



## **An Introduction to Cost of Community Services Studies**

By Thane Harrison and Charlie French: UNH Dept. of Resource Economics

### ***What is a COCS Study?***

A cost of community services (COCS) study is a type of fiscal impact analysis that determines the fiscal impact of current land uses on a municipality's budget. There are three major differences between a traditional FIA and a COCS study. 1) COCS studies are performed at the municipality scale whereas FIAs analyze smaller parcels of land; 2) COCS studies address aggregate land use classes rather than specific land use types within a municipality; and 3) COCS studies measure current rather than future fiscal impacts.

In the 1980's, the American Farmland Trust (AFT) began conducting and promoting COCS studies as a tool to advocate farmland preservation. Non-profits, local government agencies and academics rely increasingly on COCS studies to determine how different land uses affect municipal budgets. Much of the focus of COCS studies has been on demonstrating that open space and agricultural land are a fiscal benefit. By demonstrating the economic properties of agricultural and open space lands, COCS studies are an important means of putting a monetary value on what is increasingly recognized as a public good.

### ***How Are COCS Studies Performed?***

The result of a COCS study is generally a set of three or more ratios that represent the balance of revenues and expenditures for residential, commercial/industrial and agricultural/open space lands. In simple terms, the researcher determines which municipal revenues are generated by each land use and allocates that revenue to the appropriate category. Similarly, the researcher determines which municipal expenditures are demanded by each land use and allocates those expenditures to the appropriate category. Expenditures are divided by revenue to produce a final ratio. For example, a ratio of 1.03 means that for every one dollar of revenue allocated to a particular land use, 1.03 dollars of expenditures are allocated to that land use. Typically, the study will report one ratio each for residential land, commercial/industrial land and agricultural/open space land.

The term "cost of community services study" indicates that the study was done using an established framework consisting of the five basic steps listed in the next section.

### ***How Are COCS Studies Performed? (continued)***

The following steps are not explicit rules but rather guidelines used in most COCS studies. The basic method was first developed by the AFT and has been adjusted to varying degrees by individual researchers.

- 1) Define Land Use Categories – Land use categories are the three or more groups into which expenditures and revenues are allocated. The most basic categories are residential, commercial/industrial and agricultural/open space. Land use categories are most often defined by the property tax codes of the municipality studied and thus, the composition of each category varies based on differences in municipal tax codes.
- 2) Collect Relevant Financial Data – Financial data includes a listing of all the revenue generated in the municipality and the expenditures incurred in a given fiscal or calendar year. The data needed varies, depending on the portion of the budget analyzed and the desired level of disaggregation. For example, a study including school expenditures will need to find what percent of the school district budget was used by students of the studied municipality.
- 3) Allocate Expenditures – Expenditures are divided based on which land use demands a given government service. For example, schools are allocated solely to the residential category because only residents directly use schools.
- 4) Allocate Revenues – Revenue is divided based on which land use is responsible for generating certain revenue. For example, property tax revenue is divided based on how much tax was paid by each land use.
- 5) Calculate Ratios – The expenditures allocated to each land use are divided by the revenue allocated to each land use.

A combination of the following three methods are used to allocate expenditures and revenues: 1) Whole Category – Allocate an entire category of expense or revenue based on demand of one land use; 2) Fallback – Divide expenses based on fallback percentages and; 3) Interview – Interview government officials and analyze government records in order to determine which land uses directly demand certain services.

### ***Advantages of Using COCS Methodology***

Simplicity is the hallmark of COCS studies. Compared to other types of FIAs, COCS studies are fairly easy to create and understand. The methodology was developed in this way so that a person without economic expertise could conduct a COCS study. Done at the most basic level, the final results can be obtained with a relatively simple understanding of municipal financing and mathematics. Other forms of FIA often require an understanding of economics to conduct and interpret. COCS studies are also relatively inexpensive to perform because the method can be learned and conducted in a relatively short period of time. The results of a COCS study are expressed in terms that are clear to the average reader and the ratios are unambiguous in a way that is attractive to the public and decision makers.

While some researchers feel that the usefulness of COCS studies is diminished because they are not predictive, it can be argued that the results are more accurate because they are based on existing data rather than projected data. So while they may not be predictive of future development costs, they are an accurate picture of current costs and revenues that indicate what a municipality could expect from future development.

### ***Weaknesses of COCS***

The COCS study ratios should not be used to predict the ratios of future land use. In order to measure the impact of new development, researchers need to predict the revenues and expenditures of specific developments. Ratios from COCS studies calculate the revenues and expenditures of existing land use classes. The balance of revenues and expenditures for an individual development may be different than that of the land class as a whole. For example, the ratio of a new apartment complex may differ from the ratio of all current residential development. Therefore, knowing the balance of expenditures and revenues for an entire land class does not allow decision makers to accurately predict the ratio of a single piece of property within that land class.

Another reason that COCS study ratios are not predictive is because they indicate the total, rather than marginal, costs of expenditures. The marginal cost of development is the cost for each additional unit to be serviced. For example, a municipality spends a certain amount of money to provide elementary education. The municipality may or may not be able to enroll new students with no major additional cost. The cost of residential development, therefore, may be high if it requires new infrastructure or it may be fiscally beneficial if it diffuses the cost of existing infrastructure. Applying the concept of marginal costs indicates that future development may or may not impose an additional burden on the municipality. COCS study ratios are the balance of expenditures and revenues only for a given year and therefore do not indicate if additional capacity exists.

### ***What do COCS Studies Find?***

COCS studies usually conclude that residential developments contribute less in revenue than they require in government expenditures while agricultural, commercial, industrial, and open space lands contribute more in revenue than they requires in expenditures. In Phil Auger's COCS study for the Cooperative Extension of three towns in NH (Deerfield, Freemont, and Stratham), the average ratio of expenditures to revenues is 1.11 for the residential land uses; 0.45 for the commercial/industrial land uses; and 0.37 for the agriculture/open space land uses<sup>1</sup>. These numbers are consistent with other COCS studies that find that agricultural/open space and commercial/industrial lands pay for themselves while residential lands do not.

---

<sup>1</sup> Auger, P. (1996). Does Open Space Pay? Durham, NH, University of New Hampshire, Cooperative Extension.

## **Resources for More Information on COCS Studies**

- American Farmland Trust  
(website: [www.farmland.org](http://www.farmland.org))
- American Farmland Trust Farmland Information Center  
(website: [www.farmlandinfo.org](http://www.farmlandinfo.org))
- AFT COCS Fact Sheet  
(website: [http://www.farmlandinfo.org/documents/27757/FS\\_COCS\\_8-04.pdf](http://www.farmlandinfo.org/documents/27757/FS_COCS_8-04.pdf))
- Auger, P. (1996). Does Open Space Pay? UNH Cooperative Extension.  
(website: <http://ceinfo.unh.edu/Pubs/ForPubs/nrgn1010.pdf>)