Cost of Community Services Studies:

Making the Case for Conservation

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BY JULIA FREEDGOOD

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Natural Resources Conservation Service

American Farmland Trust

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NETWORK

American Farmland Trust (AFT) is a nonprofit conservation organization founded in 1980 to protect our nation's strategic agricultural resources. AFT works to stop the loss of productive farmland and to promote farming practices that lead to a healthy environment. AFT provides a variety of services to landowners, land trusts, public officials, planners, agricultural agencies and others. Services include workshops on estate planning and farmland protection, cost of community services studies, farmland protection program development and agricultural economic analysis.

AFT's *Farmland Information Center* is a clearinghouse for information about farmland protection and stewardship. The FIC is supported by a cooperative agreement between AFT, USDA's Natural Resources Conservation Service and the members of AFT.

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Acknowledgments

First I'd like to thank the reviewers who challenged assumptions, deepened my understanding of growth and development issues and offered concrete suggestions on how to improve the text: Nelson Bills from Cornell University, Larry Libby from Ohio State University, Charles Barnard, Ralph Heimlich and Cynthia Nickerson from the Economic Research Service and Virginia (Ginger) Murphy from the Natural Resources Conservation Service. Their substantial contributions greatly improved this report.

Thanks to the people on American Farmland Trust staff who contributed to the many stages of this report. In particular, my deepest gratitude goes to Doris Mittasch for her editorial assistance and persistent attention to detail every step of the way, Geraldine Brockwell for an excellent job designing the final report, and to Don Buckloh and Jesse Robertson-Dubois for their vigilant fact checking and statistical references. Thanks also to regional staff Mary Heinricht, Don Stuart and Bob Wagner for their help understanding what issues matter most to people in the field, and to Betsy Garside, Jill Schwartz and Chris Soto for their generous suggestions about how to improve the text and make it more compelling to the general public.

Special thanks go to USDA's Natural Resources Conservation Service, Smart Growth Network and the members of American Farmland Trust for their support of this project.

Julia Freedgood

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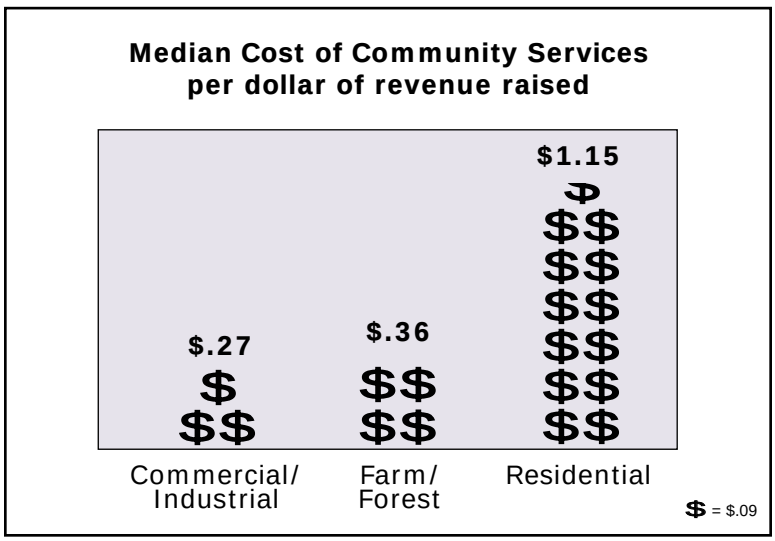
Executive Summary

83 COCS studies conducted in 19 states found that revenues from farm, ranch and forest landowners more than covered the public costs these lands incur.

Cost of Community Services (COCS) studies are a case study approach used to determine a community's public service costs versus revenues based on current land use. A subset of the much larger field of fiscal analysis, COCS studies have emerged as an inexpensive and reliable tool to measure the direct fiscal relationships between existing land uses. Their particular niche is to evaluate the overall contribution of agricultural and other open lands on equal ground with residential, commercial and industrial development.

As of January 2002, 83 COCS studies conducted in 19 states found that tax and other revenues collected from farm, ranch and forest landowners more than covered the public service costs these lands incur. Like traditional fiscal impact analyses, COCS studies show that on average, residential development generates significant tax revenue but requires costly public services that typically are subsidized by revenues from commercial and industrial land uses. The special contribution of COCS studies is that they 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.



COCS studies investigate current land use relationships based on tax and other revenues and public expenditures in a single fiscal period. They are fiscal, not economic, analyses and so do not examine economic benefits or secondary impacts of a given land use to the local or regional economy. For instance, new residential development brings with it new construction jobs, or agricultural businesses generate economic activity directly through the sale of farm products and indirectly through agribusiness sales and services. COCS studies do not analyze these impacts. Other types of studies can provide this information and are an important complement to COCS findings.

American Farmland Trust (AFT) became interested in growth-related issues because agricultural land is converted to development more commonly than any other type of land. According to USDA's National Resources Inventory (NRI), from 1992 to 1997 more than 11 million acres were converted to developed use—and more than half of that conversion was agricultural land. During that period, on average, more than 1 million acres of farmland were developed each year. The NRI also shows that the best agricultural soils are being developed faster, and the rate of conversion is increasing: up 51 percent from the rate reported in the previous decade.

AFT developed the COCS approach to investigate three common claims staff often heard at community meetings:

1. Open lands—including working agricultural and forest lands—are an interim land use that should be developed to their "highest and best use";

2. Agricultural land gets an "unfair" tax break when it is assessed at its actual use value for farming or ranching instead of at its potential use value for development;

3. Residential development will lower property taxes by increasing the tax base.

This report is the culmination of 15 years of COCS research by AFT staff, academic researchers, Extension economists, planners, researchers from private organizations and public agencies, consultants and others. It describes what COCS studies are and how they are performed. It reports how communities have used the results,

Photo by Lynn Betts, USDA NRCS

AFT became interested in growth-related issues because agricultural land is converted to development more commonly than any other type of land.

and evaluates the COCS approach in context with other fiscal impact methodologies. Finally, the report shares lessons learned on how to capture each community's unique budgetary situation accurately and objectively.

To highlight how communities have used COCS studies, the report includes the results of a survey conducted by AFT and the Southern New England Forestry Consortium (SNEFC). Responses suggest that the approach is most useful to places undergoing transition, especially those experiencing persistent development pressure. This is often when critical policy decisions are being made. Responses also suggest that COCS studies help communities achieve specific goals, have a long shelf life and contribute to a shift in awareness or public opinion in regard to valuing farmland, forest land and open space.

Land is being developed at twice the rate of population growth.

U.S. Department of Housing and Urban Development

For more than 50 years, successful public policies encouraging home ownership, highway construction and suburban expansion have led to accelerating development of rural land. And while the U.S. population is growing, the increased consumption of agricultural land is not a response to the needs of a burgeoning population, but the result of overall economic prosperity, a weak farm economy and little or poor community planning—especially in rural areas. According to the U.S. Department of Housing and Urban Development, land is being developed at twice the rate of population growth. And according to USDA's Economic Research Service, most of this is large-lot development—since 1994, lots of 10 or more acres accounted for 55 percent of the growth in housing and occurred primarily in non-metropolitan areas.

People living in these communities pay the price for unmanaged development: increased property taxes, expensive infrastructure, budgetary shortfalls, not to mention the environmental, public health and safety costs of automobiles. Recently, local citizens and leaders at all levels of government have begun to make the connection between urban "sprawl" and its unintended fiscal consequences. COCS findings are an increasingly popular way to inform community debates about how and where to grow, and whether to invest public dollars to protect agricultural land and open space.

COCS findings have been used to bring agriculture to the table in local planning decisions, to support farmland protection programs and to inform the smart growth debate by demonstrating the relative fiscal importance of privately owned working lands. Results are presented in a way that community members can understand and use. And while COCS studies are not a one-stop-shop for fiscal and economic analysis, what they do, they do well—and no other methodologies accomplish the same thing.

"I've always had this dream of buying a little farm and then selling it off piece by piece."

Introduction

Saving land saves money. While community residents demand expensive public services and infrastructure, privately owned working lands enhance community character and quality of life without requiring significant public expenditures. Their fiscal contributions typically are overlooked, but like other commercial and industrial land uses, farm, ranch and forest lands generate surplus revenues that help balance community budgets. This is an important lesson learned from 15 years of Cost of Community Services (COCS) studies. Understanding the balance of land uses and their fiscal relationships can help citizens and community leaders improve the dialogue about planning for future growth, economic development, agriculture and conservation.

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COCS studies measure the direct fiscal relationships between existing land uses.

COCS studies are a case study approach used to determine an individual community's public service costs versus revenues based on current land use. Their purpose is to uncover the fiscal contribution of working and open lands so they may be duly considered in the planning process. A recent and relatively narrow approach to fiscal analysis, COCS studies explore existing land use relationships. Their particular niche is to evaluate the overall contribution of agricultural and other open lands on equal ground with developed land uses.

Good planning involves outlining when, where and how residential, commercial and industrial development will occur. It also involves identifying land for recreation, agriculture, forest, flood control, wetlands, wildlife habitat or other conservation purposes. To make good decisions, local citizens and their leaders must know what they want to do and how much it will cost. COCS studies help inform

people of the relationship between how land is being used and the associated fiscal costs.

American Farmland Trust (AFT) became interested in growth-related issues in the 1980s because agricultural land is converted to development more commonly than any other type of land. According to USDA's National Resources Inventory (NRI), from 1992 to 1997 more than 11 million acres were converted to developed use—and more than half of that conversion was agricultural land.* Farmland is desirable for building because it tends to be flat, well drained and has few physical limitations for development. It also is more affordable to developers than to farmers and ranchers. Every year since 1992, more than 1 million agricultural acres were developed, and the rate is increasing—up 51 percent from the rate reported during 1982-1992. At the same time, 29 percent more agricultural land was developed than forest land, which was the second most frequently converted land use.[1]

Farmland is desirable for building because it tends to be flat, well drained and has few physical limitations for development.

In 1986, AFT conducted a fiscal impact analysis called *Density Related Public Costs.* The study's researchers wanted to measure the public service costs to agricultural land, which fiscal impact analysis does not address. When they discovered a study of Clarke County, Virginia, conducted by the Piedmont Environmental Council (PEC)[2] that examined the fiscal impacts of three basic land use categories including farmland/open space, AFT adapted the methodology for a brief analysis at the end of the report. AFT expanded on the approach in a subsequent study of Hebron, Connecticut, which was well received. During the next two years, AFT teamed up with Cornell Cooperative Extension to replicate the study in Dutchess County, New York, and the Massachusetts Department of Food and Agriculture hired AFT to conduct three studies in the state's agricultural Pioneer Valley.

Photo courtesy of USDA NRCS

* The NRI definition of agricultural land includes crop, pasture, range and Conservation Reserve Program (CRP) land.

Interested in applying the approach in other regions, AFT asked several agricultural economists and academic planners to review these studies to help strengthen the methodology. Since then, COCS has gained stature and national acceptance. In 1992, the Pioneer Valley study won regional and national merit awards from the Soil and Water Conservation Society, and in 1999 a study of five townships in Monmouth County, New Jersey, was awarded a local "Open Space Planning Award" from a county board of commissioners.

"If land is being consumed at a faster rate than population growth, then a metropolitan area can be characterized as 'sprawling'."

Brookings Institute

AFT originally used COCS studies to investigate three commonly held claims staff often encountered at community meetings:

1. Open lands—including working agricultural and forest lands—are an interim land use that should be developed to their "highest and best use";
2. Agricultural land gets an "unfair" tax break when it is assessed at its actual use value for farming or ranching instead of at its potential use value for development;
3. Residential development will lower property taxes by increasing the tax base.

Photo by Lynn Betts, USDA NRCS

Today, people also use the studies to add substance to policy debates about growth and land conservation. COCS findings have been used to bring agriculture to the table in local planning decisions, to support farmland protection programs and to inform the smart growth debate by demonstrating the relative fiscal importance of privately owned working lands. This report examines COCS studies as a community-planning tool and as a way to assess the fiscal impacts of agricultural and other privately owned and managed open lands.

Growth and Conservation: Challenges for the New Millennium

Since World War II, American public policy has supported development patterns that have converted the working landscape to urban and suburban use with little accommodation for the social or environmental consequences. One result has been the unnecessary consumption of agricultural land. Others include scattered development, fragmented open space and dependency on automobiles.

This pattern commonly is described as urban sprawl, "dispersed development outside of compact urban and village centers along highways and in rural countryside."[3] The Brookings Institute characterizes sprawl in terms of land resources consumed to accommodate new urbanization. In its 2001 report, *Who Sprawls Most?*, sprawl is described in the following terms: "If land is being consumed at a faster rate than population growth, then a metropolitan area can be characterized as 'sprawling'." However, the report also points out that, "Sprawl is an elusive term. To paraphrase the United States Supreme Court's long-ago ruling on pornography, most people can't define sprawl—but they know it when they see it."[4] While the term may be elusive and lack an academic definition, characterizations of sprawl have common elements.[5] These include:

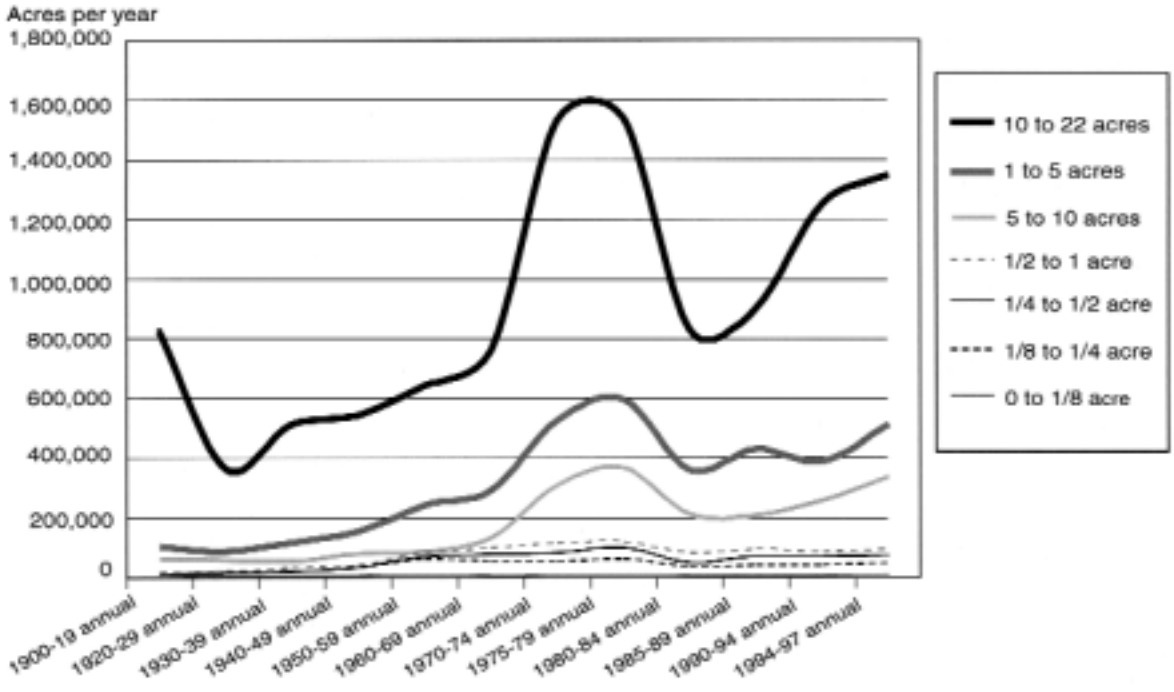
- Scattered, low-density development that uses a lot of land;
- Geographic separation of essential places, such as home, work and shopping; and
- Dependency on automobiles.[6]

Due to immigration and higher life expectancy, the U.S. population is growing at about 1 percent a year. According to the U.S. Census Bureau, from 1950 to 1990 the population increased from 150 to 250 million people and is expected to grow by another 150 million people in the next 50 years.[7] However, the conversion of agricultural land to sprawling development is not a response to the needs of a burgeoning population, but the result of economic prosperity, a weak farm economy and little or poor community planning—especially in rural areas.

The loss of agricultural land to sprawl is not a response to a burgeoning population, but to economic prosperity, a weak farm economy and little or poor community planning.

According to a 2000 report by the U.S. Department of Housing and Urban Development (HUD), land in the United States is being consumed at twice the rate of population growth.[8] The Economic Research Service's (ERS) 2001 *Development at the Urban Fringe and Beyond* documented that "most of the land being developed for housing is not urban, as defined by Census, but occurs beyond the urban fringe in largely rural areas."[9] Most of this is very large-lot housing development: lots of 10 or more acres accounted for 55 percent of the growth in housing since 1994. According to this report, since 1970 the growth of large-lot development can be tied to periods of prosperity and recession. Overall, most of the growth occurred in the largest lot size category (10-22 acres), but only 5 percent of the acreage used by houses between 1994 and 1997 was associated with existing farms. "Nearly 80 percent of the acreage used for recently constructed housing … is land outside urban areas or in non-metropolitan areas. Almost

Annual additions to housing area, by lot size, 1900-97



Source: Heimlich and Anderson, ERS, 2001

all of this land (94 percent) is in lots of 1 acre or larger, with 57 percent on lots of 10 acres or larger."[10] A close look at the NRI shows that in the process, America's best agricultural land is being developed fastest.

Beyond this inadvertent squandering of some of the world's most important agricultural resources, people are paying the price for sprawling development patterns: increased property taxes, expensive infrastructure and budgetary shortfalls. Beyond the monetary costs, they lose open space and cherished landscapes, community heritage and character, wetlands, water quality, wildlife habitat and fresh food and other agricultural products that once were grown on local farms and ranches. Automobile use associated with sprawl exacts a societal toll on public health and safety and environmental quality.

Recently, local citizens and leaders at all levels of government have begun to make the connection between sprawl and its unintended social consequences. COCS studies have been an increasingly popular tool used to inform community debates about how and where to grow, and whether to invest public dollars to protect agricultural land and open space.

According to The Trust for Public Land, between 1998 and 2001, voters approved 529 referenda to fund nearly $20 billion of open space protection.[11] The National Governors Association's position on Better Land Use Policy, states "Public officials at the state and local levels are becoming increasingly aware of the impact that public expenditures can have on growth and the need for a more balanced approach to providing financial support for development."[12]

Agricultural land conservation can help mitigate the tensions by directing development away from high-quality agricultural soils and ecologically sensitive areas. Recognizing this potential, the U.S. Conference of Mayors took a stand on sprawl by adopting a resolution "Promoting the Preservation of Urban-Influenced Farmland" at its 69th Annual Conference, June 2001: "Whereas, The U.S. Conference of Mayors recognizes that protecting important urban-influenced farmland through the purchase of conservation easements is a valuable smart growth tool, which can assist in creating a comprehensive smart growth plan."[13]

Protecting important urban-influenced farmland through the purchase of conservation easements is a valuable smart growth tool.

U.S. Conference of Mayors Resolution, June 2001

COCS studies find working lands more than pay for the services they receive—and typically make a contribution similar to commercial and industrial lands.

Suffolk County, New York, funded the first purchase of development rights (PDR) program (also known as purchase of agricultural conservation easements) in 1977. Twenty-five years later, 19 states and more than 40 localities have enacted PDR programs to protect agricultural land. Between 1996 and 2002, state spending to purchase agricultural conservation easements more than doubled from $635 million to $1.4 billion, local spending reached $600 million, and USDA invested $53 million to match state and local spending. The recent farm bill, called the Farm Security and Rural Investment Act of 2002, includes $597 million for farmland protection through 2007.

Since 1956, when the state of Maryland passed the first law of its kind, the most common tax incentive for agricultural land protection has been use assessment.* By the turn of the century, 49 states had programs that tax farm, forest and other designated lands at their actual, or "current use value," instead of their potential value at "highest and best use," and all 50 states had some kind of tax incentives to maintain the economic viability of agriculture and to protect agricultural land from unnecessary conversion to urban use. However, periodically these laws are challenged for giving agricultural landowners an unfair tax break. This is one of the main reasons AFT became interested in conducting COCS studies.

COCS Studies Help Inform the Debate

COCS studies can't take credit for the dramatic increase in state and local investment in land protection, or the public's willingness to pay for it through tax policies or PDR funding. But they do contribute to the knowledge base that supports these policy decisions. Like traditional fiscal impact analyses, COCS studies show that on average, existing residential development generates significant property tax revenue, but residents demand costly public services that must be subsidized by tax revenues from commercial and industrial land uses. The special contribution of COCS studies is the finding that working lands are also an important commercial land use that helps balance community budgets. They are more than just vacant land waiting around for development.

* Among other titles, use assessment laws also are known as differential use assessment, preferential assessment, current use assessment, current use valuation and farm use valuation.

As of January 2002, 83 COCS studies conducted in 19 states found that farm, ranch, forest and other open lands more than pay for the public services they receive—and that they typically make a contribution similar to that of commercial and industrial lands (see Appendix A). Since agricultural lands are, in fact, in commercial production, this should not be surprising. But because they are included in a larger land use sector of "undeveloped" lands, COCS studies' particular contribution to the literature is to show that working and open lands augment "developed" commercial and industrial uses. In many cases, without them the commercial/industrial sector would be unable to balance the community's budget.

Without working and open lands, commercial/ industrial land uses often would be unable to balance the community's budget.

COCS findings also have shown that agricultural land pays for itself even when it is enrolled in use assessment tax programs. This has helped defend those programs from individuals and associations who call them unfair. Even at a reduced tax rate, the minimal demands of open lands for public services are more than offset by their property tax contribution. For the same reasons, COCS findings also suggest that protecting land with PDR is a sound public investment, especially if compared with public spending on infrastructure to support scattered residential development patterns.

COCS studies have emerged as an inexpensive and reliable tool to measure the fiscal relationships between existing land uses. A small subset of a much larger field of fiscal impact analysis, COCS studies have provided new insights on the value of agricultural and other undeveloped lands to the debate on how communities across the nation should grow.

About this Report

This report is the culmination of 15 years of COCS research by AFT staff, academic researchers, Extension economists, planners, researchers from private organizations and public agencies, consultants and others. It describes what COCS studies are and how they are performed, explores how communities have used them, evaluates the COCS approach in context with other fiscal impact methodologies and shares some lessons learned from AFT's experience trying to improve the methodology

to capture each community's unique budgetary situation accurately and objectively.

Chapter I explains what a COCS study is—and is not. It summarizes results of all known studies that AFT has either conducted or reviewed and that use AFT's basic methodology. Chapter II identifies reasons for doing a COCS study and discusses how communities have used them, based on the results of a 1999 survey completed by AFT and the Southern New England Forest Consortium. Communities that have been studied were surveyed to find out specifically how the studies were used, the length of their "shelf life" and community response.

Chapter III details the main steps in the COCS methodology, while chapter IV addresses some of the more complex considerations involved in conducting the research and makes some suggestions on how to overcome common obstacles in data collection and interviews. Chapter V evaluates COCS studies, taking into account their history and influence over time, and examines their strengths and weaknesses. Here COCS studies are placed in context with the larger body of fiscal impact literature, including suggestions for future research.

The conclusion discusses the importance of agriculture, the costs and consequences of sprawl, and what COCS studies can contribute to local land use decisions and to the dialogue about what constitutes smart growth.

American Farmland Trust

I. What Are COCS Studies?

COCS studies are a case study approach used to determine an individual community's public service costs versus revenues based on current land use. Researchers analyze existing budgets and land use conditions using data provided by local sources and reviewed by the community's financial officers to ensure accuracy. Publicly available financial reports, departmental records and budgets, and assessor's data are used to allocate revenues and expenditures to determine how different land uses affect the community's bottom line. Snapshots in time, they are neither speculative nor predictive.

COCS studies are best used in communities that rely heavily on property taxes to generate revenues. Revenues and expenditures from a recent fiscal period are distributed according to land use, and results are compared to provide a ratio that shows how much the community spent on public services for every $1 raised from a specific land use. Since they are based on real time and real dollars, the studies are easy for the public to understand.

Studies are more difficult to conduct in communities with a complex tax base or less reliance on property tax. Here researchers must collect more data and be extremely careful in determining how revenues were generated and whether any relationship exists between the type of funds and a specific land use. For example, an AFT study in two Michigan townships found that revenues for services were included in three distinct budgets. The townships budgeted for some services, such as fire, ambulance and township staff. Property owners in the townships paid a separate tax millage for regional and district services, such as schools, senior centers and libraries. And the county collected revenue for countywide services such as police, courts and roads.

COCS studies are fiscal, not economic, analyses and so do not examine direct economic benefits or secondary impacts of a given land use to the local or regional economy. For instance, new residential development brings with it new construction jobs, or agricultural businesses generate economic activity directly through the sale of farm

Photo by Tim McCabe, USDA NRCS

COCS studies are a case study approach used to determine a community's public service costs versus revenues based on current land use.

products and indirectly through agribusiness sales and services. Focusing on what is, rather than what might be, COCS studies do not analyze potential economic impacts. Thus, they do not provide a full picture of the costs and benefits of new urban growth or predict the future revenues from additional sales and services that could be generated by new development. Other types of studies can provide this information and are an important complement to COCS.

COCS studies are not intended to judge the value of one land use over another or compare one type of new development to another.

COCS studies are not intended to judge the value of one land use over another or compare one type of new development to another. Other fiscal impact studies can place a dollar value on new development, for example, by comparing the fiscal impacts of high and low housing densities. While this type of analysis plays an important role in land use decisions, COCS studies do not do this. The particular niche of a COCS study is to find out about existing land use relationships and to evaluate the contribution of agricultural and other open lands on equal ground with developed land uses.

Like other types of fiscal analysis, COCS studies do not account for a variety of nonmarket costs and benefits that are incurred when agricultural land is converted to urban development. These are important to consider, and are often mentioned in COCS studies, but are not quantified. They include negative externalities such as traffic congestion, pollution, loss of green space and community character. COCS studies show the existing fiscal relationship between land uses, fiscal impact analyses predict what may occur with different kinds of growth, and cost benefit analysis can help estimate non-market values that may be lost with new development. There are many kinds of analyses that can help communities make good decisions about how and where to grow, and all should be considered in the planning process.

COCS Studies DO:

- Provide a baseline of information to help local officials and citizens make informed land use decisions.
- Offer the benefit of hindsight to see the effect of development patterns to date.
- Demonstrate the relative fiscal importance of privately owned land in agricultural, forest or other open space uses.
- Make similar assumptions about apportioning costs to agricultural land as to commercial/industrial land.
- Have a straightforward methodology and easy-to-understand findings.

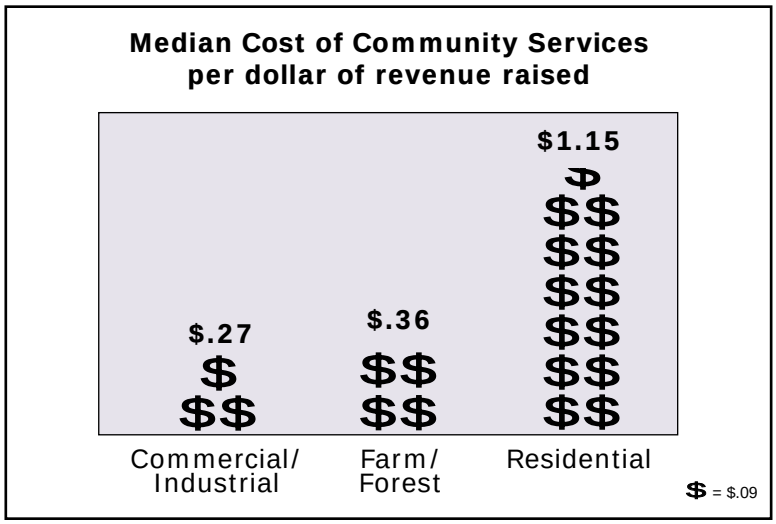
COCS Studies DO NOT:

- Project future costs of services incurred by new development.
- Analyze the costs associated with a specific development proposal or build-out scenario.
- Determine the direct or indirect value of a particular land use to the local or regional economy.
- Quantify the non-market costs and benefits that occur when agricultural land is converted to urban uses.
- Judge the intrinsic value of any particular land use.
- Compare the costs of different types of residential development.
- Treat agricultural and other working lands as residential development.

AFT's findings have been replicated in at least 60 studies conducted by academic researchers and others.

In the 83 studies done by AFT and others across the nation, the combined uses of farm, forest and open land always more than paid for themselves. For every dollar generated, working and open lands cost communities from $.02 in Carroll Township, Pennsylvania, to $.94 in Dover, New Hampshire, with a median of $.36. Similarly, for every dollar generated, commercial/industrial development cost from $.05 in Bedminster Township, Pennsylvania, to $1.04 in Perry, Wisconsin, with a median of $.27. Aggregated residential land uses never broke even. For every tax dollar received from the residential sector, communities spent from $1.01 in Groton, New Hampshire, to $2.11 in Stewardson Township, Pennsylvania, with a median of $1.15. Appendix A shows the findings to date and the source of all studies either conducted or reviewed by AFT that conform to the COCS methodology. It is interesting to note that as of December 2001, AFT only has conducted about 25 percent of these studies, yet the findings have been replicated in at least 60 studies conducted by academic researchers and others.

In virtually every study, the agricultural/open land sector combined with commercial/industrial land offset deficits created by residents' high demand for public services, particularly education, social services, public health and safety. Even departments servicing all land uses, such as highway, police and fire, usually spend the majority of their time and budgets serving residents. Most public infrastructure is needed to support residential development, as well. Therefore it is not surprising that COCS studies have found what a generation of fiscal impact studies already has



demonstrated clearly: that on average, residential development is expensive and relies on other land uses to balance municipal budgets.

Conversely, undeveloped land—in commercial agriculture, forestry or open space—does not require much in the way of public services. The people who work the land do—farmers, ranchers or foresters—but they are treated like other residents and attributed to the residential category, not to their place of employment.

AFT's COCS studies typically use the convention of the state's use assessment program to separate out the farm residence from the productive land. Generally, the language in these laws is quite precise. For example, in Kentucky, the statute states that **"***'Agricultural land'* **means any tract of land (including all income-producing improvements but excluding all residences) of at least 10 contiguous acres used for producing livestock, poultry, livestock and poultry products, tobacco growing, or other crops, including timber. …** *'Horticultural land'* **means any tract of land (including income-producing improvements but excluding all residences) of at least five contiguous acres in an area commercially used for cultivating a garden or orchard or raising fruits, nuts, vegetables, flowers, or ornamental plants."** Just as the public service demands of factory workers are not charged to the industrial sector, nor demands of doctors, lawyers, waitresses or shopkeepers charged to commercial, neither are the public service demands of farm families charged to the farmland they may or may not occupy.

COCS studies are case studies, and while their findings follow an overall pattern, each community is unique. Individual findings vary depending on numerous factors, including: geography, size of the budget, tax structure, amount of state aid and grants, value and density of residential development, amount of second home or retirement housing, and extent of public services provided to different land use sectors. Because data protocols and institutional arrangements for funding and providing public services are so different from state to state, COCS findings can be compared to discern an overall trend or pattern but should not be averaged to suggest a national cost of development or used as a proxy to predict future costs of new development in a specific community.

COCS studies are case studies, and while their findings follow an overall pattern, each community is unique.

II. How Communities Have Used COCS Studies

American Farmland Trust

To make good decisions, citizens and local leaders must know what they want and how they will pay for it.

Good planning involves outlining when, where and how residential, commercial and industrial development will occur, and whether, where and which land should be protected for agriculture or forestry, flood control, wildlife habitat, recreation and other purposes. To make good decisions, citizens and local leaders must know what they want and how they will pay for it. One of the most important first steps in the planning process is to understand how different land uses affect the community's fiscal stability. Over the years, AFT's COCS studies have received tremendous attention for doing just this. They inform communities of the relationship between how the land is used and the fiscal costs or benefits to the local government.

Communities conduct COCS studies for a variety of reasons. Often it is to support existing land protection programs or to develop new ones. Some communities are primarily interested in raising awareness about the benefits of protecting natural resources, while others have broader planning goals. Other major reasons are to compare the impacts of different land uses, to direct new development toward existing infrastructure or to supplement a comprehensive planning process. COCS studies are most valuable to communities that are concerned about farm and other open lands. The results of a 1999 survey conducted by AFT and the Southern New England Forestry Consortium (SNEFC) suggest that COCS studies are most useful to places undergoing transition, especially those experiencing persistent development pressure. This is often when critical policy decisions are being made.

What Communities Say about COCS

Having conducted nearly 20 studies between them, AFT and SNEFC teamed up to evaluate the usefulness of COCS studies to communities. Informal feedback from people in the communities where studies were conducted suggested that COCS studies raised awareness of the value of agricultural and other open lands and helped improve

the dialogue about local land use policies. To find out how often and to what extent, AFT and SNEFC collaborated on a survey of more than 50 communities where COCS studies had been conducted.

Fifty-five people from 16 states were interviewed by phone. They were asked where they had first heard of COCS studies and whether there had been specific issues or events that led to the decision to perform a study in their communities. They were asked about their goals and whether the study helped achieve them. They were asked how they had used the results, whether they were still using them and if the results were made available to the general public, as well as what the response had been. Finally, respondents were asked to give criticisms and make suggestions.

Although useful results were expected from the survey, the extent of the positive feedback was surprising and encouraging. The constructive criticism was helpful, as well, and generally showed participants' understanding of the COCS methodology and the complexity of the issues involved. Respondents said that the studies were effective, that findings have been used as educational tools for citizens and local officials and/or as part of a campaign to raise public awareness about conservation and/or growth, and in many cases respondents reported that the impact of studies resulted in direct action.

- 88 percent of respondents who had sought to achieve specific goals said the study helped accomplish them;
- 81 percent said they still used the findings, including results released more than 10 years earlier;
- 65 percent said that the study contributed to a shift in awareness or public opinion in regard to valuing farmland, forest land and open space; and
- 64 percent said that the study contributed to the development, revision or enactment of land use policies reflecting increased public investment in open space protection.

"It was one of the most empowering experiences I've ever been involved in."

Marty Rice, farmer and former city planner, about a COCS study of Frederick County, Maryland

Some of the policies or programs influenced include: purchase of development rights programs; transfer of development rights programs; comprehensive planning, including master plans that include agricultural protection; agricultural zoning; and use assessment tax programs.

In short, the findings from COCS studies helped these communities improve dialogue about land protection strategies, build support for farmland protection programs, improve local planning and zoning for agriculture, defend use assessment tax policies, motivate community leaders to fund strategic farmland mapping and more.

Some specific examples cited of the use of COCS studies include:

- Findings from a study of five townships in Monmouth County, New Jersey, helped build support for several local ballot initiatives approved by New Jersey voters in 1998 to support PDR and open space acquisitions; then-governor Christine Whitman referred to the Monmouth County study to encourage voters to approve the state's $1 billion Green Acres bond act, which also passed that year.[14]
- Using the results of a COCS study of Lexington-Fayette County, Kentucky, local land trusts built support for a county-level PDR program, which was adopted in 2000.[15]
- A 1997 study of Frederick County, Maryland, has been used to create interest in enhancing the county's PDR program and to develop new farmland protection programs. As one of the survey respondents said, COCS studies offer a fiscal "rationale for the protection of farmland and open space that is easily understood and not easily refuted." [16]

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III. COCS Methodology

Most COCS studies are conducted at the county, township or town level. However, if adequate data are available, COCS studies may be used to examine almost any level of government. Availability of data is crucial, so it is important to assess key community characteristics before deciding whether or not to do a COCS study.

It is helpful to have experienced analysts conduct the research and analyze results. A person with background in public administration, finance, economics or planning can deal with a variety of complex situations and knows that shortcuts lead to questionable findings. Township and county budgets and budget documents can be a bewildering thicket of information. Even an informed researcher can lose track of the relationship between the numbers and their fiscal relationship to local land uses.

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AFT collects and analyzes data in three basic steps refined over the years to address a variety of challenges that have arisen in the process of conducting replicable studies. The most difficult challenge is the high degree of variability in governmental and financial organization in different geographic regions. Completing a successful study in one state does not ensure success in another because institutional funding arrangements and provision of services, availability of computerized records, and financial protocols vary greatly from state to state. Based on lessons from past studies, AFT has learned to avoid pitfalls encountered in data collection and to ask local financial officers a series of questions before starting a study to determine whether or not the COCS methodology can be used.

Before AFT starts a COCS study, researchers must answer the following questions to decide if a study is feasible in a specific community and, if it can, to determine how much time and budget it will take to conduct the study.

TOP 10 Questions to Answer Before Starting a COCS Study

1. **What level of government collects and distributes the majority of taxes?**
2. **What level of government provides the majority of public services?**
3. **How much of the budget does real property tax revenue support?**
4. **What were the actual dollar amounts raised by each major source of revenue in the last budget year?**
5. **How are public services provided—both inside and outside of incorporated areas?**
6. **Are there any departments or special districts that operate separately from the general government?**
7. **If so, what are they and how many are there of each?**
8. **How much land is owned by state or federal governments, not including roads (e.g. parks, forest preserves, wildlife refuges)?**
9. **Do these public entities make payments in lieu of taxes?**
10. **What other limiting factors must analysts consider?**

Getting Started

Once the decision is made to conduct the study, but before starting the research, it is crucial to have the support of a high-ranking local official, such as a county supervisor or county manager. Although town and county budgets are publicly available, the accuracy of the studies depends on departmental data, the insights of department managers and financial officers, and other information that is controlled by community officials and staff. When local officials and budget managers are involved throughout the study, people believe the results, which makes them more likely to be publicized, used in key decisions and incorporated into the long-term planning process. It is not enough to have the support of a local advocacy group if community officials do not support the study.

It is crucial to have the support of a high-ranking local official, such as a county supervisor or county manager.

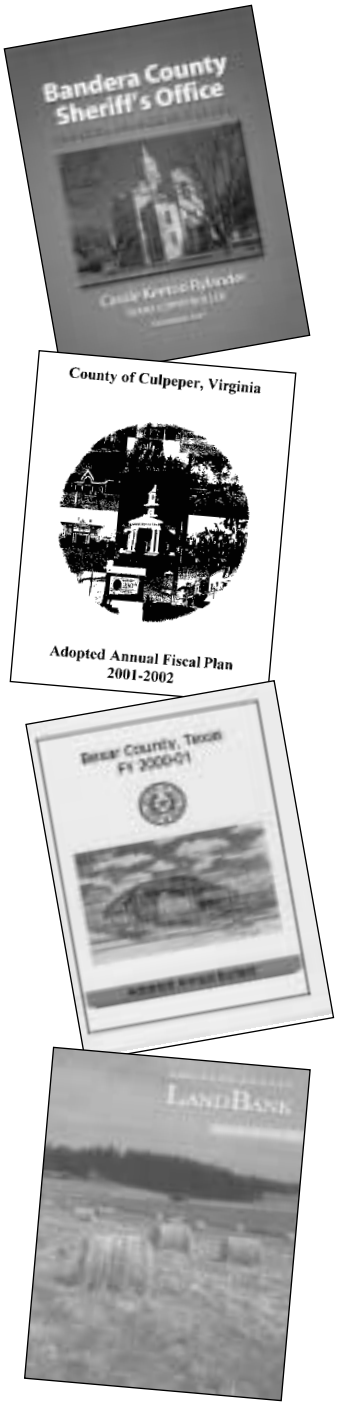
1) Gather and Organize Data

At the beginning of the data collecting stage, it is important to establish relationships with local administrators and department managers. If they are involved from the beginning, they will be more likely to provide crucial information. This will make gathering and organizing the data easier, as well as improving the acceptance of the results.

Because COCS is a case-study method, the value of the findings is in direct correlation to access to reliable data. While some financial records are available to the public, specific departmental budgets and records often are not—so financial officers and department heads must be willing to provide budgetary information, answer questions and offer insights to provide researchers with a truly accurate picture of revenues and expenditures in relation to land uses.

Three Basic Research Steps in a COCS Study

1. **Gather and organize data;**
2. **Allocate revenues and expenditures by land use category;**
3. **Analyze data and compute ratios.**



The following list outlines some of the most important financial data gathered to analyze revenues and expenditures:

- Annual Report;
- Municipal and/or county budgets;
- Audited financial statements;
- Property tax assessments or summaries;
- Applications for state aid; and
- Budgets for any special districts that fall within the study area.

All other revenues and expenditures associated with providing public services to local taxpayers must be examined and virtually all are included in the analysis (for possible exceptions, see chapter IV). In addition, demographic and census information can be useful, as well as any recent planning documents or maps, zoning by-laws, open space plans or blueprints for downtown revitalization, which provide community context.

It is challenging to interpret tax records to reflect COCS land use categories. The following standard land use definitions are adapted and refined based on state and local land use and tax definitions. For example, some communities have sufficient commercial and industrial activity to analyze each sector individually, while smaller and more rural communities often do not. In communities with a small amount of land owned by local government and buildings open to the public for passive recreation, these are included in farm/forest/open land category. However, if there is a sizeable amount of public land, it should be treated as a separate land use category since COCS studies are intended to examine the contribution of privately owned working lands.

Residential Development—All single- and multi-family residences and apartment buildings, including farmhouses, residences attached to other kinds of businesses and rental units; all town-owned property used for active recreation or social functions for local residents.

Commercial and Industrial Development—All privately owned buildings and land associated with business purposes, the manufacturing of goods or the provision of services, excluding agricultural and forestry industries, and utilities.

Farm, Forest and Open Land—All privately owned land and buildings associated with agricultural and forestry industries, including temporary housing for seasonal workers who are not permanent residents. Land that cannot be developed due to steep slopes and other limiting factors, and open lands typically in excess of five acres, including some municipal or county-owned parks and open space.

Although agriculture and forestry often are classified as commercial uses for tax purposes, typically they are buried in these categories, so COCS studies examine them separately. Because their tax revenues tend to be quite modest, working lands usually are ignored in analyses of the commercial/ industrial sector. Treating them as a distinct land use category improves the likelihood that they will be considered in local policy decisions.

Agriculture and forestry are commercial/industrial land uses, and COCS studies analyze their fiscal contributions accordingly.

USDA Photo, Dave Warren

USDA Photo

That said, agriculture and forestry *are* commercial/industrial land uses, and COCS studies analyze their fiscal contributions accordingly. For example, many people think that farm families are what make a farm a farm, not its commercial operation. But since COCS studies analyze the agricultural operation as a business, they separate the farm residence from agricultural, horticultural or forest acreage and building assessments, just as they would an apartment on top of a family-owned grocery or restaurant. AFT prefers to do this using the state's own tax assessment classifications. For example, in Utah, "the area of land devoted to agricultural use shall include all land under barns, sheds, silos, cribs, greenhouses, lakes, dams, ponds, streams, and irrigation ditches, but excludes land actively used in connection with the farmhouse."[17]

The farm residence and the full market value of the associated house lot (usually six acres) are added to the residential sector. Whether a farm family is actually living on the farm, or whether the farm is inhabited by a tenant, a retired parent, or is owned by someone who doesn't farm but just leases land for agriculture, tax revenues associated with the farmhouse are included with and analyzed as part of the residential land use sector.

Property taxes have the clearest relationship to land use of all the different types of taxes.

2) Allocate Revenues and Expenditures

Revenues

Most property tax revenues are recorded by land use, but other types of revenues typically are not. Once preliminary data have been gathered, interviews with department heads and local officials can give researchers a better understanding of what is included in specific budgets and how departments are related. Budget managers supply specific details on line items, how revenues were generated and how revenues break down according to land use. Activities with revenues from more than one land use require a thorough analysis of financial records to determine the appropriate breakdown.

Revenues typically are grouped into classes such as:

- Property taxes
- Local receipts
- Permits and fees
- Sales and/or income taxes
- Special districts
- State and/or federal aid
- Free cash and miscellaneous revenues

Property Tax Revenues

Once financial data have been gathered and organized, property taxes are allocated, and in most municipalities, they comprise the largest category of revenues. They also have the clearest relationship to land use of all the different types of taxes.

Because land use categories used in a COCS study specifically address agricultural and other open land uses, they tend to be somewhat different from typical state and local definitions. For example, in Massachusetts, land enrolled in the state's use assessment program is included with commercial properties and taxed at the commercial rate using agricultural value.[18] While agriculture is indeed a commercial use—some even consider it industrial—for the purposes of a COCS study, farmland is a key land use in the working and open land sector. So it is necessary to reallocate revenues to fit COCS land use categories.

Farmers, ranchers, foresters and their families are community residents, whether or not they live on the land that they work.

Some revenues are easy to allocate. For example, corporate revenue is commercial and revenue from single-family homes is residential. Farmers, ranchers, foresters and their families are community residents, whether or not they live on the land that they work. So property tax revenues from their homes and a large lot surrounding their homes are included in the residential category. Receipts from manufacturing, utilities, telecommunications and pipelines are industrial. Although they could be considered commercial, property taxes from grain and feed elevators, barns, silos, greenhouses and related farm properties are included with agricultural and open land. So are revenues from seasonal housing for farm employees. On the other hand, revenues from rented homes for permanent residents are allocated to the residential land use sector, even though these typically are classified as commercial for tax purposes.

Even within a single state, the tax categories may not be consistent from one town to another. Thus, local records must be matched with COCS land use definitions by transferring property values from the state tax classes to the local ones. Local assessors are familiar with the threshold acreages for different land use types and can help researchers locate information about specific parcels to make necessary determinations.

Mixed-use parcels can be difficult to allocate. If the value of different land uses can be determined, they can be broken out accordingly. Otherwise, they are attributed to the category of primary use. Most communities have computerized records that show lot size, number and type of buildings and so on. These are used to provide the detail necessary to distribute revenues.

Personal property tax also must be investigated carefully. For example, in Massachusetts, it is a tax on second homes and on equipment associated with the operation of a business, but in Illinois, it is a separate type of tax levied on cars, boats and other types of property. In Maryland, a small portion of personal property tax is paid by agriculture.

Other Revenues

Generally, the same type of analysis is used to allocate other revenues as is used for property taxes. Again, some categories are easy to determine. For example, state aid for education is allocated to residential. Building permit fees are distributed according to the type of land use indicated by permit files or in a summary report. The same approach is used for other types of permits and licenses, e.g., marriage licenses and cemetery fees are classified as residential.

Other revenues can be more difficult to allocate. For instance, income from a state lottery may be distributed in many ways. Some lottery funds are earmarked for special programs, while others are available for general use. Sometimes general funds are dispersed according to a formula. State money that comes into a municipal general fund usually cannot be attributed to a single land use category. Generally, it must be divided among the land use categories in the same way as the department that it funds. For example, in Wicomico County, Maryland, the residential sector benefits from 68 percent of detention center services, commercial/industrial from 29 percent and farm and open land 3 percent. State aid that went into the general fund for this purpose was apportioned to land uses in the same way.

Special taxes and tax districts are carefully considered. They may serve a limited population (a subset of the study area), and their fees may cover the costs of the service. In that case, they are omitted from the analysis and men-

tioned in a footnote. However, if a special district serves all residents and is paid for out of regular tax revenues, it is included. Or, if the community or county subsidizes the service, for example, by covering employee health benefits, the district would be included in the analysis.

Generally, properties owned by land trusts and other tax-exempt properties have a negligible impact on public services. However, if a significant number of properties (or one large property) are making payments in lieu of taxes, these must be reflected in the allocations. On the other hand, if they are not contributing revenues at all but require public services, this must be reflected in the allocations of expenditures.

While property tax revenues are tracked by land use categories, most government expenditures are not.

The tax-exempt situation is different in every municipality and needs to be carefully considered. If the community has a significant amount of tax exempt acreage, researchers should consider adding a fourth land use category. This would inform officials of the extent to which the other land uses are subsidizing these properties and transfer expenditures from the other land use categories to the tax-exempt category. In this case, careful consideration should be made prior to beginning a COCS study to decide how to account for this land.

Expenditures

While property tax revenues are tracked by land use categories, most government expenditures are not. Therefore interviews play an important role in determining the nature of public services provided and how they relate to businesses, residences and open land. The most challenging yet critical part of a COCS study is to allocate expenditures based on land use demand. As a rule, municipalities do not track public expenditures by land use. If they do, they usually consider agricultural, forest and open land either a subsidiary or interim use and do not report on it. As with revenues, some expenditures are straightforward—for example, education and most health and human services are residential, as are government expenses such as elections and voter registration. But building and zoning costs are based on the time involved in issuing permits and conducting inspections for each land use area.

More detailed analysis is required for fire and police department expenditures, which generally account for a large portion of public safety budgets. For example, fire department activities may include answering a variety of calls, inspecting smoke detectors, responding to highway emergencies, surveying industrial sprinkler systems and educating school children. These are all allocated to the appropriate land use category. The same type of breakdown is done for police department budgets. Working and open lands typically do not require much public safety protection.

Detailed analysis is required for fire and police department expenditures, which generally account for a large portion of public safety budgets.

General government expenses can be hard to allocate. Those for the tax collector and assessors are based on land use value, but others are trickier. To some extent, administrative and insurance costs apply to all land uses. If the expense cannot be tied to a specific land use, fallback percentages are used as a default figure to complete the analysis.

Of all expenses, those categorized as public works often are the most difficult to assign. This is especially true for highways. The number of curb miles provides useful information, but simply counting the number of miles and estimating how many went through each land use sector does not give an accurate picture of road use, since so many different users travel each roadway and often they are just passing through and have little relationship to community land use. A more detailed discussion of road use is included in chapter IV.

3) Analyze Data and Calculate Ratios

The final analytical step begins with data entry and entering formulas into a spreadsheet to make the necessary calculations to arrive at the ratios now so familiar to users of COCS studies. The dollar amount for each line item of the budget is allocated appropriately across the selected land use categories, and the logic behind them should be explained in an accompanying report. Data must be checked, rechecked—and rechecked again—for accuracy and consistency, and formulas are checked and rechecked to ensure that the columns and rows add up and all dollar amounts have been accounted for. Comparing total revenues to total expenditures in each category shows the net public service cost (surplus or deficit) generated by each land use. This information in ratio form shows the cost for every dollar raised by each land use.

To help ensure accuracy, when AFT performs a COCS study, staff ask local administrators and budget managers who have supplied important data to review their preliminary findings. Any data input errors are corrected and any significant comments about interpretation of that data are incorporated into the final analysis.

When AFT completes a study, staff generally write a final report or brochure and present the findings to local sponsors, public officials and/or concerned citizens in public meetings. This is where the goals, assumptions, methodology, land use definitions and an explanation of any unusual factors can be spelled out. The support of the sponsors is as critical at this point as at any other. If major concerns or skepticism about the methodology or results are expressed, they can be addressed in this forum.

Photo by Tim McCabe, USDA NRCS

IV. Special Considerations

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AFT developed the COCS method in New England, where there is local tax authority and powerful town government.

COCS studies have been replicated widely. The pattern of their findings has been consistent and variations have been small, regardless of whether academic researchers, planners, consultants or citizen groups have conducted or commissioned the study.

The previous chapters have shown that COCS studies have been useful for raising public awareness of the fiscal importance of agricultural lands, adding information to the dialogue about growth and land protection, and building support for PDR and differential assessment programs. In addition, study results are supported by other types of fiscal analysis that show municipal per capita spending increases as open lands are converted to residential uses.

AFT developed the COCS method in New England, where there is local tax authority and powerful town government. It is most effective in communities where property taxes are a major revenue source. The method works well under this fiscal structure because property taxes have a relatively straightforward relationship to land uses. Studies are more challenging where taxes are not as tied to land use and where there are complex layers of government and public services.

In Michigan, for example, a multitude of countywide services makes it difficult to determine the portion received by an individual town. Although it is possible to account for the cost of these services, it is not possible to know if the town actually receives the proportion of services for which it pays. In this situation land use percentages can be calculated countywide and used as a fallback for each town.

Communities with a Hierarchy of Services

Sometimes a hierarchy of community, district and county offices combined provide public services. Here the portion of revenue from individual properties must be determined for each level of government as property owners may receive one tax bill for township services, a second for education and a third for county services. Generally, it is fairly straightforward to allocate property tax revenues

to land use by multiplying the total assessed value of the properties in a land use category by the tax rate for each service.

Expenditures are more complicated. Allocating expenditures is especially difficult when studying services to a small area, such as a town or township within a county service structure. For example, in Pennsylvania, services provided by one county included: property assessments, courts, elections, planning, parks and recreation, prisons, sheriff, and voter registration. The revenue to pay for these county services comes from a variety of sources in addition to property taxes, such as state revenue sharing, fees for services and grants.

The COCS method was developed to evaluate privately owned lands on the tax rolls.

A further complication is that county departments often do not track expenditures by township or other geographic area. Only some will be able to track their efforts by location. For example, the county planning department may be able to determine how much of its budget was spent in a specific community, while the county court would not keep track of court cases by the address of the participants in a trial. In this case, if a county department does not work in every town or township in every given year, it is assumed that on average, over all departments and over a number of years, the community will require the amount of services that it pays for through property taxes. So the amount used as revenue for county services would be the cost of providing those services.

Public Lands

The COCS method was developed to evaluate privately owned lands on the tax rolls. Although a study can be done in communities with an abundance of publicly owned land, other methods should be considered or modifications made to the basic approach.

If local, state or federal governments own a small percentage of land and make payments in lieu of taxes, the COCS methodology can account for these. If there is no revenue from such properties and no services are provided to them, they can be left out. But if there are revenues, expenditures, or both, they must be accounted for, and this can be tricky if the government entity does not pay its fees or provide for land management. If public and private


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lands are commingled in the analysis, the findings for private lands may be distorted.

When public lands are included, it is advisable to create a separate land use category to evaluate them. A New Hampshire Wildlife Federation study in Groton, New Hampshire, divided open space into two categories: private land enrolled in the state's use-assessment program and state-owned land. They found that while the private lands more than paid for themselves, the amount the state was paying the town in lieu of taxes was insufficient to cover services to state-owned properties. In this case, the public land was, in fact, a significant financial drain.

Differences in land use categories make the findings hard to compare except in very general ways.

Variations in Land Use Categories

The results of COCS studies are remarkably consistent, but there are many minor variations in the ratios because the method is based on case studies. While the pattern holds up overall, the uniqueness of tax structures and communities' decisions results in variations from one community or state to another. Findings must not be averaged to make predictions about new development costs in a given state, nor should generalizations be made from one state to another.

Differences in land use categories make the findings hard to compare except in very general ways. Land use definitions vary greatly from one part of the country to another, due to significant variations in terrain and traditional land uses. Since each state has different definitions and criteria for open space and agriculture, it is important to use a clear rationale to draw this line. While some tax codes are very clear about land use definitions, others are more complex. AFT typically uses state criteria developed to classify land in use assessment programs, and local assessors know the thresholds for residential land versus open space. For example, in Massachusetts a house on five

acres or less is classified under the residential category, but in Colorado a house can have up to 35 acres and still be counted as a residential use.

One possible reason for variations in ratios between jurisdictions within one state is that properties are reassessed periodically. It may make a difference where they are in the cycle. For instance, if it has been a while since the last assessment, land whose value appreciates more rapidly will be assessed at a lower value, while undeveloped land may remain more constant.

AFT typically uses state criteria to classify agricultural land, and local assessors know the thresholds for residential land versus open space.

Fallback Percentages

Allocating revenues or expenditures that do not have a clear relationship to land use is the most problematic aspect of COCS studies. In some cases, a "fallback" percentage must be used to divide parts of the budget that cannot be distributed in a more precise way. Typically, it is derived from the percentage of revenues raised by a land use and generally used to allocate unclear expenditures, particularly administrative costs. Only rarely is it used to distribute small amounts of revenue that cannot be distributed another way.

No proxy is ideal in any kind of research, and neither is the fallback method used in COCS studies. Because it essentially washes out revenues and expenditures, it is used as a way to show the full budget without making a decision about how to attribute costs that are not readily tied to land use. Where there are many separate county services, it may be better to find another proxy than property tax figures. For example, the budgets of the Assessor and Tax Collector may be divided using the percentage of total parcels in each land use category to reflect the departments' workload. This approach makes sense in communities where the tax contribution is significantly reduced by special assessment. The use of a fallback is thornier when applied to revenues, and as a rule, AFT discourages the use of fallbacks except when there are no other alternatives.

Roads

Local road and highway costs are one of the hardest things to allocate by land use. There are so many different users of each road that it is very challenging to determine what percentage originates from commercial/industrial, residential, or farm, forest and open space lands.

Different methods can be used to obtain reliable information. For example, in Middleborough, Massachusetts, street listings and road inventory files were obtained from the Massachusetts Highway Department Bureau of Transportation Planning and Development. The road inventory file contained information about each road in town, including the administrative or maintenance responsibility (Mass. Highway Dept. or the town), the Federal-Aid Urban/Rural Designation (Urban City, Urban Town and Rural Town), the functional classification (local, rural principal arterial, rural major collector and rural minor collector) and the length of each classified segment.

Information from the road inventory was used to group roads in town by one of three types:

- Residential only (subdivisions and a residential portion of the downtown grid);
- Rural roads that primarily serve residential and farmland/open space properties outside of the downtown area; and
- Downtown streets that serve business and residential traffic.

Only town-maintained roads were included in the analysis. Streets used exclusively for residential purposes comprised 15 percent of the total, rural roads accounted for 79 percent and downtown streets covered 7 percent.

The town planner and the highway department supervisor provided information to determine the proportional use of the three defined road types. Exclusively residential streets were allocated to the residential land use category. Streets in the downtown area were determined to be approximately 67 percent residential and 33 percent commercial use. Rural roads were determined to be 80 percent residential, 5 percent commercial, and 15 percent farm, forest and open space. In this way, the mileage of each road type could be divided into the three categories. In a case where more specific data are not available, highway expenditures could be split between the fallback and a percentage based on the numbers of motor vehicle licenses issued by residential, commercial and agricultural classes.

Grants must be dealt with on a case-by-case basis and carefully evaluated.

Grants

Grants are significant when allocating revenues and expenditures because they fund many programs and services. To allocate them properly, it is important to find out why the grant was obtained and specifically what it pays for. However, because grants generally are not spent in the same fiscal year they are received, they do not always balance out. If the grant is for something or several things that fall under multiple land use categories, it may throw off the calculations. If it would be a wash over time, it can be left out of the analysis. Grants must be dealt with on a case-by-case basis and carefully evaluated to decide whether to include them or not. If they are not included, the rationale must be explained.

Courts

Court revenues and expenditures vary across the United States. In New England, where most COCS studies are done by township, courts are not included, as they are a county or state function. In other parts of the country, where county government is prevalent, researchers must account for court revenues and expenditures. A wide variety of courts exists, serving different functions and constituencies, such as land court, criminal court and divorce court. Court records can be quite complicated, and it is often difficult to determine with which type of land use a court case is most closely linked or even to which year it

should be allocated. The most useful method is to interview the most knowledgeable person within that court for the best estimate of what percentage of cases applies to which segments of the population. When the land use relationship cannot be determined, in the absence of any other information, fallback percentages must be used.

Agricultural Employees

One complication often encountered is how to deal with service costs for farm labor. If laborers are permanent employees and residents, they are included with the residential land use category, just like employees of other businesses. However, seasonal farm laborers, living in temporary quarters on or near a farm, are counted as farm and open space costs.

Enterprise Funds

Enterprise funds are separate budgets set up by some departments within a jurisdiction and are not part of the general budget. Generally, they are extremely small and can be left out. Sometimes water and/or sewer services are privately operated with enterprise funds, collecting fees directly from users. In this case, the revenues and expenditures are equal and the service can be excluded from the analysis. It is important to be sure this is actually the case, however, before making this exclusion.

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V. Evaluating COCS Studies

Fiscal impact literature spans a wide range of methodologies and approaches. Most studies are traditional fiscal impact analyses, which project the net cash flow of new development to local governments.[19] A typical fiscal impact analysis assesses the direct effects of several development scenarios and may also include indirect or secondary economic impacts. Ad Hoc Associates, a Vermont-based consulting firm, developed an interesting approach of examining the relationship of property taxes to socioeconomic land use indicators. COCS studies have gained recognition for their alternative approach to analyzing current fiscal conditions based on land uses that include agriculture and other working lands.

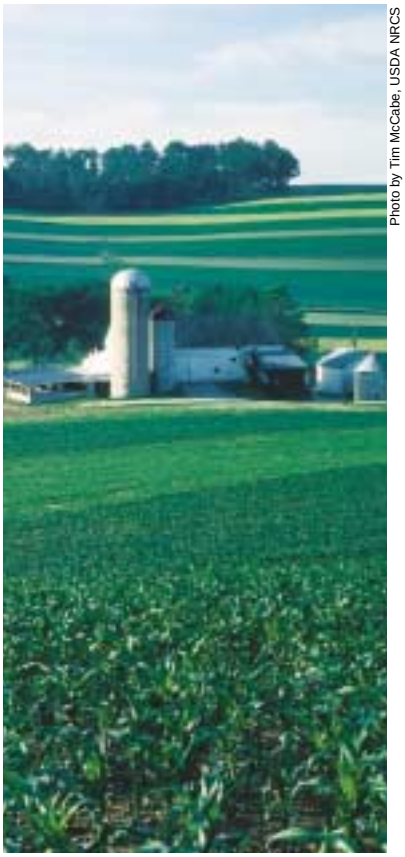


Photo by Tim McCabe, USDA NRCS

The findings of COCS studies are consistent with those of other types of fiscal analysis, which document the high municipal costs associated with residential development and the lower costs associated with commercial and industrial development. Their particular contribution is to show that working lands, even combined with "nonproductive" open space, have a similar fiscal impact to commercial and industrial uses. In this way, COCS study findings are consistent with those of tax base and a few fiscal impact studies that demonstrate the financial benefits of open space.

Comparison with Other Fiscal Analyses

Fiscal impact analysis is a far-reaching and well-developed approach. Studies generally fall into two basic categories: 1) theoretical analyses of area-wide alternative and/or cumulative development scenarios and 2) analyses of the impact of specific development proposals. These often compare the fiscal impacts of different density scenarios on one parcel of land but can include an analysis of the impacts of development versus preservation of that land.

"Build-out" scenarios evaluate cumulative impacts of all expected development within a jurisdiction over time. Methodologies vary. The "per capita" method is the most common. It determines the costs of development by averaging the total cost of required services by the number of people using them, sometimes with a multiplier to assess

more distant effects. Another popular method is the "econometric" model, which projects impacts year by year, usually for very large projects. A third possible scenario is to compare varying types of residential development, such as different types of housing[20] or variable growth rates.[21] A study using the per capita multiplier approach on a single three-bedroom home found the net impact to be a significant cost to the municipality.[22]

Growth trend studies generally find compact development significantly less expensive than scattered development.

Growth trend studies examine the future fiscal—and often economic—costs of different development patterns. They generally are based on an analysis of two to four potential development scenarios, usually focused on residential uses but sometimes including commercial and industrial uses. AFT has adapted this method to look at the effects of different growth scenarios on agricultural lands. One scenario usually assesses the fiscal impact of current growth trends (typically sprawl), while the others measure the impacts of denser development scenarios. These studies generally find that compact development is significantly less expensive than scattered development, particularly for infrastructure (such as roads, water and sewer). In the long term, ongoing operating costs for such infrastructure also are reduced with compact development, and there is less need to acquire land for public parks and recreation.[23] The annual savings to municipalities was found to be in the 2-3 percent range in several studies.[24]

Site-specific fiscal impact studies analyze the cost of a specific development project and may also compare the costs of developing versus preserving a given parcel of land. In this case, they would compare the revenues and costs generated by new residential development versus the revenues and costs generated by the undeveloped parcel. Findings typically show a net loss from residential development.[25] Other types of fiscal analysis assess the impact of a particular development, such as an office complex or residential subdivision.[26]

Ad Hoc Associates research evaluates the long-term fiscal impacts of land use. Their case study approach analyzes the relationship between land conservation and development, investigating both short-term and long-term impacts on the overall tax base, as well as on the actual tax bills paid by local residents. Results typically show 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, open land requires a much lower level of services than developed land, limiting cost increases to municipal budgets. An Ad Hoc Associates study of Massachusetts found:

1. Tax bills are lowest in towns with the most open space per capita, even though these communities tend to have the most land enrolled in use assessment programs;
2. Towns where open land makes up a larger proportion of the tax base have lower tax rates, on average, than more developed towns; and
3. Towns with the most permanently protected land have lower tax rates, on average.[27]

Tax bills are lowest in towns with the most open space per capita, even though these communities tend to have the most land enrolled in use assessment programs.

Ad Hoc Associates

One of their most interesting findings was that tax rates tend to be highest in towns with the most commercial and industrial activity. They offer three possible explanations. First, commercial and industrial activities create jobs that attract new residents, resulting in higher municipal expenditures overall. Secondly, commercial and industrial development does not appreciate as quickly as open land or residential development—in fact, it often depreciates. While this sector originally may represent 10 percent of the tax base, over time this may shrink to 5 percent of the tax base—due simply to differences in appreciation rates.[28] Finally, communities with larger tax bases generally offer more services.

The COCS case study approach measures how much a community currently spends to provide public services to its major land uses. Specifically developed for rural and transitional—or urbanizing—communities, they stand out because they include agricultural and other "undeveloped" lands in their analysis along with traditional developed land uses. Depending upon local tax structure, studies have been done at the county, township, town and village levels.

COCS findings about development are consistent with those of other fiscal analyses: On average, residential development does not pay for itself and must be subsidized by commercial and industrial uses. What COCS studies add to this picture is that working lands and open space—even

when assessed at their current use value—contribute more tax revenues than they receive in services. Like commercial/industrial land uses in general, working lands typically contribute surplus revenues. Findings have been replicated widely, using a consistent methodology to determine the actual costs of providing public services to residential, commercial/industrial and agricultural/open land. The studies are relatively inexpensive and reasonably easy to perform and, with refinements over time, have been adapted to evaluate more complex tax structures. Local citizens and decision-makers have found the results easy to understand and communicate.

The extent that new residential development will generate additional costs depends on the level and capacity of existing community services.

Critiques of COCS

1. *COCS studies do not give a picture of the full costs and benefits of future urban growth.* They do not measure non-market values or the negative externalities that may occur due to new urban development. Some of these include: pollution, traffic congestion, loss of green space, environmental amenities and community character. While externalities are not hard to understand in a qualitative way, they are very hard to quantify, making this type of analysis complex, academically rigorous and time consuming. Such studies require resources that typically make them too elaborate and expensive for most rural and transitional communities to afford.

   New residents contribute to the economic base of the community as well as paying taxes and demanding municipal services. The extent that new residential development will generate additional costs depends on the level and capacity of existing community services. This is particularly important with regards to school capacity. According to the ERS report, *Development at the Urban Fringe,* schools typically account for 60-70 percent of spending.[29] But it holds for other services as well. The effects of different capacities suggest that the costs of providing additional public services vary. Costs also will vary depending on how land uses are distributed across a jurisdiction, among other things. By design, COCS studies focus on current fiscal conditions and do not predict the future economic impacts of growth. As well as understanding current conditions, communities at or near capacity should consider the

long-term costs of growth: building a new school, fire house or police station, for example, or adding public water or sewer if existing development relies on private wells and septic systems.

COCS studies also do not show the hidden costs of deferred maintenance and prolonged burdens on services. For example, in Wicomico County, Maryland, the sheriff pointed out that current growth patterns are intensifying the need for expensive training of new officers, and that continuous use of the department's vehicles was shortening their normal life span. The COCS study did not project the effect of such increases on future land use relationships. Benefits of new development include new construction jobs or secondary impacts of commercial employment and profits. A COCS study would not show the complex relationships between these events.

COCS studies are descriptive and should not be used to predict the impact of a single development.

That said, COCS studies do not measure the positive economic impacts of agriculture or forestry either. To get at these, AFT uses data from the Census of Agriculture, Bureau of Labor, state departments of agriculture and other sources, and Impact Analysis for Planning (IMPLAN) software to create agricultural industry profiles to show the direct and indirect contributions of agriculture to local economies.

2. *COCS studies average revenues and costs across land use and thus do not differentiate between types of residential development.* This is true of other fiscal impact approaches as well, and is used in many build-out scenarios, especially the "per capita" approach. While it makes COCS findings less precise as a predictive tool, it does give an accurate picture of the aggregate costs of existing land uses. The purpose of a COCS study is to discover the fiscal contribution of working and open lands so they may be duly considered in the planning process, not to recommend one type of development over another. Because they are descriptive, they should not be used to predict the impact of a single development. If the goal is to forecast either the relative impacts of different development scenarios or the associated economic impacts, a different approach should be used.

Agriculture is a significant commercial enterprise, which contributes 13 percent of the nation's gross domestic product.

USDA

3. *COCS studies separate out the farmhouse from the farmland thus loading the analysis by dealing only with the land and not with the people who work it.* The fact that a farm family may or may not live on the land that they work is not relevant to a COCS study. Farmers, ranchers, foresters and their families are community residents regardless of their occupations. They require the same kinds of municipal services as other residents—although often to a lesser degree, as they are more likely than other residents to live on dirt roads, have wells and septic systems and tend to their own garbage removal. Furthermore, since the farm population is rapidly aging, even farmers living on their land are less likely to require expensive educational services than other community residents. A COCS study does not address these factors, but simply includes property tax revenues from their homes and the full market value of a large house lot in the residential sector, along with state aid for education and all other revenues that would be obtained from other community residents.

   While the public still holds fondly the belief that the farm family is what makes a farm a farm, this notion is based on sentiment, not agricultural economics, state definitions of agricultural land or tax policies. Agriculture is a significant commercial—and in some cases industrial—enterprise, which contributes 13 percent of the nation's gross domestic product,[30] as well as adding to communities' local economic base.

   Many agricultural operations rely on rented land. Thus, COCS studies consider tax revenues and expenditures for agricultural and other working lands in the same way as they consider them for other commercial/industrial land uses.

   According to the 1997 Census of Agriculture, about 70 percent of America's agricultural operators live on the farms that they operate—a statistic that has remained essentially the same since 1982. But while the number of all farmers declined between 1982 and 1997, the number of farmers who reported living on the farm they operated declined by 14 percent while the number of those who reported not living on the farm they operated only declined by 4 percent. Furthermore,

the number of farm operators who reported "farming" as their principal occupation declined by 22 percent in the same 15-year period. Finally, the proportion of the farm population that is nearing or at retirement age is increasing relative to the number of young people entering agriculture. In 1982, there were more than 62,000 farm operators under the age of 25. That number had shrunk to less than 21,000 by 1997. On the other hand, in 1982, not quite 400,000 operators were 70 years old and over, which dropped to 256,000 in 1987 and then grew to more than 317,000 by 1997.[31]

4. *COCS studies do not take into account the "cost" or "benefit" theory of taxation.* This theory maintains that given a limited supply of land, growth creates an increased demand for it, which boosts property values (and the net worth of the owners) and thus increases total property tax revenue, which can pay for improved infrastructure such as roads and schools.[32] COCS studies do not try to determine these values, nor do they try to place a value on the negative effects of growth (e.g., loss of agricultural productivity, landscape amenities and quality of life, increased traffic congestion, air and water pollution, etc.) It is not clear how this theory might affect COCS findings or whether it would be meaningful to community residents paying the increased property taxes.

COCS studies are like a current conditions report, intentionally relying on current and historical budgetary information.

Other Limitations

In the AFT/SNEFC survey, some respondents pointed out other limitations in the method, such as: it looks back rather than forward in time, it does not provide temporal comparisons, and it fails to examine long-term effects and hidden costs of commercial/industrial uses (see Appendix B for survey responses.) These are legitimate points, and this information can be obtained in other types of studies. COCS studies are intended to help local officials and citizens understand the present relationship of land uses including working lands—not to speculate about the fiscal impacts of taking that land out of productive use.

COCS studies are like a current conditions report, intentionally relying on current and historical budgetary information. Although they show the immediate impact of tax breaks for commercial/industrial uses, they do not

analyze the extent to which these breaks affect the ratios. While no temporal comparisons have been done to date, there is nothing inherent in the method that precludes doing a temporal comparison. In fact, it would be interesting to return to a community and find out whether its land use relationships changed over time.

A large body of fiscal impact research exists to measure the costs of future development and should be used for this type of analysis.

More expensive and elaborate studies are necessary to measure the fiscal impacts of different residential development scenarios or the cumulative costs of commercial/industrial development. Such studies are extremely valuable and should be seriously considered either as a follow-up to or instead of a COCS study. A large body of fiscal impact research exists to measure the costs of future development and should be used for this type of analysis. This is why it is important for study sponsors to be clear on their goals for the project to make sure that COCS is the appropriate research tool.

Every type of fiscal analysis has limitations; all are useful planning tools. Choosing one methodology over another should be made on the basis of desired outcomes and available budget. Unlike the more complex methodologies, COCS studies are affordable to rural or transitional communities that lack professional planning staff, and they present data in a way that community members can understand and use.

In sum, COCS studies have many merits, especially for decision-makers in rural and suburban communities with limited budgets that are experiencing rapid land use changes and want to understand the fiscal impact of their working landscape. COCS studies are not a one-stop-shop for fiscal and economic analysis, but what they do, they do well—and no other methodologies accomplish the same thing.

Future Research

More and more people are becoming concerned about the impacts of current development patterns and future growth on their communities. More research is needed to determine which methods of fiscal analysis are most valuable in different situations and to evaluate the findings from a COCS study—not just the approach—with the findings of other kinds of fiscal impact analysis in a specific community to see how they compare.

It would be interesting to conduct a cost-benefit analysis of new development types as a valuable complement to a COCS study in the same community. COCS studies measure the costs of municipal services but do not evaluate the benefits of existing land uses or of new development. A cost-benefit analysis could include market and non-market costs and benefits, which could be compared with the findings from the COCS study and add considerably to the knowledge base available for community decision-making.

COCS studies evaluate municipal services in relation to land use demand, but not in relation to current service capacity. If a community is already at capacity, any population growth is a costly proposition. But if the community has excess service capacity, adding new residences adds no marginal cost of services for water, sewer, roads, schools, police and fire vehicles, dispatching equipment and so on. It would be useful to include an evaluation of current service capacity either as part of or in addition to a COCS study to add another important piece of information to the dialogue about planning for future growth.

It would be useful to include an evaluation of current service capacity either as part of or in addition to a COCS study.

Since so many factors affect land use ratios in a COCS study, it would be interesting to do a regression analysis to try to tease out the relative importance of any individual factor—such as service capacity, the extent of urbanization in the community, size of budget, amount of local government, number of special districts, etc. Future research could compare two or more communities, holding different variables constant to assess the effects of various factors.

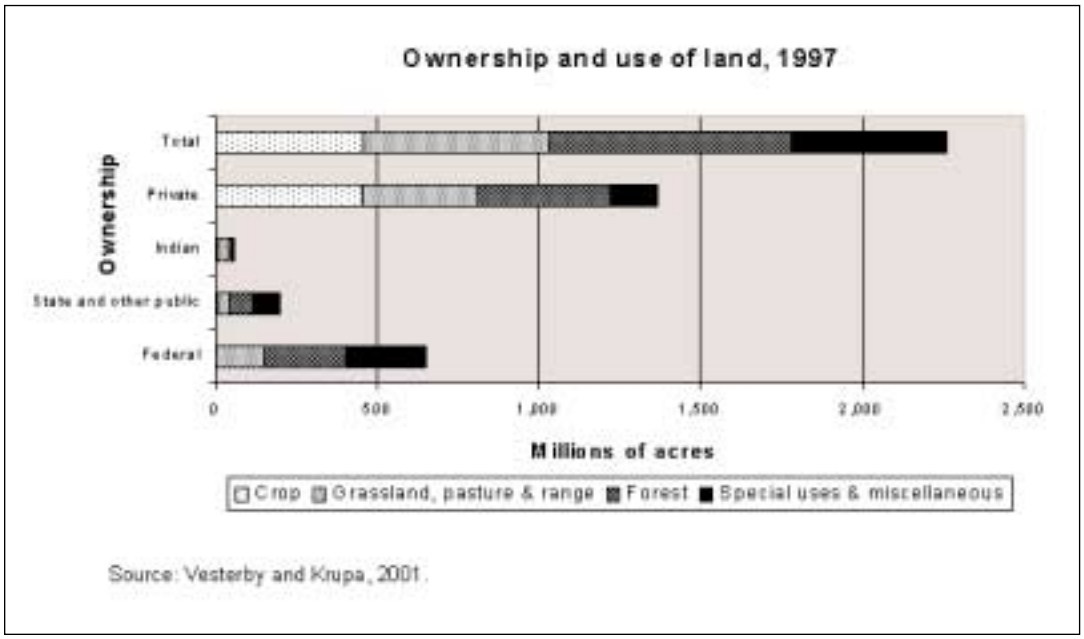
Finally, it would be useful to conduct follow-up COCS studies, perhaps 10 to15 years after an original study, to see if the ratios changed. A temporal analysis would be an interesting way to evaluate the implications of a COCS study over time—especially if the follow-up could be done

in several communities in one state that had similar profiles and ratios in the first analysis, but had experienced different rates of growth. While a comparison might be difficult due to the many variables that could affect the new ratios, a temporal analysis would provide a longer vision than is possible in an individual study.

Photo Courtesy of USDA NRCS

Conclusion

More than half of America's land is privately owned and managed.[33] Agriculture plays a primary role in maintaining these lands and supporting the heritage and cultural identity of the countryside that goes with them. While producing food, fiber and fuel, farm and ranch lands also supply a landscape Americans cherish.



U.S. agriculture is an important engine of economic activity, contributing products and services to support rural, suburban and urban communities. The 1997 Census of Agriculture reported the market value of the nation's agricultural commodities as $197 billion. Beyond the direct impacts of agricultural production, according to the USDA Economic Research Service, in 1996 American agriculture and its related industries generated nearly $1 trillion, or 13 percent, of GDP and employed nearly 23 million people, or 17 percent of the U.S. work force.[34]

Well-managed farm and ranch lands provide numerous environmental benefits, offering food and cover for wildlife, controlling floods, protecting watersheds and maintaining air quality. Public awareness of the multiple

Photo Courtesy of USDA NRCS

Well-managed farm and ranch lands offer food and cover for wildlife, control floods, protect watersheds and maintain air quality.

benefits of working lands has led to greater community appreciation of the importance of keeping land open for fiscal, economic and environmental reasons. As a result, people increasingly are challenging the perspective that new development is necessarily the most desirable use of agricultural land—especially in rural communities and communities undergoing transition from rural to suburban.

COCS studies have helped elevate the debate about smart growth and land conservation. The pattern of their findings is clear: Residential uses consistently cost more in services than they provide in revenues, while other community land uses—including working and open lands, cost less in services than they provide in revenues. As a result, COCS studies have helped inform local planning decisions and support land-friendly public policies by providing reliable baseline information and demonstrating that open lands make a positive contribution to municipal and county budgets.

The Costs and Consequences of Sprawl

As COCS studies have taken hold, so has the smart growth movement, which has gained momentum and evolved from a specialized concern of urban planners and environmentalists to a national issue. The public is increasingly aware that ordinary citizens have a choice about development and that quality of life is affected by that choice. Empowered by successes at the ballot box, smart growth coalitions and networks are getting more sophisticated with publications, Web sites and organizational agendas. Prominent individuals are speaking out about sprawl and promoting public awareness about its consequences. This does not make them anti-growth, however, and while some would like to "pull up the drawbridge" in the remaining rural areas, most people agree that it is more a question of how to grow rather than whether to grow.

Sprawl is the unintended consequence of 50 or more years of successful public policies encouraging home ownership, highway construction and suburban expansion. Characterized by segregated land uses and dependency on automobiles, it physically separates people from where they work, shop and play, disconnecting them from the things they need every day. These development patterns have

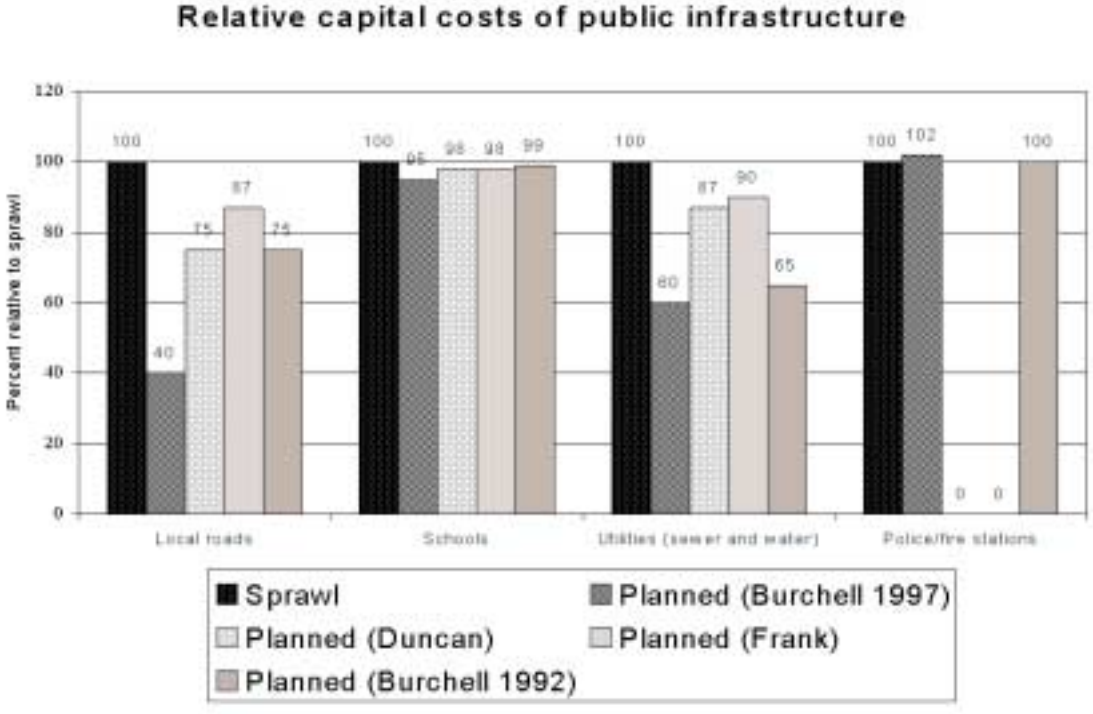
resulted in the loss of productive agricultural land and open space—between 1982 and 1997, more than 25 million acres were converted to development.[35]

Private reliance on automobiles has public costs—for example, annual infrastructure costs per car average between $4,000 and $9,400.[36] And it leads to pedestrian and traffic fatalities, traffic delays for commuters and longer school bus rides for children. For example, nearly five times as many youths are killed in traffic than in inner city violence.[37] By 2005, Americans are expected to lose 7 billion hours a year to traffic delays—an annual cost of $34 billion![38] And an AFT study of the collar counties of Chicago, Illinois, found that scattered development results in 600 percent longer police response times, 50 percent longer ambulance response times and 33 percent longer fire response times than compact development.[39]

Between 1982 and 1997, more than 25 million acres were converted to development.

National Resources Inventory

The following chart from the ERS report *Development at the Urban Fringe and Beyond* summarizes several prominent researchers' findings of the costs of infrastructure relative to sprawl.



Source: Heimlich and Anderson, ERS, 2001

Beyond highway maintenance and improvements, sprawl necessitates extended public infrastructure: water, sewer, drainage and flood management measures. These things make sprawl expensive. For example, since 1980, the rapidly growing Fresno, California, has added $56 million in yearly revenues but $123 million in public service costs.[40]

Between 1982 and 1997, the U.S. population grew by approximately 17 percent, while the amount of urbanized land increased by 47 percent.

Brookings Institute

Contrary to popular opinion, sprawl generally is not the result of increases in population. Between 1982 and 1997, the U.S. population grew by approximately 17 percent, while the amount of urbanized land increased by 47 percent.[41] Nationwide, urban land density dropped by 20 percent.[42] The 2001 Brookings Institute Report cites several impressive state specific examples:

- The population of the Atlanta metropolitan statistical area (MSA) increased by 61 percent, but urbanized land expanded 81 percent.[43]
- Metropolitan Boston saw a population increase of only 7 percent but expanded its developed land area by 47 percent.[44]
- Pittsburgh lost 8 percent of its population but still urbanized 42 percent more land.[45]
- The population of metropolitan Minneapolis-St. Paul increased by 25 percent but urbanized land area expanded by 61 percent.[46]
- Portland, Maine, grew by 17 percent but developed 108 percent more land.[47]

The costs of sprawl are not only fiscal; they also are personal and environmental. The Sierra Club estimates that smog costs the state of Maryland $40 million in crop damage each year.[48] The South Carolina Coastal Conservation League estimates that sprawl worsens non-point source pollution by generating 43 percent more runoff with three times greater sediment loads than traditional development.[49]

The Impact of COCS Studies

As evidence mounts that communities have paid a high price for poorly managed growth, COCS studies show it is time to appreciate the working landscape for its fiscal contribution as well as its other public benefits. While its revenues may be modest, so are its demands for services.

At the same time as they add to the tax base, working lands provide wildlife habitat, help clean air and protect wetlands and floodplains. They provide tourist and recreational opportunities and contribute to the quality of life of local residents. Agricultural and forestry industries are important economically, creating jobs and supplying lucrative secondary markets such as food processing and lumber milling.

Underestimating the fiscal as well as economic importance of working lands has made it possible to squander precious natural resources for their "highest and best" use, forever altering the American landscape and weakening rural economies. And while commercial/industrial growth offers a potential balance, it is not a panacea. If local skills are not available to fill the jobs created by new businesses, new residential development will occur to accommodate the new workforce.

Since open land uses require minimal services but provide sufficient revenue to support themselves, there is no compelling fiscal reason to convert crops to condos. It is only when there is a need to offset the loss of revenues from residential development and its attendant service needs that communities find themselves looking for additional revenues. By achieving a healthy balance of land uses, those requiring large amounts of public services can be supported by those requiring less.

Working lands provide tourist and recreational opportunities and contribute to the quality of life of local residents.

Beyond COCS studies, local leaders should consider the net fiscal impacts of land use on the tax base. But they should not base their planning decisions solely on fiscal relationships. The role of governments is to provide social goods and services—it is to be expected that these have costs. Fiscal health is only one component of many in making sensible decisions about land use.

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The Bottom Line

It is important for communities to see the full picture of their land uses. Community decision-makers must weigh the social, fiscal and environmental impacts of their choices and find their own equilibrium. Yet, even with due consideration of their multiple economic and ecological benefits, agricultural and other open lands will continue to be threatened by conversion to higher tax-generating uses.

That is why local decision-makers must balance the needs for growth, and the timing and locating of that growth, with the needs of agriculture and resource conservation. In the process, they may decide that conservation is a sound community investment.

COCS studies show that working lands are important to consider for fiscal reasons, but these lands also benefit communities because of the non-economic benefits they provide. Revealing the net contribution of working lands to community budgets can help leaders overcome the notion that natural resources must be converted to other uses to ensure fiscal stability.

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Appendix A

SUMMARY OF COST OF COMMUNITY SERVICES STUDIES

Revenue to Expenditure Ratios in Dollars

Community	Residential Including Farm Houses	Combined Commercial & Industrial	Farm/Forest Open Land	Source
Connecticut				
Bolton	1 : 1.05	1 : 0.23	1 : 0.50	Geisler, 1998
Durham	1 : 1.07	1 : 0.27	1 : 0.23	Southern New England Forest Consortium, 1995
Farmington	1 : 1.33	1 : 0.32	1 : 0.31	Southern New England Forest Consortium, 1995
Hebron	1 : 1.06	1 : 0.47	1 : 0.43	American Farmland Trust, 1986
Litchfield	1 : 1.11	1 : 0.34	1 : 0.34	Southern New England Forest Consortium, 1995
Pomfret	1 : 1.06	1 : 0.27	1 : 0.86	Southern New England Forest Consortium, 1995
Idaho				
Canyon County	1 : 1.08	1 : 0.79	1 : 0.54	Hartmans and Meyer, 1997
Cassia County	1 : 1.19	1 : 0.87	1 : 0.41	Hartmans and Meyer, 1997
Kentucky				
Lexington-Fayette	1 : 1.64	1 : 0.22	1 : 0.93	American Farmland Trust, 1999
Maine				
Bethel	1 : 1.29	1 : 0.59	1 : 0.06	Good, Antioch New England Graduate School, 1994
Maryland				
Carroll County	1 : 1.15	1 : 0.48	1 : 0.45	Carroll County Dept. of Management & Budget, 1994
Cecil County	1 : 1.12	1 : 0.28	1 : 0.37	Cecil County Office of Economic Development, 1994
Frederick County	1 : 1.14	1 : 0.50	1 : 0.53	American Farmland Trust, 1997
Massachusetts				
Agawam	1 : 1.05	1 : 0.44	1 : 0.31	American Farmland Trust, 1992
Becket	1 : 1.02	1 : 0.83	1 : 0.72	Southern New England Forest Consortium, 1995
Deerfield	1 : 1.16	1 : 0.38	1 : 0.29	American Farmland Trust, 1992
Franklin	1 : 1.02	1 : 0.58	1 : 0.40	Southern New England Forest Consortium, 1995
Gill	1 : 1.15	1 : 0.43	1 : 0.38	American Farmland Trust, 1992
Leverett	1 : 1.15	1 : 0.29	1 : 0.25	Southern New England Forest Consortium, 1995
Middleboro	1 : 1.08	1 : 0.47	1 : 0.70	American Farmland Trust, 2001
Southborough	1 : 1.03	1 : 0.26	1 : 0.45	Adams and Hines, 1997
Westford	1 : 1.15	1 : 0.53	1 : 0.39	Southern New England Forest Consortium, 1995
Williamstown	1 : 1.11	1 : 0.34	1 : 0.40	Hazler et al., 1992
Michigan				
Scio Township	1 : 1.40	1 : 0.28	1 : 0.62	University of Michigan, 1994
Minnesota				
Farmington	1 : 1.02	1 : 0.79	1 : 0.77	American Farmland Trust, 1994
Lake Elmo	1 : 1.07	1 : 0.20	1 : 0.27	American Farmland Trust, 1994
Independence	1 : 1.03	1 : 0.19	1 : 0.47	American Farmland Trust, 1994

SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, CONTINUED

Revenue to Expenditure Ratios in Dollars

Community	Residential Including Farm Houses	Combined Commercial & Industrial	Farm/Forest Open Land	Source
Montana				
Carbon County	1 : 1.60	1 : 0.21	1 : 0.34	Prinzing, 1999
Gallatin County	1 : 1.45	1 : 0.16	1 : 0.25	Haggerty, 1996
Flathead County	1 : 1.23	1 : 0.26	1 : 0.34	Citizens for a Better Flathead, 1999
New Hampshire				
Deerfield	1 : 1.15	1 : 0.22	1 : 0.35	Auger, 1994
Dover	1 : 1.15	1 : 0.63	1 : 0.94	Kingsley et al., 1993
Exeter	1 : 1.07	1 : 0.40	1 : 0.82	Niebling, 1997
Fremont	1 : 1.04	1 : 0.94	1 : 0.36	Auger, 1994
Groton	1 : 1.01	1 : 0.12	1 : 0.88	New Hampshire Wildlife Federation, 2001
Stratham	1 : 1.15	1 : 0.19	1 : 0.40	Auger, 1994
Lyme	1 : 1.05	1 : 0.28	1 : 0.23	Pickard, 2000
New Jersey (Townships)				
Freehold	1 : 1.51	1 : 0.17	1 : 0.33	American Farmland Trust, 1998
Holmdel	1 : 1.38	1 : 0.21	1 : 0.66	American Farmland Trust, 1998
Middletown	1 : 1.14	1 : 0.34	1 : 0.36	American Farmland Trust, 1998
Upper Freehold	1 : 1.18	1 : 0.20	1 : 0.35	American Farmland Trust, 1998
Wall	1 : 1.28	1 : 0.30	1 : 0.54	American Farmland Trust, 1998
New York				
Amenia	1 : 1.23	1 : 0.25	1 : 0.17	Bucknall, 1989
Beekman	1 : 1.12	1 : 0.18	1 : 0.48	American Farmland Trust, 1989
Dix	1 : 1.51	1 : 0.27	1 : 0.31	Schuyler County League of Women Voters, 1993
Farmington	1 : 1.22	1 : 0.27	1 : 0.72	Kinsman et al., 1991
Fishkill	1 : 1.23	1 : 0.31	1 : 0.74	Bucknall, 1989
Hector	1 : 1.30	1 : 0.15	1 : 0.28	Schuyler County League of Women Voters, 1993
Kinderhook	1 : 1.05	1 : 0.21	1 : 0.17	Concerned Citizens of Kinderhook, 1996
Montour	1 : 1.50	1 : 0.28	1 : 0.29	Schuyler County League of Women Voters, 1992
Northeast	1 : 1.36	1 : 0.29	1 : 0.21	American Farmland Trust, 1989
Reading	1 : 1.88	1 : 0.26	1 : 0.32	Schuyler County League of Women Voters, 1992
Red Hook	1 : 1.11	1 : 0.20	1 : 0.22	Bucknall, 1989
Ohio				
Madison Village	1 : 1.67	1 : 0.20	1 : 0.38	AFT and Lake County Ohio SWCD, 1993
Madison Township	1 : 1.40	1 : 0.25	1 : 0.30	AFT and Lake County Ohio SWCD, 1993
Shalersville Township	1 : 1.58	1 : 0.17	1 : 0.31	Portage County Regional Planning Commission, 1997

SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, CONTINUED

Revenue to Expenditure Ratios in Dollars

Community	Residential Including Farm Houses	Combined Commercial & Industrial	Farm/Forest Open Land	Source
Pennsylvania (Townships)				
Allegheny	1 : 1.06	1 : 0.14	1 : 0.13	Kelsey, 1997
Bedminster	1 : 1.12	1 : 0.05	1 : 0.04	Kelsey, 1997
Bethel	1 : 1.08	1 : 0.17	1 : 0.06	Kelsey, 1992
Bingham	1 : 1.56	1 : 0.16	1 : 0.15	Kelsey, 1994
Buckingham	1 : 1.04	1 : 0.15	1 : 0.08	Kelsey, 1996
Carroll	1 : 1.03	1 : 0.06	1 : 0.02	Kelsey, 1992
Maiden Creek	1 : 1.28	1 : 0.11	1 : 0.06	Kelsey, 1998
Richmond	1 : 1.24	1 : 0.09	1 : 0.04	Kelsey, 1998
Stewardson	1 : 2.11	1 : 0.23	1 : 0.31	Kelsey, 1994
Straban	1 : 1.10	1 : 0.16	1 : 0.06	Kelsey, 1992
Sweden	1 : 1.38	1 : 0.07	1 : 0.08	Kelsey, 1994
Rhode Island				
Hopkinton	1 : 1.08	1 : 0.31	1 : 0.31	Southern New England Forest Consortium, 1995
Little Compton	1 : 1.05	1 : 0.56	1 : 0.37	Southern New England Forest Consortium, 1995
Portsmouth	1 : 1.16	1 : 0.27	1 : 0.39	Johnston, 1997
West Greenwich	1 : 1.46	1 : 0.40	1 : 0.46	Southern New England Forest Consortium, 1995
Texas				
Hays County	1 : 1.26	1 : 0.30	1 : 0.33	American Farmland Trust, 2000
Utah				
Cache County	1 : 1.27	1 : 0.25	1 : 0.57	Snyder and Ferguson, 1994
Sevier County	1 : 1.11	1 : 0.31	1 : 0.99	Snyder and Ferguson, 1994
Utah County	1 : 1.23	1 : 0.26	1 : 0.82	Snyder and Ferguson, 1994
Virginia				
Augusta County	1 : 1.22	1 : 0.20	1 : 0.80	Valley Conservation Council, 1997
Clarke County	1 : 1.26	1 : 0.21	1 : 0.15	Piedmont Environmental Council, 1994
Northampton County	1 : 1.13	1 : 0.97	1 : 0.23	American Farmland Trust, 1999
Washington				
Skagit County	1 : 1.25	1 : 0.30	1 : 0.51	American Farmland Trust, 1999
Wisconsin				
Dunn	1 : 1.06	1 : 0.29	1 : 0.18	Town of Dunn, 1994
Dunn	1 : 1.02	1 : 0.55	1 : 0.15	Wisconsin Land Use Research Program, 1999
Perry	1 : 1.20	1 : 1.04	1 : 0.41	Wisconsin Land Use Research Program, 1999
Westport	1 : 1.11	1 : 0.31	1 : 0.13	Wisconsin Land Use Research Program, 1999

Appendix B

Results from American Farmland Trust and Southern New England Forestry Consortium Survey

In 1999, American Farmland Trust and the Southern New England Forestry Consortium conducted a telephone survey of 39 people representing communities in which COCS studies had been done. Some people were unable to answer some questions due to time constraints or lack of information. The numbers below each question more accurately reflect the actual number of answers to particular questions, and were used in the calculation of percentages.

1. Where did you first hear of Cost of Community Service Studies?
39 people answered

14 (36%) from AFT staff or publications
6 (15%) didn't remember
5 (13%) from other researchers
5 (13%) from colleagues
4 (10%) from orgs collaborating on study
2 (5%) from non-AFT publications
1 (3%) conference (Land Trust)
1 (3%) grad school
1 (3%) a concerned citizen

2. Were there specific issues or events that led to the decision to study the cost of services in this/your community?
38 people answered

Yes 31 (82%)
No 7 (18%) {participated in the study upon invitation}

of the 31 that had issues leading to decision
8 (26%) mentioned growth and development pressures
5 (16%) were concerned about issues of taxation
5 (16%) were interested in the idea of the value of open space
5 (16%) were actively acquiring OS for preservation
5 (16%) were motivated by new legislation/upcoming elections
3 (10%) were beginning a Master Plan process
3 (10%) wanted local numbers to substantiate the general trend of COCS findings
2 (6%) were concerned about the loss of farmland or agriculture as an industry

(Percentages don't add to 100% because some people mentioned more than one issue).

3. Did you have specific goals that you hoped the study would help to accomplish?
35 people answered

Yes 29 (83%)
No 6 (17%) {either they were asked to participate or were interested only in providing information}

Of the 29 who had specific goals
7 (24%) hoped to support existing or develop new OS acquisition/preservation programs
6 (20%) were looking for information about the impact of land use on the tax base
5 (17%) wanted to challenge the myth that residential development pays its way
4 (14%) wanted to show that OS made financial sense
3 (10%) hoped to raise general awareness about farmland preservation/ OS conservation
3 (10%) wanted to inform an ongoing or upcoming planning process
3 (10%) had preserving rural character as a goal
3 (10%) wanted to determine the trade-offs of converting rural land to development
3 (10%) had educational goals related to University co-op extension
1 (3%) wanted to see how community would compare to study trend
1 (3%) wanted to preserve ag industry

3a. If yes, did the study help to accomplish them?
29 people answered

27 (93%) felt those goals were accomplished
2 (7%) did not accomplish goals
1 could not show buying open space was good finance because the high value of many homes in the community skewed the ratios
1 was not able to protect agricultural industry or convince policy makers to preserve land because:
- Officials in the county were pro growth. They perceived the study as a threat from the outset and sabotaged its effectiveness by remaining quiet during the study process and then publicly discounting its validity after it was completed.
- Findings were questioned. Young grad student that performed study did not command the respect that an older person would have and that was necessary when requesting the type of information required.

4. What type of information did you hope to gather from the study?
32 people answered

15 (47%) were looking for fiscal information to support OS protection
13 (41%) wanted info to help with development/land use decisions
4 (13%) were looking to justify differential assessment
3 (9%) wanted information to support growth controls
2 (6%) wanted local data to compare to study trend
2 (6%) wanted budgeting information

4a. Did the study provide you with this information?
32 people answered

Yes 30 (93%)
No 2 (7%)

1 felt that information was unreliable
1 said ratios did not support open space protection enough so and had to rely on other reasons to support open space measures

5. How was the study funded?
30 people answered

10 (33%) were funded fully or in part by government funding
3 (30%) local
5 (50%) county
2 (20%) state agency
9 (30%) were done fully or partially as salaried work of ag extension agents
6 (20%) were funded fully or partially by AFT (general funds and grants received)
4 (13%) were funded by private conservation organizations
4 (13%) were funded by charitable foundations, 2 of which were local to area studied
1 (3%) was done by a volunteer organization
1 (3%) was partially funded by an individual
1 (3%) was funded by a private agricultural organization

6. How have you or your organization used the study results?
37 people answered

33 (89%) mentioned its use as an educational tool for citizens and local officials and/or as a component of a campaign to raise public awareness about land conservation or growth controls.
-5 used brochures
-2 specifically mentioned presentations, including a statewide tour (NH)
12 (32%) mentioned lobbying to promote specific policies
6 (16%) mentioned its use to inform a planning process
3 (8%) mentioned its use to promote the acquisition of OS
2 (5%) mentioned its use when discussing tax base issues, when it is usually used to promote industrial development
1 usually used it to promote industrial development
1 used it show that residents should pay for services and not be subsidized by C/I
1 (3%) mentioned its use in a local election

6a. Are you still using the results? (Non-community)
22 people answered

Yes	18 (81%)
No	4 (19%)

- 2 never used them, just did the research
- 1 don't actively use them, but still gets requests for results
- 1 backed away from study after his job was threatened

7. Were the results made available to the general public?
36 people answered

Yes 34 (94%)
No 2 (6%)

Of the 34 who answered YES
27 (79%) said the results were discussed at public meetings, though it was often not the focus
25 (74%) said a report was published and made available (distributed, upon request, in library)
3 (9%) distributed a brochure
1 (3%) posted results on a Web page

Of the 2 who answered NO
1 said AFT publicized it a bit, but they did not actively distribute the results
1 said the results, in and of themselves were not exciting enough to generate interest

8. Was a media relations campaign carried out?
36 people answered

No 22 (61%)
Yes 14 (39%)

Of the 22 who answered NO
5 (23%) of these did receive some coverage in local media
3 (14%) mentioned that results were included in a media campaign on OS
2 (9%) were written up in extension newsletters

Of the 14 who answered YES
12 (86%) mentioned press releases or editorial briefs were sent out
2 (14%) mentioned press conferences
2 (14%) mentioned radio coverage
2 (14%) specifically mentioned articles written about studies

8a. Would it have been helpful to have had professional assistance with a media campaign?
36 people answered

6 had professional help {5 AFT, 1 other}
Of the remaining 30
No 16 (53%)
Yes 9 (30%)
Maybe 5 (17%)

Of the 9 who answered YES
1 mentioned the importance of attracting local TV coverage to create a cascading effect on other local media. Perhaps staging a dramatic shot along a beautiful river. Similarly, another person thought that a campaign would be most successful if it was centered around a specific goal, such as saving a particular apple farm.
1 never would have thought of such a thing

Of the 16 who said NO
2 mentioned that a media campaign would backfire in their community, as there is a general distrust of media and big commotion.

9. In general how were the results received?
36 people answered

Very Well	12 (33%)
Well	11 (31%)
Mixed	5 (14%)
With Surprise	5 (14%)
Neutral	2 (6%)
Controversial	1 (3%)

9a. Were any individuals or groups skeptical or critical?
36 people answered

No	22 (61%)
Yes	14 (39%)

Of the 22 who said there were no skeptics or critics, the answers to Question #9 regarding general reception were as follows:

Very well	12 (55%)
With surprise	5 (23%)
Well	4 (18%)
Neutral	1 (5%)

Of the 14 who said there was some skepticism about the results, the answers to -Question #9 regarding general reception were as follows:

Well	7 (50%)
Mixed or depended who you asked	5 (36%)
Neutral	1 (7%)
Controversial	1 (7%)

If so, which groups and what were their criticisms?
14 people answered

10 (71%) mentioned local officials
7 (50%) mentioned developers and others related to development industry
5 (36%) mentioned the general citizenry
1 (7%) mentioned a conservation group
1 (7%) mentioned a farmer

Criticisms Mentioned (all biases should be attributed to the people surveyed)
Before mentioning specific criticisms they had heard, some people stated that the criticisms were invalid because they were
- rooted in a development agenda (4 people)
- rooted in the myth of development increasing the tax base (3 people)

2 (14%) claimed the study was biased or unscientific
1 (7%) was that farmers should pay more taxes because they use the roads more than residents and other businesses
1 (7%) criticized study because it included school districts that were distinct from township government in a township study
1 (7%) said that farms did not pay their way, due to differential assessment
1 (7%) said that sales tax was not properly accounted for
1 (7%) said that skepticism was allayed as soon as the details of the study were understood.

10. Do you have specific suggestions about how the study could be improved?
36 people answered

Responses to this question varied. Some people had no suggestions and took the opportunity to praise the study method or the researcher(s) that performed it. Others gave suggestions that could have been direct quotes from the "How to" book, such as, "Verify allocations with local officials." Still others spoke about issues specific to their study, e.g., frustration dealing with the 3 or 4 different budget software formats used by various townships in a county. What follows is a listing of the more useful suggestions.

5 (14%) people suggested updating numbers by plugging in new budget numbers to old allocations. Reasons for doing this varied from stemming criticisms that numbers were outdated, to re-raising issues raised by the original study, to providing information useful for comparison of different periods of town history.

4 (11%) people had suggestions regarding the allocation of the residential exposure, either related to density, value or both.

One person suggested that the category needs to be broken down further because he was convinced that high-end development skews the study. He said he needed some method to refute the claim that expensive homes benefit the tax base. The study, he claimed, does not take into account, that higher end residents typically demand more services. Therefore, studied towns with lots of high-end development, end up with results that promote low density, sprawl.

Another person thought that the residential exposure needs to be differentiated by density. She was convinced that the different demographics of condos vs. single family homes results in much higher service costs to single family homes, since condo dwellers tend to have fewer children, which results in a lower impact on school budgets.

It was also suggested that neighborhood or segment studies combined with the overall COCS might be a way to resolve issues of density and value.

4 (11%) people were concerned about the C/I ratios.

One person suggested that the numbers should be presented differently so that they are not so "disturbing." Another said that the study is easily misinterpreted because the figures are strictly for the year studied, therefore-C/I ends up looking better than it really is. Suggestions for improvement fell into two categories:

1. Expansion of the method to further quantify the long-term effects of non-residential development.

2. Developing a method that analyzes the hidden costs of C/I development, including-
   - Incentives to industry such as tax deferrals
   - Increase in residential population
   - Services demanded by commuters (not just road maintenance, but also intangibles such as headaches caused by traffic congestion)

3 (8%) people had suggestions on the current methodology

1 thought that the Commercial and Industrial categories should be separated because they are drastically different in their impacts on town budget.

1 explained why he does not look through the Police and Fire logs to allocate expenditures. Rather, he uses Fall Back percentages since everyone benefits from their presence, whether or not they actively use the services.

1 thought it would be helpful to have other methods of allocating funds instead of just by land use, because of the different sizes of parcels in each exposure. She did studies in Idaho where the residential lots are much smaller than ag. acreage and felt that it was more expensive to service larger acreages. For example, fighting a fire in a wheat field consumes more resources than fighting a house fire.

1 person thought that they still have not put school district taxes into correct light. Town of Richmond has ag-zoning, while town of Maiden Creek does not. Two towns share a school district. Maiden creek just put in 1000 new homes, which has profound affect on the taxes of both communities. Richmond had no say in the matter.

2 (6%) people thought that the study results should be publicized more.

2 (6%) people suggested developing a marginal cost methodology that would give a more dynamic picture of a local budget. They stated that this type of study would be more useful for actual development decisions because it would give policy makers an idea of threshold levels of development, e.g. the number of new residents that would result in the need to build a new sewage treatment plant.

Individual Suggestions:

1 person suggested that each published report should include a description of how to perform a COCS study. That way, anybody that came across one, would be immediately empowered to do one for their own community.

1 person had issues with AFT bureaucracy. She thought the study was too expensive and had trouble navigating the communication channels because of the size of the organization.

1 person suggested a separate, supplemental project that provides actual tax dollar figures that townships are spending to subsidize new development. He felt that ratios are hard for people to grasp and can tend to be easily dismissed, whereas, larger sums spent can have a

more dramatic impact.

1 person was interested in a study that correlates crime rates and Open Space.

1 person was interested in a study that shows the total economic contribution of agricultural land, instead of just its impact on local budgets

1 person suggested coming up with a separate ratio that correlates the land use percent of each exposure to the tax base percent of each exposure.

1 person thought it would be helpful to develop a quick and dirty, fill-in-the-blanks methodology. Perhaps just by removing all aspects of town government except for the school budget and comparing how residential and farmland uses measure up.

1 person was concerned about the way in which the study was carried out in his county. He mentioned that more homework needed to be done because the complexity of the county was not represented. At the outset, the study was too broad and needed to be narrowed down at the end when certain issues could not be resolved. He also said more care should have been taken in determining who to send to collect information. Farm communities tend to distrust outsiders and there is often a good old boy network that must be handled correctly.

11. Have any land use policies or programs been revised, developed or enacted since the study results were released?

36 people answered

Yes 21 (58%)
No 15 (42%)

8 (22%) people mentioned the impact of the study on a Master Plan process
- 3 specifically mentioned that planning for OS was a priority
- 1 mentioned re-zoning to permit more commercial development
- 1 mentioned the passage of a bill that provides $50,000 dollars for communities to create or update a Master Plan.

8 (22%) people mentioned increased public investment in OS (not necessarily farmland)
- 4 of whom mentioned specific land protection projects already carried out, which together totaled over 1000 acres.
- 4 involved dedicated taxes
- 2 involved grants
- 1 involved the passage of a bond act

5 (14%) people mentioned policies specifically related to agricultural preservation, including
- the creation of Ag. districts
- the creation of a Farmland Preservation Board
- a Farmland Protection Plan
- the passage of a Right to Farm Act
- stricter regulations regarding the division of property in Ag zones. Currently, a moratorium on further division is in place until they can straighten out the regulations. As they stand, the regulations are related to soil quality and are not clear enough about total

acreage to be useful in preserving large areas.

4 (11%) people mentioned Transfer, Purchase, or Donation of Development Rights

4 (11%) people mentioned regulations on new developments
- 3 people mentioned a New Development Impact fee, one of which doubled a previous fee
- 1 mentioned an Adequate Public Facilities Ordinance
- 1 mentioned a fee in lieu of OS protection

3 (8%) people mentioned more detailed zoning ordinances
- Upper Freehold Township, NJ passed a zoning ordinance that increases density of residential development in exchange for preservation of ¾ of land. Ex. According to other zoning regulations, a 100-acre plot normally could be developed into 50 - 2-acre lots. If developer sets aside 75acres, town allows the construction of 25 homes on 1-acre lots.

2 (6%) people mentioned a differential assessment program.
- The increased popularity of Pennsylvania's Clean & Green preferential assessment program has caused some controversy. 85% of land enrolled in the program is forested, much of it owned by commercial forestry interests. Some have begun leasing Hunting rights on land, which has caused some to propose re-evaluation of the program, based on both animal rights issues as well as issues of tax fairness.

11a. If so, do you think that the study contributed to these policies?
21 people answered

Yes	19 (90%)
No	2 (10%)

Of the 19 who answered YES
-2 were careful to state that it was one piece of a large body of information used.
-2 said the study contributed by convincing people that it was worth the money and time resources spent to save OS, because it saved on tax expenditures in the long run.
-1 said it was "a vital, indispensable part."

Of the 2 who answered NO
- 1 hedged a bit and said that several decision-makers knew about the study, but could not say for certain how much of an influence it had on policies.
- The other person said that the land conservation projects carried out after the study was completed already had the support of residents.

12. Other than specific policies, have you noticed a shift in awareness or public opinion in regards to valuing farmland, forestland and open space?
36 people answered

Yes	28 (78%)
No	8 (22%)

This shift has been apparent to the 28 who answered YES in the following ways:

7 (25%) people said that currently there is great concern about development issues, sprawl, and the loss of OS

6 (21%) people mentioned the study's impact on public discussions
- 4 noted a shift in conventional wisdom away from the myth of development adding to tax base, sometimes without mention of the studies.
- 1 said it provides a rational basis for land use discussions
- 1 noted more willingness to discuss the usage of public $ on OS preservation

4(14%) people said local and state officials have been vocal about study results or the importance of OS preservation. One of these people mentioned that the study played a role in the election of county commissioners with conservation agendas.

4 (14%) people mentioned that people have become more active in local decision making in regards to development/conservation issues

4 (14%) people mentioned that communities are beginning to plan for OS

1 (4%) person mentioned that the shift in awareness is only in regards to OS, and that a study by LakeTran (OH) showed that agricultural issues are disconnected from OS issues in the minds of Ohio residents.

Of the 8 who answered NO
3 said there was good awareness already

1 said she moved away 3 months after the study was completed and didn't know

12a. If so, in your opinion, did the study contribute to this shift?
28 people answered

Yes 21 (75%)
No 7 (25%)

Of the 7 who said NO
- 3 said so because they could not be sure that study had an effect.
- Another said that the concerns people have become aware of are outside of the study, but many people are aware of results, so they influence decisions somehow.

13. Are the study results still used by the studied community?
38 people answered, 11 of which did not know

Of the 27 remaining

Yes 22 (81%)
No 5 (19%) 2 said that the results were never used, in one case because the township administrator "hates the study."

Appendix C

COCS BUDGET ALLOCATION
SAMPLE COUNTY

REVENUES

COUNTY	Revenues	Residential	Commercial/ Industrial	Ranch, Ag. & Open Land
Property Taxes				
Current Taxes - Real Property	$ 3,197,729	2,187,566	355,268	654,895
Taxes - Mansfield Park	$ 62,166	42,528	6,907	12,732
Taxes - Sanitary Landfill	$ 65,608	44,883	7,289	13,437
Taxes - Juvenile Probation	$ 60,702	41,526	6,744	12,432
Taxes - Improv. Bonds Sinking	$ 130,053	88,969	14,449	26,635
Taxes - Medina Lake Park	$ 29,254	20,012	3,250	5,991
Taxes - Indigent Health Care	$ 130,668	89,390	14,517	26,761
Road & Bridge 30% Sp. Ad. Valorem	$ 538,830	368,614	59,864	110,352
15% precinct Road Tax	$ 148,044	101,277	16,448	30,319
1976 Co. Rd. Bonds Sinking	$ 837	572	93	171
General Tax Anti Note SKG Fund	$ 37,685	25,780	4,187	7,718
R&B Tax Anti Note SKG Fund	$ 26,031	17,808	2,892	5,331
1997 Road Tax Note	$ 181,523	124,180	20,167	37,176
Perm. Imprv. Bonds Sinking	$ 130,053	88,969	14,449	26,635
Subtotal	**$ 4,739,183**	**$ 3,242,075**	**$ 526,523**	**$ 970,585**
General Fund - Other Revenues				
Alcoholic Beverages	$ 6,234	$ -	6,234	$ -
Flood Plain Search	$ 6,725	$ 6,725	$ -	$ -
Animal Control Fees	$ 8,675	$ 6,675	$ -	$ 2,000
Subdivision Permits	$ 475	$ -	$ -	$ 475
Mixed drink tax	$ 16,785	$ -	$ 16,785	$ -
TDHS Office Rent	$ 6,480	$ -	$ 6,480	$ -
General Sales and Use Tax	$ 277,725	$ -	277,725	$ -
Service Fees on State Collections	$ 7,724	$ 6,572	$ 518	$ 633
Traffic Regulation Fees - Clerk	$ 320	245	24	52
Time Payment Fees	$ 2,981	$ 2,536	$ 200	$ 244
Soil & Water Conservation Rent	$ 2,200	$ -	2,200	$ -
Hotel/Motel Tax Collections	$ 165,362	$ -	165,362	$ -
Subtotal	**$ 501,686**	**$ 22,753**	**$ 475,528**	**$ 3,405**
Federal & State Revenue				
Law Enforcement - COPS grant	$ 33,843	27,508	2,207	4,129
GNADE Trust for Library	$ 25,354	$ 25,354	$ -	$ -
Health and Welfare	$ 2,779	$ 2,779	$ -	$ -
Task Force - Drug Enforcement	$ 29,261	$ 29,261	$ -	$ -
Corrections (JUV PROB-Comm.)	$ 28,184	$ 28,184	$ -	$ -
911 Grant	$ 27,617	$ 18,893	$ 3,068	$ 5,656
TIFB Library Grant	$ 11,024	$ 11,024	$ -	$ -
Juvenile Probation	$ 50,688	$ 50,688	$ -	$ -
Senior Citizens Grant Fund	$ 54,936	$ 54,936	$ -	$ -
Subtotal	**$ 263,686**	**$ 248,626**	**$ 5,275**	**$ 9,785**

REVENUES

COUNTY Continued	Revenues	Residential	Commercial/ Industrial	Ranch, Ag. & Open Land
Local/Other Intergov Revenues				
Juvenile Probation Fees	$ 34,342	$ 34,342	$ -	$ -
Adult Probation	$ 19,859	$ 19,859	$ -	$ -
Subtotal	**$ 54,201**	$ 54,201	$ -	$ -
Charges For Services (Fees)				
County Judge Fees	$ 746	$ 602	$ 71	$ 73
County Sheriff Fees	$ 20,083	$ 16,323	$ 1,309	$ 2,450
County Attorney Fees	$ 3,758	3,198	252	308
Tax Assessor - Collector Fees	$ 167,680	$ 114,710	$ 18,629	$ 34,341
Boat Registration Comm.	$ 111	$ 111	$ -	$ -
License Plate Postage	$ 2,169	$ 1,660	$ 160	$ 349
Fees Collected - County Clerk	$ 104,539	$ 75,958	$ 10,757	$ 17,824
District Clerk Fees	$ 32,212	27,409	2,161	2,641
Prisoner Care (Town)	$ 925	$ 463	$ 463	$ -
Jury and Steno Fees	$ 5,566	$ 5,566	$ -	$ -
Restitution	$ 455	$ 455	$ -	$ -
County Court Fines	$ 50,639	40,881	4,806	4,953
District Court Fines	$ 18,002	15,318	1,208	1,476
Animal Control Officer Fees	$ 1,760	$ 1,354	$ -	$ 406
TRIAD Contributions	$ 23	$ 23	$ -	$ -
Miscellaneous	$ 25,370	$ 17,356	$ 2,819	$ 5,196
Passport Fees - District Clerk	$ 1,020	$ 1,020	$ -	$ -
Library Fees & Fines	$ 3,563	$ 3,563	$ -	$ -
State Salary Supplement	$ 31,950	$ 25,793	$ 3,032	$ 3,125
Library Grants	$ 2,200	$ 2,200	$ -	$ -
Interest Earnings	$ 58,073	$ 40,795	$ 6,110	$ 11,168
Transfers	$ 45,000	$ 30,785	$ 5,000	$ 9,216
Non Business Fees	$ 653,902	$ 494,902	$ 53,986	$ 105,015
Dedicated Fees	$ 138,747	$ 127,165	$ 5,539	$ 6,043
Subtotal All Fees	**$ 1,368,493**	**$ 1,047,609**	**$ 116,302**	**$ 204,584**
Precinct Revenues	$ 177,136	$ 151,807	$ 15,793	$ 9,357
Health and Welfare	$ 527,559	$ 510,717	$ 9,889	$ 6,953
TOTAL COUNTY REVENUE	**$ 7,631,944**	**$ 5,277,788**	**$ 1,149,310**	**$ 1,204,668**
INEDPENDENT SCHOOL DISTRICT				
Local and Intermediate Sources	$ 9,979,027	$ 6,826,652	$ 1,108,670	$ 2,043,705
State Program Revenues	$ 11,972,129	$ 11,972,129	$ -	$ -
Federal Program Revenues	$ 116,804	$ 116,804	$ -	$ -
Total School Revenues	**$ 22,067,960**	**$ 18,915,585**	**$ 1,108,670**	**$ 2,043,705**
WATER DISTRICT	$ 242,557	$ 187,906	$ 20,183	$ 34,468
TOTAL ALL REVENUES	**$ 29,942,461**	**$ 24,381,280**	**$ 2,278,163**	**$ 3,282,841**

EXPENDITURES

COUNTY	Expenditures	Residential	Commercial/ Industrial	Ranch, Ag. & Open Land
County Administration				
General Administration				
County Judge	$ 134,290	$ 100,140	$ 13,832	$ 20,318
Commissioner's Court	$ 130,007	$ 88,938	$ 14,444	$ 26,625
County Clerk- Recording, Gen. Fund	$ 173,460	$ 130,103	$ 17,013	$ 26,344
Non-departmental (administrative)	$ 406,508	$ 305,150	$ 29,378	$ 71,979
IT Department	$ 92,487	$ 63,270	$ 10,275	$ 18,941
County Service Officer	$ 5,816	$ 3,979	$ 646	$ 1,191
Civil Defense	$ 399	$ 273	$ 44	$ 82
Custodial Department	$ 60,480	$ 41,374	$ 6,719	$ 12,386
Financial Administration				
County Treasurer	$ 124,154	$ 84,934	$ 13,794	$ 25,427
County Tax Assessor-Collector	$ 247,792	$ 169,515	$ 27,530	$ 50,748
Subtotal	**$ 1,375,392**	**$ 987,675**	**$ 133,676**	**$ 254,042**
Administration of Justice				
District Court - Clerk	$ 130,151	$ 110,745	$ 8,733	$ 10,672
All Other District Courts - Gen. Fund	$ 112,048	$ 95,341	$ 7,518	$ 9,188
Clerk's Records Mgt. & Presv.	$ 43,035	$ 36,618	$ 2,888	$ 3,529
Records Mgt. & Presv. Fund	$ 4,191	$ 3,566	$ 281	$ 344
County Courts - Judicial	$ 8,543	$ 6,897	$ 811	$ 836
Justice of the Peace Courts	$ 221,426	$ 183,584	$ 24,667	$ 13,175
Prosecutors - County Attorney	$ 148,867	$ 120,180	$ 14,127	$ 14,559
Juvenile Supervision	$ 176,748	$ 176,748	$ -	$ -
Law Library	$ 4,498	$ 3,631	$ 427	$ 440
Court House Security	$ 23,064	$ 18,620	$ 2,189	$ 2,256
Non-Residential Program	$ 24,062	$ 24,062	$ -	$ -
Appellate Jud. System Fund	$ 2,501	$ 2,501	$ -	$ -
State Fee & Fines Fund	$ 88,671	$ 73,517	$ 7,182	$ 7,972
Subtotal	**$ 987,805**	**$ 856,012**	**$ 68,823**	**$ 62,969**
Public Safety				
Sheriff	$ 1,014,256	$ 824,387	$ 66,129	$ 123,739
Constable	$ 100,411	$ 95,390	$ 5,021	$ -
County Jail Operating Costs	$ 464,886	$ 399,941	$ 64,945	$ -
Emergency Medical Services	$ 266,685	$ 259,831	$ 2,156	$ 4,698
EMS Memorials	$ 2,259	$ 2,201	$ 18	$ 40
Adult Probation	$ 493	$ 493	$ -	$ -
Adult Probation - Comm. Service	$ 16,006	$ 16,006	$ -	$ -
Task Force	$ 40,512	$ 40,512	$ -	$ -
911 Communication System	$ 65,761	$ 56,574	$ 9,187	$ -
Game Wardens & Highway Patrol	$ 1,113	$ -	$ -	$ 1,113
Subtotal Public Safety	**$1,972,381**	**$1,695,334**	**$147,456**	**$129,590**
Public Works				
Road & Bridge Fund	$ 1,439,748	$ 1,101,551	$ 106,397	$ 231,799
Solid Waste	$ 200,950	$ 190,902	$ 10,047	$ -
Subtotal Public Works	**$ 1,640,698**	**$ 1,292,453**	**$ 116,445**	**$ 231,799**

EXPENDITURES

COUNTY Continued	Expenditures	Residential	Commercial/ Industrial	Ranch, Ag. & Open Land
Public Health & Welfare				
Indigent Health Care	$ 183,945	$ 183,945	$ -	$ -
All Other Public Welfare- GF	$ 1,452	$ 1,452	$ -	$ -
Senior Citizen's	$ 29,238	$ 29,238	$ -	$ -
Senior Citizens Grant	$ 75,914	$ 75,914	$ -	$ -
Subtotal Health & Welfare	**$ 290,550**	**$ 290,550**	**$ -**	**$ -**
Culture/Recreation/Education				
Parks	$ 140,349	$ 140,349	$ -	$ -
Libraries	$ 100,726	$ 100,726	$ -	$ -
TIFB Library Grant	$ 20,695	$ 20,695	$ -	$ -
Historical Commission Fund	$ 1,112	$ 1,112	$ -	$ -
Subtotal Cult/Rec/Education	**$ 262,882**	**$ 262,882**	**$ -**	**$ -**
Resource Development				
Ag. Extension	$ 71,673	$ 60,808	$ 796	$ 10,069
Hotel/Motel Tax (Tourism)	$ 165,362	$ -	$ 82,681	$ 82,681
Subtotal Resource Development	**$237,036**	**$60,808**	**$83,478**	**$92,750**
Debt Service				
Perm. Imprv. Bonds sinking	$ 146,762	$ 100,400	$ 16,305	$ 30,057
1976 Co. Rd. Bonds	$ 17,812	$ 13,628	$ 1,316	$ 2,868
Gen. Tax Anticipation Note Skg. Fund	$ 36,603	$ 25,040	$ 4,067	$ 7,496
Transfer	$ 23,529	$ 16,096	$ 2,614	$ 4,819
R/B Tax Anti Note Skg Fund	$ 35,168	$ 26,907	$ 2,599	$ 5,662
1997 Road Tax Note	$ 32,271	$ 24,691	$ 2,385	$ 5,196
1997 Road Tax Note I&S	$ 142,030	$ 108,667	$ 10,496	$ 22,867
GNADE	$ 10,133	$ 10,133	$ -	$ -
Subtotal Debt Service	**$444,308**	**$325,562**	**$39,782**	**$78,964**
Total County Expenditures	**$7,211,052**	**$5,771,278**	**$589,659**	**$850,115**
INDEPENDENT SCHOOL DISTRICTS				
First ISD	$ 16,119,582	$ 16,119,582	$ -	$ -
Second ISD	$ 3,034,059	$ 3,034,059	$ -	$ -
Third ISD (County Portion)	$ 1,263,651	$ 1,263,651	$ -	$ -
Fourth ISD (County Portion)	$ 364,854	$ 364,854	$ -	$ -
Total School Expenditures	$ 20,782,145	$ 20,782,145	$ -	$ -
WATER DISTRICT	$ 270,499	$ 259,680	5,410	5,410
TOTAL ALL EXPENDITURES	**$28,263,697**	**$26,813,102**	**$595,069**	**$855,525**
% of expenditures		95%	2%	3%

STUDY FINDINGS

County Services		Residential	Commercial	Ranch/Open
County Revenue	$7,631,944	$ 5,277,788	$1,149,310	$1,204,668
County Expenditure	$7,211,052	$ 5,771,278	$589,659	$850,115
County - revenues minus expenditures	$420,893	-$493,489	$559,651	$354,554
County Services, Land Use Ratio*		1.09	0.51	0.71
Land Use Percent of Revenue		69%	15%	16%
Land Use Percent of Expenditure		80%	8%	12%
Combined Excess Commercial & Farm, Ranch and Open				$ 914,204

All Services (County, School, Water)				
Revenue	$ 29,942,461	$ 24,381,280	$ 2,278,163	$ 3,282,841
Expenditure	$ 28,263,697	$ 26,813,102	$ 595,069	$ 855,525
All Districts - revenues minus expenditures	$1,678,765	-$2,431,823	$1,683,094	$2,427,316
County and Districts - Land Use Ratio*		1.10	0.26	0.26
Land Use Percent of All Revenue		81%	8%	11%
Land Use Percent of All Expenditures		95%	2%	3%
Combined Excess Commercial & Farm, Ranch and Open				$ 4,110,410

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