AVOIDING THE GHETTO

A Preliminary Exploration of
Locational Characteristics
of Post'85 Social
Housing Projects

prepared
by

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CMHC

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EXECUTIVE SUMMARY

In 1986, when federal housing programs returned to a policy of targeting exclusively low-income households, this was accommpanied by an understanding that projects would be smaller and more widely dispersed. This change in delivery methodology was expected to effectively avoid the negative outcomes of the fully-targeted programs of earlier eras.

This study explores changes in the size and locations of social housing projects and their locations, by comparing post'85 projects with those of earlier eras. Socio-economic conditions of the neighbourhoods containing recent projects and the proximity of those projects to various services are examined.

Data was collected from five cities across Canada. In each city, information was obtained on the size and location of all social housing projects in the CMA and distances to services from a number of test cases.

Locations were assessed to try to identify if post'85 projects were creating concentrations of social housing or enlarging existing ones. Average distances between the projects were calculated to reveal rates of dispersion. Average project sizes and dispersion rates were grouped in eras that attempted to reflect major changes in national housing policies: 1966-1972, 1973-1978, 1979-1985, and 1986-1993.

Statistics Canada's 1986 census data was used to compile the socio-economic profiles of the census tracts in which test cases were located. The figures for each tract were compared to the aggregate figures for its CMA.

Proximity of test cases to a set of services was measured and then calculated according to the frequency of use.

Findings

The data suggests a general trend, over the years 1966-1993, towards projects which were smaller and less dispersed. However, no significant consistent disruption in this trend coincided with policy and delivery changes in 1986.

The socio-economic profiles of the neighbourhoods, into which the test-case projects were located, indicated conditions that were consistent with, or better than, the averages for their CMAs. Twice as many test-cases (14:7) were in neighbourhoods with less incidence of low income than the average for their CMA, slightly more had male unemployment rates above CMA averages (11:10), and significantly more had female unemployment rates lower than CMA average (12:8).

The basic services essential to quality of life were found to be, on average, within distances assumed appropriate. The average distance travelled to services required on a daily basis was 0.650 kilometres, for weekly services it was 1.681 kilometres, and for monthly services it was 2.726 kilometres. There was no consistency as to which services were furthest away nor notable difference between cities.

The findings of this report suggest the need for further research in several areas. Some research could attempt to verify the preliminary findings and conclusions of this report while others could investigate additional topics that have been identified as related to these issues.

The topics suggested for further research are: further investigation of those factors examined in this report, effects of matching services to the needs of residents, physical designs which foster the successful integration of social housing residents into their neighbourhood, comparative analysis of integration success by ratios of social housing project populations to neighbourhood densities, and comparison of the incidence of neighbourhood resistence (NIMBY - not in my back yard) to variations in design and delivery process of social housing projects.

RÉSUMÉ

Lorsque le gouvernement fédéral est revenu au principe des programmes de logement orientés exclusivement vers les ménages à faible revenu, en 1986, il était entendu que les futurs ensembles seraient plus petits et plus dispersés. Cette nouvelle approche devait permettre d'éviter les effets négatifs qu'une telle politique de ciblage avait eu par le passée.

La présente étude, en comparant les ensembles construits après 1985 avec ceux des années précédentes, tente de cerner les changements qui ont pu s'opérer sur le plan de la taille et de l'emplacement. L'étude examine également la situation socio-économique des quartiers où des ensembles ont été construits récemment ainsi que la distance entre ces ensembles et divers services.

Les données ont été recueillies dans cinq villes canadiennes. Dans chaque cas, on a obtenu de l'information sur la taille et sur l'emplacement, au sein de la RMR, de tous les ensembles de logement sociaux, de même que sur la distance séparant des ensembles-témoins de certains services.

L'examen de l'emplacement visait à déterminer si les ensembles construits après 1985 créaient ou accentuaient des concentrations de logements sociaux. La distance moyenne entre les ensembles a été calculée de manière à fournir un taux de dispersion. Les données relatives à la taille et au taux de dispersion moyens des ensembles ont été compilées pour chacune des périodes d'application des grandes politiques nationales de logement (1966-1972, 1973-1978, 1979-1985 et 1986-1993).

Les données du recensement de 1986, effectué par Statistique Canada, ont servi à établir le profil socio-économique des secteurs de recensement dans lesquels sont situés les ensembles-témoins. Les données de chaque secteur ont été

comparées avec les résultats globaux de la RMR dont il fait partie.

La distance entre les ensembles-témoins et certains services a été mesurée puis pondérée en fonction de la fréquence d'utilisation.

Résultats

Pour toute la période de 1966 à 1993, les données semblent indiquer une tendance générale à construire des ensembles de plus en plus petits et de moins en moins dispersés. Toutefois, aucun changement notable, dans cette tendance, ne coïncide avec le remaniement du programme et de son mode d'application en 1986.

Les profils socio-économiques des quartiers où sont situés les ensembles-témoins montrent que les conditions y sont égales ou supérieures à la moyenne de leurs RMR respectives. Dans 14 cas contre 7, les ensembles-témoins étaient situés dans des quartiers où la pauvreté était inférieure à la moyenne de la RMR visée.

Les services essentiels à la qualité de la vie se trouvaient, en général, à distance raisonnable des ensembles.

Les résultats de cette étude font ressortir le besoin d'approfondir la recherche dans plusieurs domaines. Les recherches pourraient être axées sur la vérification des résultats et conclusions préliminaires contenus dans le présent rapport, ou encore sur d'autres sujets connexes.

Les sujets connexes suivants sont suggérés en vue de la poursuite de la recherche : étude complète sur les facteurs faisant l'objet du présent rapport (principalement la taille et la dispersion des ensembles et la proximité des services);

opportunité d'offrir des services adaptés aux besoins des résidents; aménagement favorisant l'intégration dans leur quartier des bénéficiaires du logement social; analyse comparative des résultats obtenus sur le plan de l'intégration, selon le rapport entre la population des ensembles de logements sociaux et la population totale du quartier; et comparaison des taux de résistance observés chez les populations des quartiers (syndrome «pas dans ma cour»), en fonction de divers concepts d'aménagement et de fonctionnement du logement social.

BACKGROUND

Policy Evolution

The creation of large-scale high-density public housing, mainly in the 1960s, resulted in concentrations of low-income family households. As many residents faced multiple social problems, and social support was either not delivered or not sought, locating large numbers of these households in a single area only exacerbated these problems. This led to an image of public housing as ghettos of poverty and social disfunction which, in turn, attached a stigma to the inhabitants.

Most public housing activity occured, in North America and Europe, in the post-war period. Large urban renewal projects in the 1960s and 1970s, aimed at increasing the efficiency of land use, resulted in the displacement of the urban poor from medium density housing and their relocation into high-rise buildings.

The problems experienced by those living in these projects were also occurring in other countries. In France, "by the mid-seventies, the vacancy rate in some social housing projects was as high as 40%" (Blanc 1993). This was attributed to a combination of the social stigma and the dilapidated conditions associated with those projects. In St. Louis in the seventies, the Pruit-Igoo project, an award-winning example of social housing design, was demolished shortly after occupation due to extreme levels of vandalism and crime.

In Canada, we had our own examples of social problems within public housing projects. Uniacke Square in Halifax and Regent Park in Toronto suffered from various social pathologies; Uniacke Square was selected as a regeneration demonstration and considerable effort has been put into the reduction of crime and vandalism at Regent Park.

In 1969, The Federal Task Force on Housing and Urban Development, also known as the Hellyer Report for its Chairman Paul Hellyer, recognized that public housing projects were becoming "ghettos of the poor" and that delivery should attempt to "acquire dispersed housing."

In response to persistent problems in the large-scale high-density projects, the Canadian government first turned, in 1973, to involving local non-profit groups in the delivery, ownership and management of assisted housing and, in 1978, adopted programs which provided for a mix of income levels in social housing. These programs were believed to have had positive results in the reduction of the social stigma and increased neighbourhood integration of social housing tenants, but were less cost effective in meeting core housing needs, due to the program's ratio of one rent-geared-to-income unit to three low-end market units.

The 1983 Non-Profit and Co-Op Housing Evaluation (Sect. 56.1) drew several conclusions highlighting this inefficiency. It revealed that only 21% of the programs beneficiaries were low-income households and exposed the discrepancy between the estimated need for social housing assistance, at

500,000 renter households, and the delivery to only one percent of the outstanding need in any given year.

The fact that many residents of income-mixed social housing were not "needy" lead to the conclusion that, although "the benefit and quality of income-mixed non-profit and co-op projects" was recognized, these programs were deemed "less effective" than public housing. The benefits of income-mixing, to both the assisted tenant and the neighbourhood, seem to be in the decreased visibility of social housing and greater social integration of the residents.

In 1985, the federal government was searching for a more cost-effective housing strategy, considering limited funds and high demand for assistance, and decided to target only those in "core need." However, there was equal recognition that this new policy might result in some of the same problems as in the earlier era characterized by large-scale public housing "ghettos." A better methodology would be needed if the negative social effects of fully-targeted projects were to be avoided.

Unfortunately, resistance to social housing projects (NIMBY - not in my back yard) continued to plague social housing delivery agencies and were likely to increase with the introduction of a core-need targeted policy. The federal government had to convince the public that sufficient thought and strategy was taken to ensure that ghettoization was not going to recur. The principle of "small and scattered" was invoked to address the twin concerns of the social problems associated with large-scale projects and the community resistance to such projects.

Although "small and scattered" was never explicitly defined, or provided for, in program delivery and monitoring guidelines, the guiding principle seemed to be understood and accepted. Smaller and more widely dispersed projects were expected to facilitate social integration by reducing conspicuous concentrations of projects. This style of delivery was meant to be a hybrid of the sociological success of income-mixing, now at the neighbourhood rather than project level, and the cost-effectiveness of fully-targeted programs. By dispersing these projects throughout a city, concentrations of social housing would be avoided and social integration would be fostered.

The theory behind "small and scattered" social housing projects was not new in 1985. In the conference report Integration of Physical and Social Planning (1967), Preston David, then Director of the Department of Social and Community Services for the New York City Housing Authority, said, "the emphasis now is to build smaller sites and to do everything you can to scatter, rather than build the large super areas."

The 1985 Neilson Task Force report also recognized the dangers in both large-scale projects and core need targeting. The report states that small-scale projects are both cost effective and appropriate and that this concept was widely supported by organizations such as the Federation of Canadian Municipalities, as a delivery partner, and the National Anti-Poverty Organization, as a client advocacy group.

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Possible Barriers to Policy Intention

There are several factors pervading locational choices which could frustrate the intention to scatter social housing projects. These factors can be categorized under the headings of: economic considerations, political considerations, and delivery considerations. Together they form the parameters limit real choices and might frustrate policy intentions.

Economic considerations include land prices, CMHC maximum unit price (MUP) guidelines, and all other factors that tie into cost-effectiveness. The weighting of cost-effectiveness against other aspects of the proposal selection criteria is a major influence on site selection. Low-cost land which attracted pre'86 projects might continue to attract post'85 activity. This could result in social housing being concentrated in these areas. An additional concern is that low land costs refect a low desirability of the location and that housing projects in these areas have a locational disadvantage (ie. low levels of public and private services).

Political considerations include the "hard" forces of zoning and land-use priorities as well as the "soft" forces such as the power of local communities to resist location choices. Established middle and upper-income neighbourhoods tend to have more weight in influencing city council decisions, both as a consequence of heightened political activity and the financial means to pursue local community interests. The ability of such areas to mount effective deflecting or delaying tactics ultimately led to decisions, within the delivery system, to seek areas where there was less potential or ability for resistance. Therfore, their target locales might be areas without an established or organized residential population.

The locus of resistance to social housing is usually either the issue of land-use intensification or property devaluation. The negative aspects of intensification cited are: the physical stresses such as increased traffic, consumption of parking space, reduction in green space, and change in the overall aesthetics; and the social stresses such as increases in crowding, noise levels, and criminal activity. This reaction is not isolated to the opposition of social housing projects; it can also be triggered by a proposed luxury condominium complex, restaurant, or video arcade. Studies in effects of social housing projects on property values have produced varied results.

Together, all of these factors assert pressure to locate social housing projects in areas where land is cheap and plentiful, political approval is most likely, units can be brought on stream quickly, and community resistance is less likely. The concern is that these forces might limit location choices to only three alternatives: into existing concentrations, into areas which become new concentrations, or into periphery areas. The first two scenarios would defeat the principle's intent and the latter would create the new problem of locational disadvantage.

Accessibility to Services

Although geographic proximity is only one of many factors determining the accessibility of services, it is often the most important. Proximity is the most important criterion for access to a grocery store, but would be irrelevent if overridden by a factor such as high costs or limited membership. A health service or a golf and country club might be close geographically but effectively inaccessible to many people.

A complete definition of accessibility, as applied in the context of services, would include variables such as the length of time a person waits for the attention of a service provider, the costs involved in receiving those services, eligibility requirements, physical barriers to obtaining the service, perceived or real social barriers to obtaining that service, and promotion and education of that service, as well as physical proximity.

In quality-of-life modelling, accessibility to health services, for example, is measured as a derivative of several factors including numbers of beds by care type, numbers of physicians by specialty, etc, and then calculated per capita (Murdie, Rhyne and Bates 1992). The quality of life focus does not attempt to assess the geographic distribution of services, financial barriers, or socio-economic discrimination; all of which factor into the real access each person has to those services.

Proximity as Accessibility

Once proximity is isolated as the criterion for measuring accessibility there is still need for further definition. Most measures of "too far" or "close by" are subjective perceptions which are influenced by factors such as: personal mobility, resources such as a car, financial capacity to travel (gas or bus fare money), availability of public transport, and by knowledge of closest location of the desired service. Perceptions of proximity also vary from city to city; a forty minute transit ride would be far more acceptable in Toronto than in Saskatoon.

Service Provision

The "shopping basket" of services which each household deems necessary comprises both public and private-sector services. Governments at the local level can encourage, in a variety of ways, the supply of private-sector services but is only directly responsible for a small portion of the amenities residents require.

In the private market, considering a dwelling location outside the downtown include weighing the benefits, such as lower land costs and greater land space availability, against the travel time to various services and work. The challenge, of course, is to choose the location where services remain within reasonable proximity. The types of services that are most important to the person or group making the location choice is also a challenge. Economists have complex formula which calculate locational choices by weighting various factors including services, purchase price and length of commute. Within this definition "services" is a aggregate term which does not identify which services are included nor the proximity to these services.

Urban Development Models

The urban development model to which each local government subscribes will affect the expectations for proximity to services. Two major models are centre-periphery and multi-nucleation. The centre-periphery model, in which the outer areas are expected to be served mainly from the central core, is less likely to promote extensive new service provision to a new housing development. Multinucleation, a model in which developments evolve into a series of self-sufficient areas, is more likely to foster the provision of services at a local level.

Regardless of development model, a further factor in service provision is the lag time between the initial population growth of a new area and the extensive appearance of services. Both private and public services seem to have catchment area thresholds which dictate when services are viable or warranted.

THE RESEARCH QUESTIONS

Primary Question: Concentrations

Was there a change in the pattern of social housing delivery since 1985 which avoided concentrations of low-income persons? Specifically, were social housing projects built after 1985 smaller and more dispersed than in previous eras?

Concentrations can be a single high-density project or a series of smaller projects. Smaller projects are not automatically the solution; they must also be dispersed. Therefore, the first question that this research attempts to explore is the dispersion rate and average size of social housing projects built after 1985 in comparison to those built in previous eras.

Secondary Question: Socio-Economic Profile of Locations

Are social housing projects located in neighbourhoods with socio-economic conditions that are less favourable than the averages for its CMA?

Although the issue is far more complex than implied by this treatment, there seem to be two main schools of thought on the appropriate location of social housing projects: the income mix concept or, the parity concept. If income mixing at the project level had some sociological advantages for both higher and lower income persons, perhaps this will also work at the neighbourhood level. The second view suggests that tenants will likely feel alienated and resented in surroundings of higher income levels, thus discouraging integration, and that they would be more likely to integrate into a neighbourhood where they feel a sense of parity with the other residents.

Census data was used to compile a socio-economic profile for various project locations (census tracts) so that these could be compared to the CMA average.

Tertiary Question: Locational Disadvantage in Access to Services

Are social housing projects located in areas that are isolated from those services and facilities that are considered necessary for an acceptable quality of life?

While the "small and scattered" approach was meant to avoid the problems of "ghettoization" a new emphasis on dispersion could increase geographic isolation from services. If neighbourhoods with low socio-economic status typically have fewer services and facilities than wealthier areas, compounding this with geographic isolation could further reduce the likelihood of housing projects existing within a reasonable proximity of services. This question is explored by measuring the distances from some test-case projects to various services.

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METHODOLOGY

The projects studied in this research have been built under the programs of Public Housing, Co-Op, Public Non-Profit, and Private Non-Profit. Because of the focus on housing concentrations, and limitations in data bases, only projects with six units or more were included. Client type was not distinguished.

Originally, 28 cities were surveyed for their capacity, in technology and labour resources, and willingness to participate. The cities surveyed were simply the 28 largest urban centres in Canada. The objective was to ultimately settle on a small sample of cities that represented a variety of city sizes and geographic regions. The cities that were included for analysis were those who were able to produce all of the essential components: inventory of social housing projects including year built and number of units, a map plotting the location of each of these projects, and measurements to the set of services for a number of test cases. The list of cities examined changes slightly through the three main areas of exploration.

First, an inventory of all the projects was compiled with the help of city, regional and provincial governments and CMHC branch offices. Then, this information was plotted on a map to give a spatial representation of the dispersion and concentrations of projects throughout the years. From the post'85 projects, 3-5 test-case addresses were randomly selected for measurement to various services.

Limitations

The first limitation was in only being able to include those cities which were able to provide complete information. This restricted analysis to those cities who participated rather than choosing cities for their characteristics. This meant, unfortunately, that some people put in efforts to gather data that was not included in the final report. A common example is when inventory was compiled but the technology or staff time at the local level was not available to plot this on a map. Without the spatial representation the measurement of distances was not possible.

The decision to look only at projects with more than six units carried some restrictions. This research is not intended to analyse the delivery of all social housing but looks specifically at areas of concentrations. Social housing delivery in forms such as infill, duplex and fourplex, which may or may not comprise a significant portion of social housing activity, have not been included in this research because their low density make them unlikely to contribute significantly to concentrations.

By not distinguishing between client types, some important factors have been ignored. These factors include overall size, services required, and the potential level of community resistance. Seniors projects, typically having only bachelor and one-bedroom units, are smaller per unit than family projects, typically having two or three-bedroom units. There is also much less community resistance to seniors' projects for a variety of reasons.

This report measures the proximity of projects to a single set of services without attempting to discern the specific services required for each client type.

SMALL AND SCATTERED

Average Project Size

The average project size was calculated simply on the basis of dividing the total units by the total number of projects. This statistic was calculated for several eras that, to some degree, reflect policy shifts. Because of limits to data these eras start in 1966. The years are grouped into eras in this way: 1966-1972, 1973-1978, 1979-1985, 1986-1993.

Dispersion

In order to measure dispersion rates on maps that were inconsistently scaled, a fifty-by-fifty grid of arbitrary units was drawn and laid over each map. In this way the unit of measurement varied from map but because only the relative dispersion is compared between cities, the measurements remain valid. Further, the most significant comparison is between program eras, rather than across locales, so this relative measurement is the most meaningful.

In this study, a concentration was defined as any area with 200 units or more where there is less than 2 blocks between each of the projects in that concentration. In other words, if 5 projects are within a 5-block area and total more than 200 units they form a concentration. If these are all post'85 projects they are forming a new concentration and, if a small post'85 project is built contiguous to a large pre'86 project this is referred to as into an existing concentration. If neither of these apply the project is said to be dispersed. The term "dispersed" is not meant to be synonymous with "well placed" or, "locationally disadvantaged."

SOCIO-ECONOMIC PROFILE

In order to obtain a limited view of the socio-economic conditions of the neighbourhoods into which these projects were being placed, 1986 census data was used to compile a tract profile, including information on income levels, employment rates, and household composition. This data was only intended to serve as a description for comparison to consolidated data for its CMA, or to other tracts. These figures are highlighted in Chapter 2 and set out in complete tables in Appendix A.

PROXIMITY TO SERVICES

Services To Be Examined

The selection of services to be included for measurement was problematic. Services were selected on the basis of their being generally recognized as important to measures of quality of life. Places of worship were not included because this would only be relevant if the religious characteristics of the residents of the project being analyzed were known. Similarly, recreation and entertainment sources are only relevant inasfar as they satisfy the known needs of the residents. Therefore, because the various needs and requirements of the residents was not known, only generic services were selected.

The services that were ultimately selected are:
  a) convenience store
  b) grocery store
  c) local transit (bus stop)
  d) daycare
  e) elementary school
  f) retail area (bank, pharmacy, etc)
  g) park/playground
  h) employment office
  i) family and social support office
  j) Doctor's office/Medical clinic
  k) Hospital

Proximity

The next step was to measure the distance one would travel from the test-case projects to these services. Services are divided into three categories according to the frequency of use: daily (a, c, d, and e), weekly (b, f, g, and h) and monthly (i, j, and k). All distances are measured along street paths and not "as the crow flies." The complete tables can be seen in Appendix B.

The decision to use absolute rather than relative measures meant two things: services could be deemed as within an acceptable proximity or not, rather than simply using terms such as "farther from" or "closer to"; and a matched sample of market housing was not required. The intent of this research was not to compare social housing to market housing, in terms of proximity to services, but rather to examine whether or not social housing had an acceptable level of services within a reasonable proximity.

Proximity Equations

In an attempt to establish some qualitative measure for the proximity of services, this set of equations was developed. This very simple model allows various addresses in a city to be compared to each other and to those in other cities.

Daily Services (A1)

The proximity of daily services is calculated by averaging the distances travelled to services which are most likely required on a daily basis. The smaller the A1 figure the closer services are, on average; the larger the A1 figure the further one must travel on average.

$$A1 = \frac{(a + c + d + e)}{S}$$

Where small case letters are the distance in kilometers travelled from the project address to that service, and:

a = convenience store
c = bus stop
d = day care
e = elementary school

and,

S = the number of services measured (this design allows the number of services studied to vary without having zero values corrupt the product)

Example 1 $$A1 = \frac{(.120 + .078 + .236 + .762)}{4}$$

$$A1 = 0.299$$

Weekly Services (A2)

$$A2 = \frac{(b + f + g + h)}{S}$$

Where: b = grocery store
f = retail area
g = park/playground
h = employment office

S = number of services measured

Monthly Services (A3)

$$A3 = \frac{(i + j + k)}{S}$$

Where: i = family support services
j = medical/Doctor's office
k = hospital

S = number of services measured

FINDINGS

SMALL AND SCATTERED

The average project size (47) between 1986 and 1993 is slightly larger than those built between 1979 and 1985 (44) but considerably smaller than those built in the periods 1966-1972 (83) and 1973-1978 (68).

Total production of new units fell sharply from the 1979-1985 era (approximately 12 000 units) to the 1986-1993 era (approximately 7 000 units).

In three of the four cities examined, projects built in the period 1986-1993 were less dispersed than in the directly previous era.

In three of the four cities projects were least dispersed during the 1966-1972 era.

In only one city (St. John's) projects were more dispersed in 1986-1993 than in any previous era.

One possible explanation for reduced rates of dispersion is that after a certain level of density adding a new point within a constant geographic area reduces the average distance between all points regardless of how well dispersed that point is within that area. This could be called **static area pervasion.** In other words, the density of the area can increase without those projects becoming less dispersed. Increased dispersion rates can happen most easily when the area is redefined as larger - some CMAs have expanded their boundaries - and new projects are built in the newly acquired territory. Dispersion rates are likely to decrease with every project built within a CMA whose areas has remained static. This research has not considered which CMAs have increased in size.

Three of the four subject cities, and Coquitlam to the extent of data availability, produced lower units-per-project averages for the period 1986 - 1993 than for any of the previous eras. In the fourth city, Saskatoon, the average project size for the post'85 era was smaller than the previous two periods. However, national figures show that in the average project size for the period 1986-1993 was slightly larger than in the period 1979 - 1985.

National Totals

Figure 1 shows the distinct trend of consistently decreasing average project size over the four program eras. The reduced size could be the result of many forces such as lessons learnt from problems with large projects and changes in the delivery systems.

Figure 1
Average Project Size Nationally

units per project

	1966 - 1972	1973 - 1978	1979 - 1985	1986 - 1993
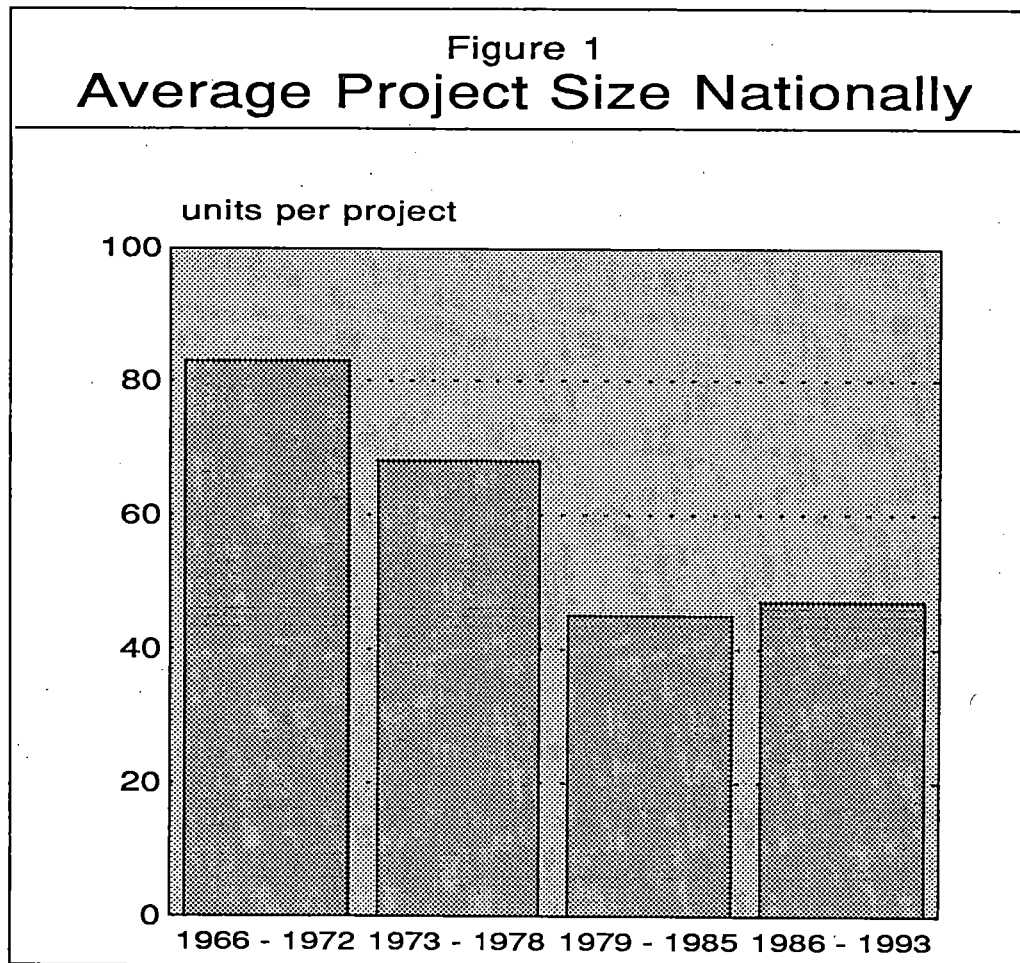
The national figures show a definite trend towards smaller average sizes of projects over the periods included in this data. Surprisingly, after 1985, and after the "small and scattered" policy directive, the trend of decreasing average size reversed and average size increased slightly. Perhaps most important, is the comparison between the average project size in the 1986-1993 and 1966-1972 eras; the two eras in which delivery was fully targeted to low-income clients. Figure 1 shows that the average project size was considerably smaller in the 1986-1993 era than the 1966-1972 era, which spawned the stigma and fears of ghettoization.

Subject Cities

Halifax

The dispersion rates of projects in Halifax are shown in figure 2, graphing average distances between projects by era. As with most cities tested, Halifax projects are less dispersed in the 1986-1993 era than in the previous two eras and the reduction in average distances between projects is consistent over the three latest eras.

The average project size in Halifax (see figure 3) is smaller in the 1986-1993 period (32) than in the previous eras although the reduction from the 1979-1985 period (34) is minimal. In no other city is there such a dramatic difference between the two earlier eras, 1966-1972 (118) and 1973-1978 (113), and the two later eras. The statistics from Halifax suggest a clear change in policy or delivery practice at some point near the 1978/1979 division.

Figure 2
HALIFAX   Average Project Size

units per project

Figure 3
HALIFAX   Dispersion Rate
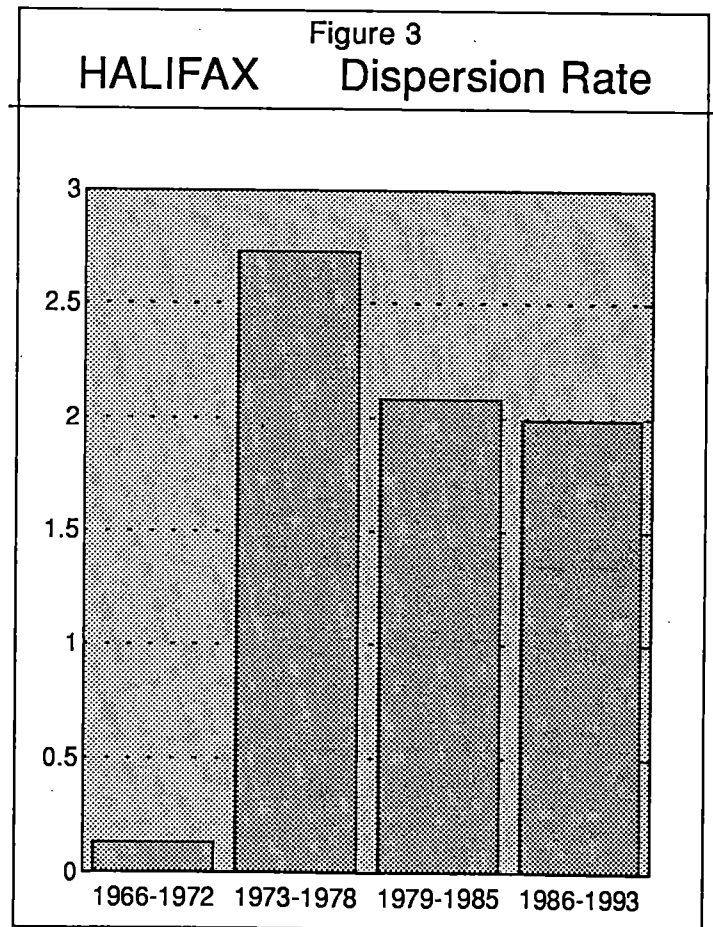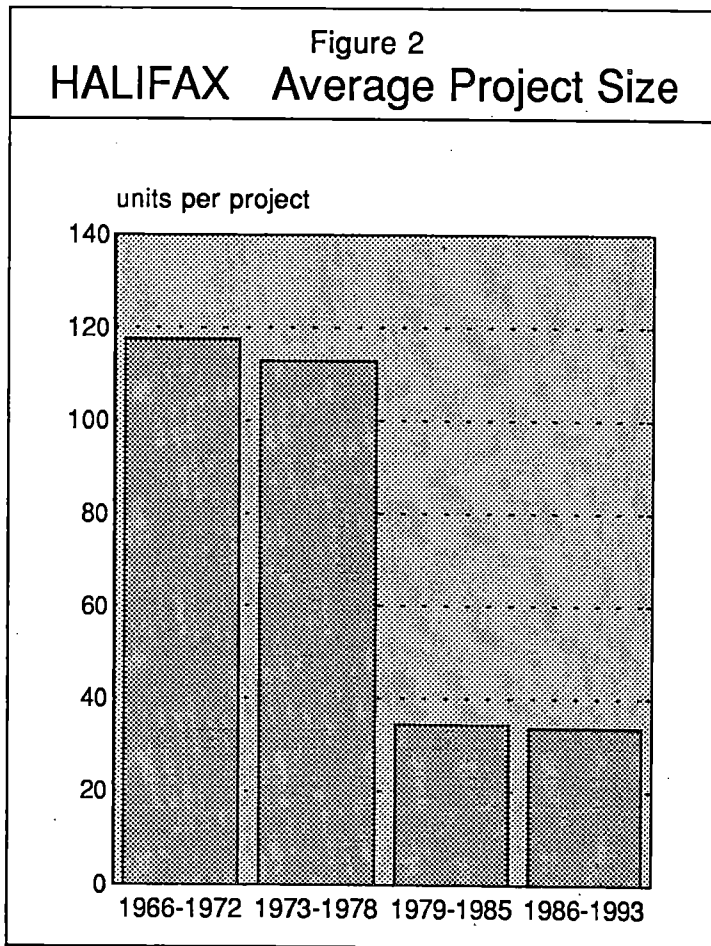
Saskatoon

The dispersion rates in Saskatoon perfectly illustrate the trend suggested by this research (see figure 4). The rate steadily increased over the first three eras and then dropped significantly in the era 1986-1993 which should have reflected the "small and scattered" directive.

The decreasing average project sizes in Saskatoon, shown in figure 5, is consistent with national and sample city trends. The average size dropped steadily during the latest three eras and the figure goes from a high of almost 100 units per project to less than forty. Perhaps the most notable data in this figure, however, is the unusually small average size for the period of 1966-1972.

Figure 4
SASKATOON   Average Project Size

units per project

| | 1966-1972 | 1973-1978 | 1979-1985 | 1986-1993 |

Figure 5
SASKATOON   Dispersion Rate

| | 1966-1972 | 1973-1978 | 1979-1985 | 1986-1993 |
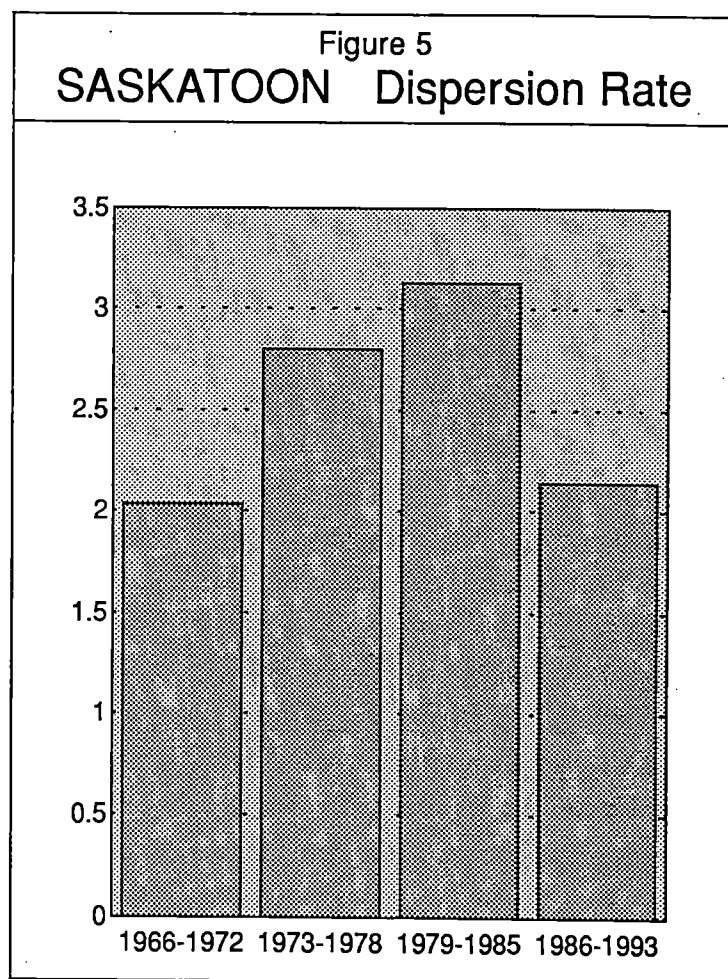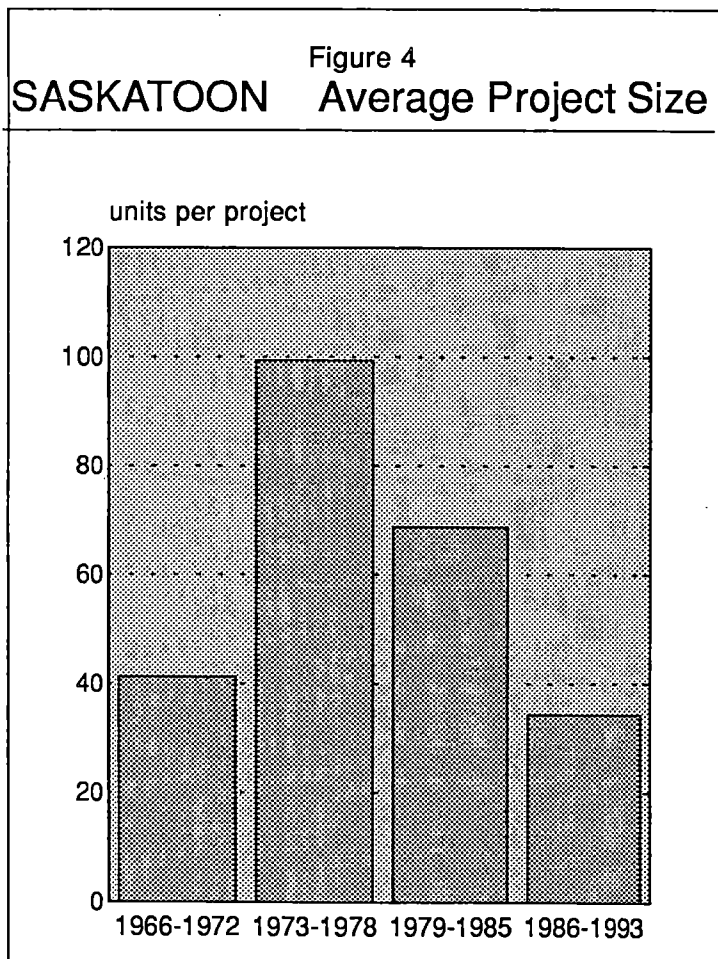
St. John's

St. John's is the only city to have statistics that are fully congruent to the policy directive of "small and scattered." The dispersion rate increased and the average project size decreased in the 1986-1993 era. St. John's is, in fact, the only city that registered a greater dispersion rate in the post'85 era than in any previous period (see figure 6).

Although the average project size in this city decreased over the latest three eras, the most noteworthy aspect of the statistics in this figure is that in all eras the average size is atypically small (see figure 7). The greatest average project size is just over 18, for the period 1973-1978, and the lowest is 12 for the post'85 period. This suggests that building small projects has always been the practice in this city but, nevertheless, the average size continues to decrease.

Figure 6
ST JOHN'S   Average Project Size

units per project

| | 1966 - 1972 | 1973 - 1978 | 1979 - 1985 | 1986 - 1993 |
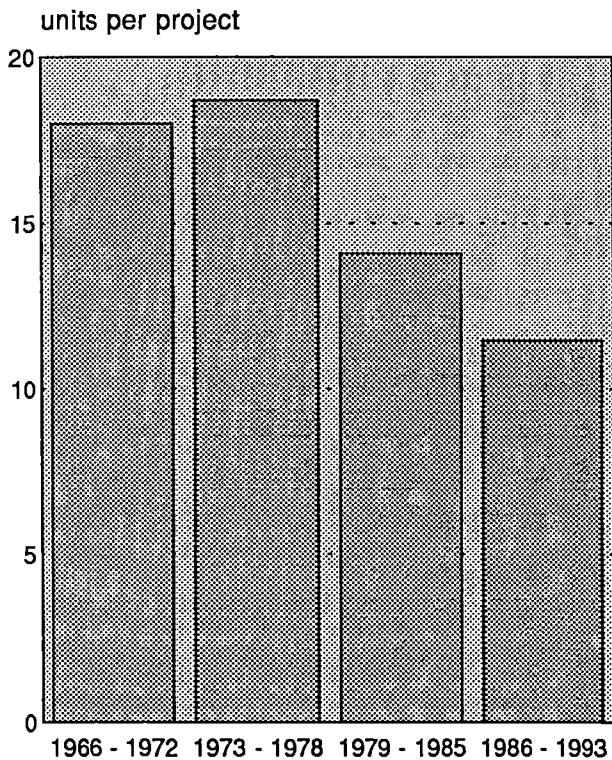
Figure 7
ST JOHN'S   Dispersion Rate

| | 1966 - 1972 | 1973 - 1978 | 1979 - 1985 | 1986 - 1993 |
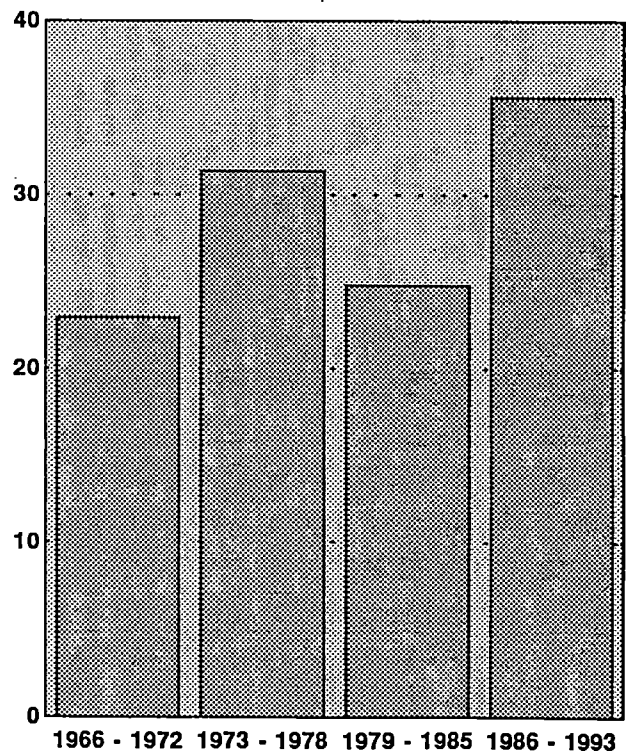
Windsor

The data from Windsor shows the same general trend as in the other sample cities: a gradual reduction in dispersion rates (see figure 8). The reduction almost appears deliberate by its consistency, although this could be an example of the static area pervasion theory as described at the beginning of this chapter.

The average project size figures in Windsor, as seen in figure 9, are the most erratic of those from all the sample cities. There is no clear identifiable trend but, consistent with other cities, the smallest average size occurs in the post'85 era (53). Most surprising is the large average project size for the 1979-1985 period (169), which is probably explained by the fact that several large seniors' projects were constructed during this era.

Figure 8

WINDSOR   Average Project Size
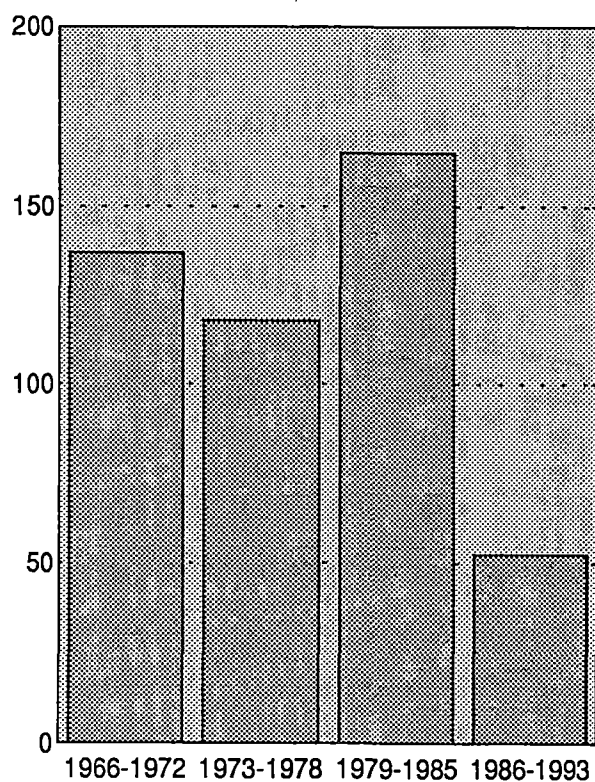
Figure 9

WINDSOR   Dispersion Rate
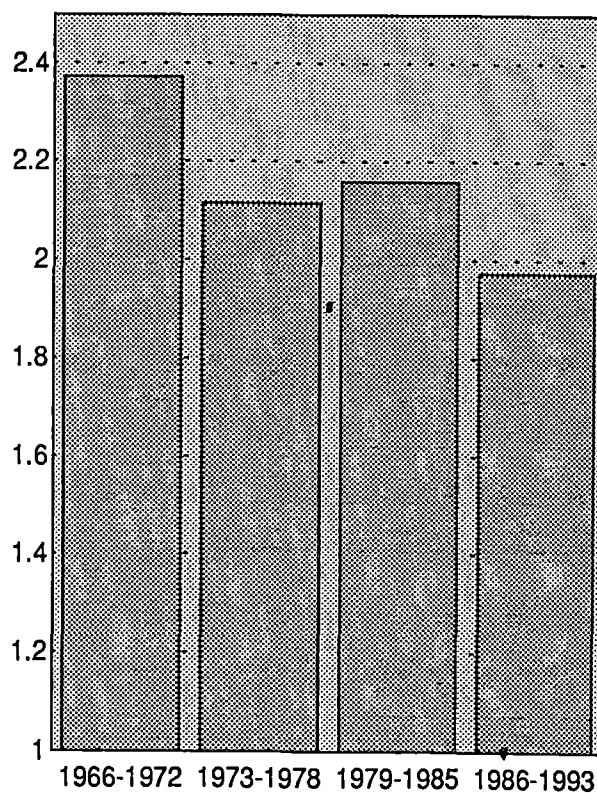
Coquitlam

The data for Coquitlam does not lend itself to the same graphs as the other sample cities but the same trends that are suggested in the other cities are apparent. From figure 10, we can see that post'85 projects are smaller than pre'86 projects in every program and significantly smaller as a compiled average (88 compared to 60). Interesting to note are the facts that seniors' projects remain large (pre'86, 119 to post'85, 117) and, non-profit projects, although smaller in the post'85 era (43), were always small (46).

Figure 10
COQUITLAM Average Project Size

Legend: Pre 86, Post 85

Categories: Seniors, Non-Profit, Co-Op, Total
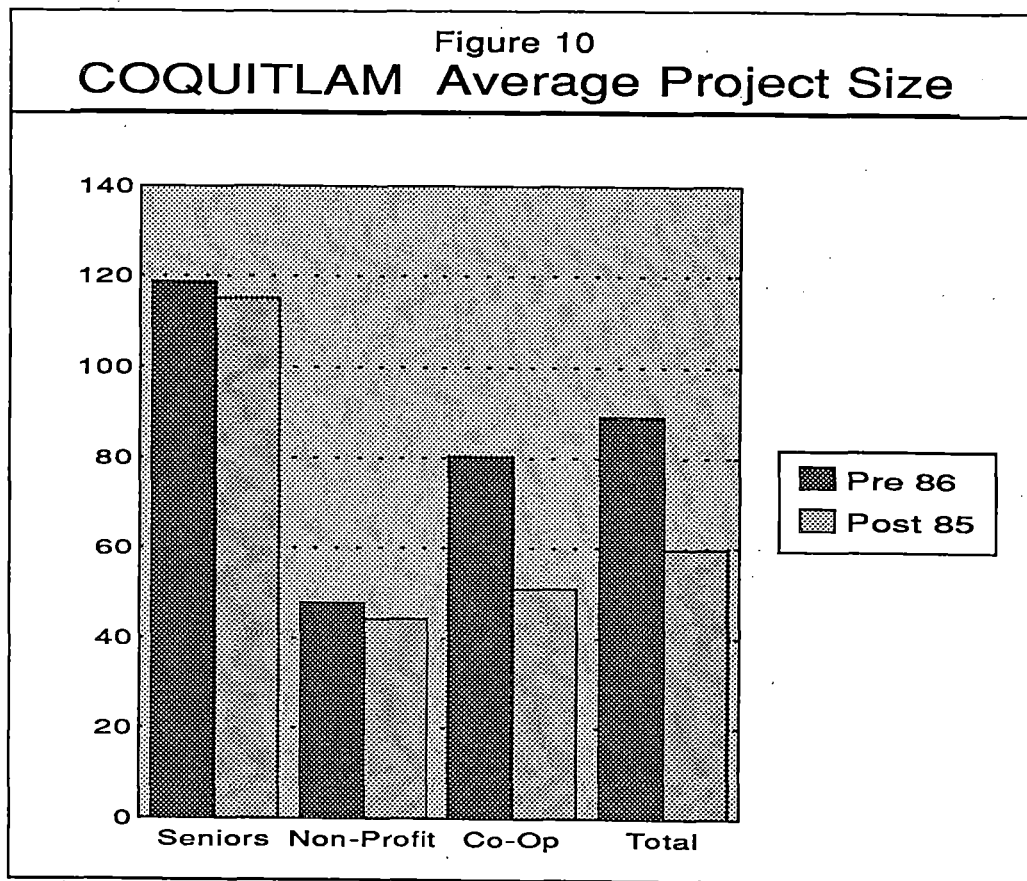
Nature of Dispersion

From figures 11 through 15, we can see that, although the largest percentage of projects were dispersed, many project were located in a concentrated fashion. Three of the five sample cities did not create new concentrations but every city placed post'85 projects contiguous to large projects from previous eras.

New concentrations are less likely to appear because the average project sizes are decreasing. Often, small projects built contiguous will not qualify as a new concentration, according to the criteria outlined for this research but, nevertheless, could be oversaturating the neighbourhood. In order to identify the true nature of saturation, research would need to measure social housing as a percentage of the total market (see Possible Further Research - Densities).

The incidence of projects being placed into existing concentrations does not automatically signal a failure of the policy directive but does question the will (political considerations) or the ability (economic considerations) to disperse projects.

Figure 11
COQUITAM Nature of Dispersion

number of projects

Existing Concentration   New Concentration   Dispersed

Figure 12
HALIFAX Nature of Dispersion

number of projects

Existing Concentration   New Concentration   Dispersed
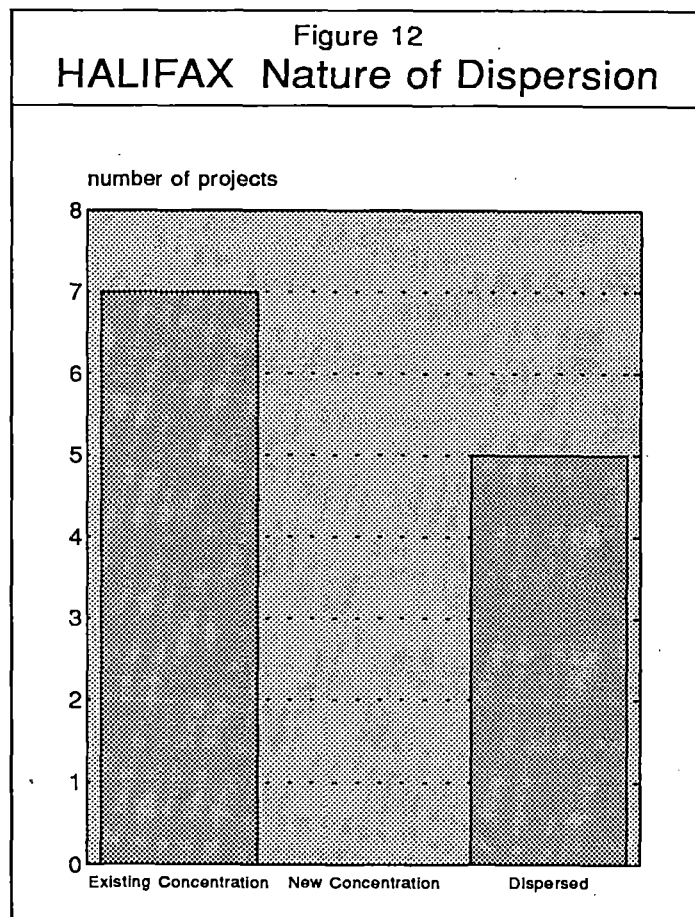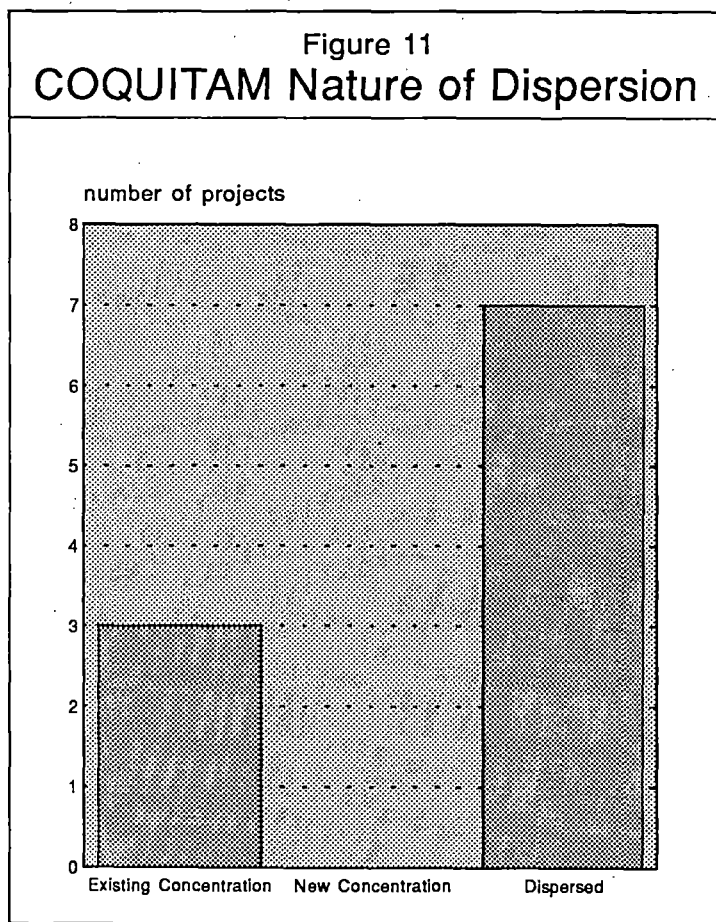
Figure 13
SASKATOON Nature of Dispersion

Number of Projects

Existing Concentration	New Concentration	Dispersed
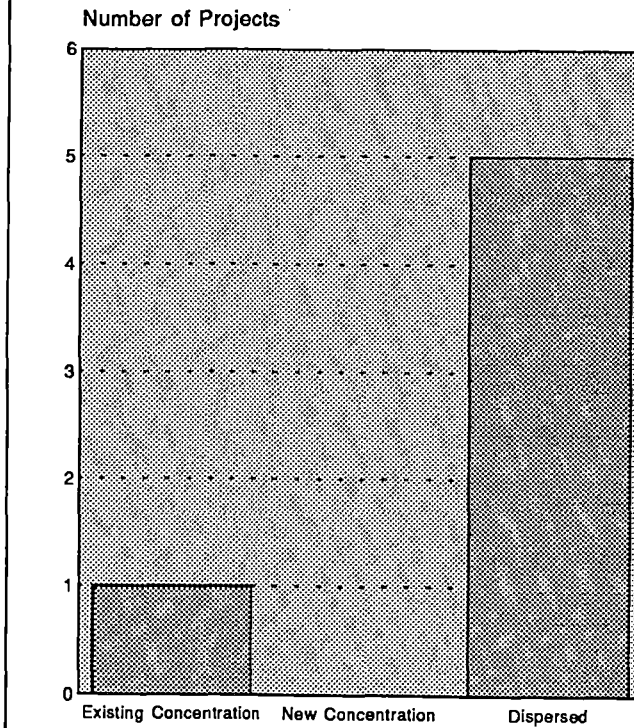
Figuer 14
ST JOHN'S Nature of Dispersion

number of projects

Existing Concentration   New Concentration   Dispersed
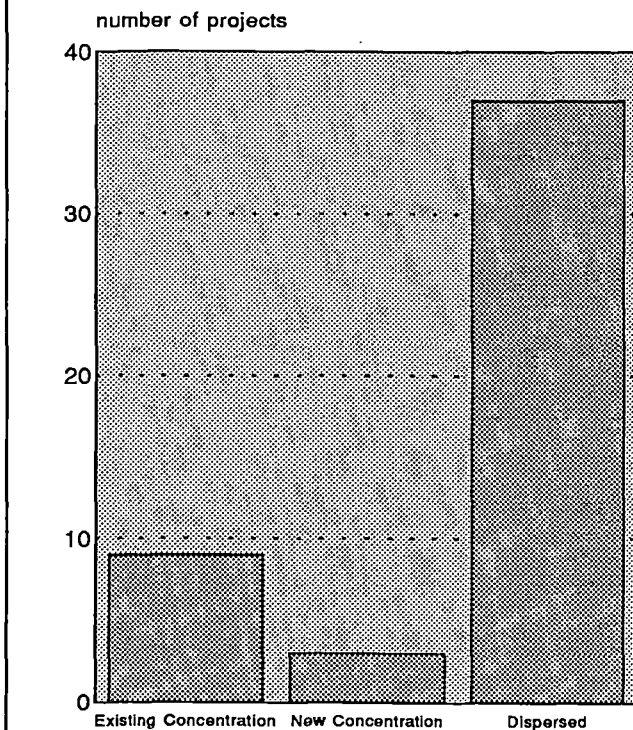
Figure 15
WINDSOR Nature of Dispersion

number of projects

Existing Concentration   New Concentration   Dispersed

24
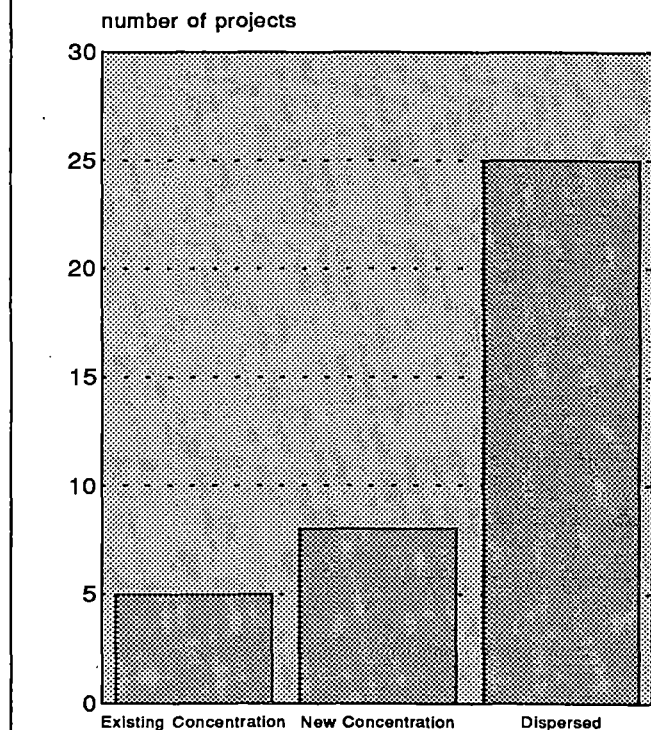
SOCIO-ECONOMIC PROFILES

Census tract data was used to provide "snapshots" of the socio-economic conditions of neighbourhoods into which social housing projects are put. This is recognized as having some limitations. Each tract is compared to aggregate data for its CMA so that these conditions are measured in a regional context.

This study is primarily concerned with the socio-economic conditions of the neighbourhoods at the time they were selected for project locations. Therefore, 1986 data is as likely to be accurate as is 1991 data for projects built in the post'85 era.

Also, averages for both tracts and CMA's cannot fully reveal the problems in the issue of parity. The maldistribution of advantages and wealth is not completely exposed even when using data at the census tract level. However, this is the highest resolution that can be used for a research project of this style and scope.

Selected Highlights

A set of fifteen characteristics was collected for each test-case tract. The complete tables of these statistics can be found in Appendix A. Three indicators were selected to give a brief and limited summary of the conditions of the test-case tracts: incidence of low income (as defined by StatsCan), male unemployment rate, and female unemployment rate.

Note that, because all three tables are measuring negative characteristics, rates above the CMA average are worse and below the average are more favourable.

This data shows that twice as many social housing projects (14:7) were in tracts with less incidence of low income than their CMA.

For rates of unemployment, the tracts containing the social housing test cases were not consistently above or below the averages for their CMA. For male unemployment, 11 tracts had higher than average rates and 10 had lower. For female unemployment, 8 tracts were higher and 12 were lower.

For complete tables showing distances to services in each city, see Appendix A.

Incidence of Low Income

Of the social housing projects included in this study, twice as many were located in census tracts with "incidence of low income" lower than the average for the CMA.

Table 1*	Incidence of Low Income	
	Test-case Tracts with higher incidence than CMA average	Test-case Tracts with lower incidence than CMA average
Coquitlam	1	3
Edmonton	2	3
St. John's	1	3
Vancouver	1	2
Windsor	2	3
Total	7	14

The only noticeable statistic that runs counter to the general trend in these figures was one of the Edmonton test-cases (044) in which the incidence of low income (32.2%) is more than twice as high as the CMA average (14.2%). This is likely to represent a condition of concentrating persons with low income into a geographic area.

Male Unemployment

The data on male unemployment levels indicate that there is no discernible difference between test-case tracts and CMA averages.

Table 2 *	Male Unemployment Levels	
	Test-case Tracts with levels above CMA average	Test-case Tracts with levels below CMA average
Coquitlam	2	3
Edmonton	2	2
St. John's	2	2
Vancouver	2	1
Windsor	3	2
Total	11	10

Female Unemployment

The data on female unemployment levels show that projects are 50% more likely to be put into tracts with lower than average rates as into tracts with higher rates.

Table 3 *	Female Unemployment Rates	
	Test-case Tracts with levels above CMA average	Test-case Tracts with levels below CMA average
Coquitlam	1	2
Edmonton	3	2
St. John's	3	1
Vancouver	1	2
Windsor	0	5
Total	8	12

From the three variables considered here, and consistant with other variables compiled in Appendix A, we can see that there is no clear and consistant evidence to suggest that social housing projects are put into neighbourhoods with lower than average socio-economic conditions. The data examined, in most cases, showed that test-case neighbourhoods were slightly more likely to have more positive conditions than the CMA's averages. With test-case tracts both above and below the CMA averages, projects could be seen as being located among residential areas with varying socio-economic conditions.

By definition of eligibility requirements, social housing tenants in post'85 test cases are in core need and, therefore, are most likely to be below the CMA average in economic terms. As seen in the tables above, test-case tracts are twice as often put into tracts with less incidence of low-income than the CMA average. This suggests that social housing residents are, more often, living in neighbourhoods with socio-economic levels above their own.

* Total number of test cases is not constant because cases that were found to be equal to the CMA average were not included.

PROXIMITY TO SERVICES

Analysis of Data

In this preliminary data, the services selected were, on average, within reasonable proximity to the test-case social housing projects. (see table on following page) The average distance travelled to services that are considered to be required daily (A1) was 0.650 kilometres, and only two test-cases had averages over one kilometre.

The average distance travelled for weekly services (A2) was 1.681 km. The A2 average for each test case was far more varied than for A1. Seven test cases had averages under one kilometre, seven were between one and three kilometres, one was just over three kilometres, and one was slightly over five kilometres.

The average distance travelled to monthly services (A3) also varied. The overall average was 2.726 kilometres with eleven test cases below that average and four above. The extremes of the range were; four test cases with averages below one kilometre, and two cases over seven kilometres.

There was no consistency to which services were farthest away nor was there any significant or consistent difference between cities. This suggests that social housing projects do not, typically, suffer any discernible locational disadvantages; they face a distance-to-service relationship that is likely to be similar to that which is faced by market rental housing.

The data collected from Vancouver has a characteristic which is not consistent with that of the other cities. In Vancouver, a one-kilometre radius was studied to see which of the services were present. In this case, the average distance is highly likely to be understated. Any service which was not present within that area was simply deleted from the equation. If services outside this radius were included the distance would be greater than one kilometre and, therefore, would raise the average. Despite this difference, the data was complete enough that it warranted inclusion.

Table 4 Distances to Services

ALL CITIES	A1	A2	A3
Averages (all distances in km)	.650	1.681	2.726
Coquitlam			
1142 Dufferine	.700	.970	2.280
736 Clarke	.345	2.602	2.613
99 Laval	.825	2.648	2.170
1160 Johnson	.538	.785	2.060
St. John`s			
Rockcrest Court	.210	.864	.636
Hamilton Ave	.537	.537	.789
Bastow Court	.531	1.094	3.165
Martin Street	.817	5.190	7.280
Windsor			
10200 Menard	1.889	3.070	8.210
3015 Temple	1.078	2.013	3.332
980 St Luke	.829	2.547	1.497
2800 Pillette (Gr Marais)	.591	1.943	2.357
College Green	.397	1.273	1.238
Vancouver *			
8828 Hudson	.709	.774	.889
2998 E. 54th Ave	.215	.393	N/A
2782 Grandview	.182	.200	.100

* see note at Appendix A - Vancouver

BROADER ISSUES FOR DISCUSSSION

The research questions in this paper are interrelated to several other urban planning and sociological issues. In order to draw some conclusions from the data collected on these questions, a broader context needs to be considered. The data might suggest some trends but what do these trends indicate? And are these good or bad? The following paragraphs are intended to provide a context for discussion.

Is Neighbourhood Important?

Concerns over the appropriate location of projects presume that a sense of integration into the neighbourhood is important. This assumption says that the established residents need to accept the new social housing tenants and that the new tenants need to integrate into this neighbourhood.

Clearly, the levels to which neighbourhoods are integrated varies widely. Ethnic composition, local versus commuter activity, and the life stages of residents, are among the many factors that will affect the level of integration. As well, behaviour and issues can bring neighbours together or create divisions. Neighbourhood interaction can be cyclical and issue- bound. A recent study found evidence to suggest that neighbourhood has a continuing importance for residents of all tenure, and that awareness of neighbours and activities is as high as ever (Taggart 1993). Such reports suggest that the social networks that we form are closely linked to the area in which we live.

Neighbourhood social networks can include both social housing tenants and private renters. A recent study by Ekos (1993) revealed that as many as 56% a neighbourhood's residents were unaware that their neighbours included social housing tenants. This report also found that people living near social housing projects were more likely to respond favourably (as high as 87%) to the question "is social housing in your neighbourhood a good idea?" This might suggest that neighbours can establish social relationships without knowing the social status of the individuals or that this status is unimportant.

Soft Infrastructure

It is reasonable to assume that automation and computerization have increased the efficiency of virtually every aspect of living and working. From government agencies that can process applications and requests quicker with database terminals and on-line systems, to automated bank teller machines, and even banking by phone, transactions of all sorts can be done quicker with fewer people than ever before. This can be translated as the increased ability for infrastructure to accommodate and serve greater population densities; or the same densities more adequately.

Although social housing residents might be affected less dramatically by electronic innovations than more affluent people, they are affected by the overall changes in the efficiency of urban-space usage.

As urban space has become more valuable, mixed-use and alternative design concepts have created more efficient urban space models. In 1990, the Canadian Urban Institute identified five main categories for effective urban intensification: conversion, infill, redevelopment, adaptive re-use, and suburban densification. Applied to the delivery of social housing projects, these practices would be consistent with the efforts to build small and dispersed projects.

Environmentalism

The inherent danger in scattering projects is that this could conflict with environmental concerns. Although scattering does not necessarily mean outward sprawl, and its potentially inefficient use of land and infrastructure, it could apply considerable pressure in that direction.

Especially in the light of today's environmental concerns, land-use recycling makes more sense than ever. Infill housing, conversion, and adaptive re-use are more efficient uses of land and existing core infrastructure, (water and sewer systems, etc) than outward expansion.

Service Matching

Anecdotal accounts of sociological problems associated with the arrival of a social housing project suggest that, although increased social problems can be associated with an increase in density, these problems are not necessarily an inevitable consequence. If a project were to be matched to a corresponding increase in services such as police, social and family support services, school counsellors, etc. the impact of the new residents would be minimized.

CONCLUSIONS

Policy Development

From discussions with several people who were involved or interested in the formation of the federal government's housing policy in 1985, for implementation in 1986, and from wading through the documentation, several striking points were revealed. Without question, the policymakers of the day believed in the social benefits, namely integration into the neighbourhood, associated with projects that were small and scattered. The simultaneous advantage anticipated from such a practice was in the reduced resistance from the public. Somehow, the distinction between these two aspects became slightly blurred and it became unclear which one was the major motivator.

In the cabinet document from which the housing policies were formed, the "small and scattered" principle is only mentioned three times; twice as, "small scale, scattered projects to be encouraged where community may resist large scale projects" and once as, "project size as appropriate for client group and community acceptance." These phrases are conspicuous in their implicit preference to assuage community resistance rather than to highlight the social benefits.

Despite the policy directive from the cabinet document, there were no definitions of "small" and "scattered" in program definitions, guidelines, procedures or project selection criteria. However, the issue of cost-effectiveness is raised frequently and is suggested as the determining factor for project selection. If one is to accept that, within reasonable parameters, large-scale projects are more cost effective than are those of small to medium sizes, one would be puzzled by the evidence that small projects were built nonetheless.

There is one possible explanation in which the cost-effectiveness criteria ensured that new projects were small: one line in the Guidelines and Procedures Manual reads, "It is unlikely that on-site facilities will be required for small, well distributed projects of low density that can easily be integrated into the neighbourhood" (Section 40, Policies: 13.1.4). This section also describes the in-house social and recreation facilities that were required with large projects. Cost-effectiveness might, by this requirement, be skewed towards the smaller projects that need no common-use space provisions.

The practice of delivering housing projects through private non-profit groups, since 1973, intended to ensure that projects would be smaller in scale, needs driven, and community based. The significant changes in the 1986 policy were in targeting core need households, and transfer of delivery to the provinces and territories. There was no reason to believe that these changes in themselves would effect the trend towards smaller projects. Also, there was no reason to suspect that the new policy directive would have any significant effect on those forces which influenced site selections and identified earlier as barriers to policy fulfillment. If the new policy and its guidelines were to enable

Therefore, funding structure seemed to be the only policy tool, however subtle, used to influence the size and location of social housing projects. The third sector was more able and interested in delivering small and medium-sized projects and in building them in culturally appropriate neighbourhoods. This is probably the greatest source of difference between the fully-targeted projects of the late 1980's and the public housing of the 1960's and 1970's. Therefore, intentions of "small and scattered" were fulfilled by creating the funding and delivery environments that fostered this rather than through specific regulations for size and location.

If there were any concerns that fully targeting to core need was going to create new ghettos, this was not translated into firm delivery guidelines at the federal policy level. The provincial governments, who were responsible for the delivery of social housing, each created their own three-year plan which could include guidelines for project sizes and selection criteria.

Income Mixing

The debate over the benefits of income mixing has not ended. Plausible theories and anecdotal accounts have been presented for each case but no definitive belief has been universally adopted. Such a final decision in that debate would have considerable bearing on attitudes and guidelines governing the size and site selection of social housing projects. Social benefits of income mixing requires further research.

If the major concern driving social housing policy is one of community integration, anecdotal evidence suggests that physical design of the building, tenant participation in its operation, and provision of appropriate social and support services have more direct and positive impact.

Small and Scattered

The data shows that post'85 projects, although smaller, might not have been as scattered as was intended. This does not immediately imply the failure of the policy's intention but rather it raises two questions: were they scattered as much as they could be and, were they scattered adequately? The answer to the first question would have to be based on proof that better locations were available, suitable and priced within budgetary parameters. The answer to the second question would require a definitive conclusion to the income mixing debate and a study of the integration of social housing residents as compared to the level of dispersion.

Proximity to Services

The proximity to services data will probably be surprising to some people. By setting the absolute measures for A1, A2 and A3 at distances that attempted to describe an ideal rather than an average scenario, there was a risk of finding many projects, if not all, fell outside these guidelines. Surprisingly, and fortunately, this was not the case. Other

than for a couple test cases and a few services, projects were found to be well served according to those variables that were measured. The limitation to this conclusion is that there was no attempt to match what services should be available to meet the specific needs of the specific tenants.

The service variables included were intending to cover those amenities that are basic to a standard quality of life model and they are not intended to reflect the special needs of social housing tenants in general, and especially not specific to client type. Therefore, although we can take some comfort in knowing that basic services are available, we can not conclude that specific and specialized need were addressed.

The data was not collected in the manner required to make analysis of how well services were matched to the project's client type. The data in this report reflects basic service requirements and greater relevance would derive from a study that surveyed the needs of the project tenants and tested the availability of the amenities that would serve those specific needs.

RECOMMENDED FURTHER RESEARCH

Comprehensive Research

The ideal approach to many of the questions raised in this paper might involve the universe of projects developed over several policy and program contexts. This could be accomplished by having StatsCan provide a tape of all assisted housing matching address characteristics to census tract and CMA characteristics, on the basis of an address-to-geocode conversion. This could be analysed using a variety of multivariable techniques, such as cluster analysis, to provide definitive evidence of concentrations in areas identified by certain socio-economic conditions.

Services Matching Needs

These preliminary findings suggest further validation of the proximity to relevant services should be investigated. A survey of tenants' needs and testing of the availability of appropriate services would yield a more accurate assessment of how well those tenants are served.

Matching services to the needs of the neighbourhood populations, in nature and quantity required, could be part of the assurance of quality of life and the solution to many social problems. If new residents have an identifiable need, a delivery mechanism to service those needs is necessary. This mechanism should predict needs, provide services to those needs, and retain the dynamic ability to react to changing needs.

Additional services that could be examined in relation to social pathologies include local police and school counsellors. A research effort could review how, if at all, these institutions react to new populations and compare those reactions to the changes in rates of social pathologies.

Sociology of Design

Physical design is consistently quoted as the predominant factor of tenant satisfaction in a housing project and its acceptance by the other residents of the neighbourhood. Respondents in the Ekos study put three design-related issues (privacy from adjacent lots, compatibility in appearance, and adequate parking) ahead of issues of limiting the number of projects in the neighbourhood, and the number of units per project.

Other research suggest that design is an enabler rather than a determinant of human action (Gurstein and Vandeburgh 1993). Good design can have positive benefits and deteriorating conditions can induce apathy. On the other hand, physical conditions are sometimes seen as indicators of the behavior or attitudes of the tenants. However, a causal relationship between poor conditions and social pathologies is limited or, at least, unconfirmed. Despite some differences of opinion, most research supports the notion that good design does not predetermine a positive social atmosphere and poor conditions cannot be directly and solely attributed to apathy.

The Neilson Task Force Report in 1985 stated that social problems and community resistance associated with social housing projects, "can be avoided with appropriate design, acceptable project size, and improved project management." The highlighting of design appropriateness further supports calls for more research and attention to this feature.

This issue can be studied from a number of angles such as: levels of acceptance of social housing tenants among neighbourhood residents in relation to visible exterior conditions of that project; or, feelings of efficacy and integration among tenants in relation to physical design and conditions of their project. The relationships can be studied from the perspective of the social housing tenants or that of the neighbourhood residents. Physical conditions can be viewed as a function of design as well as maintenance initiatives.

Densities

The correlation between density and the success or failure of neighbourhood integration could be examined. Density could be defined as a percentage of social housing units to the total number of dwelling units or the population of social housing as percentage of total population. These relative figures are likely to be far more relevant to the study of integration than looking at absolute figures of units, or persons, per hectare. From this we might be able to better understand and predict the process of integration.

NIMBY

A research project could tract community resistance to social housing projects and compare this to various characteristics of the projects such as sponsor group, community consultation process, physical design, client group, and service provision. Such a study could attempt to isolate the variables that caused, avoided, or satisfied public concerns over the introduction of social housing projects. The most useful study would collect data from mid-1960s forward in order to capture the implications from various policies and delivery styles.

APPENDIX A

SOCIO-ECONOMIC PROFILES
BY CENSUS TRACT DATA

APPENDIX A

NEIGHBOURHOOD PROFILE BY CENSUS DATA

	COQUITLAM (Vancouver CMA)					
Characteristics	CMA Consoli	99 Laval	736 Clarke	1160 Johnson	1142 Dufferi	
	all	282.0	284.02	287.01	287.02	
1	population 1986	1362445	4 945	5 270	11 070	2 475	
2	% change 81 - 86	8.9	-0.9	1.7	110.7	25.6	
3	total census families	361 425	1 370	1 430	3 230	740	
4	lone-parent families	47 150	220	145	340	40	
	language						
5	English	1140840	4 245	4 885	9 710	2 265	
6	French	4 745	145	0	40	0	
7	other	139 990	150	185	710	145	
8	average family income	41 351	33 969	39 807	42 715	47 708	
9	median family income	36 644	33 149	38 315	42 202	44 439	
10	incidence of low incom	14.8%	20.4	13.8	11.1	5.4	
11	pop in low incom units	235 745	1 110	850	1 435	150	
	education						
12	males with post-sec	217 200	675	810	1 765	415	
13	females with post-sec.	189 480	485	675	1 545	290	
14	male unemployment rate	11.7%	16.5	13.2	6.9	9.2	
15	female unemploy rate	11.2%	12.9	10.9	11.2	7.4	

All data from Statistics Canada 1986 Census

APPENDIX A

NEIGHBOURHOOD PROFILE BY CENSUS DATA

	Characteristics	CMA Consoli	130 Crystal	10984 82 Ave	31 Ave 55 St	53 McKenne	11422 93 St
	EDMONTON						
		all	106	044	002.02	121.02	061
1	population 1986	777 905	4 180	6 270	3 805	5 445	3 585
2	% change 81 - 86	6.0	-2.0	2.8	-6.5	-4.6	-4.5
3	total census families	205 405	1 140	1 340	1 035	1 500	915
4	lone-parent families	27 135	65	285	185	135	150
	language						
5	English	683 200	3 935	5 345	3 305	5 125	2 625
6	French	5 945	-	10	-	45	20
7	other	49 980	150	490	300	115	525
8	average family income	41 681	45 571	26 029	44 838	49 506	28 554
9	median family income	37 657	41 499	22 288	41 249	48 457	25 832
10	incidence of low incom	14.2%	7.5	32.2	12.5	6.6	24.4
11	pop in low incom units	133 235	360	2 330	655	455	1 090
	education						
12	males with post-sec	121 735	665	825	760	965	375
13	females with post-sec.	101 755	465	645	675	820	280
14	male unemployment rate	11.0%	5.5	19.2	11.0	8.0	20.5
15	female unemploy rate	9.6%	8.1	10.5	8.1	10.0	13.2

All data from Statistics Canada 1986 Census

APPENDIX A

NEIGHBOURHOOD PROFILE BY CENSUS DATA

		ST JOHN'S					
	Characteristics	CMA Consoli	Rockcre Crt	Hamilto Ave	Bastow Crt	Martin St	
		all	005.02	002	171.0	100.02	
1	population 1986	159 625	4 515	5 860	4 300	5 895	
2	% change 81 - 86	4.6	-9.3	-8.4	-1.1	9.8	
3	total census families	40 185	1 125	1 485	1 435	1 160	
4	lone-parent families	5 425	245	230	130	125	
	language						
5	English	157 970	4 495	5 800	4 255	5 885	
6	French	300	-	10	15	5	
7	other	600	-	5	10	-	
8	average family income	36 849	27 965	38 727	34 146	32 172	
9	median family income	32 917	25 134	33 999	34 706	31 153	
10	incidence of low incom	16.7%	24.3%	15.3%	11.2%	12.6%	
11	pop in low incom units	29 435	1 175	1 065	510	790	
	education						
12	males with post-sec	20 975	540	105	575	565	
13	females with post-sec.	22 595	635	915	550	545	
14	male unemployment rate	15.0	19.5	14.3	19.2	10.4	
15	female unemploy rate	15.7	18.3	11.4	24.9	16.7	

All data from Statistics Canada 1986 Census

APPENDIX A

NEIGHBOURHOOD PROFILE BY CENSUS DATA

	CITY OF VANCOUVER					
Characteristics	CMA Consoli	8828 Hudson	2998 E 54 av	2782 Grandvw		
	all	007.0	015.02	035.00		
1 population 1986	1362445	6 990	4 825	8 085		
2 % change 81 - 86	8.9	6.1	-0.9	5.9		
3 total census families	361 425	2 000	1 255	2 110		
4 lone-parent families	47 150	230	130	255		
language						
5 English	1140840	6 115	3 200	4 185		
6 French	4 745	10	0	20		
7 other	139 990	570	1 170	2 765		
8 average family income	41 351	73 712	39 108	34 547		
9 median family income	36 644	59 317	35 438	31 190		
10 incidence of low incom	14.8%	5.9	10.2	19.8		
11 pop in low incom units	235 745	620	865	1 870		
education						
12 males with post-sec	217 200	1 495	675	930		
13 females with post-sec.	189 480	1 640	470	690		
14 male unemployment rate	11.7%	5.7	16.0	18.0		
15 female unemploy rate	11.2%	8.0	7.9	11.3		

All data from Statistics Canada 1986 Census

APPENDIX A

NEIGHBOURHOOD PROFILE BY CENSUS DATA

		WINDSOR					
	Characteristics	CMA Consoli	3015 Temple	2800 Pillett	College Green	980 St Luke	10200 Menard
		all	015	016	028	038	043
1	population 1986	251 080	3 400	4 015	4 850	· 1 635	7 060
2	% change 81 - 86	1.2	2.7	-1.2	-3.1	0.2	0.8
3	total census families	67 590	930	1 155	1 310	435	1 955
4	lone-parent families	9 375	100	110	280	100	220
	language						
5	English	212 120	2 465	3 640	4 310	1 285	6 225
6	French	4 410	55	10	35	125	75
7	other	17 240	395	195	200	75	315
8	average family income	41 045	39 822	47 568	30 882	26 239	44 435
9	median family income	37 623	39 042	43 866	30 049	23 277	40 919
10	incidence of low incom	12.9%	9.6	5.6	24.0	25.9	6.0
11	pop in low incom units	38 385	370	320	1 245	505	700
	education						
12	males with post-sec	30 120	335	730	415	85	· 1 220
13	females with post-sec.	25 810	260	595	300	50	965
14	male unemployment rate	8.2	8.1	8.9	9.7	14.3	7.8
15	female unemploy rate	11.3	9.3	8.6	8.8	7.7	6.3

All data from Statistics Canada 1986 Census

APPENDIX B

DISTANCES TRAVELLED FROM
TEST-CASE ADDRESSES
TO SERVICES

APPENDIX B

PROXIMITY TO SERVICES

		COQUITLAM				
		1142 Duffer	736 Clarke	99 Laval	1160 Johnso	
a	convenience store	.38	.34	.43	.04	
b	grocery store	1.01	.79	1.5	1.09	
c	bus stop	.23	.01	.11	.01	
d	day-care	N/A	.71	2.25	1.12	
e	elementary school	1.52	.32	.51	.98	
f	retail area	.49	1.396	3.5	.59	
g	park/playground	1.55	.32	.51	1.1	
h	employment office	.83	7.9	5.08	.36	
i	family support	4.4	1.29	1.77	.98	
j	medical/Dr office	.38	.95	1.94	.04	
k	hospital	2.06	5.6	2.8	1.63	
	A1	.700	.345	.825	.538	
	A2	.970	2.602	2.648	.785	
	A3	2.280	2.613	2.170	2.060	

APPENDIX B

PROXIMITY TO SERVICES

ST JOHN`S [1]		Rockcr Crt	Hamilt Ave	Bastow Crt	Martin St	
a	convenience store	.086	.242	.086	.282	
b	grocery store	.834	.062	.793	1.502	
c	bus stop	N/A	N/A	N/A	N/A	
d	day-care	.241	.412	.383	.913	
e	elementary school	.303	.957	1.125	1.258	
f	retail area	.893	.991	1.394	8.878	
g	park/playground	N/A	N/A	N/A	N/A	
h	employment office	N/A	N/A	N/A	N/A	
i	family support	N/A	N/A	N/A	N/A	
j	medical/Dr office	.228	.369	.184	1.502	
k	hospital	1.043	1.209	6.145	13.06	
	A1	.210	.537	.531	.817	
	A2	.864	.537	1.094	5.190	
	A3	.636	.789	3.165	7.280	

1 - all distances measured as straight lines rather than along street paths.

APPENDIX B

ACCESSIBILITY TO SERVICES

		8828 Hudson	2998 E 54av	2782 Grndvw		
	CITY OF VANCOUVER *					
a	convenience store	.714	N/A	.200		
b	grocery store	.744	.420	.240		
c	bus stop	.472	.200	.245		
d	day-care	.820	N/A	N/A		
e	elementary school	.828	.230	N/A		
f	retail area	.732	.420	.240	/	
g	park/playground	.846	.340	.220		
h	employment office	N/A	N/A	.100		
i	family support	N/A	N/A	.100		
j	medical/Dr office	.889	N/A	N/A		
k	hospital	N/A	N/A	N/A		
	A1	.709	.215	.182		
	A2	.774	.393	.200		
	A3	.889	N/A	.100		

* **Note:** This data was presented as 1 kilometre-radius views.
Services that are not within this radius were not measured,
therefore, positive ratings are overstated. Figures for A1, A2
and A3 would undoubtedly be lower if the data were complete.

APPENDIX B

PROXIMITY TO SERVICES

		WINDSOR				
		10200 Menard	3015 Temple	980 St Luk	2800 Gr Mar	Colleg Green
a	convenience store	2.56	2.135	.267	1.065	.305
b	grocery store	2.56	2.135	3.414	1.280	.460
c	bus stop	.121	.020	.280	.020	.365
d	day-care	2.925	N/A	1.95	.670	.050
e	elementary school	1.95	N/A	1.12	.610	.760
f	retail area	2.56	2.135	1.706	2.040	1.340
g	park/playground	.610	1.77	.800	.550	.700
h	employment office	6.55	N/A	4.267	3.900	2.590
i	family support	9.50	2.925	.427	1.770	1.160
j	medical/Dr office	3.78	3.535	.914	1.340	.485
k	hospital	11.36	3.535	2.88	3.960	2.070
	A1	1.889	1.078	.829	.591	.397
	A2	3.070	2.013	2.547	1.943	1.273
	A3	8.210	3.332	1.497	2.357	1.238