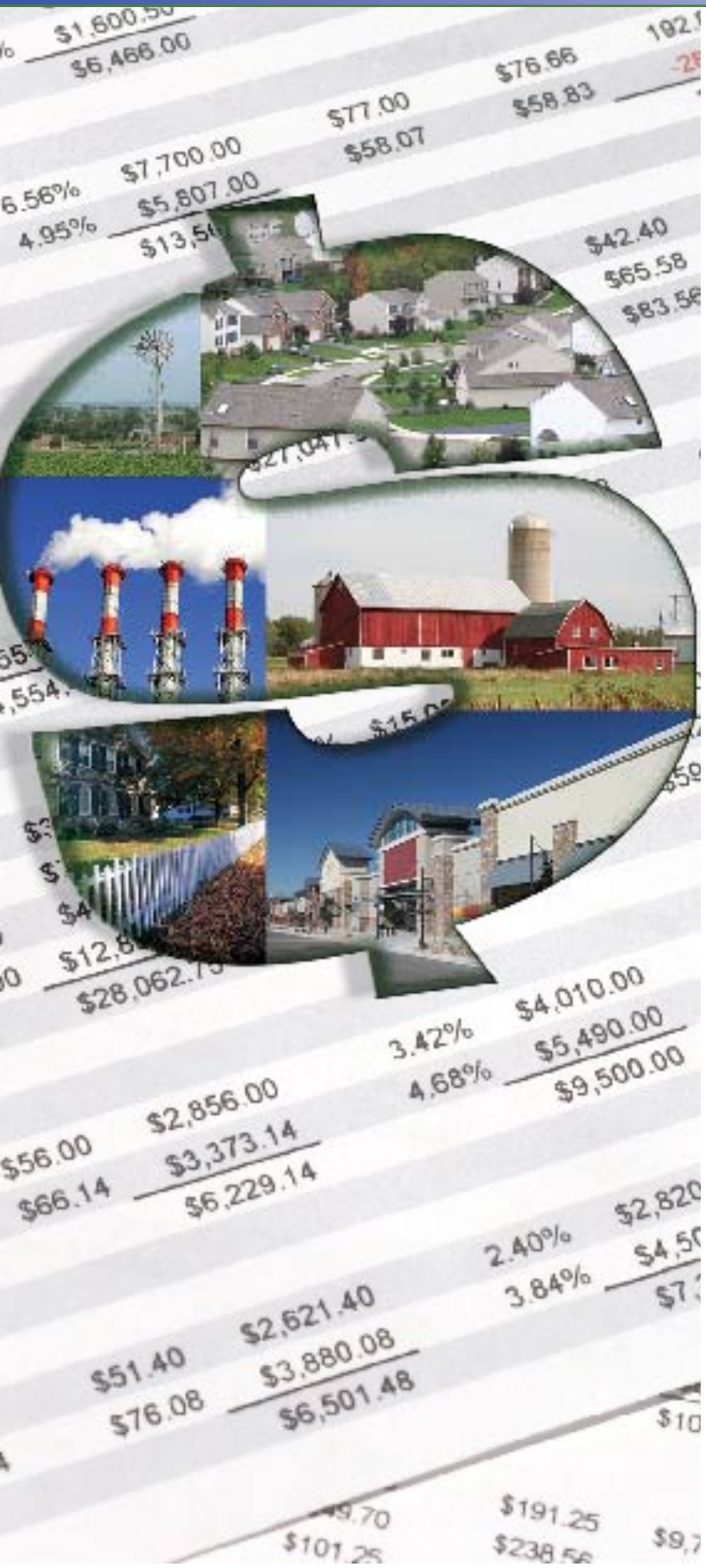


Finding the true cost of development in your township

*During its 2006 budget process, the **Delhi Charter Township** (Ingham Co.) board of trustees noticed a decline in available revenues—despite many consecutive years of record-breaking development activity resulting in increased tax revenues.*

Officials were perplexed by this trend.

*Township Director of Community Development **Tracy Miller** looked into the issue. After plenty of thought and consideration, the reason became apparent to Miller. It wasn't the volume of development that was causing the trend—it was the* mix *of land uses used in the development.*

"Specifically, the rapid development of new housing was creating an increased need for services that was not keeping pace with the new tax revenue being generated," Miller explained.

To quantify Miller's suspicion, and to develop a new model for land use planning in the township that would include overall fiscal sustainability, the township board allowed Miller to pursue a cost of community services (COCS) study.

After undertaking the COCS process, the township had hard-and-fast figures to back up their assumptions. Officials could also measure how the various land uses—including agricultural, low-density and high-density residential, commercial, mixed use and industrial—in this township of roughly 25,000 residents impacted the community's bottom line.

This article discusses the basics of conducting a COCS study, looks at the results of the Delhi study and how the numbers break down—including some surprise discoveries—and offers suggestions for how all townships can make policy and practice changes to reduce the costs of services.

WHAT IS A COST OF COMMUNITY SERVICES STUDY?

According to American Farmland Trust, which first developed the methods for measuring a land use's fiscal impact, a COCS study is "a case study approach used to determine an individual community's public service costs versus revenues based on current land use." The analysis can help township officials better understand, identify and determine the relationship between land use and the township's budget. It is used to evaluate the costs incurred by a municipality for providing community services to defined land uses, and compare those costs to revenues generated by each land use.

The COCS process follows four basic steps:

1. Define land use categories.
2. Collect and analyze municipal budgetary data.
3. Allocate revenue and expenditures by land use.
4. Analyze data and calculate ratios.

The final step in the process allows an expense-to-revenue ratio ("COCS ratio") to be calculated for each land use that describes the cost to provide community services to each land use versus the amount of income generated by each land use. The COCS ratio is the final product of the COCS process. This ratio creates a link between land use and the fiscal implications of providing community services.

INSIDE THE TOWNSHIP STUDY

While most COCS studies seek to find the relationship between land use and fiscal security, the Delhi study provided some benefits and drawbacks. By narrowing the scope to a single township, the study focused on a detailed analysis of the township's specific land uses and budget.

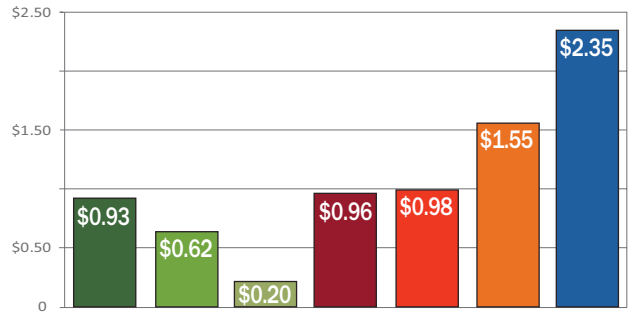
The unique features of the Delhi COCS study included: 1) a narrower budgetary focus, which allowed study of land use categories that are directly related to the township budget, land use policies and zoning; 2) exclusion of school funding and bond issues, which either could not be examined due to state tax structure or their budgetary nature; and 3) initially addressing road, water and sewer budget impacts as an "indicator" outside of the established ratios since the nature of these systems requires the community to recoup the actual dollar value spent, thus eliminating any net gain or loss to the township.

Because the Delhi Charter Township study began in mid-2007, the year 2006 was chosen as the study year because it provided the most comprehensive budgetary information. In retrospect, this is especially significant because it represents a year that was relatively unaffected by the state's current economic downturn. While some decline was experienced at that time, the sharp decrease in property values was not yet emerging.

A LOOK AT THE NUMBERS

Typical COCS studies include an analysis of generalized land uses, primarily focused on agricultural, residential and commercial land uses. The Delhi study took the traditional approach a step further to include more land uses, including three residential categories based on density (which was later expanded).

Delhi Charter Township's analysis results and COCS ratios



Agricultural/open space: Land devoted primarily to agriculture (including pasture, row crops, and/or livestock), open or fallow fields, and forestland.

Commercial/office: Land utilized for retail and wholesale trade, service (including hotels, restaurants, etc.), private offices, and businesses.

Industrial: Land use categorized by manufacturing, assembly, and/or small- and large-scale production facilities.

Low-density residential: Land use typically categorized by large lots (greater than 15,000 sq. ft.) typically associated with suburban development.

Medium-density residential: Land use marked by moderately sized lots (10,000-15,000 sq. ft.) associated with traditional neighborhoods.

High-density residential: Land use characterized by small lots (6,000-10,000 sq. ft.), single-family homes, multiple-family units and manufactured home parks.

Tax-exempt: Land owned and operated by non-profit and religious agencies, private schools, and non-township governmental entities.

As outlined in the chart above, an expense-to-revenue, or COCS, ratio was established for the land use categories, which is expressed as a dollar value. Any ratio with a value above $1 indicates the land use demands more services than it pays in revenue. A ratio less than $1 indicates the land use generates more revenue than it demands in service.

The three residential categories present the most striking results of this study. High-density residential land use has the highest expense-to-revenue ratio at $1.55—indicating that for every $1 generated in revenue from high-density residential property, the township spends $1.55 in services to these uses. The biggest contributor to this high total expenditure is the amount of police and emergency medical services (EMS) required by these properties. This is to be expected since these areas house more people in a smaller area.

The opposite is true for low- and medium-density residential properties, which produce more revenue than they require in services. Overall, this can be attributed to relatively high property values associated with lower density (larger lot) residential properties.

The ratios calculated for commercial/office and industrial land uses indicate that these uses require far less services than they provide in revenue. These uses typically have high property values and low demand for township resources.

Agricultural/open space land uses, with a ratio of $0.93, also produce more revenue than they require in services, thereby creating a financial benefit to the community.

ROAD AND SEWER ANALYSIS

In the Delhi study, the effect of land use on sewer and road infrastructure was analyzed using a per-linear-foot method. The total linear feet of sewer infrastructure was aggregated by land use category and divided by the number of sewer users within each category. The total length of roads was calculated for each land use and divided by the total number of parcels in each land use served to determine the average length of road required to serve a typical parcel within each land use category.

As evidenced in the tables below, low-density residential land uses require more linear feet of sewer and roads—due to the larger lot sizes and required lot widths—than higher density uses. However, because each property pays its share of the sewer costs, there is no net gain or loss to the township if a development occurs in outlying areas or on larger lots.

The closed budgetary systems created to recoup sewer, water and road maintenance costs are such that the consumers—i.e., township residents—pay for any higher costs for sewer service related to their larger lot size and remote location proximate to the township core. While there is no fiscal loss to the township if more low-density residential development occurs, there is certainly a financial impact on the homeowner. This, in turn, makes it difficult to attain voluntary participation in future infrastructure improvement projects, and hinders township efforts to establish special assessment districts or other programs to improve roads, water and sewer systems.

It can be argued that this structure may contribute to township expenses over time. Since this study analyzed only one fiscal budget, long-term impacts are more difficult to evaluate. Based on the study results, however, it can be predicted that, if road, sewer and water systems could be included in the COCS ratios, they would significantly increase the ratios for the low-density and medium-density residential categories, and decrease the ratios for the high-density residential.

Road construction and maintenance

Residential land use		Non-residential land use	
Land use category	Length per parcel	Land use category	Length per parcel
Low-density residential	157.9 ft.	Industrial	636.5 ft.
Medium-density residential	110.7 ft.	Civic	687.1 ft.
High-density residential	94.6 ft.	Tax-exempt	490.8 ft.
		Agricultural/open space	68 ft.
		Commercial/office	303.1 ft.

Sewer infrastructure

Residential land use		Non-residential land use	
Land use category	Length per parcel	Land use category	Length per parcel
Low-density residential	133.8 ft.	Industrial	819.6 ft.
Medium-density residential	69.3 ft.	Civic	775.0 ft.
High-density residential	63.6 ft.	Tax-exempt	343.8 ft.
		Agricultural/open space	300.0 ft.
		Commercial/office	298.1 ft.

A township cost of community services study showed that agricultural and open space land creates a financial benefit to the community.

AN IN-DEPTH LOOK AT HIGH-DENSITY LAND USE

It has been widely argued that, due to the dense layout, narrower lots and resulting infrastructure efficiencies, higher density residential land uses produce a lower cost of service than lower density residential uses. Many of these arguments seem logical, based on a reasonable extrapolation of typical land use patterns.

The numbers coming from the Delhi study told a different story, however.

"At first, we were surprised that high-density residential development had a higher ratio than the low-density residential category," Miller explained. "This was the opposite of most current information available on density."

The Delhi COCS study suggests this unexpectedly high ratio for high-density residential neighborhoods was primarily the result of the higher demand for public safety services. Increased demand was, in fact, documented through analysis of township police, fire and EMS service run reports, which showed a higher percentage of all service calls were made from the high-density residential areas.

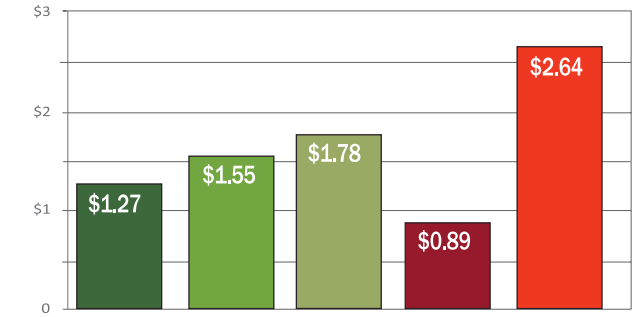
The township decided to further investigate this issue, and break down the high-density residential category into more specific types of development.

In the more detailed study, 48 high-density neighborhoods were inventoried, including 26 low-intensity, 5 moderate-intensity, 11 high-intensity, two mixed-use neighborhoods and four manufactured home communities. The general "perceived quality" of each neighborhood was observed and other notable attributes, such as housing age, value, and household income, were evaluated.

"What we found was fascinating," Miller continued. "Particularly interesting was the finding that high-density mixed housing development in our community is actually revenue positive, while more traditional styles of development are not."

The high-density COCS ratios revealed in the detailed study are outlined in the following chart:

High density sub-category COCS ratios



Low-intensity, high-density (LI): One and two unit buildings.
Moderate-intensity, high-density (MI): Three to seven unit buildings.
High-intensity, high-density (HI): Eight or more unit buildings.
Mixed use (MU): Mix of building forms in one comprehensive development.
Manufactured home (MHP): Mobile homes.

"This part of the study also allowed us to specifically inventory and quantify the physical characteristics within high-density neighborhoods that result in better cost ratios," Miller said.

The detailed analysis of high-density neighborhoods is summarized in the following table. This and more detailed lists were studied to identify any patterns or links between the ownership, age, quality and value of each neighborhood.

Summary of findings

Type	COCS ratio	Perceived quality*	Average year built	Average ownership/unit	Average unit value
LI	$1.27	2.6	1960	77%	$110,854.02
MI	$1.55	2	1981	35%	$79,734.90
HI	$1.78	2.4	1980	14%	$47,691.07
MU	$0.89	1	2002	60%	$202,859.65
MHP	$2.64	4.5	N/A	N/A	$9,584.99

**Perceived quality was measured on a scale of 1 to 5, with one being the highest quality.*

Among the observations that emerged when sorted by age, value, ownership, condition and neighborhood type were:

- The top five highest value neighborhoods were built since 1988.
- The top 10 highest value neighborhoods had over 75 percent ownership rates.
- The five lowest value neighborhoods were all manufactured home (MHP) or high-intensity neighborhoods.
- The top five newest neighborhoods ranked 1 or 1.5 in quality.
- The five neighborhoods with the highest ownership rates were all above average in value (over $101,000).
- Four of the five neighborhoods with the highest ownership rates were built after 1980.
- Eight of the top 10 neighborhoods with the highest ownership rates were low-intensity neighborhoods.
- The top five neighborhoods had over 90 percent ownership rates (excluding developing neighborhoods).
- The five neighborhoods with the lowest rank were all MHP neighborhoods, or were platted subdivisions containing trailer homes.
- Manufactured home communities ranked the lowest in condition, ownership and unit value.
- All but one of the high-intensity neighborhoods ranked below average in unit value.
- All but one of the low-intensity neighborhoods ranked above average in value.

THE IMPACT OF HIGH DENSITY

After reviewing the above analysis, it can be reasonably concluded that the high-intensity neighborhoods and manufactured home parks are the primary cause of the high COCS ratio in the high-density residential category. After reviewing additional analyses, it appears these neighborhoods generally are also the lowest in ownership rates and unit value.

Some of these factors are not likely to change as a result of township policy. For instance, manufactured home parks are allowed by state law and are governed differently than other neighborhoods. According to the Trailer Coach Parks Act (Public Act 243 of 1959), each mobile home in a regulated mobile home park pays an annual flat tax fee of $3. Alternative taxation policies have been debated in the state Legislature, but no such changes have taken place to date. Some argue that the amount of taxes paid in mobile home parks is not enough because current taxation laws were originally enacted for transient mobile home parks which would levy more revenue due to higher turnover, when today, many are occupied year-round and this fixed fee is charged only once per year. Until the state changes these taxation laws, these communities are not likely to contribute higher taxes.

Another factor that cannot change as a direct result of township policy is public perception and opinion. Many people prefer to live in more modern, detached homes. While the trends are changing, and attached housing is becoming more attractive, the desire for homeownership remains, and will continue to drive the housing market. Lower-income residents seeking to purchase a home are likely to buy one that is older and lower in value. Communities must strive to provide high-quality, owner-occupied units in all neighborhood types, as ownership rates seem to be related to neighborhood quality and unit values.

In a surprising twist, results from a Delhi Charter Township (Ingham Co.) study showed that high-density residential development had a higher cost ratio than the low-density residential category.

TURNING THE ANSWERS INTO ACTIONS

A key benefit to a COCS study is to better understand the relationship between the township budget and existing and planned land use patterns. Armed with this knowledge from its own study, Delhi Charter Township intends to modify its land use strategies to balance the cost of providing required municipal services with the revenue generated.

"The township's next step will be to apply the ratios to our current zoning map and our future land use plans to determine if we are 'planning' for a sound financial future, or 'planning' ourselves into financial ruin," said Miller. "Obviously, our goal will be to determine the correct mix of land uses that will result in a sustainable community."

Townships can make changes to their land use practices to help lower the cost of community services in many ways, including:

■ Growth boundaries, utility districts and infill development.

Encouraging infill within already developed areas makes the most of existing infrastructure. Every effort should be taken to exhaust development opportunities before "greenfield" development is allowed or encouraged. Infill development can be encouraged with incentives such as density bonuses, height bonuses, expedited permit reviews and reduced permitting fees. Include these incentives in the master plan to create a legal basis for providing them in development codes.

While in many cases the initial infrastructure costs are borne by the developer, these costs are often passed on to the future homeowner, and, in the long term, to the community in the form of ongoing maintenance costs. Development at the periphery of a community can require installation of underutilized water and sewer mains well in advance of larger-scale development. Premature development of these areas can be prevented through the adoption of a growth boundary or utility service district beyond which no utility services will be extended. The intent is to encourage infill development and limit inefficient expansion of the system.

■ Cluster/planned unit development.

A benefit of cluster or open space zoning is the efficiency of infrastructure afforded with a more compact design. Clustered development allows for smaller and narrower lots in exchange for common open space. This, in turn, allows the same number of lots to be served by fewer linear feet of roads and utilities. This, according to the case study results, can reduce the overall sewer, water and road maintenance costs.

■ Mixed use areas.

Sociologists often equate a concentration of low-income families and population as contributing to an overall decline in safety. Allowing families with different demographic backgrounds to live in proximity to one another can foster a spirit of understanding and humanity that is sometimes lacking in areas with segregated land uses.

Mixed use areas, including downtowns, can provide centers of activity that provide the "sense of community" that residents desire. Over time, attraction to the community core can help strengthen the local economy and reduce pressure to develop outlying areas.

■ Public education and neighborhood watch programs.

Many modern homebuyers desire large-lot residential home sites located in rural settings, which as noted in this study, can increase the number of linear feet and cost of infrastructure for each residential lot. With some public education, residents may

modify their choices to one that may be more cost-effective, not only to themselves but to the community as a whole.

Neighborhood watch programs can also be established to improve neighborhood safety. Improved safety and crime prevention among neighbors can also contribute to less public safety costs.

■ 'Safescaping' and crime prevention through environmental design.

In many communities, concentrated areas of multiple-family housing have raised concerns about safety and other problems that sometimes occur in high-density areas. To ensure development of safe multiple-family housing, the following should be considered:

- Quality building materials should be used in the building design to improve the perceived value of the units.
- Attractive landscaping is needed to create neighborhood character and to provide useable open spaces throughout multiple-family developments.
- Road and sidewalk design should create private recreation areas for residents. It is important that any private areas be designed with safety in mind, include appropriate lighting and landscaping, and are easily visible to residents.
- Where possible, attached single-family housing should be provided rather than larger, apartment complex-type housing. These include a limited number of units per building, each with their own entrance and garage. Attached single-family options provide ownership opportunities in a setting that is often more affordable.
- Appropriate safety measures should be included in any larger multiple-family development, such as:
  - o Common building entrances should include self-locking entrances.
  - o No more than four units should use the same entrance.
  - o Locate stairwells and elevators in a central location where visibility is higher.
  - o Limit communal building entrances to two or less, and ensure all entrances are well lit and highly visible.
  - o Require that all building facades include windows.
  - o Ensure proper lighting of all parking and pedestrian areas.
  - o Design landscaping, dumpsters and loading areas to avoid creating blind areas or hiding places.

■ Purchase of development rights and open space preservation.

The concept of open space and farmland preservation, including transfer and purchase of development rights, is emerging as a way to manage growth and protect the fiscal integrity of communities. In fact, it was the farmland preservation community that originally developed the first cost of community services study. While the Delhi case study has shown that moderate residential densities can provide efficient land use patterns, original COCS studies sought to illustrate the benefits of protecting farmland from development.

Because agricultural property maintains a low COCS ratio, it can contribute to a more balanced budget and provide a valuable growth management tool, if proper mechanisms are set in place to accommodate both the farmer and the developer.

■ Encourage home ownership.

Higher home ownership rates can help increase community awareness and investment, which over time can lead to stronger neighborhoods and improved safety and aesthetics. The Michigan State Housing Development Authority offers low-interest loan programs that give lower-income people an opportunity to buy their first home. Higher-density development in the form of townhomes or attached condominiums attracts potential buyers, yet still provides a level of affordability that is increasingly in demand.

■ Property maintenance.

Clean, tidy neighborhoods attract residents and homebuyers more than unkempt neighborhoods. All communities must continually enforce local codes including property maintenance codes, building safety codes, blight regulations, and rental inspection codes. Just as the "curb appeal" of a home is paramount to its sale, so is the perceived quality of a neighborhood to its overall vibrancy and safety.

■ Foster a sense of pride.

In general, great communities are formed through strong citizenry and development of a compelling community spirit.

It is critical that residents feel a connection and sense of ownership in their neighborhoods and communities. Residents who are proud of their community often go the extra mile to ensure it remains safe and attractive to new residents.

While a "sense of community" cannot be measured using traditional methods, there are various things communities can do to increase resident awareness, pride and spirit:

- Continue to invest in neighborhood infrastructure, especially in older neighborhoods where housing exists that may not be as marketable in today's real estate market.
- Promote walkable communities with interconnected pathways and appropriate pedestrian amenities.
- Consider developing vacant land within existing neighborhoods into pocket parks or local playgrounds.
- Maintain an exceptional level of community services through continued partnerships and cooperation with other publicly funded organizations to minimize cost and diversify resources.

CREATING A BETTER TOWNSHIP

Michigan communities remain strong, yet with today's economic pressures, the threat of decline is evermore present. Some question the role of fiscal analysis in planning and zoning; this study suggests that without it, even the most well-intended plans can create unanticipated fiduciary impacts.

"For a community to engage in land use planning without a clear understanding of how those plans will affect their future fiscal sustainability is irresponsible," Miller said. "As a nation, we are becoming more aware of community planning issues, and the concept of leaving our children with a better physical environment.

"This concept needs to extend to the idea of ensuring that what we build today can be maintained in the future, and that we are not leaving our kids with communities that are economically dysfunctional."

Understanding the role that land uses play in a local government's budget as it relates to tax revenue and other elements is valuable for all townships. And, while COCS studies primarily relate to community budgets, a side-effect is the potential to create even better places to live, work and recreate. ■

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