

The Cost of Community Services in the Township of Cavan Monaghan:

A literature review on the fiscal impacts of land
use for municipalities in Ontario, Canada



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Respectfully submitted,

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1 Introduction

At the first public meeting of the Cavan Monaghan Official Plan (OP) review consultation (May 6, 2009), community members asked for a fiscal impact analysis to be conducted as part of the OP review process. The suggestion was that fiscal responsibility should be used as a governance principle in the allocation of land uses in the Township. Community members identified a need to balance business (commercial/industrial) development with residential development. Agriculture was also discussed as an important component of the local economy.

This led to the identification of at least three major issues related to the fiscal costs and benefits of different land uses. As identified by Dymont (2009), these issues were:

- 1) The capacity of the Township to finance proposed levels of development in general;
- 2) The ongoing dependence of the Township on lottery revenue; and
- 3) The lack of public support for the proposed Fraserville Secondary Plan, which would have supported water and wastewater facilities to be used by Fraserville and the Kawartha Downs racetrack and casino.

As part of the OP review, and in response to community feedback, council has engaged in a research project with the School of Environmental Design and Rural Development, University of Guelph through The Monieson Centre at Queen's School of Business. In spring of 2011, Council approved the Literature Review of Land Use Benefits & Costs project. This project provided funding for a graduate student to prepare a 25-page literature review during Summer 2011.

This literature review is the product of that partnership. The review examines existing documents and academic literature with a goal of providing a series of observations and conclusions that would be relevant for rural Ontario municipalities. In particular these findings help to identify the relative revenues and expenses associated with different land uses. The literature review is intended to contribute to more informed decision-making, particularly at the stage of developing an Official Plan.

The review first examines the use of fiscal impact studies which focus on land use in municipalities across the United States. Following this, the use of such studies in Canada is discussed. A number of general considerations are identified for the application of common methods to the Canadian context. After establishing the general uses and dimensions of Cost of Community Services (COCS) studies, this literature review examines the particular context of the Township of Cavan Monaghan as an example of an Ontario municipality currently considering the fiscal impacts of its current balance of land uses. This is followed by a detailed analysis of how a COCS study might be carried out in the Township, and some preliminary discussions of how the study might be used and interpreted. Finally, a set of other types of fiscal impact analysis are mentioned, and conclusions are outlined based on the findings of the literature review. A list of definitions for common terms is provided in Appendix B.

2 Review of Cost of Community Services Studies

According to Kotchen and Schulte (2008), land use largely determines the revenues and expenses of municipal governments. Residential, commercial, industrial, agricultural, and environmental land uses all require different levels of community services and are taxed at different rates. As the balance of residential and non-residential land uses continues to shift, municipal leaders and staff are increasingly concerned with the long-term financial implications of land-use decisions (Kotchen and Schulte, 2008).

Most municipalities currently set operating and capital budgets within non-aligned expense and revenue categories. The categories used for expenses are different than those used for revenue. For example, a municipality may divide revenues into categories such as federal and provincial grants, property taxes, development charges and other revenue streams, while dividing expenses into a different set of service categories such as Protection, Transportation, Environment, Recreation and Planning and Development services. Although this method is useful for many municipality functions, it does not account for the differences in revenues and expenses attributed to various land uses.

Cost of Community Services (COCS) studies help to address this information gap. COCS studies consider expenses and revenues within four general land-use categories: residential, commercial, industrial, and working lands. Commercial and industrial land-use categories are often combined. Working lands typically include agriculture, but can also include forestry, resource extraction, and natural heritage lands. Each COCS study produces one ratio for each land-use category that expresses expenses as a proportion of total revenue in that category. For example, if a residential land-use category has a ratio of 1.2, that means \$1.20 is spent for every \$1.00 received from the residential land use.

In the United States, COCS studies are perhaps the most accessible and frequently used method to evaluate the fiscal impacts of different land uses (Kotchen and Schulte, 2008). COCS studies were originally developed by the American Farmland Trust, building on publications such as “The Fiscal Impact Handbook” (Burchell, 1978) and “Cost of Sprawl” (Real Estate Research Corporation, 1974). Since that time, over 125 COCS studies have been conducted in the United States.

Kotchen and Schulte (2008) conducted a quantitative review of COCS studies in the United States and found clear support for the common perception that residential ratios are greater than one (see Appendix A). This suggests that residential land uses are a net cost to municipalities, despite higher tax revenues in residential areas. Second, commercial, industrial and working lands tend to have ratios lower than one, which suggests that these land uses create a positive cash flow for the municipality. The results of these studies are remarkably consistent across widely varying regulatory, economic and environmental contexts. The median cost of community services (per dollar of revenue raised) was as follows: \$0.27 for Commercial/Industrial lands (combined), \$0.36 for Farm/Forest lands, and \$1.15 for Residential lands. These median values are based on a review of all COCS studies up to 2002 by Freedgood et al. (2002). The frequency and range of ratios across the United States was further developed by Kotchen and Schulte (2008), and is illustrated in Appendix A. The implication is that municipalities should try to balance net residential costs with development of other land uses, or find ways to lower the residential expense/revenue ratio. COCS studies are particularly useful for considering not only the fiscal balance within each land use, but also the overall fiscal balance amongst all land uses.

2.1 Limitations in the use and interpretation of COCS studies

COCS studies are popular because they are cost-effective and easy to understand, especially when compared to other tools that may be used during the budgeting and Official Plan review process for different purposes (e.g., population projections, build-out scenarios, and financial forecasting). The simplicity of COCS studies also means that their use and interpretation is limited in a number of ways.

Greenaway and Sanders (2006) identify a number of COCS study limitations, which can be summarized as follows:

Lack of predictive capability: COCS studies show a retroactive snapshot of fiscal land-use implications for a one-year time frame. They should not be used for prediction of the same implications in future time frames. This limitation may be remediated by conducting COCS studies over a large set of consecutive time frames, but COCS studies have not typically been used in such a way for prediction of land-use costs or benefits.

Comparison to other municipalities: Although all COCS studies use similar methodologies, the specific methods used in each municipality vary considerably. This is because of the unique record-keeping and fiscal anomalies in each municipality. Many municipalities have different revenue sources, spending priorities and demands for services. As such, COCS study ratios should not be compared between municipalities without an accompanying analysis of the differences in study methods. Section 3 provides a discussion of how different study methods can affect ratio results.

Target year is not an average year: COCS studies typically target a single fiscal year for analysis. As such, any anomalies that occur in that year are included in the analysis. Major capital initiatives, natural disasters, recessions and other anomalies could significantly increase or decrease revenues and expenses in that particular year, even though such costs are not present in other years. The target year should not be interpreted as an average year.

Data gaps: COCS studies are highly adaptable to differing availabilities of local data. Sometimes records may not be available, or the existing records may not be easily attributed to one land use over another. Approximations are frequently used and occasionally large data gaps require fallback percentages to be used. For example, tax assessment percentages may be used as an approximation for the proportion of servicing costs allocated. Study results should clearly state any such approximations and data sources. Each municipality will have its own challenges with lack of data. These challenges should be used to inform future improvements to municipal service data collection.

Freedgood et al. (2002) also identify several important limitations:

Expenses and revenues vs. costs and benefits: COCS studies are focused on expenses and revenues as they appear in budgets and financial statements. Expenses and revenues must have existing market values in order to appear in municipal budgets. Thus COCS studies do not measure non-market values and externalities that would otherwise be attributed to specific land uses. These could include pollution, traffic congestion, loss of green space, environmental amenities and community character. Quantifying externalities is not part of the COCS methodology, although it is an important part of broader economic research and could be useful to municipalities as a complement to COCS studies.

Generalized attribution of expenses and revenues: Most COCS studies average revenues and costs within a land-use and thus do not differentiate between different kinds of development within that land-use. For example, higher density development might be expected to pay more of its servicing requirements than lower density development. Some commercial and industrial developments may vary widely in assessment value and servicing requirements. One new commercial development may double the number of jobs available in a community. Additionally, agriculture and forestry are known to have many positive externalities not accounted for in municipal budgets. A separate but similar limitation is that a COCS study may attribute some expenses and revenues differently across land uses, despite the fact that, at a political level, they are intended to benefit all land uses equally (e.g., Councillors' salaries).

Finally, Kotchen and Schulte (2008) identify some important limitations in interpreting COCS study results, summarized as follows:

Marginal changes in land-use: COCS studies should not be used to discuss the impacts of marginal changes in land-use. The ratios represent cumulative fiscal impacts and would not apply equally to the addition of one extra house at a time, or 100 new acres designated commercial. Impacts at the marginal level are difficult to predict, and may indeed add nothing to servicing costs, until cumulative change builds up to require a new threshold of services. Predictions should not be made on a case-by-case basis based on COCS study results. Instead, a municipality can use the results to determine the relative expenses and revenues from particular land uses (as discussed in Crompton, 2002; and Deller, 2002).

Land supply and magnitude of assessment value: Since COCS studies use ratios, they do not account for land supply considerations and the actual magnitudes of assessment values and servicing costs (as discussed in Kelsey, 1996). First, land supply considerations may be important if a municipality already has more industrial land than it needs, which certainly occurs in rural areas. Second, the actual magnitude of assessment value should further inform municipal decisions, rather than considering only the ratios. For example, if a residential land-use ratio was 1.1, based on expenses of \$3.3 million and revenues of \$3 million, it would not largely influence the ratio to increase or decrease expenses or revenues by \$100,000. In contrast, an agricultural land-use ratio may be 0.8, based on expenses of \$80,000 and revenues of \$100,000. If the agricultural expenses or revenues were changed by \$100,000, the impact on the agricultural ratio would be quite high, despite the fact that a \$100,000 change is low in magnitude compared to expenses and revenues associated with residential land uses. This makes agricultural land uses particularly susceptible to small variations from year to year, such as increased expenses related to grass or barn fires.

Despite these limitations, COCS studies have many merits for decision makers in rural and suburban communities with limited budgets that are experiencing rapid land use changes. COCS studies provide a simple and effective way to assess relative expenses and revenues of different land uses in the unique circumstances of individual municipalities.

2.2 COCS in Canada

COCS studies have not been used as frequently in Canada as in the United States. This may be partially due to the fact that American municipalities were the first to use and promote COCS studies.

Alternately, this could reflect the greater complexity of the Canadian context, in which municipalities are

legally ‘creatures’ of the provinces, and upper tiers often provide various layers of public services that overlap with services provided by lower tiers.

To date in Canada, one COCS-type study was conducted in the Township of Brighton (County of Northumberland) by the Ministry of Municipal Affairs and Housing in 1988. In 2006, a second COCS study was conducted in Red Deer, Alberta. These studies demonstrate that COCS studies can be relevant in the Canadian context. However, given that no COCS study has recently been conducted in Ontario, additional exploration of the possibility is required in order to determine applicability.

2.2.1 Results in the Township of Brighton, Ontario

The 1988 study in Brighton, Ontario, was not a COCS study in the strict sense, but it did use cost/benefit measures to discuss the balance of expenses and revenues for different land uses in Brighton. The study found that residential development drew negatively from the municipal budget, despite being a large part of the tax base. The study especially discouraged new rural lot creation because the costs of servicing rural residential properties represented the greatest losses among the land use categories. It also found that high tax increases were required to offset declining residential property assessment in some rural areas.

The study identified Brighton as a specific example of how scattered residential development does not attract new commercial and industrial investment to improve the tax base (MMAH, 1988). As a further negative impact, scattered residential development actually left small hamlets and settlement areas without the continual reinvestment required to maintain viable rural communities. Brighton was chosen as a municipality with sound financial management that was typical of rural municipalities at that time. Despite the high costs of scattered residential development, the costs of residential uses in the township were balanced by revenues from other land uses.

2.2.2 Results in Red Deer County, Alberta

Table 1: Baseline Ratios for land uses in Red Deer County (not including education costs)

	Commercial	Industrial	Residential	Agriculture	Totals
Expenses	\$3,438,489	\$1,079,793	\$16,531,954	\$1,740,729	\$22,790,965
Revenues	\$3,431,567	\$7,714,203	\$9,966,580	\$1,727,763	\$22,840,112
Ratio	1 : 1.00	1 : 0.14	1 : 1.66	1 : 1.01	

The Red Deer results revealed several interesting differences compared to studies conducted in the United States. This COCS study kept industrial and commercial uses separate, unlike many other studies. With this arrangement, commercial land use had a ratio of 1:1, essentially ‘paying for itself’. Industrial land use more than paid for itself, which matches other COCS studies results. This is partly due to the importance of oil and gas revenues in Red Deer County. Residential land use did not pay for itself, even

when education was excluded from the ratio values (ratio 1:1.66). This is likely because of the amount of staff time dedicated to residential concerns and the proportionally higher residential use of roads. Finally, agriculture also had a ratio of roughly 1:1, although this ratio was higher than other studies. This may be partially due to a higher number of calls for grass fires in the study year (2004). Note that the cost of residential land uses would have been 1:1.81 if education costs had been included, while the cost of all other land uses would have decreased.

3 Considerations in Carrying out COCS Studies in Ontario

COCS studies are designed to accommodate varying data availability and tight budgets. As such, COCS studies are able to provide meaningful approximations of the cost/benefit ratio of a specific land use in a particular municipality quickly. Costs and benefits are much more complex in reality, and studies should attempt to capture this complexity to the greatest degree possible, given data and budget constraints. If some types of data must be prioritized, it is important to consider the following factors and their impacts on certain land-use ratios.

The largest components of a municipal budget are the most important to allocate appropriately in a COCS study. In the Township of Cavan Monaghan and many other rural municipalities, these large budget items are transportation services, fire protection and police services, and economic development. However, if a small budget item affects a category with small magnitudes (e.g., agriculture), that number should be carefully attributed even if it is a small component of the overall municipal budget. This is because ratios derived from small magnitudes tend to be highly sensitive to the attribution of even small expenses and revenues to those categories.

Farmland taxation: In Ontario, the Farmland and Managed Forest Assessment Grant Component provides funding to municipalities that find themselves with limited property assessment because their tax base is comprised of a significant amount of farmland and managed forest properties. The grant provides funding equivalent to 300 per cent of the municipal revenue generated from farmland and managed forest assessment where these properties comprise 20 per cent or more of the municipality's tax base. Municipalities that have between five per cent and 20 per cent of their tax base made up of farm and managed forest properties receive a portion of this funding on a sliding scale (MPAC, 2011). Since 2.4% of Cavan Monaghan's tax revenue is derived from farm and forest properties, it does not appear to be eligible for this grant. Before 1998, all properties in the farm tax class would have paid the full residential tax rate, and received a rebate from the provincial government. However, this rebate was downloaded to municipalities in 1998 (OMAFRA, 2008). Upper-tier and single-tier municipalities now have the option to reduce the municipal tax rates on the farm property class to below 25 per cent of the residential tax rate, without a provincial rebate. This is an important consideration for COCS studies in Ontario.

Rural communities grants: The provincial Rural Communities Grant Component provides funding to municipalities based on the proportion of their population residing in rural areas or small communities. Municipalities with a Rural and Small Community Measure of 75 per cent or more receive the full per-household amount of \$156. Cavan Monaghan is eligible for this grant because 100% of its residents reside in rural areas and small towns, as defined by the Municipal Property Assessment Corporation (MPAC). Municipalities with a Rural and Small Community Measure between 25 per cent and 75 per cent receive a portion of potential total funding based on a sliding scale (MPAC, 2011).

Density and median home value: Planning decisions tend to focus on encouraging certain types of residential development to increase density and real estate values. It should be noted that COCS studies do not clearly differentiate between types of residential development. All residential types are averaged across types whether high or low density, or high or low assessment value. It would be difficult in many

circumstances to determine whether residents in higher-valued homes use more services than those in lower-valued homes. This is relevant in the case of Cavan Monaghan because there are different levels of environmental and water services in the different wards of the Township. In an ideal COCS study, these residential services could be divided amongst different residential land uses to create a more sophisticated ratio estimate. Kotchen and Schulte (2008) also recommend further investigations into the effect of density on servicing costs.

Whether to count agricultural houses in the residential category: According to Kotchen and Schulte (2008), including farm houses in the agricultural/open-space category, rather than the residential category, increases agricultural/open-space ratios as much as 60 percent. This choice is fairly clear in Ontario, however, given that farm houses are assessed at residential rates and contribute to the residential tax revenue base. Some arguments could be made that rural houses are more expensive to service than residential houses in urban areas. However, the balance of services between residential types is not intended to be determined by COCS studies. More in depth analysis of records would be required.

Whether to count the educational budget: According to Kotchen and Schulte (2008), if municipalities in the United States included the school budget in a COCS study, this would increase residential ratios by more than 15 percent on average. A similar situation exists in Red Deer County, Alberta. According to Greenaway and Sanders (2006), if ratios for Red Deer included school services, the residential ratio would increase by 13%. In Ontario, responsibility for education was uploaded to the province in 1998. However, municipalities still collect educational taxes. These taxes are then allocated to school boards by the province. The budget of Cavan Monaghan does not indicate educational taxes; they need not be considered in this instance. A COCS study for the County of Peterborough would need to consider this question.

Whether to count County/Regional property taxes and services: Servicing agreements between lower- and upper-tier municipalities are variable across Ontario. This relationship is perhaps even more complicated than many municipalities in the United States, which tend to have higher tax control. If a study is intended to be used by a lower-tier municipality, it is useful to focus on revenues collected by that municipality and expenses incurred by that municipality. If it is possible to attribute expenses that are part of the upper-tier levy, this should be done. However, if this process is too complicated or not dependable, analysis should not include the portion of tax collected by the county/region. A more sophisticated COCS study could consider all lower tiers within an upper tier in order to develop a more comprehensive picture of the costs of servicing different land uses. This would help to incorporate costs that are incurred at the upper tier, including planning, economic development, and police services.

Whether to conduct interviews or attribute expenses/revenues using other means: In the only other recent COCS study conducted in Canada, Greenaway and Sanders (2006) depend on interviews and estimates of staff time as approximations ('proxies') for actual records. For example, if a planner allocated 80% of his or her time to reviewing residential development applications, then 80% of the planner's salary could be allocated to the residential land use. This would likely be an effective approach in Cavan Monaghan. Where possible, interviews should be supplemented with municipal records. Records for large budget items should be prioritized. Where records and interviews are insufficient or

unavailable, it is also possible to attribute expenses and revenues based on fallback percentages. These percentages can be developed based on averages in other categories, or borrowed from other studies. However, fallback percentages should be avoided if possible and their use should be clearly noted (see the definition of fallback percentages in Appendix B).

In addition to the specific considerations above, there are general considerations at play in the broader service provision arrangements between the province and municipalities. In 1998, the provincial government imposed a Local Services Realignment (LSR) which uploaded the costs for public education to the province, while downloading full or partial responsibility and costs for social housing, social assistance, public transit, child care, public health and land ambulance services to municipalities. The province committed that the process would be revenue neutral, using the Community Reinvestment Fund (CRF) to address local fiscal capacity. However, the Provincial Auditor found in 2001 that the CRF did not meet the commitment to revenue neutrality of the LSR. In 2008, the province proposed significant changes to a number of fiscal service delivery arrangements (MMAH, 2008a). These changes will take effect through gradual changes over the next four to ten years. Changes include the full uploading of Ontario Works to the province, uploading of the Ontario Drug Benefits and Ontario Disability Support Plan, and the uploading of Provincial Courts services. A number of general considerations for infrastructure and services for people are also underway. The CRF is now replaced by the Ontario Municipal Partnership Fund (OMPF), which further aligns provincial transfer payments with municipal capacity needs. In light of uploaded services, transfer payments available in the OMPF will gradually decrease to a total of \$500 million by 2016. Full details of the changes made, and their implications to specific municipalities, are outlined by the Ministry of Municipal Affairs and Housing in the Provincial-Municipal Fiscal and Service Delivery Review (2008a).

4 Community Services Context in Cavan Monaghan

The Township of Cavan Monaghan is located in the south-west quadrant of the County of Peterborough, in Central Ontario. The Township is an amalgamation of the former Townships of Cavan, North Monaghan and the former Village of Millbrook, which occurred in 1998. The municipality is currently in the process of generating the new Cavan-Millbrook-North Monaghan Official Plan, which will incorporate policies for all areas of the Township including the Millbrook settlement area and the Fraserville Secondary Plan Area up to the year 2031. In preparation for this review, the municipality has drawn upon a number of informative studies.

4.1 Economic profile

According to Dymont (2009), major economic activities in Cavan Monaghan include agriculture, manufacturing, processing, education and technology. There appear to be a number of economic development opportunities in the industrial and commercial nodes at the Cavan/Highway 115 intersection, Fraserville, and the Peterborough Airport business park. The beginning of a manufacturing and processing cluster is formed by General Electric, PepsiCo (Quaker), Sysco foods, Siemens Miltronics, and others. Currently, 13% of the labour force in Cavan Monaghan works in manufacturing. However, expansion of some manufacturing uses may require water and sewage treatment capacity, which is currently not available in Fraserville.

According to a study of agricultural impacts in the City of Kawartha Lakes and the Greater Peterborough Area, 18% of the area's gross farm receipts are generated in Cavan Monaghan (approximately \$13 million). Agriculture has a regional economic impact of approximately \$353 million, or \$410 million including labour income. This income supports a broad variety of economic strengths in the Township of Cavan Monaghan. Key farm related industries include farm commodities, the equestrian industry, farm tourism, eco-tourism in the Oak Ridges Moraine lands, home occupations, and renewable energy installations.

Tourism is another important economic activity. This includes tourism commercial zones such as Kawartha Downs, and the Millbrook downtown and Fairgrounds. A number of home occupations also generate tourism activity.

Institutional and technology uses also generate economic activity at Trent University, Fleming College, and the associated Research Innovation Network. The provincial jail lands present a significant institutional opportunity.

In light of these economic activities, consultants and public stakeholders have recommended that the municipality pursue an 'appropriate' mix and range of employment uses, including industrial, commercial and institutional uses to meet long-term needs (Dymont, 2009). A Peterborough County Strategy Session facilitated by the Queen's Executive Decision Centre identified a need for innovative infrastructure for long term sustainable growth to capture more of the technology industry, and a need to increase the availability of fully serviced industrial land for manufacturing. Although these recommendations are being considered in the OP review process, the difficult decision relates to what an appropriate mix of uses might be.

4.2 Growth management

Growth in the Township of Cavan Monaghan has been projected in a number of scenarios. Total population growth by 2031 has been projected anywhere in the range of 10,384 to 15,150. The 2006 Census population was 8,828. This wide variation in projected population corresponds to different assumptions about average household size, future levels of servicing and changes to the Official Plan. Much depends on how growth is assumed to be concentrated in Fraserville-North Monaghan and/or Millbrook. Based on a 16.8% share of overall County growth, as promoted by the County in response to the Growth Plan for the Greater Golden Horseshoe, Cavan Monaghan would have a projected population of 12,015 in 2031. Hemson Consulting projected a population of 11,267 by 2031, which was similar to Lapointe Consulting in 2008, which determined the population would be 12,728 by 2031.

After considering the various population growth projections, Dymont (2009) projected demand for an additional 1,514 - 1,696 households in Cavan Monaghan by 2031. The population of Cavan Monaghan is completely rural and small town, as defined by Statistics Canada. Single low-density dwellings comprise 96% of building inventory. Existing vacant lots may provide up to 750 additional dwelling units. This represents a fairly traditional rural residential development pattern. An additional 78 hectares of land would be required to accommodate projected residential development in Fraserville and Millbrook (with a 70% low density, 30% high density split) (Dymont, 2009).

Increases in residential development are linked to requirements for an additional 27.8 to 36.9 hectares of employment lands by 2031 (based on Population:Job ratios of 4:1 and 3:1). Floor area estimates were also prepared by Watson and Associates (2010). The forecasted incremental Gross Floor Area (GFA) increase for Cavan Monaghan is 429,100 square feet over the residential buildout projection period (18 years) and 1,568,000 square feet over the non-residential buildout projection period (Watson and Associates, 2010).

4.3 Growth-related servicing costs

The *Development Charges Act 1997* allows municipalities to recoup a portion of increased servicing costs attributable to anticipated development through development charges. These charges must be based on estimates of the increased municipal servicing costs. There must be a clear link between the anticipated development charge and the estimated increase in the need for services. Development charges are intended to be applied to infrastructure/capital type services (25.7% of the Cavan Monaghan budget in 2011), and not operating budgets (34.5% of the 2011 budget). Development charges do not include a number of costs. These include costs that do not change the current level of service ceiling; costs within existing uncommitted (excess) servicing capacity; benefits to existing development; anticipated grants, subsidies and other contributions; and a 10% reduction in the development charge for certain services.

The “Development Charges Background Study” prepared by Watson and Associates (2010) provides a detailed analysis of the costs of new development according to a number of service categories and land-use classes. The study distinguishes between township-wide services (roads and related, fire protection services, outdoor recreation services, indoor recreation services, library services, and administration)

and Millbrook area-specific services (wastewater services and water services). Due to additional water and wastewater services, development charges in Millbrook are higher.

The development charges study distinguishes between a number of residential use classes: single and semi-detached dwellings; apartments (above or below two bedrooms); multiple dwellings; and special care units. Non-residential type development charges are combined in a single use class. As such, the development charges study provides a head start in attributing certain costs to residential and non-residential land uses, potentially reducing the amount of work required to conduct a COCS study. For example, Watson and Associates (2010) determine that 80% of the \$321,000 administrative costs dedicated to studies related to growth and capital works, can be attributed to residential and 20% to non-residential. Further work would be required to ascertain specific attributions within the non-residential category (distinguishing between agriculture, commercial, and industrial development).

5 Considering a COCS Study in Cavan Monaghan

Multiple studies have identified the implications of growth in Cavan Monaghan and the need to carefully consider an appropriate mix of residential, commercial, industrial and agricultural uses. Given the variety of information already available, what functional information could be further provided by a COCS study? Would a COCS study be appropriate in Cavan Monaghan?

Many of the studies generated so far provide population and land-use projections for the coming decade. These projections are based on empirical data and assumptions about future conditions. However, none of the studies provides an assessment of the full expenses and revenues attributed to specific land uses in the municipality. This information would be useful in answering the question of how expenses and revenues are currently balanced across land uses in Cavan Monaghan. Although this information could not be used to predict the appropriate balance of land uses in the Official Plan, it is useful in informing debates about what the current numbers are. This is especially useful in identifying the value of rural landscapes compared to other land uses on an expense/revenue basis.

As such, a COCS study would be potentially valuable as a rapid evaluation method for measuring how servicing expenses and revenues actually align across land uses. In particular, a COCS study would put an approximate dollar value on the current level of servicing in each land use, for a one year time period (unless multiple years were analyzed). This would help to provide an estimate of both capital and operational servicing costs, rather than capital considerations only, as is the case in the development charges study. This dollar value is only useful in comparisons between land uses, however, and not for creating buildout scenarios. A COCS study could be repeated periodically as a series of snapshots throughout the Official Plan period to 2031. It is important to emphasize that COCS studies are retrospective. They may inform future decisions, but they are not predictive.

Before examining a potential COCS study in Cavan Monaghan, two special circumstances should be considered. First, 44% of municipal revenues were derived from reserve funds in 2011. A large portion of these funds were dependent on casino revenues. This is a considerable exception compared to many other municipalities. Secondly, as of March 3rd, 2011, the municipality has submitted \$494,123.61 and received \$309,964.78 through the Build Canada Fund for a municipal water and sewer project in Fraserville (Hurley, 2011). Council has decided not to move forward with this project and the federal and provincial governments require that monies received by the municipality be returned if the project does not proceed. Subject to negotiations with the Build Canada Fund, some funding claims may be reallocated to expanding water and wastewater infrastructure in Millbrook.

COCS studies are most straight-forward in municipalities where the majority of revenues are generated by property taxes; this means that a COCS study in Cavan Monaghan could be more complicated than previous studies, due to dependence on non-traditional revenue sources such as the casino. Additionally, COCS studies are most reliable when major capital projects are amortized in the budget. Amortization prevents large fluctuations in the ratios between land uses due to allocation of capital projects to a single fiscal year. The Fraserville servicing project represents expenses that could not be amortized and that may further complicate a COCS study in Cavan Monaghan. This does not mean that a COCS study would be inappropriate, but it does indicate the need for caution in interpreting results.

5.1 Next steps for a COCS study in Cavan Monaghan

Traditionally, COCS studies proceed in four major stages:

- 1) Develop land use category definitions;
- 2) Collect data from the municipality;
- 3) Attribute municipal expenses and revenues to specific land-use categories; and
- 4) Calculate and analyze expense/revenue ratios.

The following preliminary analysis uses 2011 as the target fiscal year. Wherever 2011 numbers were not available, 2010 numbers were used.

5.1.1 Developing land-use category definitions

Based on preliminary conversations with Township staff, it appears that it is relatively feasible to quickly attribute servicing expenses to residential and non-residential uses of land. This was also reinforced in the results of the development charges study, which used a residential/non-residential split for projecting and attributing servicing costs. This type of two-class system also aligns to some degree with the need for the Township to identify employment lands in response to the requirements of the Growth Plan for the Greater Golden Horseshoe. It should be noted that employment lands would not include agricultural lands, however. Traditionally, a COCS study would use three or four categories: Residential, Agricultural (working lands), and Industrial/Commercial (in some studies, Industrial and Commercial categories are split). This four category approach would still be the most informative, despite the reality that servicing expenses are more readily attributed to residential/non-residential land uses. Another consideration is whether to use more than one residential land class, as outlined in Watson and Associates (2010). Of particular interest is the difference in servicing costs inside Millbrook due to water and sewage services.

5.1.2 Collecting data from the municipality

If a COCS study were to be pursued, further background information would need to be collected to provide an understanding of County corporate structure, the decision-making process, land-use divisions, zoning and assessment practices and protocols, departmental activities, special circumstances in the target year (e.g. 2011), and available Geographic Information System (GIS) support. The researcher would need to gather financial data for the target year, including audited actuals and program budgets. Much of this information was readily gathered on a two-day visit to the municipality by one of the authors of this literature review.

5.1.3 Attributing municipal expenses and revenues to specific land use categories

Greenaway and Sanders (2006) used interviews with Red Deer County department directors and program managers to attribute expenses and revenues to specific land uses. These interviews included group meetings in which expenses/revenues that were dependent on multiple departments could be discussed between related staff. A similar approach would be useful in Cavan Monaghan. Each program manager would be asked to describe their program, providing a context for attributing dollars. Greenaway and Sanders (2006) often used staff time as an approximate measure of the proportion of spending attributed to each land use. It is useful to collect a rationale from each interviewee as to why they estimated their time in a particular way. For expenses/revenues which are not easily attributed to specific land uses, fallback percentages can be used, but should be avoided if possible.

The Township of Cavan Monaghan has a 2011 budget of \$14.3 million. This budget can be divided as follows: 34.5% operating, 25.7% capital, 24.3% contributions to reserves, 9.9% police services, and 5.6% other. Each of these categories represents a set of services and projects carried out by the municipality.

Tax rates differ slightly between the wards of Cavan, Millbrook and North Monaghan, but are generally as follows: Residential is 1%; Commercial is 2.2%; Industrial is 3.3%; Farmland is 0.25%. The implementation of a COCS study in Cavan Monaghan should be carried out with caution because only 37% of revenues are directly attributable to specific land uses. Conversely, 44% of Cavan Monaghan revenues are derived from reserve funds. Reserve funds consist of funds saved from previous years for future uses. Reserve funds are therefore extra sources of revenue that may be spent in a fiscal year, but were not collected through taxes in that same year, and are not directly attributable to any specific land use. The exception to this is the revenues derived from the lottery reserve fund, which can be attributed to the commercial land use. The reserve fund from lottery revenues appears to vary from year to year. Non-lottery reserve fund revenues could be allocated using a fallback percentage. One way to determine the fallback percentage is to use the percentage of taxes derived from each of the land use categories. In 2011, the percentages were 10.2% commercial, 2.4% industrial, 84.9% residential and 2.4% agricultural (as illustrated in Table 2).

Table 2: Assessment and tax revenue values classified by land use 2011 (\$ values)

	Commercial (includes New Commercial)	Industrial (includes Pipeline assessment)	Residential (includes Multi- residential assessment)	Agricultural (includes managed forest)	Tax Exempt	Total
Assessment value	\$84,663,486	\$13,782,556	\$768,927,325	\$89,166,619	\$45,717,541	\$1,002,257,527
% Total assessment	8.45	1.4	76.72	8.90	4.56	
Tax collected	\$408,611.70	\$97,728.91	\$3,396,217.6	\$96,334.49	0	\$3,998,892.65
% Total tax collected	10.22	2.44	84.93	2.41	0	

Table 3 attributes the three largest revenue classes: property taxes, reserve funds (non-lottery), and lottery reserve funds. This is a preliminary example of how revenues might be allocated in the Township. It is not a final analysis and should not be used for interpretation. This table illustrates the important question of whether or not to include lottery reserve revenues. If these revenues are included, the commercial revenue class would be larger than all the other classes combined by a factor of 1.34. This could create a skewed ratio for commercial (or any category in which commercial is combined with other classes).

Table 3: Revenue sources classified by land use 2011 (\$ values)

	Commercial	Industrial	Residential	Agricultural	Total from 2011 budget
General tax levy (Property taxes)	\$408,612	\$97,729	\$3,396,218	\$96,334	\$3,998,893
Development charges	Not Attributed	Not Attributed	Not Attributed	Not Attributed	\$252,950
Reserve funds (non-lottery funds, using fallback percentage)	\$183,812	\$43,963	\$1,527,768	\$43,336	\$1,798,878
Lottery reserve funds	\$6,400,000	0	0	0	\$6,400,000
Env. Service and BIA charges	Not Attributed	Not Attributed	Not Attributed	Not Attributed	\$293,116
Provincial/federal grants	Not Attributed	Not Attributed	Not Attributed	Not Attributed	\$846,000
Other revenue	Not Attributed	Not Attributed	Not Attributed	Not Attributed	\$709,345
Totals	\$6,992,423	\$141,692	\$4,923,986	\$139,670	\$12,197,770*
*This represents 85% of total revenues. The total is 14,299,181 if non-attributed revenues are included. Note that values in this table have been rounded to the dollar.					

Another table focused on expenses would need to be prepared. This table would attribute the largest service expenses to specific land uses in Cavan Monaghan, including, in minimum, police and protective services, roads, economic development, and any other services that could feasibly be attributed. Preliminary conversations were carried out with municipal staff in the Planning, Economic Development, and Finance departments. Based on these conversations, it appears that municipal staff can readily attribute specific budget lines within their departments, occasionally using staff time as proxy. Some records also appear to be available in Roads and Protective Services. This indicates that further

interviews in the municipality would provide a useful basis for attributing expenses in the Township. This is further analysis that would be carried out in a full COCS study in future.

5.1.4 Calculating and analyzing expense/revenue ratios.

Once expenditure and revenue data have been attributed to land uses, the sums of these values would be used to create a series of ratios for the land classes that the Township decides to pursue in a COCS study. The ratio calculation is straightforward – [Sum of Expenses/Sum of Revenues] – for each specific land use. The resulting interpretation of the ratio would be that for every 1 dollar in revenues spent on a specific land use, some number of dollars was spent on services to that land use (see the range of values observed in other studies in Appendix A).

The ratios should be examined for anomalies and sensitivity analysis should be conducted for any expected outliers (e.g., lottery revenues, or Build Canada Fund expenses). It is already clear from this preliminary analysis that the ratio for farmland should be interpreted with caution because revenues for agricultural land are relatively small compared to the other categories (farmland represents 2.4% of overall tax revenues). The ratio for commercial should also be interpreted with caution because 92% of revenues from commercial are derived from a single commercial use (the casino).

5.1.5 Using and communicating the results of a COCS study

A fifth stage of a potential COCS study is deciding what to do with the results. Results could be further promoted and used in a number of ways, similar to other fiscal impact studies. Greenaway and Sanders (2006) identify a number of possible outcomes of a COCS study, summarized as follows:

- Informing visioning and community planning discussions
- Reviewing policy and evaluating policy impacts
- Comparing non-revenue and revenue-generating programs
- Understanding who uses municipal services, and identifying service gaps
- Identifying research gaps and municipal information needs
- Partnering with other municipalities to perform further cost/benefit analysis

5.2 Other methods of evaluating fiscal impacts of land use

Cost of Community Services (COCS) studies are only one amongst many methods of assessing municipal financial viability, though they are one of the best methods for questions related to the fiscal impacts of a municipality's current mix of land uses. A wide variety of other methods are discussed in the International City/County Management Association book, "Evaluating Financial Condition: A Handbook for Local Government" (ICMA, 2003). This book outlines both simple and sophisticated ways to assess financial viability. Methods include identifying relevant time frames, using different accounting techniques, identifying indicators for effectiveness, efficiency, and equity, and assessing fiscal impacts of development. The ICMA contains many Canadian member municipalities, though it does tend to focus on municipalities in the United States.

In a survey of Canadian municipalities, Marshall and Douglas (1997) identified a wide variety of fiscal viability measures in use across Canada. These measures include general services/provision measures, reserve fund and per capita measures, methods for assessing provincial transfer payments, and deficit-or debt-based indicators. Buildout scenarios and population growth projections were common. In each

category, Canadian municipalities evaluated questions such as “Are tax rates straining residents’ ability to pay?”, “Are reserve funds being depleted at an unplanned rate?”, and “How do revenues and expenditures compare to other similar municipalities?” Although the methods used across Canada vary widely, all measures tend to revolve around the capacity of a municipality to generate revenues equal to or greater than the expenses related to providing services and other costs demanded by the community. These measures are increasingly related to performance benchmarks and standardization of reporting indicators within and across provinces and territories.

Standardization of reporting measures is occurring in Ontario. Ontario municipalities are now required to participate in the Financial Information Return (FIR) conducted by the Ministry of Municipal Affairs and Housing (MMAH). Within the FIR, municipalities provide information that the MMAH uses to prepare fiscal health indicators in a number of servicing areas. These indicators describe fiscal health in terms of property taxes, assessment base, municipal servicing costs, economic indicators such as income and employment rates, and financial measures such as reserves per capita. According to composite ratings published in 2008, the Township of Cavan Monaghan is in the highest category of fiscal health (MMAH, 2008b). The Township fares well for most indicators, although there appears to be a dip in financial indicators that are determined on a per capita basis.

There are many other types of non-direct, non-fiscal sources of information that could inform debate about costs and benefits of different land uses. A wide literature exists that attempts to allocate dollar values to Environmental Goods and Services. A recent example of this is a report that identifies that services per hectare in the Greenbelt could be valued at \$3,571 per hectare annually (Suzuki Foundation, 2008). There are many ways in which such measures have been proposed as a boost to rural municipal budgets (Economy League, 2010).

It is also important to consider indirect economic impacts between land uses that conflict or complement each other. One example of this is the impacts of rural non-farm development. From an agricultural standpoint, as each new residence replaces a farm, the number of customers for farm service centres also declines (Davidson, 1982). Beyond a certain threshold, those agricultural services leave as well, creating a downward spiral in the agricultural assessment base without any corresponding increase in residential assessment. Speculative values on land for residential purposes begin to interfere with the land values for farmland. This leaves farmers with a choice between cashing out on valuable (and highly taxed) lands or continuing to farm with low returns in an increasingly urbanized context (Zollinger and Krannich, 2002).

6 Conclusions

Kotchen and Schulte (2008) point out that municipalities and planning-related organizations have used COCS studies to argue against the common perception that further residential development automatically increases municipal health. COCS studies are also used to argue that working lands provide fiscal benefits, in the sense that they do not use more in service costs than they provide in tax revenues. Although many municipal councillors perceive additional residential development as a positive contribution to tax base, the overall expenses for servicing residential development tend to be higher than overall revenues from residential tax assessment.

Land use is a fundamental component of a municipality's fiscal health. It is surprising that more municipalities in Canada and the United States do not consider COCS style-studies to better understand current fiscal health as it relates to the balance of land uses in a municipality. The Township of Cavan Monaghan has taken an important first step in considering this type of study in its Official Plan review.

Despite the fact that municipal fiscal viability depends largely on balancing land uses, municipalities often do not know the actual measure of expenses and revenues within specific land-use categories. This means that municipalities often review budgets and Official Plans without quantitative measures of the fiscal implications of current land-use patterns. It is possible in many cases to generalize about results, but quantitative measures provide an additional level of certainty to decisions in which a balance of land uses must be achieved. Although there are a wide variety of factors that influence both the budgeting and planning processes, fiscal implications are common ground between these processes.

The findings of a COCS study may further reinforce that traditional forms of housing development no longer serve the needs of municipalities in similar situations as Cavan Monaghan. New residential lots are increasingly less likely to be created in rural areas. Municipalities should seriously consider how to increase their municipal tax base through agricultural, commercial and industrial land uses, which tend to contribute positively to the municipal budget. For example, municipalities can seek to attract value-added activities and agriculturally-related commercial and industrial developments that support existing and future agricultural uses, including equestrian industries.

At the same time, alternative residential development patterns are possible, which would change traditional relationships between land use and municipal finance. In an analysis of affordable housing strategies in rural Ontario, Slaunwhite (2009) found that rural municipalities are now seeking to use lower minimum lot sizes and to intensify existing hamlets and villages. For example, the United Counties of Leeds and Grenville Affordable Housing Strategy recommends secondary and garden suites to provide housing to seniors and assist with mortgage payments in low-income households.

Although the use of COCS studies is not yet widespread in Canada, these studies have become increasingly popular and influential in the United States. They are cited in land-use planning documents, government reports, academic research, and advocacy materials. COCS studies have promoted greater emphasis on economic considerations in debates over land use, which have otherwise focused on social, aesthetic, environmental, and legal concerns that are harder to quantify (Kotchen and Schulte, 2008). It is still important to consider all of these uses.

The use of a COCS study in Cavan Monaghan may indeed be useful in answering the types of questions now being asked. Amongst the many methods of assessing fiscal health, a COCS study would serve as a way to rapidly evaluate the balance of expenses and revenues in specific land uses. This would help to provide an estimate of both capital and operational servicing costs as they relate to each other, adding operational budget information to the detailed considerations of the capital budget already included in the “Development Charges Background Study” (Watson and Associates, 2010). A series of COCS studies carried out periodically would provide a set of important measures of land-use policy impacts in the coming decades.

Users of this review and future COCS studies should be aware that Cavan Monaghan also has a number of exceptional circumstances that should guide the interpretation of results. Results should contain sensitivity analysis of unique circumstances, including changes to the Canada Building Fund agreement and ongoing revenues from the casino should be included in any analysis of results. As indicated earlier, COCS studies do not make predictions, but rather provide a more detailed picture of the existing costs of development related to land uses.

7 References and Resource List

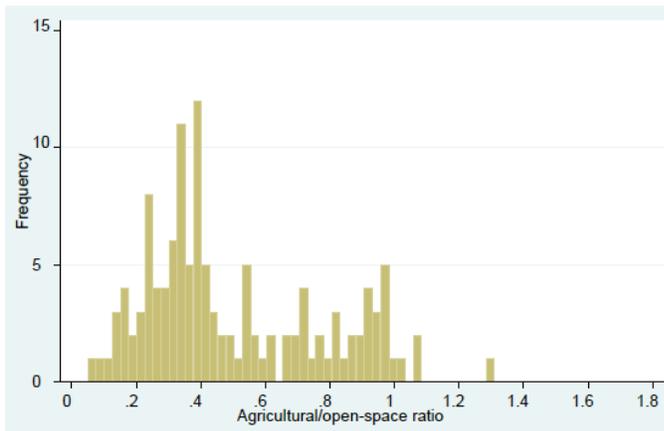
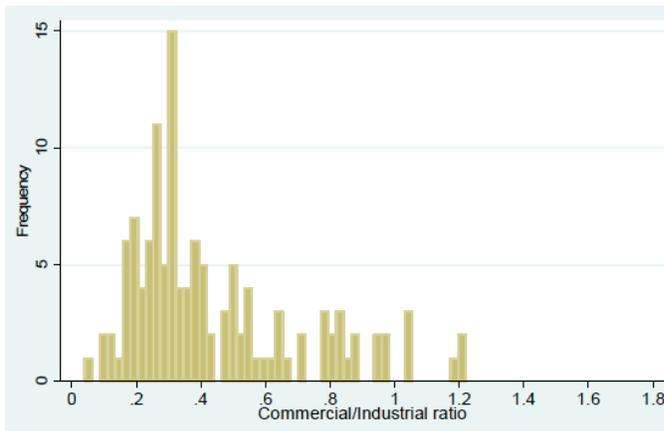
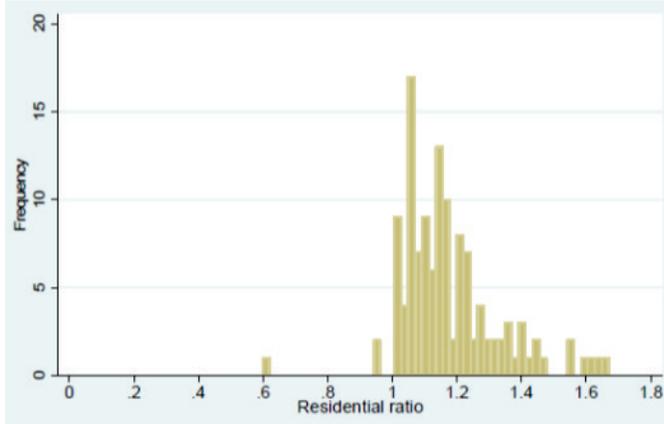
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8 Appendix A – Frequency Distributions of COCS Study Ratios

Frequency distributions of cost of community service study ratios (i.e., the cost of services relative to a dollar of tax revenue) for residential, commercial/industrial, and agricultural/open-space land uses in 125 COCS studies in the United States.

Source: Kotchen and Schulte (2008)



9 Appendix B - Definitions

These definitions are derived from the Municipal Councillor's Guide (MAH, 2010).

Amortization of Tangible Capital Assets: Since 2009, municipalities must comply with PS 3150 – Tangible Capital Assets (TCA) for external reporting. Prior to 2009, municipalities often recorded TCAs as expenditures in the year they were purchased, and no TCA was recorded on the municipality's statement of financial position. Now, municipalities are required to record TCAs on the statement of financial position and to amortize (expense) the asset over its useful life on the statement of operations.

Capital budget: A capital budget typically provides for infrastructure to be maintained or new infrastructure needs to be met in the future. It may set out the specific capital projects to be approved for the budgetary period, such as capital improvements, land acquisitions, new facilities and equipment, and it identifies a source of financing for each.

Conditional grants: Conditional grants account for about 85 per cent of total provincial grants and are subject to specific eligibility and spending criteria. The major conditional grants are for transportation, health, social services and the environment. Unconditional grants, which represent about 15 percent of total provincial grants, consist mainly of funding provided through the Ontario Municipal Partnership Fund (OMPF). The fund assists municipalities with their share of social program costs, includes equalization measures for areas with limited property assessment, addresses challenges faced by northern and rural communities, and responds to policing costs in rural communities.

Development charges: Development charges are amounts levied to pay for growth-related capital costs such as roads, sewers and transit. They are used to fund the initial capital costs to build infrastructure needed to serve new growth (both residential and non-residential). Development charges do not pay for operating costs or for the future repair and rehabilitation of infrastructure.

Fallback percentages: Fallback percentages are used to allocate expenses or revenues which are difficult to allocate based on existing records (e.g., road maintenance) or may be inappropriate to allocate to a specific land use because they are intended to benefit all land uses equally (e.g., the role of councillors). Typically, fallback percentages for specific budget lines are based on the average percentage allocation of other budget lines in the same department. Other approaches include using percentages for different land uses from comparable municipalities; using percentages that have been averaged across a number of different municipalities; using percentages of property tax revenues from each land use to allocate other non-tax revenues; and using data from other sources to allocate revenues and expenses (e.g., one could allocate road expenses based on road use statistics in other jurisdictions). In this report, a fallback percentage is any percentage used to allocate expenses or revenues that is not based on municipal records or staff estimates of time spent providing services to specific land uses.

Full-accrual: Full-accrual accounting standards require municipalities to more fully account for their tangible capital assets – such as roads, bridges, buildings and water systems – as assets in their

financial statements. The new standards also require municipalities to include amortization of assets in their statement of operations. This change provides information regarding the consumption of tangible capital assets in the delivery of municipal services.

Operating budget: Includes expenses and revenues related to salaries, wages, benefits, heat, hydro, maintenance of buildings and infrastructure.

Property taxes: There are seven main property classes used in Ontario (residential, multi-residential, commercial, industrial, pipeline, farm, and managed forests) in which properties are generally categorized on the assessment roll. The average tax ratios prescribed by the provincial government are 2.74 for the multi-residential class, 1.98 for the commercial class, and 2.63 for the industrial class (note that Cavan Monaghan is quite a lot lower than this currently: 1 for agricultural, 1 for multi-residential, 1.10 for commercial, 1.54 for industrial).

Revenue: Some examples of revenue that municipalities may receive include:

- special area taxes
- conditional and unconditional grants
- payments in lieu of taxes
- property taxes
- investment income
- licenses, permits and rents
- fines and penalties
- development charges
- user fees and charges for services such as recreational and cultural facilities (libraries, pools, etc.) and local improvement charges (sidewalks, etc.)