

**A STUDY OF THE UNTAXING  
OF  
IMPROVEMENTS  
IN  
EDMONTON, ALBERTA**

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# **A STUDY OF THE UNTAXING OF IMPROVEMENTS IN EDMONTON, ALBERTA**

Prepared for:  
**THE SCHOOL OF ECONOMIC SCIENCE AND SOCIAL PHILOSOPHY**

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## **PART I SUMMARY AND INTRODUCTION**

### **Summary**

The object of this study was to obtain a measure of the impact of untaxing improvements, on broad classes of taxpayers, in one of Alberta's largest urban municipalities.

The dual nature of the property tax is emphasized by a description of how a tax upon one segment is a deterrent against enterprise, while a tax upon the other segment is an incentive toward enterprise.

While Provincial law intends substantial tax relief of improvements, the goal is not achieved.

The economic and social justification for further reductions in the taxes on improvements, with corresponding increases on site-advantage, is discussed.

Sample data are analyzed to illustrate how the taxes on properties in different classes would be affected by the shift in tax emphasis both under current and up-dated assessments.

These changes are also discussed in relation to the "ability to pay" and the "benefits received" doctrines of taxation.

### **Introduction and acknowledgements**

The study was instigated by Mr. I. Gliener on behalf of the School of Economic Science and Social Philosophy, as a result of newspaper reports of speeches on taxation delivered by the Chief Commissioner of the City of Edmonton. Mr. Gliener arranged with the City of Edmonton for the study to be made, and together with other members of the School collected the initial data. The City Assessors' Department kindly provided the figures of assessments, of sales prices, and of estimated market values of sites.

Acknowledgement is gratefully made to the Mayor, Chief Commissioner and City Assessor for their co-operation; and to Northwestern Utilities, Limited for the use of their facilities for the running of a computer program. It should be clearly understood that their co-operation does not constitute endorsement of this report.

The author is a director of the School of Economic Science and Social Philosophy but the views expressed here are his own, and not necessarily those of the School.

## PART 2 WHY UNTAX IMPROVEMENTS?

### Applying Tests to Taxes

It is probably generally true that all types of taxes were initially low, and that their effect on the process of production was small enough to be reasonable ignored. A dollar was a dollar was a dollar, so long as the taxpayer was able to pay. That historical approach might be considered to have reached a climax in the philosophy of the Carter Commission, and finds some implied support in the Report of the Special Committee of the Alberta Legislature on Assessment and Taxation, March 1970. (1)

However with current high levels of taxation, there is growing concern that something is missing. The traditional tests of "benefit received" and "ability to pay", which were supposed to be complementary, are often found in conflict, with "benefit" the usual casualty. Perhaps they need reconciling again; perhaps they are not enough, on their own, to make an adequate evaluation of heavy tax loads.

It is clearly not realistic merely to say "taxes are too high", for in this century we have observed not only low taxes associated with low production but also high taxes associated with high production. As Professor M. Mason Gaffney says (2), at page 274:

"We often hear that heavy taxes stifle enterprise, but that is an artless slogan. It is not the mere weight of a tax that stifles enterprise. What matters is how the tax varies when the taxpayer acts enterprising."

It is suggested therefore that a tax should face the additional test of "how it varies when the taxpayer acts enterprising"; and how it varies depends upon the source of the value or income being taxed.

### Sources of Value

In the field of municipal finance, the main sources of value that are taxed may be described as follows:—

IMPROVEMENT VALUE is the result of work and enterprise upon the site itself.

SITE VALUE arises from a combination of:—

the general level of knowledge and technology existing in the wider communities of nation and province,  
the pressure of population upon the local community,

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(1) The reference is to the foot of page 18, of what is usually described as the SCOPE report.

(2) Chairman Department of Economics University of Wisconsin. Quotations are from his paper "PROPERTY TAXES and the FREQUENCY OF URBAN RENEWAL"; proceedings of the 57th National Tax Conference 1964, reprinted by the National Tax Association, Harrisburg, Pennsylvania.

the expenditures out of taxation of the local community, and its zoning laws, and work and enterprise upon neighboring sites,

and, with arguable exceptions, does not arise from work and enterprise upon the site itself.

To the extent that these sources of value are adequately described, it will readily be seen that the two values have sources that are not merely different, but fundamentally different. It may be observed that land has no cost of production to use as an aid in determining its value. The value of a piece of it is the measure of its advantage over pieces that have no advantage at all.

This is of sufficient importance that for urban areas it is considered advisable for clarity to use the word "site" or "location" instead of "land"; and when considering value or assessment, to use the more descriptive phrase "site-advantage".

The fundamental difference between those sources of value may for taxation purposes be summarized as:—

A tax on IMPROVEMENTS is a tax on enterprise  
A tax on SITE-ADVANTAGE is not a tax on enterprise.

#### **Some reasons for untaxing improvements**

Some of the undesirable effects caused by the existing tax on improvements can be logically deduced as:—

discouragement of renewal of old buildings;  
discouragement of development of undeveloped sites; and  
depression of aesthetic values.

But the question arises of the **extent** of these undesirable effects. There is far more opinion on this subject than facts. Some supporters of enterprise in earlier years may have made extravagant claims; countered by opinions of doubt that ultimates are attainable.

A responsible modern approach is that of Professor Gaffney. After demonstrating the mathematics of renewal, he states at page 281 a general conclusion about taxes on buildings that is independent of local laws:—

"Thus the fiscal deterrent assumes not just a supplemental but the primary role in blocking urban renewal. It may defer private renewal not just for decades but indefinitely, because there are reverberating neighborhood effects, from deterioration of old buildings, which progressively rob sites of their renewability".

and he continues:—

"There are large areas in our central cities which would be renewed forthwith in the absence of the fiscal deterrent".

In a later film "ONE WAY TO BETTER CITIES" (3) he states:—

"If you compare the real estate property tax on construction with an excise levied once at the time of construction, the weight of the deterrent becomes plain. A 3% of true value tax, such as we have in Milwaukee and many other cities, is the installment plan equivalent of a 52% sales tax. That is, it costs the owner as much each year as a 52% sales tax would cost him if financed over the life of the building".

"Today's property tax is slowing down the replacement of obsolete structures by twenty to thirty years. We recently completed a tract-by-tract study of Milwaukee property with the cooperation of the Milwaukee Tax Commissioner. It showed that if the city would stop taxing improvements and collect the same property tax total from location values alone, no subsidies at all would be needed for urban renewal. This is because the tax shift would so change the arithmetic of property ownership that it would pay the owners of most obsolete buildings in the heart of Milwaukee—without any subsidy at all—to tear them down and replace them with new buildings that would make better use of the site".

(The Alberta urban equivalent of Milwaukee's 3% of true value tax would likely be about 2%).

#### **Some reasons for recouping site-advantage**

The sources of value listed earlier indicate that the value of site-advantage is not dependent upon the site-holder's productive activities or decisions, but solely upon the exogenously determined capability of the site to earn income. Furthermore, these external determinants of value are provided by society itself: by society as a whole and by the particular community.

A tax on site-advantage may be regarded therefore as a partial recoupment by society of the value that was provided by society. It may well be considered the best possible fit to the "benefit received" doctrine. This "perfect fit" occurs before the expenditure of the tax moneys, and is thus independent of how those moneys are subsequently spent.

Site-advantage is the measure of the greater or lesser income-producing capacity given to that site by the community. It follows that a high flat rate tax upon it is in accordance with the "ability-to-pay" doctrine. In these days when conflict between "benefit" and "ability" is normal, it is a welcome change to find compatibility.

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(3) *Colour film presented by the Robert Schalkenbach Foundation Inc.; currently available for showing in Alberta by arrangement with the School.*

Those who would push the "ability-to-pay" doctrine to extremes point out that a tax on site-advantage does not conform with their "ability-to-pay-limited-to-inclination-to-produce" doctrine. And they are quite right; it does not. If the site-holder elects not to use the advantage bestowed upon him by the community, he cannot thereby escape the tax on the advantage, except by disposing of the site. Otherwise, the tax remains as one of the costs to be weighed, in making his decision not to develop or redevelop.

It is sometimes claimed that this can cause hardship; and special cases have been quoted in support. In quoting these special cases, it is usually overlooked that the hardship, if real, already exists under the present property tax system in Alberta. The point is discussed further under the heading "transitional residential".

Further reasons advanced in favour of a tax on site-advantage is that the tax base is "non-migratory" and "non-erosive". Improvements may migrate, in the form of industry electing to locate elsewhere, and when they do not migrate, they depreciate. Non-erosive is of course not the same characteristic as "width". Width of a tax base is not a measure of virtue. A narrow tax base may be economically desirable, politically feasible, practical to assess and cheap to assess. A wide tax base may fail all of those tests.

This list does not exhaust the subject of a tax on site-advantage, and in particular it omits consideration of the claimed benefit, under widely accepted theory, that a tax on site-advantage cannot be passed on.

#### **What should be studied?**

It should be noted that this study, and the Calgary study (4), are of little value in measuring the deterrent effects of the improvements tax, or in measuring the extent of the benefits to be anticipated by removal of the deterrent. Both studies may be described as no more than observation of the **initial** impact of a dynamic force applied to a static situation. The data discloses little of the medium and long term dynamic effects of ceasing to deter enterprise.

Furthermore neither study has adequately met its limited objectives. This study would have been improved by extension of examination of classes to sub-classes; the Calgary study needs re-assembly if its conclusions are to be made consistent with its data. But to whatever extent these two "static" studies might be improved in technique, their usefulness may be said to be limited to:—

- what is socially and politically acceptable; and
- whether or not there are problem areas.

As Professor Gaffney's activities have indicated, the heart of the matter is the dynamics of enterprise: "what happens when the tax payer acts enterprising"

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(4) "Site Taxation Report" as prepared by the City of Calgary Assessment Department 1962 based on 1960 data.



## **PART 3 THE EDMONTON DATA**

### **Approach to the Edmonton data**

Studies on the untaxing of improvements tend to measure the difference between:—

- (i) Actual tax; and
- (ii) Tax that would be chargeable on the actual assessments of site-advantage, if improvements were untaxed.

That method is sufficient if one assumes either that assessments of site-advantage are adequate, or that in practice they are not going to be updated. For reasons stated in Part 4, neither of these assumptions is valid. Accordingly this study attempts to measure the difference between:—

- (i) Updated tax (being tax under the present system but using updated assessment), and
- (ii) Tax that would be chargeable if improvements were untaxed.

Studies on the untaxing of improvements tend to assume that the untaxing be done all at once, which may lead to a conclusion that the effect would be too severe. Severe or not, there is no basis for assuming it to be the only method. That would be a decision of the provincial legislature, or of the municipality if so delegated.

Accordingly this study attempts to measure the effects of untaxing improvements in five equal steps.

### **Selection of samples and data used**

Because of the importance of market value in updating assessments, 439 out of the 457 samples were drawn from properties sold in the years 1966, 1967 and 1968. Within this limitation, single family residence samples were spread across zones and geographical areas of the city. (The zone category "other" includes undeveloped and under-developed sites). The basic data used was:

- Assessment of site-advantage 1968
- Assessment of improvement 1968
- Sale price 1966, 1967 or 1968
- Estimated market value of site-advantage 1968
- Estimated market value of improvement 1968
- Mill rate in 1968, which was 60.12 mills.

Limitations of sampling and estimating are listed at Appendix F.

### **The "sample municipality"**

The actual 1968 tax on all the samples combined, calculated at 60.12 mills on the actual assessments, totals \$804,283. In the course of this study the samples are treated as if they form a municipality on its own, needing to raise \$804,283 of tax. This will be referred to as the "sample municipality".

## **PART 4 UPDATING ASSESSMENTS OF SITE-ADVANTAGE**

### **Are assessments of site-advantage low?**

In Alberta, market value is the basis for, or main factor in, the assessment of site-advantage. The interval, usually seven years, between re-assessments means that assessments of site-advantage lag behind market values. It is generally accepted that this lag is significant. The following are extracts from the SCOPE report:—

- Page 43      “generally it was found by the Committee that assessment faults could be traced to too infrequent valuation of the tax bases”.
- Page 31      “when assessments must remain fixed for periods of five to seven years and longer, the disparities grow quite large”.
- Page 30      “one taxpayer who is predominantly assessed on land and another taxpayer who is assessed mostly on improvements will not be treated more equitably because of equalization”.

### **How low are assessments of site-advantage?**

Under existing legislation, site-advantage is theoretically assessed at 100% of the base used; improvement at 60% of the base (50% of the base for a single family dwelling in Edmonton). As proportions of 1968 market value, these may be approximately expressed as: site-advantage at 60% of market; improvement at 36% (or 30%) of market. The existence of that legislation means that in theory, steps have been taken in Alberta toward the untaxing of urban improvements.

But the SCOPE report says on page 12:—

“it is also apparent that (urban) land assessments relate to their current values in a ratio of perhaps 35% to 40%, not 65% as some have assumed”;

and in discussing equalized assessments on page 30, it says:

“Urban lands are theoretically reduced to 38% of market value for equalization purposes . . . In some cities however, our studies indicate that land is equalized at between 25% and 30% of market value . . .” .

## **Are low assessments of site-advantage inevitable?**

The SCOPE report states on page 31:—

“Possible results of converting many of the clerical duties now carried out by assessment personnel to the computer method would include the freeing of those personnel for more frequent valuations of the tax base. The greater volume of information about existing tax bases, ratios, and indexes of burden could pinpoint the areas and assessments needing early attention. Vast improvements in efficiency, accuracy and timeliness at little additional cost are almost a certainty”.

It is known that the Cities of Calgary and Edmonton have advanced considerably in adapting computer technology to the area of assessment, and the Department of Municipal Affairs is also actively involved in this field. Accordingly, the sample assessments of site-advantage have been updated. From the results of preliminary calculations it was considered that assessments of improvements did not require updating.

It should be understood that the reason that the assessments of site-advantage require adjusting is because of the usual time lag and is not to be considered a reflection on assessors or assessment practices.

### **The method of updating assessments of site-advantage**

Assessments of site-advantage in 1968 should be approximately sixty percent of market value. Accordingly for each sample an updated assessment of site-advantage has been calculated at 60% of its estimated market value.

### **The effect of updated assessments of site-advantage**

Appendix D is a summary of the effect of updating assessments on the “sample municipality”. Before updating, site-advantage carried only about 27% of the tax; after updating it would carry about 44% of the tax. The tax rate on the “sample municipality” would drop from 60.12 mills to about 47 mills.

## PART 5 UNTAXING IMPROVEMENTS

### The method of untaxing improvements

Appendix E shows in total for the "sample municipality" the reduction of total assessment on improvements by five equal steps reducing to zero, and the new mill rate required at each step to maintain the tax levy of \$804,283.

Schedule 2 shows the computer summary by zones of all the samples; the 14 pages of computer listing of samples are not reproduced. The left side of schedule 2 shows the new tax figure at each step, resulting from the reduction of the improvement assessment by one-fifth, and from the application of the new mill rate. Below and between steps is shown the percentage tax shift from the **previous step**. After and below the fifth step is shown the full percentage shift from start to finish; that is from updated tax to fully untaxed improvements.

The right side of schedule 2 is an alternative method dealt with later in this report.

Exhibit C is a repeat of ZONE percentage shifts by steps in more readable form.

### If improvements were wholly untaxed

The following summaries have been prepared:—

Exhibit B is a further summary of schedule 2 by ZONES.

Exhibit A is a summary of exhibit B by CLASS.

As expected, the major percentage increase is on undeveloped sites. Perhaps the most significant trends to be observed are the 29% decrease in class residential and 29% increase in class commercial.

At this stage, the reliability of the results must be seriously questioned: the samples were not randomly selected; the classes do not have the same weighting as the city as a whole.

Accordingly it was decided to compare the Edmonton sample totals with totals of the Calgary 1960 samples, as being a reasonably comparable city of about the same size under the same provincial assessment and taxation laws.

No summations of data appear in the Calgary report, so that the additions are this author's and have not been checked. To improve the comparison, the Edmonton samples were re-calculated using actual tax as the starting point instead of updated tax. The comparative results are shown at Appendix G, and disclose surprisingly close results of:—

RESIDENTIAL	Edmonton	33% -
	Calgary	36% -
COMMERCIAL	Edmonton	32% +
	Calgary	32% +

It may be observed from the tax columns of Appendix F that the weighting of these two major classes in the two samples is reversed; and it may be that the closeness of the results is entirely accidental.

A swing of tax from residential to commercial is a normal expectation of untaxing improvements; but whether the swing amounts to one-third is not proven by either of the studies.

### **Comments on class RESIDENTIAL**

Indications from the sample data are that tax in zones RRA and R1 might in total be unchanged, with a tax reduction in R2. The tendency is supported by the Calgary data which shows a reduction for R1 and RR1 combined of 7% widening to a 17% reduction in its R2 zone (unchecked). Such a tendency would be attractive to proponents of the ability-to-pay doctrine. As regards different ages and sizes of houses within residential zones, no differentiation was made in the Edmonton study. The Calgary data is grouped, and there is some indication that owners of well-kept older or smaller houses in residential zones might receive tax decreases, but the evidence is unclear.

### **Comments on Class TRANSITIONAL RESIDENTIAL**

These are basically residences in areas zoned for commercial use, and possibly for apartment use. In considering this category at least three questions should be asked about the situation as it has existed over the years and exists today.

Are they a problem?

Is it intensive or extensive?

Are solutions available?

As to whether or not a problem exists, two pieces of evidence are available. The first is from the Calgary 1962 report, referring to owners of residential homes in the central business area:

“...they do in many cases pay taxes on a ratio of three to four times higher than our best residential properties because of their proximity to the central core”.

The other piece of evidence is that the SCOPE committee made a specific recommendation on this point and it may therefore be inferred that the committee considered that a problem exists.

The Calgary 1962 report suggests that there are many hundreds of cases involved. If this can be inferred to be less than a thousand, and there were say 90,000 homes in Calgary in 1960, the extent of the problem can be measured at perhaps 1% of all homes. Assuming say 3%, this is within the range of possible exceptional treatment.

The SCOPE report contains a solution in its recommendation number 7 which is sometimes referred to as the "roll back provision". It has been subject to informed verbal criticism, so it may not be the best available. The point may merit a study on its own; its first task being to strip away the emotional verbiage obscuring the facts.

The comments above deal with the situation as it exists under present taxation. If that situation remains unrelieved, then the untaxing of improvements would aggravate it. It is possible that the untaxing of improvements would benefit the owners of homes in transitional zones, by forcing action on the issue.

#### **A full-market value alternative**

The SCOPE report emphasized that, in the interests of public understanding, all assessments should be on the same base, with municipalities to have power to vary tax rates.

Mr. R. H. Craig states (5)

"New Brunswick in 1966/67 went to Full Market Value Assessment under complete Provincial jurisdiction ... and Assessment Rolls published in 1967 achieved a general level of 90 to 95% of Market Value, with a low level of dispersion. This level is, I believe, still being maintained".

And of Ontario he says:

"...complete reassessment at full market value is under way and is scheduled for completion by 1974 or 1975. This is one of the few areas where the Assessment Act specifically spells out that assessments are to be at market value".

Accordingly, the right half of schedule 2 shows the untaxing of improvements by steps after raising both the assessment of site-advantage and the assessment of improvements to 100% of estimated full market value. The method used and the recalculation of mill rates is shown at Appendix H. The main point of interest perhaps is that with improvements fully untaxed, the tax rate in the "sample municipality" would be about 65 mills on an assessment that is capable of being understood.

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(5) Paper published in AIM, Winter 1970-71. Mr. Craig during 1966 to 1969 was Director of Assessment for the Province of New Brunswick.

## Conclusions

Conclusions that may reasonably be drawn from the data, on the untaxing of improvements are:—

almost axiomatically, within any CLASS of property there will be increases and decreases;

there is a discernible tendency for tax to swing away from CLASS RESIDENTIAL;

there is a discernible tendency for tax to swing towards CLASS COMMERCIAL;

almost axiomatically, UNDEVELOPED sites would attract much more taxation;

there is a slight tendency for tax to swing away from class INDUSTRIAL.

## Closing remarks

This study has quoted from one particular paper that dealt with research into, and the mathematics of, the important dynamics of urban renewal. And in that same paper Professor Gaffney shows a command of descriptive prose, with which this present study may fittingly be concluded:

“In conclusion, the property tax need not be a Frankenstein. In its present form it belongs back in the grave whence it so recently lurched, for it is grisly with the gore of aborted buildings and guilty with the breath of suffocated communities and the stifled lives of those who suffer from inadequate housing, from unemployment in the building material industries, and the host of related problems. But if it were converted to a tax on the base of site values it would become a perfectly respectable member of the tax family. In a family with so few of the description, it is an opportunity not to be lightly dismissed.

Certainly it is not to be dismissed with the hackneyed inanity that “it is no panacea”. It is not competing with any panacea. History has imposed a curious double standard on deliberations of tax alternatives. Most taxes are adopted because they raise revenue. Land taxes are rejected because they are no panacea. If they simply raise revenue without doing much damage they are a great improvement over what we have now. If they offer additional benefits, so much the better, but let us not be so enamored of the results of taxing buildings that we will consider no alternative except a panacea. The land tax is a good tax, on a non-erosive base. It lets us escape from the folly of taxing improvements. That is a sufficient character reference”.

**"SAMPLE MUNICIPALITY"**  
**IMPROVEMENTS FULLY UNTAXED - CLASS SUMMARY**

Exhibit A

Class	Number of Samples			Percentage Shift from Updated Tax to Improvements Fully Untaxed		
	Total	Up	Down	Extreme Up	Extreme Down	Class Average
Residential	253	62	191	76%+	71%-	29%-
Commercial	78	55	23	116%+	35%-	29%+
Industrial	69	40	29	90%+	55%-	3%-
Transitional Res.	33	25	8	54%+	19%-	17%+
Undeveloped, Underdeveloped & Miscellaneous	24	23	1	130%+	30%-	97%+
	457	205	252			

NOTE: Exhibit A is a summary of Exhibit B

**"SAMPLE MUNICIPALITY"**  
**IMPROVEMENTS FULLY UNTAXED - ZONE SUMMARY**

Exhibit B

Zone	Number of Samples			Percentage Shift from Updated Tax to Improvements Fully Untaxed		
	Total	Up	Down	Extreme Up	Extreme Down	Zone Average
RRA	19	8	11	33%+	32%-	1%-
R1	78	34	44	53%+	34%-	None
R2	18	2	16	12%+	33%-	14%-
R2A	10	None	10	None	52%-	34%-
R3	23	None	23	None	59%-	42%-
R4	48	5	43	76%+	54%-	32%-
R5	49	9	40	47%+	41%-	24%-
R6	8	4	4	21%+	71%-	46%-
RC1 Res.	33	25	8	54%+	19%-	17%+
RC1 Comm.	7	1	6	61%+	35%-	21%-
C1, 2	12	10	2	38%+	21%-	16%+
C2A	22	14	8	90%+	32%-	6%+
C3	26	19	7	116%+	31%-	36%+
Other Comm.	11	11	None	73%+	None	51%+
M1, 2, 3	69	40	29	90%+	55%-	3%-
Other	24	23	1	130%+	30%-	97%+
Total	457	205	252			

NOTE: Exhibit B is a summary of Schedule 2.



**“SAMPLE MUNICIPALITY”** Exhibit C  
**IMPROVEMENTS UNTAXED IN STEPS - ZONE SUMMARY**  
**OF PERCENTAGE TAX SHIFTS**

Zone	Updated Tax To Step 1	Step 1 To Step 2	Step 2 To Step 3	Step 3 To Step 4	Step 4 To Step 5
RRA	None	None	None	None	None
R1	None	None	None	None	None
R2	1%-	2%-	3%-	4%-	6%-
R2A	3%-	5%-	6%-	9%-	16%-
R3	4%-	6%-	8%-	12%-	21%-
R4	3%-	4%-	6%-	9%-	15%-
R5	2%-	3%-	4%-	7%-	11%-
R6	5%-	6%-	9%-	14%-	24%-
RC1 Res.	2%+	2%+	3%+	4%+	6%+
RC1 Comm.	2%-	3%-	4%-	6%-	9%-
C1, 2	2%+	2%+	3%+	4%+	5%+
C2A	1%+	1%+	1%+	1%+	2%+
C3	4%+	4%+	6%+	8%+	11%+
Other Comm.	5%+	6%+	8%+	10%+	14%+
M1, 2, 3	None	None	1%-	1%-	1%-
Other	10%+	11%+	14%+	17%+	22%+

NOTE: For the **Full** percentage shift from updated tax to Step 5, see the last column of Exhibit B.

THE SCHOOL OF ECONOMIC SCIENCE										EDMONTON TAX STUDY										SCHEDULE 2										CONCERNING RELIEF OF THE TAX BURDEN ON IMPROVEMENTS PAGE 15									
UPDATED TAX		STEP1		TAXATION-CN-UPDATED-ASSESSMENTS		STEP3		STEP4		STEPS		UPDATED TAX		STEP1		TAXATION-CN-FULL-MARKET-VALUES		STEP2		STEP3		STEP4		VALUES		STEPS													
RRA	16,749	16,732	16,713	16,684	16,649	16,593	-1					16,749	+14	15,669	-3	17,832	-4	17,211	-4	16,593	-1																		
R-1	25,870	25,867	25,862	25,860	25,855	25,853						25,870	+12	28,972	-3	27,405	-3	26,623	-3	25,845																			
R-2	10,100	9,961	-2	9,778	9,534	-4	9,191	-6	8,668	-14		10,100	+2	10,326	-4	9,499	-5	9,681	-5	8,668	-14																		
R2A	26,478	25,603	24,470	22,950	20,804	-16	17,546	-34				26,478	-2	26,012	-8	21,778	-10	19,665	-11	17,546	-34																		
R-3	48,870	46,865	44,283	40,817	35,924	-21	28,492	-42				48,870	-12	43,270	-9	39,577	-9	32,188	-12	28,491	-42																		
R-4	105,960	102,598	98,257	92,427	84,292	-15	71,708	-32				105,960	-10	93,280	-6	89,396	-7	83,500	-7	77,608	-8	71,708	-32																
R-5	161,596	157,752	152,787	146,122	136,711	-11	122,419	-24				161,596	-11	144,430	-4	138,930	-4	127,928	-4	122,416	-24																		
R-6	50,883	48,567	45,575	41,360	35,893	-14	27,287	-46				50,883	-5	48,153	-11	42,938	-12	37,719	-14	32,504	-16	27,287	-46																
RC1 RES	8,372	8,511	+2	8,690	+3	8,928	+4	9,269	+6	9,785	+17		8,372	+13	9,424	+1	9,516	+1	9,690	+1	9,781	+17																	
RC1 COMMERCIAL	5,572	5,458	-3	5,312	-4	5,116	-6	4,838	-9	4,418	-21		5,572	-6	5,232	-4	5,028	-4	4,824	-4	4,621	-4	4,418	-21															
C-1,2	16,930	17,284	+2	17,557	+3	18,030	+4	18,699	+5	19,716	+16		16,930	+8	18,221	+2	18,594	+2	18,969	+2	19,343	+2	19,716	+16															
C2A	35,266	35,478	+1	35,749	+1	36,115	+1	36,635	+2	37,418	+6		35,266	+2	36,102	+1	36,432	+1	36,758	+1	37,090	+1	37,418	+6															
C-3	33,212	34,404	+4	35,933	+6	37,991	+8	40,893	+11	45,299	+36		33,212	+9	36,339	+8	38,582	+6	40,820	+5	43,299	+36																	
OTHER COMMERC.	52,811	55,447	+3	58,851	+6	63,419	+10	69,867	+14	79,663	+51		52,811	+9	57,305	+10	62,896	+9	68,483	+8	74,077	+8	79,663	+51															
M-1,2,3	115,708	115,364	114,926	114,335	113,499	-11	112,231	-3				115,708	+2	116,257	-1	116,754	-1	115,243	-1	113,744	-1	112,230	-3																
OTHER	89,916	98,484	+10	109,552	+14	124,397	+17	145,362	+22	177,196	+97		89,916	+20	108,059	+16	125,345	+14	142,629	+12	159,914	+11	177,196	+97															
SCHEDULE TOTAL	804,293	804,295	804,295	804,295	804,291	804,292						804,293		804,461		804,439		804,362		804,347		804,275																	

"SAMPLE MUNICIPALITY" Appendix D  
MILL RATE RECALCULATED FOR UPDATED ASSESSMENTS

	Assessments	Tax	Percent
1. <b>ACTUAL Assessments</b>			
On site-advantages	\$ 3,617,350	\$217,480	27%
On improvements	\$ 9,760,528	\$586,803	73%
Together	\$13,377,878	\$804,283	100%
Tax Rate	60.12 mills		
2. <b>UPDATED Assessments</b>			
On site-advantages	\$ 7,527,085	\$350,183	44%
On improvements	\$ 9,760,528	\$454,100	56%
Together	\$17,287,613	\$804,283	100%
Tax Rate	46.52 mills		

"SAMPLE MUNICIPALITY" Appendix E  
MILL RATES RECALCULATED FOR UNTAXING IMPROVEMENTS

Step	Updated Assessments			Tax Levy	Mill Rate
	Site Advantage	Improvements	Together		
Start	7,527,085	9,760,528	17,287,613	804,283	46.52
Step 1	7,527,085	7,808,421	15,335,506	804,283	52.44
Step 2	7,527,085	5,856,317	13,383,402	804,283	60.10
Step 3	7,527,085	3,904,211	11,431,296	804,283	70.36
Step 4	7,527,085	1,952,106	9,479,191	804,283	84.85
Step 5	7,527,085	—	7,527,085	804,283	106.85

LIMITATIONS OF THE EDMONTON SAMPLES Appendix F

The samples are not statistically random; they are mostly properties that exchanged in the market. The weighting of classes in the sample would not equal the weighting of classes in the city as a whole.

None of the sales prices were verified as to financing, as to non-arms-length, or as to special characteristics; extremes were deleted.

The time available for the estimating of market value of sites was limited; accordingly the accuracy of the estimates is thereby affected.

Some of the assessments of sites, and of improvements, may be low by reason of limitations imposed by legislation that existed in 1967 and 1968.

## Appendix G

## COMPARISON OF 1968 SAMPLES WITH 1960 SAMPLES

	Actual Tax	Tax if Improvement Untaxed	Tax Shift	Percent Shift
<b>EDMONTON (1968)</b>				
RESIDENTIAL	473,033	318,554	154,479-	33%-
COMMERCIAL	140,668	186,514	45,846+	32%+
INDUSTRIAL	117,080	112,230	4,850-	4%-
TRANSITIONAL				
RESIDENTIAL	8,172	9,781	1,609+	20%+
UNDERDEVELOPED etc.	65,330	117,196	111,866+	171%+
	\$804,283	\$804,275	\$8-	
<b>CALGARY (1960)</b>				
RESIDENTIAL	205,691	131,005	74,686-	36%-
COMMERCIAL	1,427,723	1,884,295	456,572+	32%+
INDUSTRIAL	383,471	359,032	24,439-	6%-
TRANSITIONAL				
RESIDENTIAL (C-M)	16,873	31,365	14,492+	86%+
UNDEVELOPED and parking (?) lots	11,177	34,359	23,182+	207%+
	\$ 2,044,935	\$2,440,056	\$395,121+	19%+

## NOTES:—

1. The 1960 sample data in the Calgary 1962 report was not summated; the additions necessary to arrive at the totals above have not been checked.
2. The Calgary classes "commercial" and "industrial" include undeveloped and underdeveloped sites.

**Untaxing improvements by steps: an alternative using full market value**

**Method**

- (i) Assessments of site-advantage and improvements are all raised to estimated full market value. For improvements the estimate is: if sold, at sale price less estimated market value of the site-advantage; if not sold, at actual assessment divided by .35. This results in assessments of: site advantages \$12,545,142  
improvements \$26,620,745
- (ii) The effective rates of updated tax are derived by division, and as shown below are: site-advantages 27.91 mills; improvements 17.06 mills.
- (iii) The tax rate of 17.06 mills on improvements is reduced by five equal steps. At each step, the tax shortfall is levied on site-advantage, resulting in a new tax-rate.
- (iv) The resulting rates are applied to the samples on the right side of schedule 2, and movements are shown in identical manner to the left side.

Millrates recalculated

	total	TAX LEVY		MILL RATES ON FULL MARKET VALUE	
		on site-advantage	on improvements	on site-advantage	on improvements
UPDATED TAX					
from appendix D	\$804,283	\$350,183	\$454,100	27.91	17.06
STEP 1	\$804,283	\$441,003	\$363,280	35.15	13.65
STEP 2	\$804,283	\$531,823	\$272,460	42.39	10.23
STEP 3	\$804,283	\$622,643	\$181,640	49.63	6.82
STEP 4	\$804,283	\$713,460	\$ 90,820	56.87	3.41
STEP 5	\$804,283	\$804,283	—	64.11	—

(The method used in arriving at market value of improvements of properties sold, is open to the valid criticism that "going concern" values have automatically been included with improvement values. The mill-rates on improvements from 17.06 to 3.41 are therefore somewhat understated. The millrates on site-advantage are not affected.)