



Growing Knowledge



Ministry of
Agriculture
and Lands

Strengthening Farming Report

File Number 860.600-1 2005

Direct Financial Contribution of Farming Areas to Local Governments in British Columbia

A Pilot Project in Pitt Meadows and Abbotsford

Prepared by the

Coast Region
and
Resource Management Branch



Ministry of Agriculture and Lands
Province of British Columbia

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Executive Summary

This study provides some clarity regarding the financial contribution of farming areas to a local community by investigating the property tax revenues generated by the farming area and the cost of services provided in the farming area. There are different perceptions as to how farming areas affect the tax base of local communities in British Columbia. It has been suggested¹ that farming areas are not a net contributor to the municipal tax base and that farming areas use more community services than they contribute in tax revenues.

The results of this study should not be confused with the **economic impact** of agriculture to the community. This study simply looks at local government revenues and expenditures in different land use designations.² An economic impact study would look at the spin-off benefits, jobs, economic activity, resulting from farming activity.

To develop a methodology that could be used in the British Columbia context, the study looked at the communities of Pitt Meadows and Abbotsford in the Lower Mainland of British Columbia. In Abbotsford and Pitt Meadows over 95% of the farming activity is in the ALR and over 90% of the ALR is actively farmed. For these reasons the ALR was used as the land use designation for farming³ areas in these communities.

Within this context, the study provides a methodology⁴ for other local governments in B.C. that wish to evaluate the revenues generated by, and the costs of community services incurred in, the farming area. The approach involves:

- A. Identifying the property tax revenues derived from the assessment of land uses in the ALR and other land use designations.
- B. Allocating the local government expenditures to the relevant land use designation, and
- C. Determining a net fiscal position for each land use designation.

Many local government revenues and expenditures can be easily allocated to the different land use designations. Some revenue and expenditure items relate to more than one land use designation. Standard allocation methodologies were developed to allocate these revenues and expenditures among the land use designations. It is important to recognize that the allocation methodologies are estimates. The methodology is designed to show general patterns, not to be a detailed accounting exercise.

Financial data used is for the year ending December 31st, 2003.



¹ Anecdotal evidence that agencies involved in assessment, provincial finances and local governments believe farming areas are a tax drain on urban areas.

² Land use designations are similar to the Official Community Plan zoning designations.

³ Some non-farm activities, such as gravel extraction, occur in the ALR. Other land use designations also have cross uses, for example residential in commercial land use designations.

⁴ The American Farmland Trust (AFT) has done similar studies on local areas throughout the United States. Their tax structures and local policies differ from B.C. so a new, but similar, methodology had to be developed.

A. Allocation of Revenues to Different Land Use Designations

BC Assessment (BCA) evaluates the land use activities or uses on each lot. Generally, for taxation purposes, industrial lots have almost exclusively industrial uses, commercial lots have commercial uses, and residential lots have only residential use. Farmland is an exception. In the farming area, the land is assessed as farmland, houses and farm buildings are assessed as residential, land not farmed is assessed as residential, and any commercial or industrial activities are assessed as commercial and industrial respectively.

Much of the uncertainty surrounding the property tax revenues generated from the ALR relates to the perception that taxes from the land are the only tax revenues generated in the farming area.

This perception ignores houses and other farm buildings on farmland that generate tax revenues under different tax classifications. The BCA classification system allocates on-farm activities such as agri-business, agro-industry, barns, and on-farm residences to the overall totals of business, industry, and residential land use designations respectively. To better represent the property tax revenues derived from farming areas, the property tax paid by farms under these other BCA classifications should be allocated to the farming area.



The reallocation of tax revenues received from ALR properties, but grouped in non-farm BCA assessment classes, back to the (ALR) is summarized below. The land use classes are those used by BCA.

Table E.1

Pitt Meadows Property Tax Re-allocation to ALR - 2003 (\$,000)				
Land Use Class	Standard BC Assessment Allocation		Re-allocation to Farming(ALR)	
	\$	%	\$	%
Residential	\$4,535	62.4%	\$ 4,212	58.0%
Utility	\$ 211	2.9%	\$ 219	3.0%
Industry	\$ 247	3.4%	\$ 247	3.4%
Business	\$1,766	24.3%	\$ 1,433	19.7%
Rec/NonProfit	\$ 211	2.9%	\$ 168	2.3%
Farmland / ALR	\$ 291	4.0%	\$ 988	13.6%
Total	\$7,267	100%	\$ 7,267	100%

Source of Property Tax Revenues
Pitt Meadows - 2003

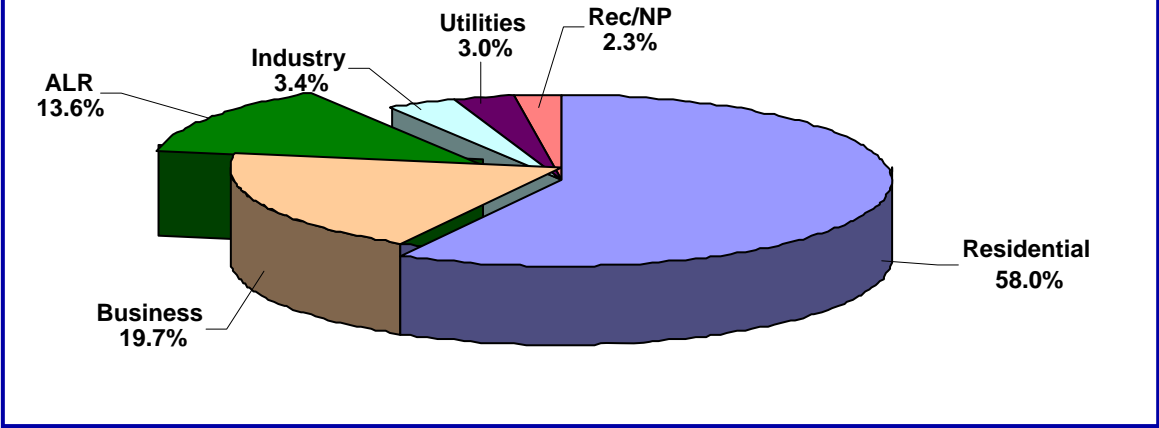


Figure E.1

Table E.2

Abbotsford Property Tax Re-allocation to ALR - 2003 (\$,000)				
Land Use Class	Standard BC Assessment Allocation		Re-allocation to Farming (ALR)	
	\$	%	\$	%
Residential	\$36,732	62.7%	\$31,733	54.2%
Utility	\$ 2,050	3.5%	\$ 1,894	3.2%
Industry	\$ 1,992	3.4%	\$ 1,789	3.1%
Business	\$16,169	27.6%	\$16,038	27.4%
Rec/NonP	\$ 59	0.1%	\$ 69	0.1%
Farmland / ALR	\$ 1,582	2.7%	\$ 7,060	12.0%
Total	\$58,583	100%	\$58,583	100%

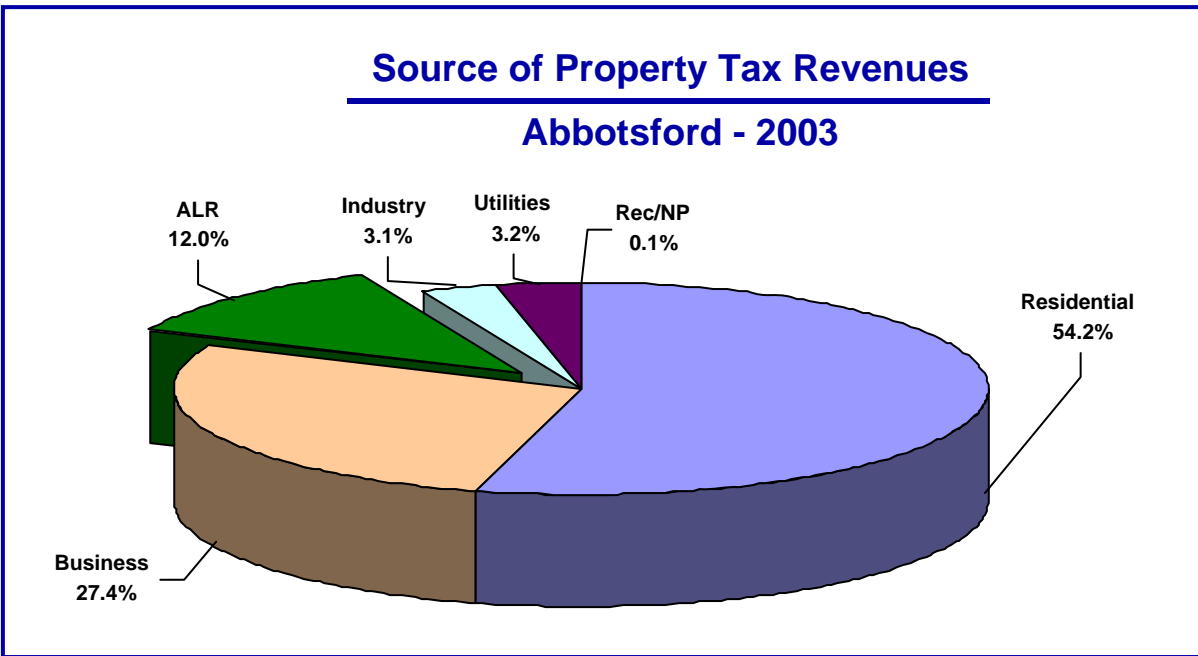


Figure E.2

When the on-farm residential, business, and industrial property taxes (originating in the ALR) are allocated to the ALR area, the proportion of the local government property tax base contributed by the ALR is 13.6% in Pitt Meadows and 12.0% in Abbotsford. This makes the ALR the third largest source of property tax revenue after the residential and business areas.

Local governments receive revenues from a number of other sources including service fees, levies, contributions from developers and others. These revenues are from the community at large (e.g. dog licence fees) or from a specific land use designation (e.g. business licence). Local government staff provided detailed information on how some revenues were received relative to the specific land use designations. For other revenue one of 9 standard allocation methods were used. A description of the allocation methods is in Section 8.1.

Adding the other revenues to the property taxes gives the final revenues attributed to each land use designation in Abbotsford and Pitt Meadows.



Table E.3

Allocation of Total Revenues by Land Use Designation - 2003 (\$,000)				
Land Use Class	Pitt Meadows		Abbotsford⁵	
	Revenues	%	Revenues	%
Residential	\$ 7,766	60.3%	\$ 70,359	57.3%
Utility	\$ 293	2.3%	\$ 3,118	2.5%
Industry	\$ 702	5.5%	\$ 3,976	3.2%
Business	\$ 2,114	16.4%	\$ 30,590	24.9%
Rec/NonP	\$ 237	1.8%	\$ 575	0.5%
ALR	\$ 1,761	13.7%	\$ 14,250	11.6%
Airport			\$5,279	
Total	\$ 12,873	100%	\$128,147	100%

B. Allocation of Expenditures to Different Land Use Designations

Annual financial statements for local governments do not report expenditures on a land use basis. For this study, the distribution of expenditures among different land use designations began with a discussion with local government officials.

Where consultation with local government could not provide a clear distribution of expenditures, one of 9 standard methods was used. A detailed explanation of how expenditures were allocated is in Section 8.3. The final result is summarized below:

Table E.4

Allocation of Expenditures by Land Use Designation - 2003 (\$,000)				
Land Use Class	Pitt Meadows		Abbotsford⁶	
	Expenditures	%	Expenditures	%
Residential	\$ 9,039	70.2%	\$ 77,941	63.4%
Utility	\$ 157	1.2%	\$ 2,023	1.6%
Industry	\$ 566	4.4%	\$ 3,329	2.7%
Business	\$ 1,405	10.9%	\$ 25,978	21.1%
Rec/NonP	\$ 135	1.1%	\$ 600	0.5%
ALR	\$ 1,571	12.2%	\$ 12,997	10.7%
Airport			\$ 5,279	
Total	\$12,873	100%	\$128,147	100%

⁵ Percentage of revenues are calculated minus airport revenue. Total revenues minus airport are \$ 122,868,000

⁶ Same as footnote #5

C. Net Fiscal Status of Various Land Uses

A “net fiscal status” was generated for each land use designation as a means of comparing the revenues and expenditures in different land use designations. The net fiscal status is the amount of revenue from each land use designation that is left after the service costs for that designation have been paid. Net fiscal status is presented as a total dollar amount and also on a per dollar of tax revenue basis.

Table E.5

Net Fiscal Status by Land Use Designation - 2003								
Pitt Meadows					Abbotsford			
Land Use	Revenue	Expenditure	Net Status (\$,000)	Net Status (per \$1)	Revenue	Expenditure	Net Status (\$,000)	Net Status (per \$1)
Residential	\$ 7,766	\$ 9,039	-\$1,273	-0.16	\$ 70,359	\$ 77,941	-\$ 7,582	-0.11
Utility	\$ 293	\$ 157	\$ 136	0.46	\$ 3,118	\$ 2,023	\$ 1,095	0.35
Industry	\$ 702	\$ 566	\$ 136	0.19	\$ 3,976	\$ 3,329	\$ 647	0.16
Business	\$ 2,114	\$ 1,405	\$ 709	0.34	\$ 30,590	\$ 25,978	\$ 4,612	0.15
Rec/NonP	\$ 237	\$ 135	\$ 102	0.43	\$ 575	\$ 600	-\$ 25	-0.05
ALR	\$ 1,761	\$ 1,571	\$ 190	0.11	\$ 14,250	\$ 12,997	\$ 1,253	0.09
Airport					\$ 5,279	\$ 5,279	0	0
Total	\$12,873	\$12,873	0		\$128,147	\$128,147	0	

Recreation/non-profit is very small in magnitude and varies greatly between communities. Pitt Meadows has two large golf courses that provide significant revenue while Abbotsford has many non-profits (churches) that do not pay property tax. Consequently recreation/non-profit has been excluded from the net fiscal status bar charts below.

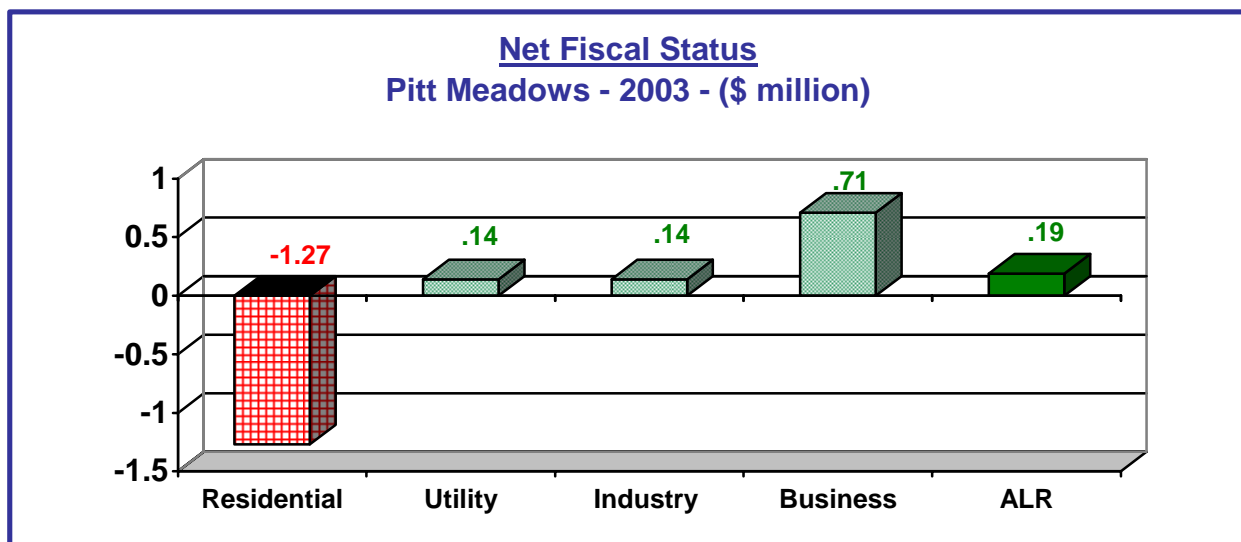


Figure E.3

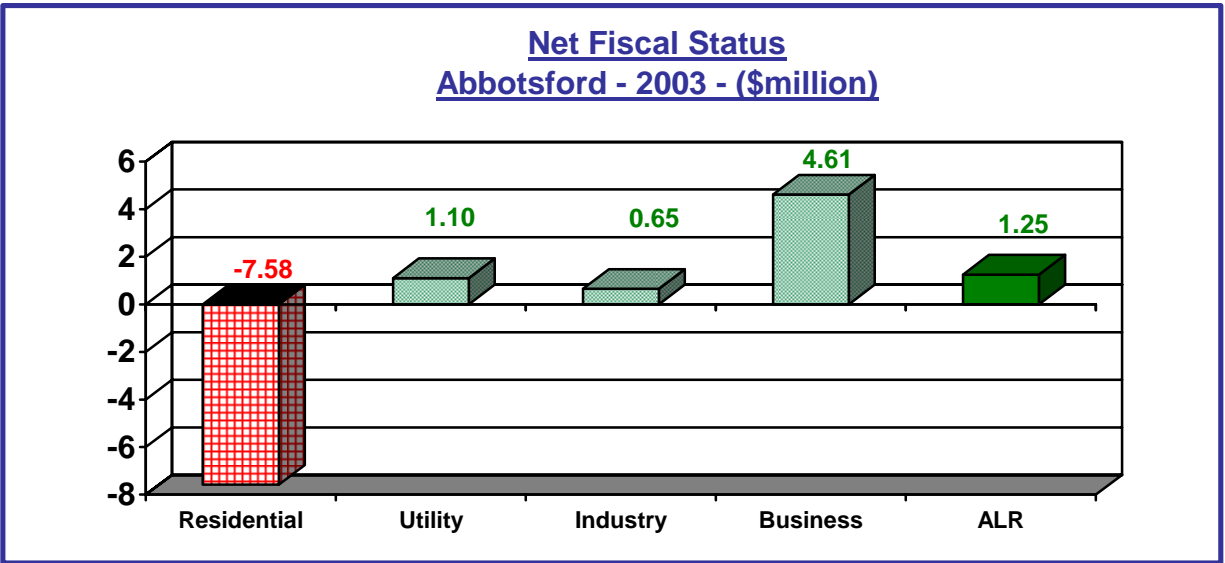


Figure E.4

Net fiscal status can also be represented on a per dollar of tax revenue basis. This is calculated by taking the difference between the revenues and expenditures and dividing it by the revenue⁷. A net fiscal status of \$0.40 means that for every \$1 of revenue collected in that land use designation, \$0.60 was spent for community expenditures associated with that land use designation, leaving \$0.40 to be used in other areas of the community. The net fiscal status, on a per dollar basis, is presented below.

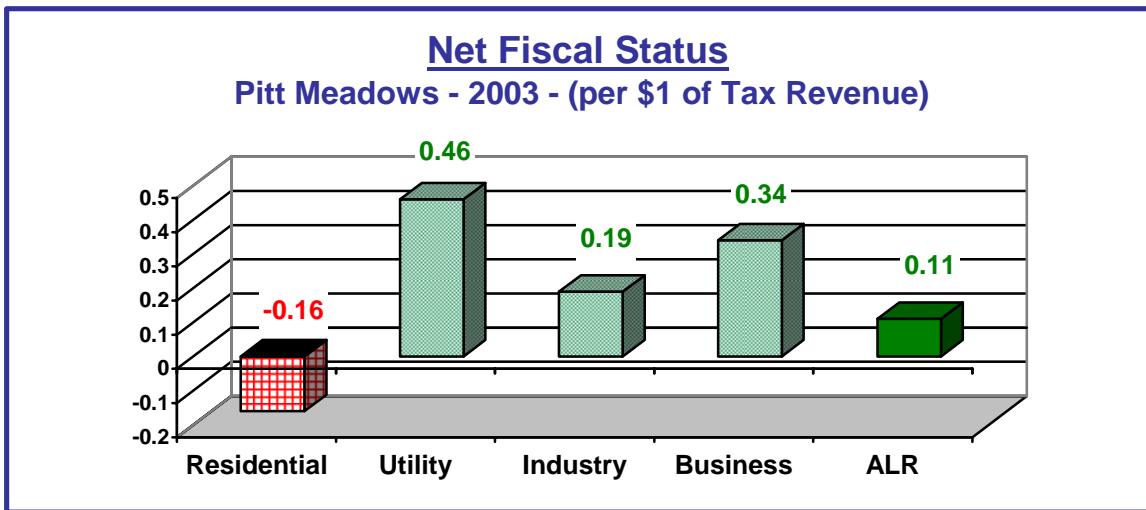


Figure E.5

⁷ Net fiscal status = (revenue – expenditure) / revenue

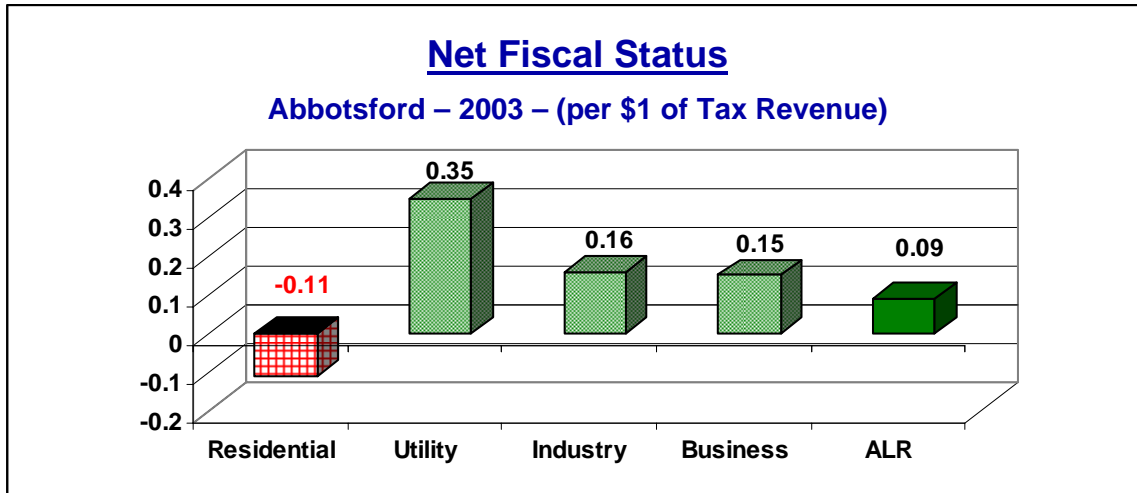


Figure E.6

NOTE: The net fiscal status of agriculture should not be confused with the economic impact of agriculture. Net fiscal status is simply the amount of money that property owners in the ALR provide the city through property tax and other revenue that exceeds the cost of services. Economic impact involves estimating the other spin-off benefits of agriculture to the community – jobs, economic activity, etc.

D. Comparison to the American Farmland Trust Studies

The general results of this study are consistent with those generated in the United States by the American Farmland Trust (AFT). In the U.S., over 80 ‘cost of community services’ (COCS) studies of this nature have been carried out. They show that commercial, industrial, farm and forest land generate revenues for the local community in excess of what they use in services while residential properties receive more in services than the property taxes generated. The AFT grouped land uses into an industry-business class, a farm / open land class (which is the farm & forest land exclusive of farm structures), and a residential class.

The AFT methodology grouped the residences on farmland with the urban residential. As a result few community services were charged to the farming area. If this approach was used in this study the net fiscal status for farming would have been higher – closer to the AFT results.



The comparison with the AFT studies is summarized below:

Table E.6

Results from this Study		AFT Results ⁸	
Land Use	Avg. Net Fiscal Status	Land Use	Avg. Net Fiscal Status
Residential	-0.14	Residential	-0.15
Industry	0.21	Commercial / Industry	0.73
Business			
ALR	0.10	Farm ./ Forest	0.64

E. Discussion

In general, residential land uses utilize more community services than they pay for in property taxes. Other land uses, including farming, make up for the shortfall on the residential side. In both communities business is the major generator of tax revenues over expenditures and residential is the big user of these funds.

In both communities agriculture is the second largest contributor of net tax to the local government after business. In Abbotsford agriculture provides almost twice as much in additional revenue over expenditures as does the industrial area.



The methodology presented in this study appears to be a useful way of looking at the net fiscal status of separate land use designation by local governments in B.C. The results are consistent with those obtained in the U.S. using the AFT approach.

The methodology used in this study is robust in that the core premise is to look at the property tax revenues from the actual land uses on farms rather than the allocation of the values of these uses to separate assessment classifications. This method more accurately reflects the tax revenues from all activities; business, commercial, industrial, residential and farming on farmland than using the unadjusted BCA classification approach.

The study indicates that the ALR in Pitt Meadows and Abbotsford is a net contributor of tax revenues to the community.

⁸ Freegood, Julia. "Cost of Community Services Studies: Making the Case for Conservation." American Farmland Trust, Washington, 2002, pg. i.

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1. Introduction

1.1 PURPOSE

There is considerable debate surrounding the financial contribution that farming areas provide to a local municipality. In discussion of municipal taxation, it has been suggested that farming areas do not make significant contributions to the municipal tax base and, similarly, that farming areas do not generate enough revenue to pay for the community services that it uses.

The goals of the study are two-fold: first, it seeks to better understand the level of property tax revenues generated in the farming area as compared to other land use zones, and second, it evaluates the cost of services used to support the farming area as compared to the other primary land use categories of Residential, Utility, Industry and Business. In doing so, this project developed a model that is useful for better evaluating the net fiscal status of the farming area in their communities, i.e., the net result of revenues versus costs associated with farming.



This project outlines a case-study that identifies best-information and creates a relatively simple, yet effective model for evaluating the taxation generated from “farmland” against the other primary categories of residential, utility, industrial and business. This information is valuable not only to the Province of British Columbia and the partner municipalities, but to other jurisdictions as well. Through conducting the project, the partner municipalities generated increased precision regarding specific taxation allocations. This project also developed a modelling methodology that is applicable for other government jurisdictions to apply in order to generate similar information for their areas.

1.2 Project Location

In 2004, the Ministry of Agriculture and Lands initiated a comprehensive analysis of the revenues and expenditures attributed to the farming areas in British Columbia. This study examines two local government areas in the Fraser Valley that have significant farming activity and well-defined farming areas – Pitt Meadows and Abbotsford.

2. Project Overview

2.1 OVERVIEW OF METHODOLOGY

In the past, local governments have used the British Columbia Assessment (BCA) groupings of assessed values to estimate the tax revenues from farming areas in their community. This study reviewed the accuracy of that approach.

In the United States, the American Farmland Trust (AFT) has developed a methodology for estimating the revenues from, and cost of services used, in farming areas. The general methodology used by the AFT was adapted for the tax, revenue, and cost structure of local governments in the B.C. context. The AFT grouped farms and forest, rural-residential with urban-residential and commercial with industrial.

For modeling purposes, the farming area was defined as the Agricultural Land Reserve (ALR) because farming in the Fraser Valley farming is concentrated in the ALR⁹. With respect to Abbotsford and Pitt Meadows over 95% of the farming activity is in the ALR and over 90% of the ALR is actively farmed. Having a well defined farming zone enabled a more accurate analysis of the distribution of revenue and expenditures between farming and the other major zones, residential, commercial and industrial.

Outside the Fraser Valley the ALR may not define the farming area as clearly. A different approach may be necessary to model these areas.

To enable the model to be adaptable or transferable to other communities, the accounts in the consolidated financial statements were used as the base for allocating revenues and expenditures. Where revenues or expenditures could not be allocated to a specific land use designation one of nine allocation methods was used to divide revenue and expenditures between different land use designations. They include allocation by population distribution, by building assessed value distribution, by folios and others

By nature the model is a tool to estimate the revenues received from and the expenditures that benefit specific land use designations. It is not a precise accounting exercise. The results need to be viewed in that context.

2.2 Overview of Project Steps

The general approach taken in this study was:

- review the current allocation of tax revenues to different land use designations;
- adjust the allocations if necessary;
- allocate expenditures to the different land use designations;
- compare the revenues and expenditures and establish a net fiscal status for the different land use designations.

The information used in evaluating and allocating revenues and expenditures came from B.C. Assessment, local government financial statements, and personal discussions with local government officials. The 2003 financial information was used.

⁹ 93 % of available land in Abbotsford's ALR is farmed

2.3 Structure of the Report

Sections 3, 4 and 5 use the recommended methodology to estimate the revenues, expenditures and net tax status of the major land use designations in the ALR in Abbotsford and Pitt Meadows. The major difference in this study, as compared to other reviews of farmland taxation in B.C., is in the estimation of property tax revenues from farmland. To help understand the approach used in this study Section 3.1 provides an overview of the local property taxation system.

Section 6 compares the results from the methodology used with those obtained in the U.S. by the American Farmland Trust. Section 7 provides a brief discussion of the results.

Modeling exercises involve assumptions and estimates. Section 8 provides detail on the allocation methods used, the rationale behind the allocation methods and Section 9 provides comparisons of actual values of specific accounts with the estimates from the allocation methodology.

3. Revenues

3.1 OVERVIEW OF LOCAL GOVERNMENT PROPERTY TAXATION

B.C. Assessment (BCA) is the provincial authority that establishes the assessed value of land for the purpose of property taxation by the province and local governments. The assessments are based on a combination of the current market value of the land and the replacement costs of buildings on the land. The B.C. Assessment classification system groups assessed values into categories, or classes, of similar uses. The key use categories are: residential, utility, major industrial, light industrial, business, recreation / non-profit, and farm.

Local governments use the assessed values established by BCA as the basis to levy taxes to meet their fiscal needs. Local governments set annual taxes by establishing a mil rate¹⁰, for each use classification. The mil rates are the end result of the local government budgeting process wherein it first establishes a budget of estimated costs. The local government then decides what proportion of the tax revenues shall be obtained from each land use class. Finally, local government sets the mil rate to generate the appropriate tax revenue. Mil rates vary between local governments depending on how much tax revenue the local government wishes to realize from each land use classification.

BCA evaluates the land use activities or uses on each lot. Generally, for taxation purposes, industrial lots have almost exclusively industrial uses, commercial lots have commercial uses, and residential lots have only residential use. Farmland is an exception.

In the farming area:

- land is assessed as farmland
- houses and farm buildings are assessed as residential
- land not farmed is assessed as residential, and
- any commercial or industrial activities are assessed as commercial and industrial respectively.

Because of this allocation of assessed values, some property taxes derived from the farming area (ALR) are buried within the overall totals of the other land use classifications. Thus, the distribution of local government tax revenues based on the B.C. Assessment categories is not a complete estimate of the total tax revenues from the farming area (ALR). In general the tax revenues from the farming area (ALR) would be understated and the tax revenues for residential, commercial, and industrial would be overstated.

The following examples will help clarify the BCA allocation:

- 1) Poultry farm with barns and a house:
 - the land would be assessed as *farm use*;
 - the poultry barn would be assessed as *residential use*; and
 - the house would be assessed as *residential use*.
- 2) Berry farm with house, work shed and small packaging facility:
 - the land would be assessed as *farm use*;
 - the house and work shed as *residential use*; and
 - the small packaging facility as *industrial or commercial use*.



¹⁰ One mil = 1/1,000 of a dollar. For example, if the mil rate for residential was 5.76 the land owner would pay \$5.76 of tax for every \$1,000 of assessed value.

Table 3.1.1 is an example of how a rural property may be assessed and taxed for municipal tax purposes.

Table 3.1.1 Example of a Property Tax Assessment (BCA allocation)			
Land Use	Assessment	Mil Rate	Property Tax Revenue
Industrial (Small Fruit Processing)	\$ 150,000	22.681	\$ 3,402
Residential (Chicken Barn)	\$ 262,000	4.682	\$ 1,227
Residential (Farmer's Dwelling)	\$ 70,100	4.682	\$ 328
Farm (Primary Agriculture)	\$ 45,500	20.454	\$ 930
Total			\$ 5,887

Knowing the tax revenues received from the different major land use designations is an important tool in local government planning, administration, and supply of utilities and services. With respect to farmland, the use of the current BCA classifications as a method to estimate the tax revenues and financial impacts does not present the full picture. To provide more accurate information on tax revenues generated by the ALR, the on-farm portion of the taxes in the residential, industrial, and business classifications, needs to be reallocated to farm parcels.

3.2 ALLOCATING REVENUES BETWEEN DIFFERENT LAND USE DESIGNATIONS

3.2.1 Data Sets

The primary data sets needed to calculate farmland revenues in this methodology¹¹ are:

- A.** B.C. Assessment (BCA) database of the local government (with municipal exemptions and net taxable values for each property class);
- B.** Mil Rates and Tax Statistics for the local government.

A. BCA Database

The BCA database provides a list of all of the properties by folio or roll numbers. Each folio number usually represents one lot, but could include other similar lots owned by the same person. With each folio, the data needed is:

1. The ALR status; i.e., if the lot is in the ALR;
2. Actual Value Property Class Fields: show the assessed value for portions of a folio in different land use classifications. There is a maximum of 10 possible land use classifications.
3. Gross Value Property Class Fields: show the gross taxable value within each property class (at this point the values of Residential and Farm Out Buildings (OB) are combined).
4. Exempt Value Property Class Fields: show the municipal tax exempt values within each property class.
5. Actual Use: This field describes the predominant use on the property.

¹¹ It is important to ensure that the sets of data are all for the same year. This study used 2003 data.

Table 3.2.1 Example of Assessment Data from BCA

Roll Number	ALR	Actual Use	Residential	Utilities	UnMgd Forest	Major Ind	Light Ind	Business	Mgd Forest	Rec NonP	Farm Land	Farm OB
0008.000	1	Dairy	\$81,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$135,200	\$137,300
0276.000	1	Small Fruits	\$0	\$0	\$0	\$0	\$39,600	\$0	\$0	\$0	\$53,700	\$0
0089.000	0	Dairy	\$65,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,000	\$65,200

Table 3.2.1 is an example of the data from BCA. It has three folios listed. For a municipality there will likely be thousands. Below is a brief definition of the above abbreviations:

- Roll Number = folio number.
- ALR: 1 = the property is inside the ALR; 0 = the folio is outside the ALR.
- Actual Use = the predominant use on the property.
- Utilities = include railways, transmission towers, pump stations, etc.
- UnMgdF = unmanaged forest portion of the folio; in settled areas, this field will typically be empty and not used for tax calculations.
- MajorInd = the major industry portion of the folio.
- LightInd = the light industry portion of the folio.
- Business = the commercial or business portion of the folio.
- MgdFor = managed forest portion of the folio; in settled areas, this field will typically be empty and not used for tax calculations.
- RecNonP = recreation and non-profit, could include public recreation centres, private golf courses, churches, etc.
- Farm Land = farm land portion of the folio, i.e., the land that is directly responsible for the production of primary agricultural products.
- Farm OB = the farm out-buildings portion of the folio, including all farm-related structures including animal storage facilities such as barns.



B. Mil Rates and Tax Statistics

The annual financial report of the local government will usually contain a table of the mil rates applied to the assessed values in various land use classes. Also, it will often contain data of the total tax revenue by class. This published tax revenue can be compared to the total calculated by multiplying the mil rates by the net assessed values from BCA.

3.2.2 Calculation of Tax Revenues from Farmland

To determine the tax revenue contribution from the ALR, the revenues from all BCA tax categories present in the ALR must be included.

The following steps, beginning with per folio assessment data obtained from BCA, were used to allocate the appropriate tax revenues to the ALR:

1. Separate all folios that are located within the ALR;
2. Calculate the total net taxable values for all nine classes of land use inside the ALR;
3. Multiply the total net values for all nine classes by the respective mil rates to obtain the revenues generated within the ALR;
4. Add up each class' revenues to calculate the total tax revenue from ALR;
5. Multiply the remaining folios located outside the ALR by the appropriate mil rates to obtain the revenues generated from each remaining property class (i.e. the property taxes generated from class 01, outside the ALR is the amount of revenue generated in the Residential category).
6. Allocate tax revenue collected from class 09, non-ALR properties according to the folio's zoning and/or zoning of surrounding folios

The classifications: 'unmanaged forest' and 'managed forest' do not apply in the pilot communities and were deleted. Major and light industrial were combined into one land use class - industrial.

3.3 TAX REVENUE RE-ALLOCATION RESULTS - SUMMARY

The above methodology was applied to the data available for Pitt Meadows and Abbotsford. The following table summarizes the differences in revenues after the reallocation methodology was applied. For a more detailed explanation of the methodology, refer to section 8.3 for the spreadsheets used to calculate the end results for the District of Pitt Meadows and the City of Abbotsford. It should be noted that in both Pitt Meadows and Abbotsford, major industry occurs in very few numbers and therefore, has been added together with light industry to form an "industry" category.

Table 3.3.a

Pitt Meadows Property Tax Re- allocation to ALR - 2003 (\$,000)				
Land Use Class	Standard BC Assessment Allocation		Re-allocation to Farming(ALR)	
	\$	%	\$	%
Residential	\$4,535	62.4%	\$ 4,212	58.0%
Utility	\$ 211	2.9%	\$ 219	3.0%
Industry	\$ 247	3.4%	\$ 247	3.4%
Business	\$1,766	24.3%	\$ 1,433	19.7%
Rec/NonProfit	\$ 211	2.9%	\$ 168	2.3%
Farmland / ALR	\$ 291	4.0%	\$ 988	13.6%
Total	\$7,267	100%	\$ 7,267	100%

Table 3.3.b

Abbotsford Property Tax Re-allocation to ALR - 2003 (\$,000)				
Land Use Class	Standard BC Assessment Allocation		Re-allocation to Farming (ALR)	
	\$	%	\$	%
Residential	\$36,732	62.7%	\$31,733	54.2%
Utility	\$ 2,050	3.5%	\$ 1,894	3.2%
Industry	\$ 1,992	3.4%	\$ 1,789	3.1%
Business	\$16,169	27.6%	\$16,038	27.4%
Rec/NonP	\$ 59	0.1%	\$ 69	0.1%
Farmland / ALR	\$ 1,582	2.7%	\$ 7,060	12.0%
Total	\$58,583	100%	\$58,583	100%

After the reallocation, the tax revenue from the ALR, as a proportion of total property tax collected, was 13.6% in Pitt Meadows and 12% in Abbotsford. The ALR is the third largest contributor of municipal tax revenues in both communities.

NOTE: From this point on all references to revenues from the ALR refer to the fully re-allocated revenues.

3.4 OTHER REVENUES

Local governments receive revenues from other sources. Many of these revenues are general and can be allocated in a similar manner as the tax revenues. Others, such as business licences, grants in lieu of taxes are specific to individual land use designations. In general terms, the other revenues received by the local governments were allocated as follows:

- Some of the other revenues were allocated to the major land use designation based on proportions calculated for the redistributed tax revenue. Examples include:
 - sale of services
 - return on investment
 - sale of property
 - contributions by others
- Other revenues were allocated according to the most likely land use designation, depending on the type of revenue. Examples include:
 - secondary suite fees to residential
 - business improvement revenue to business



A more detailed explanation of the allocation of revenues is provided in section 8.

3.5 TOTAL REVENUES

Total local government revenues for Pitt Meadows and Abbotsford, the sum of tax revenues and other revenues, is summarized in Table 3.5

Table 3.5

Allocation of Total Revenues by Land Use Designation - 2003 (\$,000)				
Land Use Class	Pitt Meadows		Abbotsford¹²	
	Revenues	%	Revenues	%
Residential	\$ 7,766	60.3%	\$ 70,359	57.3%
Utility	\$ 293	2.3%	\$ 3,118	2.5%
Industry	\$ 702	5.5%	\$ 3,976	3.2%
Business	\$ 2,114	16.4%	\$ 30,590	24.9%
Rec/NonP	\$ 237	1.8%	\$ 575	0.5%
ALR	\$ 1,761	13.7%	\$ 14,250	11.6%
Airport			\$5,279	
Total	\$ 12,873	100%	\$128,147	100%

¹² Percentage of revenues are calculated minus airport revenue. Total revenues minus airport are \$ 122,868,000

4. Expenditures

4.1 GENERAL EXPENDITURE AREAS FOR LOCAL GOVERNMENTS

There are numerous services provided within a municipality that are administered by regional governmental bodies. These include hospital, regional transportation services and schools. These and associated revenues were not evaluated in this study because they operate outside municipal budgets.

Local government expenditures are generally grouped into five major areas; community service; general government services, protective services, transportation services, public works, and recreational/cultural services.

General government services include all of the expenditures associated with running and staffing a governmental body. Typical items found under general government include administration, finance, corporate planning, and human resources. These services are general, serve the whole municipality equally, and are required in order for the local government to function at any level.

Protective services include the provision of fire protection and rescue services, police services, bylaw enforcement, emergency programs, and animal control. These services may be used at different levels by different land use designations.

Transportation services include the provision of transportation to the local municipality by Translink or BC Transit. Services under transportation are typically categorized as engineering, road maintenance, and road operations. Depending on the area being serviced and the use of the roads in the area, the services may be provided to some land use designations more than others. Rural roads typically are at a lower standard than urban streets (no curbs, fewer lights, and no sidewalks) and in some areas the urban residential area residents use the rural roads as transportation routes to other locations¹³.

Public works are the “hard” services to land uses such as the provision of dyking, sewers, removal of solid waste and the provision of water. Similar to protective and transportation services, there may be differences in the amount of services provided to different land use designations.

Recreation and cultural services include the provision of libraries, parks, recreation programs, and recreation / community centres. These items are used mostly by residents, consequently the benefits are assumed to be incurred by land use designations that contain residences.

4.2 ALLOCATING EXPENDITURES BETWEEN DIFFERENT LAND USE DESIGNATIONS

Municipal financial statements do not record expenditures by land use designation and very little information is available within the statements to suggest definitively how values should be distributed amongst the land use designations. Where expenditures were clearly tied to a land use designation, they were allocated accordingly. Where expenditures are not tied to a land use designation, interviews with local government staff and/or a reasonable estimation were used. (See section 8 for all of the modeling assumptions made in both case studies.) Some capital projects, such as dykes, are reflected in the revenue as levies and in the expenditures by operating and/or carrying costs. Allocation to land use designations of those types of projects was assisted by local knowledge.

Local officials provided valuable insight into how revenues and costs should be allocated. For this study, numerous officials were consulted including deputy fire chiefs, community police representatives, city planners, engineers, and directors of corporate finance.

¹³ Appendix in – *A Preliminary Look at Factors Affecting the Level of Farm Practice Concerns in the Fraser Valley*-Ministry of Agriculture and Lands

Municipal property taxes are set at a level that includes an allocation for the average annual requirement for capital projects. If capital projects in any one year are less than the taxes collected, the balance is transferred to a reserve fund that is used in years when capital projects exceed taxes collected. The actual tax collected for capital projects is the best estimate of the annual use of capital assets. To best reflect capital expenditures on an annual basis the transfers to reserve funds are allocated to the appropriate land use designation. For example funds transferred to the water reserve fund would be allocated using the same method as used for allocating water usage fees.

In general terms, the local government expenditures were distributed among the land uses using one of the methods described in section 8.1.

Section 8.3, tables 8.3.2 and 8.3.4, has more detailed breakdown of the allocation of expenditures to land use designations in Pitt Meadows and Abbotsford. The following table is a summary:

Table 4.2

Allocation of Expenditures by Land Use Designation - 2003 (\$,000)				
Land Use Class	Pitt Meadows		Abbotsford¹⁴	
	Expenditures	%	Expenditures	%
Residential	\$ 9,039	70.2%	\$ 77,941	63.4%
Utility	\$ 157	1.2%	\$ 2,023	1.6%
Industry	\$ 566	4.4%	\$ 3,329	2.7%
Business	\$ 1,405	10.9%	\$ 25,978	21.1%
Rec/NonP	\$ 135	1.1%	\$ 600	0.5%
ALR	\$ 1,571	12.2%	\$ 12,997	10.7%
Airport			\$ 5,279	
Total	\$12,873	100%	\$128,147	100%

¹⁴ Percentage of expenditures are calculated minus airport expenditures. Total exp. minus airport are \$ 122,868,000

5. Estimating the Net Fiscal Status of Land Use Designations

With the revenues and expenditures allocated to specific land use designations, it is possible to examine to what extent the revenue from each land use designation meets the cost of the services it receives.

The “net fiscal status” is the amount a land use generates in revenue over and above the cost of providing services to that land use. It can be stated in terms of the total amount or as a proportion of the revenue. The calculation for the net fiscal status as a proportion of revenue collected is:

$$\text{“Net Fiscal Status”} = \frac{(\text{Revenues} - \text{Expenditures})}{\text{Revenues}}$$

A net fiscal status of \$0.40 means that for every \$1 of revenue collected in that land use designation, \$0.60 was spent for community expenditures associated with that use, leaving \$0.40 to be used in other areas of the community. A negative net fiscal status means expenses for that use exceed revenues generated from that use. The following charts summarize the net fiscal status for the major land use designations in Pitt Meadows and Abbotsford in total dollars and on a per dollar of revenue basis.

Table 5

Net Fiscal Status by Land Use Designation - 2003								
Pitt Meadows					Abbotsford			
Land Use	Revenue	Expenditure	Net Status (\$,000)	Net Status (per \$1)	Revenue	Expenditure	Net Status (\$,000)	Net Status (per \$1)
Residential	\$ 7,766	\$ 9,039	-\$1,273	-0.16	\$ 70,359	\$ 77,941	-\$ 7,582	-0.11
Utility	\$ 293	\$ 157	\$ 136	0.46	\$ 3,118	\$ 2,023	\$ 1,095	0.35
Industry	\$ 702	\$ 566	\$136	0.19	\$ 3,976	\$ 3,329	\$ 647	0.16
Business	\$ 2,114	\$ 1,405	\$ 709	0.34	\$ 30,590	\$ 25,978	\$ 4,612	0.15
Rec/NonP	\$ 237	\$ 135	\$ 102	0.43	\$ 575	\$ 600	-\$ 25	-0.05
ALR	\$ 1,761	\$ 1,571	\$ 190	0.11	\$ 14,250	\$ 12,997	\$ 1,253	0.09
Airport					\$ 5,279	\$ 5,279	0	0
Total	\$12,873	\$12,873	0		\$28,147	\$128,147	0	

Recreation/non-profit is very small in magnitude and varies greatly between communities. Pitt Meadows has 2 large golf courses that provide revenue while Abbotsford has many non-profits (churches) that do not pay property tax. Consequently recreation/non-profit has been excluded from the net fiscal status bar charts below.

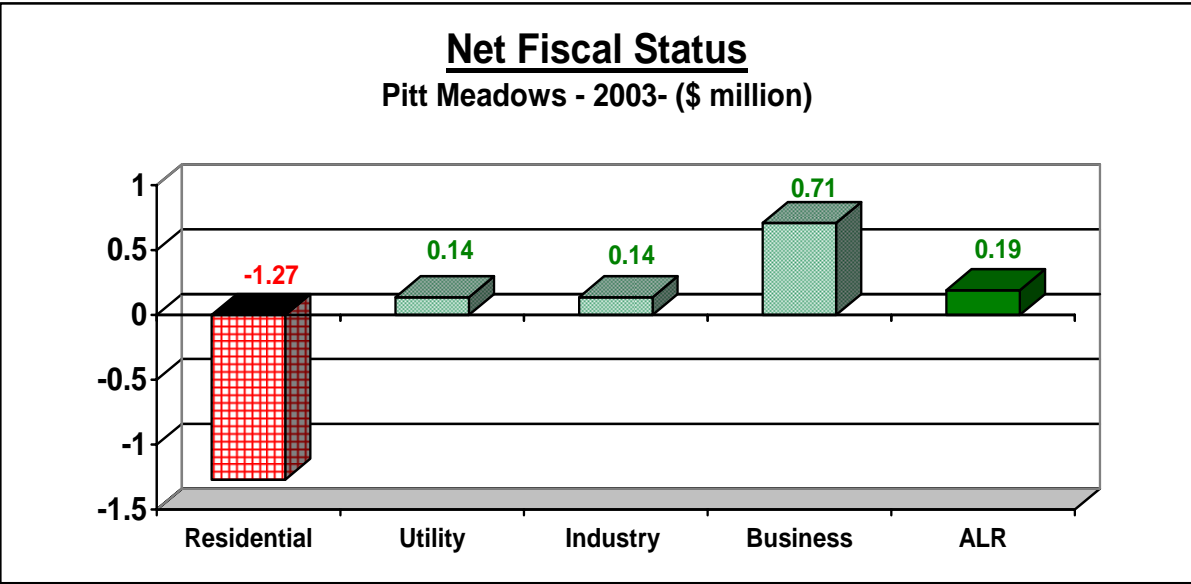


Figure 1

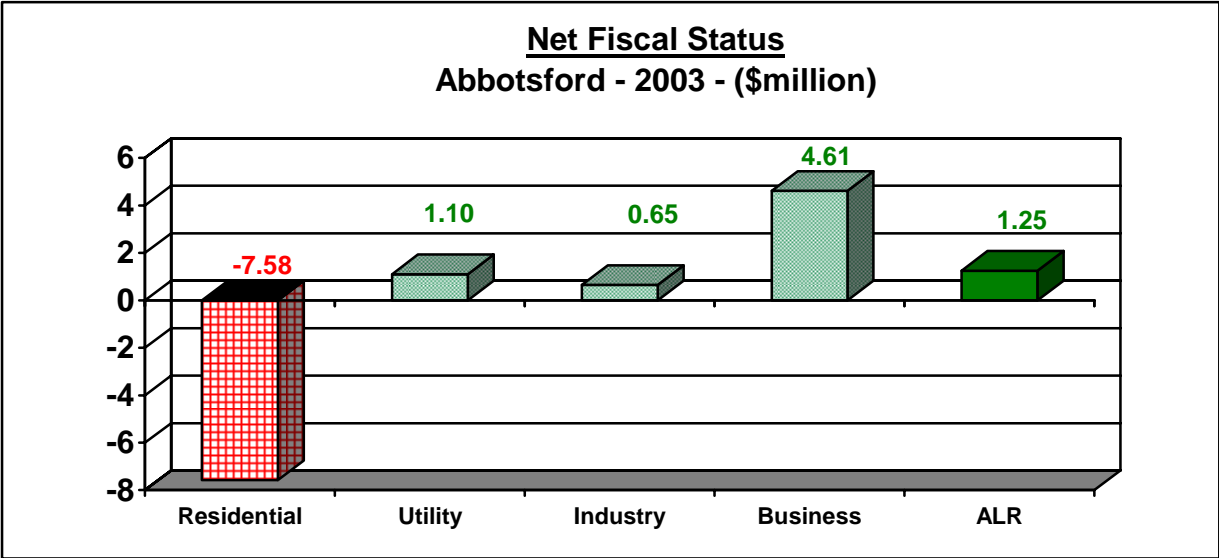


Figure 2

The net fiscal status, on a per dollar of revenue basis, is presented below:

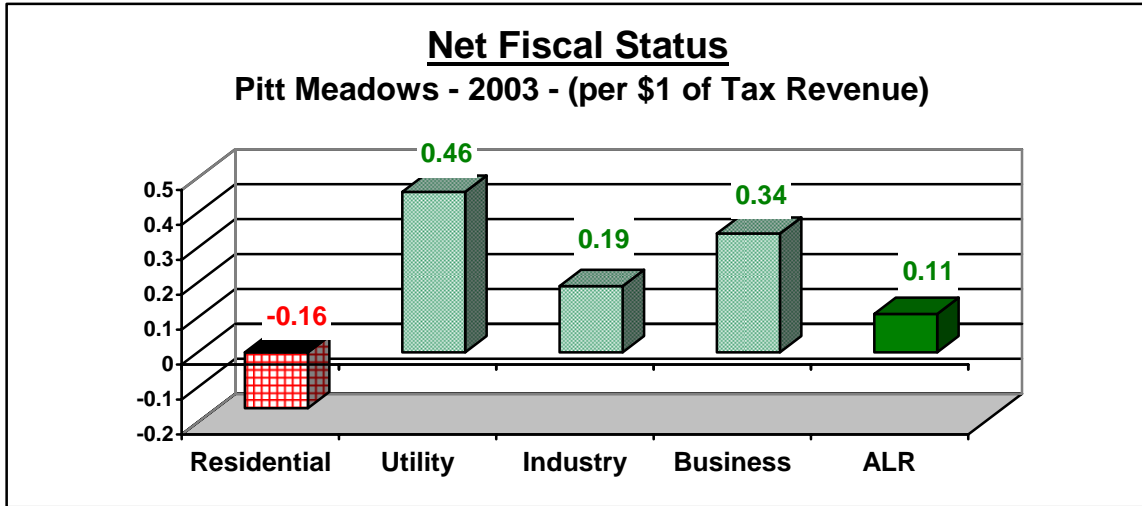


Figure 3

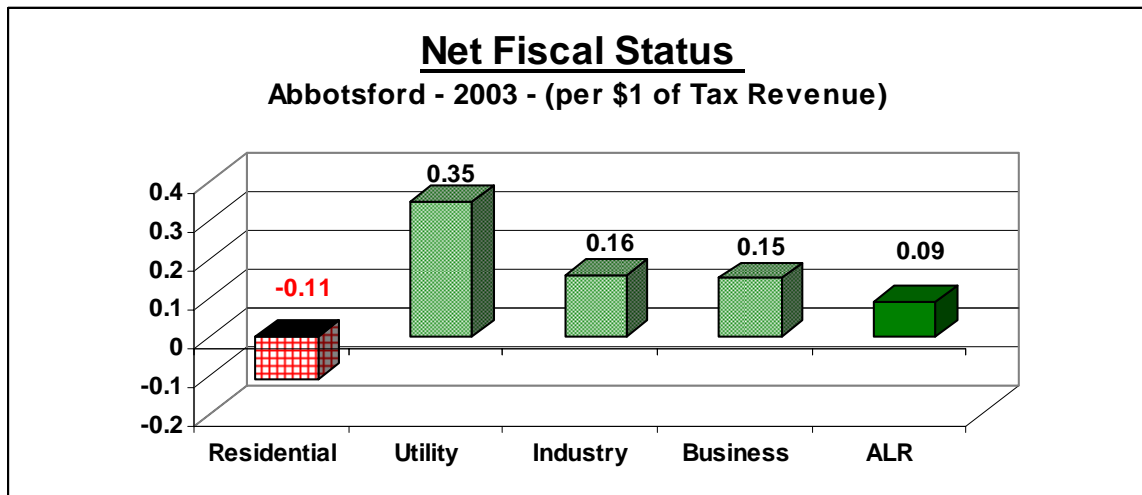


Figure 4

6. Comparison of Results with the American Farmland Trust Studies

The results of this study are consistent with those generated in the United States by the American Farmland Trust (AFT). In the U.S., over 80 ‘cost of community services’ (COCS) studies of this nature have been carried out and generally show that commercial, industrial, farm and forest land generate extra revenues for the local community, but services to residential properties cost more than the property taxes generated. The AFT grouped land uses into an industry-business class, a farm / open land class (which is the farm & forest land exclusive of farm structures), and a residential class.

The comparison with the AFT studies is summarized below:

Table 6: Comparison to AFT Studies

Results from this Study		AFT Results ¹⁵	
Land Use	Avg. Net Fiscal Status	Land Use	Avg. Net Fiscal Status
Residential	-0.14	Residential	-0.15
Industry	0.21	Commercial / Industry	0.73
Business			
ALR	0.10	Farm ./ Forest	0.64

¹⁵ Freegood, Julia. “Cost of Community Services Studies: Making the Case for Conservation.” American Farmland Trust, Washington, 2002, pg i

7. Discussion of Results

In general, residential land uses utilize more community services than they pay for in property taxes. Other land uses, including farming, make up for the shortfall on the residential side. In both Abbotsford and Pitt Meadows business is the major generator of tax revenues over expenditures and residential is the big user of these funds.

In both communities agriculture is the second largest contributor of net tax to the local government after business. In Abbotsford agriculture provides almost twice as much in additional revenue over expenditures as does the industrial area.

The methodology presented in this study appears to be a useful way of looking at the net fiscal status of separate land use designation by local governments in B.C.

The methodology used in this report is robust in that the core premise is to look at the property tax revenues from the actual land uses on farms rather than the allocation of the values of these uses to separate assessment classifications. This method more accurately reflects the tax revenues from all activities; business, commercial, industrial, residential and farming on farmland than using the unadjusted BCA classification approach. The contribution to local government revenues by farming is much higher than commonly thought.



8. Revenue and Expenditure Allocation Methodology

8.1 METHODS OF ALLOCATING REVENUES AND EXPENDITURES

Nine methods were used to allocate revenues and expenditures to the different land use designations. In some cases, the local government staff provided advice about the allocation of particular revenues and expenditures based on their knowledge of the revenue, service, or cost. Explanatory notes for those items are provided in each allocation table. For specific details regarding which accounts received which allocation methods please see tables 8.3.1 through 8.3.4.

The nine basic allocation methods are described below.

Method 1: Allocation according to the proportion of the property tax revenue in each land use designation.

Table 8.1.1

Method 1: Proportion of Property Taxes Levied				
	Pitt Meadows		Abbotsford	
Land Use Designation	Revenue	Proportion	Revenue	Proportion
Residential	\$ 4,230,199	57.96%	\$ 31,766,302	54.17%
Utilities	\$ 220,080	3.02%	\$ 1,895,501	3.23%
Industry	\$ 248,157	3.40%	\$ 1,790,689	3.05%
Business	\$ 1,438,924	19.72%	\$ 16,054,181	27.38%
Rec/NonProfit	\$ 168,846	2.31%	\$ 69,702	0.12%
ALR	\$ 992,293	13.60%	\$ 7,067,282	12.05%
Total	\$ 7,298,499	100%	\$ 58,643,657	100%

Table 8.1.2

Method 1 (Library): Proportion of Property Taxes Levied				
	Pitt Meadows		Abbotsford	
Land Use Designation	Revenue	Proportion	Revenue	Proportion
Residential			\$ 1,056,141	54.14%
Utilities			\$ 63,040	3.23%
Industry			\$ 59,636	3.06%
Business		N/A	\$ 534,471	27.40%
Rec/NonProfit			\$ 2,311	0.12%
ALR			\$ 235,080	12.05%
Total			\$ 1,950,679	100%

Method 1 was used to allocate accounts such as general property taxes, interest and tax penalties, and sale of equipment in both Abbotsford and Pitt Meadows.

Method 1E: Allocation according to the proportion of gross property tax before municipal taxation exemptions.

The property taxation system is based on the assessed value of property. The actual tax collected from different property classes is subject to taxation exemptions. In some situations pre-exempt taxation proportions provide a better distribution of the services provided to that land use designation.

Table 8.1.3

Method 1E: Proportion of Pre-Exemption Property Taxes				
	Pitt Meadows		Abbotsford	
Land Use Designation	Revenue	Proportion	Revenue	Proportion
Residential	\$ 4,276,586	48.63%	\$ 32,286,749	44.09%
Utilities	\$ 522,180	5.94%	\$ 4,222,504	5.77%
Industry	\$ 252,099	2.87%	\$ 1,836,207	2.51%
Business	\$ 2,419,553	27.52%	\$ 24,968,313	34.10%
Rec/NonProfit	\$ 235,580	2.68%	\$ 986,674	1.35%
ALR	\$ 1,087,249	12.36%	\$ 8,927,937	12.19%
Total	\$ 8,793,247	100%	\$ 73,228,383	100%

Method 1E was used to allocate general DCC revenue and expenditures (less ALR) as well as building permit revenue and building inspection expenditures in both local governments.

Method 2: Allocation to one land use class. Examples of allocation to a specific land use designation in Abbotsford include dyking and drainage levies being allocated to the ALR areas, secondary suite fees being allocated to the residential land use designation and any revenue or expenditure relating to the Abbotsford airport. In Pitt Meadows this method was used exclusively in dyking related accounts.

Method 3: Allocation according to the proportion of the population paying for and using a service; people were assumed to reside in residential and ALR areas¹⁶.

Table 8.1.4

Method 3: Proportion of Population in Land Use Designations				
	Pitt Meadows		Abbotsford	
Land Use Designation	Population	Proportion	Population	Proportion
Urban (Residential)	13,404	91.37%	104,842	90.80%
Rural (ALR)	1,266	8.63%	10,621	9.20%
Total	14,670	100%	115,463	100%

Method 3 was used to allocate accounts such as Parks and Recreation operations and Library operating costs in Abbotsford and Pitt Meadows, as well as transfers to other agencies in Abbotsford (i.e. Abbotsford Arts Council).

¹⁶ There are a small undetermined number of residents in the business area.

Method 4: Allocation according to the number of folios in each land use designation, instead of the value of each folio, as a measure of the benefits accruing to each use.

Table 8.1.5

Method 4: Proportion of Folios within Land Use Designations				
	Pitt Meadows		Abbotsford	
Land Use Designation	No. Folios	Proportion	No. Folios	Proportion
Residential	4,507	83.06%	32,450	82.92%
Utilities	33	0.61%	108	0.28%
Industry	47	0.87%	150	0.38%
Business	112	2.06%	1,797	4.59%
Rec/NonProfit	36	0.66%	336	0.86%
ALR	691	12.73%	4,295	10.97%
Total	5,426	100%	39,136	100%

Method 4 was used to assign dyking costs (in excess of dyking levies) and road operation expenditures in both local governments.

Method 5: Allocation according to the number of residential dwellings within the municipality, both urban and rural.

Table 8.1.6

Method 5: Proportion of Dwellings within Land Use Designations				
	Pitt Meadows		Abbotsford	
Land Use Designation	Dwellings	Proportion	Dwellings	Proportion
Urban (Residential)	4,824	90.93%	35,911	89.52%
Rural (ALR)	481	9.07%	4,204	10.48%
Total	5,305	100%	40,115	100%

Method 5 was used to allocate solid waste revenue and expenditure in Abbotsford and Pitt Meadows; as well as dog licenses fees in Abbotsford.

Method 6: Allocation according to the water service fees collected from the land use designations.

Table 8.1.7

Method 6: Proportion of Water User Fees (Adj. water connections in Pitt Meadows see Section 8.4.14)				
	Pitt Meadows		Abbotsford	
Land Use Designation	Adj. No. Folios	Proportion	User Fees	Proportion
Residential	3,158	62.94%	\$5,184,246	61.13%
Utilities	0	0.00%	\$8,909	0.11%
Industry	217	4.32%	\$157,790	1.86%
Business	372	7.41%	\$1,359,381	16.03%
Rec/NonProfit	65	1.29%	\$112,980	1.33%
ALR	1,206	24.04%	\$1,657,691	19.55%
Total	5,017	100%	8,480,997	100%

Method 6 was used to allocate revenues and expenditures related to the municipality's water system.

Method 7: Allocation according to the sewer user fees collected from the land use designations.

Table 8.1.8

Method 7: Proportion of Sewer User Fees (Adj. sewer connections in Pitt Meadows see Section 8.4.14)				
Pitt Meadows			Abbotsford	
Land Use Designation	Adj. No. Folios	Proportion	User Fees	Proportion
Residential	3,503	72.27%	\$2,938,639	73.01%
Utilities	0	0.00%	\$91	0.00%
Industry	1,039	21.44%	\$432,129	10.74%
Business	305	6.29%	\$564,755	14.03%
Rec/NonProfit	0	0.00%	\$27,133	0.67%
ALR	0	0.00%	\$62,253	1.55%
Total	4,847	100%	\$4,025,000	100%

Method 7 was used to allocate revenues and expenditures related to the municipality’s sewer system.

Method 8: Allocation according to the number of non-ALR folios.

Table 8.1.9

Method 8: Proportion of Non-ALR Folios				
Pitt Meadows			Abbotsford	
Land Use Designation	No. Folios	Proportion	No. Folios	Proportion
Residential	4,507	95.18%	32,450	93.14%
Utilities	33	0.70%	108	0.31%
Industry	47	0.99%	150	0.43%
Business	112	2.37%	1,797	5.16%
Rec/NonProfit	36	0.76%	336	0.96%
Total	4,735	100%	34,841	100%

Method 8 was used to allocate revenue and expenditures dealing with the transit system in Abbotsford. The method was not used in Pitt Meadows.

Method 9: Allocation according to the proportion of the grants in lieu of tax revenue in each land use designation:

Table 8.1.10

Method 9: Proportion of Grants in Lieu within Land Use Designations				
Pitt Meadows			Abbotsford	
Land Use Designation	Prov. Grant Roll Proportions	Fed. Grant Roll Proportions	Prov. Grant Roll Proportions	Fed. Grant Roll Proportions
Residential			15.19%	0.00%
Utilities			12.78%	0.00%
Industry	N/A		0.00%	0.00%
Business			50.19%	84.11%
Rec/NonProfit			0.00%	0.00%
ALR			21.84%	15.89%
Total			100%	100%

Method 9 was used to allocate the grants in lieu revenue in Abbotsford.

8.2 PROCEDURES USED IN CALCULATING THE ALLOCATION METHODS

The following is a brief text description of the procedures used in calculating the allocation methods described in the previous section.

Method 1: Property Tax Distribution. The procedure for determining the proportions used in this allocation method are outlined in section 3.2.2 of the report.

Method 1E: Property Tax minus Exemptions. Property taxation is based on assessed value of land and buildings. Method 1 is based on assessed value, but does not include land and buildings that are tax-exempt. Method 1E is based solely on assessed value of land and buildings. To establish the proportions for Method 1E the ‘gross’ property taxes are allocated using the same procedure as method one, except gross taxable values are used rather than net taxable values. This method was used when dealing with accounts which did not take into account exemption status (i.e. General DCC’s and Building Permits).

When allocating expenditures, the impact of using Method 1 over Method 1E, is to allocate the expenditures related to the tax-exempt buildings according to the general property tax collection method. For example the costs of servicing schools would effectively be distributed according to the distribution of general property taxes.

Method 3: Distribution of Population. Statistics Canada Census data (2001) divides the population into urban and rural categories. The urban proportion was assigned to residential and the rural to the ALR land use designation. Because the urban and rural division is not an exact reproduction of the ALR/non-ALR division, the population located within the ALR may be slightly overstated in Abbotsford. There is a small amount of rural, non-ALR population living in the Sumas Mountain area. This discrepancy was not considered material enough to adjust for.

Method 4: Distribution of Folios. Folios with ALR classification are assigned to the ALR land use designation. The remaining folio counts are assigned to land use designations according to where the assessed value was categorized (i.e. if a folio had residential assessed value, it was counted as a residential folio).



Most folios within land use designations other than ALR have assessed values exclusively in one property class. However, there are a few exceptions, in which case the folio count was assigned to the category best described by the “actual use code” within the BC Assessment database. In the instances when the actual use code didn’t provide an obvious solution, the count was simply assigned according to the property class with the greater assessed value.

Folios with class 09 values situated outside the ALR had their folio counts allocated in two ways. Folios which also had assessed values in other property classes (predominantly class 01 – residential) had their count assigned to the corresponding land use designation. When a folio had exclusively class 09 assessment value its count was assigned to the same land use designation its property taxes were assigned in method 1.

Method 5: Proportion of Dwellings. Statistics Canada Census data (2001) records the number of dwellings within a municipality. Within Abbotsford, the dwellings situated in the ALR were obtained from the Land Use Inventory Study (2004). For Pitt Meadows the dwellings within the ALR was unavailable, however, upon further investigation it was revealed that the number of folios with residential assessment was quite similar to the number of dwellings. This is due to the lack of un-stratified rental apartment blocks in the district. Consequently, the folios with residential assessment were divided into ALR and Residential land use designations, effectively assuming that the small amount of ‘extra’ dwellings (secondary suites and multiple residences on ALR folios) were distributed in the same proportions.

Method 6: Proportion of Water User Fees. In areas where water hook-ups are metered and water user fees are assessed it is possible to determine the water user fees for each land use designation. To determine the proportion of water user fees requires a digital file of user fees accompanied with folio numbers from the local government. The water user fees, connected to folio numbers, can then be allocated to specific land use designations.

There were folios which had water user rates but no corresponding BC Assessment entries. These folio numbers were internally assigned to accounts which did not receive individual assessments but were metered by the municipality (i.e. an un-stratified apartment block with each unit metered). The user fees resulting from these folios were assigned to the residential land use designation.

ALR folios pay water DCC’s to the district but not the City. Method 6a, using the same relative amounts of user fees but excluding the ALR, was used for water DCC accounts.

In Pitt Meadows information on user fees per folio was unavailable. Adjusted proportions of water system connections per land use designation were used (see Section 8.4.14).

Method 7: Proportion of Sewer User Fees. To determine the proportion of sewer user fees requires a digital file of user fees accompanied with folio numbers from the local government. User fees can be connected to specific land use designations through folio numbers.

In Abbotsford the substantial discrepancy between the total user fees in the digital file and that recorded in the financial statements was the result of direct billing, semi-annually, to large industrial users. The additional revenue was allocated according to the billings.

ALR folios do not pay sewer water DCC’s. Method 7a, using the same relative amounts of user fees but excluding the ALR, was used for sewer DCC accounts.

In Pitt Meadows information on user fees per folio was unavailable. Adjusted proportions of sewer system connections per land use designation were used (see Section 8.4.14)

Method 8: Proportion of non-ALR Folios. The proportion of non-ALR folios is simply a recalculation of the proportions in method 4, without the ALR category.

Method 9: Distribution of Grants in Lieu. To distribute the grants in lieu requires the “Grant Roll” for the area of interest from the local government. The 2003 Grant Roll was used to create a table containing grant roll information on a per folio basis. Folios containing large net assessed values had their ALR classification double checked. The figures within each land use designation were totalled, assessed the appropriate mil rates, and the proportion of the total grants in lieu was determined.

The federal grant roll required adjustments of the Abbotsford prison folio to determine the proportion situated outside the ALR. Also, the assessed values within the Federal Grant Roll, multiplied by the appropriate mil rates, were significantly larger than the total Federal Grants in Lieu recorded in the financial statements. Because of an inability to determine the source of the Federal Grants in Lieu exemption, the proportions were determined using the ‘gross’ values multiplied by the appropriate mil rates and were then applied to the actual Federal Grants in Lieu collected in the financial statement.

8.3 DETAILED ALLOCATION TABLES

Table 8.3.1	Allocation of Revenues	– Pitt Meadows
Table 8.3.2	Allocation of Expenditures	– Pitt Meadows
Table 8.3.3	Allocation of Revenues	– Abbotsford
Table 8.3.4	Allocation of Expenditures	– Abbotsford

See inserted pages or attached file for electronic version



8.4 ASSUMPTIONS USED IN THE ALLOCATION METHODOLOGY

8.4.1 General Approach to Allocation of Revenues and Expenditures

The general approach taken throughout this study was to look at the revenues from, and expenditures that benefit, a particular folio and then look at where the folio is located. **Therefore expenditures in one land use designation can benefit (be allocated to) a folio in another land use designation.** For example residences in the ALR benefit from parks and recreation facilities located in the residential area.

In some accounts the proportion of revenue/expenditure occurring in land use designations remains relatively constant from year to year. For such an account specific information from any given year can be used as a proxy for most years (i.e. property taxes). In other accounts the revenue or expenditure in a specific land use designation may fluctuate significantly from year to year. For these accounts expenditures or revenues were examined over a three year period to establish a 'typical' distribution. An example of this is building inspections and building permits. See section 9.1 for the detail calculation.

Some accounts may have expenditures in one land use designation that benefit a broader part of the community. Non-DCC funded engineering capital is an example of such an account. The land use designations where engineering capital projects are located change from year to year. Engineering capital expenditures, such as the Clearbrook road upgrade in Abbotsford, benefit the community as a whole. Benefits of this project go beyond the specific land use designation where it is located. As a modelling assumption for this project expensing general engineering capital across the whole community, rather than just the land use designation around the project, better reflects the benefits from the capital project.

Local Governments raise revenues from the community through property taxes in order to deliver services to the community. It is assumed that the proportion with which revenues are collected from different land use designations is a reflection of the perceived services these land use designations receive. When services could not be clearly allocated to different land use designations the distribution of property tax revenues (Method 1) was used to allocate expenses. Accounts where Method 1 was used to allocate expenses have no impact on the net status of land use designations as the expenses are allocated similar to the revenue collected.

8.4.2 Municipal Owned Businesses

The City of Abbotsford recently took over operation of the Airport. While it is included in the consolidated statements, the City views it as a separate operating entity. To keep the totals in the report similar to those on the consolidated statement, yet show that it is separate from ongoing City business, the airport was given a separate column/row in the tables.

8.4.3 Transfers to Reserves

Municipal property taxes are set at a level that includes an (annual) allocation for capital projects. Capital funds not used in the current year are transferred into a reserve fund. In a year when capital expenditures exceed the property taxes collected, the reserve funds are used to cover the shortfall. The annual tax collected for capital projects is the best estimate of the average use of capital assets.

The consolidated statements for Abbotsford show a residual of approximately \$17m, yet this balance is not available to spend in the current year. Most is set aside in capital reserve funds to cover future capital needs.

Given that the taxes collected in one year best reflect that years use of capital assets, the transfer to reserve funds were allocated according to how they were collected. For example funds transferred to the water reserve fund were allocated using the same method as used for allocating water service fees. This approach expenses a fair representation of the annual use of capital assets each year and shows that the revenues collected each year are fully committed.

8.4.4 Development Cost Charges (DCC's)

Where DCC charges were specific to a service (water and sewer) they were allocated according to that area. Where they were general, they were allocated according to Method 1E (excluding the ALR). This modelling approach was selected because many types of folios exempt from property taxes pay DCCs and it is assumed that the rates applied reflect the municipality's general perspective of payment distribution (mil rates). DCCs are brought into revenue when they are used so in all cases the revenues and expenditures are allocated in the same manner and therefore do not impact the net fiscal status.

8.4.5 Utility Taxes in Abbotsford and Grants in Lieu in Pitt Meadows

Utilities pay the local government for the right to run services through the municipality; services such as power lines, telephone lines and pipe lines. These services are distributed throughout the land base and in every land use area. On the other hand, land assessed as utility is a folio specifically used for a utility activity.

The study looks at allocation of revenues and expenditures to folios in specific land use designations. The right to run utility services benefits all folios. For this reason the utility tax was allocated according to Method 1.

8.4.6 Sale of Capital Assets

For the model used in this project, the proceeds from the sales are allocated similar to how the money used to purchase the asset was collected, i.e. sale of waterworks capital assets are allocated using the same method as water user fees.

8.4.7 Drainage and Dyking

The perspective on drainage and dyking varies between municipalities. There is a level of recognition that there is some responsibility by all tax payers to contribute to drainage and dyking. This is coupled with responsibility for special groups to pay for incremental benefits they receive. In both Pitt Meadows and Abbotsford farmers pay a drainage and dyking levy to ensure that drainage meets a standard that enables them to farm and use ditch water for irrigation in the summer. Abbotsford also has an urban storm drainage levy.

The study has taken the approach that the levies are a reflection of the incremental benefits received by those specific groups. Costs equal to the levies have been allocated to that specific group – for example in Abbotsford \$1,200,000 in costs (the amount received in drainage and dyking levies) were allocated specifically to the ALR. The balance of the costs were allocated to all folios (including those in the ALR) by Method 4.

Below are the calculations showing how the dyking and drainage expenditure allocation proportions were developed in Abbotsford.

Matsqui Prairie

Land Use Designation	\$Value	Method 4 Proportions	Proportion of Total
ALR (same as levies)	\$ 405,000		77.88%
Total	\$ 520,000		
<i>Remaining Expenditure</i>	<i>\$ 115,000</i>		
<i>The "remaining expenditures" are allocated on a per folio basis (method 4)</i>			
<i>Residential</i>	<i>\$ 95,357</i>	<i>82.92%</i>	<i>18.34%</i>
<i>Utilities</i>	<i>\$ 322</i>	<i>0.28%</i>	<i>0.06%</i>
<i>Industry</i>	<i>\$ 437</i>	<i>0.38%</i>	<i>0.08%</i>
<i>Business</i>	<i>\$ 5,279</i>	<i>4.59%</i>	<i>1.02%</i>
<i>Recreational</i>	<i>\$ 989</i>	<i>0.86%</i>	<i>0.19%</i>
<i>ALR</i>	<i>\$ 12,616</i>	<i>10.97%</i>	<i>2.43%</i>
<i>Sub-total</i>	<i>\$ 115,000</i>	<i>100%</i>	<i>100.0%</i>

Sumas Prairie

Land Use Designation	\$Value	Method 4 Proportions	Proportion of Total
ALR (same as levies)	\$ 795,000		69.15%
Total	\$ 1,150,000		
<i>Remaining Expenditure</i>	<i>\$ 355,000</i>		
<i>The "remaining expenditures" are allocated on a per folio basis (method 4)</i>			
<i>Residential</i>	<i>\$ 294,366</i>	<i>82.92%</i>	<i>25.59%</i>
<i>Utilities</i>	<i>\$ 994</i>	<i>0.28%</i>	<i>0.09%</i>
<i>Industry</i>	<i>\$ 1,349</i>	<i>0.38%</i>	<i>0.12%</i>
<i>Business</i>	<i>\$ 16,294</i>	<i>4.59%</i>	<i>1.41%</i>
<i>Recreational</i>	<i>\$ 3,053</i>	<i>0.86%</i>	<i>0.26%</i>
<i>ALR</i>	<i>\$ 38,944</i>	<i>10.97%</i>	<i>3.38%</i>
<i>Sub-total</i>	<i>\$ 355,000</i>	<i>100.0%</i>	<i>100.0%</i>

8.4.8 Roads

Assigning expenditures for roads to land use designations is a challenge. Throughout the Fraser Valley roads serve multiple purposes from facilitating the local traffic needs to also supporting regular commuters who flow through the valley on their way to destinations elsewhere.

Expenditures on roads appears in three areas of the financial statements:



- **Road operations.** Road operations involves maintenance activities such as snow removal, street sweeping, ditch maintenance , shoulder levelling and others.
- **General Engineering Services.** General Engineer Services includes engineering services around road construction, intersection design, and sidewalk design and general expenses for traffic signals and street lighting.
- **General Engineering Capital.** General Engineering Capital includes road resurfacing, road construction, sidewalks, pathways, intersections, traffic signals and storm drainage that is not covered by DCC's or local area improvement fees.

Three approaches were considered for allocating expenses for roads to land use designations:

1. Method 1, the general property tax distribution
2. By the linear road length in the different land use designations
3. By actual expenditures (i.e, paving) in different land use designations

Engineering staff felt that road maintenance activities were more closely aligned with the linear road length than the level of vehicle activity. For this reason the road operating costs were allocated according to linear road length. In Abbotsford 48% of the linear road length is in the ALR. The remaining expenditures for road operations were allocated in the urban area according to Method 4.

General engineering services and general engineering capital for roads was allocated according to Method 1 because no other method could be demonstrated to be a more accurate modelling of these accounts. Section 9 compares some actual expenses with this recommended allocation method.

8.4.9 Rental Income

Properties owned by the local government pay the appropriate taxes and fees but also provide rental income for the local government. The goal of the study is to look at revenue from and expenditures attributed to folios in land use designations. The study viewed rental properties as an investment or asset and the rental income as a return on the asset. Return on investment is a general revenue source so rental income was allocated according to Method 1.

8.4.10 Impacts of Tax Exempt Public Service Buildings

There are a number of tax exempt public service buildings. They pay DCC's, water and sewer fees but pay no property taxes. They do receive general services from the local government. Examples of exempt public service buildings include schools, hospitals, police and fire stations. Most of these buildings are in the business area. If general expenditures were allocated to the business area, with no corresponding revenue, this would distort the net fiscal status for the business area – it would show higher costs than warranted. By using the distribution of property taxes (Method 1) for these situations the expenditures for these public service buildings are distributed throughout the community similar to other general services. Although the use of method 4 and 8 will slightly inflate the revenue or expenditure allocated to the commercial land use designations, as both methods include tax exempt public service buildings, the effect of this is negligible because the account is based on number of folios, not asset value.

Methods 1E, 6 and 7 are used on multiple revenue and expenditure accounts. These methods are also susceptible to having tax exempt public service revenue and expenditure being assigned to the business land use designation due to their assessment as class 06 property. However, these methods were only applied to accounts which net out, having no impact on net fiscal status, but slightly inflating the proportion of total revenue from the business land use designation.

8.4.11 Building Permits and Inspections

Building permit revenue from land use designations is highly volatile from year to year. An allocation approach was needed that would best model the average building permit revenue per land use designation. Since building permits are levied against all folios (including tax exempt buildings), and the fees are based on construction value, Method 1E (assessed value including tax exempt buildings) was the preferred approach. Building permit fees are designed to offset inspection costs so Method 1E was also used for inspection costs. See Section 9.1 for comparison of Method 1E and an adjusted three year average of land use designation construction values in Abbotsford.

8.4.12 Police Services

Allocation of expenditures for police services to land use designations is a challenge. Allocation by folio would not take into account the higher likelihood of a police call from a shopping center or entertainment establishment as compared to a residential property or a farm building. Allocation by property tax would not consider the tax exempt buildings nor would it consider the increased policing needs in the urban core.

Abbotsford’s call tracking system does not track calls according to land use designations. A recent study by the Ministry of Agriculture and Lands on bylaw/farm practice concerns indicated that the rural area accounted for only 2% of the bylaw complaints. Police department personnel provided their intuitive breakdown of expenditures. A standard methodology to match the police department’s intuition and the bylaw complaint information was developed by using folios with buildings and applying a multiple on the industrial/commercial folios to reflect the higher likelihood of requiring police services.

Below is an example of the calculation using Abbotsford, and a comparison of the results with the breakdown provided by police department personnel.

Multiply **Industry** and **Business** folios by a factor of 10.

Number of Folios with Improvements		
Land Use Designation	No. Folios	Proportion
Residential	31,134	82.92%
Utilities	60	0.28%
Industry	141	0.38%
Business	1,430	4.59%
Recreational	97	0.86%
ALR	3,638	10.97%
Total	36,500	100%

Number of Folios with Improvements		
Land Use Designation	No. Folios	Proportion
Residential	31,134	61.48%
Utilities	60	0.12%
Industry	1,410	2.78%
Business	14,300	28.24%
Recreational	97	0.19%
ALR	3,638	7.18%

Police Personnel's Intuitive Breakdown	
	Proportion
	65.00%
	0.00%
	3.00%
	25.00%
	0.00%
	7.00%

8.4.13 Fire Services

There is also no obvious method to distribute fire services. Fire services can be broken into two categories: general services and incident response services. General services are those which exist to benefit the entire service area and include costs such as training, administration, and prevention (inspections and education). Incident response includes responses to `fires with loss` as well as other responses such as motor vehicle accidents, hazardous materials, etc. In reviewing other fire departments, the cost breakdown between general services and incident response is approximately 50/50. Within incident response, the breakdown between `fires with loss` and other responses is approximately 50/50.

Fire department personnel indicated that the cost of responding to fires is somewhat proportional to the size and complexity of the building. A proxy for this would be the assessed value of the building. For example a fire at a \$ 2,000,000 commercial building would likely be more costly to respond to than a fire at a \$300,000 residence. Consequently the `fire with loss` portion of fire services was allocated according to the assessed value of buildings in each land use designation.

The costs for general services and the other 50% of incidence response (75% of fire services) was allocated by Method 1 (similar to other general services) – with one small exception. A portion of the fire prevention budget goes to doing fire inspection on industrial, commercial and public buildings. Residences do not get regular inspections. 5% of the fire services budget was allocated specifically to industry and business folios.

So the final allocation of fire services was:

Method 1	70 %
Business and industrial folios	5 %
Assessed value of buildings	25 %
	<hr/>
	100 %



8.4.14 Pitt Meadows' Method 6 & 7 (Water and Sewer)

Abbotsford collects water use and sewer use fees that can be easily allocated to land use designations. This is not the case in Pitt Meadows. The only information available was folios with hook-ups. The Abbotsford distribution of water and sewer fees was used to adjust the Pitt Meadows hook-up numbers to better reflect actual usage. See calculations below.

Abbotsford (to determine multiple)

Method 6: Water Hook-ups		
Land Use Type	No. Folios	Proportion
Residential	32,450	87.2%
Utilities	0	0.0%
Industry	150	0.4%
Business	1,797	4.8%
Recreational	168	0.5%
ALR	2,627	7.1%
Total	37,192	100%

Method 6: Water User Fees		
Land Use Type	User Fees	Proportion
Residential	\$5,184,246	61.1%
Utilities	\$8,909	0.1%
Industry	\$157,790	1.9%
Business	\$1,359,381	16.0%
Recreational	\$112,980	1.3%
ALR	\$1,657,691	19.5%
Total	\$8,480,997	100%

Multiple
0.70
4.61
3.32
2.95
2.77

Pitt Meadows (applying factor to obtain final proportions)

Method 6: Adj. Water Connection Proportions				
Land Use Type	No. Folios	Multiple	Adj. No. Folios	Proportion
Residential	4,507	0.70	3,158	62.9%
Utilities				0.0%
Industry	47	4.61	217	4.3%
Business	112	3.32	372	7.4%
Recreational	22	2.95	65	1.3%
ALR	436	2.77	1,206	24.0%
Total	5,124		5,017	100%

8.4.15 General Engineering Capital

Capital projects that provide a focused benefit are funded through DCC’s or local area assessments. General capital improvements by nature provide a broader, less focused benefit. It is very difficult to allocate the benefits of any one general engineering capital project to specific land use designations. Because the benefits from general capital projects are hard to allocate and because it is not clear that a detailed analysis would provide a different distribution than the general property tax distribution, Method 1 was used.

This approach has no impact on the net tax status.



9. Comparisons of Recommended Allocation Methodology with Detailed Account Information – Abbotsford Data

9.1 BUILDING PERMITS AND INSPECTIONS

The allocation methodology used in this study was Method 1E because building permits are connected to building costs and Method 1E is a distribution based on assessed values including tax exempt buildings.

Below the distributions of construction values in each land use designation over a 3 year period (2002 – 2004) are compared to the Method 1E distribution.

Designation	Const Value	%
Residential (single + multifamily)	\$88,361,714	54.01%
Industrial	\$11,257,903	6.88%
Commercial	\$20,325,835	12.42%
Institutional	\$17,568,668	10.74%
Other (incl. Specialized)	\$11,404,641	6.97%
Agriculture	\$14,690,004	8.98%

With the location based approach, agricultural building permits are not the only permits located within the ALR zone. Analyzing the fees paid in building permits within the ALR for the 2003 year resulted in the following proportions.

Designation	Permit Fees	%
Residential	\$ 76,628	32.97%
Commercial	\$ 45,665	19.65%
Other (incl. Specialized)	\$ 3,525	1.52%
Agriculture	\$ 106,590	45.86%

Agricultural permits are only 46% of the total permit fees paid in 2003. Using the proportion of permit fees paid as a proxy for proportions of construction values, the following adjustments were added to the ALR category (and subtracted from their respective land use designations):

Residential	\$ 7,842,758
Commercial	\$ 4,673,708
Other	\$ 360,725

The resulting adjusted proportions are listed below, compared against the allocation method used, method 1E. Note: most utility construction would have its building permit fee classified within the ‘Specialized’ category.

Designation	Const Value	%
Residential (single + multifamily)	\$ 80,475,745	51.73%
Other (incl. Specialized)	\$ 7,172,629	4.61%
Industrial	\$ 10,712,900	6.89%
Commercial	\$ 17,074,102	10.98%
Institutional	\$ 16,338,532	10.50%
Agriculture Land	\$ 23,786,489	15.29%

21.48%

Method 1E: Proportion of Pre-Exemption Property Taxes		
Abbotsford		
Land Use Designation	Revenue	Proportion
Residential	\$ 32,286,749	44.09%
Utilities	\$ 4,222,504	5.77%
Industry	\$ 1,836,207	2.51%
Business	\$ 24,968,313	34.10%
Rec/NonProfit	\$ 986,674	1.35%
ALR	\$ 8,927,937	12.19%
Total	\$ 73,228,383	100%

9.2 WATER SYSTEM FLUSHING AND METER READING

The recommended methodology allocates all water capital and service costs according to the distribution of water user fees. The longer distances between hook-ups in the ALR poses the question of whether water servicing costs (meter reading and line flushing) in the ALR are higher than the urban area. Engineering staff provided information on the specific costs of water line flushing and meter reading in the rural area. The following comparison was done between the detailed information provided and the recommended methodology.

Meter Reading

Meters in urban area	22,853
Meters in rural*	<u>1,747 (7.1%)</u>
	24,600
Time required to read meters	
- urban - 331/day or	69.0 days
- rural - 114/day or	<u>15.3 days (18.1%)</u>
	84.3 days
Actual cost to read meters	
- rural cost	\$ 10,462 (18.1%)
- urban cost	<u>\$ 47,338</u>
- total cost	\$ 57,800
Comparison to User Fee Estimate	
- actual cost for rural(18.1%)	\$ 10,462
- user fee estimate for rural(19.55%)	<u>\$ 11,300</u>
- difference	\$ 838

Flushing

Flushing hours rural*	520 (27.3%)
Flushing hours urban	1380
Total flushing hours	1900

Comparison to User Fee Rates

Actual flushing hours in rural area	520
Hours using User Fee Estimate (19.55%)	371
Under estimation in hours	149
Under estimation in dollars (\$50/hr)	\$ 5,811

There are some parts of the rural area that are not in the ALR so these estimates will be slight overestimates of the ALR costs. It is important to note that the ALR in Abbotsford has only 7.1% of the water hook-ups but pays 19.55% of the water user fees.

The difference between the recommended methodology and the actual data provided for flushing and meter reading of approximately \$5,000 represents 3% of the flushing and meter reading budget and .06% of the \$8,225,000 annual waterworks budget.

9.3 Roads and Drainage Engineering Services

The recommended methodology considers engineering services as a general benefit to the whole community and allocates expenses as per Method 1. Road and Drainage Engineering Services include accounts such as intersection engineering, sidewalk engineering, traffic and road engineering, traffic signals and street lighting. There are no sidewalks and few traffic lights in the ALR.

In 2003, \$657,000 (52%) of the \$1,248,000 roads and drainage engineering service budget was spent on electricity for street lighting. In 2003 no expenditures were made for intersection sidewalk and traffic financing and the \$516,000 in these accounts was transferred to reserves for future years.

With over half the account comprised of an urban dominated expense (street lighting) and no expenditures in several urban dominated areas there is no support in the 2003 accounts to indicate that an allocation other than Method 1 is preferred.



9.4 General Engineering Capital

General capital for roads is broken into several area – construction, resurfacing, ROW acquisition, sidewalks, intersections, traffic signals and storm water.

The recommended methodology viewed roads infrastructure as a general community benefit and allocated according to Method 1. This position included the recognition that rural roads in communities in the central Fraser Valley are often used as commuter links in place of the established highways and urban road networks. This reduces or delays the need to build and maintain larger urban road networks.

The actual roads and storm drainage expenditures for General Engineering Capital in 2003 were:

Roads - General Capital					
	Urban	%	ALR	%	total
Construction	\$2,662,064	85%	\$465,918	15%	\$3,127,982
Resurfacing*	\$2,627,280	76%	\$847,280	24%	\$3,474,560
ROW acquisition**	\$467,535				\$467,535
Sidewalks/Pathways	\$134,587	76%	\$43,330	24%	\$177,917
Intersections	\$134,841	91%	\$13,685	9%	\$148,526
Traffic Signals	\$251,537				\$251,537
Storm Drainage	\$435,890				\$435,890
Total	\$6,713,734		\$1,370,213	17%	\$8,083,947
Recommended Methodology(12.05%)			\$974,116	12%	
Difference			\$396,097		

The actual costs for 2003 were 17% for the ALR as compared to 12% using Method 1. The difference of \$396,000 represents 4.4% of the \$8,955,000 engineering capital budget.

The perspective that significant numbers of urban residential residents use the ALR roads to commute around the city and in doing so shift road costs from the urban area to the rural area is accounted for in the recommended methodology. If this is indeed the case¹⁷ the actual expenditures for 2003 suggest the recommended allocation methodology incorporates a 4.4% premium for urban commuter use in the ALR.

The detailed accounts for General Engineering Capital do not indicate that an allocation method other than Method 1 is preferred. Expenditures on roads is a complex series of accounts and in future work a more detailed analysis would be helpful.



¹⁷ A Ministry of Agriculture and Lands traffic study report in 2002 found that 93% of the rural traffic was passenger vehicles