areas. Metropolitan Atlanta seems to expand daily, and Athens-Clarke County touches the edge of the Atlanta MSA (Athens-Clarke is the center of its own MSA as well). Traffic problems are an issue with people wanting more (and less congested) roads, as well as some pressure for more mass transit and alternative transportation alternatives such as bike lanes. With these traffic pressures and the knowledge that Athens-Clarke and Atlanta are near the EPA's noncompliance standards for air quality (Atlanta is non-compliant, while Athens just earned a reprieve), increasing residential development's density or access to alternative transportation seems important. This is relevant here because higher density, less car-dependent residential development is less expensive to service. Research has shown that service costs drop at half the rate as which land use decreases. That is, if a residential development increased its density so that it used 20% less land, it would cost the county 10% less to provide services.

This report provides a snapshot of Athens-Clarke County in which an allocation of the county's budget numbers reveals the economic service costs and revenue streams of three major land uses and provides a snapshot of the county's overall financial health. After describing the method of analysis, the results will be presented.

Cost of Community Service Studies

Cost of Community Service (COCS) studies involve a reorganization of a local government's (usually a county's) records in order to assign the government revenues and costs of public services to different classes of land use or development such as residential, commercial, industrial, farm, forest and open lands. For example, a county's expenditures on the Department of Family and Children Services program would be classified as all benefiting residential development; the costs of roads would be allocated across all types of development; and expenditures on the Forestry Commission would likely be allocated to farm and forestland. The resulting totals for revenues generated and expenditures incurred can be presented as a ratio of expenditures-to-revenues for different land use types. Where expenses are difficult to allocate across land use categories, emphasis is placed on the expert knowledge of county staff to estimate service expenditures by land use category. Data on the acreage, population, and property value in each land use category are also used in determining some expenditure allocations.

COCS studies look at average revenues and expenditures, not changes at the margin, and are thus not capable of precisely predicting the impact of future decisions. Still, they provide the benefit of hindsight, a budgetary baseline from which to make decisions about the future. They can also allow for informed decision-making on such policy topics as tax abatements for farm or forestland (or even for commercial/industrial development). Further, educated guesses can often be made from these averages as to the likely marginal cost of development and the impact on a local government's financial situation as a result of land use transition.

Review of COCS Studies from Around the Nation and In Georgia

About 90 COCS studies have been completed by a variety of researchers around the country for cities and rural communities. The maximum, median, and minimum ratios of local government revenues-to-expenditures collected from these studies are shown in Table 1. The "Minimum" row states that for every dollar the county generates from the residential category, it spends \$2.11 in services. The commercial/industrial and farm/forestland categories show that, on average, the government receives more than it spends and therefore, these land uses create a surplus. The numbers show the fallacy of depending on residential development as a sound growth policy. In not a single instance did residential development generate sufficient revenue to cover its associated expenditures. Results of other Georgia studies are shown in the appendix. It is worth noting that Athens-Clarke County is one of the most educated counties in the U.S. This has led to demand for high levels of services; the other Georgia counties studied generally provide lower levels of service to county residents.

Table 1. A National Summary of COCS Study Results

Revenue: Expenditures			
County	Residential	Comm./Ind.	Farm/Forest
Minimum	1 : 2.11	1 : 1.04	1 : 0.99
Median	1 : 1.15	1 : 0.27	1 : 0.36
Maximum	1 : 1.02	1 : 0.05	1 : 0.02

Footnote: these figures are for 83 COCS studies compiled by the American Farmland Trust (http://www.farmlandinfo.org/fic/tas/COCS_9-01.pdf).

Bedroom communities are not economically sustainable at tax rates that are likely to be levied. In fact, when a rural community with a large base of farm and forestland begins to convert that land into residential development, either as a planned growth strategy or due to market forces and a lack of growth control measures, the local government is virtually guaranteed to head down a path of deteriorating financial stability and increasing local property tax rates.

Athens-Clarke County

Three land use categories were defined for this study: residential, commercial/ industrial, and farm/forest/open space. Financial information was obtained from Athens-Clarke County and the Athens-Clarke County School System. For Athens-Clarke County, the data are for the year ended June 30, 2004; for the schools, the data are for the 2003-2004 school year. The revenues and expenditures in the budgets were allocated to the land use categories based on the review of available records and interviews with local officials and service providers (farmhouses were included in residential category.) Revenues and expenditures were totaled for each land use category and revenues-to-expenditures ratios were calculated. In calculating the ratios, an adjustment was performed to account for revenue generated from sources outside the county (which amounted to 4.8% of the total revenues); this adjustment recognizes that all expenditures are partially funded from these outside sources. The final results are displayed and tabulated in Figures 1 and 2 below. Figure 1 represents the county government only, with schools excluded. Figure 2 shows how the results change when schools are included. The figures are presented as dollars of revenue per dollar of expenditure; numbers greater than one signify land uses generating more in revenue than they are receiving in service expenditures.

Analysis of the revenue-to-expenditure ratio for the residential category in Athens-Clarke County reveals a common result: residential development provides less in revenue than it requires in service expenditures (with or without schools included). Just looking at the county government, residential development pays \$0.86 in revenue for every \$1.00 in services received. In contrast, the commercial/industrial category produces a solid fiscal surplus for the county government, paying \$1.46 for every \$1.00 in services received. In an unusual result, the farm and forest land in Athens-Clarke County generates less in revenue than it costs in services provided (\$0.42 in revenue per \$1.00 in services); in almost all other cost of service studies farmland generates a fiscal surplus. The farm/forest category shortfall in Athens-Clarke County is about \$700,000, which represents less than 1% of the budget. The reasons for this rare result are that farmland is such a small part of the local economy, almost all the land is under conservation use assessment so that the taxes paid are very low, and Athens-Clarke County provides a lot of services to this land. It is worth noting that county citizens receive other benefits from this land and may well feel these benefits offset the cost shifted onto them of subsidizing the farmland's services.

Break-even Home Values

The cost of service and revenue generation numbers that lie behind the ratios reported above can also be used to calculate the home value necessary for a county or school board to break-even. If one assumes that service cost is fairly constant across houses relative to the home value, such computations are straightforward. Further, this is not an unreasonable assumption as local government service costs will vary with house location, lot size, and (for schools) with number of kids, but are not particularly correlated with home value. Given this assumption, the county government's average service cost per house is easily calculated, as is the revenue from all

Figure 1.

**Revenues per \$1 of Expenditures by Land Use
(County Government Only)**

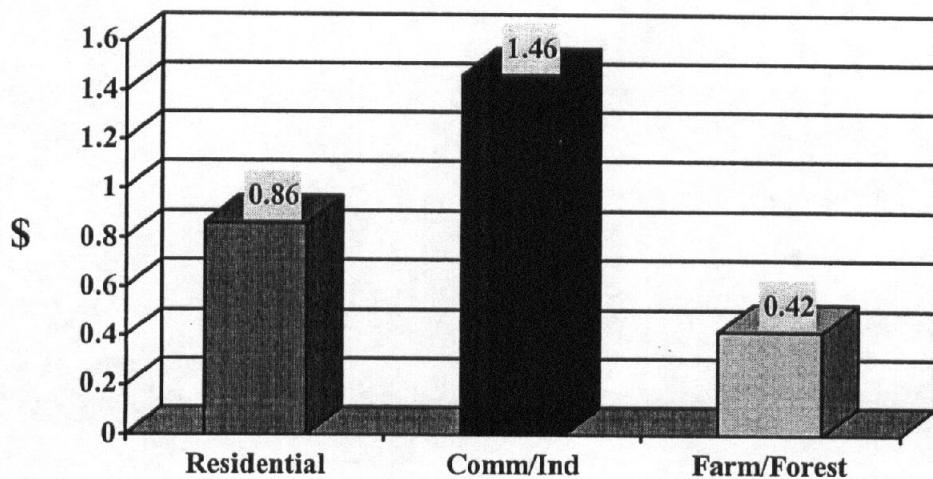
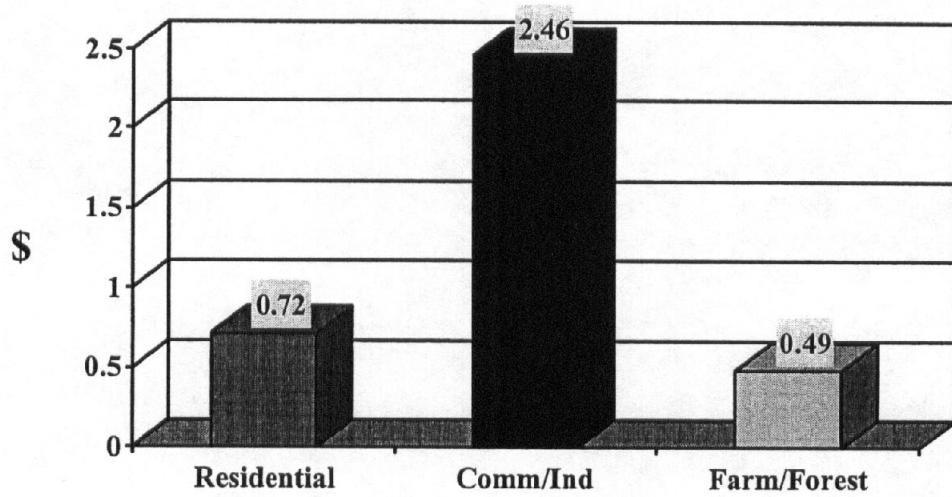


Figure 2.

**Revenues per \$1 of Expenditures by Land Use
(County Government Plus Schools)**

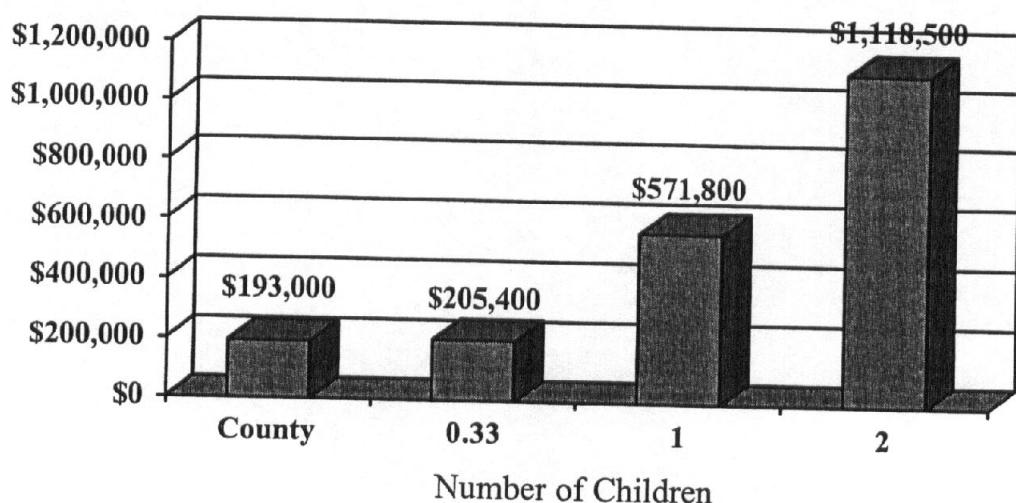


residential sources other than property tax from houses. Then, one can use the county millage rate and homestead exemption to find the home value where revenue will exactly equal service cost; we call this the break-even home value. For schools, the average per pupil cost from local tax money is computed (state and federal money is excluded) and then the school millage rate and exemptions allow the computation of a break-even home value needed to generate sufficient local revenue to cover the locally-generated expenditures for whatever number of children per household is expected or is being modeled. Figure 3 shows the breakeven home value for Athens-Clarke County to be \$193,000 (the average appraised home value in 2004 is about \$114,000, \$121,000 if manufactured housing is excluded).

While the county government breaks-even on a \$193,000 house, they are just one government entity in the county. From the county school system perspective, the results are quite different. If a home contains just one child attending the public county schools, the break-even home value is \$571,800 from the point of view of the schools' budget. Thus, the county government will be earning a fiscal surplus off a house with a single child long before the schools. With two kids in school, the break-even home price increases to \$1,118,500. Census data suggests that a home in Athens-Clarke County is likely to have about one-third of a child of public school age. The break-even value for homes from the school system point of view using this average of 0.33 pupils per household is \$205,400. This is above the average value of new houses being constructed in Athens-Clarke County (approximately \$145,000 in 2005). Thus, in most cases public education of children must be subsidized by taxes paid from other land use classes along with school taxes paid by homeowners without children in the public school system.

The main insight from these numbers is that school expenses are the main service burden from residential development. Yet, with no direct control over growth and land use policies, schools are required by law to accept all children who move into their jurisdictions.

Figure 3. Athens-Clarke County Breakeven Home Values



*All values to the nearest \$100. Values do not account for dedicated capital fund revenues and expenditures.

How Much Does Farm Preservation Cost?

There has been an ongoing debate over the equity of state and local government programs that provide tax relief for farm and forestland. These programs provide tax relief by assessing the land at its "current use" in place of its "highest and best use." In return, landowners must agree to keep the land in its current use for 10 years or be subject to financial penalties. These programs help to slow development and preserve farm/forestland and green space. In Georgia, agricultural lands are eligible for enrollment in the Conservation Use Valuation Assessment (CUVA) or the Agricultural Preferential (AG PREF) program to receive these tax incentives.

A major underlying question, however, is: How much of a tax burden is shifted to homeowners to make up for this loss in revenue? This question can be answered in Athens-Clarke County by empirical investigation of the tax digest and the results of the COCS. Table 2 below was compiled from the Athens-Clarke County Tax Digest Consolidated Summaries and shows the loss in revenue for Athens-Clarke County as a result of the CUVA program (Athens-Clarke has no land under the agricultural preferential assessment).

Table 2. Lost Revenue in Athens-Clarke County from Conservation Use Assessment

Government Program	Parcel Count	Value Eliminated	State Tax Loss	County Tax Loss	School Tax Loss	Total Tax Loss
CUVA	200	\$12,895,993	\$3,224	\$172,806	\$251,472	\$427,502

To compute the impact of the conservation use tax programs, the reduction in the tax digest (the sum total of property value in the county) due to conservation use assessment is added back into the tax digest. This yields a hypothetical tax digest as if this program did not exist. Then a millage rate is computed to produce the same revenue as collected currently by the local government and school combined. This produces a slightly lower millage rate that property owners would pay if these tax incentive programs for farms did not exist. The difference between this lower, hypothetical rate and the actual millage rate (0.5 mills) allows computation of the fiscal impact of these tax programs for any specified property value. Table 3 shows the amount of additional property tax (both county and school) a homeowner pays because of the existence of property tax benefits for agricultural landowners. The numbers are computed for various home prices and a standard homestead exemption. For example, the owner of a \$150,000 house pays an additional \$10.03 per year. These tax increases are quite small, particularly given the environmental amenities provided by these lands such as improved air and water quality. It seems likely that a majority of Athens-Clarke County taxpayers would consider this additional tax worthwhile in exchange for helping to preserve farmland in their county.

Table 3. Homeowner Tax Increases as a Result of Farmland Assessment Programs

House Value	\$75,000	\$100,000	\$150,000	\$200,000	\$300,000
Additional Tax	\$4.84	\$6.57	\$10.03	\$13.49	\$20.41

A Quick Look at The Costs of Affordable Housing

The results modeled in this study can also be used to estimate the cost of affordable housing programs, similar to the way farmland tax benefits have been evaluated. The need for more affordable housing is often discussed in Athens-Clarke County. Affordable housing by definition is lower in value so that its residents will not pay enough in taxes to cover their service costs. For any hypothetical amount and type of affordable housing an estimate of this shortfall can be made and the increment in taxes paid by other residents to cover this shortfall can be computed. As a simple example, we can model the case of 1000 new low-cost single family houses sold for \$100,000 each. These would be affordable to families making \$22,000 per year which would qualify them as affordable housing under standard government definitions. Athens-Clarke County would lose approximately \$500 per house per year on these new houses, or \$500,000 total in terms of service costs exceeding revenue from all sources. To raise the \$500,000, Athens-Clarke County would raise the property tax rate on all property owners. For the owner of a \$200,000 house, the additional tax would be \$5.77 per year. This is likely to be deemed a very reasonable cost to bear by the vast majority of Athens-Clarke County residents in exchange for the presence of 1000 new, good quality, affordable houses.

Implications for Governments and Land Use Planning

The main finding of this study is that residential development does not pay for its services directly in Athens-Clarke County. Residents pay on \$0.86 for every \$1.00 they receive in services from the county government; when schools are included the deficit grows bigger. The shortfall is recovered from businesses which pay in \$1.46 for every \$1.00 they receive back in services. Because businesses get their money from customers, the residents are paying indirectly (as a hidden tax in their local purchases) for that part of the services they do not pay for directly. Even though in Athens-Clarke County farmland also generates a fiscal shortfall for the county government, the value is much smaller on a per acre basis. Thus, the conversion of farmland to houses will worsen the financial condition of the county government somewhat if the new homes have an average value below break-even value of \$193,000. Currently, new homes built in Clarke County are averaging about \$145,000 in value.

On a per acre basis, residential development averages a \$400/acre shortfall, commercial/industrial land averages an \$898/acre surplus, and farm and forest lands average a \$72/acre deficit. Placed on this metric, one can see how converting farmland to houses creates a negative fiscal impact. These figures also imply that Athens-Clarke County would need an acre of new commercial/industrial development for every three acres of new residential development to hold tax rates constant. This seems an unlikely figure to achieve, suggesting that future residential development is likely to cause an increase in taxes for all existing residents and businesses.

The findings of COCS studies should be carefully evaluated. COCS studies should not be used to promote one land use type over another without a careful and full understanding of their limitations. They use average revenues and expenditures and may not reflect the costs and revenue of a particular development project. For example, denser residential development, multifamily development, and residences closer to the city center are all likely to have a smaller fiscal shortfall or even a surplus for the county government. The key finding is that communities must ensure that their development is balanced with enough commercial and industrial development to "support" residential development that does not generate enough local government revenues to cover the expenditures it requires.

References

American Farmland Trust (1992). *Does Farmland Protection Pay? The Cost of Community Services in Three Massachusetts Towns*. The Massachusetts Department of Food and Agriculture.

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

Appendix - Results From Other Studies in Georgia

Figure A1.

Revenues per \$1 in Expenditures by Land Use (County Government Only)

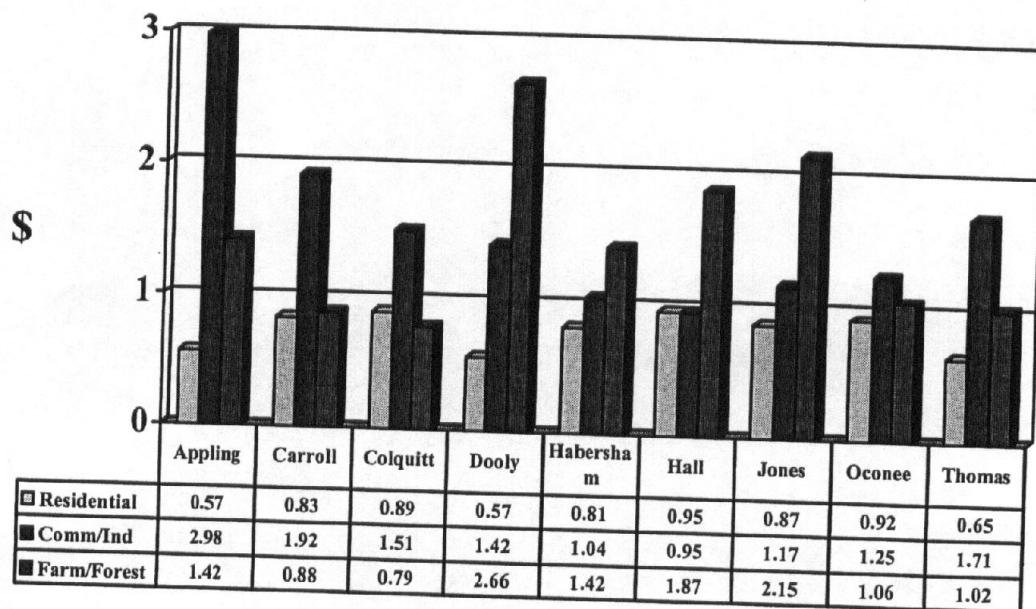


Figure A2.

Revenues per \$1 in Expenditures by Land Use (County Government Plus Schools)

