



Cost of Community Services study
for Red Deer County

**The Fiscal Implications
of Land Use:**

**A “Cost of Community Services”
Study for Red Deer County**

**Report 4: A COMPARATIVE ANALYSIS OF
THE RED DEER COUNTY COCS STUDY
AND PREVIOUS COCS STUDIES**



MIISTAKIS
INSTITUTE

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**Report 4: A COMPARATIVE ANALYSIS OF THE RED DEER COUNTY
COCS STUDY AND PREVIOUS COCS STUDIES**

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Introduction

As we noted in the companion reports, the unique character of each Cost of Community Services (COCS) study makes it inappropriate to make detailed comparisons across studies. However, as they all follow the same basic methodology, they do form a cohesive body of knowledge. Similarly, they have much to learn from each other in terms of improving methodology.

In the *Cost of Community Services Study for Red Deer County* project we took some significant methodological departures from previous studies. For the reasons noted above, we chose to re-run our data model, substituting more common or traditional methodological approaches to facilitate comparison.

It is critical to note that we made those methodological changes because we felt doing otherwise made for less appropriate results (as we describe below). ***Therefore, the following analyses should not be considered equally valid sets of results, nor lead to "cherry-picking" of the most desirable ratios from a philosophical perspective.*** Rather they are to provide a basis for comparison to other studies, and a discussion point for the continuous improvement of the Cost of Community Services study methodology.

Allocating Road-related Expenditures and Revenues Using Fallback Percentages

Owing to the fact that road-related expenditures make up 56% of the Red Deer County budget, a change in the assumptions and methods here can have a significant impact on the final ratios. Therefore, for comparison, we redeveloped ratios based on the more traditional approach of using *fallback percentages* to allocate road-related expenditures and revenues.

This comparison test involved replacing the road cost/revenue proportions developed in the base methodology with the "fallback percentages" developed from available data. Many previous Cost of Community Services studies have allocated roads-related costs and revenues in this way, and it was deemed important to understand the impact of this methodological choice and to provide a basis for comparison. In this situation, the road expenditures and revenues are allocated to land uses based on the overall proportions for all activities in the county. This approach essentially ignores the actual influence of roads, but still accounts for the total expenditures and revenues.

The resulting ratios compared against the two *baseline ratio* sets, are shown in Tables 1 and 2, and in Figures 1 and 2.

Table 1: Ratios based on Two Different Roads Methodologies (with Education)

	Commercial	Industrial	Residential	Working Landscapes (Agriculture)
Baseline	1 : 0.74	1 : 0.09	1 : 1.81	1 : 0.70
Roads (Fallback Percentages)	1 : 0.57	1 : 0.17	1 : 1.77	1 : 1.06

Figure 1: Comparison of Road Sensitivity Testing (with Education)

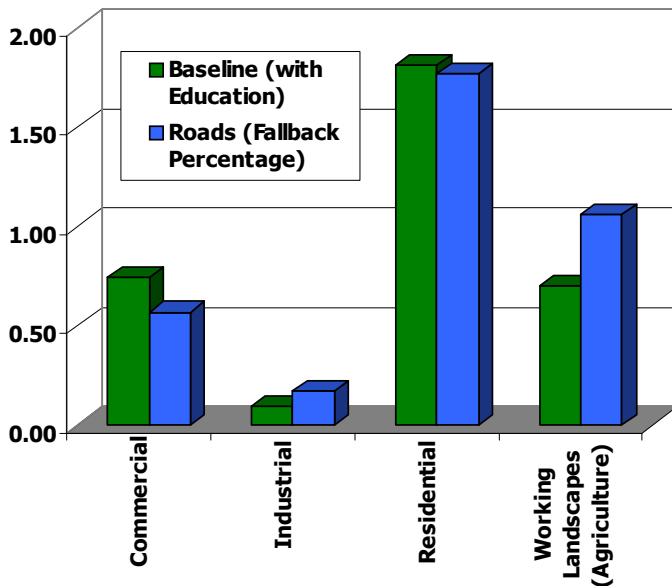
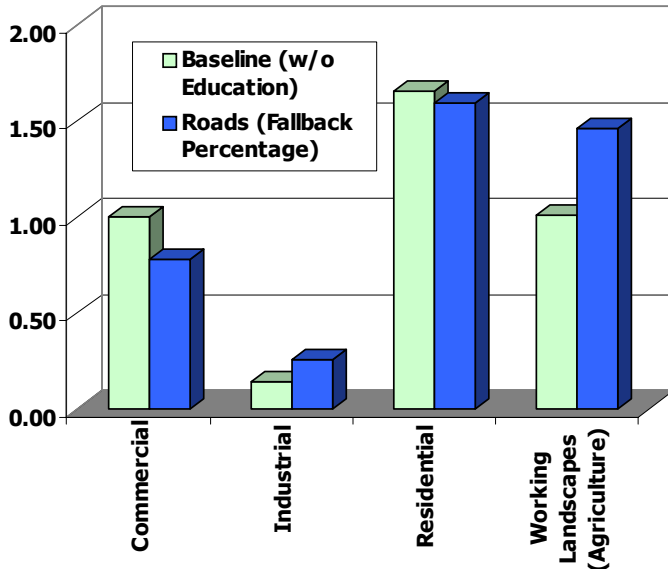


Table 2: Ratios with Two Different Roads Methodologies (without Education)

	Commercial	Industrial	Residential	Working Landscapes (Agriculture)
Baseline	1 : 1.00	1 : 0.14	1 : 1.66	1 : 1.01
Roads (Fallback Percentages)	1 : 0.78	1 : 0.26	1 : 1.59	1 : 1.46

Figure 2: Comparison of Road Sensitivity Testing (without Education)



Analysis

Developing ratios in this manner causes relatively little change in the Industrial and Residential land uses, but a dramatic change in the Commercial (more efficient) and the Working Landscapes (less efficient) land uses.

Although an interesting result, the dilemma is that the fallback percentages are based on virtually everything BUT roads-related data, and contain what we know to be significant inaccuracies. For example, our data and interviews indicated that agricultural traffic makes up a very small portion of the use on rural roads (in the order of 2%), yet the fallback percentages would assign 11% of road-related expenditures.

As well, we considered removing roads-related expenditures entirely, as has been the case with some previous COCS studies. Ultimately we chose not to, as we felt that even for the purposes of comparison to other COCS studies, this was not appropriate owing to the large portion of the County's fiscal picture that roads-related costs represent.

Fallback Based on Property Tax Revenue

Many previous COCS studies have developed fallback percentages¹ based on the proportion of property tax revenues generated by each land use. In the interest of creating a basis for comparison, the Red Deer County ratios were re-developed using this approach (including using this fallback calculation for road-related revenues and expenditures).

¹ The proportions applied to expenditures and revenues for which there is no basis, or for which it would be inappropriate, to allocate amongst the land uses.

The ratios resulting from this property-tax-based fallback comparison testing are shown in Tables 3 and 4 for each of the baseline scenarios with comparison graphics following in Figures 3 and 4.

Table 3: Ratios with Property-tax-based Fallbacks (with Education)

	Commercial	Industrial	Residential	Working Landscapes (Agriculture)
Baseline	1 : 0.74	1 : 0.09	1 : 1.81	1 : 0.70
Property-tax-based Fallback	1 : 0.59	1 : 0.53	1 : 1.57	1 : 0.91

Figure 3: Comparison of Property-tax-based Fallback Testing (with Education)

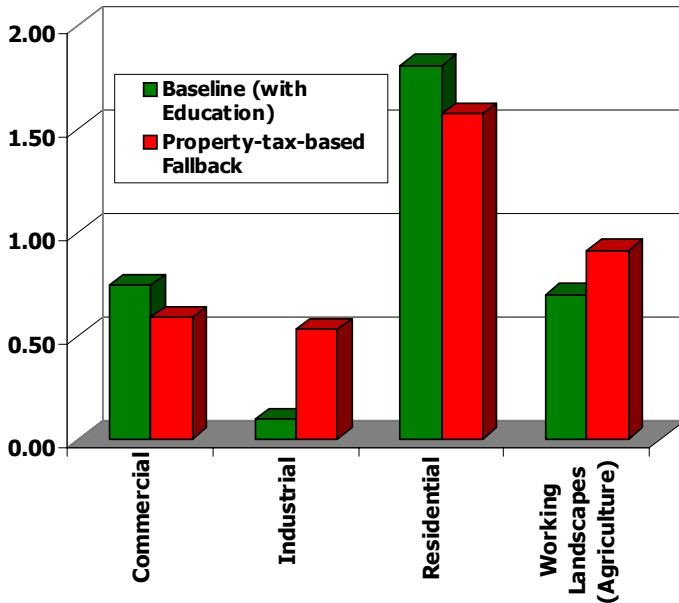
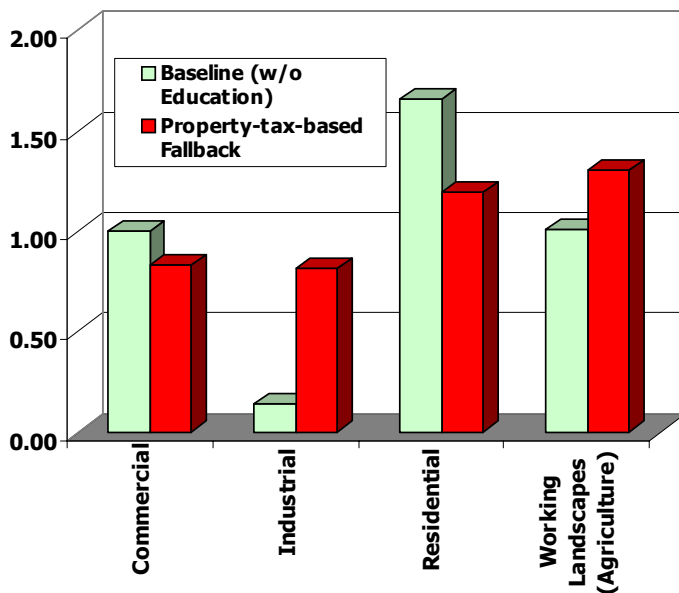


Table 4: Ratios with Property-tax-based Fallbacks (without Education)

	Commercial	Industrial	Residential	Working Landscapes (Agriculture)
Baseline	1 : 1.00	1 : 0.14	1 : 1.66	1 : 1.01
Property-tax-based Fallback	1 : 0.83	1 : 0.81	1 : 1.20	1 : 1.30

Figure 4: Comparison of Property-tax-based Fallback Testing (without Education)



Analysis

The new results showed significant changes in all land uses. The Commercial and Residential land uses returned much more efficient ratios, while the Industrial and Working Landscapes land uses returned much less efficient ratios, which was not surprising given the points made below.

It is interesting to note that even with this approach, the Residential land use, while coming the closest to the break-even point in any scenario, still cost at least \$1.20 for every dollar in revenues.

Methodologically, we did not feel this was a valid approach, and avoided developing fallbacks in this way for two reasons.

First, we felt a good representation could be developed using fallbacks based on all other data. This provides the maximum amount of County-specific data from which to generate an approximation of the average proportions of expenditures in each land use category.

Second, while using property-tax-revenues-based fallbacks can be viewed as a logical way of discounting for these unattributable data, we feel it reinforces the foundationless assumptions that this study is specifically trying to address; namely, that there is a one-to-one relationship between the property tax revenues and expenditures within each land use.

The example of the Industrial land use revenues in Red Deer County aptly illustrates our concern with this approach. In this case, all other expenditure and revenue data indicated a high level of revenues and a low level of service costs for this land use. However, when unattributable costs are assigned using a revenue-based calculation, this low-cost, high-revenue land use is assigned a disproportionately high proportion of those costs, and its ratios reflect that (going from 1:0.09 to 1:0.53 in the education-included scenario, and from 1:0.14 to 1:0.81 in the education-excluded scenario). In effect, high-revenue land uses will be characterized as high-cost regardless of their actual expenditures.