

FISCAL IMPACTS TOOLKIT

Governor's Office of Planning and Budget



FISCAL IMPACTS TOOLKIT

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Top left photo was taken by Jay Baker. All other photographs on the cover were taken by Kevin Kilpatrick.

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INTRODUCTION

The Fiscal Impacts Toolkit is the latest product from the Utah Governor's Office of Planning and Budget that strives to provide applied planning techniques and information to the local governments and citizens of Utah. In a similar fashion to the Critical Lands Planning Toolkit, the Fiscal Impacts Toolkit also provides an internet based interface which users can access interactively. Another similarity and goal is the desire to make fiscal information that is often confusing and cumbersome more user friendly and interpretable for county and local government officials and other concerned citizens.

While the Critical Lands Planning Toolkit focused primarily on environmental hazards that are likely to be encountered, the Fiscal Impacts Toolkit focuses more on the financial implications associated with the most common land uses (agricultural, commercial, residential).

Residents in any area expect certain services to be provided by the local government. However, it is not uncommon for local budgets to become overextended, especially in areas experiencing rapid growth or increased urbanization. In situations where local expenditures are greater than revenues, neither residents or the local governments prefer increased taxes or a decreased amount of government services. In order to provide practical information and to help avoid the aforementioned scenario, the Fiscal Impacts Toolkit provides a hypothetical, interactive grid which users can easily change and manipulate to see how changes in land use could affect the local budgets.

Hopefully, the Fiscal Impacts Toolkit will enable a better understanding of the the budget and service implications associated with different types of land use so that local governments and residents will be able to make better land-use decisions for their communities.

Finally, although the Fiscal Impacts Toolkit shows residential land-use requiring more expenditures than it provides in revenue, it is important to note that it is not advocating for a particular type of land-use or trying to discourage residential land-use. The objective of the Fiscal Impacts Toolkit is to provide better information to local governments so that they can encourage fiscally responsible development and avoid a situation where governmental expenditures exceed revenues.

May 2006

PURPOSE & EXPLANATION OF FUNCTION

How do the amounts of different types of land-use in a community affect the finances of the local government? While this question has often been asked, it is often answered differently and in somewhat abstract or guarded terminology.

The American Farmland Trust has sponsored many studies called the Cost of Community Services studies (COCS) that have quantified the ratios between government costs and revenues for different land uses. For each study area the COCS studies produced a set of expenditure-to-revenue values for agricultural, commercial and residential land uses. Nationally, over 100 COCS studies have been conducted since 1992. The median results of these studies are summarized in Figure 1. What the COCS studies have consistently found is that commercial and agricultural land uses provide more than they receive in terms of government services, while residential land uses receive more than what they provide. Specifically, for every \$1.00 of revenue, received in the form of property tax, commercial and agricultural properties received \$0.28 and \$0.36 in government expenditures, respectively. In contrast, residential properties received \$1.15 in expenditures for every \$1.00 in revenue (see Appendix A).

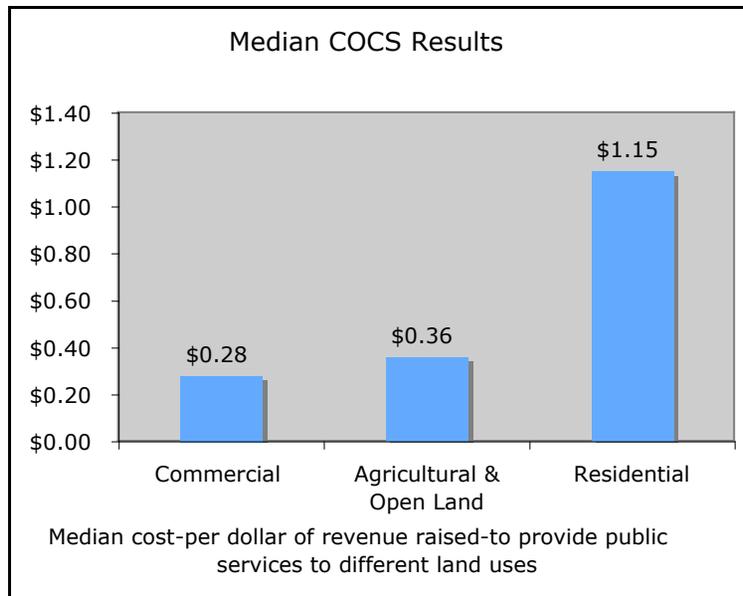


Figure 1 National U.S. Median COCS Ratios

Therefore, the COCS studies have found that agricultural land and commercial land are net governmental revenue sources; that is, they provide more revenue than they receive back in governmental services/expenditures. In contrast, residential land uses were found to be a net governmental revenue sink; that is, they require more government services than the amount received by the government in the form of property tax. A potential implication of these studies is that a community shown to only have residential land use will have a large net fiscal deficit that will have to be offset by an additional source of revenue, a reduction in government service levels or a combination of the two.

PURPOSE & EXPLANATION OF FUNCTION

	Residential	Commercial	Agricultural
Utah			
<i>Cache County</i>	1.27:1	0.25:1	0.57:1
<i>Sevier County</i>	1.11:1	0.31:1	0.99:1
<i>Utah County</i>	1.23:1	0.26:1	0.82:1

Figure 2 Revenue to Expenditure Ratios for Cache, Sevier and Utah Counties (Snyder and Ferguson 1994)

Included amongst the national data is a 1994 study conducted by Dr. Donald Snyder and Gary Ferguson for Cache, Sevier and Utah Counties. Figure 2 shows the results of their findings. A copy of the executive summary has also been included as Appendix B in this report. Overall, the ratios for Cache, Sevier and Utah Counties are consistent with the national trends; commercial and agricultural land uses provide more in revenue than what is received in expenditures and residential land uses receive more in expenditures than what is provided in revenue. It is interesting to note that the agricultural values, while still less than one, are all much higher than the national median value of \$0.36, which suggests that agricultural land use in Utah receives more government expenditure or contributes less in revenue than agriculture in other areas of the United States. Residential land use ratios for Cache and Utah Counties are also much higher than the national value of \$1.15, showing that, comparatively, residential land use requires more government expenditure in Utah relative to the rest of the United States.

Although the COCS studies have been available for almost 15 years, relating on the ground land use to the fiscal bottom line can be difficult to visualize. Therefore, to make the COCS figures more tangible and relevant to local officials and governments, the Fiscal Impacts Toolkit uses the COCS figures in conjunction with available county revenue data to spatially present the information in a more interpretable fashion.

The Fiscal Impacts Toolkit uses the Utah COCS multiplier values calculated by Snyder and Ferguson and applies them to the average property tax revenue received per 10 acres for the different types of land uses (agricultural, commercial, and residential). By translating the COCS values spatially, the user of the Fiscal Impact Toolkit can spatially see how differing proportions of each land use affect the net fiscal impact of the local government.

FISCAL IMPACTS BACKGROUND

DEFINITION OF FISCAL IMPACTS:

Described simply, the fiscal impact measures the difference between government revenues and government expenditures. It is important to remember that the COCS studies, as well as the Fiscal Impacts Toolkit, make many assumptions when determining fiscal values. Most importantly, understand that no local governments are closed financial systems. Revenues come from many different sources and expenditures will vary greatly depending upon the specific town or county being studied. Furthermore, government expenditures can broadly be broken down into two categories: capital, or one-time costs, and operation and maintenance costs. Capital costs vary widely, depending on the site-specific attributes and existing capacity of an area. As such, they are not directly included as expenditures in the COCS studies or in the Fiscal Impacts Toolkit. The data illustrated here presents aggregated and generalized information for diverse counties within the state of Utah. Any area within or outside the counties would likely have different values.

WHAT ARE REVENUES?

For the purpose of fiscal impact analysis, local government sources of revenue include:

- Property taxes (real and personal property)
- Sales taxes
- Fees in lieu of tax (for federal properties)
- Franchise taxes
- Licenses, fees and permits
- Utility and service revenues
- Fines
- Intergovernmental revenues (from state or federal government appropriations)

FISCAL IMPACTS BACKGROUND

WHAT ARE EXPENDITURES?

- *Administration* (mayors, council members, judges, attorneys, planning and zoning, office buildings, appraisers, economic development)
- *Public Safety* (police, fire, ambulance, corrections, inspection)
- *Environment and Housing* (sewer, storm water, solid waste, parks, libraries, cemeteries, etc.)
- *Transportation* (roads, sidewalk, curb & gutter)
- *Health* (hospitals, public health services)
- *Municipal debt* (interest on bonds or other loans)
- *Utilities* (for government owned utilities)

WHICH REVENUES AND EXPENDITURES ARE CONSIDERED IN THE TOOLKIT?

The revenues and expenditures used in the Fiscal Impacts Toolkit are consistent with the COCS expenditure-to-revenue ratios, which summarized the net expenditure per dollar of revenue associated with each different type of land use. For expenditures, the COCS studies primarily focused on the governmental operation and maintenance expenditures associated with each land use. Capital, or one-time costs, associated with new development were not included in the COCS ratios. For revenue, the COCS studies used property tax revenue collected from real property for each land use. Income taxes, sales taxes and personal property taxes are not included as revenue in the Fiscal Impacts Toolkit.

HOW ARE THE NUMBERS IN THE TOOLKIT CALCULATED?

METHODOLOGY

For each land use, COCS values show the amount of government expenditures per dollar of revenue. Therefore, in order to use the COCS values to spatially illustrate the fiscal impact of each land use, revenue values needed to be calculated on a per acre basis. The Fiscal Impacts Toolkit, using real property tax as a proxy for revenue, calculated the average amount of revenue received for 10 acres of each land use by using the approach shown below:

$$\frac{\$ \text{Revenue}}{10 \text{ Acres}} = \frac{\text{Land Parcels}}{10 \text{ Acres}} \times \left\{ \left(\frac{\$ \text{Revenue}}{\text{Bldg. Parcel}} \times \frac{\text{Bldg. Parcels}}{\text{Land Parcel}} \right) + \frac{\$ \text{Revenue}}{\text{Land Parcel}} \right\}$$

Step 2
Step 1

1. Calculate the dollars of revenue received per parcel of land. Each parcel of real property includes both buildings and land. In order to calculate the building portion of this revenue, the number of building parcels per land parcel is multiplied by the amount of revenue received per building parcel.
2. Multiply the dollars of revenue per parcel by the number of parcels per 10 acres. By multiplying the dollars of revenue per parcel by the number of parcels per acre, the result is the dollars of revenue per 10 acres of each land use.
3. Use the COCS ratios to determine the difference in expenditures per 10 acres of land. By multiplying the dollars of revenue per 10 acres by the COCS ratios, the result shows the excess or deficit in expenditures required by each 10 acre block of land use.

$$\frac{\$ \text{Revenue}}{10 \text{ Acres}} \times \frac{\$ \text{Expenditure}}{\$ \text{Revenue}} = \frac{\$ \text{Expenditure}}{10 \text{ Acres}} \quad \leftarrow \text{Step 3}$$

↑
COCS Ratio

HOW ARE THE NUMBERS IN THE TOOLKIT CALCULATED?

LAND USE CALCULATIONS

AGRICULTURAL

When calculating the agricultural revenue, the counties distinguish between land declared as Greenbelt under the Utah Farmland Assessment Act (FAA) or non-FAA agricultural. “The Utah Farmland Assessment Act (FAA, also called the Greenbelt Act) allows qualifying agricultural property to be assessed and taxed based upon its productive capability instead of the prevailing market value. This unique method of assessment is vital to agriculture operations in close proximity to expanding urban areas, where taxing agricultural property at market value could make farming operations economically prohibitive” (Utah State Tax Commission). Properties qualifying as Greenbelt receive a much lower taxable value than those not declared FAA land. The Fiscal Impacts Toolkit has aggregated non-FAA and FAA assessed agricultural lands when calculating the per 10 acre average revenue for each county data set.

RESIDENTIAL

The Fiscal Impacts Toolkit only considers primary residential property. It is important to distinguish between primary and secondary residential, as primary residential property is only taxed at 55% of its market value. Secondary residential data was not included due to incomplete data. If secondary residential data were included, it would likely have a lower COCS ratio than primary residential due to the higher revenue received.

An additional feature that the Fiscal Impacts Toolkit provides is a comparison between a Trend Residential Density, and Residential Densities that are 10% and 20% denser than Trend Residential. Empirical studies have shown that the operation and maintenance costs of residential

HOW ARE THE NUMBERS IN THE TOOLKIT CALCULATED?

land uses will decrease around 3%-10% for neighborhoods that have an increased residential density (units/acre) (Muro and Puentes 2004, Burchell 2003). In order to estimate the fiscal impacts of increased residential density, the Fiscal Impacts Toolkit provides two denser residential land uses, a 10% Denser Residential and a 20% Denser Residential. The 10% Denser Residential land use assumes 10% more household units for each 10-acre block with an associated 3% cost decrease in the COCS ratio. Similarly, by further extrapolating the results of the empirical studies, the 20% Denser Residential land use shows a 20% increase in household density per 10-acre block, and a 5% decrease in the COCS ratio. The 20% Denser Residential is associated with a 5% decrease in costs because the fiscal benefits (reductions in costs) that accompany higher residential density tend to decrease with increasing density (Ladd 1992). In other words, as the residential density rate increases, the expenditure savings do not increase proportionately or linearly. The initial increase in residential density will produce the greatest amount of cost reduction. Further increases in density will have a decreasing amount of cost savings. As such, the Fiscal Impacts Toolkit shows the first 10% increase in density resulting in a 3% cost savings, but an additional 10% increase in density (20% total) only resulting in a net savings of 5%.

DATA

The revenue figures used in the calculations were obtained from 2005 real property summary data sheets provided by the Cache, Morgan, San Juan and Davis County Assessors Offices (see Appendix C).

The Davis County Assessors Office did not have access to the acreages of each land use. As such, the acreage data used for Davis County was calculated from a Davis County land-use data set obtained from the Utah Automated Geographic Reference Center (Utah AGRC).

LAND USES BACKGROUND



Cache Valley

Photo - Jay Baker



Agricultural Land

Photo - Jay Baker

Descriptions of land uses

Agricultural:

Lands classified as agricultural include any large lots with land put into agricultural or ranching production. Note that most agricultural land, including those of small, rural towns, will include very low density residential units within the agricultural parcels. In some rural areas that have historically been based on agriculture and have a very low housing density, all of the housing units may be classified as agricultural as opposed to residential.

In most areas, agricultural lands do not require as many government services, such as water and sewer. However, agricultural lands require a higher amount of roads per capita and are generally further away from services, such as police, fire and education are still necessary with agricultural lands.

Although the government expenditure requirements are generally lower with agricultural land, it is important to note that the amount of revenue received from agricultural land is also much lower, due to the decreased property tax rate for lands declared Greenbelt under the Utah Farmland Assessment Act.

The two photos on the left show aerial photos of examples of agricultural land in Northern Utah.

LAND USES BACKGROUND



Older Commercial

Photo - Kevin Kilpatrick



Recent Commercial

Photo - Kevin Kilpatrick

Commercial:

Lands classified as commercial include a wide variety of office, retail, industrial and other non-agricultural, non-residential land uses.

In regards to government expenditures, commercial land uses require significant government infrastructure, such as roads, water, sewer and stormwater. However, government services, such as education, are not requisite with commercial land uses. As such, the total amount of government services required for commercial properties is less than that required for residential land uses, but more than that required for agricultural land uses.

Commercial land uses are also a significant source of governmental revenue since they commonly do not receive a reduction in their property tax rate. Additional revenue from personal property and sales tax are also generated from commercial properties.

As a result of the increased revenue and decreased service requirements, commercial and industrial land uses provide more in revenue than they receive in government expenditures and services.

LAND USES BACKGROUND



Trend Residential Development

Photo - Jay Baker



Trend Residential Development

Photo - Kevin Kilpatrick

Trend Residential:

For the purpose of the Fiscal Impacts Toolkit, lands classified as trend residential represent the average housing density for the county of reference. As the Trend Residential category has been calculated after aggregating all lands classified as residential throughout the county, within each county there are many areas that will be much denser than the trend residential rate, and areas that will have a density much less.

Residential land uses require the most public expenditures and government services. Construction and maintenance costs are necessary for roads, water, sewer, utilities, police, fire, education, recreation and garbage service in most residential areas.

Overall, residential properties contribute a substantial amount of the property tax base. However, since primary residential properties are only taxed at 55% of their market value, the amount of revenue received from residential land uses is generally less than the amount of expenditures required to support them. This is evidenced in the COCS residential expenditure-revenue ratios.

LAND USES BACKGROUND



Denser Residential Density

Photo - Katie Hinman



Denser Residential Density

Photo - Kevin Kilpatrick

10% Denser Residential & 20% Denser Residential:

While the data used for the Fiscal Impacts Toolkit does not differentiate between residential densities, there are examples of denser residential densities in each of the county data sets.

As mentioned earlier, denser residential density generally has been found to decrease the annual operation and maintenance costs for local governments by 3-10% (see Muro and Puentes, 2004, Burchell, 2003, or Burchell 2005). Most of the studies have compared low density development located further away from the core infrastructure and services against denser development located in close proximity to existing infrastructure and services.

The results have indicated that economies of scale and governmental service efficiency generally are increased with denser residential development, which decreases the requisite amount of government expenditure per household. Examples of denser development could include, denser subdivisions with smaller minimum lot sizes, cluster design, more multi-family housing units (condominiums, apartments, etc.) or mixed-use development (which has commercial and residential uses in the same areas or building lots).

TOOLKIT OVERVIEW

MENU BAR

Each cell represents 10 acres.

Fiscal Impacts Toolkit

Northern Utah | Southern Utah | Wasatch Back | Wasatch Front

SPATIAL REPRESENTATION

The display of the Fiscal Impacts Toolkit is a 10x10 grid that represents 1000 acres. As such, there are 100 cells that each spatially represents 10 acres, which is approximately equivalent to an average city block. Four data sets and six different land uses are currently available for use.

[About Fiscal Impact Values](#)

[Directions For Use](#)

LAND USE SELECTIONS
(see pages 16-19 for information on land uses)

- Agriculture
- Commercial
- Residential Trend
- Residential 10% Denser
- Residential 20% Denser
- Unclassified/Vacant

Agriculture: 0 acres
 Commercial: 0 acres
 Trend Residential: 0 acres
 10% Denser Residential: 0 acres
 20% Denser Residential: 0 acres
 Unclassified: 1000 acres
 Total: 1000 acres

Number of households: 0
 Number of people: 0

Fiscal impact per household:

Net fiscal impact: \$.00

Start Over

OUTPUT TABLE
(see page 29 for interpretation)

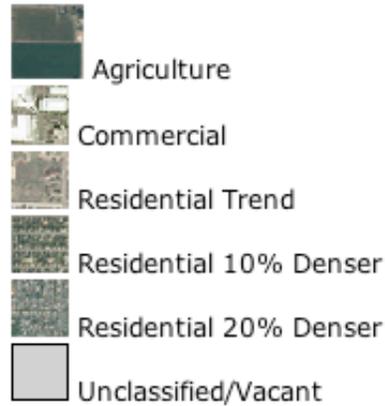
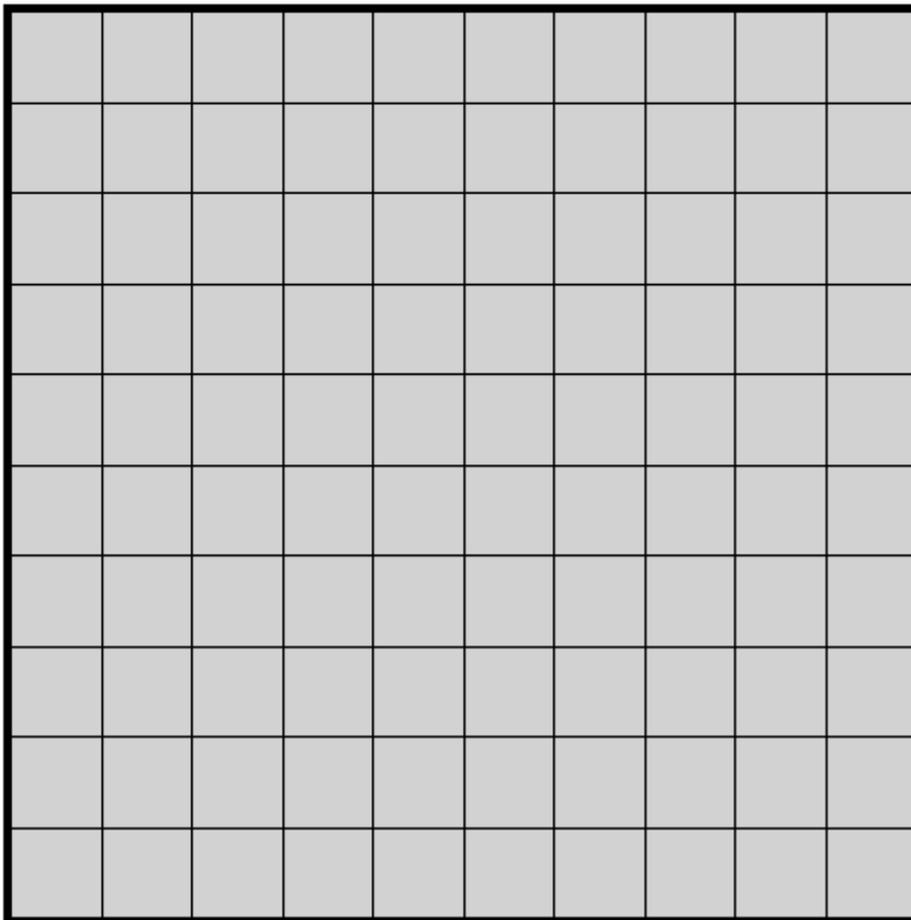
HOW TO USE THE TOOLKIT

DIRECTIONS FOR USE:

1. Select the tab on the menu bar for the appropriate area (Northern Utah, Wasatch Back, Southern Utah, or Wasatch Front)

Fiscal Impacts Toolkit

Northern Utah Southern Utah Wasatch Back Wasatch Front



Agriculture: 0 acres
Commercial: 0 acres
Trend Residential: 0 acres
10% Denser Residential: 0 acres
20% Denser Residential: 0 acres
Unclassified: 1000 acres
Total: 1000 acres

Net fiscal impact: \$0.00

Start Over

HOW TO USE THE TOOLKIT

DIRECTIONS FOR USE:

3. To apply a land use to a single cell, simply click a cell in the grid.

Fiscal Impacts Toolkit

Northern Utah | Southern Utah | Wasatch Back | Wasatch Front

- Agriculture
- Commercial
- Residential Trend
- Residential 10% Denser
- Residential 20% Denser
- Unclassified/Vacant

Agriculture: 10 acres
Commercial: 0 acres
Trend Residential: 0 acres
10% Denser Residential: 0 acres
20% Denser Residential: 0 acres
Unclassified: 990 acres
Total: 1000 acres

Net fiscal impact: \$14.16

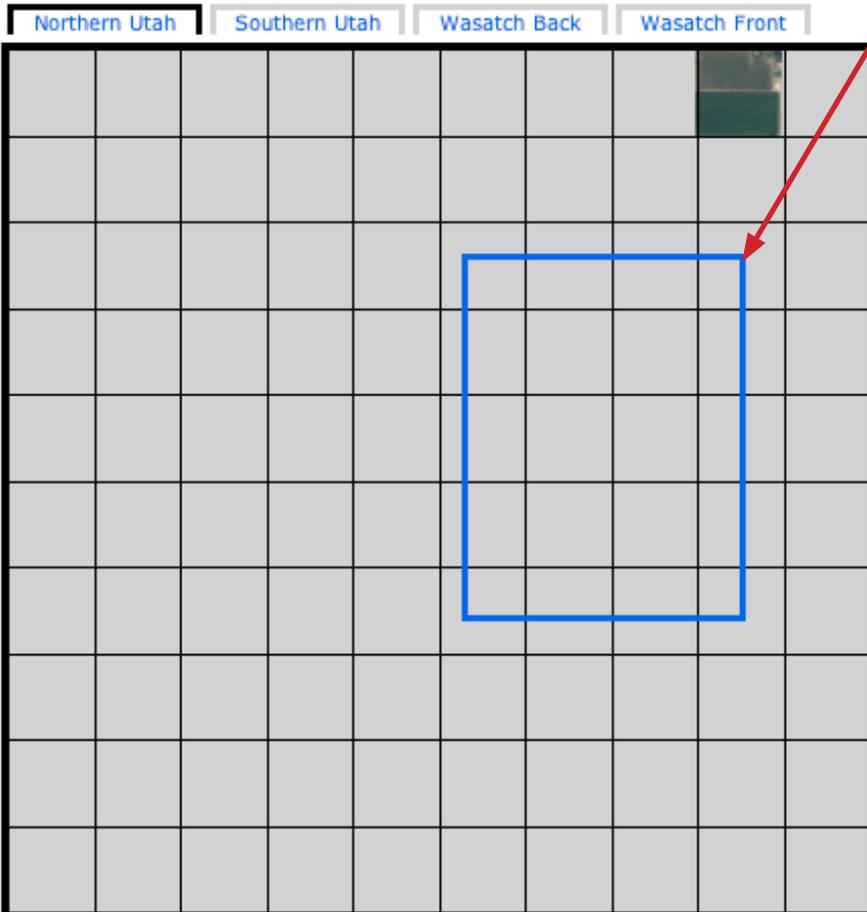
Start Over

HOW TO USE THE TOOLKIT

DIRECTIONS FOR USE:

4. To select multiple cells, click and hold down your left mouse key while moving your mouse over the grid. A blue selection box will show up and expand as you move the mouse. Release the left mouse button once you have selected the desired number of cells.

Fiscal Impacts Toolkit



-  Agriculture
-  Commercial
-  Residential Trend
-  Residential 10% Denser
-  Residential 20% Denser
-  Unclassified/Vacant

Agriculture: 10 acres
Commercial: 0 acres
Trend Residential: 0 acres
10% Denser Residential: 0 acres
20% Denser Residential: 0 acres
Unclassified: 990 acres
Total: 1000 acres

Net fiscal impact: \$14.16

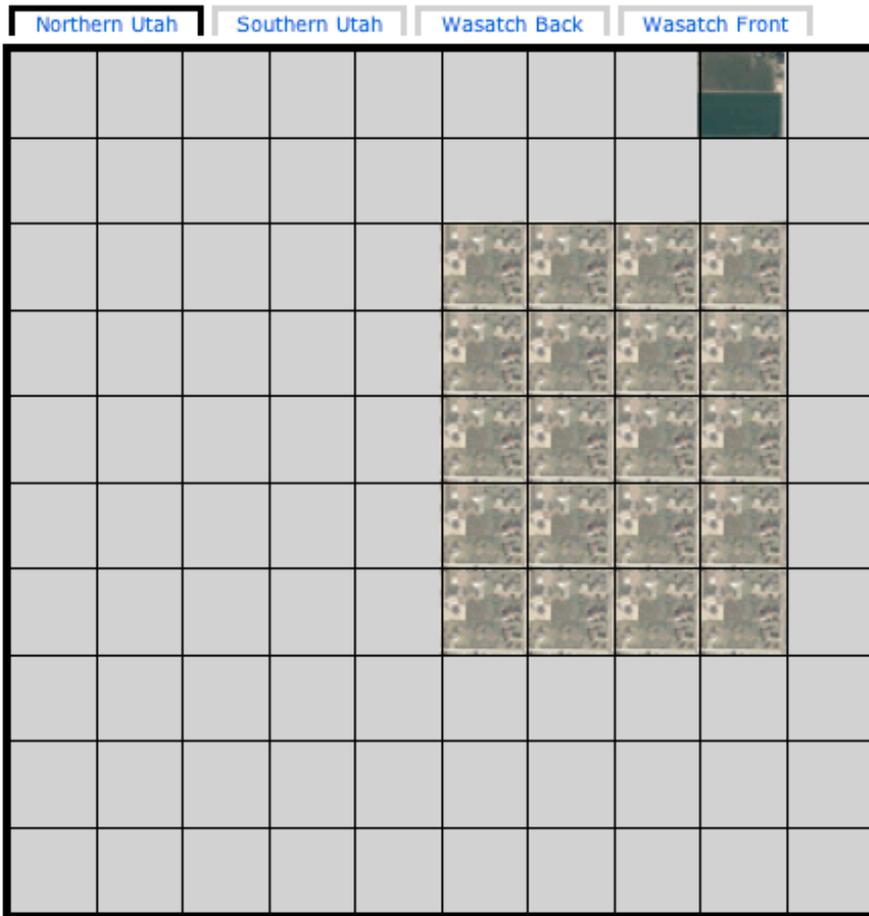
Start Over

HOW TO USE THE TOOLKIT

DIRECTIONS FOR USE:

4. The result of step 4 is shown below here. The following two pages show one potential pattern that could be produced by repeating steps 2-4.

Fiscal Impacts Toolkit



-  Agriculture
-  Commercial
-  Residential Trend
-  Residential 10% Denser
-  Residential 20% Denser
-  Unclassified/Vacant

Agriculture: 10 acres
 Commercial: 0 acres
 Trend Residential: 200 acres
 10% Denser Residential: 0 acres
 20% Denser Residential: 0 acres
 Unclassified: 790 acres
 Total: 1000 acres

Net fiscal impact: \$119,980.84

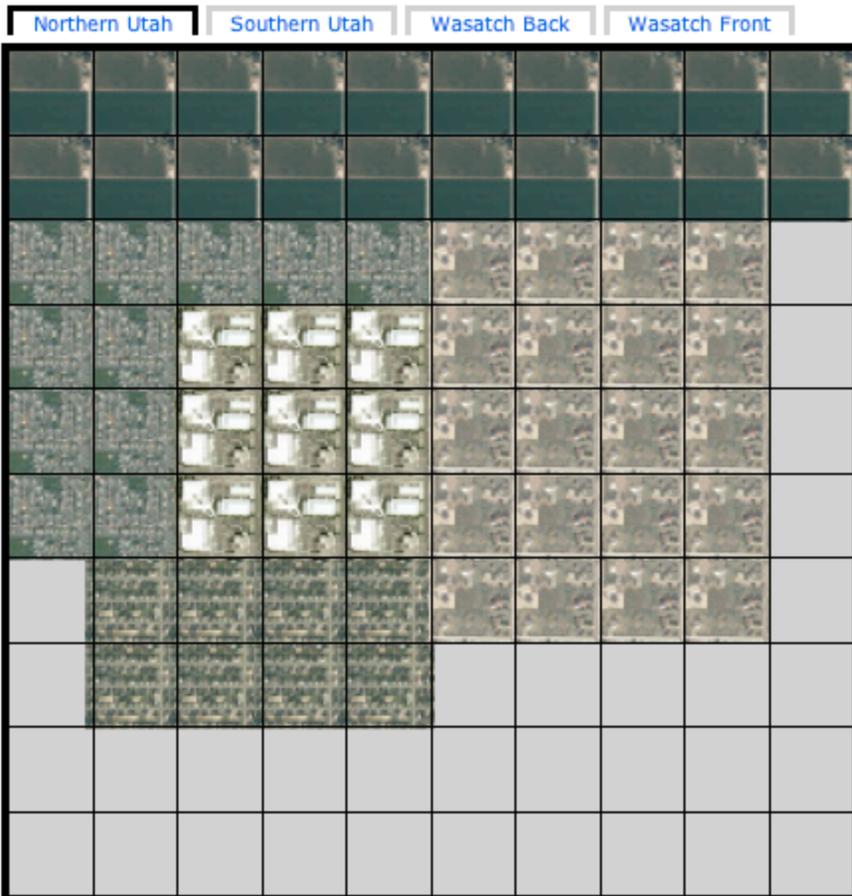
Start Over

HOW TO USE THE TOOLKIT

DIRECTIONS FOR USE:

4. If steps 2,3 and 4 are repeated with different land uses, many different combinations of land uses are possible. One possible result is shown here.

Fiscal Impacts Toolkit



-  Agriculture
-  Commercial
-  Residential Trend
-  Residential 10% Denser
-  Residential 20% Denser
-  Unclassified/Vacant

Agriculture: 200 acres
 Commercial: 90 acres
 Trend Residential: 200 acres
 10% Denser Residential: 80 acres
 20% Denser Residential: 110 acres
 Unclassified: 510 acres
 Total: 1000 acres

Net fiscal impact: \$38,975.07

Start Over

[About Fiscal Impact Values](#)

[Directions For Use](#)

Number of households: 974.121
 Number of people: 3000.54

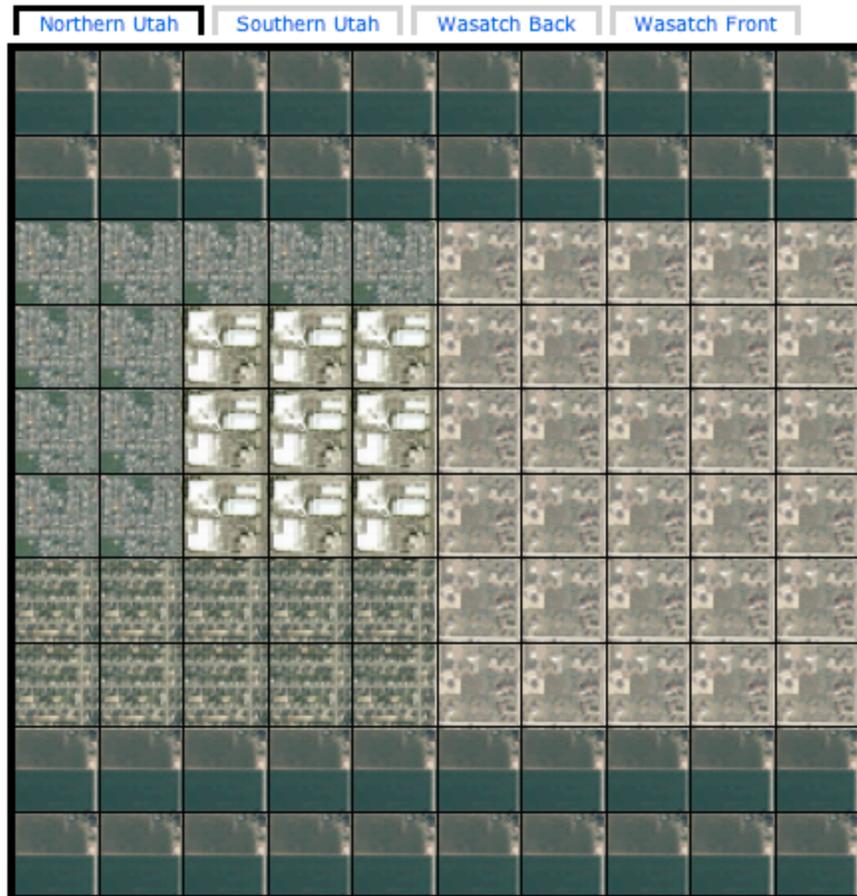
Fiscal impact per household: \$40.01

HOW TO USE THE TOOLKIT

DIRECTIONS FOR USE:

4. An example of a completely filled grid is shown below.

Fiscal Impacts Toolkit



- Agriculture
- Commercial
- Residential Trend
- Residential 10% Denser
- Residential 20% Denser
- Unclassified/Vacant

Agriculture: 400 acres
Commercial: 90 acres
Trend Residential: 300 acres
10% Denser Residential: 100 acres
20% Denser Residential: 110 acres
Unclassified: 210 acres
Total: 1000 acres

Net fiscal impact: \$108,995.61

Start Over

[About Fiscal Impact Values](#)

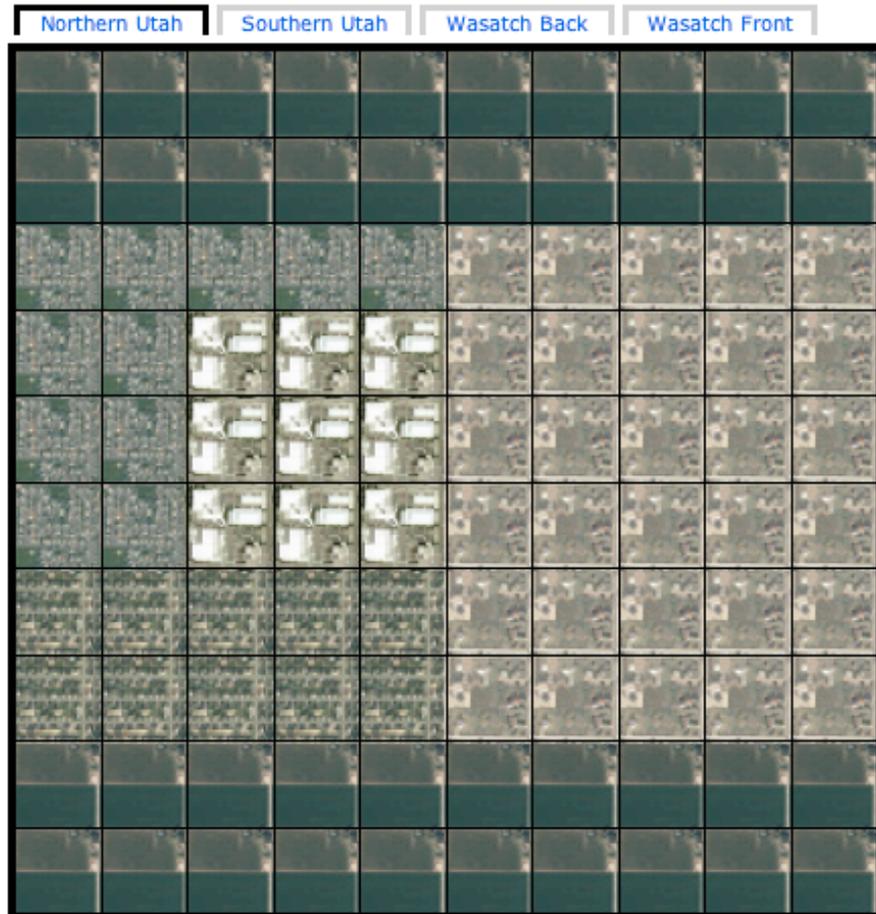
[Directions For Use](#)

Number of households: 1268.339
Number of people: 3883.194

Fiscal impact per household: \$85.94

HOW TO USE THE TOOLKIT

Fiscal Impacts Toolkit



DIRECTIONS FOR USE:

5. You can overwrite or change the land use of any cells by selecting a different land use and applying it to the desired cells. Alternately, you can select the Start Over button and the grid will be reset.

[About Fiscal Impact Values](#)
[Directions For Use](#)

- Agriculture
- Commercial
- Residential Trend
- Residential 10% Denser
- Residential 20% Denser
- Unclassified/Vacant

Agriculture: 400 acres
 Commercial: 90 acres
 Trend Residential: 300 acres
 10% Denser Residential: 100 acres
 20% Denser Residential: 110 acres
 Unclassified: 210 acres
 Total: 1000 acres

Number of households: 1268.339
 Number of people: 3883.194
 Fiscal impact per household: \$85.94

Net fiscal impact: \$108,995.61

Start Over

INTERPRETING THE RESULTS

Agriculture: 400 acres
Commercial: 90 acres
Trend Residential: 300 acres
10% Denser Residential: 100 acres
20% Denser Residential: 110 acres
Unclassified: 210 acres
Total: 1000 acres

Number of households: 1268.339
Number of people: 3883.194
Fiscal impact per household: \$85.94

Net fiscal impact: \$108,995.61

Land Use Acres

The output table will show how many acres of each land use have been selected on the grid. The sum of these will always be 1000 acres.

Fiscal Impact Value

The Fiscal Impact value shows the resulting shortage or surplus of government funds associated with the land-use proportions displayed in the grid.

RED Fiscal Impact values show the government having a shortage/deficit of revenue and needing the amount of the value shown to cover the extra costs associated with the displayed land-use proportions. A red fiscal impact value shows the difference between the revenue received and the costs required by the land-use proportions displayed in the grid.

GREEN Fiscal Impact Values show the amount of surplus/excess governmental revenue provided by the displayed land-use proportions. That is, the amount of governmental revenue left over after providing for the costs and services.

If the Fiscal Impact Value were equal to zero, the governmental revenues received would equal (pay for) the cost of the required governmental services (costs) with no surplus or shortage of funds.

If the Fiscal Impact Value is red (i.e., a shortage/deficit), then the **Fiscal Impact per Household value** will show the per household burden of a fiscal impact based on the land-use pattern displayed.

CAVEATS & LIMITATIONS

Site-specific limitations

- Proximity or location in relation to existing infrastructure and the pattern of land use does not affect the fiscal impact (the proportions are what matters for the calculation). In reality, it is much more efficient for government services if new development occurs closer to existing development and within existing service areas.
- Development in areas that have excess or surplus capacity of government services and infrastructure will greatly reduce the fiscal impact by decreasing both the capital and operating costs.
- In contrast, development in areas that have no existing infrastructure or services would require substantially higher capital costs.

Revenue Limitations

- No accounting for the effects of personal property taxes. Personal property associated with residential, commercial and agricultural land uses varies greatly. Although personal property tax is not as significant as real property, it does provide a noticeable amount of funding to local governments.
- No accounting for sales tax revenues. Not surprisingly, the fiscal impact of commercial properties would likely be even more favorable to local governments with the inclusion of sales tax revenues. However, since most of the sales tax initially is collected at the state level, all of the sales tax revenues are not distributed locally.
- No accounting for any intergovernmental funds or sources of revenues. The amount of funding received from the state or federal government will also vary greatly in different areas.

Expenditure Limitations

- Assumes any government owned utilities pay for themselves. If utilities are subsidized by the local government, then there will be additional expenditures associated with the utilities.

CAVEATS & LIMITATIONS

- No accounting for one-time capital costs related to construction of new infrastructure or expanded services required by development. The magnitude of the capital costs is often much larger than the annual operating costs. However, many local governments are defraying these costs through the use of impact fees charged to the proponents of the new developments.

Land-Use Limitations

- Only considers primary residential data (not secondary or vacant land). Secondary residential land provides more revenue to the local governments because it is taxed at 100% of its market value. Primary residential is only taxed at 55% of its taxable value.
- Only considers commercial and agricultural land (no federal lands, municipal lands, or other centrally assessed properties).
- Cannot calculate the fiscal impacts of mixed use developments. If a new development has a mixture of commercial and residential, the resulting expenditure to revenue ratio would likely be more beneficial to the local government than strictly residential land-uses.

Spatial and Temporal Limitations

- Cannot give specific property tax revenue for a particular town; as noted before, due to county level aggregation of the data, at any specific location, the actual tax rate associated with each type of land use are likely to be much different than those calculated in the Fiscal Impacts Toolkit.
- The Fiscal Impacts Toolkit only calculates annual operating costs. As such, it cannot calculate the thirty year fiscal benefits or burdens of land uses; smaller costs extrapolated out over 30 years will likely be much larger in magnitude than the capital costs.

CONCLUSIONS

Conclusions

- The Fiscal Impacts Toolkit provides a spatial way of interpreting the effects of different land uses on government fiscal impacts.
- By using this approach, the relative fiscal implications of each land use become more apparent.
- Commercial land uses provide local governments with a proportionally large amount of revenue and require fewer government services.
- Agricultural land uses also require few government services, but also contribute less in revenue. As a result, 10 acres of agricultural lands, on average, provides more revenue than what it receives in expenditures, but the fiscal benefit is much lower proportionally than 10 acres of commercial lands.
- 10 acres of primary residential lands provide a local government with an amount of revenue that is less than 10 acres of commercial and much more than 10 acres of agricultural land. However, the governmental expenditures required by 10 acres of residential land are much more than either commercial and agricultural. Furthermore, the amount of revenue provided by 10 acres of residential land does not pay for all of the government services and expenditures associated with 10 acres of residential land.

POLICY OR BUDGET IMPLICATIONS

What are some of the alternatives for government policy or budgetary implications that could result from a negative fiscal impact?

- Raise property tax rates
- Decrease services
- Manage for existing infrastructure and service capacities
- More commercial or industrial land uses
- Preserve agricultural land
- Mixed use development
- Higher residential density
- Approve fewer new residential applications without an accompanying source of revenue to cover the operation and maintenance deficit caused by residential development
- For capital costs, local governments can enact impact fees on new development; impact fees defray the amount of governmental capital costs associated with new development by passing on the proportionate costs to the developers/proponents who will benefit from the additional infrastructure.

AREAS FOR FURTHER RESEARCH

Areas for Further Research

- Better residential density data could enable a more accurate understanding of the relationship between residential density and fiscal impacts.
- Incorporating more land uses and differentiating more between existing land uses would also make the Fiscal Impacts Toolkit more accurate.
- Incorporating the capital costs associated with different land uses would address an important aspect of fiscal impact analysis that is not included in the Fiscal Impacts Toolkit.
- If a local municipality had adequate spatial and financial data related to infrastructure locations and capacities, someone could attempt to predict the localized fiscal impacts resulting from a specific type of land use at an actual location.
- Incorporating personal property tax revenue would also make the Fiscal Impacts Toolkit more accurate.
- Incorporating sales tax revenue generated from commercial properties would also be a useful addition to the Fiscal Impacts Toolkit. However, one of the criticisms regarding the inclusion of sales tax is that the source of the sales tax revenue often is not associated with a local land use proportion. In many areas, a large difference between day time and night time populations plays a substantial part in determining the amount of sales tax revenue received. To adequately incorporate sales tax, this criticism would need to be reconciled.

REFERENCES

American Farmland Trust. (2004). Fact sheet: Cost of community services studies. Northhampton, MA: Farmland Information Center. (<http://www.farmlandinfo.org>)

American Farmland Trust. (2002). Fact sheet: Cost of community services studies. Northhampton, MA: Farmland Information Center. (<http://www.farmlandinfo.org>)

Burchell, R.W., & Listokin, D. (1978). *The Fiscal Impact Handbook: estimating local costs and revenues of land development*. 1978. New Brunswick, NJ: Center for Urban Policy Research.

Burchell, R.W., & Listokin, D. (1980). *Practitioner's guide to fiscal impact analysis*. New Brunswick, NJ: Center for Urban Policy Research.

Burchell, R.W., & Mukherji, S. (2003). Conventional Development versus managed growth: The costs of sprawl. *American Journal of Public Health*, 93, 1534-1540.

Burchell, R.W., Downs, A., McCann, B., & Mukherji, S. (2005). *Sprawl costs: Economic impacts of unchecked development*. Washington, D.C.: Island Press.

Dekel, G.P. (1995). Housing density: A neglected dimension of fiscal impact analysis. *Urban Studies*, 32, 935-951.

Edwards, M. *Fiscal Impact Analysis*. (http://www.lic.wisc.edu/shaping-dane/facilitation/all_resources/impacts/analysis_fiscal.htm).

REFERENCES

- Frank, J.E. (1989). The costs of alternative development patterns: A review of the literature. Washington, D.C.: Urban Land Institute.
- Garrett, T., & Leatherman, J.C. An Introduction to State and Local Finance. (<http://www.rri.wvu.edu/WebBook/Garrett/chaptersix.htm>).
- Honadle, B., Cigler, B., & Costa, J. Fiscal Health for Local Governments. (http://www.elsevier.com/wps/find/bookdescription.cws_home/701252/description#description).
- Hozheimer, T. (1998). How has fiscal impact analysis been integrated into local comprehensive planning? Case studies of Howard County, Maryland and Loudoun County, Virginia. AICP Press. (<http://www.asu.edu/caed/proceedings98/Holz/holz.html>).
- Ladd, H.F. (1992). Population growth, density and the costs of providing public services. *Urban Studies*, 29, 273-295.
- Mattson, G.A. (2002). Small towns, sprawl and the politics of policy choices: The Florida experience. Lanham, MD: The University Press of America.
- Muro, M., & Puentes, R. (2004). Investing in a better future: A review of the fiscal and competitive advantages of smarter growth development patterns. The Brookings Institution Center on Urban and Metropolitan Policy.
- Natural Resources Defense Council. Developments and dollars: An introduction to fiscal impact analysis in land use planning. (<http://www.nrdc.org/cities/smartGrowth/dd/ddinx.asp>).

REFERENCES

Snyder, D.L., & Ferguson, G. (1994). Cost of community services study: Cache, Sevier, and Utah Counties. ERI Study Paper #94-19.

Steinlieb, G., Beaton, W.P., Burchell, R.W., Hughes, J.W., James, F.J., Listokin, D., & Windsor, D. (1973). Housing Development and Municipal Costs. New Brunswick, NJ: Center for Urban Policy Research.

Torres, J. (1972). Government Services in Major Metropolitan Areas. New York, NY: The Conference Board.

Utah Automated Geographic Reference Center (Utah AGRC). (<http://agrc.its.state.ut.us/>).

Utah State Tax Commission Farmland Assessment. (<http://propertytax.utah.gov/faa/faa.html>).

Utah State Tax Commission Homepage. (<http://www.tax.utah.gov/>).

West Coast Environmental Law Guide to Fiscal Impact. (<http://www.wcel.org/issues/urban/sbg/Part7/fiscalimpact.htm>).

Wilkins, H., & Brown, H.J. (1979). The Interaction Between Urbanization and Land: Quality and Quantity in Environmental Planning and Design. Cambridge, MA: Landscape Architecture Research Office Harvard University.

APPENDICES

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Appendix B

Cost of Community Services Study for Cache, Sevier and Utah Counties,
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County Assessors Data
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APPENDIX A - COCS FACT SHEET



FARMLAND
INFORMATION
CENTER

FACT SHEET

COST OF COMMUNITY SERVICES STUDIES



FARMLAND INFORMATION CENTER
One Short Street, Suite 2
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DESCRIPTION

Cost of Community Services (COCS) studies are a case study approach used to determine the fiscal contribution of existing local land uses. A subset of the much larger field of fiscal analysis, COCS studies have emerged as an inexpensive and reliable tool to measure direct fiscal relationships. Their particular niche is to evaluate working and open lands on equal ground with residential, commercial and industrial land uses.

COCS studies are a snapshot in time of costs versus revenues for each type of land use. They do not predict future costs or revenues or the impact of future growth. They do provide a baseline of current information to help local officials and citizens make informed land use and policy decisions.

METHODOLOGY

In a COCS study, researchers organize financial records to assign the cost of municipal services to working and open lands, as well as to residential, commercial and industrial development. Researchers meet with local sponsors to define the scope of the project and identify land use categories to study. For example, working lands may include farm, forest and/or ranch lands. Residential development includes all housing, including rentals, but if there is a migrant agricultural work force, temporary housing for these workers would be considered part of agricultural land use. Often in rural communities, commercial and industrial land uses are combined. COCS studies findings are displayed as a set of ratios that compare annual revenues to annual expenditures for a community's unique mix of land uses.

COCS studies involve three basic steps:

1. Collect data on local revenues and expenditures.
2. Group revenues and expenditures and allocate them to the community's major land use categories.
3. Analyze the data and calculate revenue-to-expenditure ratios for each land use category.

The process is straightforward, but ensuring reliable figures requires local oversight. The most complicated task is interpreting existing records to reflect COCS land use categories. Allocating revenues and expenses requires a significant amount of research, including extensive interviews with financial officers and public administrators.

HISTORY

Communities often evaluate the impact of growth on local budgets by conducting or commissioning fiscal impact analyses. Fiscal impact studies project public costs and revenues from different land development patterns. They generally show that residential development is a net fiscal loss for communities and recommend commercial and industrial development as a strategy to balance local budgets.

Rural towns and counties that would benefit from fiscal impact analysis may not have the expertise or resources to conduct a study. Also, fiscal impact analyses rarely consider the contribution of working and other open lands uses, which are very important to rural economies.

American Farmland Trust (AFT) developed COCS studies in the mid-1980s to provide communities with a straightforward and inexpensive way to measure the contribution of agricultural lands to the local tax base. Since then, COCS studies have been conducted in at least 102 communities in the United States.

FUNCTIONS & PURPOSES

Communities pay a high price for unplanned growth. Scattered development frequently causes traffic congestion, air and water pollution, loss of open space and increased demand for costly public services. This is why it is important for citizens and local leaders to understand the relationships between residential and commercial growth, agricultural land use, conservation and their community's bottom line.

COCS studies help address three claims that are commonly made in rural or suburban communities facing growth pressures:

1. Open lands—including productive farms and forests—are an interim land 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 current use value for farming or ranching instead of at its potential use value for residential or commercial development.
3. Residential development will lower property taxes by increasing the tax base.

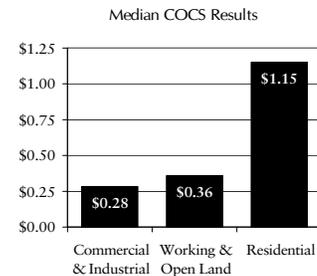
COST OF COMMUNITY SERVICES STUDIES

For additional information on farmland protection and stewardship contact the Farmland Information Center. The FIC offers a staffed answer service, online library, program monitoring, fact sheets and other educational materials.

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While it is true that an acre of land with a new house generates more total revenue than an acre of hay or corn, this tells us little about a community's bottom line. In areas where agriculture or forestry are major industries, it is especially important to consider the real property tax contribution of privately owned working lands. Working and other open lands may generate less revenue than residential, commercial or industrial properties, but they require little public infrastructure and few services.

COCS studies conducted over the last 20 years show working lands generate more public revenues than they receive back in public services. Their impact on community coffers is similar to



Median cost—per dollar of revenue raised—to provide public services to different land uses.

that of other commercial and industrial land uses. On average, because residential land uses do not cover their costs, they must be subsidized by other community land uses. Converting agricultural land to residential land use should not be seen as a way to balance local budgets.

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

Communities need reliable information to help them see the full picture of their land uses. COCS studies are an inexpensive way to evaluate the net contribution of working and open lands. They can help local leaders discard the notion that natural resources must be converted to other uses to ensure fiscal stability. They also dispel the myths that residential development leads to lower taxes, that differential assessment programs give landowners an "unfair" tax break and that farmland is an interim land use just waiting around for development.

One type of land use is not intrinsically better than another, and COCS studies are not meant to judge the overall public good or long-term merits of any land use or taxing structure. It is up to communities to balance goals such as maintaining affordable housing, creating jobs and conserving land. With good planning, these goals can complement rather than compete with each other. COCS studies give communities another tool to make decisions about their futures.



APPENDIX A - COCS FACT SHEET

AMERICAN FARMLAND TRUST · FARMLAND INFORMATION CENTER

SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, REVENUE-TO-EXPENDITURE RATIOS IN DOLLARS

Community	Residential including farm houses	Commercial & Industrial	Working & Open Land	Source
Colorado				
Custer County	1 : 1.16	1 : 0.71	1 : 0.54	Haggerty, 2000
Saguache County	1 : 1.17	1 : 0.53	1 : 0.35	Dirt, Inc., 2001
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
Georgia				
Carroll County	1 : 1.29	1 : 0.37	1 : 0.55	Dorfman and Black, 2002
Grady County	1 : 1.72	1 : 0.10	1 : 0.38	Dorfman, 2003
Thomas County	1 : 1.64	1 : 0.38	1 : 0.66	Dorfman, 2003
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
Oldham County	1 : 1.05	1 : 0.29	1 : 0.44	American Farmland Trust, 2003
Maine				
Bethel	1 : 1.29	1 : 0.59	1 : 0.06	Good, 1994
Maryland				
Carroll County	1 : 1.15	1 : 0.48	1 : 0.45	Carroll County Dept. of Management & Budget, 1994
Cecil County	1 : 1.17	1 : 0.34	1 : 0.66	American Farmland Trust, 2001
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
Harford County	1 : 1.11	1 : 0.40	1 : 0.91	American Farmland Trust, 2003
Kent County	1 : 1.05	1 : 0.64	1 : 0.42	American Farmland Trust, 2002
Wicomico County	1 : 1.21	1 : 0.33	1 : 0.96	American Farmland Trust, 2001
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				
Marshall Twp., Calhoun Cty.	1 : 1.47	1 : 0.20	1 : 0.27	American Farmland Trust, 2001
Newton Twp., Calhoun Cty.	1 : 1.20	1 : 0.25	1 : 0.24	American Farmland Trust, 2001
Scio Township	1 : 1.40	1 : 0.28	1 : 0.62	University of Michigan, 1994

AMERICAN FARMLAND TRUST · FARMLAND INFORMATION CENTER

SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, REVENUE-TO-EXPENDITURE RATIOS IN DOLLARS

Community	Residential including farm houses	Commercial & Industrial	Working & Open Land	Source
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
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				
Freehold Township	1 : 1.51	1 : 0.17	1 : 0.33	American Farmland Trust, 1998
Holmdel Township	1 : 1.38	1 : 0.21	1 : 0.66	American Farmland Trust, 1998
Middletown Township	1 : 1.14	1 : 0.34	1 : 0.36	American Farmland Trust, 1998
Upper Freehold Township	1 : 1.18	1 : 0.20	1 : 0.35	American Farmland Trust, 1998
Wall Township	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				
Clark County	1 : 1.11	1 : 0.38	1 : 0.30	American Farmland Trust, 2003
Knox County	1 : 1.05	1 : 0.38	1 : 0.29	American Farmland Trust, 2003
Madison Village	1 : 1.67	1 : 0.20	1 : 0.38	American Farmland Trust, 1993
Madison Township	1 : 1.40	1 : 0.25	1 : 0.30	American Farmland Trust, 1993
Shalersville Township	1 : 1.58	1 : 0.17	1 : 0.31	Portage County Regional Planning Commission, 1997

APPENDIX A - COCS FACT SHEET

AMERICAN FARMLAND TRUST · FARMLAND INFORMATION CENTER

SUMMARY OF COST OF COMMUNITY SERVICES STUDIES, REVENUE-TO-EXPENDITURE RATIOS IN DOLLARS

Community	Residential including farm houses	Commercial & Industrial	Working & Open Land	Source
Pennsylvania				
Allegheny Township	1 : 1.06	1 : 0.14	1 : 0.13	Kelsey, 1997
Bedminster Township	1 : 1.12	1 : 0.05	1 : 0.04	Kelsey, 1997
Bethel Township	1 : 1.08	1 : 0.17	1 : 0.06	Kelsey, 1992
Bingham Township	1 : 1.56	1 : 0.16	1 : 0.15	Kelsey, 1994
Buckingham Township	1 : 1.04	1 : 0.15	1 : 0.08	Kelsey, 1996
Carroll Township	1 : 1.03	1 : 0.06	1 : 0.02	Kelsey, 1992
Hopewell Township	1 : 1.27	1 : 0.32	1 : 0.59	The South Central Assembly for Effective Governance, 2002
Maiden Creek Township	1 : 1.28	1 : 0.11	1 : 0.06	Kelsey, 1998
Richmond Township	1 : 1.24	1 : 0.09	1 : 0.04	Kelsey, 1998
Shrewsbury Township	1 : 1.22	1 : 0.15	1 : 0.17	The South Central Assembly for Effective Governance, 2002
Stewardson Township	1 : 2.11	1 : 0.23	1 : 0.31	Kelsey, 1994
Straban Township	1 : 1.10	1 : 0.16	1 : 0.06	Kelsey, 1992
Sweden Township	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				
Bandera County	1 : 1.10	1 : 0.26	1 : 0.26	American Farmland Trust, 2002
Bexar County	1 : 1.15	1 : 0.20	1 : 0.18	American Farmland Trust, 2004
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
Culpeper County	1 : 1.22	1 : 0.41	1 : 0.32	American Farmland Trust, 2003
Frederick County	1 : 1.19	1 : 0.23	1 : 0.33	American Farmland Trust, 2003
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

American Farmland Trust's Farmland Information Center acts as a clearinghouse for information about Cost of Community Services studies. Inclusion in this table does not necessarily signify review or endorsement by American Farmland Trust.

APPENDIX B - UTAH COCS SUMMARY

Cost of Community Services Study Cache, Sevier, and Utah Counties

Submitted by

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Professor and Head**

and

**Gary Ferguson
Research Assistant**

**Economics Department
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July 1994

Even though the COCS approach is less costly than a detailed benefit-cost analysis, it still requires considerable time and effort. Furthermore, it has generally been done on a community level. The purpose of this study was to see if an alternative, less costly approach could be developed which would provide results similar to those available using the traditional COCS approach.

An alternative method of analysis has been developed which relies heavily on secondary data. The approach utilizes data from local government sources, the State Auditor's Office, the Utah State Tax Commission, as well as data from various census reports. This approach yields results consistent with traditional COCS analyses, but it requires fewer financial and time resources. Following this approach, results were reported for three study areas: Cache, Sevier, and Utah counties.

Results of this study are summarized below:

Revenues and expenditures for cities and towns in Cache County were analyzed and allocated to residential, commercial, and agricultural exposures. The expenditure-to-revenue ratio for the cities and towns in Cache County was 1.24. This ratio suggests that residences within towns and cities receive \$1.24 in services for every \$1 collected in revenue. The commercial expenditure-to-revenue ratio was 0.43. The ratio for agricultural or open lands was only 0.27, meaning that open areas within towns and cities receive back approximately 27 cents for every \$1 contributed in tax revenues.

For Cache County as a whole, the residential expenditure-to-revenue increases slightly from 1.24 to 1.27. The commercial expenditure-to-revenue ratio dropped from .43 to .25. The agricultural expenditure-to-revenue ratio increased, going from .29 to .57.

Revenues and expenditures for cities and towns in Sevier County were allocated to residential, commercial, and agricultural exposures. The expenditure-to-revenue ratio for the cities and towns in Sevier County was 1.12. This ratio suggests that residences within towns and cities receive \$1.12 in services for every \$1 collected in revenue. The commercial expenditure-to-revenue ratio was 0.40. The ratio for agricultural or open lands was 0.84, meaning that open areas within towns and cities receive back approximately 84 cents for every \$1 contributed in tax revenues.

For the cities, towns and Sevier County as a whole, the residential expenditure-to-revenue decreased slightly from 1.12 to 1.11. The commercial expenditure-to-revenue ratio dropped from .40 to .31. The agricultural expenditure-to-revenue ratio likewise increased, going from .84 to .99, suggesting that agriculture receives \$0.99 in services for every dollar it contributes in taxes.

APPENDIX B - UTAH COCS SUMMARY

Revenues and expenditures for cities and towns in Utah County were analyzed and allocated to residential, commercial and agricultural exposures. The expenditure-to-revenue ratio for the cities and towns in Cache County was 1.00. This ratio suggests that residences within towns and cities receive \$1 in services for every \$1 collected in revenue. The commercial expenditure-to-revenue ratio was 0.22. The ratio for agricultural or open lands was only 0.68, meaning that open areas within towns and cities receive services worth approximately 68 cents for every \$1 contributed in tax revenues.

When the Utah County budget is included, the resulting expenditure-to-revenue ratios for residential, commercial and farm properties were 1.23, 0.26, and 0.82, respectively.

Considering the city and town first, the results of this study are similar to those derived in previous work. Recall that the Massachusetts study found an expenditure-to-revenue ratio for residential lands of 1.12. For this study, expenditures-to-revenue ratios for residential properties were 1.24, 1.12 and 1.00, respectively for Cache, Sevier, and Utah Counties.

The commercial expenditures-to-revenue ratio for the Massachusetts study was .41, whereas the results in this study were .43, .40, and .22 for Cache, Sevier and Utah Counties, respectively.

The agricultural expenditure-to-revenue for the Massachusetts study was .33. The results from this study when towns and cities are considered were .27, .84, and .68.

While these results are similar to the earlier Massachusetts study, there are some differences. First, the residential exposure for towns and cities in Utah County appear to be self-supporting. This would likely be the

case where there are few 'open' areas within incorporated boundaries. Second, the return to commercial enterprise for tax dollars contributed is substantially lower in the case of Utah County, approximately half of that realized in the other counties. This suggests that commercial exposures are receiving less for their contribution than in the other counties. Given that the residential ratio was 1, it is difficult to understand where the funds generated by commercial activity are going.¹³ Third, the return to the agricultural sector is different from the Massachusetts study for Sevier and Utah counties, but similar for Cache County.

The results of this analysis when county data are added is, in many cases, quite different than those derived in earlier studies. The expenditure-to-revenue ratio for residential areas within the county is 1.27, 1.11, and 1.23 for Cache, Sevier, and Utah Counties respectively, compared to 1.12 for the Massachusetts study. Of the three counties examined in this study, Sevier County is the least urbanized and the one that compares most favorably with the three Massachusetts' communities included in the Massachusetts study. In this case, the results for residential properties are consistent with this past study. In the more highly urbanized counties, i.e., Cache and Utah, residential areas are paying a smaller portion of the services received than are commercial and agricultural properties. That should not be surprising since it would be anticipated that "urban sprawl" likely increases the costs of providing needed services. It may also be true, given that public funds are allocated on a per person basis, that population can dictate how funds are allocated.

The commercial expenditure-to-revenue ratio for the commercial exposure were 0.25, 0.31 and 0.26 for Cache, Sevier, and Utah Counties, respectively, compared to 0.41 from the Massachusetts study. Once again, the results for Sevier County more closely match those from the Massachusetts study, as would be expected since both areas are relatively rural. Still, there is a much higher degree of subsidization in these three counties than noted in other studies.

APPENDIX B - UTAH COCS SUMMARY

The agricultural expenditure-to-revenue ratios were 0.57, 0.99, and 0.82 for Cache, Sevier, and Utah Counties, compared to .33 derived in the Massachusetts study. These differences are much more dramatic than occurred under the residential and commercial exposures. Agriculture in Cache County appears to subsidize residential properties at a higher level than the other counties studied. Sevier County shows almost no subsidization of residential properties which might occur if the majority of people in Sevier County resides in towns and cities and if limited services are being provided to rural areas. In the case of Cache County, as urban sprawl increases, the need for subsidization may be greater, requiring that more funds be transferred between agriculture and commercial enterprises to residential areas. The results from Utah County are the most difficult to explain. It might be possible that as a county becomes more and more urban, the need for subsidization decreases simply because the share of revenue coming from agricultural (or open) lands decreases. For instance, in Cache County, the relative share of agricultural tax revenues to total county tax revenues is 5.2 percent. In Sevier County, the share of agricultural tax revenues to total county tax revenues is 9.3 percent, while in Utah County, the share of agricultural tax revenues to total tax revenues is only 3.7 percent.

These results would suggest that if an area or community is highly urbanized, such that little land remains in agriculture or open space, the degree of subsidization from those rural areas will decline and more of the burden of service provision will naturally be carried by the commercial and residential sectors. This would certainly be the case in Utah County. On the other hand, if an area or community is substantially rural, then one would also expect to see a lower level of subsidization occurring since services to fringe “growth” areas would not be required. Sevier County would typify this sort of a community.

Finally, if an area or community is in the process of becoming urbanized, then a significant subsidy is likely from the agricultural sector. Cache County would be an example of this type of community.

13 It is recognized that these ratios are a function of the allocation scheme utilized in this study. However, ratios for the other counties are consistent with expectations.

APPENDIX C - COUNTY ASSESSORS DATA

CACHE COUNTY								
PROPERTY NAME	TOTAL ACRES	TOTAL MARKET VALUE	TOTAL TAX-ABLE VALUE	TOTAL TAX LEVIED (\$)	# OF PARCELS	\$ TAX/PARCEL		
BUILDING AG	0.63	\$37,539,596	\$37,539,305	\$374,717.56	2,920	\$128.33		
BUILDING COM	0	\$605,565,659	\$605,565,655	\$6,965,636.71	1,531	\$4,549.73		
BUILDING RES	0.19	\$2,963,750,406	\$1,630,063,295	\$17,924,623.85	24,642	\$727.40		
LAND AG	3677.33	\$18,149,562	\$18,149,675	\$182,289.38	1,211	\$150.53		
LAND COM	3535.21	\$178,572,787	\$178,572,800	\$2,065,508.22	1,440	\$1,434.38		
LAND GBELT	336626.62	\$545,946,020	\$44,460,135	\$432,911.63	7,689	\$56.30		
LAND HOMESITE (GB)	2.55	\$24,241,936	\$13,333,810	\$130,403.04	891	\$146.36		
LAND RES	10023.58	\$715,066,088	\$393,294,290	\$4,349,077.97	23,749	\$183.13		
	353866.11	\$5,088,832,054	\$2,920,978,965	\$32,425,168.36	64,073	\$506.07		
LAND USE TYPE	# OF BLDGS/ LAND PARCEL	\$ TAX/BLDG	\$ TAX/LAND PARCEL (FOR BLDGS)	\$ TAX/LAND PARCEL (FOR LAND)	TOTAL \$ TAX/ LAND PARCEL	# LAND PARCELS/ ACRE OF LAND	TOTAL \$ TAX/ ACRE	TOTAL \$ TAX/10 ACRES
AGRICULTURE	2.411	\$128.33	\$309.43	\$150.53	\$459.96	0.329	\$151.47	\$1,514.70
Greenbelt (ag)	0.116	\$146.36	\$16.96	\$56.30	\$73.26	0.023	\$1.67	\$16.73
COMMERCIAL	1.063	\$4,549.73	\$4,837.25	\$1,434.38	\$6,271.63	0.407	\$2,554.63	\$25,546.28
RESIDENTIAL PRIM	1.038	\$727.40	\$754.75	\$183.13	\$937.88	2.369	\$2,222.13	\$22,221.30
COMBINED AGRIC.	0.428	\$132.54	\$56.76	\$69.12	\$125.88	0.026	\$3.29	\$32.92
LAND USE TYPE	MULTIPLIER	MULTIPLIER - 1	NET FISCAL IMPACT	# HH/10 ACRES	# PEOPLE/10 ACRES	People/HH = 3		
AGRICULTURE	0.57	-0.43	-\$14.16	0.26	0.78			
COMMERCIAL	0.25	-0.75	-\$19,159.71	0	0			
RESIDENTIAL	1.27	0.27	\$5,999.75	23.69	71.07			
DENSER RES (-3%)	1.232	0.232	\$5,153.12	26.059	78.177			
DENSEST RES (-5%)	1.207	0.207	\$4,588.70	28.428	85.284			

APPENDIX C - COUNTY ASSESSORS DATA

MORGAN COUNTY								
PROPERTY NAME	TOTAL ACRES	TOTAL MARKET VALUE	TOTAL TAXABLE VALUE	TOTAL TAX LEVIED (\$)	# OF PARCELS	\$ TAX/PARCEL		
BUILDING AG	0.00	\$6,162,939.00	\$6,162,989.00	\$56,505.89	360	\$156.96		
BUILDING COMM	0.00	\$78,802,854.00	\$78,802,854.00	\$735,814.46	130	\$5,660.11		
BUILDING RES	0.00	\$320,702,761.00	\$176,386,590.00	\$1,730,493.61	2,339	\$739.84		
BUILDING SEC	0.00	\$7,753,088.00	\$7,753,088.00	\$70,816.93	120	\$590.14		
LAND AG	351,038.88	\$327,750,366.00	\$14,332,277.00	\$131,606.43	2,358	\$55.81		
LAND COMM	797.79	\$12,802,997.00	\$12,803,297.00	\$128,054.26	179	\$715.39		
LAND RES (PRIM)	1,331.72	\$116,976,180.00	\$64,338,871.00	\$630,961.92	2,204	\$286.28		
LAND RES (SEC)	1,069.83	\$11,391,523.00	\$11,391,873.00	\$109,583.85	715	\$153.26		
LAND VACANT	738.53	\$25,823,313.00	\$25,827,668.00	\$253,944.66	525	\$483.70		
	354,976.75	\$908,166,021.00	\$397,799,507.00	\$3,847,782.01	8,930			
LAND USE TYPE	# OF BLDGS/ LAND PARCEL	\$ TAX/BLDG	\$ TAX/LAND PARCEL (FOR BLDGS)	\$ TAX/LAND PARCEL (FOR LAND)	TOTAL \$ TAX/LAND PARCEL	# LAND PARCELS/ACRE OF LAND	TOTAL \$ TAX/ ACRE	TOTAL \$ TAX/10 ACRES
AGRICULTURAL	0.153	\$156.96	\$23.96	\$55.81	\$79.78	0.007	\$0.54	\$5.36
COMMERCIAL	0.726	\$5,660.11	\$4,110.70	\$715.39	\$4,826.08	0.224	\$1,082.83	\$10,828.27
RESID. (PRIM)	1.061	\$739.84	\$785.16	\$286.28	\$1,071.44	1.655	\$1,773.24	\$17,732.37
RESID. (SEC)	0.168	\$590.14	\$99.04	\$153.26	\$252.31	0.668	\$168.63	\$1,686.26
VACANT	0	0	\$0.00	\$483.70	\$483.70	0.711	\$343.85	\$3,438.52
LAND USE TYPE	MULTIPLIER	MULTIPLIER - 1	NET FISCAL IMPACT	# OF HH/10 ACRES	# PEO- PLE/10 ACRES	People/HH = 3.3		
AGRICULTURE	0.57	-0.43	-\$2.30	0.067	0.22			
COMMERCIAL	0.25	-0.75	-\$8,121.20	0	0			
RESIDENTIAL	1.27	0.27	\$4,787.74	16.55	54.615			
DENSER RES (-3%)	1.232	0.232	\$4,112.14	18.205	60.077			
DENSEST RES (-5%)	1.207	0.207	\$3,661.73	19.86	65.538			

APPENDIX C - COUNTY ASSESSORS DATA

SAN JUAN COUNTY								
PROPERTY NAME	TOTAL ACRES	TOTAL MARKET VALUE	TOTAL TAX-ABLE VALUE	TOTAL TAX LEVIED (\$)	# OF PARCELS	\$ TAX/PARCEL		
BUILDING AG	0.00	\$2,111,696.00	\$2,111,708.00	\$31,465.32	468	\$67.23		
BUILDING COMM	0.00	\$37,238,669.00	\$37,238,716.00	\$605,446.54	328	\$1,845.87		
BUILDING RES	0.00	\$158,311,654.00	\$87,071,544.00	\$1,432,330.56	2,370	\$604.36		
BUILDING SEC	0.00	\$5,259,539.00	\$5,259,549.00	\$78,564.82	171	\$459.44		
LAND AG	371,692.81	\$162,551,767.00	\$12,744,219.00	\$183,516.63	2,824	\$64.98		
LAND COMM	1,196.24	\$6,801,830.00	\$6,801,839.00	\$115,345.79	363	\$317.76		
LAND RES (PRIM)	1,558.01	\$30,676,897.00	\$16,872,757.00	\$273,651.92	2,283	\$119.87		
LAND RES (SEC)	114.07	\$1,880,459.00	\$1,880,445.00	\$27,665.51	120	\$230.55		
LAND VACANT	7,713.29	\$24,931,964.00	\$24,932,952.00	\$375,129.73	1,648	\$227.63		
	382,274.42	\$429,764,475.00	\$194,913,729.00	\$3,123,116.82	10,575			
LAND USE TYPE	# OF BLDGS/ LAND PARCEL	\$ TAX/BLDG	\$ TAX/LAND PARCEL (FOR BLDGS)	\$ TAX/LAND PARCEL (FOR LAND)	TOTAL \$ TAX/ LAND PARCEL	# LAND PARCELS/ ACRE OF LAND	TOTAL \$ TAX/ ACRE	TOTAL \$ TAX/10 ACRES
AGRICULTURAL	0.166	\$67.23	\$11.14	\$64.98	\$76.13	0.008	\$0.58	\$5.78
COMMERCIAL	0.904	\$1,845.87	\$1,667.90	\$317.76	\$1,985.65	0.303	\$602.55	\$6,025.48
RESID. (PRIM)	1.038	\$604.36	\$627.39	\$119.87	\$747.25	1.465	\$1,094.98	\$10,949.75
RESID. (SEC)	1.425	\$459.44	\$654.71	\$230.55	\$885.25	1.052	\$931.27	\$9,312.73
VACANT	0	0	\$0.00	\$227.63	\$227.63	0.214	\$48.63	\$486.34
LAND USE TYPE	MULTIPLIER	MULTIPLIER - 1	NET FISCAL IMPACT	# OF HH/10 ACRES	# OF PEOPLE/10 ACRES	People/HH = 3.2		
AGRICULTURE	0.99	-0.01	-\$0.06	0.076	0.25			
COMMERCIAL	0.31	-0.69	-\$4,157.58	0	0			
RESIDENTIAL	1.11	0.11	\$1,204.47	14.65	46.88			
DENSER RES (-3%)	1.077	0.077	\$839.85	16.115	51.568			
DENSEST RES (-5%)	1.055	0.055	\$596.76	17.58	56.256			

APPENDIX C - COUNTY ASSESSORS DATA

		DAVIS COUNTY							
PROPERTY NAME	TOTAL ACRES	TOTAL MARKET VALUE	TOTAL TAXABLE VALUE	TOTAL TAX LEVIED (\$)	# OF PARCELS	\$ TAX/PARCEL			
BUILDING AG	0.00	\$18,518,691.00	\$18,518,691.00	\$240,742.98	839	\$286.94			
BUILDING COMM	0.00	\$1,710,712,425.00	\$1,580,480,303.00	\$20,546,243.94	3,110	\$6,606.51			
BUILDING RES	0.00	\$9,371,155,966.00	\$5,154,135,780.00	\$67,003,765.14	72,653	\$922.24			
BUILDING SEC	0.00	\$11,714,876.00	\$11,714,876.00	\$152,293.39	244	\$624.15			
LAND AG	26,238.00	\$478,539,859.00	\$8,941,668.00	\$116,241.68	1,854	\$62.70			
LAND COMM	10,656.80	\$997,140,608.00	\$921,763,924.00	\$11,982,931.01	5,366	\$2,233.12			
LAND RES (PRIM)	33,625.00	\$3,006,277,791.00	\$1,653,452,785.00	\$21,494,886.20	71,439	\$300.88			
LAND RES (SEC)	3,482.00	\$335,181,507.00	\$335,181,507.00	\$4,357,359.59	7,398	\$588.99			
LAND VACANT	3,726.00	\$92,084,675.00	\$92,084,675.00	\$1,197,100.77	2,568	\$466.16			
	77,727.80	\$16,021,326,398.00	\$9,776,274,209.00	\$127,091,564.72	165,471				
LAND USE TYPE	# OF BLDGS/ LAND PARCEL	\$ TAX/BLDG	\$ TAX/LAND PARCEL (FOR BLDGS)	\$ TAX/LAND PARCEL (FOR LAND)	TOTAL \$ TAX/LAND PARCEL	# LAND PARCELS/ ACRE OF LAND	TOTAL \$ TAX/ ACRE	TOTAL \$ TAX/10 ACRES	
AGRICULTURAL	0.453	\$286.94	\$129.85	\$62.70	\$192.55	0.071	\$13.61	\$136.06	
COMMERCIAL	0.580	\$6,606.51	\$3,828.97	\$2,233.12	\$6,062.09	0.504	\$3,052.43	\$30,524.34	
RESID. (PRIM)	1.017	\$922.24	\$937.92	\$300.88	\$1,238.80	2.125	\$2,631.93	\$26,319.30	
RESID. (SEC)	0.033	\$624.15	\$20.59	\$588.99	\$609.58	2.125	\$1,295.13	\$12,951.33	
VACANT	0	0	\$0.00	\$466.16	\$466.16	0.689	\$321.28	\$3,212.83	
LAND USE TYPE	MULTIPLIER	MULTIPLIER - 1	NET FISCAL IMPACT	# OF HH/10 ACRES	# OF PEOPLE/10 ACRES	People/HH = 3.2			
AGRICULTURE	0.82	-0.18	-\$24.49	0.71	2.26				
COMMERCIAL	0.26	-0.74	-\$22,588.01	0	0				
RESIDENTIAL	1.23	0.23	\$6,053.44	21.25	68				
DENSER RES (-3%)	1.193	0.193	\$5,082.26	23.375	74.8				
DENSEST RES (-5%)	1.169	0.169	\$4,434.80	25.5	81.6				