

- Housing Cost Index - Northwest Territories, 2003

1. Background

In early 2003, the NWT Bureau of Statistics was asked to complete research into variations in the cost of housing between communities in the Northwest Territories. Specifically, the research was to focus on the spatial variations between NWT communities in the cost of developing a new dwelling and for operational costs for utilities such as water & sewer, electricity and heating fuel.

This paper presents the findings of the research and compares the results with other information on dwelling costs. The general approach used for the research was to estimate the cost for components of developing a new dwelling in each community and to compute an index that would compare those costs with costs for Yellowknife. More information on the approach is presented below. However, it should be noted that the indexes developed here are of a general nature for each community. Specific circumstances related to the development of a housing property on a specific lot could not be considered due to the complexity of each individual circumstance. For example, it is likely that some costs (for example land costs) could vary within communities.

Therefore, the indexes developed in this analysis should be considered as general patterns. The intention was not to develop cost indexes that would be used for every circumstance, but rather that would describe a general trend in the relative spatial pattern of housing costs within NWT communities.

2. Cost of Home Ownership

The first component of housing costs to be examined in this analysis is the cost of home ownership. The following section describes the approach to developing the index for home ownership, followed by a description of the results.

Whenever trying to establish spatial patterns in price, a standard approach is to keep the “basket of goods” constant between communities and then price those goods for each community. For example, to establish price differences for food prices between communities it is less important that every brand of canned corn is priced in every community, but rather that the same size and brand is priced in every community.

To extend this approach to housing is a challenge as small differences in housing types could impact the price. To address this, the dwelling unit chosen as the basis for development of the index was a typical mobile home. Information was then collected on the price of transporting this home and purchasing a lot in each community to establish the spatial differences in price.

The base mobile home selected for the index was a 16 ft. X 80 ft. unit with a northern package (increased insulation and oil burning furnace) added. The typical price for this type of home was reported as \$66,000 from dealers in the Edmonton area.

To calculate transportation costs, information was collected from dealers on the cost of transport to various communities on the road system. For other communities, costs of road transportation were considered to Hay River. Information was then obtained from NTCL to assess the remaining transportation costs to each community. For communities on the winter road system, it was assumed that the home could be transported on the winter road system. For some communities, that meant road costs to Hay River, barge costs to a regional center and then additional road costs during the winter road system.

For lot costs, there is significant variation in costs for lots in larger NWT communities. To simplify this component, information was obtained through the NWT Housing Corporation for housing units that have been recently constructed.

Price differences between communities are typically reported as an index where a selected community is set as the base. In this case Yellowknife has been selected as the base, so all results are reported as an index number with YK = 100. An index of 75 would therefore suggest the price of the unit was 25% less than Yellowknife. Results of this analysis of the cost of developing a dwelling in each community are presented in Table 1.

Table 1
NWT Housing Cost Index – Development of a New Dwelling
Yellowknife = 100

	YK=100		YK=100
Inuvik Region			
		Fort Liard	53
Aklavik	66	Fort Providence	56
Colville Lake	..	Fort Resolution	53
Deline	63		
Fort Good Hope	63	Fort Simpson	53
Fort McPherson	63	Fort Smith	60
		Hay River	71
Holman	83	Hay River Reserve	52
Inuvik	96	Jean Marie River	58
Norman Wells	76		
Paulatuk	83	Kakisa	47
Sachs Harbour	80	Lutsel'ke	62
		Nahanni Butte	59
Tsiigehtchic	63	Rae Lakes	50
Tuktoyaktuk	75	Rae-Edzo	61
Tulita	61		
		Trout Lake	54
Fort Smith Region			
		Wekweti	49
		Wha Ti	56
Detah	57	Wrigley	55
Enterprise	53	Yellowknife	100

The results of the housing cost index suggest that the cost of obtaining a home in the Northwest Territories is highest in Yellowknife. Costs in other communities in the Fort Smith administrative area average about 55% of the Yellowknife costs. Hay River is the most notable exception to this where costs would be about 70% of Yellowknife prices. Due to the high transportation costs,

prices for communities in the Inuvik Region were closer to Yellowknife prices, but still averaged about 70% of the Yellowknife price. The index value for the community of Inuvik was 96% of Yellowknife's price reflecting both transportation costs and lot prices.

To provide some comparison to these results, information was obtained on the cost of housing units built or financed by the NWT HC over the past three years. This information was transformed into an index to identify differences between this index and the housing cost index calculated by the Bureau of Statistics. Some differences would be expected in these values although a similar spatial pattern should be apparent.

*Table 2
Comparison of NWT Housing Cost Index and NWT HC Construction Costs
Yellowknife = 100*

	NWT HCI	NWTHC Const.	Diff.		NWT HCI	NWTHC Const.	Diff.
Inuvik Region							
				Fort Liard	53	56	-3
Aklavik	66	75	-9	Fort Providence	56	66	-10
Colville Lake	..	85	..	Fort Resolution	53	55	-2
Deline	63	81	-18				
Fort Good Hope	63	68	-5	Fort Simpson	53	60	-7
Fort McPherson	63	66	-3	Fort Smith	60	57	3
				Hay River	71	66	6
Holman	83	76	7	Hay River Reserve	52	60	-8
Inuvik	96	88	8	Jean Marie River	54	53	1
Norman Wells	76	78	-2				
Paulatuk	83	76	7	Kakisa	47	54	-7
Sachs Harbour	80	75	5	Lutsel'ke	59	64	-5
				Nahanni Butte	59	64	-5
Tsiigehtchic	63	67	-3	Rae Lakes	50	72	-22
Tuktoyaktuk	75	75	0	Rae-Edzo	61	75	-14
Tulita	61	76	-15				
				Trout Lake	54	62	-8
Fort Smith Region							
				Wekweti	49	77	-28
				Wha Ti	56	82	-26
Detah	57	73	-16	Wrigley	55	60	-5
Enterprise	53	60	-7	Yellowknife	100	100	..

Generally speaking, a similar pattern can be seen between these two index values. There are specific communities where differences are significant.

3. Household Operations

The second component considered in this analysis on housing costs in the Northwest Territories is household operation costs for utilities including electricity, water and sewer and heating fuel. In this case prices were obtained from administrative sources and from retailers in communities when necessary.

In developing the index, consumption levels for electricity and water & sewer were considered to be equal across all communities. This assumption is supported by the approach of considering developing a mobile home in each community. It is unlikely that the resident would change consumption patterns for water & sewer depending on the community they are in. For electricity, while there is differences in daylight between NWT communities, on an annual basis the lower amounts of daylight in winter months would be offset by increased daylight in summer months.

For heating fuel, variations in consumption likely exist due to differences in climate between communities. To add this dimension, information on climate averages was obtained from Environment Canada for NWT communities. Degree days below 18° Celsius is used as the measure for the need for heating. Table 3 shows these values for the NWT communities where this information was available. This information was used to estimate degree day information for all NWT communities.

*Table 3
Degree Days Below 18° Celsius for Selected NWT Communities*

	Degree Days
Fort Liard	7,044.8
Fort Simpson	7,771.5
Fort Smith	7,438.9
Hay River	7,647.5
Inuvik	9,766.9
Norman Wells	8,614.9
Reliance	8,946.4
Sachs Harbour	11,442.0
Yellowknife	8,256.0

According to experts in the field, the increased consumption of heating fuel that is needed in a community is directly proportional to the relationship between the degree days in the community and the degree days in Yellowknife.

The index results for utilities are presented in Table 4. Generally, the pattern seen is that communities in the Inuvik Region tend to have somewhat higher prices for utilities than in Yellowknife. Significantly higher prices can be seen for some of the more northerly communities such as Holman, Paulatuk and Sachs Harbour where weather differences suggest much higher consumption of heating fuel.

For the Fort Smith Region, price for utilities tend to be lower than in Yellowknife with the exception being the off-road communities. In these cases prices are higher than Yellowknife.

Table 4
NWT Housing Cost Index - Utilities
Yellowknife = 100

	YK=100		YK=100
Inuvik Region			
		Fort Liard	73
Aklavik	101	Fort Providence	73
Colville Lake	128	Fort Resolution	76
Deline	107		
Fort Good Hope	106	Fort Simpson	75
Fort McPherson	111	Fort Smith	75
		Hay River	72
Holman	135	Hay River Reserve	70
Inuvik	100	Jean Marie River	103
Norman Wells	88		
Paulatuk	133	Kakisa	..
Sachs Harbour	134	Lutsel'ke	109
		Nahanni Butte	100
Tsiigehtchic	116	Rae Lakes	115
Tuktoyaktuk	124	Rae-Edzo	79
Tulita	110		
		Trout Lake	96
Fort Smith Region			
		Wekweti	116
		Wha Ti	114
Detah	91	Wrigley	108
Enterprise	79	Yellowknife	100

4. Comparison with Other Data

The analysis presented in this paper examines price differences between communities. To provide the required context for considering the results of the analysis, it is useful to examine another approach in looking at differences between communities for the cost of housing which is to look at actual expenditures. Table 5 shows information from the 2001 Survey of Household Spending completed by Statistics Canada. This survey examines spending by households throughout Canada.

While the sample size is quite small for the Northwest Territories, the information does show some useful trends. Due to the small sample sizes, caution should be used in particular in examining the results for smaller NWT communities as differences among these communities could be considerable.

Table 5 indicates that, on average, NWT households spend some \$12,136 per year in shelter costs for their principal accommodation. In Yellowknife this value is \$15,700, while in other communities the average was \$8,706. These differences, in part, can be explained by the differences in prices and, in part, by difference in circumstances like the presence of private rental housing, the presence of public rental housing, the size of dwellings, the level of property taxes, and other factors. For comparison, the average household in Canada spends \$10,429 on shelter costs for their principal accommodation.

*Table 5
Comparison of Shelter Expenditures, by Selected Components
Survey of Household Spending, 2001*

	Canada	NWT	Yellowknife	Rest of Communities
<i>Average Cost for Households with the Expenditure Item</i>				
Shelter Costs for Principal Accommodation	10,429	12,136	15,700	8,706
Rented living quarters	6,780	8,586	9,905	6,834
Owned living quarters	9,226	9,980	13,781	6,164
Regular mortgage payments	9,735	10,433	11,628	8,444
Maintenance, repairs and replacements	1,489	2,077	2,623	1,448
Property taxes	1,939	1,324	1,669	937
Homeowners' insurance premiums	487	580	624	514
Other expenditures for owned living quarters	1,440	1,094	1,060	1,175
Water, fuel and electricity	2,041	3,292	3,410	3,185
Water and sewage	494	955	1,105	826
Heating Fuel	1,073	1,883	1,726	2,037
Electricity	1,161	1,457	1,551	1,367

The data presented in Table 1 describes the average expenditures for households that have each expenditure item. Therefore the average rent are for those households that rent, while the average property tax are for those households that pay property tax. As such, the categories in this table do not sum to the total.

The data of particular interest for this analysis is the mortgage expenditures for owned dwellings with a mortgage and the utility costs. For mortgage payments, the average expenditures are \$10,433 for the Northwest Territories. Average mortgage payments per year in Yellowknife are \$11,628, while average mortgage payments in the rest of the communities are \$8,444 per year. The difference of average mortgage payments in smaller NWT communities of 73% of the Yellowknife value suggests that while these differences, again, are due to a variety of factors, the results of housing cost index presented earlier are quite consistent.

For the other component of interest, utility costs such as water, heating fuel and electricity the average costs were \$3,292 for the year for the Northwest Territories. There is less difference between communities for utility costs as the average for Yellowknife was \$3,410 and the average in the rest of the communities was \$3,185.

This again is quite consistent with the index findings, although this is more difficult to determine because of the significant variation in costs for utilities in NWT communities due to the more severe weather in the more northern communities.

One aspect of home ownership not included in the analysis below is property taxes as it would be difficult to include in an index of this type. From Table 1, the Survey of Household Spending people in owned dwellings reported spending an average of \$1,669 on property tax in Yellowknife. For the rest of the communities the average was \$937. This value likely varies

significantly within the other NWT communities. This additional difference in housing cost would only add more variation between Yellowknife and other communities, than the price indexes below suggest.

5. Conclusion

The analysis presented above is intended to provide a general overview of differences in the cost of housing between communities. It is intended that these indexes, along with the expenditure data from the Survey of Household Spending, provide a more detailed description of the pattern of housing cost between communities in the Northwest Territories.