INCUMBENT UPGRADING IMPLICATIONS FOR RESIDENTIAL REVITALIZATION

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ABSTRACT

The scope of this study involves conducting theoretical and empirical research into incumbent upgrading. Its purpose is to examine incumbent upgrading as a force in inner city residential revitalization. The study hypothesises that home renovation in the inner cities of lower order cities, like Winnipeg, whose socio-economic and physical environment has not been greatly affected by post-industrial change are more likely to exhibit characteristics of incumbent upgrading than the characteristics of gentrification. It proceeds to develop a framework for analysis based on indicators which measure both actual reinvestment and renovation in the housing stock and the socio economic characteristics of neighbourhoods, so that forces such as gentrification and incumbent upgrading can be identified as separate phenomena. Further, using methodological techniques such as correlation analysis, linear regression and spatial analysis, it tests the assumptions (based on an extensive literature review, the authors' knowledge of urban structure and feedback from practitioners) that incumbent upgrading is spatially associated with social status factors such as lower levels of education, income and employment status and factors such as neighbourhood stability, cohesiveness and public policy intervention. Incumbent upgrading areas are identified and described in terms of their physical and socio-economic characteristics.

It concludes that gentrification is not a force in inner city revitalization in Winnipeg; that incumbent upgrading is evident in several inner city neighbourhoods in Winnipeg, that public policy intervention is an important catalyst in encouraging incumbent upgrading; and that different forms of inner city revitalization can be observed if both socio-economic and housing investment indicators are used in examining inner city revitalization.

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EXECUTIVE SUMMARY*

The purpose of this study is to examine incumbent upgrading as a force in inner city residential revitalization. It develops a framework for analysis to examine what processes of change are at work in inner city areas like that of Winnipeg so that forces such as gentrification and incumbent upgrading can be identified as separate phenomena and the latter examined.

Incumbent upgrading is defined as a process involving owner occupiers whereby physical improvement by incumbent residents takes place at a substantial rate with no significant change in the socio economic status or characteristics of the population (Clay 1979; Millward and Davis, 1986). Gentrification refers to a process by which middle class people take up residence as owner occupiers in inner city areas, renovate deteriorated property causing property values to increase, and having the secondary effect of driving out poor families (Smith and Williams, 1988). Those involved in this settlement and displacement process will have high levels of social status in terms of education, income and occupation than traditional residents.

The study argues that the focus of research into processes of change in the inner city has been gentrification. However, as the work of Clay (1979) and Millward and Davis (1986) suggest some inner city neighbourhoods have been revitalized, not by gentrification, but by incumbent upgrading. What causes some neighbourhoods in some cities to resist the tide of the gentrification process? What produces investment in the houses of inner city neighbourhoods by incumbents? To what extent is the presence or absence of each phenomenon linked to strong structural forces of change, which are differentially affecting different cities in the post industrial economy? To what extent are social integration, neighbourhood cohesion and public policy interventions linked to incumbent upgrading? This study examines the theoretical and empirical linkages presented by these research questions. Its focus is the inner City of Winnipeg. The boundary for the inner city used for this study is adopted from the boundary defined for the Greater Winnipeg Development Plan Review (Clatworthy, Frenette and Mckee, 1979) which was later used for the Core Area Initiative (CAI). Census tracts, despite identified limitations, are used as the unit of analysis.

A literature review is initially undertaken. It emphasises that while gentrification must be understood as a process that is occurring in a framework much broader than residential rehabilitation, research related to theoretical explanations of inner city revitalization have outpaced empirical examination (Smith and Williams, 1988; Beauregard, 1988). Understanding the complexity of gentrification as a "spatial process rooted in current patterns of social and economic differentiation" (Smith and Williams, 1988), the work of Cohen (1981) and Beauregard (1988) suggests that lower order cities, in the international hierarchy of cities emerging as a consequence of globalization and structural change in post-industrial economies, are less likely to be affected by gentrification. However, as Beauregard (1988) observed, lower order cities (like Winnipeg) may be experiencing revitalization of a different kind.

*Acronyms for dependent and independent variables are defined in Appendix II. Other definitions and abbreviations are presented and explained in Appendix IV.

In Canada, we would therefore expect that cities such as Toronto and Vancouver are more likely to be impacted by globalization and experience "full blown gentrification" than lower order cities like Winnipeg, Saskatoon and St. John's. It is argued that this is precisely what Canadian researchers (Bunting and Phipps 1987; Ley, 1991) have found.

It is pointed out that Clay identified the phenomenon of incumbent upgrading in 1979 (Clay, 1979) and it was further examined in Halifax by Millward and Davis in two studies (Millward & Davis 1986; Millward, 1988). These researchers also found an association, as Clay had, between incumbent upgrading and public policy intervention, although this view was not universally shared (Varedy, 1986). Several authors (Clay, 1979; Galster and Hesser, 1982) also found neighbourhood stability and cohesiveness to be important factors in incumbent upgrading.

Although the theoretical literature on incumbent upgrading is not as varied and rich as the theoretical framework which underpins gentrification, the work of several authors (Clay 1979; Beauregard, 1981; Galster and Hesser, 1982; Millward and Davis, 1986; Bunting and Phipps, 1987; and Smith and Woodman, 1987) allows us to identify indicators which provide a link to the study hypothesis, outlined in Section 2, and the kind of profile we are likely to find in cities, inner cities and neighbourhoods that are likely to initiate incumbent upgrading.

A picture emerges from the literature, of cities that have not experienced the same degree of employment restructuring as larger metropolitan centres; cities which have not seen an influx of the new strata of worker associated with gentrification; and cities which may have inner cities that are experiencing population loss but have not experienced the upward pressure on house prices caused by the movement of high income households back to the inner city. Neighbourhoods likely to show signs of incumbent upgrading are more likely to be lower income and working class with residents likely to be working in the remaining manufacturing and tertiary sectors and be long time residents. Physically they are more likely to be more distant from the Central Business District (CBC) than gentrifying neighbourhoods, are associated with more contemporary housing (post world war II) which is in relatively good condition. Two factors appear to be important catalysts; the availability of public sector programs to support the revitalization process and neighbourhood stability and cohesion which support individual and private sector investment decisions.

It is argued that given that revitalization of other kinds may be occurring in lower order cities, the focus of empirical research on the inner city should move away from simply identifying whether gentrification has occurred, and that any new model or framework for analysis should measure housing renovation and investment as well as socio-economic and demographic change in neighbourhoods.

As a final backdrop to developing a portable framework for analysis to attempt to identify gentrification and incumbent upgrading as separate phenomena, the policy

context in Winnipeg is discussed. A preliminary analysis is also undertaken of Winnipeg's inner city to examine spatial relationships between key variables related to the identification of renovation activity, social status and stability.

Section 4 of this report attempts to systematically develop a portable framework for analysis, linked to theoretical indicators, that might be usable in other situations, in addition to Winnipeg, for identifying incumbent upgrading and gentrification. It was first necessary to establish a dependent variable that represents actual reinvestment and renovation in the housing stock. Despite some limitations as a data base, for this research, it was decided to use building permits (a complete computerized data base was available for 1983 to 1991 from the City of Winnipeg) as a measure of home reinvestment activity and the dependent variable. The dependent variable was further subdivided into three categories, total building permits; those permits involving program grants/loans such as RRAP/CAHRPS; and those permits without public subsidy. After initial statistical manipulation to examine close interrelationships between variables and avoid double counting, 13 socio-economic and demographic variables were identified in the model These are precisely defined in Appendix II. The framework, summary variables and linkages to theoretical indicators are summarized below in Matrix 1.

In developing the framework for analysis, the raw data was standardized by converting all values to percentages. This allowed comparative examination of census tracts. All values were then weighted. This procedure takes into account the proportion of each variable relative to the entire inner city for the independent variables; and the comparative number of single detached and semi-detached dwellings in each census tract for the dependent variables. (All weighted calculations are presented in Appendix II Further details of the methodology are described in Section 4).

Three steps were used to analyze the data. First, the variables were examined individually for relationships using a correlation table (see Table 10-11). Second, a spatial analysis was undertaken to map the incidence of each variable by census tract. (See Maps 2 to 23b). Third, to further enhance the analysis of the inner city, a comparative analysis was undertaken of selected (see Section 4 for rationale for selection) census tracts outside the inner city in terms of issued building permits, issued RRAPS and socio-economic and demographic variables/census tract characteristics.

The correlation analysis, undertaken for 1986 and 1991, shows strong relationships between the three dependent variables (TOTAL, PERMS and RRAPS) and between some of the independent and dependent variables. There was a strong relationship between home ownership and all three dependent variables. The independent variables, families with children (FWKIDS)and homeowners with families who were paying more than 30 percent of their income for housing (OWNGT), were also highly correlated with the dependent variables. However, the only occupation variable directly related to housing investment was CONST (percent of population employed in construction occupations).

The application of the framework for analysis also found many correlations between various independent variables. In the inner city, there is a strong relationship between those employed in professional sectors of the economy and rented dwellings. In addition, rental tenure is associated with individuals who are retired and families with no children. What this seems to indicate is that those who are considered typical gentrifiers are not investing in home ownership in Winnipeg's inner city. However, occupations such as CONST and MANU show relationships with variables such as OWNGT, IMMG, TERT, SPAR and FWKIDS. When some of the conditions of incumbent upgrading are considered such as high ownership, high length of occupancy, predominant low income areas, strong ethnic component, the correlation analysis does support the expectation that incumbent upgrading will be found in Winnipeg;s inner city. This was confirmed by the spatial analysis. Three census tracts (21, 45 and 48) reveal signs of the incumbent upgrading process.

The study concludes that if different processes of inner city revitalization are to be identified, three main elements are important in any methodology designed to identify both gentrification and incumbent upgrading. These are indicators that measure re-investment in the housing stock; indicators that measure socio-economic status; and indicators that measure area and population stability. It cautions that the variables identified in the framework for analysis used for this study are neither inclusive nor exclusive. Also, this model is very much a "first pass" at developing a new framework for analysis. It should be refined, simplified or expanded, depending on research or policy analysis needs.

The main findings, conclusions, and recommendations of the study are summarized below:

- Although the level of home renovation in Winnipeg's inner city is relatively modest, evidence of incumbent upgrading was found in census tracts 21, 45 and 48.

- Those involved in the incumbent upgrading process are homeowners with families, who are likely to be employed in traditional sectors of the economy such as manufacturing and construction. There is some evidence that ethnicity may be associated with incumbent upgrading.

- Public policy interventions such as the CAI and programs such as NIP and RRAP appear to be associated with the encouragement and fostering of incumbent upgrading.

- There is little evidence of gentrification in Winnipeg's inner city except in CT117. Those groups normally associated with gentrification in other cities are more likely to be renters if they live in the inner city or are staying in the suburbs.

- The areas that were observed as incumbent upgrading areas approximate the profile identified in the literature and have different physical as well as socio-economic

characteristics from gentrifying areas. They were found at the edge of the inner city (Northwest and West) rather than close to the CBD; had modest, mainly single-family detached, affordable housing built between the wars or post war.

- Revitalization activity has not often been observed in lower order cities like Winnipeg because previous frameworks for analysis have tended to focus on the socio economic characteristics of those undertaking home renovation. This tends to highlight gentrification but not identify incumbent upgrading.

- Our analysis has shown that different forms of revitalization can be observed if the framework for analysis uses indicators related to renovation activity (such as building permits) and area stability, as well as socio-economic indicators.

Recommendations

- The framework for analysis developed here should be refined and modified and tested elsewhere to determine its portability and viability in assessing revitalization and forces of change in inner city areas.

- Given the importance of public policy intervention in encouraging and fostering incumbent upgrading, it is recommended that programs such as the CAI and RRAP be continued and extended.

- Although incumbent upgrading appears to be associated with indicators of area stability (homeownership, low population mobility, families with children, neighbourhood cohesiveness), it has not been possible because of constraints of time and resources to directly explore the link between stability indicators, incumbent upgrading and the decision to invest. It is therefore recommended that further research be undertaken to explore these links.

MATRIX I

SUMMARY FRAMEWORK FOR ANALYSIS SHOWING THEORETICAL LINKAGES and PROCESSES/FACTORS TO BE IDENTIFIED

THEORETICAL LINKAGE/ PROCESS TO BE IDENTIFIED	VARIABLE DEFINITION	PRIMARY SOURCE OF THEORY/CONCEPT
INVESTMENT IN HOUSING STOCK	DEPENDENT	
Renovation Activity	(%) Total (Bldg Permits)	Clay
Public Financing (RRAP/CAHRP)	(%) RRAP (permits involving public subsidy)	Millward & Davis
Private Investment Activity	(%) PERM (private investment permits)	Bunting & Phipps
SOCIAL STATUS FACTORS	INDEPENDENT	
Education }	(%) Professional }	Millward & Davis
Income }	(%) Tertiary } Occupatns	
Occupation }	(%) Manufacturing }	Bunting & Phipps
	(%) Construction }	
	(%) Income (comparative median income of CT)	
NEIGHBOURHOOD STABILITY FACTORS/POVERTY INDICATORS		
Home Ownership }	(%) Owner Occupied Dwellings	
Population Mobility }	(%) Rented Occupied Dwellings	Clay
Families with children	(%) FWKIDS (families with children)	Galster & Hesser
Families without children	(%) FNKIDS (families with no children)	Ley
Elderly residents	(%) POPOLD (population over 65)	McLemore et al
Ethnicity	(%) IMMG (immigrant population	
Commitment to home/ neighbourhood	(%) OWNGT (owner occupied dwellings where owner pays > 30% of household income on housing)	
Low income rental tenure	(%) RENTGT (rented, occupied private dwellings where occupiers pays > 30% of income towards rent)	
Single parent families	(%) SPAR (single parent families)	
Aboriginal population	(%) ABORG (aboriginal, single ethnic group	

«Effet des améliorations apportées par les occupants sur la régénération résidentielle»

SOMMAIRE

Dans cette étude, on se propose d'examiner les améliorations qu'apportent les occupants à titre d'instrument de la revitalisation résidentielle dans le centre des villes. On y présente d'abord un cadre d'analyse pour étudier les processus de changement entrant en jeu dans les quartiers du centre des villes comme celui de Winnipeg, afin que des éléments, tels que l'embourgeoisement et les améliorations apportées par les occupants, puissent être relevés comme phénomènes à part puis examinés.

On définit les améliorations qu'apportent les occupants comme étant un processus dans lequel un nombre important de propriétaires de logements améliorent leur habitation sans changement marquant de la classe socio-économique ou des caractéristiques de la population (Clay 1979; Millward et Davis, 1986). Par embourgeoisement, on entend un processus dans lequel les gens de la classe moyenne deviennent propriétaires d'un logement dans les quartiers du centre-ville, rénovent les propriétés dégradées, ce qui fait augmenter la valeur des propriétés et force les familles à quitter le quartier (Smith et Williams, 1988). Les acteurs de ce processus d'installation et de déplacement auront un niveau social plus élevé que les résidents traditionnels, en fonction de l'éducation, du revenu et de la profession.

Dans cette étude, on prétend que l'embourgeoisement est l'élément essentiel de la recherche liée au processus de changement dans le centre des villes. Cependant, comme le suggèrent les travaux de Clay (1979) et de Millward et Davis (1986), certains quartiers du centre des villes ont été revitalisés non pas grâce à l'embourgeoisement, mais aux améliorations apportées par les occupants eux-mêmes. Pourquoi des quartiers résistent-ils au processus d'embourgeoisement dans certaines villes? Qu'est-ce qui incite les occupants à investir dans les logements des quartiers du centre des villes? Dans quelle mesure la présence ou l'absence de chacun des phénomènes est-elle liée à de puissantes forces de changements structurels, qui ont des effets différents sur les villes dans l'économie postindustrielle? Dans quelle mesure, l'intégration sociale, la cohésion des quartiers et l'intervention des politiques publiques sont-elles liées aux améliorations qu'apportent les occupants? On examine dans ce document les liens théoriques et empiriques présentés dans le cadre de ces questions de recherche. L'élément essentiel est le centre de Winnipeg. On a utilisé dans cette étude la limite du noyau urbain définie pour le Greater Winnipeg Development Plan Review (Clatworthy, Frenette et Mckee, 1979) et qui a été utilisée par la suite pour le Core Area Initiative (CAI). En dépit des limitations relevées, les secteurs de recensement sont utilisés comme unité d'analyse.

On a d'abord entrepris d'examiner les documents existants. Ils font ressortir que même si l'embourgeoisement s'entend d'un processus se présentant dans un cadre beaucoup plus large que la remise en état des habitations, la recherche liée aux explications théoriques de la revitalisation du centre des villes a dépassé l'examen empirique (Smith et Williams, 1988; Beauregard (1988). La complexité de l'embourgeoisement étant compris comme un processus spatial ayant pris naissance dans les modèles actuels de différentiation sociale et économique (Smith et Williams, 1988), les travaux de Cohen (1981) et Beauregard (1988) suggèrent que les villes moins importantes, dans la hiérarchie internationale des villes surgissant par suite de

la mondialisation et du changement structurel dans les économies post-industrielles, ont moins de chance d'être concernées par l'embourgeoisement. Cependant, selon les observations de Beauregard (1988), on remarque une revitalisation d'un autre type dans les villes moins importantes (comme Winnipeg).

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* Les acronymes pour les variables dépendantes et indépendantes sont définies dans l'annexe II. Les autres définitions et abréviations sont expliquées et présentées dans l'annexe IV.

Au Canada, on s'attendrait par conséquent que des villes comme Toronto et Vancouver soient plus vraisemblablement touchées par la mondialisation et l'expérience d'embourgeoisement total que les villes moins importantes comme Winnipeg, Saskatoon et St. John's. On affirme que c'est précisément ce qu'ont conclu les chercheurs canadiens (Bunting et Phipps 1987; Ley, 1991).

On fait remarquer que c'est en 1979 que Clay a relevé le phénomène des améliorations apportées par les occupants (Clay, 1979) et que d'autres recherches ont été effectuées à Halifax par Millward et Davis dans deux études (Millward & Davis 1986; Millward, 1988). À l'exemple de Clay, ces chercheurs ont également constaté un lien entre les améliorations apportées par les occupants et l'action des politiques publiques, bien que cette opinion ne soit pas universellement partagée (Varedy, 1986). Plusieurs auteurs (Clay, 1979; Galster et Hesser, 1982) ont également décelé que la stabilité et la cohésion des quartiers étaient des facteurs essentiels dans les améliorations apportées par les occupants.

Bien que les documents théoriques sur les améliorations apportées par les occupants ne soient pas aussi variés et aussi riches que le contexte théorique qui sous-tend l'embourgeoisement, les travaux de plusieurs auteurs (Clay 1979; Beauregard, 1981; Galster et Hesser, 1982; Millward et Davis, 1986; Bunting et Phipps, 1987; et Smith et Woodman, 1987) nous ont permis de déceler des indicateurs qui sont liés à l'hypothèse de l'étude, décrite dans la section 2, et au genre de profil que nous sommes susceptibles de trouver dans les villes, le centre des villes et les quartiers où les occupants apporteront vraisemblablement des améliorations à leur logement.

De ces documents, se profile l'image de villes dans lesquelles le degré de restructuration de l'emploi n'est pas le même que dans les grandes agglomérations urbaines. Les villes dans lesquelles on n'a pas vu arriver de nouvelles catégories de travailleurs associées au processus d'embourgeoisement; et des villes où l'on remarque une perte de population au centre même mais où le prix des logements est en hausse en raison du retour des ménages à revenu élevé vers le noyau urbain. On remarque des améliorations apportées par les occupants dans les quartiers où les résidents appartiennent vraisemblablement à la classe ouvrière, ont un faible revenu, travaillent probablement dans les secteurs manufacturiers et tertiaires restants et occupent le quartier depuis longtemps. Ces quartiers seront vraisemblablement plus éloignés du centre commercial (Central Business District) que les quartiers embourgeoisés où l'on

trouve des logements plus modernes (construits après la Deuxième Guerre mondiale) et qui sont relativement en bon état. Deux facteurs semblent constituer d'importants catalyseurs : les programmes du secteur public à l'appui du processus de revitalisation et la stabilité et la cohésion des quartiers qui soutiennent les décisions d'investir du secteur privé et des particuliers.

On prétend que puisque d'autres genres de revitalisations peuvent se présenter dans les villes moins importantes, le point focal de la recherche empirique dans les noyaux urbains ne devrait pas consister seulement à établir si l'embourgeoisement a eu lieu et que tout nouveau modèle ou cadre d'analyse devrait mesurer la rénovation des habitations et les investissements ainsi que les modifications socio-économiques et démographiques des quartiers.

Enfin, dans le but de mettre au point un cadre d'analyse pratique pour tenter de définir, comme phénomènes à part, l'embourgeoisement et les améliorations apportées par les occupants, on aborde l'aspect des politiques à Winnipeg. On entreprend également une analyse préliminaire du centre-ville de Winnipeg afin d'étudier les relations spatiales entre les variables clés connexes à l'identification de l'activité de rénovation, de la condition sociale et de la stabilité.

Dans la section 4 de ce rapport, on tente d'établir systématiquement un cadre d'analyse portable lié aux indicateurs théoriques que l'on pourrait utiliser dans des situations ailleurs qu'à Winnipeg pour y déceler les améliorations apportées par les occupants et l'embourgeoisement. On a d'abord dû établir une variable dépendante qui constitue le réinvestissement réel dans le parc de logements et la rénovation. Malgré certaines limitations, on a décidé, aux fins de cette recherche, d'utiliser les permis de construire (on a obtenu une base de données informatisée complète de la ville de Winnipeg pour 1983 à 1991) comme mesure de l'activité de réinvestissement dans les logements et de la variable dépendante. Cette variable a été divisée en trois catégories, nombre total de permis de construire; les permis de construire pour lesquels des prêts et des subventions de programmes ont été accordés (PAREL et «CAHRPS»); et les permis sans subvention du secteur public. Après manipulation initiale statistique pour examiner les rapports étroits entre les variables et pour éviter les répétitions, on a décelé dans le modèle 13 variables socio-économiques et démographiques. Elles sont expliquées dans l'annexe II. Le cadre, les variables et les liens avec les indicateurs théoriques sont résumés ci-dessous dans le tableau 1.

Dans l'élaboration du cadre d'analyse, les données brutes ont été normalisées en convertissant toutes les valeurs en pourcentage, ce qui a permis de comparer les secteurs de recensement. Toutes les valeurs ont ensuite été pondérées. Ce procédé tient compte de la proportion de chaque variable par rapport à tout le noyau urbain pour les variables indépendantes; et du nombre comparatif des logements individuels et jumelés dans chaque secteur de recensement pour les variables dépendantes. (Les calculs pondérés figurent à l'annexe II. La méthodologie est expliquée plus en détail à la section 4).

On a procédé à l'analyse des données en trois étapes. D'abord, on a examiné chacune des variables à l'aide d'une table de corrélation (voir table 10-11). On a ensuite entrepris une analyse spatiale pour relever l'effet de chaque variable par secteur de recensement (voir cartes 2 à 23b). Enfin, pour améliorer l'analyse du noyau urbain, on a entrepris une analyse

comparative des secteurs de recensement sélectionnés en dehors du noyau (voir section 4 pour savoir comment l'on a procédé) en fonction des permis de construire délivrés, des prêts PAREL et des variables et caractéristiques des secteurs de recensement socio-économiques et démographiques.

L'analyse de corrélation entreprise pour 1986 et 1991 fait ressortir des liens solides entre les trois variables dépendantes (TOTAL, PERMS et PAREL) et entre certaines des variables indépendantes et dépendantes. Il y avait un lien étroit entre la propriété d'un logement et les trois variables dépendantes. Des variables indépendantes, familles avec enfants (FWKIDS) et les propriétaires-occupants avec familles qui consacraient plus de 30 % de leur revenu au logement (OWNGT), étaient également étroitement corrélées avec les variables dépendantes. Cependant, la seule variable de profession directement liée à l'investissement dans le logement était CONST (pourcentage de la population occupant des emplois dans la construction).

En appliquant le cadre d'analyse, on a également trouvé de nombreuses corrélations entre diverses variables indépendantes. Dans le noyau urbain, on remarque un rapport étroit entre les personnes ayant un emploi dans les secteurs professionnels de l'économie et les logements loués. En outre, le logement locatif est associé aux personnes qui sont à la retraite et aux familles sans enfants. Ce qui semble donc indiquer que ceux que l'on considère comme des bourgeois types n'investissent pas dans l'achat de logements au centre de Winnipeg. Cependant, les professions telles que CONST et MANU indiquent des rapports avec des variables comme OWNGT, IMMG, TERT, SPAR et FWKIDS. Lorsque l'on examine certaines conditions d'amélioration par les occupants, comme un grand nombre de propriétaires-occupants, de nombreuses années de résidence, des secteurs où la majorité des gens ont un faible revenu, un élément ethnique important, l'analyse de corrélation confirme le fait que l'on s'attend à trouver au centre de Winnipeg des logements rénovés par les occupants. Ce fait a été confirmé par l'analyse spatiale. On trouve les effets du processus d'amélioration par les occupants dans trois secteurs de recensement (21, 45 et 48).

En conclusion, on énonce qu'il faut distinguer différents processus de revitalisation du centre des grandes villes, trois éléments sont essentiels dans toute méthode conçue pour déceler à la fois l'embourgeoisement et les améliorations apportées par les occupants. Ce sont les indicateurs qui mesurent le réinvestissement dans le parc de logements, les indicateurs qui mesurent la situation socio-économique, et ceux qui évaluent le quartier et la stabilité de la population. On met en garde contre le fait que les variables relevées dans le cadre d'analyse et utilisées pour cette étude ne sont ni inclusives ni exclusives. En outre, le modèle est essentiellement une «première tentative» d'élaboration d'un nouveau cadre d'analyse. Il doit être amélioré, simplifié ou élargi selon les besoins de la recherche ou de l'analyse des politiques.

Les principales constatations, conclusions et recommandations de l'étude sont résumées ci-dessous :

o Bien que le nombre de logements rénovés dans le centre de Winnipeg soit relativement modeste, on constate des améliorations apportées par les occupants dans les secteurs de recensement de 21, 45 et 48.

o Les personnes qui apportent des améliorations sont des propriétaires- occupants et leur famille et sont employés vraisemblablement dans les secteurs traditionnels de l'économie, notamment l'industrie manufacturière et la construction. Il semble que l'on puisse associer l'ethnicité avec les améliorations apportées.

o Les interventions en matière de politiques publiques, comme le CAI et les programmes comme le PAQ et le PAREL semblent avoir un lien avec le fait que les occupants sont encouragés à apporter des améliorations.

o On trouve peu de preuves d'embourgeoisement dans le centre de Winnipeg sauf dans le secteur de recensement 117. Les groupes normalement associés à l'embourgeoisement dans d'autres villes sont plus vraisemblablement des locataires s'ils vivent dans le centre de la ville ou s'ils habitent la banlieue.

o Les secteurs désignés comme secteurs où l'on a remarqué des améliorations apportées par les occupants ont a peu près le profil relevé dans les documents et des caractéristiques physiques et socio-économiques différentes de celles relevées dans les quartiers où l'on remarque le phénomène d'embourgeoisement. On les trouve dans la périphérie du centre de la ville (nord-ouest et ouest) plutôt que près du centre des affaires (CBD); ce sont des logements modestes, surtout des logements individuels abordables construits entre les deux guerres ou après la Deuxième Guerre mondiale.

o On n'a pas souvent observé d'activités de revitalisation dans les villes de moindre importance comme Winnipeg car les cadres d'analyse antérieurs tendaient à d'étudier les caractéristiques socio-économiques des personnes entreprenant des travaux de rénovation. Cela permet de faire ressortir l'embourgeoisement mais non pas les améliorations apportées par les occupants.

o Notre analyse démontre que l'on peut observer différentes formes de régénération si le cadre d'analyse fait usage d'indicateurs liés à l'activité de rénovation (comme les permis de construire) et à la stabilité du quartier, ainsi que des indicateurs socio-économiques).

Recommandations

o Le cadre d'analyse mis au point dans le présent document doit être amélioré, modifié puis mis à l'essai ailleurs, afin de déterminer s'il peut être appliqué pour évaluer la revitalisation et les éléments de changement dans des quartiers du centre-ville et s'il est viable.

o Étant donné que l'intervention en matière de politique publique joue un rôle important pour encourager et favoriser les améliorations apportées par les occupants, on recommande de poursuivre et d'élargir des programmes, tel que le «CAI» et le PAREL.

o Bien que les améliorations par les occupants soient liées à des indicateurs de stabilité du quartier (propriété, faible mobilité de la population, famille avec enfants, cohésion du quartier), il n'a pas été possible, en raison de contraintes de temps et de ressources, d'étudier précisément le lien entre les indicateurs de stabilité, les améliorations apportées par les occupants et la décision d'investir. Il est donc recommandé de poursuivre la recherche afin d'explorer ces liens.

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SECTION 1. INTRODUCTION and PROBLEM STATEMENT

The scope of this study involves conducting theoretical and empirical research into incumbent upgrading. The purpose of the work is to examine incumbent upgrading as a force in residential revitalization. Its first task is to determine what processes of change are at work in inner city areas like that of Winnipeg so that forces such as gentrification and incumbent upgrading can be identified as separate phenomena and the latter examined.

For the purposes of this study, gentrification is defined as a process by which middle class people take up residence as owner occupiers in inner city areas, renovate deteriorated property causing property values to increase, and having the secondary effect of driving out poor families (Smith and Williams, 1988). Those involved in this settlement and displacement process will have higher levels of social status in terms of education, income and occupation than traditional residents. Incumbent upgrading is defined as a process involving owner occupiers whereby physical improvement by incumbent residents takes place at a substantial rate with no significant change in the socio-economic status or characteristics of the population (Clay 1979, Millward and Davis, 1986). For the purposes of this report, it is viewed as a phenomenon in inner city revitalization which is associated with residential renovation activity by incumbent homeowners in lower income inner city neighbourhoods. It is therefore differentiated from routine maintenance and incumbent upgrading by long term homeowners in non-inner city neighbourhoods.

The recent focus of research into processes of change in the inner city has been work on gentrification. Much has been written over the past twenty years about this phenomenon. Much less is understood about incumbent upgrading (Millward and Davis, 1986). Both phenomena connote a process of change in the residential housing market. However, gentrification is now understood to be a process that is occurring in a context much broader than residential rehabilitation. It is occurring in a framework of changing social, economic and political forces as advanced capitalist societies attempt to cope with a restructured industrial base, a shift to service employment and a transformation of the class structure. Gentrification is a physical and spatial manifestation of this transformation (Smith and Williams, 1988).

Those involved in the high technology jobs of the information economy have emerged as a new middle class. As this group has gathered strength, they have looked for alternatives to suburban lifestyles, close to work. The working class, under assault from industrial restructuring has faced a new challenge in working class neighbourhoods. Some prefer to take the money and run. Others are squeezed out by rising costs and the alienation of the new environment (Williams, 1988). The latter involves secondary processes which follow the residential transformation. These include the development of trendy restaurants, services and facilities which cater to needs associated with upward changes in the socio-demographic profile of the gentrified neighbourhood.

However, as the work of Clay (1979) and Millward and Davis (1986) suggest, some inner city neighbourhoods have been revitalized, not by gentrification, but by incumbent upgrading. What causes some neighbourhoods in some cities to resist the tide of the gentrification process? What produces investment in the houses of inner city neighbourhoods by incumbents? To what extent do the presence or absence of strong structural forces contribute? To what extent are social integration, neighbourhood cohesion and public policy interventions linked to incumbent upgrading? It is the purpose of this study to examine the theoretical and empirical linkages presented by these research questions. Its focus will be on the inner city of the city of Winnipeg.

1 - 1 Definitions and Units of Analysis

The same definition will be used to delineate Winnipeg's inner city for this study, as that developed for the Greater Winnipeg Development Plan (Clatworthy, Frenette and McKee, 1979) and which was subsequently adopted by the Core Area Initiative.

Map 1 (Appendix 1) identifies the Study area in relation to the Winnipeg Census Metropolitan Area. The census tract will be the unit of analysis used to identify the spatial characteristics of revitalization, to compare socio-economic changes over time, and to initially explore linkages between social integration, neighbourhood cohesiveness and physical upgrading. Although this unit of analysis is somewhat arbitrary and large scale, it has been selected because it allows data comparisons over time, because it has not substantially changed over several census periods and because it is a good fit with City of Winnipeg Residential Building Permit data.

In order to examine the overall incidence of revitalization for the inner city of Winnipeg at the census tract level, computerized building permit data is available. It is classified by street address, construction type, building type, work detail/government program involvement, census tract and estimated cost of renovation. This source of information provides an excellent opportunity to do a spatial analysis of renovation activity.

1 - 2 Organization of the Study

A review of generic research relevant to the study is presented in Section 2. It culminates with the identification of the study hypothesis and research assumptions, derived from the literature review, which guide the empirical analysis. The purpose of subsequent sections is to link theory and empirical data in examining incumbent upgrading as a force in residential revitalization. Section 3 of this report discusses Winnipeg in the context of structural change and undertakes preliminary analysis to respond to the question, is incumbent or gentrification the predominant force in residential revitalization in Winnipeg? It examines the factors driving the incumbent upgrading process and the physical and social characteristics of incumbent upgrading.

Section 4 develops a framework/model to allow us to further identify the spatial characteristics of inner city revitalization for both incumbent upgrading and gentrification. To find whether incumbent upgrading or gentrification has occurred, it is necessary to determine the required variables that can accurately measure both physical reinvestment and changes, if any, in the social status of an area. To build a model for analysis, it is necessary to establish a dependent variable that represents actual reinvestment and renovation of the housing stock. For this research, it was decided to use building permits as a measure of actual home reinvestment activity in various neighbourhoods. Based on the assumption that the socio-economic and demographic circumstances of a neighbourhood affect the amount of housing renovation, 15 central independent variables are identified in this framework. These are discussed and determined in Section four and defined in Appendix II.

The theoretical data and rationale which underpins the choice of these variables is detailed in sections two and four. Each variable was appropriately defined according to existing statistical data. All statistical information is derived from Statistics Canada Census Profiles 1986 and 1991. The data for building permits and government grants has been provided by the City of Winnipeg Planning Department (1983 to 1991).

Section 5 presents the results of the study when the model described above was applied to inner city neighbourhoods in the city of Winnipeg. First, a correlation table was developed to determine whether there were relationships between the independent and dependent variables, using City of Winnipeg data. Second, a spatial analysis was undertaken to map each variable, to determine whether some spatial relationships exist between variables and to identify those areas that showed evidence of one or other of the two processes of change under investigation, incumbent upgrading or gentrification. Third, the areas which appear to exhibit attributes of incumbent upgrading are identified and discussed.

Section 6 discusses the findings, limitations and linkages of the study. The analysis presented is related to research questions and assumptions which flow from the study's hypothesis and the results discussed above. These include the following. How has post-industrial change affected the revitalization process in Winnipeg? What kind of revitalization is occurring? Where is it spatially located and what are the probable characteristics of incumbent upgraders? The role of public policy intervention in encouraging incumbent upgrading is also discussed in this section.

Section 7 provides a short summary of findings, conclusions and recommendations.

SECTION 2. REVIEW OF LITERATURE

To set the stage for answering the research questions, posed in Section 1, this section will examine approaches to research on inner city revitalization, consider the search for a testable theoretical paradigm, review previous analyses of relevance to this study and conclude with a statement of the hypothesis and research assumptions that can be drawn from this analysis. Research objectives that will guide the organization of the study and link to prescriptive policy recommendations are identified.

2 - 1 Approaches to Research on Inner City Revitalization

Early research on gentrification and inner city revitalization focussed on empirical questions and looked at the effects rather than the causes of change (Smith and Williams, 1988). It asked questions about where the process was taking place, who the gentrifiers were and tended to extol the benefits of revitalization in reversing decay. Displacement of existing residents was a lesser factor in discussion. The work of Gale, Laska and Spain (1979)and Sternlieb and Ford (1979) epitomised this genre of research and comment.

Smith and Williams further points out that a second phase of research was interested in the causes of gentrification, seeing the phenomenon as part of the broader operation of housing and urban land markets. It was recognized as a process occurring in the context of urban restructuring and much broader than residential rehabilitation. The focus of work was on theoretical analysis over statistical documentation. Hamnett (1984) and Rose (1984) produced critical reviews on this type of work on gentrification.

Beauregard (1988) captures what several authors perceive as a gap in research directions. He critiques simplistic and superficial "definitions" of gentrification, our understanding of the term and empirical assessments of gentrification. He points out the difficulty of satisfactorily linking theoretical approaches and empirical analysis. He cautions against the "booster approach", perceiving gentrification as a means of manipulating the city and its neighbourhoods "in order to reduce...perceived risk and to encourage investment." He warns against research that is too quick to classify and stereotype gentrifiers and gentrified neighbourhoods. He observes the need to articulate a strong theoretical base and understand the structural forces that create and drive gentrification.

Beauregard's works offer several epistemological comments that are useful to this analysis.

- *First, he points out that theory should not be deluded by ideology or misrepresent empirical regularities as causal explanation.*
- *Second, he observes gentrification as a "chaotic concept", and a process involving diverse events, experiences, people and effects rather than a single phenomenon.*
- *Third, he points out that as a diversity of social forces combine to produce different types of gentrification, the phenomenon is not inevitable in older, declining cities. Also, and particularly important for this study, general structural forces and specific, interdependent and unknown forces combine to produce gentrification in some cities and not in others (Beauregard 1988, p.40).*

Another group of European theorists (Klassen, Paelinck and Leo van den Berg) reviewed by Bourne (1993) in a recent article on the term re-urbanization", have developed a model to explain the process of change in urban development patterns which affect capitalist societies and cities. They outline four stages in the urban development process:

i) Centralization or urbanization (rapid development and growth concentrated in the urban core);
ii) Suburbanization (decentralization and suburban dispersal);
iii) Disurbanization or exurbanization (population and job loss to outlying towns and semi rural areas);
iv) Reurbanization (the decline of population and jobs in the central core area ceases).

Although Bourne cautions that some have criticized this model as overly "simplistic and deterministic" he comments that "it has provided a convenient and robust framework for comparative analysis" (Bourne, 1993, p.7). This model may have some implications in developing a framework for analysis in this study. Attributes of Winnipeg's economic and socio-demographic profile suggest that it may be at stage three or between stages three and four in the urban development process according to this model.

In discussing gentrification, Smith and Williams (1988) like Beauregard (1988), point out that gentrification is now understood to be a process that is occurring in a framework much broader than residential rehabilitation. They argue that "urban processes are quite specific to different societies, different periods, and especially different modes of production, and that the contemporary process of gentrification is quintessentially a feature of the advanced capitalist city". Also, "just as suburbanization was the spatial expression of larger social and economic processes, so too gentrification is a highly visible, spatial process rooted in current patterns of social and economic differentiation" (op cit, p.206).

However, globalization and re-structuring has produced different kinds of inner city revitalization processes in different kinds of cities. Conventional wisdom suggests that with de-industrialization and the transformation to a service economy, cities are changing from industrial centres to service centres. This is generally correct, but it does not reflect the different effects of international forces that are transforming some cities into global centres and are producing a hierarchical ordering of cities in the global economy (Cohen 1981). Cohen suggests that with the decline of "the metropolis and region structure" and the forced international involvement of national economies, a new urban hierarchy of cities has emerged. This places global cities such as New York, London and Tokyo (which are largely involved in international and corporate transactions) at the top of the pecking order. Other cities are sorted according to their national or regional functions.

The impact of globalization on regional and smaller cities is more ambiguous than for higher order cities. Although they too are changing from industrial to service economies, they may retain their role as manufacturing centres, producing goods for which there is no international or national market.

It therefore follows that inner city areas will be differentially affected. Higher order cities will be affected by "higher prices for rents and services", gentrification and what Cohen refers to as "Manhattanization". This is likely to be maintained in recessionary situations because

their economies are more linked to international trends and demands. Lower order cities are likely to be less affected by structural change, international forces and consequential gentrification. In Canada, one could expect that cities such as Toronto and Vancouver are more likely to be impacted by globalization and experience "full blown" gentrification than lower order cities like Winnipeg, Saskatoon, and St. Johns. This is precisely what Canadian researchers (such as Bunting and Phipps, 1987 and Ley, 1991) have found.

However, this does not mean that those lower order cities which have not experienced significant gentrification have not experienced residential rehabilitation of a different kind. As indicated earlier, although gentrification has received much study, other forms of inner city revitalization have not. The phenomenon of incumbent upgrading, was identified by Clay, (1979) and Millward and Davis, (1986). This process seems to occur in cities where the movement of high and middle income households to the inner city is marginal, placing less demand pressure on existing housing and less competition for incumbent residents. Unlike gentrification, incumbent upgrading involves residential rehabilitation by incumbents without significant changes in the socio-economic status or characteristics of the population of a neighbourhood (Clay, 1979).

The phenomenon of incumbent upgrading in Canada also seems to be associated with public policy intervention. Millward (1988) concludes that incumbent upgrading is fostered by public policies aimed at reversing inner city decline. These public policies support different kinds of home improvement. Clay's original work in 1979 had also made this association. However, his view was not universally shared. Varady (1986) questioned his assumption. However a later empirical study by Galster and Hesser (1987) supported it. Clay (1979) also indicates that the socialization process in some neighbourhoods emit confidence which enables them to stabilize and rejuvenate in the face of economic change. Galster and Hesser (1982) also found neighbourhood cohesiveness to be an important factor in home improvement. It seems the combination of both public policies and the social integration of a neighbourhood, are potentially important catalysts in the process of incumbent upgrading.

The literature reviewed in this section suggests that different kinds of urban revitalization (including gentrification and incumbent upgrading) are a function of different kinds of urban conditions. It also suggests that there is a relationship between the stage of "reurbanization" a city is at and the kind of inner city revitalization a city experiences. The place of a city in the international hierarchy and the effects of globalization and industrial restructuring are also factors in the kind of revitalization found in different cities.

The literature also suggests that a study such as this should go beyond descriptive analysis, should view urban revitalization as a complex and diverse process of change and should search for a theoretical framework that avoids idealogue and provides a workable link between theoretically derived assumptions and empirical testing.

2 -2 The Search for a Testable Theoretical Paradigm

Although the work on inner city decline and revitalization is extensive, there is no commonly accepted theoretical framework to guide empirical analysis. Orthodox economic theory

(Solomon and Vandell, 1982) and theories of ecological succession no longer explain the complex processes of change presently occurring in inner city areas. There has been a search for alternatives and links between urban policies and programs and competing theories (Solomon and Vandell, 1982).

Marxian urban sociology takes as its starting point a critique of the Chicago School of Urban Sociology advanced by Robert Park (Guterbok, 1980). Marxist analysts deplore the uncritical acceptance of the status quo and emphasize economic forces as the primary factor in shaping urban form to foster the interests of a small élite, bent on capital accumulation. Gentrification is seen as a manifestation of this phenomenon. Marxian analysis is essential in understanding the insidiousness and complexities of capital accumulation, its negative effect on the poor, its treatment of the powerless and its contribution to the creation of an urban underclass. However, it provides a somewhat closed loop in directly linking theoretical assumptions and empirical analysis, and in looking for prescriptive policy options. This is because of its inherent assumption that individual and collective action will be ineffective without change in the basic nature of society. In discussing competing theories and the political economy of urban revitalization, Guterbok (1980) refers to both pluralist and Marxist approaches to the analysis of urban revitalization as "ideocentrisms" rather than scientific theories, because of the propensity of each to draw "opposite conclusions from almost identical data".

Guterbok's work guides research on urban revitalization towards a synthesis. He suggests that analysis of urban revitalization needs to recognize the Marxian perspective, that changes in urban structure can occur that benefit the rich rather than the poor, the powerful rather than the weak. The lesson from the pluralist perspective is that "concerted political action based on non-economic value commitments can alter the balance of power and the course of public policy in American cities." (Guterbok, 1980). He cautions against the pluralist pre-judgement that "the system works" and urges research on urban revitalization to recognize the interdependencies between cultural, political, economic and ecological factors.

Smith and Williams (1988) also refer to the search for "appropriate social theory" and frustration with neo-classical approaches. They point to Harvey's work (1973) as a landmark in linking the "integration of society and space". Although the search "did not necessitate a Marxist direction", they suggest that despite differing theoretical approaches of which radical theory is one, there are two tenets about which there is consensus. First, that gentrification is not an isolated phenomenon. Rather it is "the expression in the urban landscape of deeper social processes and social change." Second, "gentrification, as an urban spatial process, contributes to the determination and differentiation of class." Despite this consensus, Bourne (1987) observes that few studies have analyzed the "form and changing structure of urban areas ... in terms of the interrelationships among socio-economic, demographic and physical variables." He argues that in general, "theoretical work and speculation have generally outpaced systematic empirical research."

Because the direct literature on incumbent upgrading is very sparse, it has been necessary in this section and in the subsequent sections to draw on diverse sources to understand processes of urban revitalization in order to develop our hypothesis and research assumptions. It has also been demonstrated, that both gentrification and incumbent upgrading are part of a complex set of social, political and cultural processes of urban change. To understand these phenomena, and in

the absence of any theoretical unanimity to guide empirical analysis we must draw on several theoretical approaches and previous empirical work to develop a framework for analysis.

2 - 3 Previous Empirical Analysis of Relevance to this Study

Bunting and Filion (1987) provide one framework for understanding inner city change. They conclude that four theoretical approaches emerge from a review of the literature; spatial, demand-oriented, supply oriented and the societal change approach. They build on this analysis in Canadian Cities in Transition (Bunting and Filion, 1991). Ley's analysis of social upgrading in six Canadian inner cities (Ley, 1988) sets the stage for understanding which areas are experiencing social upgrading and he considers hypotheses to explain what kinds of neighbourhoods are likely to experience upgrading. Ley (1991) further develops these themes in a later study.

Williams (1988) asks the question. "Is incumbent upgrading a legacy of an earlier era, allowed to function in cities that have not been inundated by structural change?" As indicated earlier, Clay (1979) was one of the first to identify incumbent upgrading as a phenomenon. He compares and contrasts gentrification with incumbent upgrading. Social cohesion in the latter kind of neighbourhood and the identified relationship between government intervention, planning and inner city revitalization are also chronicled in Clay's work. What his work lacked was empirical evidence to substantiate the theoretical analysis and linkages he had so usefully drawn.

Studies by Ley (1985 and 1991) use social indicators to assess changes in social status in selected Canadian inner city areas. Millward and Davis (1986) and Millward (1987) provide a vital link for differentiating between gentrification and incumbent upgrading by relating social status indicators and renovation activity. Their studies of Halifax demonstrated that revitalizing areas of both gentrification and incumbent upgrading could be observed. The 1986 study was one of the first to identify the two different processes. They also concluded that government intervention such as NIP and RRAP had been successful in promoting incumbent upgrading.

Bunting and Phipps (1987) found in Kitchener and Saskatoon that "there is substantial evidence of a modest and somewhat inconspicuous form of residential upgrading taking place throughout the inner zones of both cities". Their work was a response to a "growing recognition" that inner city upgrading was a function of a process other than gentrification, which had not been documented in the literature. Smith and Woodman (1987) in their study of housing renovation in Edmonton reached similar conclusions.

Solomon and Vandell (1982) examine several competing theories governing the process of inner city decline which seem to underpin public policy initiatives and suggest research strategies to empirically test the relationship of different theories to particular scenarios. They advocate "thorough, micro-level analysis of a number of dimensions of neighbourhood conditions which are proxies for market behavioral characteristics."

However in Canada, Bourne's work (1992) calls into question the decline versus back to the city/gentrification scenarios which have characterized inner city theoretical and empirical analysis for the past two decades. He demonstrates that the decline of inner city populations in most metropolitan areas in Western industrialized cities (and particularly in Winnipeg) recorded by Clatworthy, Frenette and McKee (1979), and Filion (1987), has stabilized or been reversed. In the case of Winnipeg, after dramatic population loss from the inner city (-30.2%, 1951-71: -17.1% 1971-81), Winnipeg's inner city saw a population increase of 8.7 percent between 1981 and 1986. Yet other work (Bijelic 1991 and Ley 1991) shows that Winnipeg's inner city has not shown an increase in social status or evidence of significant gentrification. Is incumbent upgrading a significant factor in this scenario?

The above review of theoretical and empirical approaches to gentrification and incumbent upgrading have shaped the development of the following hypothesis and research assumptions. They will further inform the development of our specific research methodology.

2 - 4 Hypothesis and Definition of Research Assumptions

Given the complex and diverse variables for possible study derived from the above literature review, a hypothesis is required which reflects complex relationships and processes of inner city change, provides a manageable focus for empirical study and is linked to prescriptive public policy direction. It is hypothesized that:

> *Home renovation in the inner city of Winnipeg, whose socio-economic and physical environment has not been greatly affected by post-industrial change, is more likely to exhibit specific characteristics of incumbent upgrading than the specific characteristics of gentrification. Further, it is predicted that incumbent upgrading will be spatially associated with social status factors such as lower levels of education, income and employment status than gentrifying areas and with social and neighbourhood stability factors such as low levels of population loss and mobility, neighbourhood cohesiveness and public policy intervention.*

The following research assumptions derived from the literature review will guide empirical analysis.

- Gentrification is part of a phenomena much broader than housing rehabilitation which can have different manifestations in different types of cities and in different types of inner city areas.

- Structural change and its impact on different types of cities is a factor in determining what kind of residential rehabilitation will emerge most strongly in certain inner city areas.

- Incumbent upgrading is more likely to be found in the inner city areas of lower order cities, like Winnipeg, which have been less affected by post-industrial change in employment and demographic structures.

SECTION III. PROCESSES, CHANGE INDICATORS and POLICY CONTEXT

The previous section indicated that research into inner city revitalization over the past fifteen years has focussed on the phenomenon of gentrification. This focus has been associated with interest in and documentation of structural changes in the post industrial economy. Smith and Williams see gentrification as the spatial manifestation of changing patterns of social and economic differentiation characteristic of advanced capitalist cities (Smith and Williams, 1988).

3 - 1 Economic and Social Restructuring

Gentrification has also been a controversial phenomenon, particularly in the United States. Originally hailed as a form of urban renaissance or revival (Sumka, 1979), researchers soon recognized the downside of gentrification, particularly in terms of the displacement of low income households and the loss of affordable housing because of middle class resettlement (Gale, 1984; Marcuse, 1988). Section 2 also demonstrates that not all cities have experienced gentrification, which is associated with increases in social status (education, income and occupation) in inner city areas. Clay (1979) and Canadian researchers (Millward and Davis, 1986; Bunting and Phipps; Smith and Woodman, 1987) have observed residential rehabilitation in inner city areas without concomitant social status increases. This is particularly a phenomenon of smaller, lower order centres. Clay and Millward and Davis term the latter process of revitalization incumbent upgrading. This process is less associated than gentrification with negative consequences (such as displacement and loss of affordable housing) and may be encouraged by public policy initiatives (Millward and Davis, 1986).

On the basis of research reviewed, we hypothesised that the type of revitalization a city experiences is associated with the extent to which the economic base and occupational structure of a particular city has been impacted by structural change in the post-industrial economy. This has particular impact on the kind of inner city revitalization we would expect to observe in cities like Winnipeg.

For the past three decades, most industrial economies in advanced capitalist societies have experienced de-industrialization and a reduction in the proportion of workers employed in the industrial sector. At the same time, there has been a growth in other sectors of the economy and employment. White collar service functions and the high technology, information and communication sectors of the economy have grown (Smith, 1988: Hall, 1992). (See Tables 1 to 4: Appendix I).

"A characteristic feature of a number of advanced capitalist societies ... has been the emergence of a new strata of professional and managerial workers ..." (Williams, 1988). It is this group which drives the gentrification process that researchers associate with social status gains in the inner city.

However Winnipeg has not seen an influx of this new strata of worker into its inner city, even though it has lost manufacturing employment. Typically, structural change has been

characterised in higher order cities by the emergence of an informational proletariat as well as an informational elite (Hall, 1992). The former is associated with relatively lower paid jobs (and often increased female participation in the workforce) occurring alongside increased quaternary employment. This is not the pattern observed in Winnipeg, although tertiary employment is an important sector in Winnipeg's inner city.

3 - 2 Factors Driving the Incumbent Upgrading Process

In what ways does the literature help to provide a framework to explain the factors which drive incumbent upgrading? A summary of factors is outlined below.

- The process of revitalization that will occur in inner cities depends on the kind of employment restructuring that has occurred in a particular city (Clay 1979, Beauregard, 1981).

- In higher order cities that have undergone extensive post-industrial restructuring, gentrification in the inner city is likely to occur. In cities where in-migration of higher income groups into the inner city has not put pressure on existing residents to move, or inflated housing prices, re-investment is likely to be made by existing long term residents who like the neighbourhood and/or who may not be able to afford newer suburban housing (Clay, 1979).

- Incumbent upgrading is likely to occur in lower income areas where traditional employment patterns persist and where employment in manufacturing and lower sector (tertiary) sectors is still available (Clay 1979).

- The availability of public programs, and the confidence of private capital in an area (which is associated with neighbourhood stability, cohesiveness and the elimination of red-lining) appear to be important factors in the incumbent upgrading process (Galster & Hesser, 1982; Goetze, 1976).

3 - 3 Physical and Social Characteristics of Incumbent Upgrading Neighbourhoods

We must also ask the question of the literature, if incumbent upgrading is occurring, what kind of neighbourhoods is it occuring in?

- In terms of their physical characteristics, areas undergoing incumbent upgrading are likely to be different from their gentrifying counterparts. The latter is typified by elegant housing, classical architecture, closeness to the Central Business District (CBD), amenities and landmarks such as rivers, urban parks, etc. (Bijelic, 1992). The former are more likely to be areas further from the CBD, contain modest, affordable, single-detached housing and less aesthetic architectural style (Clay, 1979).

- Socially, households in incumbent upgrading neighbourhoods are more likely to have dependent children and be long-term residents. Elderly households are also likely to be found (Clay, 1979). Low mobility, families and long term elderly households are associated with stability in neighbourhoods.

- Ethnicity may also be a factor in incumbent upgrading although there are conflicting views. Both Varady (1984) and Beauregard, to varying degrees cite ethnicity as a catalyst or force in incumbent upgrading. However, Clay (1979) does not consider ethnicity to be an important factor.

Although the theoretical literature on incumbent upgrading is not as varied and rich as the theoretical framework which underpins gentrification, the above summary of indicators from the work of Clay (1979), Beauregard (1981), Galster and Hessor (1982), Bunting and Phipps (1987), Smith and Woodman (1987), allows us to link our study hypothesis outlined in section 2 to the kind of profile we are likely to find of cities, inner cities and neighbourhoods that are likely to initiate incumbent upgrading. A picture emerges of cities that have not experienced the same degree of employment restructuring as larger metropolitan centres; have not seen an influx of the new strata of worker associated with gentrification; may have inner cities that are experiencing population loss but have not experienced the upward pressure on house prices caused by the movement of high income households back to the inner city. Neighbourhoods likely to show signs of incumbent upgrading are more likely to be lower income and working class with residents likely to be working in the remaining manufacturing and tertiary sectors and be long time residents.

Physically they are more likely to be more distant from the Central Business District CBC than gentrifying neighbourhoods, are associated with more contemporary housing (post world war II) in relatively good condition. Two factors appear to be important catalysts; the availability of public sector programs to support the revitalization process and neighbourhood stability and cohesion which support individual and private sector investment decisions.

Finally, in examining the physical and social characteristics of incumbent upgrading, what empirical evidence is there to link incumbent upgrading in Winnipeg to our assumptions related to structural change? Tables 1 through 8 included in Appendix I illustrate how employment restructuring in the Canadian context has affected Winnipeg and its inner city. The following key points are highlighted below.

- Manufacturing employment in Canada has seen a 20.1% reduction between 1989 and 1992.

- The loss of manufacturing employment has recently accelerated in Canada. Between 1970 and 1990, there was a 6.8% reduction in manufacturing employment in Canada and an 8.9% increase in services employment compared to the 20.1% reduction in manufacturing employment over the 3 year period described above.

- Between 1986 and 1991, there has been a modest loss (2.67%) in the manufacturing sector in Winnipeg but a 19.13% loss in the inner city. However in those areas identified in Sections 4 and 5 as showing evidence of incumbent upgrading, the loss of

manufacturing employment has been less significant than in many other areas.

- Between 1986 and 1991, Winnipeg shows an increase of 5.69% in its tertiary sector but a loss of 2.96% in the inner city. However all other sectors in the inner city showed more significant losses.

- Between 1986 and 1991, there was an 18.5% increase in the quaternary employment sector but a 6.24% decrease in the inner-city. Winnipeg may be seeing some increase in new post-industrial employment but those with quaternary employment are not locating in the inner city.

3 - 4 Re-Orientation of Research on Inner City Revitalization

From the literature review, it has been determined that the focus of any empirical research on the inner city should move away from simply identifying whether gentrification has occurred. In large metropolitan centres, economic restructuring in the post-industrial era has had the effect of increasing the concentration of professionals employed in the quaternary sector of the inner city. This phenomenon has been ably chronicled by authors such as Ley (1991). However, as Matrix II illustrates, cities like Winnipeg score very low on any revitalization index that uses only social status indicators. Table 6 (Appendix I) also illustrates that there has been a decrease rather than an increase in quaternary employment in Winnipeg's inner city.

As Ley points out, "... gentrification has not taken place equally across Canada" (Ley, 1991). An analysis of the increase in social status in inner city areas between 1971 and 1981 illustrates differentiation between clusters of cities (Ley, 1991).

"Ley associates a growth in tertiary and quaternary sectors of employment with a change of attitude toward the inner city. For him the recent evolution of employment structure has led to the expansion of a literate middle class with a taste for inner-city living. In this view, post-industrialism fosters inner-city revival" (Bunting and Filion, 1988). He concludes that the nature of the urban economy seems to be the most important factor in determining social status change. "The six cities with the highest gentrification scores are either government centres or else regional or national centres of advanced services; some are both. In contrast the cities with the lowest scores have economic functions primarily in manufacturing or resource development". (Ley, 1991).

However, we have demonstrated that other urban centres, like Winnipeg, that have not been as affected by this restructuring, also reveal signs that some types of revitalization has occurred. Most notably, physical reinvestment has taken place in certain areas without shifts in the population's socio-economic profile. Social status indicators associated with gentrification involve statistics focussing on education levels, occupation and household income. "The typical gentrifier has been shown to be young, highly educated, upwardly mobile, and a recent mover into the neighbourhood" (Millward and Davis, 1986). By contrast, incumbent upgrading is associated with no change in or declining, socio-economic status and low levels of homeowner mobility.

3 - 5 Requirements of Model for Analysis and Incremental Model Building

It follows then that any new model or framework for analysis (these terms will be used interchangeably) should be based on the assumption that socio-economic and demographic change are reflected in the profiles of neighbourhood populations. To determine whether gentrification or incumbent upgrading is occurring, various social and demographic variables have to be used to identify the level and form of inner city revitalization that can be observed. Also, such a framework for analysis must measure physical renewal activity as well as the socio-economic characteristics of neighbourhoods. Developing such a detailed and portable framework is undertaken in Section 4. However these broad parameters were first examined in a preliminary way with key variables. This preliminary analysis underpinned the framework that was ultimately developed for this study. To examine the spatial relationships between renovation activity, social status and stability, three key variables were examined; building permit activity, population with a university degree and non-movers. The first variable is associated with both gentrification and incumbent upgrading, the second is a key factor in examining the population with a university degree and neighbourhood stability is associated with upgrading by incumbent populations who are non-movers.

City of Winnipeg residential building permit data was first computerised in 1983. A complete data base of computerized building permit data was provided by the City of Winnipeg for the 1983 to 1991 period. As indicated in Section 1, it is classified by street address, construction type, work detail/government program involvement, census tract and estimated cost of renovation. The information it provides on the total incidence of renovation (1983-91) has been used to provide a preliminary non-weighted spatial analysis of renovation activity in the city of Winnipeg (see Table 9). The top quartile shows that census tracts 45, 48, 21, 43, 117 and 116 have the highest levels of renovation activity. Map 2 identifies the same census tracts using weighted values.*

The second step was to map the incidence of university degrees by census tract for 1981 and 1991. Although high educational, occupational and income status are all closely associated with gentrification, the literature suggests that education is a key variable (Gale, 1979; Millward and Davis, 1986). Maps 3 and 4 map the incidence of university degrees over time by census tract in 1981 and 1991. These demonstrate that census tracts 11, 12, 17, 116 and 117 had weighted values higher than twice the median* for 1981 and 1991. Census tract 15 shows a decrease between 1981 and 1991, scoring in 1981 but not 1991. Census tracts 16, 21 and 29 are additional census tracts that can be mapped in 1991. It is worthy of note that census tracts 45, 48 and 43 (three out of the four census tracts that scored highest in terms of the non-weighted renovation incidence) did not score on the preliminary social status analysis. However in 1991 census tract 21 is featured in both analyses.

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* The methodology for calculation is explained in Section 4-6.

The third step was to map the percent of non-movers** by census tract for Winnipeg's inner city in 1981 and 1991 (see Maps 5 and 6). In both base years, census tracts 21, 45 and 48 scored. These also scored highest on the renovation index (issued building permits 1983 to 1991). We might expect to find incumbent upgrading here. In 1991, census tracts 11, 28, 29 and 116 also scored on the non-mover diagram. All except census tract 11 showed relatively high scores on the renovation index.

This preliminary analysis provided some indication of the forces of revitalization at work in Winnipeg. However, in order to develop a portable model, integrally linked to theoretical indicators, that might be used in other situations and cities, it was necessary to develop a more systematic and statistically appropriate framework. As indicated earlier, this is the subject of Section 4.

3 - 6 The Policy Context in Winnipeg's Inner City

The literature described above suggests that public policy intervention may be a factor in encouraging incumbent upgrading. As a final backdrop to developing a framework for analysis, this section examines the public policy context in Winnipeg.

As in other Canadian cities, the demise of urban renewal during the 1960's was followed by a public policy focus on conservation, renovation and revitalization in inner cities. The 1973 Housing Act ushered in two complementary programs aimed at improving older housing stock and neighbourhoods, the Neighbourhood Improvement Program (NIP) and the Residential Rehabilitation Assistance Program (RRAP). Given that 69 percent of the housing stock in Winnipeg's inner city was constructed prior to 1946 (Clatworthy, Frenette & McKee, 1979) and a CMHC survey in 1974** had indicated that Winnipeg (amongst 9 major cities) had the largest percentage of poor quality housing stock (13 percent) in Canada, these programs were obviously ones from which the city could benefit. For the past twenty years RRAP, NIP and successors to NIP have been the centrepieces of public policy intervention in Winnipeg's inner city.

Until 1986, (when there was a change in federal policy) the City of Winnipeg used NIP and its successors such as the Community Services Program (CSP) in tandem with RRAP to target neighbourhoods for revitalization. NIP allowed improvement of community facilities and infrastructure; RRAP provided loans to low income homeowners (initially up to $10,000), half of which was forgivable if the incumbent remained in the renovated home for a period of five years after renovations were completed. This encouraged low population mobility and discouraged speculation. NIP was designed as a catalyst for neighbourhood revitalization and a five year lifespan was defined in the 1973 legislation. Between 1974 and 1979, nine NIP areas

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* Non movers defined as percent of non movers who have resided at the same address for 5 years or more (at twice the median or above).

* * CMHC, Survey of Housing Units, 1974
Peter Barnard & Associates, Housing in Winnipeg, 1979
Institute for Urban Studies, Inner City Housing, 1979

were designated and revitalized in Winnipeg. Between 1979 and 1986 further areas were targeted using a combination of RRAP and NIP successor programs.

After 1986, as a result of the Neilson Task Force and the narrow focus by the federal government on low income assistance in social housing approaches, the required association between RRAP and designated areas was eliminated and the RRAP program became available city wide. After a steady take-up of grants in designated areas between 1983 and 1989 (with a peak in 1985) there was a substantial increase in RRAP associated building permits issued between 1986 and 1991. However, their effects were not focussed on particular inner city areas.

Diagrams 24 to 27 show the percent of building permits by year (1983 to 1991) for the inner city: the number of RRAP permits issued over time for the inner city compared to total permits issued for the city as a whole; a comparison of the number of permits issued for the outer city and the inner city; and the total issued building permits for Winnipeg, the outer city and the inner city. These tables will be further discussed in Sections 5 and 6.

In Winnipeg's inner city, the NIP and RRAP programs were enriched between 1981 and 1991 by the Core Area Initiative (CAI). Designed to address the social, economic and physical problems of the inner city it was initially capitalized by $96 million in funding over the first five years, equally cost shared by the municipal, provincial and federal governments. Its renewal (1986-91) saw a further $90 million of public funds invested, cost shared tri-laterally, and authorization for $10 million capital borrowing. The CAI was an important public policy context for residential revitalization because housing programs were pivotal to the program framework it developed. Its housing initiatives included home ownership incentives, encouragement of affordable housing and home renovation and repair. Further it allowed a "son/daughter of NIP and CIP" program to be developed to improve community facilities and infrastructure and attempted to address safety, slum housing and public health through its application of the city's housing maintenance and occupancy by-laws through inspection and enforcement. The Core Area Home Repair Program (CAHRP) was of particular relevance to residential revitalization between 1981 and 1991.

This latter program allowed the city to include neighbourhoods that did not qualify for RRAP. It offered home owners and landlords financial assistance to make repairs and undertake renovation to allow their property to meet health and safety standards under the city's by-laws. Between 1981 and 1986 it allowed 4038 owner-occupied units to be repaired and a further 545 between 1986 and 1991, for a total investment of more than $10 million (CAI Reports 1987 and 1991).

However, there is concern that the termination of the CAI (1991) and uncertainty related to the federal government's commitment to RRAP will affect the ability of incumbent upgrading neighbourhoods to sustain revitalization activity. "In 1993, the Conservative Government cut social housing funding by 29 percent and announced its intention to terminate RRAP effective January 1st, 1994." (Pollock, 1994). Although the new federal liberal government reinstated the RRAP program until 1996 and committed $100 million nationwide for two more years of funding (Pollock, 1994), there is understandable concern in Winnipeg. It is unlikely that without strong federal support, the municipality will have the political will or the financial resources to continue the kind of programs which encourage incumbent upgrading.

SECTION 4. A FRAMEWORK FOR ANALYSIS Christian Douchant

4 - 1 Introduction

The difficulty with building a framework for analysis is the complexity of defining neighbourhood revitalization. In his 1986 study, Ley (1986) identifies two major choices: either neighbourhood revitalization could be measured by changes in the housing market, or it could be assessed by changes in the socio-economic profile of households. In terms of studying gentrification, most researchers have opted for socio-economic profiles of households (Gale: 1984), (Ley: 1985, 1988), (Beauregard: 1990), and (Logan: 1984). However, as indicated earlier, other researchers such as Millward and Davis (1988) successfully used both changes in the housing market and socio-economic profiles for analyzing inner city revitalization. Their research provided a descriptive analysis of whether incumbent upgrading and gentrification were occurring simultaneously in Halifax. They used variables that assessed actual physical reinvestment in the housing stock as well as looking at the socio-economic and demographic change that had occurred in certain neighbourhoods.

This research builds on Millward's methodology. To identify the incidence of incumbent upgrading and gentrification, variables have been selected and applied to measure both physical re-investment and the socio-economic and demographic changes in neighbourhoods over time.

4 - 2 Dependent Variable: Identification of Home Renovation Using Building Permits

To build a framework for analysis, it is necessary to establish a dependent variable that represents actual reinvestment and renovation of the housing stock. For this research the assumption is that reinvestment in the housing stock is a consequence of the change in the socioeconomic characteristics of an area. Housing conditions are not seen as the motivating factor behind the change. With this assumption, it is necessary to identify the type of variable that provides an indication of the amount and type of renovation activity that has occurred in a neighbourhood over time. There has been substantial use of various empirical indicators to show change in the housing markets of areas. Some common ones include housing tax rates, housing assessments, number of housing sales and building permits (Albrandt and Brophy, 1975; Phipps, 1983). However, the use of any one of these variables can only be associated with its availability and the reliability of information provided.

For this research, it was decided to use building permits as a measure of actual home reinvestment activity in various neighbourhoods. As indicated earlier, building permits have been successfully used by Millward and Davis (1988) in their study of Halifax. Other studies have also shown the possibility of using building permits as well (Albrandt and Brophy, 1975; and Ley 1988). Building permits are seen as a good indicator about the type of reinvestment activity in an area particularly since it is indicated on the permit what type of renovation and construction is being conducted (Millward 1988).

There are some limitations to the use of permits. Building permits are only indications of intent

and therefore the described construction might not even take place. Also, not all households will apply for a permit when doing renovation. Often this is done covertly to avoid a higher reassessment of the property and therefore the possibility of increased property taxes. However, as Millward argues "...the missed cases of renovation presumably exhibit a spatial pattern similar to those recorded" (Millward 1988, p. 110). Most importantly, evasion of applications is less severe in cases of substantial renovation work, since such work is much less easily disguised. (Millward, 1988) Another concern is separating building permits related to routine maintenance from more extensive renovations associated with gentrification and incumbent upgrading. We chose not to use a cost of renovation cut off so we could use the total population of building permit data rather than sample*.

With the use of building permits as a measure of reinvestment and renovation activity in a neighbourhood, it is simply a question of identifying variables that can be used to explain the different forms of revitalization by examining different socioeconomic circumstance in a neighbourhood. In this case, whether gentrification or incumbent upgrading is predominating in an area. This can therefore be symbolised in a diagram:

Gentrification --> [Home Renovation] < -- Incumbent Upgrading

To facilitate the analysis, particularly in terms of the influence of public policy on home reinvestment, the building permit data used was divided into three dependent variables. TOTAL, RRAPS and PERM were the acronyms used for these variables. Each are fully defined in Appendix II (pgs. 114-115). The variable TOTAL includes all registered building permits i.e. both those involving private renovation and those involving renovation with public program support such as RRAP and CAHRP. The variable RRAP refers to building permits registered involving public program support. PERM is the variable acronym for building permits registered, not involving public program support. This separation into categories was undertaken to identify census tracts that might have proportionately more government sponsored reinvestment than others. Logically, areas where higher income groups reside should have a greater proportion of privately issued building permits, while a lower income area should have more significant numbers of permits issued under RRAP and CAHRP. These variables were also desegregated to determine the influence of one on the other. The hypothesis is that as the number of RRAPS and CAHRPS increase, so should the number of regular permits increase as well. If Galster (1987) is correct in his assumption, then hopefully this set of data will support it.

4 - 3 Independent Variables: Socioeconomic and Demographic Variables

Initially, eighteen variables describing socio-economic, demographic and housing characteristics were selected for two time periods, 1986 and 1991. The variables were selected on the basis of previous research as well as our understanding of urban structure and process.**

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* This high correlation between the variable TOTAL and RRAPS suggest that renovation in lower income areas (that are associated with the phenomenon of incumbent upgrading) involves more than routine maintenance. The variables TOTAL and RRAP are defined in APPENDIX III.

* * Feedback was also sought from academics and practitioners about the choice of variables. This was principally undertaken through presentation of preliminary analysis and a paper at the Workshop on Inner City Research, November, 1993, sponsored by the Institute for Urban Studies, University of Winnipeg.

The choice of good indicators to identify the transition process presents the most important aspect of developing a framework for analysis. Examining the variables selected for intercorrelations and potential double counting, which might occur when the model is applied, is also important. For example, initially, a variable measuring the proportion of individuals with university degrees was calculated because areas exhibiting characteristics of gentrification often reveal higher proportions of highly educated and employed individuals. In various studies, David Ley (1985, 1988) uses education as a surrogate measure of socio-economic status, where the increase in the highly educated households was indicative of neighbourhood transition to "gentrification" (Ley 1985, p.189). In his study of the impact of gentrification on Canadian cities, Ley used the number of individuals with university education as part of his social index to measure the increase in neighbourhood social status (Ley 1985, p.9).

Measuring income and socio-economic class to identify middle- and upper income household movements into an inner city area, can also reveal the socioeconomic transitional process associated with gentrification. However, the problem with using income is that an individual's income changes over time, but not necessarily his or her social position (Badcock, 1990). To overcome this problem, many studies have used changes in occupation inside neighbourhoods to define the socioeconomic transition associated with gentrification Badcock (1981, 1990), Logan (1984), Houghton (1987).

In his study, Logan used the increase in occupational status, where an increase in the proportion of residents in the professional and upper management occupations suggests neighbourhood improvement (Logan 1984). Ley used the same variable in his social status index indicator of his study on Canadian inner-cities. The use of occupation has been significantly important for those researchers of post-industrial change and its effects on the socioeconomic structures of Canadian inner-cities. Bourne (1987), Broadway (1992) and Ley (1988) used changes in occupations to show that in large metropolitan centres, there has been an increase in the number of people employed in quaternary sectors concentrated in certain inner city neighbourhoods. Ley goes further and associates this concentration of individuals employed in that sector with the rise of gentrification in large urban centres. Therefore, in terms of identifying whether gentrification has occurred in a neighbourhood, it is possible to use occupation in the quaternary sector to identify the transitional process in a neighbourhood.

As indicated earlier in addition to Ley (1985, 1988), level of education was also used by Logan (1984) and Millward (1988), to measure socio-economic status of neighbourhoods. However, initial use of the level of education variable showed very significant correlations with the variable measuring the proportion of people employed in the quaternary sector. The relationship was so high that it was decided to omit the education variable and use only occupational characteristics to identify social status in neighbourhoods.

We faced a similar dilemma in eliminating the variable "non-movers" initially used in section 3 as an indicator of stability. For its part, incumbent upgrading deals with a set of socio-economic characteristics that are much different from gentrification. Most notably, the population has resided in the area for many years without any substantial change (Clay, 1979). In addition, the population in question is usually of the same socio-economic background - i.e. working class or lower income households (Clay, 1979). Unlike gentrification, which is associated with an influx of a new high income population group, incumbent upgraded areas have

hardly any population movements occurring. Therefore, to define whether incumbent upgrading has occurred, it is necessary to consider population mobility in an area.

Measuring mobility is difficult since there are many variables that can be used to assess the extent of mobility in a neighbourhood. In their study of Halifax, Millward and Davis simply used the length of occupancy to determine mobility rates (Millward and Davis, 1986). They obtained this measure from Statistics Canada Census profiles that calculate an average length of occupancy for the entire area: they used a limit of ten years and over. This amount of time corresponds to other studies that have used ten years as a minimum to define whether the population movements have been stable (Galster, 1989). There is difficulty using this variable for statistical purposes, since it is only a median value and not a percentage. Another variable therefore has to be identified for a statistical framework for analysis. As shown in Section 3, it still has merit however as a spatial analysis indicator.

Another variable that has been associated with both neighbourhood stability and revitalization is the incidence of owner occupied dwellings. In Logan's study, he provided evidence that increases in the proportion of owner-occupied houses in the total housing stock is a good indicator of the increasing settlement of higher income groups in a neighbourhood (Logan, 1984). However, high ownership has also been associated with incumbent upgraded areas as well, where a high incidence of ownership in an area has been related to re-investment in the housing stock (Galster, 1987; Clay, 1979). The high incidence of home ownership induces revitalization because the residents feel more optimistic about their area; recognize that there is less probability of demographic change and therefore less chance of a negative filtering process occurring (Galster, 1987). Because of this expectation, high home ownership tenure is also associated with neighbourhood stability, where high tenure means a stable population base.

In the gentrifying process, less stable, low income areas with high rental tenure and vacancy rates will be transformed by increased evidence of homeownership because of the movement of new, affluent households. Whatever type of neighbourhood revitalization being identified, high homeownership is a key factor for both gentrification and incumbent upgrading. Therefore, this variable is central to the framework for analysis.

Given the difficulty of using population mobility in the statistical model, and given that the non-movers variable and the home ownership variable showed high inter-correlation, the non mover variable was eliminated. Initial use of the Pearson Product Moment Correlation table revealed those variables (like the ones described above) that were highly intercorrelated and essentially measured the same characteristics about various neighbourhoods. This was difficult to determine on an a priori basis.

Other variables which measure the social and economic conditions of neighbourhoods include the proportion of rental tenure and family status. Three variables show three types of family households that were calculated because certain types of households are present in different types of neighbourhoods undergoing different transitions. For example, areas showing gentrification have more families with no children or common-law couples than other neighbourhoods. Conversely, areas exhibiting characteristics of incumbent upgrading or stability would have greater proportions of families with children. In terms of single parents, there would be a greater proportion in the low income areas in the inner city.

Also incumbent upgrading deals with a set of socioeconomic characteristics that are much different from gentrification. Most notably the population has resided in the area for many years without any substantial change (Clay 1979). However, in addition, the population in question is usually of the same socioeconomic background - i.e. working class or lower income households (Clay 1979). Therefore, to define these particular sectors of the economy, the proportion of those employed in tertiary, manufacturing and construction sectors were also calculated (as a corollary to using quaternary employment to identify gentrification). If incumbent upgrading is occurring, then areas which have significant levels of renovation activity should have a stronger showing of households where people are employed in these traditional sectors of the economy.

Ethnicity is a controversial factor in neighbourhood revitalization. For gentrification it has no impact, but for incumbent upgrading it can be a major factor. Clay identified in his study that areas with a strong ethnic component, where one ethnic group predominates in an area, was more likely to show signs of revitalization via reinvestment in the housing stock (Clay, 1979). These findings have been supported by other studies as well (Beauregard 1990). Neighbourhoods that have one predominant ethnic group often produce a solidarity among most of the residences that resist change and/or promotes reinvestment and renovation of the existing housing stock. Because of this factor, an additional variable identifying ethnicity will be used to determine its relationship with renovation activity. Also, a variable will be created to measure the percentage of immigrants in an area. This translates into the percentage of all individuals who are not born in Canada. By using both these variables, it is possible to determine the influence of ethnicity on renovation activity.

To determine whether certain segments of the population are responsible for renovation activity three additional variables were calculated. A variable to measure the percentage of population over 65 years of age will be used in order to determine whether the majority of renovation activity is done by this group. This is possible since the contemporary inner city has more concentrations of elderly people than the suburban areas, which have younger families. Also, a variable will be calculated to measure the proportion of households that use over 30% of their annual income that goes towards payments on housing. Theoretically all of these variables should provide more detailed information as to the existence of incumbent upgrading, since it is a process which is directly related with low-income areas. As Clay (1979) indicated, most of the incumbent upgraded areas often had households using larger than normal amounts of their income towards their housing, and it has been identified that some areas have a larger than normal concentration of an older retired population firmly established in the area - often becoming the main reason for stability in some areas. Therefore, all these variables can be included as independent variables measuring incumbent upgrading.

At the outset it was unclear that relationships would develop between variables. They were included initially for research purposes related to the literature and to examine whether relationships do exist. Appendix II displays the fifteen variables that were finally used in the framework for analysis that was developed. It indicates the variable titles, how they were calculated and the data sources. The actual number used for calculating the values for each CT is also provided in Appendix III.

4 - 4 Methodology for the Development and Application of the Framework for Analysis

In order to achieve the stated research objectives, it was necessary to undertake a descriptive analysis of Winnipeg in general and the inner city in particular over the 1986 to 1991 time period at the census tract level. To accomplish this, the kind of theoretical and analytical decisions described above had to be made. This involved identifying observations and their standardization over time; data selection and manipulation; statistical analyses and standardization of single distributions and mapping procedures.

Any meaningful longitudinal analysis of Winnipeg's inner city requires that the number of observations from each time period should remain the same. As already stated in the introduction, the boundary of the inner city used for this study is the same as that adopted by the Core Area Initiative. Fortunately, all census tracts for both 1986 and 1991 remained unchanged during time period (see Map 1). Altogether, 27 census tracts are in this area. However, 3 census tracts were eliminated from the study - 13, 14 and 23. The reasons for elimination were as follows: their population base was low; nearly all dwellings were apartment units and rented; or no permits were issued for single detached and semi-detached dwellings in these areas.

The raw data was standardized by converting all values to percentages. The expression of values in percent makes it possible to compare census tracts, even though they may vary extensively on the basis of their absolute numbers. All values were then weighted according to the entire inner city. This weighting procedure takes into account the proportion of each of the variables for each census tract relative to the entire inner city area. The value calculated is then multiplied by the calculated percentage for each CT in order to obtain a weighted value. The values weighted are more representative of each CTs' value according to each variable. (All weighted calculations are presented at the end of Appendix II).

As indicated earlier the data for issued permits indicates the census tract in which the permit is issued; the value of the permit; the type of construction undertaken and whether it was issued under a RRAP or CAHRP. The dates of the permits range from 1983 to 1991. The permits were divided by the total number of single-detached and semi-detached dwelling units in the study area for 1981, and the value for each census tract was appropriately weighted according to the entire inner city. This weighting procedure takes into account the proportion of single-detached and semi-detached dwellings for each census tract relative to the entire inner city area; the values calculated here is then multiplied to the calculated percentage for each CT in order to obtain a weighted value. Unfortunately, the Statistics Canada profiles do not include the variable single-detached and semi-detached owner-occupied dwellings. Therefore, it was decided to use only single and semi-detached dwellings as a base value. This is acceptable since the majority of this type of dwelling in most urban areas are owned anyway, and since the focus of the study deals with residential neighbourhoods. In addition, the 1981 census was used for obtaining the total amount of single and semi-detached homes since it is a more appropriate base for the building permit data, and since both single-detached and semi-detached dwellings were outlined - the 1986 census only identified single-detached dwelling and therefore it became less accurate than the 1981 statistics.

The data for each time period was placed on a SPSS computer file (Statistical Package for the Social Sciences) for extensive data manipulations. Because all the variables were measured on a ratio scale[1], descriptive statistics such as means and standard deviations could be calculated and meaningfully interpreted. The normal distribution has many desirable properties in that between $\pm$ 1 standard deviations from the mean would include 68 percent of the observations (Kuz: 1979).

Three steps were used to analyze the data. In the first step, as has already been discussed, the variables were examined individually for relationships using a correlation table. Second, a spatial analysis was undertaken to map the incidence of each variable by census tract. Tables 10 and 11 and Maps 7 through 23 report the results of this process (see Appendix I).

The second step allowed us to examine spatial relationships between variables and to identify those areas that showed evidence of one or other of the two processes of change under investigation, incumbent upgrading or gentrification. Third, the areas which appear to exhibit attributes of incumbent upgrading were identified and discussed.

The association between variables was examined using Pearson's product-moment correlation (r). All values with an (r) value greater than 0.5 were identified by the SPSS program option selected. The statistical significance of a relationship between variables observed in a data set is required to be expressed in terms of probabilities. The values 0.01 and 0.001 indicate that the probability of obtaining the measured association between variables, as a result of a sampling error are 1 in 100 in the case of the former and 1 in 1000 in the case of the latter. All values with an asterisk (*) represent a statistically significant relationship at the 0.01 level and all values with a double asterisk (**) represent a statistically significant relationship at the 0.001 level. Tables 10 through 15 show correlations between variables identified in the framework for analysis for the inner city of Winnipeg and the city of Winnipeg for 1986 and 1991 (see Appendix I). The higher the value of the correlation coefficient (the value of (r) varying between -1.00 and +1.00), the greater the strength of the association between variables.

All the variables were then mapped for each time period so as to provide a visual image of their distribution. The mapping was done using the Atlas Grapher program which produces accurate choroplethic automated maps. Values were assigned for each variable in the computer mapping software database which connects each value with the represented census tract.

The variables in this project were all mapped in their original form without transformation or Z-scores being used. The use of original values is acceptable since it is more easily interpreted and understood than z-scores (Kuz: 1979). Also, the data used had already been transformed via the weighting factors applied to each variable. Hence the maps reveal the distribution of the values weighted and their numbers do reflect the real percent value. However, it is more

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1.The distances between the observations are defined in terms of a fixed and equal units allowing for direct comparisons.

important to use these weighted values because they give a true representation of the standing of each census tract relative to others. Finally, a criteria of twice the median was used for categorizing each value. This is justified in that all established categories are arbitrary. Though means and standard deviations could be used for creating such categories the desired effect is simply to identify the areas which score higher than others. Twice the median has been used by other researchers such as Millward (1988), Millward & Davies (1986) and Knox (1988). All maps are displayed in Appendix I (see Maps 1 to 12).

To further enhance the analysis of the inner city, all these same statistics were calculated for the entire city of Winnipeg and for remaining areas of the city excluding the inner city - this was termed outer city. For this study, only census tracts that had building permits and RRAPS issued over the 1983 - 1991 period were included. As well, any CTs which change boundaries over time were not included. Altogether, 102 census tracts were included for analysis of the entire city of Winnipeg (see Appendix VI). By eliminating the inner city CTs 77 CTs were included for the non-inner city boundary. By dividing up the city into these boundaries, it is possible to conduct a comparative analysis between the inner city, non-inner city and the entire city of Winnipeg. The belief is that there will be marked differences between the inner city and non-inner city in terms of the levels of issued permits and RRAPS as well as the socioeconomic variables associated with each neighbourhood. The logical assumption is that their will be proportionally more RRAPS in the inner city than the non-inner city. However, what will be more interesting is to determine the trends between the two areas of the cities and their levels of reinvestment activity.

4 - 5 Conclusion

Overall, there are 3 dependent and 13 independent demographic and socioeconomic variables identified in this model. Though they are all factors that can explain the neighbourhood revitalization process, a variable measuring quaternary employment is important for identifying gentrification while low population mobility (which showed a close correlation with homeownership) is important for incumbent upgrading. The extent to which each variable will be more prominent than another will ultimately help to identify the form of revitalization occurring.

It should be mentioned that neither of these variables nor the forms of revitalization identified are exclusive. There are varying degrees to which each of these variables can occur, and this means that there are varying forms of revitalization occurring. As previously mentioned, Millward's study is the foundation for this model because his work was an attempt to identify varying forms of revitalization. His research did not just reveal gentrification or incumbent upgrading but stages of revitalization between these two. Building on his initial research, this model is an attempt to incorporate more variables and thereby provide a more detailed analysis as to the degree of change occurring in each neighbourhood over time. However, the ultimate aim is to identify whether incumbent upgrading, gentrification or no revitalization what so ever predominates in the study area.

SECTION 5. ANALYSIS OF RESULTS* Christian Douchant

5 - 1 Relationships Between Variables

A brief review of the 1986 values reveal strong relationships between the three dependent variables (TOTAL, PERMS & RRAPS). The RRAPS variable reveals a direct relationship of (.85) with Total (total households occupied owned dwellings) and a (.71) value with the variable PERMS. This only indicates that a relationship exists; whether increase in one influences the other is still inconclusive. Further analysis will be needed to be done. Of course these same values were used in the 1991 calculated values, since they are the base dependent variables.

The relationship between some of the independent variables with the dependent variables for 1986 are strong. Of course the variable OWNER reveals a strong relationship with all three dependent variables. A value of (.86) for TOTAL was computed and a value of (.81) for PERMS as well as a value of (.81) for RRAPS. All three were significant at the .001 level. There is no question that as the proportion of owners increase, so do the number of permits. However, what is particularly interesting is the strong relationship between the variable measuring the percent of husband-wife families with children (FWKIDS) and all three dependent variables; in succession, a value of (.80) was calculated with TOTAL, and values of (.67) with RRAPS and (.78) with PERMS. All values were again significant at the .001 level. There is also a direct relationship between the independent variables and the variable OWNGT (percent of owners who pay greater than 30 percent of their income towards housing); OWNGT achieved a value of (.81) against TOTAL and a value (.70) for RRAPS and a value of (.78) against PERMS respectively. Again, all values were significant at the .001 level. This is not surprising since most homeowners now are paying more and more of their incomes into housing. Interestingly, the only socioeconomic variable directly related to the dependent variables was CONST (percent population employed in construction occupations).

From this first section of the analysis, it is interesting that so many linear relationships between the dependent and some of the independent variables were found. There was no reason to believe that any kind of relationship would develop, considering that past studies have indicated that no form of revitalization was occurring in Winnipeg. What these results show for Winnipeg is that as the proportion of homeowners increase the number of building permits go up. The same can be said for the variable OWNGT (percent of households paying greater than 30% of income towards housing) and FWKIDS (percent of husband-wife families with children). The fact that the RRAP variable highly correlated with the PERMS variable suggests that as the number of RRAPS increase the number of additional permits increase as well.

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* This section discusses the analysis of all correlation tables produced for the inner city (see Tables 10 to 15 - Appendix I). All statistics that are relevant are included in this text. For a definition of each variable label, or acronym (such as TOTAL, OWNER, FWKIDS, etc.) see Appendix II p. 106. Reference to this definitional matrix will assist in the interpretation of results presented in this section.

Though there is a direct relationship between these independent variables and the dependent, it does not necessarily translate into meaning that as the number of owners increase or the greater the length of occupancy in an area, that more renovation activity will occur. It could be suggested that there would normally be a greater percentage of building permits being issued as the number of owners increase - obviously the greater number of owners, the greater the number of issued permits - and hence the result should not be surprising. However, these results do suggest that probability, since there is no expectation that linear relationships would occur at all. The simple fact remains that the application of these variables for analysis for Winnipeg's inner city reveal that significant relationships exist between the number of building permits issued and various independent variables identified.

There are of course many correlations between the various independent variables. Interestingly, the variable RENT (percent of household that rent their dwelling) is correlated with PROF (- percent employed in quaternary sector) (.80); POPOLD (percent of population over 65 years of age) (.73); FNKIDS (percent of husband/wife/common-law families with no children) (.72) and TERT (percent employed in tertiary sector)(.79). Again, all these values are significant at the .001 level. This means that in the inner city, there is a strong relationship between those employed in professional sectors of the economy and rented dwellings. As well, those that are renters seem to be individuals that are retired or families with no children. These same variables are only intercorrelated to each other, though FNKIDS is also correlated with OWNERS. As well, TERT is correlated with nearly all the independent variables, but this is a result of the increase of the tertiary sector in our economy. What this seems to indicate is that those who are considered the typical gentrifiers, are not in fact homeowners at all. This then indicates that it is highly unlikely that any form of gentrification is occurring.

However, other occupation variables such as CONST and MANU are showing relationships with variables such as OWNGT, IMMG, TERT, SPAR, FWKIDS. When we consider some of the conditions of incumbent upgrading - high ownership, high length of occupancy, predominant low income areas, strong ethnic component - we see that our correlation table does in certain ways support these conditions which would suggest incumbent upgrading, both directly and indirectly. For Winnipeg, it seems that as the number of owners, and households that pay over 30% income towards housing increase, the number of building permits increase. Professional occupations appear to have absolutely no influence on the dependent variable, whereas other occupation variables (which represent lower income occupations) strongly correlated with other independent variables that do score high with the dependent variable. The important findings are the fact that there is a polarization in terms of the different occupations associated with the different identified family types. In terms of families with kids, individuals is this group are more likely to be employed in the manufacturing or construction sectors than those who have no children. As well, those families with children are more likely to be homeowners than those that have no children.

Considering these preliminary results, we can conclude that there is the possibility that incumbent upgrading is occurring. There seems to be a segment of the population which are homeowners with families that are employed in lower income sectors of the economy. More importantly, there seems to be a significant proportion of these homeowners who are using government assistance to finance reinvestment in their housing stock.

Overall, our linear analysis reveals the strong possibility that revitalization might be occurring in the entire inner city, and it might be in the form of incumbent upgrading. However, two conditions have to be considered. First, the proportion of issued building permits in the inner city is relatively small compared to the rest of the city of Winnipeg - in fact, we are dealing with just over 7% of the permits issued for the entire city. So despite our identification of linear relationships, it must be tempered with the fact that the amounts in question are not substantial. Also, there is no reason to believe that these relationships are more or less even throughout the city. There must be some areas which score higher relative to other areas. If this is the case, only then can it possibly be suggested that some areas are involved in greater intensity of reinvestment activity than others, and that a possible explanation for it is the process of incumbent upgrading.

The correlation table for the calculated 1991 values indicates no change over time. Once again, the independent variable OWNER is highly correlated with TOTAL (.82), RRAPS (.78) and PERMS (.77); all three were significant at the .001 level. Other independent variables correlated with TOTAL are again FWKIDS (.82), CONST (.66) and OWNGT (.80); all were significant at the .001 level. Interestingly, the variable MANU - (percent employed in the manufacturing sector) was also correlated with TOTAL, where MANU had a value of (.59) and was significant at the .01 level. This seems to reinforce our overall analysis of the 1986 table in that there is a segment of the population primarily involved with reinvestment activity who are employed in lower occupation sectors of the economy - this relates directly to incumbent upgrading (See Table 11, Appendix I).

The variable RENT is again highly correlated with POPOLD (.69), PROF (.77), TERT (.82) FNKIDS (.72). This reinforces the original analysis from 1986 that those who would be considered typical gentrifiers are not involved at all in home reinvestment. From examining both tables, it seems clear that the inner city has a segment of the population which is educated, employed in professional employment but which does not own property. They merely are renting, which suggest that they are highly mobile. Also, it could suggest that the majority are retired professionals who are renting dwellings in the inner city in order to be situated closer to downtown. This in itself deserves further investigation - the statistics seem to cohere with this analysis.

From both time periods, certain independent variables were intercorrelated to reveal that a segment of the population is low income. For 1986, the variable SPAR - percent single parents with children is highly correlated with RENTGT - percent renter paying greater than 30 percent income towards rental payments (.86). RENTGT is also highly correlated with ABORG - percent population of aboriginal descent (.62), IMMG - percent immigrant population (.67), MANU (.65) and CONST (.65). Interestingly, these statistics reveal that in terms of the immigrant population in the inner city there is a dichotomy. One group seem to be highly correlated with homeownership, rising incomes, employed in the traditional professions (i.e construction and manufacturing). The other seems to be associated with deprivation, such as decreasing incomes, no homeownership and higher proportion of single parent families. Those in the groups associated with deprivation would include aboriginal as well. The 1991 tables support the same statistics for 1986 in terms of the deprivation levels.

There seems to be no suggestion of gentrification occurring in Winnipeg. Any potential variables that would be indicative of gentrification (PROF and INCOME) reveal no correlation with the dependent variables. Perhaps the spatial analysis will reveal more interesting results.

In Appendix I, Table 13 through Table 15, provide results for both the city of Winnipeg and the non-inner city for 1986 and 1991. The most interesting statistic emerging from these tables is that there is no correlation at all between TOTAL and RRAPS. Interestingly, even the entire city reveals no relationship with RRAPS except independent variables such as POPOLD, ABORG, RENT and direct inverse relationship with the INCOME variable. All these signify conditions of low income groups in the suburban area. However, when we separate the city into inner city and non-inner city, we clearly see a difference in terms of the significance of RRAPS and the independent variables associated. In the non-inner city, the variables OWNER are correlated with TOTAL and PERM, but so are the variables PROF, TERT, FWKIDS and SPAR. This indicates that in this geographical area, it is the middle class which predominates in terms of homeownership, construction and maintenance. As one would expect, only lower income groups are associated with RRAPS. However, in the inner city variables such as MANU, CONST, OWNER and FWKIDS reveal strong relationships with TOTAL, PERMS as well as RRAPS.

Overall, this then signifies that two distinct groups are involved with home repair and maintenance. In the non-inner city, it is the middle class; in the inner city, it is lower income groups employed in traditional sectors of the economy. More importantly for the inner city, this same identified group is dependent on the availability of RRAPS - hence the high correlation. This suggests that incumbent upgrading is occurring in the inner city. It is the only thing that can explain the differences between the two geographical areas.

5 - 2 Spatial Analysis

For the second part of this study, maps were created to examine the spatial distribution of the various independent variables and the dependent variable identified in this study. The aim was to determine the census tracts that have higher intensities than others. Twice the median value was used as a threshold to identify the census tracts with higher degree of intensity.

The first map reveals the distribution of total building permits for the inner city. It reveals that CTs 21, 48, 43, 45 and 117 have the higher proportions than other CTs (see Map 2). The next step is to see if the same census tracts score high on the various independent variables. The second map reveals the percentage of homeowners in the inner city. Interestingly, CTs 21, 45 and 48 reveal higher proportions than the rest of the inner city; CT 29 also scored high but did not score high in terms of the building permit variable. Most of these CTs are on the marginal areas of the inner city.

Map 11a reveals that the majority of the rented dwellings are in the south of the inner city. These same CTs scored high for the professional (Maps 15a & 15b) and tertiary occupation variables (Maps 16a & 16b). There does seem to be a spatial relationship between rental units and those employed in professional and service employment in those areas (see Maps 15a and 15b). The other occupation groups (construction and manufacturing) are more related to the CTs which have higher proportions of homeowners.

Maps (12a to 14b) show the family types variables. Families with no children are spatially related to the CTs that scored high with professional occupation variables. Families with children are more associated with the high ownership areas. Interestingly, single parent families are associated with both. This probably represents the simple fact that this family type is becoming more common in all walks of life.

Maps (21a & 21b) and Maps (23a & 23b) measure the proportion of immigrants and aboriginals in the inner city. There is a particular concentration of immigrants in the centre; both CT 21 and 29 scored high. These CTs also exhibit characteristics of high homeownership and renovation activity. While the proportion of aboriginal population is more concentrated in the central and northern part of the inner city.

5 - 3 Evidence of Incumbent Upgrading in Particular Areas

The series of maps reveal that there is the probability that incumbent upgrading was occurring in Winnipeg from 1986 to 1991. There is some evidence of upfiltering that occurred in some neighbourhoods. CT 117 exhibited characteristics of gentrification (i.e. scored high in terms of building permits and percent employed in professional occupations), and this suggests that there has been a current socioeconomic change in the that CT over the past five years. The most likely explanation is the in-migration of new high income households into the area. Finally, despite the fact that CT 117 did not pass the threshold level of twice the median, its own score came really close, meaning that there is a higher proportion of homeownership.

In terms of incumbent upgrading, three CTs (21, 45 and 48) reveals signs of this process. All three scored high with the building permit, homeowner, and manufacturing and construction occupations. They are also geographically located in areas where it is likely that this process would occur. These findings suggest that the populations in these areas are fairly stable, with higher proportion of homeownership and where more home investment activity has been taking place than other CTs in the inner city. Most importantly, these areas have higher concentrations of people employed in traditional occupations. CT 21 is particularly interesting since it scored high with all the immigrant variables as well. Altogether these maps reveal that spatially there is a case for incumbent upgrading in Winnipeg. Two CTs can be associated with the traditional definition of incumbent upgrading, and another can be associated with the ethnic component of incumbent upgrading, as discussed by Clay (1979) and Beauregard (1990).

Finally, it is important to determine the influence of public policy on potential renovation activity. A view of the map showing the spatial distribution of RRAP reveals that once again CTs 21, 45 and 48 score high as well as surrounding CTs. Most interestingly, CT 117 does not show up at all which suggest that the majority of its building permits have been obtained through private investment. This map indicates those areas with conditions of incumbent upgrading also have higher proportions of government assisted home reinvestment grants than other CTs in the inner city. This alone can indicate that there is a strong possibility that incumbent upgrading has been occurring in the three mentioned CTs. As indicated by Clay (1979), government assisted home grants have been considered influential in the proliferation of the incumbent upgrading process; these maps seem to support that hypothesis.

SECTION 6. DISCUSSION OF KEY FINDINGS, LIMITATIONS and LINKAGES

6 - 1 Introduction

It has been indicated that research on inner city revitalization for the past decade has focussed on the phenomenon of gentrification. Inner city revitalization in cities less affected by post-industrial change, which have not seen an influx of middle-class professionals (who buy and renovate residential property) into their inner city areas, has not often been studied and is much less well documented.

One of the reasons why revitalization of inner city areas by incumbent residents has not been so often observed is because the framework for analysis used by researchers has focussed on the socio-economic characteristics of those responsible for renovation and revitalization. Building principally on the work of Clay (1979) and the methodology developed by Millward and Davis (1986), this project has demonstrated that other forms of revitalization can be observed if a different framework for analysis is developed. Although the variables identified in the model, developed in Section 4 and applied to the Winnipeg situation in Section 5, are neither inclusive nor exclusive, it can be concluded that three main elements are important in any methodology designed to identify both gentrification and incumbent upgrading. These are indicators that measure reinvestment/renovation/revitalization activity in relation to the housing stock; indicators that measure socio-economic status; and indicators that measure area stability and population mobility.

The choice and selection of variables for the framework developed here was associated with further statistical analysis, undertaken by Douchant (1994). This has explored the links between selected variables and vectors or typologies of neighbourhoods. The methodology presented here is very much "a first pass" at developing a new framework for analysis. The framework can be refined, simplified or expanded, depending on research or policy analysis needs. As pointed out earlier, variables such as education, occupational status and income are important in identifying gentrifying areas. By contrast, incumbent upgrading is associated with no change or declining socio-economic status and low levels of homeowner mobility. Indicators of reinvestment/renovation will be present in both scenarios.

Our hypothesis, developed from the literature review in Section 2, is set out on page 9. Several research questions and assumptions flow from our hypothesis and underpin the empirical analysis presented in Sections 4 and 5. To what extent have these questions been answered and assumptions supported? They are dealt with seriatim in this section.

6 - 2 How has Post-Industrial Change Affected the Revitalization Process in Winnipeg?

It was hypothesised in Section 2, that "home renovation in the inner city of Winnipeg, whose socio-economic and physical environment has not been greatly affected by post-industrial change, is more likely to exhibit specific characteristics of incumbent upgrading than the specific characteristics of gentrification." To what extent was this part of our hypothesis bourne out by the evidence we found? Two factors associated with post industrial change are

selected for examination here, the loss of manufacturing employment and gains in the quaternary sector (the sector most associated with new information age jobs).

Tables 1 and 2 show that there was a steady decline in manufacturing employment in Canada between 1970 and 1990, and that this has recently accelerated to a point between 1989 and 1992 where employment from all manufacturing declined from 1,946,200 to 1,587,200, a loss of more than 20 percent. The loss of manufacturing employment has been much less evident in Winnipeg as a whole than the Canadian average; the percentage change in the manufacturing sector being minus 2.67%. However, Table 3 shows that Winnipeg's inner city showed a decline in those employed in manufacturing of minus 19.13% between 1986 and 1991. Some census tracts identified as showing characteristics of incumbent upgrading (21,45 and 48) recorded declines that were proportionately less significant than the mean.

It can be observed that Winnipeg as a whole has been proportionately less affected by the loss of manufacturing jobs, but its inner city shows losses similar to the Canadian average. However, although the evidence is somewhat weak, it can be deduced that in those areas where incumbent upgrading is taking place the effect of the loss of manufacturing employment is much less significant than in many other areas in the inner city.

When we examine changes in quaternary employment, Winnipeg has seen an 18.5% increase in this sector. However, Winnipeg's inner city showed 6.24% decline over the 1986 to 1991 period, a figure which cannot be associated with the kind of influx of higher income workers associated with gentrification. Nevertheless, it is difficult to reach any definitive conclusions when figures for specific areas are examined. Census tract 45 shows a decline in those in quaternary employment of 13.92%, more than twice the inner city average, but 21 and 48 show gains of 6.67% and 18.64% respectively (although the number of jobs compared to other sectors is very small). Other census tracts such as 24, 36 and 43 show even greater gains. Clearly, more analysis needs to occur to explain this. Douchant's principal component analysis (1994) may offer some explanation for this apparently incongruous finding. His further work, like this report, supports the finding that Winnipeg's inner city has not seen an influx of the new strata of worker, who buy and fix up property as homeowners. However, he has found spatial relationships between high income, quaternary sector employment and renters in some areas. In Winnipeg, those groups (well educated, higher income professionals) normally associated with gentrification, appear to be more likely to rent if they live in the inner city.

6 - 3 What Kind of Revitalization is Occurring in Winnipeg's Inner City - Gentrification or Incumbent Upgrading?

Overall our analysis suggests that revitalization is occurring in the inner city and it is more likely to be incumbent upgrading than gentrification. However it should be noted that only 3 census tracts out of 24 made the threshold defined in the model. Also, the proportion of issued building permits is relatively small when compared to Winnipeg as a whole. The inner city accounts for just over 7 percent of building permits issued in the city (see Diagram 24).

It can be concluded that incumbent upgrading is involved in modest levels of revitalization in Winnipeg's inner city. There appears to be a population of homeowners in the inner city, with

families, who are employed in traditional areas of the economy, such as manufacturing and construction, who are renovating their homes as incumbents. There is no evidence of a major influx of higher income professionals revitalizing inner city neighbourhoods as incumbents. Only census tract 117 showed some signs of gentrification using our framework for analysis (i.e. high scores in terms of building permits and quaternary employment) suggesting that there has been socio-economic change over the 1986 to 1991 period. However, it did not meet the threshold of twice the median using our framework.

6 - 4 Where is Incumbent Upgrading Occuring in Winnipeg's Inner City and In What Kind of Neighbourhood?

Our spatial analysis indicates that census tracts 21, 45 and 48 show signs of being areas where incumbent upgrading is occurring. All three scored high on variables measuring building permit, homeowner and manufacturing and construction occupations. Geographically, and in terms of the physical characteristics of the areas, they are similar to the profile identified in the literature. All these CTs are at the edge of the inner city boundary rather than close to the CBD, CTs 45 and 48 being in the north western edge of the inner city and CT 21 on its western edge (see Map 1). The housing stock is the kind of modest, affordable, single detached housing described by Clay (1979). The architecture of these areas is not associated with the "grand style" and impressive landmarks characteristic of gentrifying areas (Bijelic 1991). In terms of age, the housing stock is mainly post war or 1920 to 1940.

In terms of stability, CTs 21, 45 and 48 all showed values of twice the median population of non movers in both 1981 and 1991 (see Maps 4 and 5), suggesting low population movement over time, stability and cohesiveness in these areas. It is interesting to note that CTs 21, 45 and 48 were the only areas to score at twice the median in 1981. However in 1991, CTs 21, 45, 48, 28, 29, 11 and 118 all scored at twice the median for non-movers. It may be that other areas in the inner city also have some of the conditions needed to encourage incumbent upgrading.

6 - 5 What are the Probable Characteristics of Incumbent Upgraders?

A picture emerges from the correlation and spatial analysis of close relationships between homeownership, renovation activity and government grants. The population involved in incumbent upgrading are likely to be employed in traditional industries, manufacturing or construction and be part of families with children. There is evidence that some households may be quite financially stretched to make this kind of investment in their homes, given the relationship between the PERM (percent of building permits registered) variable and those that pay over 30% of income towards housing. As predicted in the literature, the proportion of immigrant population may be a factor in incumbent upgrading in some areas, particularly where this variable is related to homeownership, rising incomes and employment in traditional employment sectors. However, areas identified as those where incumbent upgrading may be occurring provide a sharp contrast with certain other inner city areas characterised by deprivation. Another group of the immigrant population is associated with declining incomes, no homeownership and higher proportions of single parent families. The variable, percent of single parents with children also shows high correlation RENTGT (percent of rented, occupied

dwellings where the renter pays more than 30 percent of income towards rent). A profile of the probable characteristics of incumbent upgraders is provided both by observing the population characteristics and relationship between variables in the areas we identified, and by contrast between these areas and those more associated with deprivation and low levels of homeownership.

Douchant's work (1994) helps to further explain these contrasts. Using a principal component factor analysis, he identified clusters between certain independent variables. Three principle "vectors" emerged; incumbent upgrading; high income/retired populations; low income/immigrant population. Only the first showed a significant relationship with the dependent variables signifying a relationship between this cluster of population characteristics and reinvestment in the housing stock.

6 - 6 What Role does Public Policy Intervention Play in Encouraging Incumbent Upgrading?

As indicated earlier, the use of government grants appears to be an important factor in the decision by incumbents to invest in renovation, particularly in the inner city. Further, government grants may be one of the few sources of investment capital available for homeowners, particularly lower income groups employed in traditional employment sectors. In the outer city, our analysis suggests it is the middle class who are involved in renovation, but there is no significant dependence on RRAP for this group. Census tracts 21, 45 and 48 are particularly identified as areas demonstrating evidence of incumbent upgrading. They are also areas which score high when the spatial distribution of RRAP take up was mapped (see Map 8). In Winnipeg's inner city, the targeting of RRAP to inner city neighbourhoods, until 1986 and the enrichment provided by additional CAI programs between 1981 and 1991 appear to have provided crucial incentives to revitalization in some inner city areas. This finding supports Clay's hypothesis about the link between government intervention and incumbent upgrading.

Given these findings, uncertainty related to long term funding for homeowner RRAP discussed in Section 3-6, and the loss of other housing programs with the demise of the CAI is of significant concern. It is unlikely that the modest revitalization activity observed in incumbent upgrading neighbourhoods can be sustained without senior level government financial support. This finding may also be of value when programs, related to the proposed new Winnipeg Development Agreement, are being developed. This is to be the tri-level successor to the CAI. Also given the economic development thrust of this new initiative, Pollock's work suggests that there are secondary economic benefits to be derived from such a labour intensive activity as homeowner renovation which fuels the renovation industry (Pollock, 1994).

SECTION 7. SUMMARY OF FINDINGS and CONCLUSIONS and RECOMMENDATIONS

- Although the level of home renovation in Winnipeg's inner city is relatively modest, evidence of incumbent upgrading was found in census tracts 21, 45 and 48.

- Those involved in the incumbent upgrading process are homeowners, with families, who are likely to be employed in traditional sectors of the economy such as manufacturing and construction. There is some evidence that ethnicity may be associated with incumbent upgrading.

- Public policy interventions such as the CAI and programs such as NIP and RRAP appear to be associated with the encouragement and fostering of incumbent upgrading.

- There is little evidence of gentrification in Winnipeg's inner city except in CT117. Those groups normally associated with gentrification in other cities are more likely to be renters if they live in the inner city or are staying in the suburbs.

- The areas that were observed as incumbent upgrading areas approximate the profile identified in the literature and have different physical as well as socio-economic characteristics from gentrifying areas. They were found at the edge of the inner city (N.W. and W.) rather than close to the CBD: had modest, mainly single-family detached, affordable housing built between the wars or post war.

- Revitalization activity has not often been observed in lower order cities like Winnipeg because previous frameworks for analysis have tended to focus on the socio economic characteristics of those undertaking home renovation. This tends to highlight gentrification but not identify incumbent upgrading.

- Our analysis has shown that different forms of revitalization can be observed if the framework for analysis uses indicators related to renovation activity (such as building permits) and area stability, as well as socio-economic indicators.

- Given that planning interventions should be based on careful analysis and diagnostic study, the framework for analysis developed here, could be a useful tool in linking appropriate public policy initiatives with conditions and socio-economic profiles in particular neighbourhoods.

RECOMMENDATIONS

- The framework for analysis developed here should be refined and modified and tested elsewhere to determine its portability and viability in assessing revitalization and forces of change in inner city areas.

- Given the importance of public policy intervention in encouraging and fostering incumbent upgrading, it is recommended that programs such as the CAI and RRAP be continued and extended. It is unlikely that there will be the political will or financial resources at the local level to sustain home renovation grants without senior level government support.

- It is recommended that new initiatives such as the Winnipeg Development Agreement consider the continuance of funding home renovation activity in the inner city both to sustain physical improvement of the inner city housing stock and support employment in the home renovation industry.

- It is further recommended that public/private partnerships between financial institutions and government (such as Community Development Funds) be considered to encourage incumbent upgrading and make the best possible use of scarce resources.

- Although incumbent upgrading appears to be associated with indicators of area stability (homeownership, low population mobility, families with children, neighbourhood cohesiveness), it has not been possible because of constraints of time and resources to directly explore the link between stability indicators, incumbent upgrading and the decision to invest. It is therefore recommended that further research be undertaken to explore these links, and the factors involved in the homeowner's decision to invest in home renovation.

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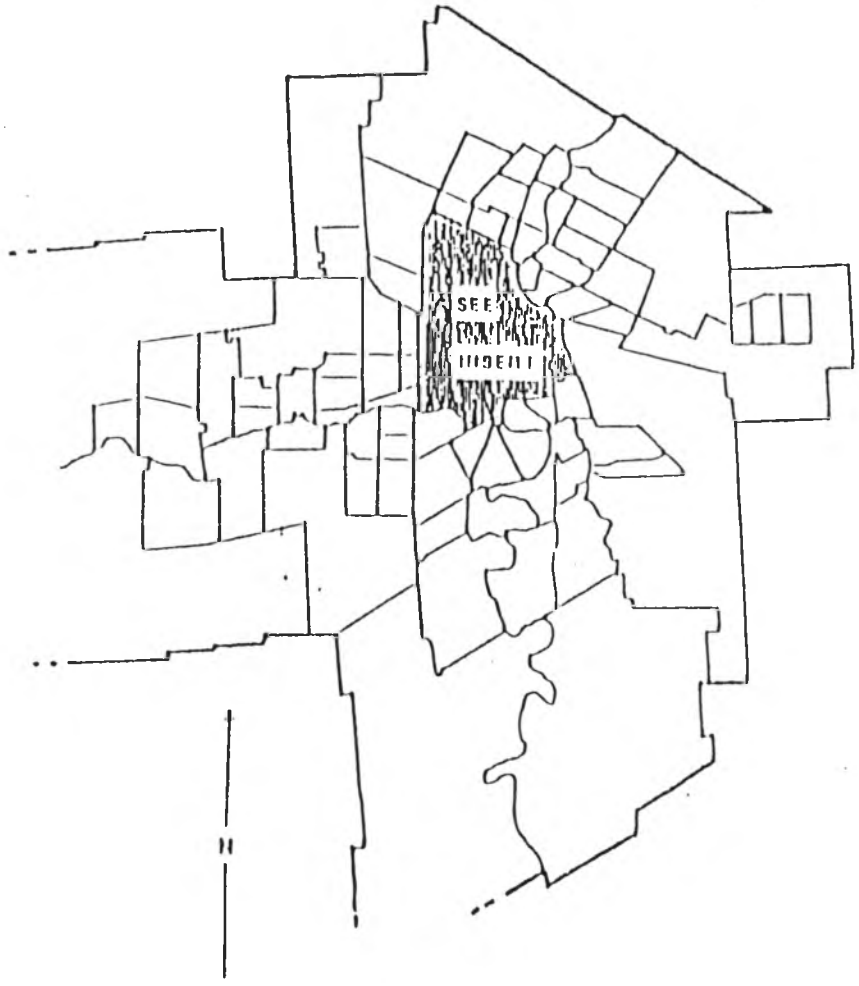
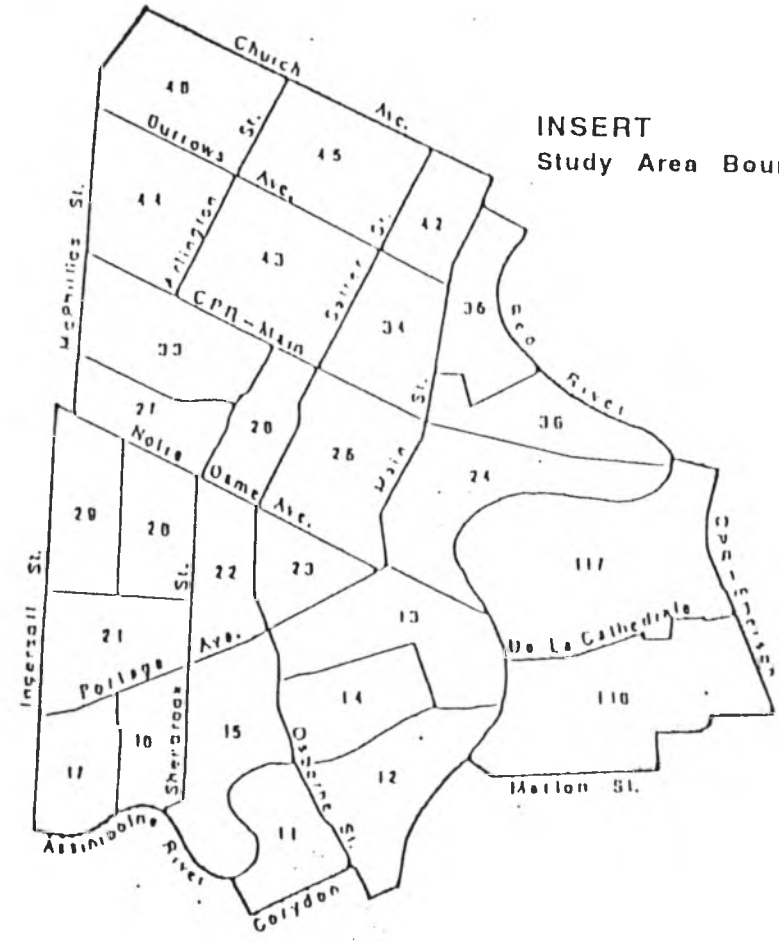
APPENDIX I
Maps, Diagrams and Tables

MAP 1
LOCATION OF INNER CITY STUDY AREA IN RELATION TO WINNIPEG CENSUS METROPOLITAN AREA



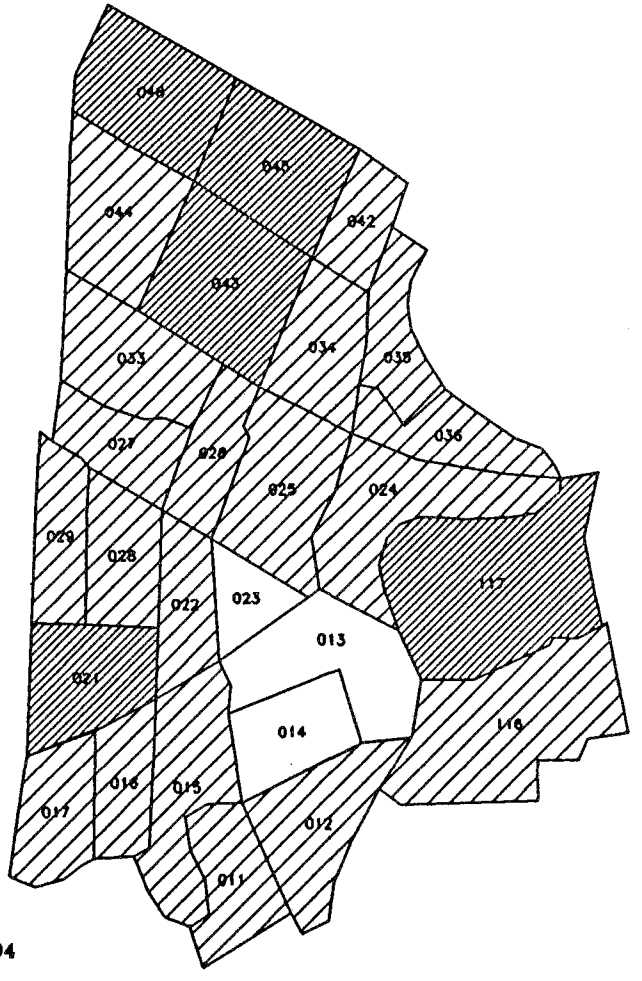


SOURCE: Clatworthy, S.; Frenette, S., and McKee, C.D. (1979) Housing: Inner City Type Older Areas Institute for Urban Studies, Winnipeg

Prepared by D. Maetze

Map 2

PERCENT OF TOTAL BUILDING PERMITS BY CENSUS TRACT FOR WINNIPEG'S INNER CITY – 1983 TO 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

9.14 to 16.66 (above

.1 to 9.14 (below)

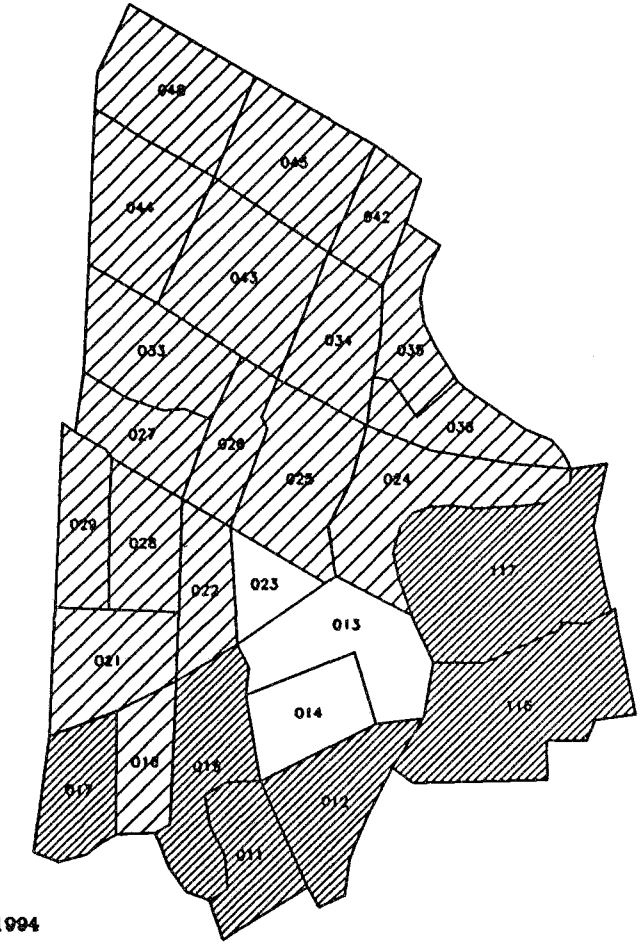
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of Institute of Urban Studies – U of W.

Map 3

PERCENT OF UNIVERSITY DEGREES BY CENSUS TRACT FOR WINNIPEG'S INNER CITY – 1981 (All VALUES WEIGHTED)

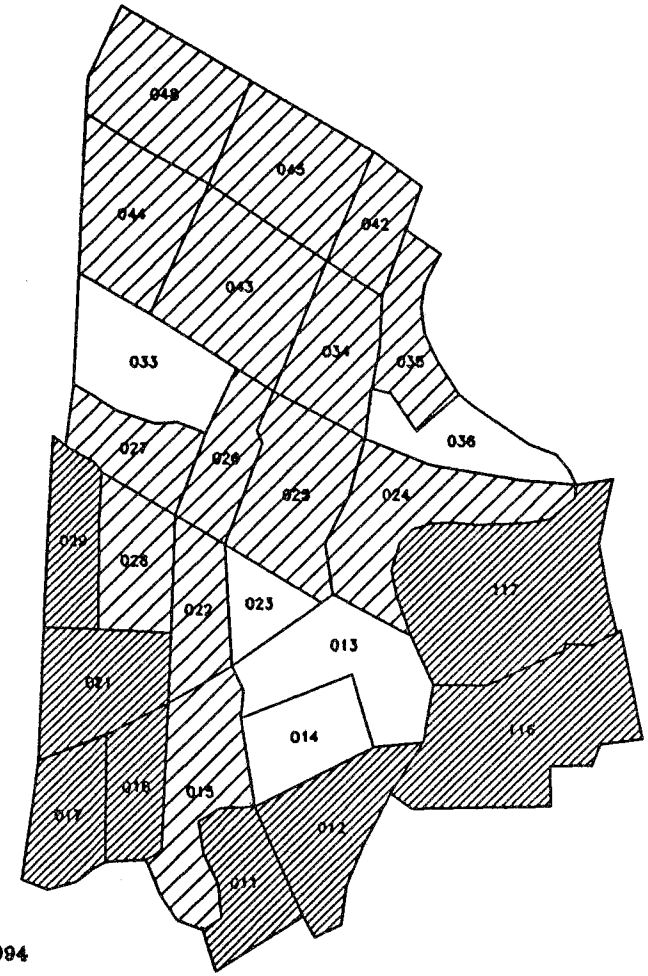


Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 4

PERCENT OF POPULATION WITH UNIVERSITY DEGREES
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

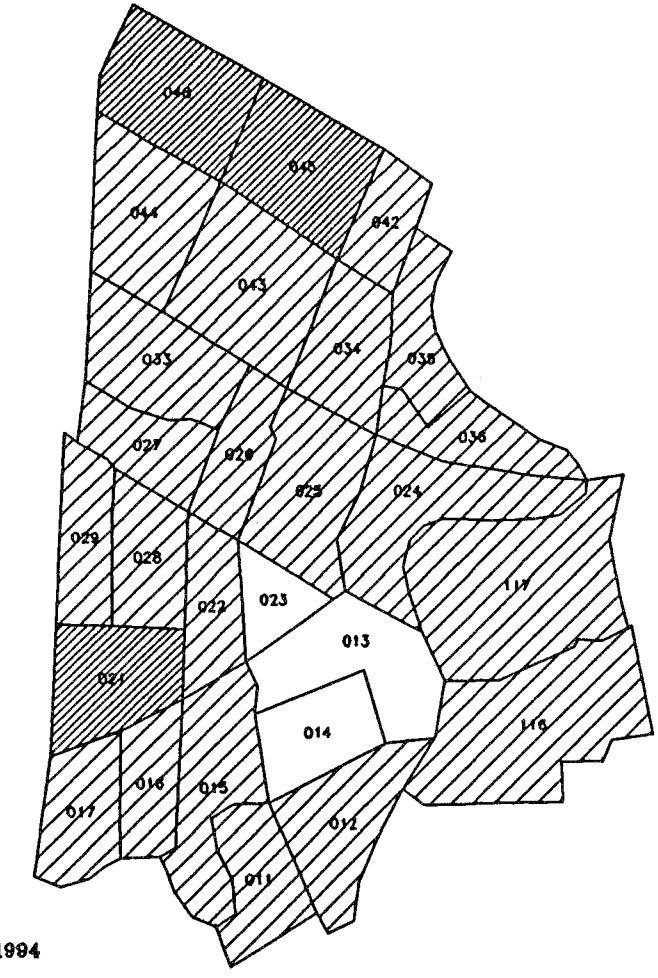
- 2.9 to 25.8
- .1 to 2.9
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 5

PERCENT OF NON–MOVERS BY CENSUS TRACT FOR WINNIPEG'S INNER CITY – 1981 (All VALUES WEIGHTED)

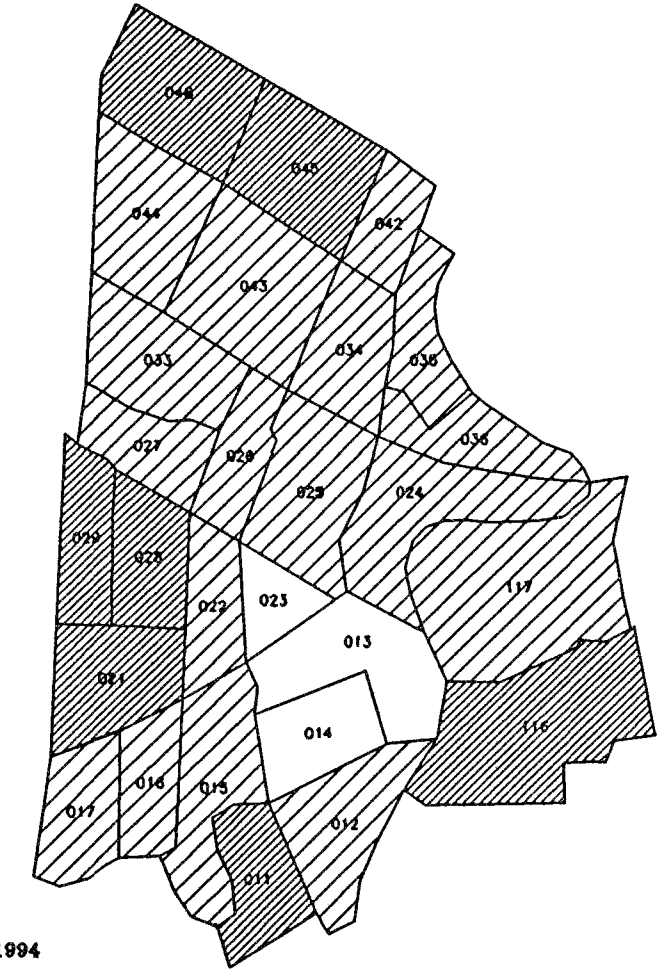


Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 6

PERCENT OF NON–MOVERS BY CENSUS TRACT FOR WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

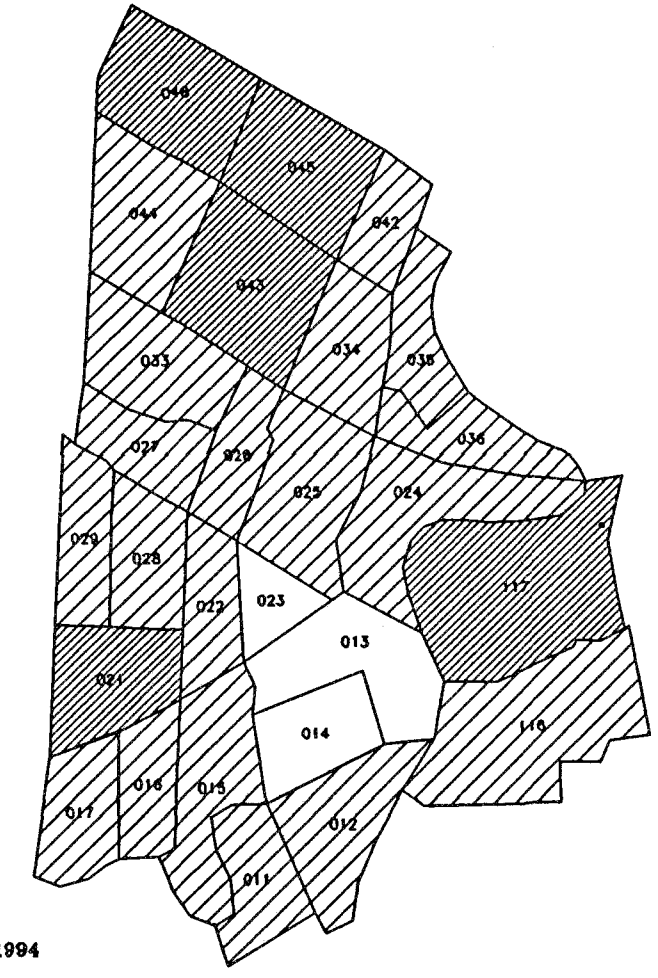
- 23.8 to 43.0
- .1 to 23.8
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 7

PERCENT OF TOTAL BUILDING PERMITS BY CENSUS TRACT FOR WINNIPEG'S INNER CITY – 1983 TO 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

9.14 to 16.66 (above

.1 to 9.14 (below)

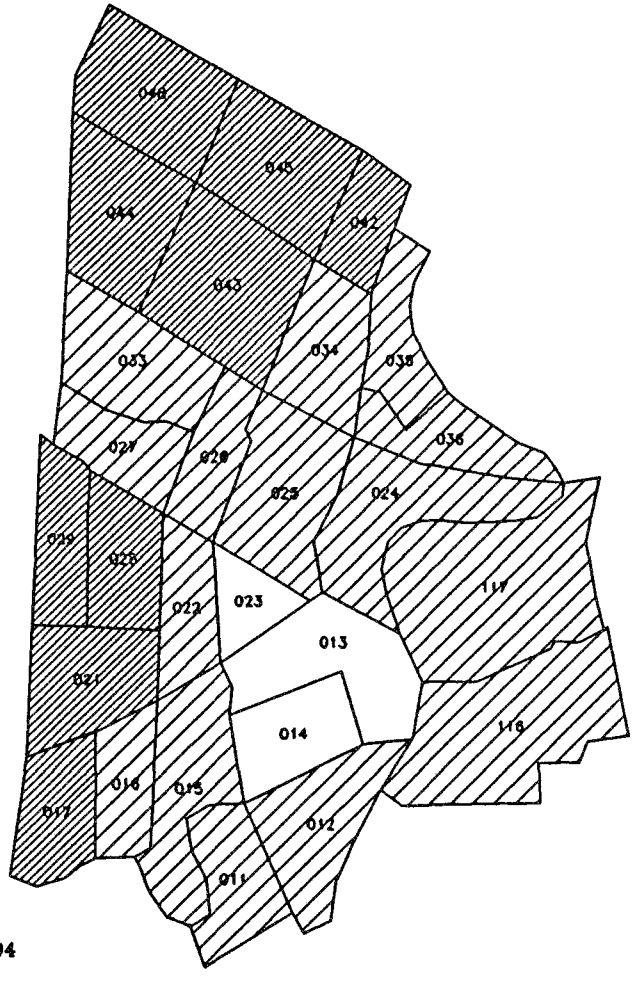
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of Institute of Urban Studies – U of W.

Map 8

PERCENT OF ISSUED RRAPS BY CENSUS TRACT FOR WINNIPEG'S INNER CITY – 1983 TO 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

1.31 to 5.10 (above)

.1 to 1.30 (below)

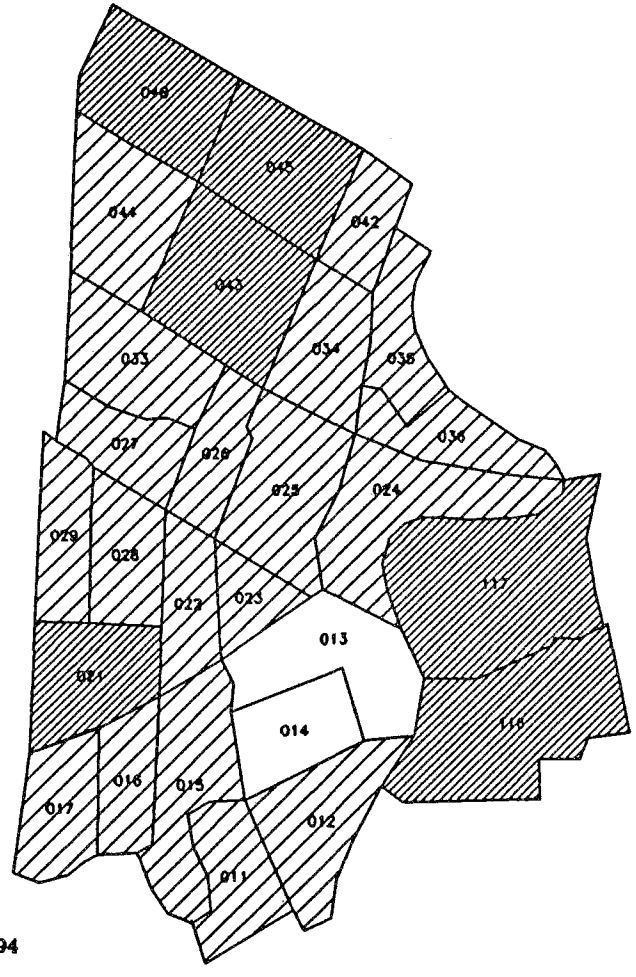
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 9

PERCENT OF ISSUED BUILDING PERMITS BY CENSUS TRACT FOR WINNIPEG'S INNER CITY – 1983 TO 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

7.54 to 11.70 (above

.01 to 7.54 (below)

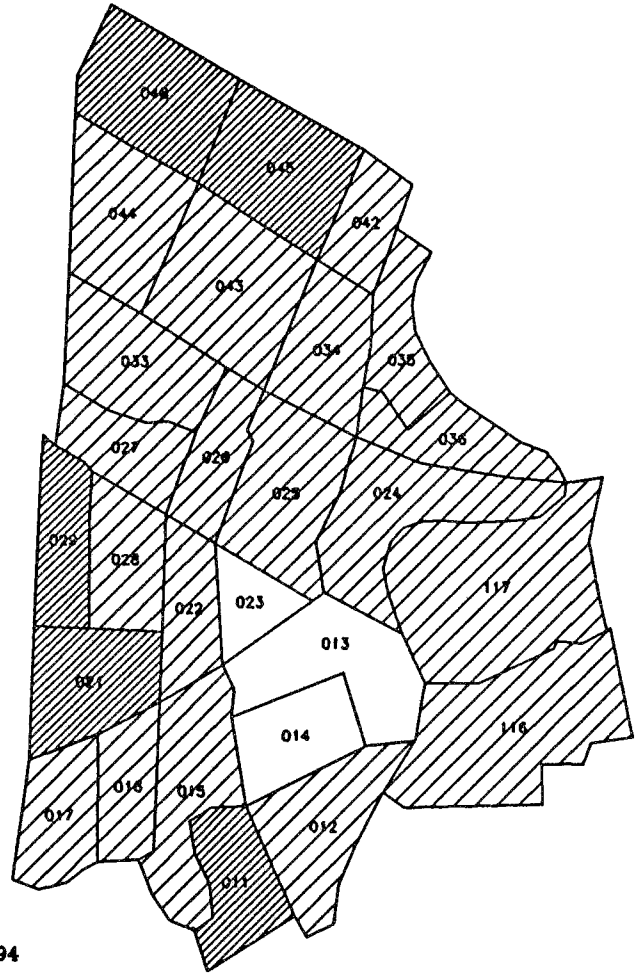
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 10a

OWNER–OCCUPIED DWELLINGS BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

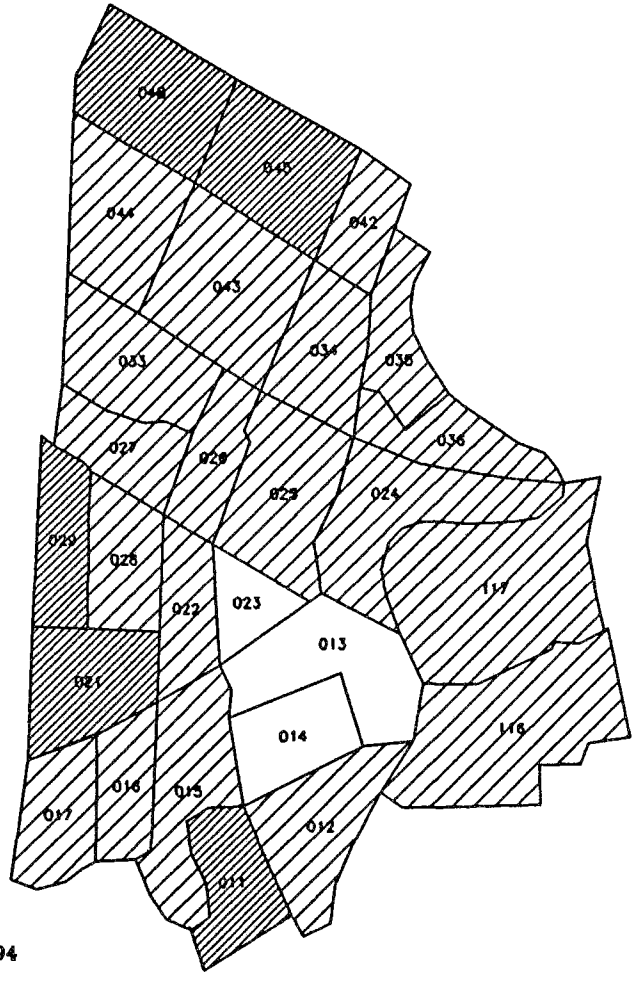
- 21.6 to 40.0 (above)
- .1 to 21.6 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 10b

OWNER–OCCUPIED HOUSEHOLDS BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

20.4 to 45.0 (above)

.1 to 20.4 (below)

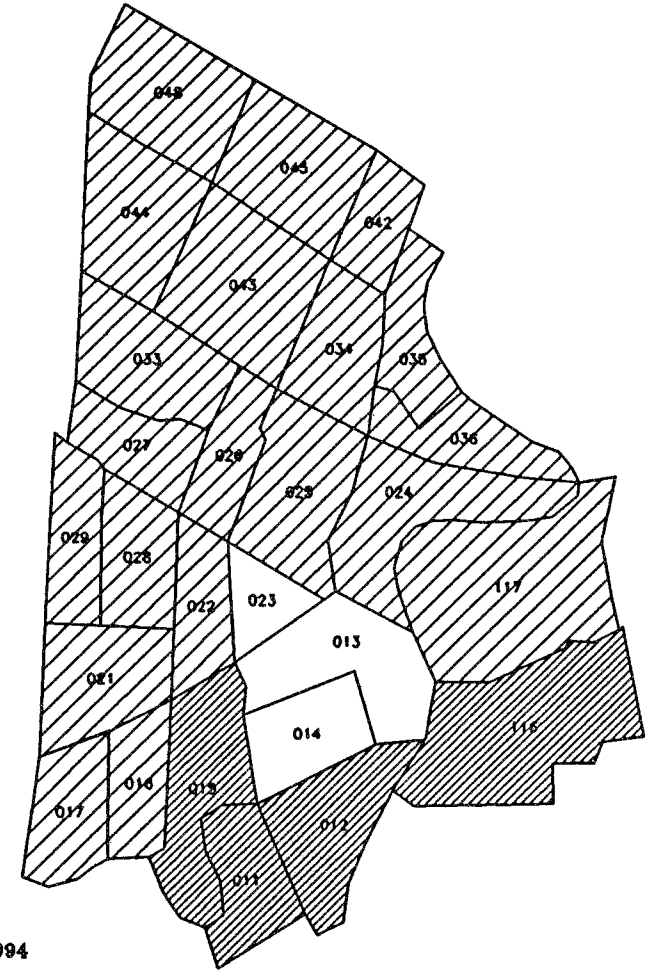
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 11a

RENTED–OCCUPIED DWELLINGS BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

45.70 to 87.00 (above)

.10 to 45.70 (below)

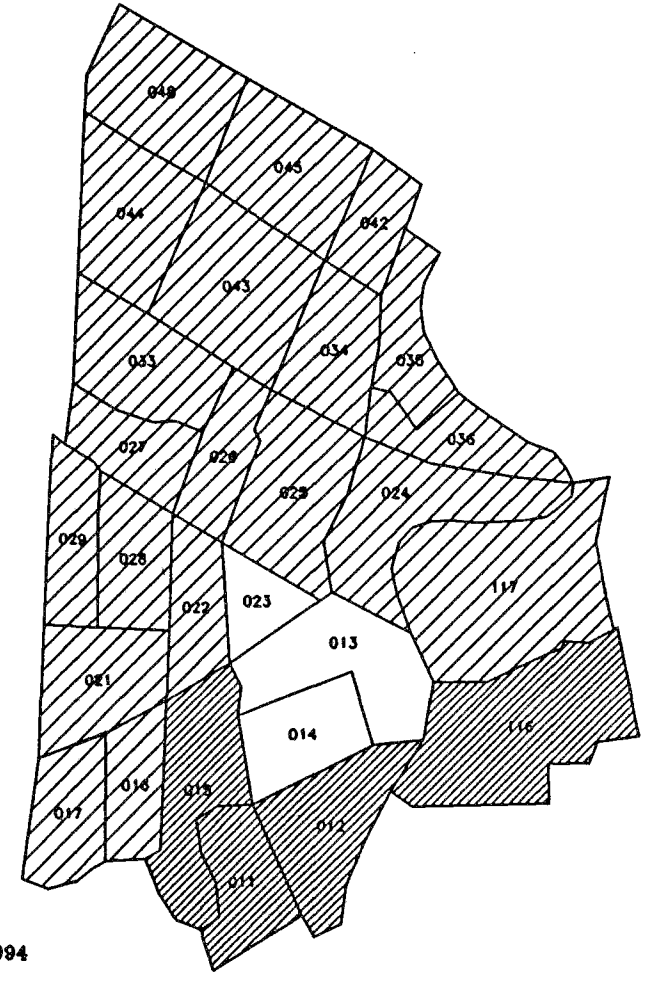
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 11b

RENTED OCCUPIED HOUSEHOLDS BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

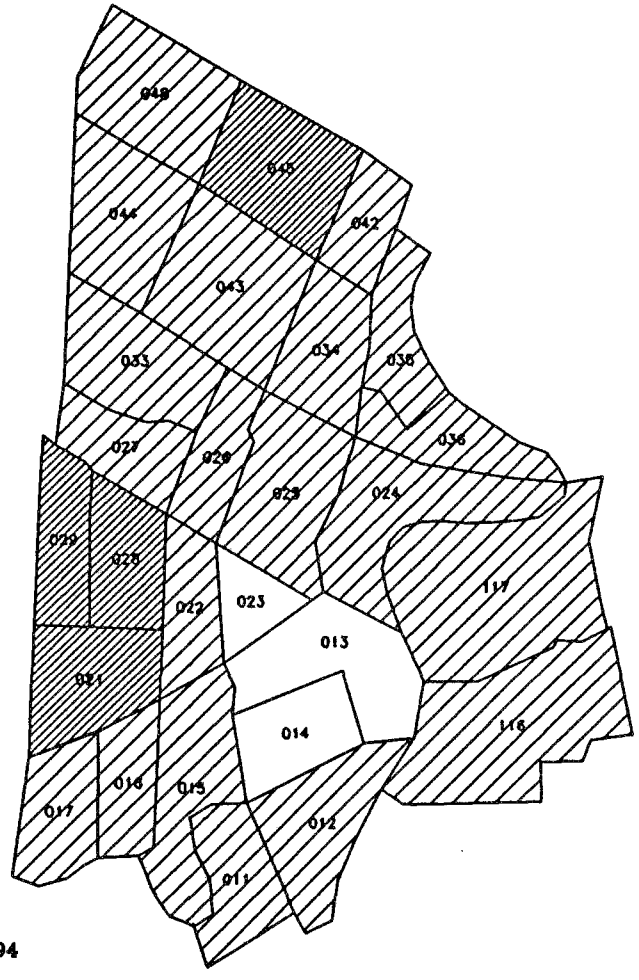
- 43.8 to 90.0 (above)
- .1 to 43.8 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 12a

FAMILIES WITH CHILDREN BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

6.7 to 8.5 (above)

.1 to 6.7 (below)

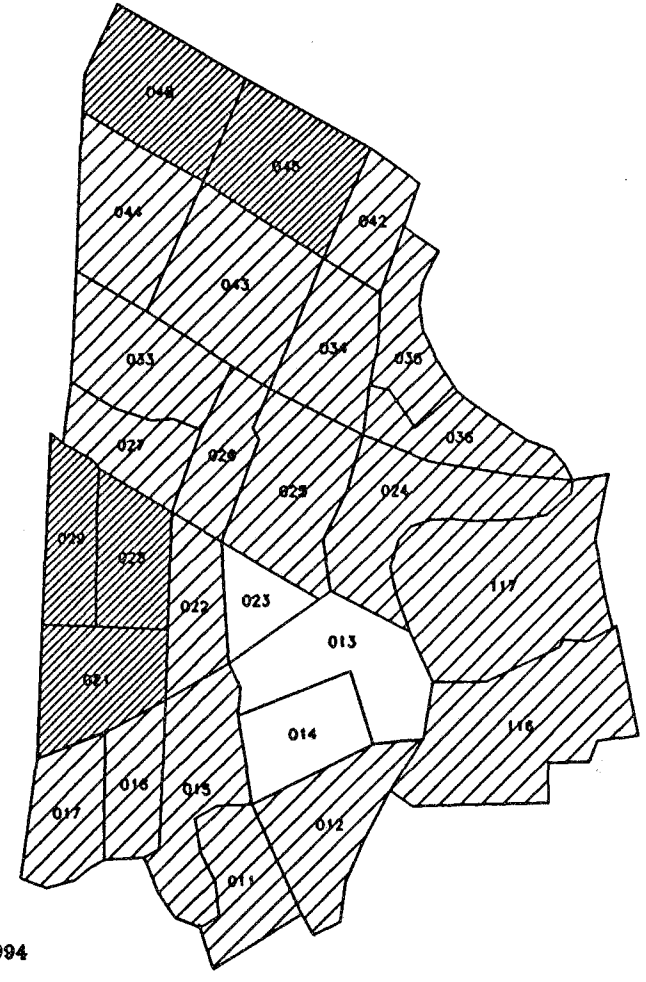
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 12b

FAMILIES WITH CHILDREN BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)

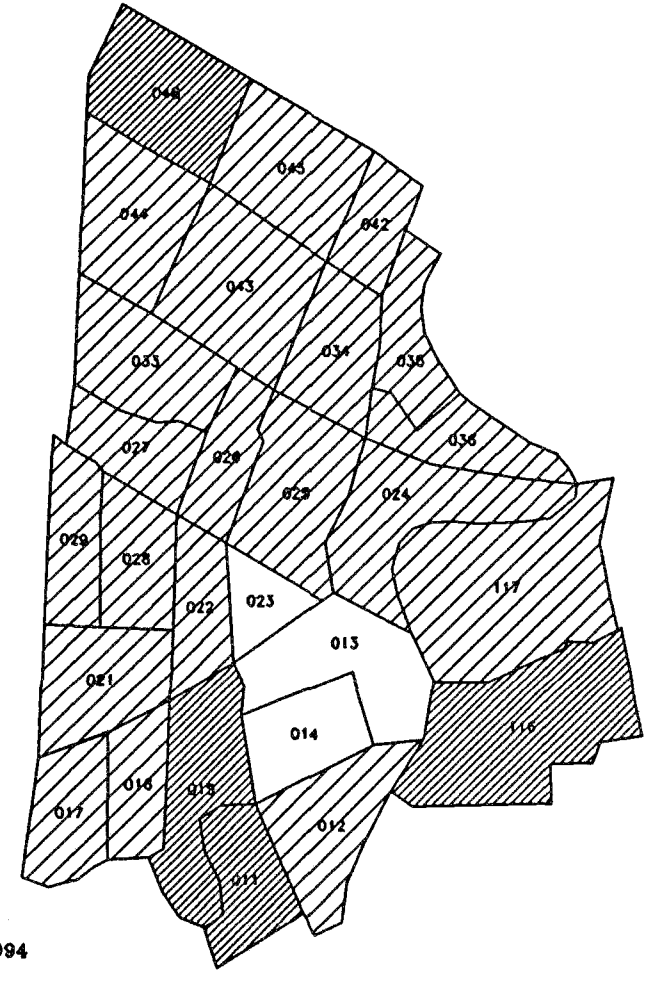


Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 13a

FAMILIES WITH NO CHILDREN BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

5.9 to 11.3 (above)

.1 to 5.9 (below)

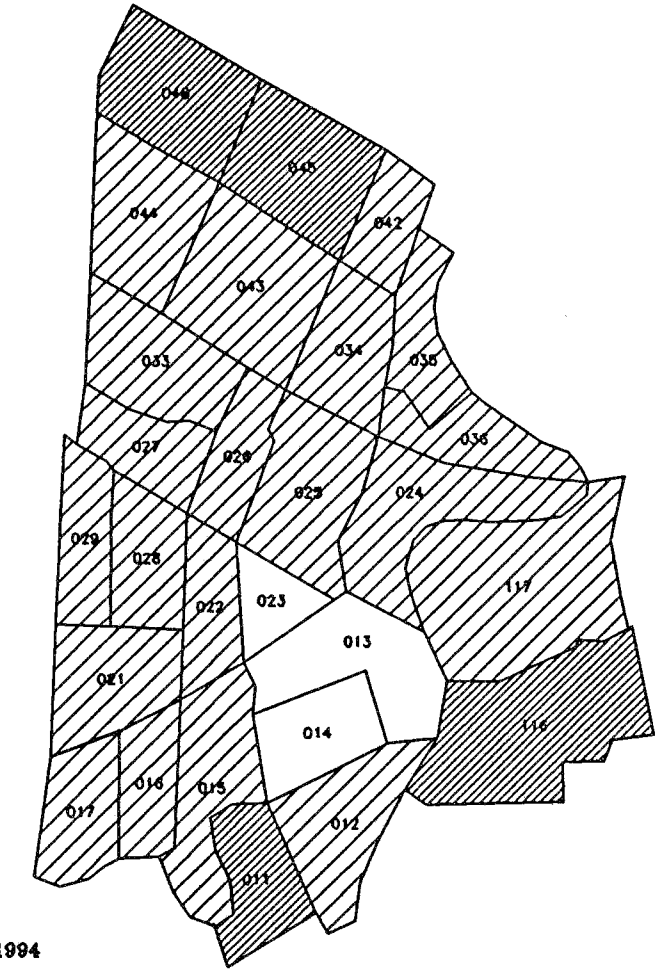
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 13b

FAMILIES WITH NO CHILDREN BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



Legend (2 x Median)

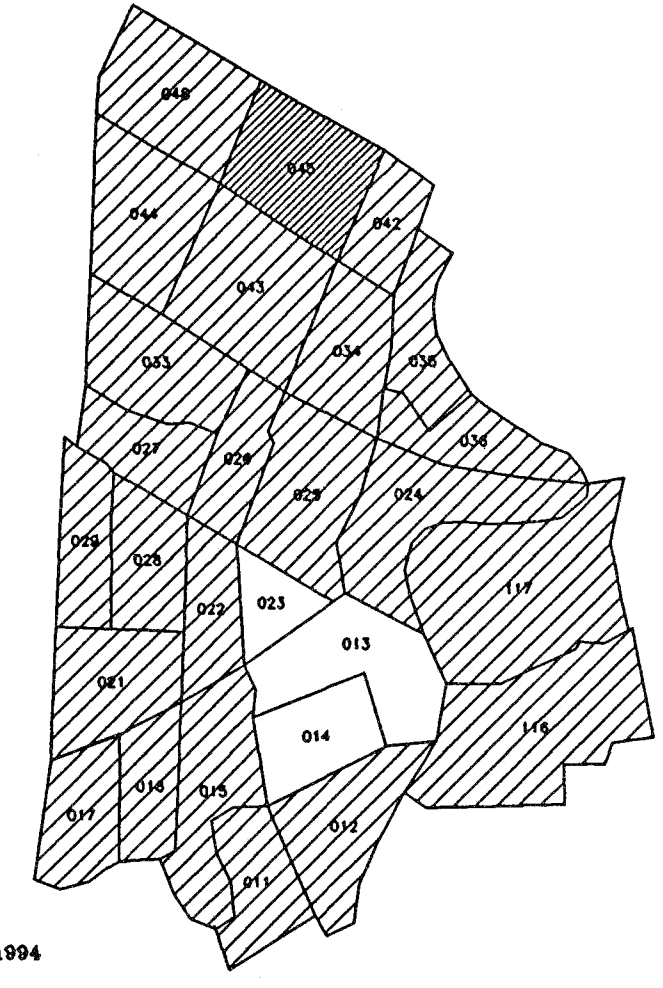
- 24.5 to 47.9 (above)
- .1 to 24.5 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 14a

SINGLE PARENT FAMILIES BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

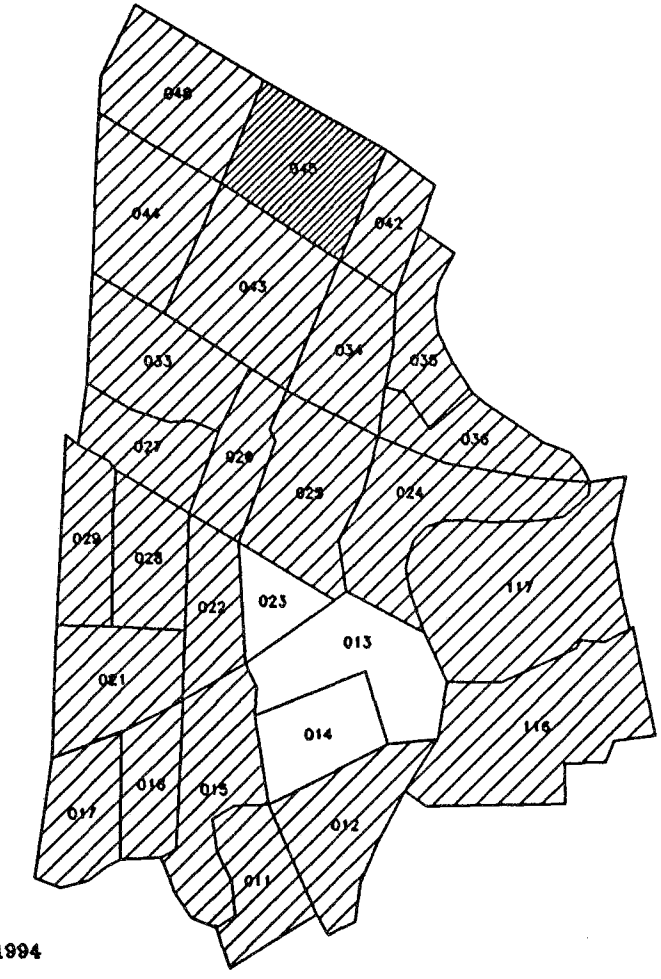
- 4.3 to 4.7 (below)
- 0.1 to 4.3 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 14b

SINGLE PARENT FAMILIES BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

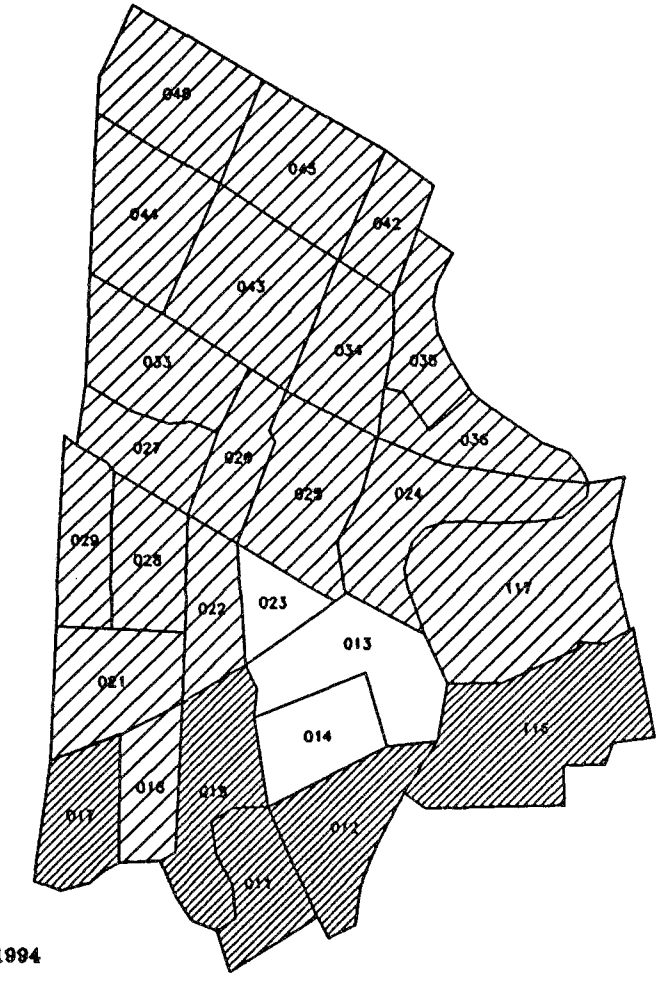
- 21.1 to 22.0 (above)
- .1 to 21.1 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 15a

PROFESSIONAL EMPLOYED POPULATION BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

11.4 to 42.0 (above)

.1 to 11.4 (below)

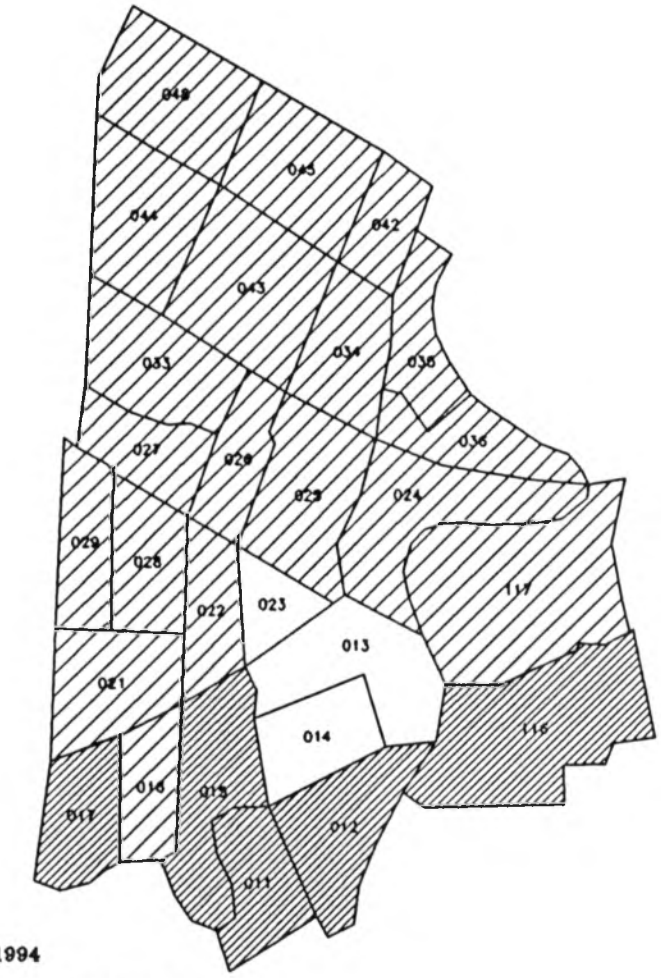
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 15b

PROFESSIONAL EMPLOYED POPULATION BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

13.3 to 43.0 (above)

.1 to 13.3 (below)

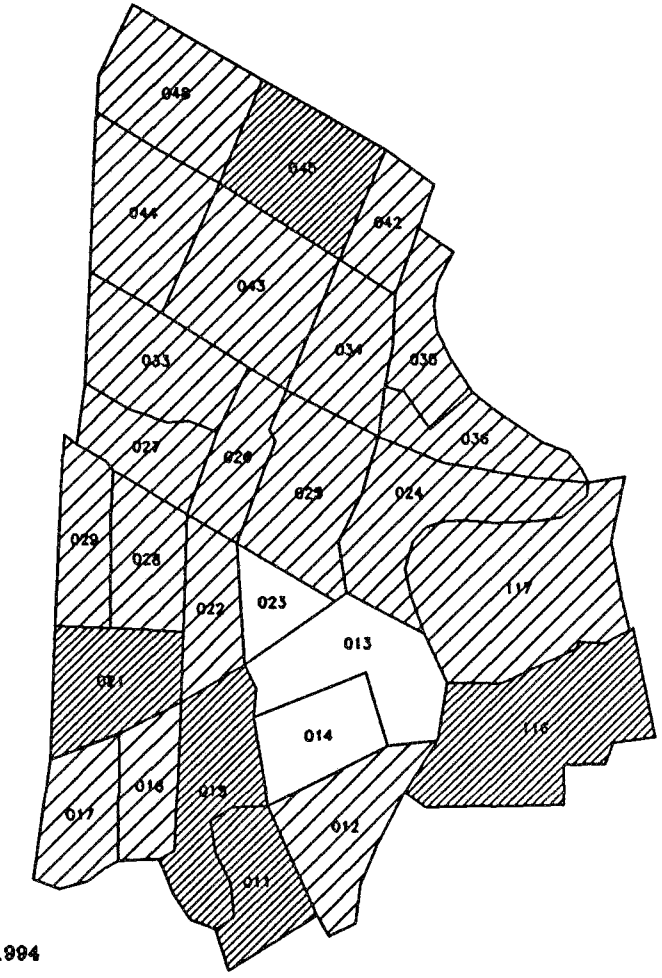
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 16a

POPULATION EMPLOYED IN SERVICE SECTOR BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

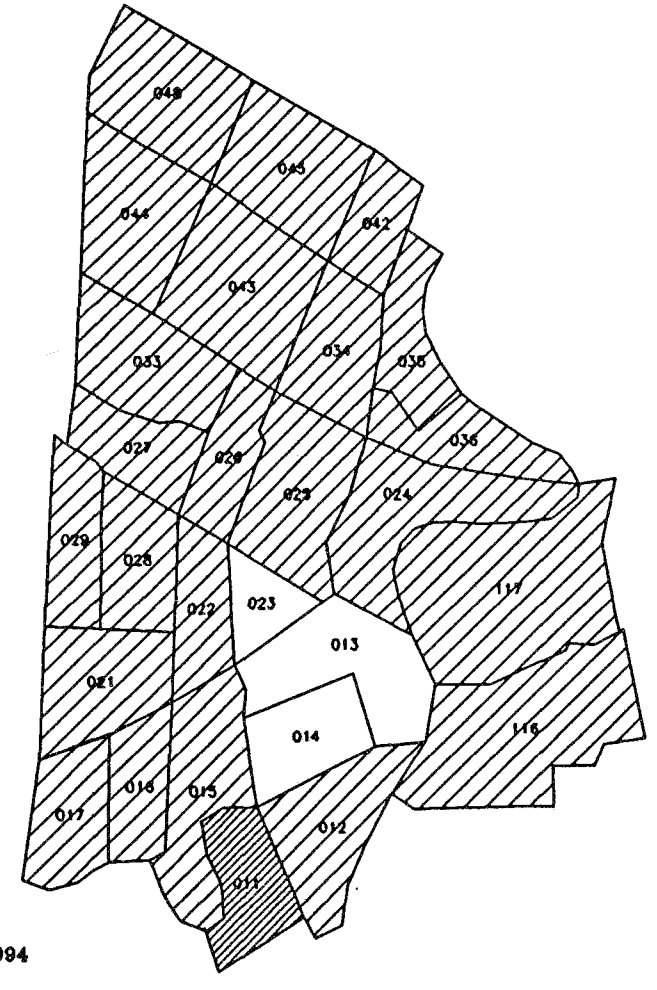
- 26.0 to 34.0 (above)
- .1 to 26.0 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 16b

POPULATION EMPLOYED IN SERVICE SECTOR BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

36.8 to 39.0 (above)

.1 to 36.8 (below)

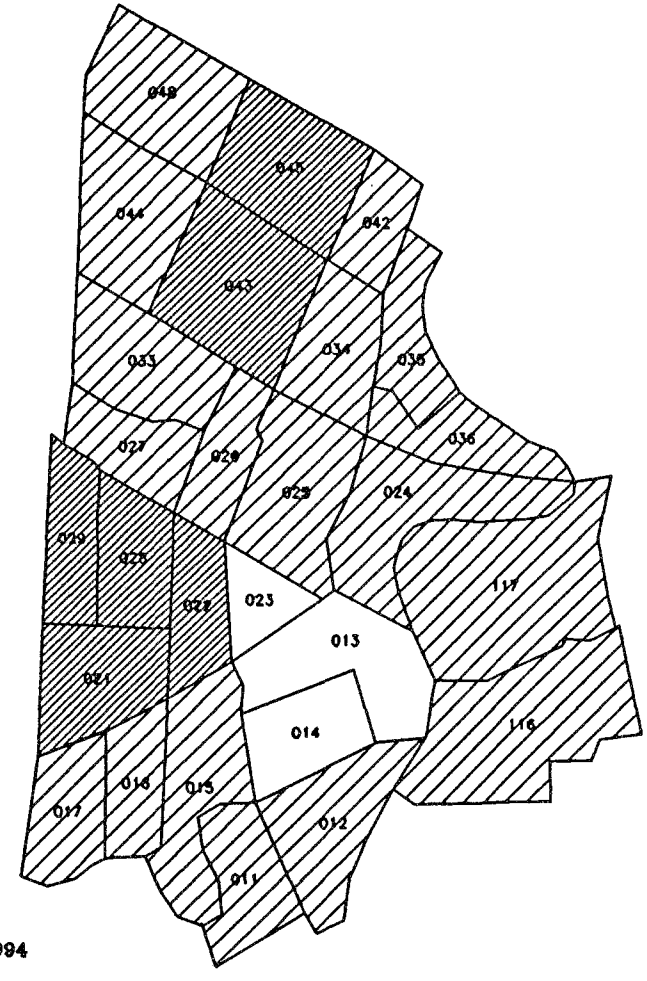
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 17a

POPULATION EMPLOYED IN MANUFACTURING SECTOR BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

10.9 to 19.5 (above)

.1 to 10.9 (below)

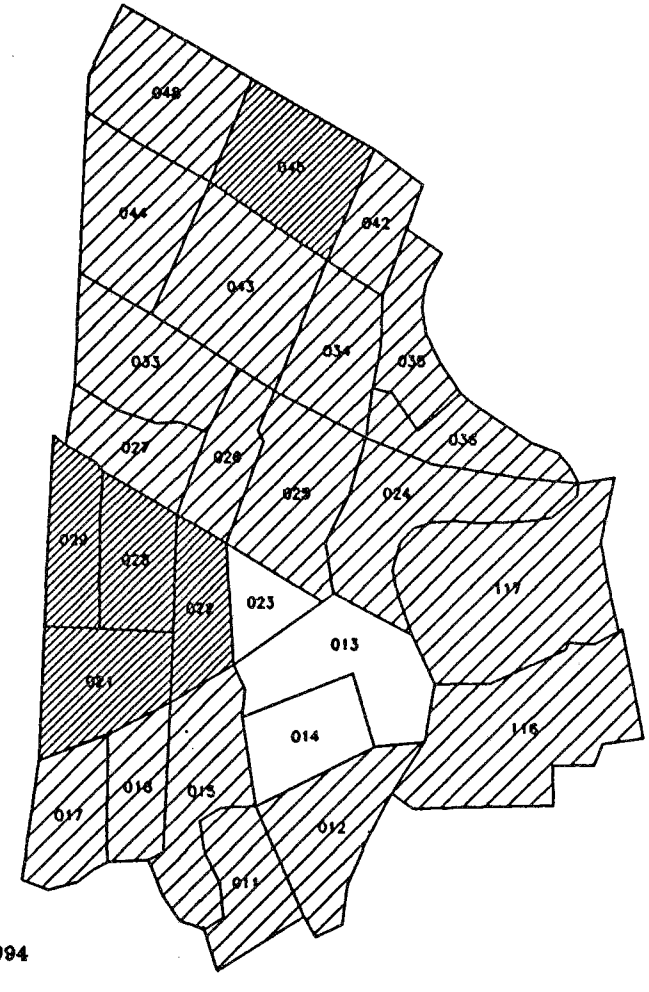
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 17b

POPULATION EMPLOYED IN MANUFACTURING SECTOR BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

9.9 to 17.1 (above)

.1 to 9.9 (below)

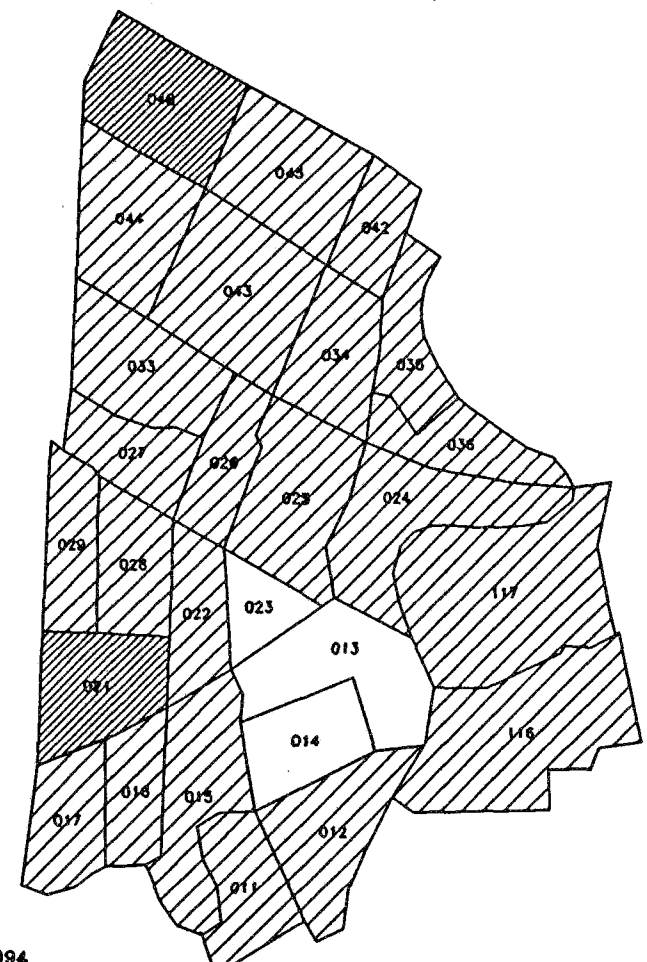
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 18a

POPULATION EMPLOYED IN CONSTRUCTION SECTOR BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

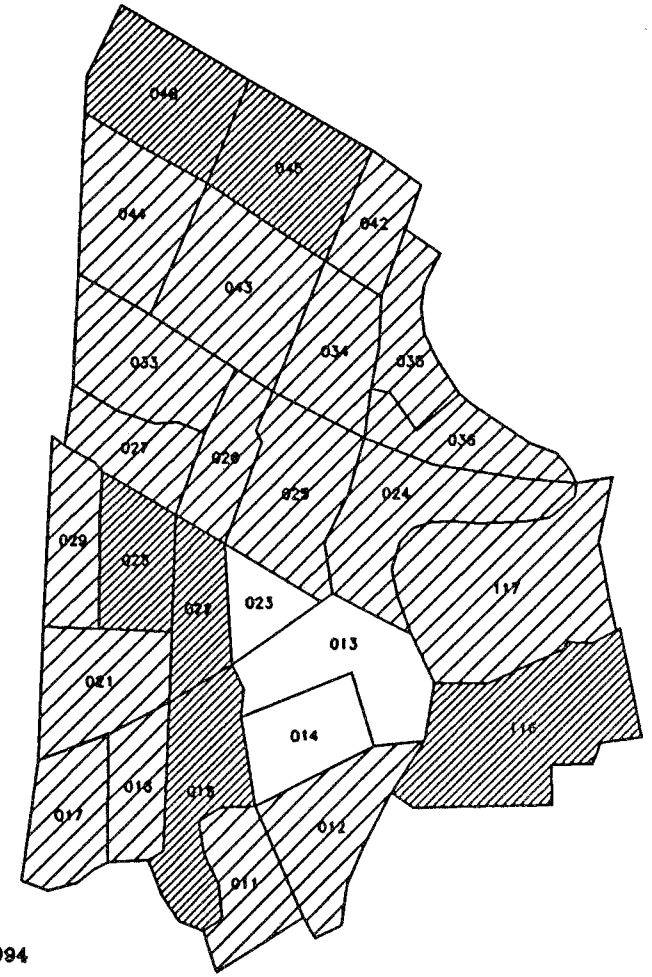
- 4.7 to 5.5 (above)
- .1 to 4.7 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 18b

POPULATION EMPLOYED IN CONSTRUCTION SECTOR BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

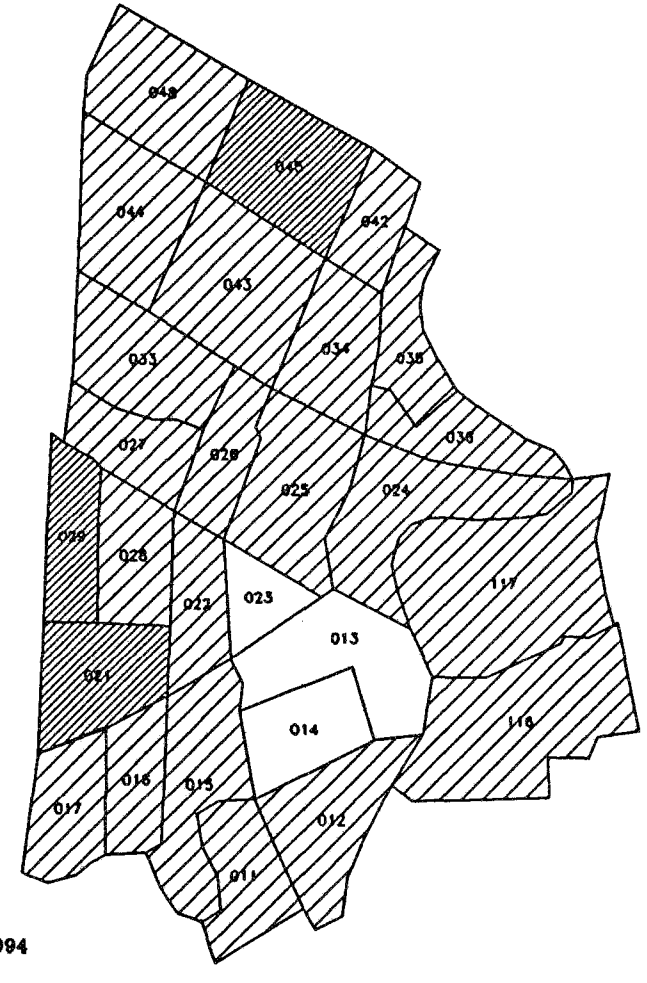
- 3.0 to 6.1 (above)
- .1 to 3.0 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 19a

OWNER–OCCUPIERS 〉 30% OF INCOME FOR HOUSING BY CENSUS TRACT WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

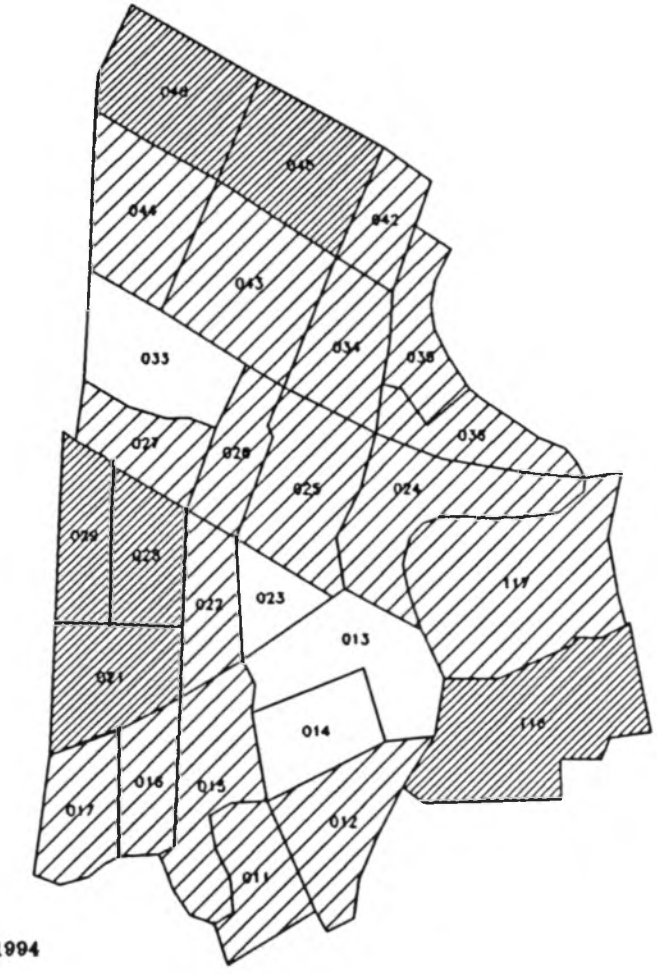
- .8 to 1.3 (above)
- .0 to .8 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 19b

OWNER–OCCUPIERS 〉 30% OF INCOME FOR HOUSING BY CENSUS TRACT WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

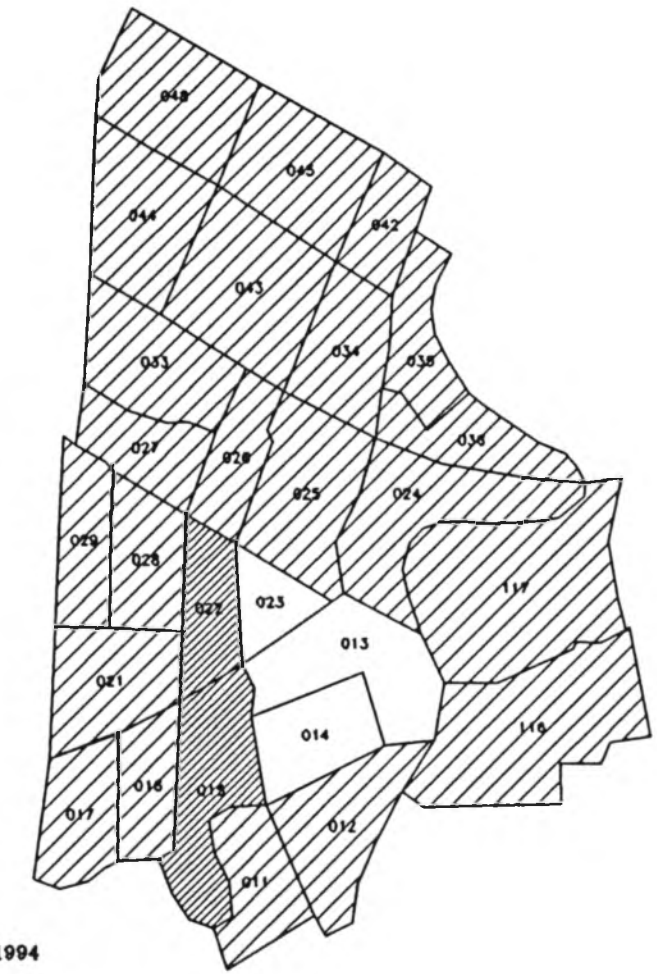
- .1 to 1.7 (below)
- 1.7 to 3.1 (above)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 20a

RENTERS PAYING 〉 30% OF INCOME FOR HOUSING BY CENSUS TRACT WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

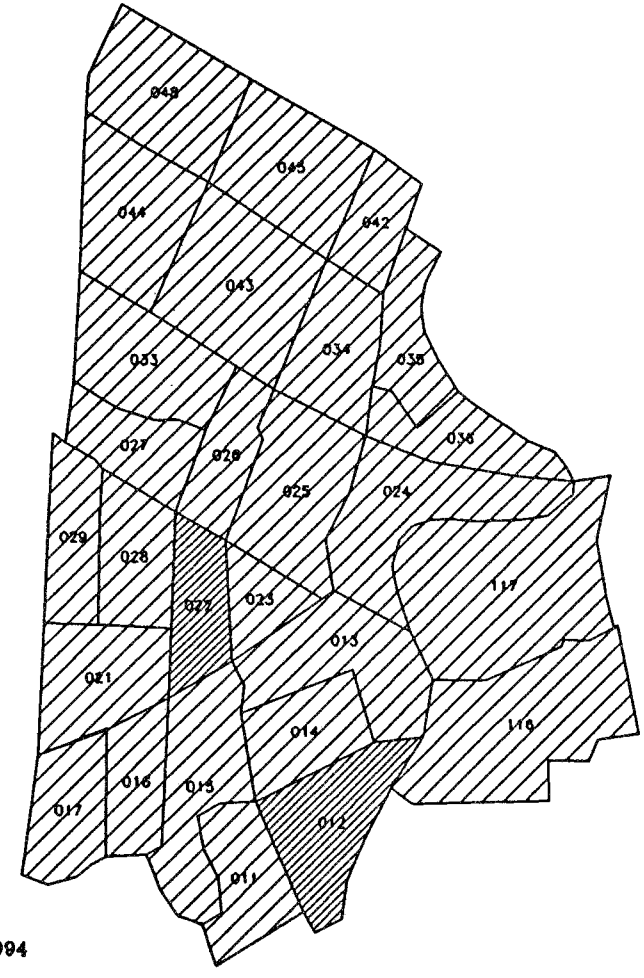
- 3.3 to 4.7 (above)
- .0 to 3.3 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 20b

RENTERS PAYING ⟩ 30% OF INCOME FOR HOUSING BY CENSUS TRACT WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

7.6 to 8.0

0.0 to 7.6

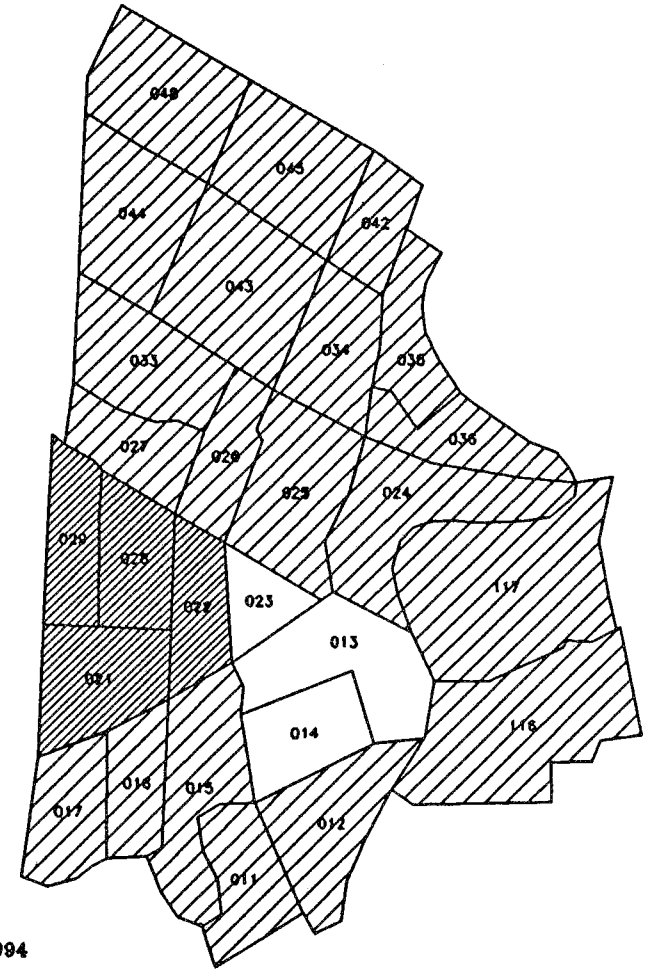
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 21a

IMMIGRANT POPULATION BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

21.1 to 34.0 (above)

.1 to 21.1 (below)

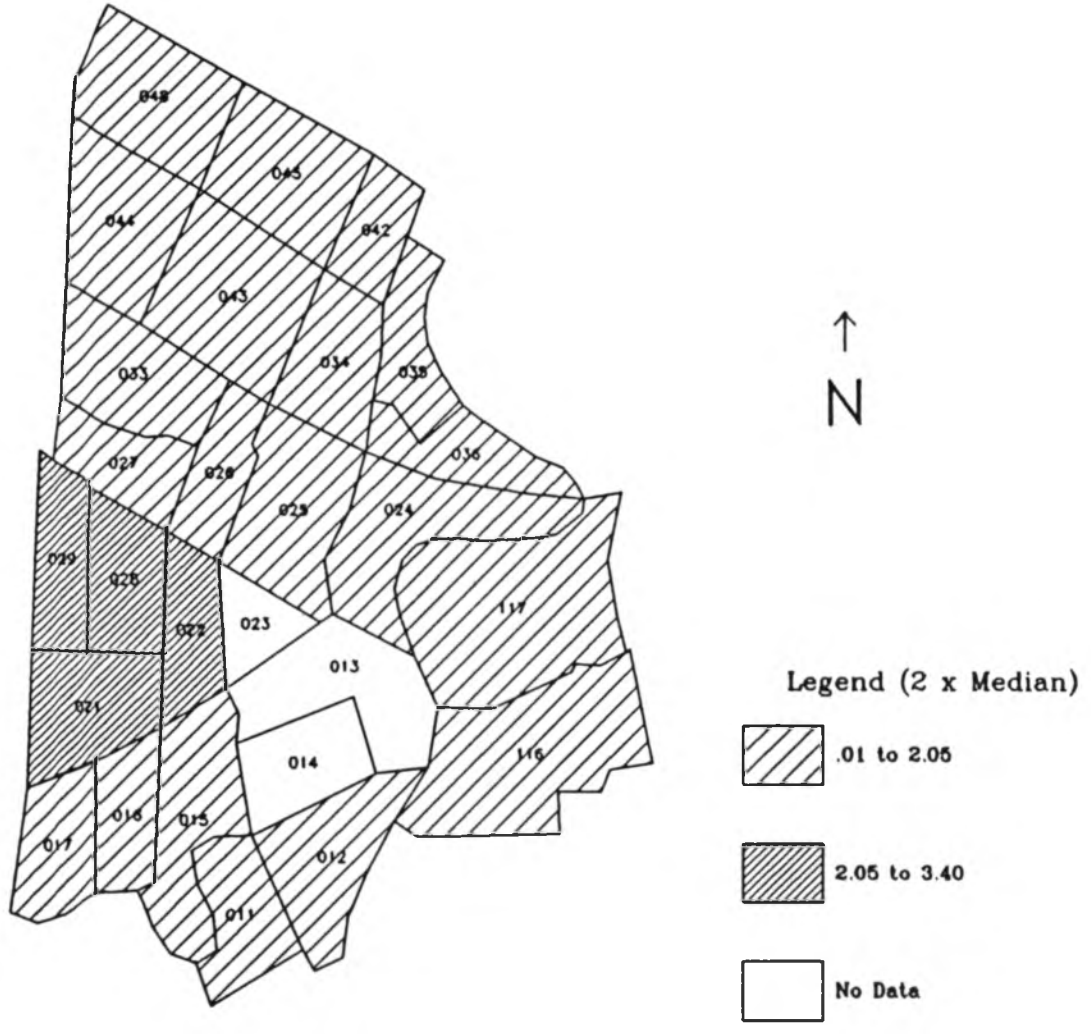
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

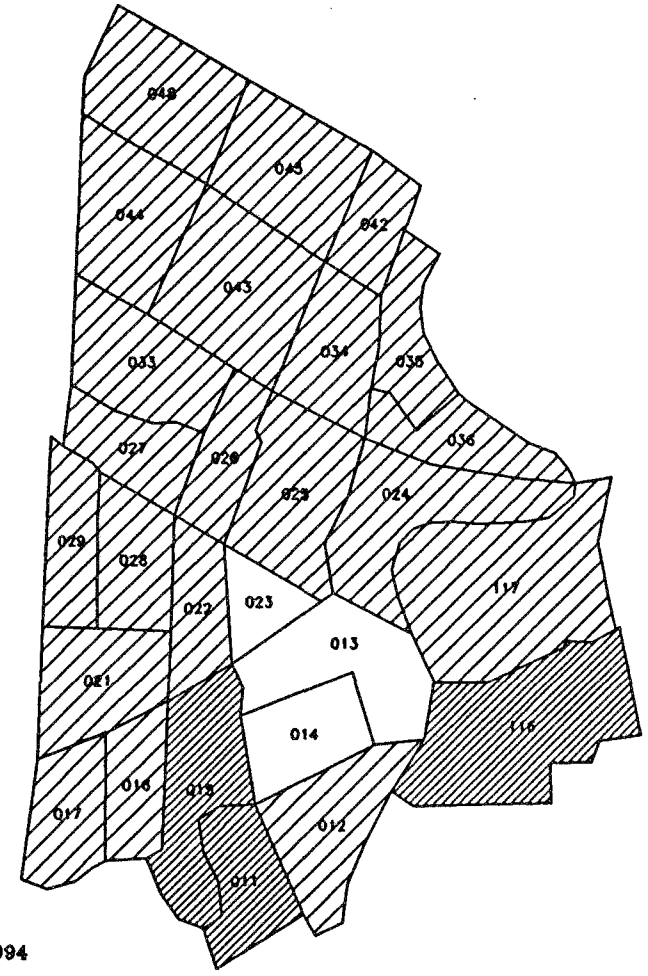
Map 21b

IMMIGRANT POPULATION BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



Map 22a

POPULATION OVER 65 YEARS OF AGE BY CENSUS TRACT WINNIPEG'S INNER-CITY - 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

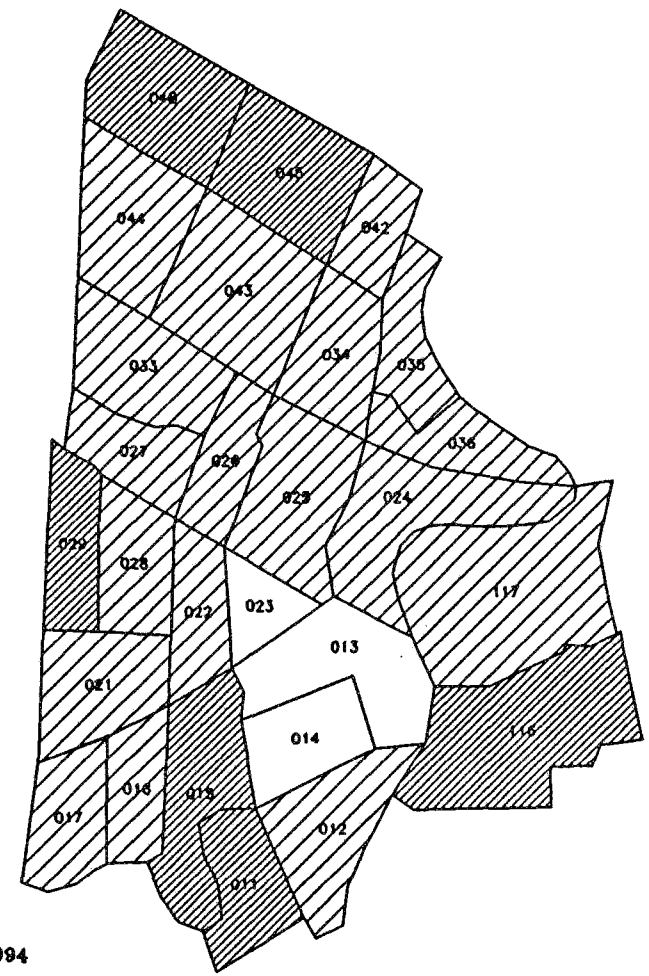
- 10.4 to 18.0 (above)
- .1 to 10.4 (below)
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 22b

POPULATION OVER 65 YEARS OF AGE BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



N

Legend (2 x Median)

9.8 to 20.0 (above)

.1 to 9.8 (below)

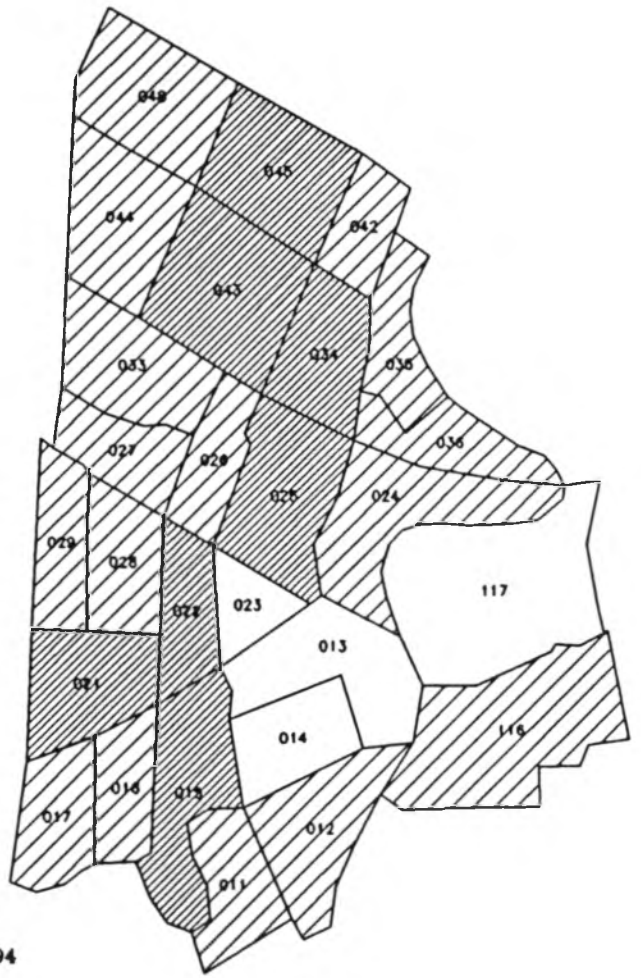
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 23a

ABORIGINAL POPULATION BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1986 (All VALUES WEIGHTED)



N

Legend (2 x Median)

3.8 to 8.1 (above)

.1 to 3.8 (below)

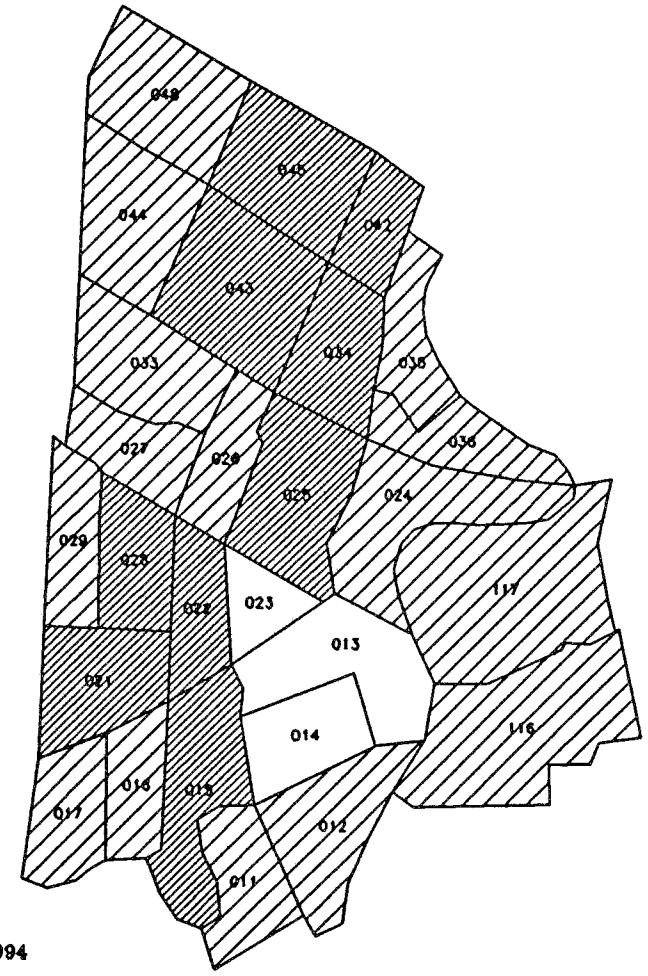
No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Map 23b

ABORIGINAL POPULATION BY CENSUS TRACT
WINNIPEG'S INNER CITY – 1991 (All VALUES WEIGHTED)



Legend (2 x Median)

- 6.3 to 16.0
- .1 to 6.3
- No Data

Maps by Christian Douchant 03/09/1994

Production courtesy of the Institute of Urban Studies

Diagram 1

PERCENT OF TOTAL BUILDING PERMITS BY YEAR FOR WINNIPEG'S INNER CITY

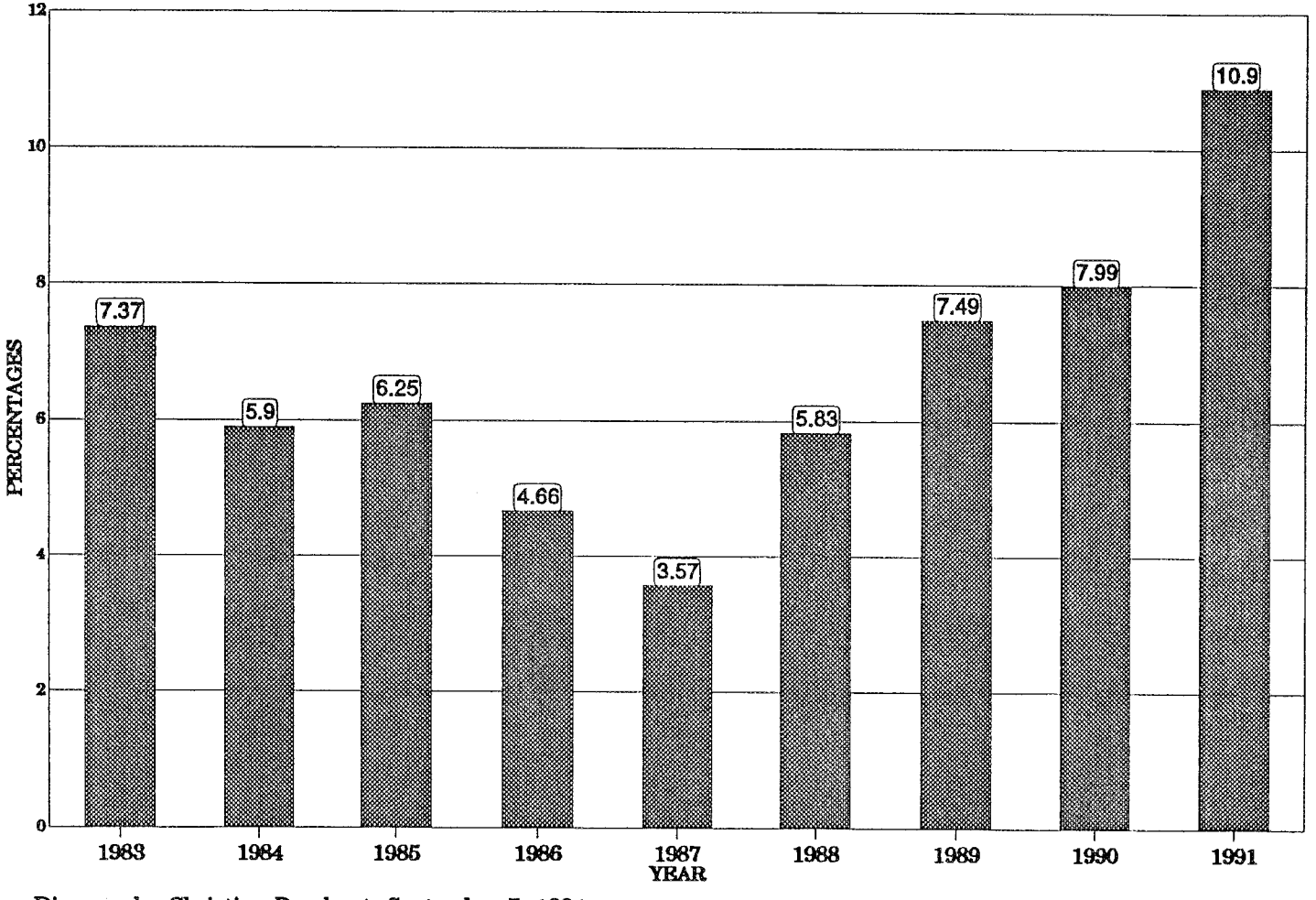


Diagram by Christian Douchant: September 7, 1994
Production courtesy of the Institute of Urban Studies

Diagram 2

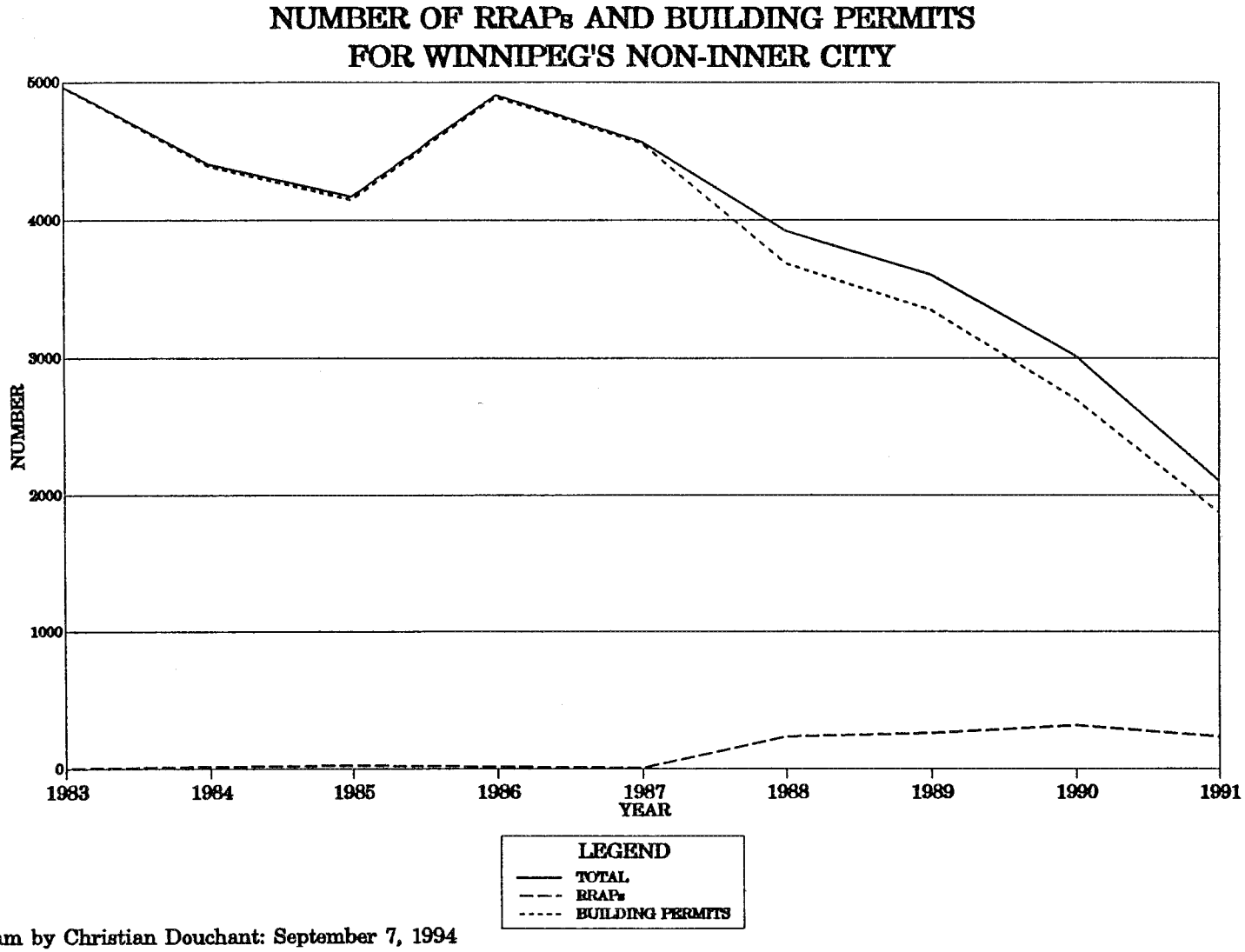


Diagram by Christian Douchant: September 7, 1994
Production courtesy of the Institute of Urban Studies

Diagram 3

COMPARING THE NUMBER OF RRAPs FOR THE INNER CITY AND NON-INNER CITY

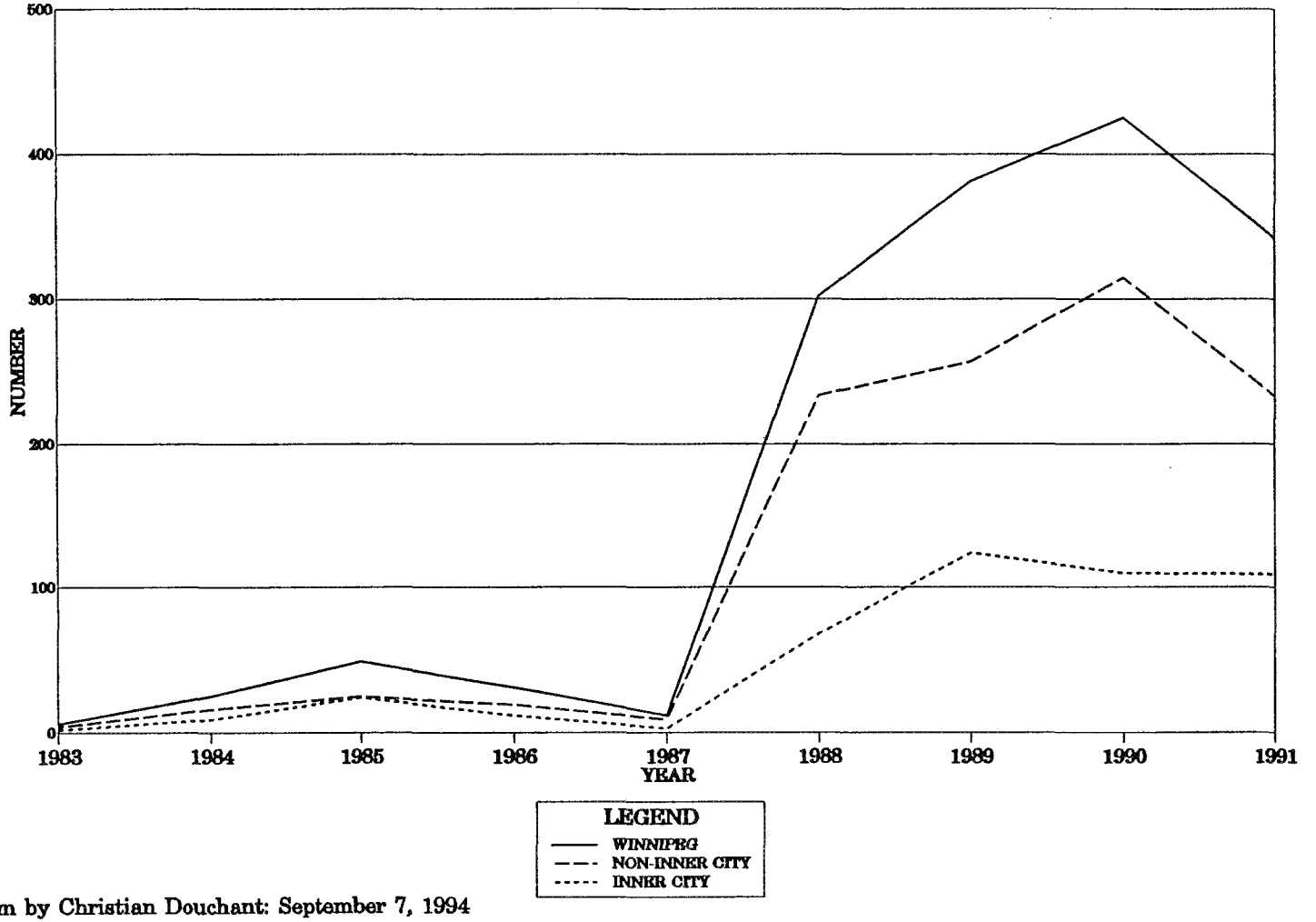


Diagram by Christian Douchant: September 7, 1994
Production courtesy of the Institute of Urban Studies

Diagram 4

TOTAL BUILDING PERMITS (INCLUDING RRAPs) FOR WINNIPEG, NON-INNER CITY AND THE INNER CITY

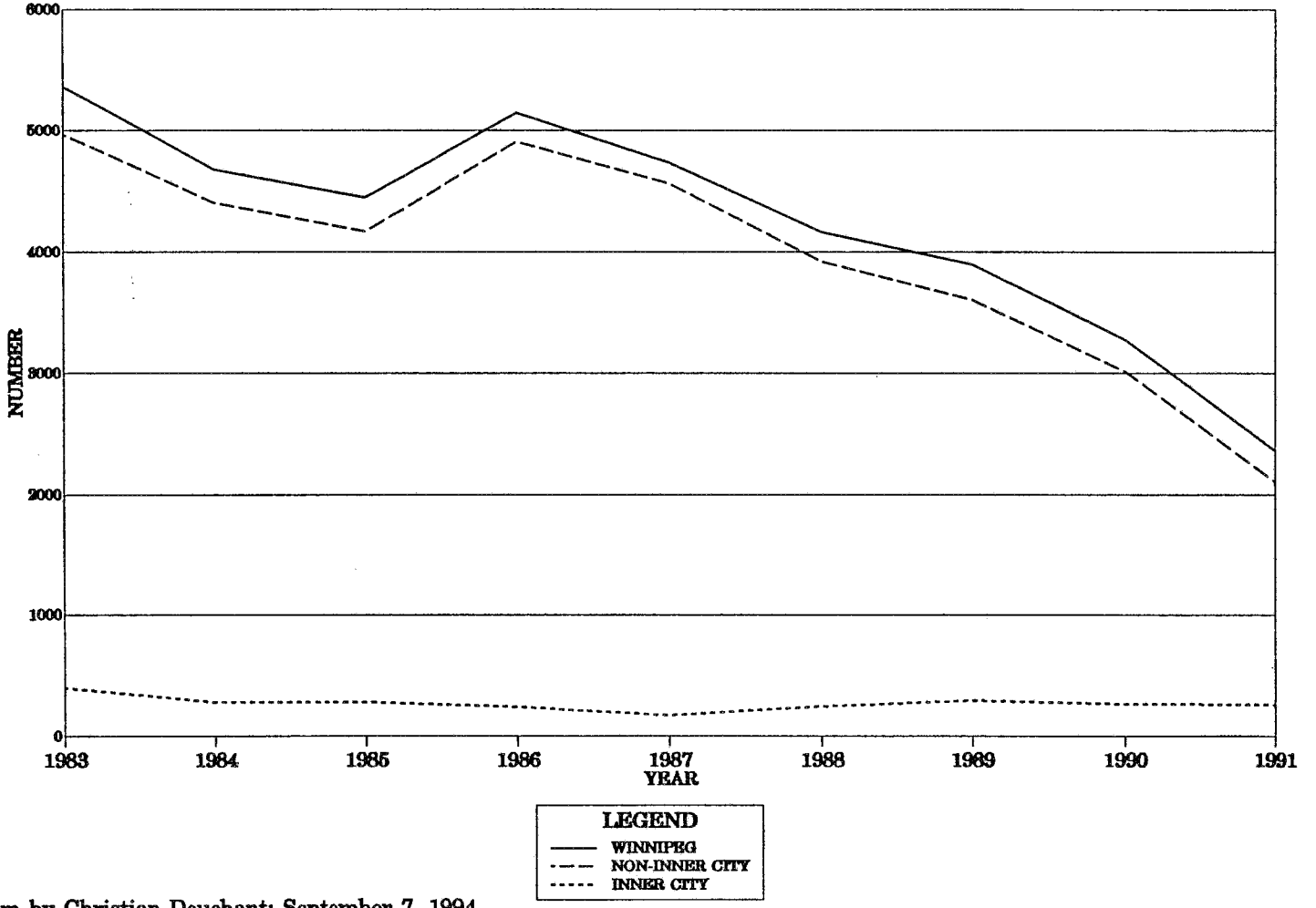


Diagram by Christian Douchant: September 7, 1994
Production courtesy of the Institute of Urban Studies

TABLE 1
CHANGE IN MANUFACTURING EMPLOYMENT IN CANADA
1988 TO 1992

Manufacturing Employment
(000s)

Sector	1988	1989	1990	1991	1992	Change '89-'92
All Manufacturing	1946.2	1987.1	1869.7	1675.4	1587.2	-20.1%
Aircraft & Parts	39.1	41.7	45.4	43.2	40.9	-1.9%
Machinery	73.4	82.3	68.3	56.6	54.7	-33.5%
Communications & other Electronic Equipment	67.3	75.0	66.8	59.8	61.6	-17.9%
Office, Store & Business Machines	16.4	16.3	15.8	13.1	15.2	-6.7%
Pharmaceuticals & Medicine	18.2	19.8	20.9	21.5	21.5	+8.6%
Electrical Industrial Equipment	23.6	23.8	24.3	20.1	16.9	-15.5%

SOURCE: Winnipeg Free Press/Canadian Labour Congress, October 1993

TABLE 2
PERCENT OF DIRECT EMPLOYMENT BY INDUSTRY IN CANADA
1970 to 1990

INDUSTRY	DIRECT EMPLOYMENT 1970 %	DIRECT EMPLOYMENT 1990 %
Agriculture	6.3	3.4
Forestry	0.9	0.5
Mining	1.6	1.4
Manufacturing	22.7	15.9
Services	49.1	58.0
Other*	18.9	20.5

Other includes utilities, government and construction
Source: OECD, Statistics Canada
Creating Opportunity, The Liberal Plan for Canada, 1993

TABLE 3

PERCENT CHANGE IN LABOUR FORCE BY SECTOR 1986-1991
WINNIPEG - INNER CITY

CTS	TOTAL LABOUR FORCE	QUATER. SECTOR	TERT. SECTOR	MANU. SECTOR	CONST. SECTOR
WINNIPEG	4.51	18.50	5.69	-2.67	-1.21
NON-INNER CITY	6.55	22.27	7.08	2.10	41.50
INNER CITY	-6.94	-6.24	-2.96	-19.13	-66.19
11	-4.48	-6.40	3.96	-20.69	-66.67
12	-5.25	-17.86	12.56	-24.53	-75.61
13	-24.37	-27.66	-17.95	-33.33	66.66
14	32.32	-9.57	36.25	58.62	50.00
15	-16.23	-4.76	-18.69	-55.06	-58.82
16	-12.46	1.94	-22.40	0.00	-58.06
17	-11.21	-7.94	-9.58	-25.00	-60.71
21	-16.67	6.67	-15.05	-20.13	-87.50
22	-13.23	-18.60	1.06	-29.70	-73.24
23	-7.23	22.60	-10.61	-36.26	0.00
24	20.34	170.00	12.50	-71.43	-55.56
25	-16.67	11.11	-12.36	-34.41	-85.37
26	-11.33	0.00	17.46	-43.06	-69.84
27	2.98	29.73	-11.27	26.92	-58.33
28	-16.73	-6.15	-17.50	-25.57	-77.03
29	4.83	-7.78	5.39	14.75	-79.00
33	-12.12	0.00	-10.34	-14.29	-38.46
34	-28.81	-5.26	-27.87	-36.59	-65.63
35	1.44	-38.71	13.04	-11.11	-52.38
36	33.96	25.00	4.55	27.27	14.29
42	-17.74	-8.57	-24.00	14.29	-71.43
43	-14.20	26.92	-8.77	-35.45	-83.67
44	-6.33	-47.50	11.24	-6.25	-69.23
45	-12.73	-13.92	-17.50	-14.17	-51.92
48	2.53	18.64	-4.40	-4.94	-54.55
116	-8.03	-22.63	5.67	4.00	-16.22
117	1.74	5.06	6.25	0.00	4.35

TABLE 4

CHANGE IN THE MANUFACTURING SECTOR 1986-1991
WINNIPEG, OUTER CITY, INNER CITY AND SELECTED CENSUS TRACTS

CTS	MANUF. OCCUP. 1986	MANUF. OCCUP. 1991	CHANGE IN MANUF. OCCP.
WINNIPEG	39665	38605	-2.67
NON-INNER CITY	30750	31395	2.10
INNER CITY	8915	7210	-19.13
11	145	115	-20.69
12	265	200	-24.53
13	40	30	-33.33
14	145	230	58.62
15	445	200	-55.06
16	165	165	0.00
17	200	150	-25.00
21	770	615	-20.13
22	825	580	-29.70
23	455	290	-36.26
24	70	20	-71.43
25	465	305	-34.41
26	360	205	-43.06
27	130	165	26.92
28	880	655	-25.57
29	610	700	14.75
33	105	90	-14.29
34	205	130	-36.59
35	135	120	-11.11
36	55	70	27.27
42	245	280	14.29
43	550	355	-35.45
44	240	225	-6.25
45	600	515	-14.17
48	405	385	-4.94
116	250	260	4.00
117	155	155	0.00

TABLE 5

CHANGE IN THE TERTIARY SECTOR 1986-1991
WINNIPEG, OUTER CITY, INNER CITY AND SELECTED CENSUS TRACTS

CTS	TERT. OCCUP. 1986	TERT. OCCUP. 1991	CHANGE IN TERT. OCCP.
WINNIPEG	145715	154000	5.69
NON-INNER CITY	125425	134310	7.08
INNER CITY	20290	19690	-2.96
11	1515	1575	3.96
12	1115	1255	12.56
13	390	320	-17.95
14	1530	2095	36.25
15	1525	1240	-18.69
16	625	485	-22.40
17	835	755	-9.58
21	1495	1270	-15.05
22	940	950	1.06
23	895	800	-10.61
24	80	90	12.50
25	445	390	-12.36
26	315	370	17.46
27	355	315	-11.27
28	1000	825	-17.50
29	1020	1075	5.39
33	145	130	-10.34
34	305	220	-27.87
35	230	260	13.04
36	110	115	4.55
42	500	380	-24.00
43	570	520	-8.77
44	445	495	11.24
45	1200	990	-17.50
48	910	870	-4.40
116	1235	1305	5.67
117	560	595	6.25

TABLE 6

CHANGE IN THE QUATENARY SECTOR 1986-1991
WINNIPEG, OUTER CITY, INNER CITY AND SELECTED CENSUS TRACTS

CTS	PROF. OCCUP. 1986	PROF. OCCUP. 1991	CHANGE IN PROF. OCCP.
WINNIPEG	87205	103340	18.50
NON-INNER CITY	75670	92525	22.27
INNER CITY	11535	10815	-6.24
11	1875	1755	-6.40
12	980	805	-17.86
13	235	170	-27.66
14	940	850	-9.57
15	945	900	-4.76
16	515	525	1.94
17	945	870	-7.94
21	450	480	6.67
22	215	175	-18.60
23	340	415	22.06
24	50	135	170.00
25	135	150	11.11
26	90	90	0.00
27	185	240	29.73
28	325	305	-6.15
29	450	415	-7.78
33	30	30	0.00
34	95	90	-5.26
35	155	95	-38.71
36	40	50	25.00
42	175	160	-8.57
43	130	165	26.92
44	200	105	-47.50
45	395	340	-13.92
48	295	350	18.64
116	950	735	-22.63
117	395	415	5.06

TABLE 7

POPULATION CHANGE FOR 1981,1986 AND 1991 BY CENSUS TRACT INNER CITY COMPARED WITH TOTAL CMA AND OUTER CITY

GEOGRAPHY	POP. 1981	POP. 1986	CHANGE 1981-86	POP. 1991	CHANGE 1986-91	CHANGE 1981-91
WINNIPEG	592061	625304	5.61	652354	4.33	10.18
NON-INNER CITY	496197	522935	5.45	552275	5.61	5.61
INNER CITY	95864	102369	6.79	100079	-2.24	4.40
011	6086	6322	3.88	6202	-1.90	1.91
012	4550	4716	3.65	4538	-3.77	-0.26
013	1689	1640	-2.98	1463	-10.79	-15.45
014	3900	4323	10.85	5825	34.74	49.36
015	5889	6633	12.63	5990	-9.69	1.72
016	2499	2653	6.16	2549	-3.92	2.00
017	3810	3736	-1.94	3366	-9.90	-11.65
021	6707	6924	3.24	6392	-7.68	-4.70
022	4995	5194	3.98	4954	-4.62	-0.82
023	3670	4129	12.51	4446	7.68	21.14
024	541	570	5.36	616	8.07	13.86
025	3134	3525	12.48	3704	5.08	18.19
026	2271	2328	2.51	2203	-5.37	-2.99
027	1927	1788	-7.21	1776	-0.67	-7.84
028	5211	5683	9.06	5203	-8.45	-0.15
029	5258	5277	0.36	5194	-1.57	-1.22
033	1010	1046	3.56	1018	-2.68	0.79
034	3022	2808	-7.08	2555	-9.01	-15.45
035	2332	2327	-0.21	2275	-2.23	-2.44
036	840	956	13.81	930	-2.72	10.71
042	2844	2893	1.72	2701	-6.64	-5.03
043	4514	4497	-0.38	4600	2.29	1.91
044	2494	2598	4.17	2561	-1.42	2.69
045	6039	6352	5.18	6016	-5.29	-0.38
048	4633	4612	-0.45	4583	-0.63	-1.08
116	6148	5924	-3.64	5561	-6.13	-9.55
117	2851	2915	2.24	2858	-1.96	0.25

TABLE 8

CHANGE IN HOUSEHOLD TENURE (OWNED & RENTED) FOR 1981, 1986 & 1991 INNER CITY COMPARED WITH TOTAL CMA AND OUTER CITY

GEOGRAPHY	TOTAL OWNED 1981	TOTAL OWNED 1986	CHANGE 1986-91	TOTAL OWNED 1991	CHANGE 1986-91	CHANGE 1981-91	TOTAL RENT 1981	TOTAL RENT 1986	CHANGE 1986-91	TOTAL RENT 1991	CHANGE 1986-91	CHANGE 1981-91
WINNIPEG	127690	143715	11.15	156350	8.79	22.44	89515	92610	3.46	95810	3.34	7.03
NON-INNER CITY	114280	129970	13.73	142950	9.99	25.10	58835	60780	3.31	63750	4.89	8.35
INNER CITY	13410	13745	2.44	13400	-2.51	-0.07	30680	31830	0.04	32060	0.72	4.50
11	525	910	42.31	1105	21.43	110.48	3280	3105	-5.64	2865	-7.73	-12.65
12	105	140	25.00	105	-25.00	0.00	2590	2740	5.47	2580	-5.84	-0.39
13	5	15	66.67	5	-66.67	0.00	1100	1000	-10.00	875	-12.50	-20.45
14	10	20	50.00	30	50.00	200.00	2875	3050	5.74	3915	28.36	36.17
15	350	300	-16.67	275	-8.33	-21.43	3005	3440	12.65	3160	-8.14	5.16
16	325	340	4.41	310	-8.82	-4.62	905	935	3.21	810	-13.37	-10.50
17	665	720	7.64	690	-4.17	3.76	930	865	-7.51	800	-7.51	-13.98
21	1200	1185	-1.27	1095	-7.59	-8.75	1400	1200	-16.67	1350	12.50	-3.57
22	415	395	-5.06	350	-11.39	-15.66	1440	1750	17.71	1565	-10.57	8.68
23	95	155	38.71	250	61.29	163.16	1750	1810	3.31	2195	21.27	25.43
24	50	45	-11.11	95	111.11	90.00	85	85	0.00	105	23.53	23.53
25	225	200	-12.50	175	-12.50	-22.22	865	985	12.18	980	-0.51	13.29
26	220	210	-4.76	200	-4.76	-9.09	600	650	7.69	575	-11.54	-4.17
27	355	335	-5.97	310	-7.46	-12.68	355	345	-2.90	365	5.80	2.82
28	780	775	-0.65	695	-10.32	-10.90	1130	1225	7.76	1100	-10.20	-2.65
29	1100	1070	-2.80	1025	-4.21	-6.82	910	905	-0.55	945	4.42	3.85
33	195	195	0.00	180	-7.69	-7.69	110	155	29.03	140	-9.68	27.27
34	290	265	-9.43	215	-18.87	-25.86	895	830	-7.83	865	4.22	-3.35
35	340	325	-4.62	290	-10.77	-14.71	375	350	-7.14	360	2.86	-4.00
36	125	125	0.00	130	4.00	4.00	245	280	12.50	275	-1.79	12.24
42	460	455	-1.10	430	-5.49	-6.52	595	635	6.30	610	-3.94	2.52
43	735	710	-3.52	645	-9.15	-12.24	1080	1100	1.82	1220	10.91	12.96
44	585	590	0.85	575	-2.54	-1.71	440	455	3.30	510	12.09	15.91
45	1425	1400	-1.79	1365	-2.50	-4.21	835	980	14.80	980	0.00	17.37
48	1570	1580	0.63	1575	-0.32	0.32	280	280	0.00	275	-1.79	-1.79
116	770	790	2.53	770	-2.53	0.00	2020	1980	-2.02	1950	-1.52	-3.47
117	490	495	1.01	510	3.03	4.08	585	695	15.83	690	-0.72	17.95

TABLE 9
TOTAL NUMBER OF RESIDENTIAL BUILDING PERMITS ISSUED 1983 to 1991 BY CENSUS TRACT, IN ASCENDING ORDER OF FREQUENCEY

CENSUS TRACT #	TOTAL # OF RESIDENTIAL BUILDING PERMITS ISSUED 1983 to 1991
024	8
027	35
012	36
011	47
029	49
036	50
026	55
015	57
034	58
035	59
016	65
022	70
042	96
025	98
044	105
017	121
028	128
029	135
116	138
117	162
043	167
021	171
048	248
045	255
24*	2413

*Data not available for census tracts 13, 14 and 23

TABLE 10

CORRELATIONS FOR WINNIPEG'S INNER CITY 1986 - SELECTED CTS

Correlations:	TOTAL	RRAPS	PERMS	OWNER	RENT	FNKIDS
TOTAL	1.0000					
RRAPS	.8492**	1.0000				
PERMS	.9758**	.7132**	1.0000			
OWNER	.8632**	.8120**	.8095**	1.0000		
RENT	-.1203	-.2409	-.0596	.0523	1.0000	
FNKIDS	.3914	.2866	.4010	.6616**	.7195**	1.0000
FWKIDS	.7988**	.6652**	.7847**	.8194**	.1244	.4557
SPAR	.5244*	.4747	.4997	.5162*	.4800	.4674
POPOLD	.3741	.2369	.3989	.5872*	.7287**	.9278**
PROF	-.0240	-.1565	.0331	.2677	.8006**	.8451**
TERT	.3938	.2391	.4239	.6057*	.7852**	.8878**
MANU	.4909	.4182	.4784	.4807	.2414	.2672
CONST	.6795**	.5516*	.6735**	.7001**	.2919	.4958
ABORG	.2114	.2852	.1628	.0811	.1511	-.0507
IMMG	.3422	.2814	.3376	.4522	.3729	.3675
OWNGT	.8106**	.7042**	.7843**	.8517**	-.0260	.3989
RENTGT	.1630	.0915	.1789	.1978	.8003**	.5361*
INCOM	.3447	.2750	.3432	.6112*	.1070	.6017*

Minimum pairwise N of cases: 24 2-tailed Signif: * - .01 ** - .001

Correlations:	FWKIDS	SPAR	POPOLD	PROF	TERT	MANU
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS	1.0000					
SPAR	.7718**	1.0000				
POPOLD	.4266	.5086	1.0000			
PROF	.0590	.1706	.7466**	1.0000		
TERT	.6325**	.6836**	.8120**	.7496**	1.0000	
MANU	.8594**	.8162**	.2713	-.0639	.5295*	1.0000
CONST	.8778**	.7386**	.4417	.1416	.6992**	.7998**
ABORG	.3749	.7424**	.0994	-.2802	.1355	.5871*
IMMG	.8011**	.7781**	.3524	.1272	.6251*	.9366**
OWNGT	.9179**	.6730**	.3923	.0393	.5262*	.6558**
RENTGT	.4701	.8520**	.5939*	.3990	.7258**	.6535**
INCOM	.2643	-.0529	.3872	.5774*	.4498	-.0976

Minimum pairwise N of cases: 24 2-tailed Signif: * - .01 ** - .001

TABLE 10...Continued

CORRELATIONS FOR WINNIPEG'S INNER CITY 1986 - SELECTED CTS

Correlations:	CONST	ABORG	IMMG	OWNGT	RENTGT	INCOM
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS						
SPAR						
POPOLD						
PROF						
TERT						
MANU						
CONST	1.0000					
ABORG	.3689	1.0000				
IMMG	.7568**	.5157*	1.0000			
OWNGT	.7410**	.3150	.5982*	1.0000		
RENTGT	.5612*	.6251*	.6674**	.3047	1.0000	
INCOM	.2456	-.5222*	.0166	.3313	-.1678	1.0000

Minimum pairwise N of cases: 24 2-tailed Signif: * - .01 ** - .001

TABLE 11

CORRELATIONS FOR WINNIPEG'S INNER CITY 1991 - SELECTED CTS

Correlations:	TOTAL	RRAPS	PERMS	OWNER	RENT	FNKIDS
TOTAL	1.0000					
RRAPS	.8492**	1.0000				
PERMS	.9758**	.7132**	1.0000			
OWNER	.8231**	.7796**	.7698**	1.0000		
RENT	-.0841	-.2166	-.0216	.1104	1.0000	
FNKIDS	.3611	.2745	.3658	.7003**	.7203**	1.0000
FWKIDS	.8196**	.6876**	.8030**	.7714**	.1017	.3941
SPAR	.5094	.4420	.4934	.4149	.5702*	.4351
POPOLD	.4156	.2833	.4346	.6983**	.6906**	.9349**
PROF	-.0187	-.1463	.0359	.3553	.7700**	.8505**
TERT	.3378	.1723	.3772	.5903*	.8163**	.9076**
MANU	.5914*	.5101	.5736*	.5619*	.1323	.2600
CONST	.6593**	.5513*	.6471**	.5258*	.2251	.3593
ABORG	.2128	.2335	.1861	-.0166	.2349	-.0895
IMMG	.3383	.2679	.3378	.4268	.3181	.3144
OWNGT	.8005**	.6321**	.8007**	.7740**	.1380	.5181*
RENTGT	.1380	.0669	.1556	.0491	.7186**	.3505
INCOM	.3224	.2435	.3269	.5955*	-.0233	.5105

Minimum pairwise N of cases: 24 2-tailed Signif: * - .01 ** - .001

Correlations:	FWKIDS	SPAR	POPOLD	PROF	TERT	MANU
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS	1.0000					
SPAR	.6982**	1.0000				
POPOLD	.4481	.4971	1.0000			
PROF	.0242	.1793	.7201**	1.0000		
TERT	.5253*	.6044*	.8466**	.7827**	1.0000	
MANU	.9322**	.6976**	.3196	-.0713	.4684	1.0000
CONST	.7306**	.6761**	.3616	.0179	.4646	.6594**
ABORG	.3552	.7687**	.0595	-.2442	.0367	.4324
IMMG	.7937**	.6596**	.3665	.1049	.5380*	.9127**
OWNGT	.7754**	.5216*	.5528*	.2077	.5391*	.5916*
RENTGT	.3892	.8643**	.3682	.2295	.5578*	.4944
INCOM	.2100	-.2456	.3603	.5195*	.3524	.0216

Minimum pairwise N of cases: 24 2-tailed Signif: * - .01 ** - .001

TABLE 11...Continued

CORRELATIONS FOR WINNIPEG'S INNER CITY 1991 - SELECTED CTS

Correlations:	CONST	ABORG	IMMG	OWNGT	RENTGT	INCOM
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS						
SPAR						
POPOLD						
PROF						
TERT						
MANU						
CONST	1.0000					
ABORG	.3263	1.0000				
IMMG	.4748	.4301	1.0000			
OWNGT	.6514**	.0734	.3907	1.0000		
RENTGT	.4755	.7108**	.5674*	.1936	1.0000	
INCOM	.0010	-.6157*	-.0153	.3555	-.4217	1.0000

Minimum pairwise N of cases: 24 2-tailed Signif: * - .01 ** - .001

TABLE 12

CORRELATIONS FOR CITY OF WINNIPEG 1986 - SELECTED CTS

Correlations:	TOTAL	RRAPS	PERMS	OWNER	RENT	FNKIDS
TOTAL	1.0000					
RRAPS	.0735	1.0000				
PERMS	.6248**	.0972	1.0000			
OWNER	.2941*	.2076	.4503**	1.0000		
RENT	.0685	.1027	-.0657	-.1378	1.0000	
FNKIDS	.2446	.1559	.2808*	.7576**	.4164**	1.0000
FWKIDS	.3756**	.0144	.4622**	.8320**	-.0906	.5429**
SPAR	.2980*	.5693**	.1970	.1954	.6436**	.3516**
POPOLD	.0183	.3179*	.0570	.4428**	.5517**	.8142**
PROF	.3309**	-.2764*	.2813*	.6478**	.2109	.6376**
TERT	.3600**	.0457	.3883**	.7246**	.4209**	.8185**
MANU	.1080	.5643**	.1960	.2520	.2971*	.2161
CONST	.2614*	.3461**	.3056*	.4877**	.1562	.4010**
ABORG	-.0585	.3958**	-.1052	-.3509**	.4282**	-.2579*
IMMG	.1080	.2940*	-.0002	.1750	.4511**	.2290
OWNGT	.1507	.0233	.3603**	.7314**	-.1761	.3758**
RENTGT	.2455	.3276**	.0142	-.2311	.7803**	.0995
INCOM	.1414	-.3721**	.2670*	.5930**	-.4793**	.2781*

Minimum pairwise N of cases: 101 2-tailed Signif: * - .01 ** - .001

Correlations:	FWKIDS	SPAR	POPOLD	PROF	TERT	MANU
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS	1.0000					
SPAR	.2784*	1.0000				
POPOLD	.1220	.3975**	1.0000			
PROF	.6737**	.1025	.2695*	1.0000		
TERT	.7824**	.4728**	.4708**	.7111**	1.0000	
MANU	.3429**	.7068**	.2601*	-.1387	.3546**	1.0000
CONST	.4949**	.5098**	.2298	.1162	.5107**	.5644**
ABORG	-.1743	.6430**	.0059	-.3155*	-.1598	.4580**
IMMG	.3102*	.6372**	.3290**	.1156	.3381**	.7670**
OWNGT	.8090**	.1124	.0437	.5548**	.5874**	.2277
RENTGT	-.0299	.8357**	.2149	-.0487	.2423	.5350**
INCOM	.6070**	-.4037**	-.1399	.6117**	.3575**	-.3326**

Minimum pairwise N of cases: 101 2-tailed Signif: * - .01 ** - .001

TABLE 12...Continued

CORRELATIONS FOR CITY OF WINNIPEG 1986 - SELECTED CTS

Correlations:	CONST	ABORG	IMMG	OWNGT	RENTGT	INCOM
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS						
SPAR						
POPOLD						
PROF						
TERT						
MANU						
CONST	1.0000					
ABORG	.0905	1.0000				
IMMG	.3351**	.5000**	1.0000			
OWNGT	.4712**	-.2057	.2033	1.0000		
RENTGT	.2988*	.7349**	.5917**	-.1847	1.0000	
INCOM	-.0470	-.6285**	-.2976*	.5127**	-.6206**	1.0000

Minimum pairwise N of cases: 101 2-tailed Signif: * - .01 ** - .001

TABLE 13

CORRELATIONS FOR WINNIPEG'S NON-INNER CITY 1986 - SELECTED CTS

Correlations:	TOTAL	RRAPS	PERMS	OWNER	RENT	FNKIDS
TOTAL	1.0000					
RRAPS	.0021	1.0000				
PERMS	.9994**	-.0316	1.0000			
OWNER	.3246*	.1892	.3182*	1.0000		
RENT	.0979	.2371	.0899	.1011	1.0000	
FNKIDS	.2537	.2568	.2450	.7926**	.5901**	1.0000
FWKIDS	.4212**	-.0344	.4223**	.8607**	.1603	.6412**
SPAR	.2042	.5988**	.1839	.4507**	.7125**	.6104**
POPOLD	-.0148	.4363**	-.0296	.3962**	.5740**	.7379**
PROF	.4786**	-.2708	.4875**	.6980**	.2740	.6178**
TERT	.3397*	.0864	.3367*	.7564**	.5806**	.8138**
MANU	.1416	.5257**	.1240	.6152**	.3332*	.5767**
CONST	.1314	.3338*	.1201	.6209**	.3785**	.5936**
ABORG	.0236	.6981**	-.0002	.0191	.2409	.0412
IMMG	.4238**	.2463	.4154**	.6351**	.5064**	.7476**
OWNGT	.3451*	.1053	.3414*	.8197**	.0867	.6059**
RENTGT	.2322	.3966**	.2187	.0343	.8203**	.4021**
INCOM	-.1656	-.4650**	-.1498	.0599	-.4498**	-.2741

Minimum pairwise N of cases: 79 2-tailed Signif: * - .01 ** - .001

Correlations:	FWKIDS	SPAR	POPOLD	PROF	TERT	MANU
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS	1.0000					
SPAR	.4480**	1.0000				
POPOLD	.0668	.4549**	1.0000			
PROF	.7931**	.3223*	.1583	1.0000		
TERT	.8461**	.6628**	.3595*	.7146**	1.0000	
MANU	.5660**	.6795**	.2954*	.1367	.5905**	1.0000
CONST	.6030**	.6436**	.2192	.2901*	.6664**	.8579**
ABORG	.0377	.5989**	.0790	-.1174	.0366	.3712**
IMMG	.5803**	.6056**	.5394**	.5776**	.6621**	.5599**
OWNGT	.8320**	.3986**	.0969	.6337**	.6711**	.6058**
RENTGT	.1714	.7884**	.3255*	.1249	.4616**	.4455**
INCOM	.2264	-.3869**	-.4627**	.2038	-.0101	-.2811

Minimum pairwise N of cases: 79 2-tailed Signif: * - .01 ** - .001

TABLE 13...Continued

CORRELATIONS FOR WINNIPEG'S NON-NNER CITY 1986 - SELECTED CTS

Correlations:	CONST	ABORG	IMMG	OWNGT	RENTGT	INCOM
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS						
SPAR						
POPOLD						
PROF						
TERT						
MANU						
CONST	1.0000					
ABORG	.2534	1.0000				
IMMG	.4931**	.1598	1.0000			
OWNGT	.6349**	.0844	.5201**	1.0000		
RENTGT	.4170**	.4589**	.4831**	.1002	1.0000	
INCOM	-.2006	-.3359*	-.3116*	-.0127	-.4442**	1.0000

Minimum pairwise N of cases: 79 2-tailed Signif: * - .01 ** - .001

TABLE 14

CORRELATIONS FOR CITY OF WINNIPEG 1991 - SELECTED CTS

Correlations:	TOTAL	RRAPS	PERMS	OWNER	RENT	FNKIDS
TOTAL	1.0000					
RRAPS	.0735	1.0000				
PERMS	.6248**	.0972	1.0000			
OWNER	.2941*	.2076	.4503**	1.0000		
RENT	.0685	.1027	-.0657	-.1378	1.0000	
FNKIDS	.2446	.1559	.2808*	.7576**	.4164**	1.0000
FWKIDS	.3756**	.0144	.4622**	.8320**	-.0906	.5429**
SPAR	.2980*	.5693**	.1970	.1954	.6436**	.3516**
POPOLD	.0183	.3179*	.0570	.4428**	.5517**	.8142**
PROF	.3309**	-.2764*	.2813*	.6478**	.2109	.6376**
TERT	.3600**	.0457	.3883**	.7246**	.4209**	.8185**
MANU	.1080	.5643**	.1960	.2520	.2971*	.2161
CONST	.2614*	.3461**	.3056*	.4877**	.1562	.4010**
ABORG	-.0585	.3958**	-.1052	-.3509**	.4282**	-.2579*
IMMG	.1080	.2940*	-.0002	.1750	.4511**	.2290
OWNGT	.1507	.0233	.3603**	.7314**	-.1761	.3758**
RENTGT	.2455	.3276**	.0142	-.2311	.7803**	.0995
INCOM	.1414	-.3721**	.2670*	.5930**	-.4793**	.2781*

Minimum pairwise N of cases: 101 2-tailed Signif: * - .01 ** - .001

Correlations:	FWKIDS	SPAR	POPOLD	PROF	TERT	MANU
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS	1.0000					
SPAR	.2784*	1.0000				
POPOLD	.1220	.3975**	1.0000			
PROF	.6737**	.1025	.2695*	1.0000		
TERT	.7824**	.4728**	.4708**	.7111**	1.0000	
MANU	.3429**	.7068**	.2601*	-.1387	.3546**	1.0000
CONST	.4949**	.5098**	.2298	.1162	.5107**	.5644**
ABORG	-.1743	.6430**	.0059	-.3155*	-.1598	.4580**
IMMG	.3102*	.6372**	.3290**	.1156	.3381**	.7670**
OWNGT	.8090**	.1124	.0437	.5548**	.5874**	.2277
RENTGT	-.0299	.8357**	.2149	-.0487	.2423	.5350**
INCOM	.6070**	-.4037**	-.1399	.6117**	.3575**	-.3326**

Minimum pairwise N of cases: 101 2-tailed Signif: * - .01 ** - .001

TABLE 14...Continued

CORRELATIONS FOR CITY OF WINNIPEG 1991 - SELECTED CTS

Correlations:	CONST	ABORG	IMMG	OWNGT	RENTGT	INCOM
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS						
SPAR						
POPOLD						
PROF						
TERT						
MANU						
CONST	1.0000					
ABORG	.0905	1.0000				
IMMG	.3351**	.5000**	1.0000			
OWNGT	.4712**	-.2057	.2033	1.0000		
RENTGT	.2988*	.7349**	.5917**	-.1847	1.0000	
INCOM	-.0470	-.6285**	-.2976*	.5127**	-.6206**	1.0000

Minimum pairwise N of cases: 101 2-tailed Signif: * - .01 ** - .001

TABLE 15

CORRELATIONS FOR WINNIPEG'S NON-INNER CITY 1991 - SELECTED CTS

Correlations:	TOTAL	RRAPS	PERMS	OWNER	RENT	FNKIDS
TOTAL	1.0000					
RRAPS	.0556	1.0000				
PERMS	.9409**	.0453	1.0000			
OWNER	.2453	.1478	.2354	1.0000		
RENT	.2244	.2810	.2512	.0640	1.0000	
FNKIDS	.2303	.2170	.2552	.7341**	.6047**	1.0000
FWKIDS	.3421*	-.1165	.3106*	.8213**	.0610	.5181**
SPAR	.4060**	.6217**	.4028**	.3862**	.6655**	.5155**
POPOLD	-.0202	.3694**	.0273	.3996**	.5970**	.8068**
PROF	.3480*	-.2900	.3854**	.6958**	.1595	.5193**
TERT	.3724**	.0678	.3518*	.7415**	.5099**	.7563**
MANU	.1350	.5747**	.0561	.3749**	.3482*	.3615*
CONST	.2424	.2975*	.1895	.4698**	.2634	.3885**
ABORG	.0514	.6951**	-.0006	-.0866	.3078*	-.0165
IMMG	.2527	.2410	.2847	.5616**	.4186**	.5555**
OWNGT	.0871	-.0761	.0136	.6982**	-.1545	.2593
RENTGT	.4956**	.4363**	.4978**	.0426	.7600**	.3477*
INCOM	.0529	-.5454**	.0537	.3741**	-.5012**	-.0250

Minimum pairwise N of cases: 77 2-tailed Signif: * - .01 ** - .001

Correlations:	FWKIDS	SPAR	POPOLD	PROF	TERT	MANU
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS	1.0000					
SPAR	.3471*	1.0000				
POPOLD	.0157	.3834**	1.0000			
PROF	.7767**	.1939	.1034	1.0000		
TERT	.8313**	.5917**	.3178*	.6589**	1.0000	
MANU	.3308*	.6867**	.2521	-.0970	.4492**	1.0000
CONST	.4203**	.5247**	.1660	.1021	.5056**	.6110**
ABORG	-.0797	.6125**	.0451	-.2341	.0396	.4874**
IMMG	.5133**	.5883**	.4246**	.3965**	.5527**	.5789**
OWNGT	.7892**	.1378	-.1046	.5766**	.5636**	.2656
RENTGT	.1570	.8412**	.2282	.0647	.4471**	.5151**
INCOM	.5622**	-.3685**	-.3793**	.6195**	.2183	-.3809**

Minimum pairwise N of cases: 77 2-tailed Signif: * - .01 ** - .001

TABLE 15...Continued

CORRELATIONS FOR WINNIPEG'S NON-INNER CITY 1991 - SELECTED CTS

Correlations:	CONST	ABORG	IMMG	OWNGT	RENTGT	INCOM
TOTAL						
RRAPS						
PERMS						
OWNER						
RENT						
FNKIDS						
FWKIDS						
SPAR						
POPOLD						
PROF						
TERT						
MANU						
CONST	1.0000					
ABORG	.2317	1.0000				
IMMG	.4448**	.1935	1.0000			
OWNGT	.4209**	-.0663	.4704**	1.0000		
RENTGT	.4369**	.5730**	.4492**	-.0962	1.0000	
INCOM	-.2440	-.4409**	-.1240	.4369**	-.4840**	1.0000

Minimum pairwise N of cases: 77 2-tailed Signif: * - .01 ** - .001

MATRIX II
THE GEOGRAPHY OF GENTRIFICATION:
GAINS IN SOCIAL STATUS IN INNER CITY AREAS IN DESCENDING ORDER

CLUSTERS OF INNER CITY AREAS	GAIN IN SOCIAL STATUS IN DESCENDING ORDER
Halifax, Ottawa, Victoria, Vancouver, Calgary and Toronto	Most rapid gains in social status
St. John's, Saskatoon, Quebec City Kitchener and Edmonton	Second grouping of generally lower gains
Montreal, London, Hamilton, Regina and Windsor	Third group
Thunder Bay, Winnipeg, St. Catherines-Niagara, Sudbury Saint John and Oshawa	Slightest social status gains

Source: D. Ley (1991) "Gentrification", in The Canadian City, K. Gerecke (ed.), Black Rose Books, Montreal.

APPENDIX II
Definition of Independent and Dependent Variables used in Framework for Analysis

APPENDIX II

The following lists all labels and definitions for each independent and dependent variable.

LIST OF INDEPENDENT VARIABLES - LABEL AND DESCRIPTION

FNKID: (%) Percent of Husband/wife (& Common-Law Couples) households with no children

FWKID: (%) Percent of Husband/wife (& Common-Law Couples) households with children

SPAR: (%) Percent of Single Parent Families (both Male & Female head of household)

ABORG: (%) Percent of Aboriginals, single ethnic origin

POPOLD: (%) Percent of Percent of Population over 65 years of age

IMMG: (%) Percent of Immigrant Population

PROF: (%) Percent of labour force employed in Professional occupations (Quaternary Sector of economy)

TERT: (%) Percent of labour force employed in Service occupations (Tertiary Sector of economy)

MANU: (%) Percent of labour force employed in Manufacturing occupations

CONST: (%) Percent of labour force employed in Construction occupations

OWN: (%) Percent of owner-occupied private dwellings

OWNGT: (%) Percent of owner-occupied private dwellings, where the owner pays greater than 30 % of household income towards major payments.

RENT: (%) Percent of rented, occupied private dwellings

RENTGT: (%) Percent of rented, occupied private dwellings, where the renter pays greater than 30 % of income towards rent.

INCOM: (%) Percent of Household Income

LIST OF DEPENDENT VARIABLES - LABEL AND DESCRIPTION

TOTAL: (%) Percent of building permits registered and R.R.A.Ps/ C.A.H.R.Ps issued

PERM: (%) Percent of building permits registered

RRAP: (%) Percent of R.R.A.Ps/C.A.H.R.Ps issued

The following provides the formula used for calculating each value for the 1986-1991 census periods for each census tract. All data sources are also included.

INDEPENDENT VARIABLES:

FNKID: (%) Percent of Husband/wife (& Common-Law Couples) households with no children

Formula: **FNKID** = ((Ai / Bi) * 100) * HSLDWGT

Ai = (Total number of husband/wife + Common law Couple households without children)

Bi = (Total number of private households)

** This value was then multiplied by the private household weight.

Weight = HSLDWGT

Formula: HSLDWGHT = Ai/ΣB

A = (Total number of private households per census tract)

ΣB = (Sum of total private households in the inner city)

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1991)

FWKID: (%) Percent of Husband/wife (& Common-Law Couples) households with children

Formula: **FWKID** = ((Ai / Bi) * 100) * HSLDWGT

Ai = (Total number husband/wife + Common law Couple households with children)

Bi = (Total number of private households))

** This value was multiplied by the same family household weight.

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1991)

SPAR: (%) Percent of Single Parent Families (both Male & Female head of household)

Formula: **SPAR** = ((Ai / Bi) * 100) * HSLDWGT

Ai = (Total number of single parent households)

Bi = (Total number of private households)

** This value was then multiplied by the same family household weight.

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1991)

IMMG: (%) Percent of Immigrant Population

Formula: **IMMG** = ((Ai / Bi) * 100) * POP5WGT

Ai = (Total number of immigrants)

Bi = (Total Population over 5 years of age)

** This value was then multiplied by the weight of Population 5 years and older.

Weight = POP5WGT

Formula: POP5WGHT = Ai/ΣB

A = (Total Population over 5 years old per census tract)

ΣB = (Sum of Total Population over 5 years old in the inner city)

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

ABORG: (%) Percent of Aboriginals, single ethnic origin

Formula: **ABORG** = ((Ai / Bi) * 100) * POPWGT

Ai = (Total number of Aboriginals, single ethnic origin)

Bi = (Total Population)

** This value was then multiplied by a Total Population weight.

Weight = POPWGT

Formula: POPWGHT = Ai/ΣB

A = (Total population per census tract)

ΣB = (Sum of Total Population in the inner city)

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

POPOLD: (%) Percent of Aboriginals, single ethnic origin

Formula: **POPOLD** = ((Ai / Bi) * 100) * POPWGT

Ai = (Total population over 65 years of age)

Bi = (Total Population)

** This value was then multiplied by a Total Population weight.

Weight = POPWGT

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

PROF: (%) Percent of labour force employed in Professional occupations (Quaternary Sector of economy)

Formula: **PROF** = ((Ai / Bi) * 100) * LABRWGT

Ai = (a + b + c + d + e + f)

a = Total number of males and females employed in Managerial, administrative and related occupations.

b = Total number of males and females employed in natural sciences, engineering and mathematics.

c = Total number of males and females employed in social sciences and related fields.

e = Total number of males and females employed Teaching and related occupations.

f = Total number of males and females employed in medicine and health occupations.

g = Total number of males and females employed in Artistic, literary, recreational and related occupations.

Bi = (Total Labour Force 15 years of age and older)

** This value was then multiplied by a Total Labour Force weight.

Weight = LABRWGT

Formula: LABRWGT = Ai/ΣB

A = (Total Labour Force 15 years and older per census tract)

ΣB = (Sum of Total Labour Force over 15 years in the inner city)

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

TERT: (%) Percent of labour force employed in Service occupations (Tertiary Sector of economy)

Formula: **TERT** = ((Ai / Bi) * 100) * LABRWGT

Ai = (a + b + c)

a = Total number of males and females employed in clerical and related occupations.

b = Total number of males and females employed in Real sales occupations.

c = Total number of males and females employed in service occupations.

Bi = (Total Labour Force 15 years of age and older)

** This value was then multiplied by a Total Labour Force weight.

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

MANU: (%) Percent of labour force employed in Manufacturing occupations

Formula: **MANU** = ((Ai / Bi) * 100) * LABRWGT

Ai = (a + b + c)

a = Total number of males and females employed in processing occupations.

b = Total number of males and females employed in machine and related occupations.

c = Total number of males and females employed in product fabricating, assembling and repairing occupations.

Bi = (Total Labour Force (Population over 15 years of age)

** This value was then multiplied by a Total Labour Force weight.

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

CONST: (%) Percent of labour force employed in Construction occupations

Formula: **CONST** = ((Ai / Bi) * 100) * LABRWGT

Ai = (Total number of males and females employed in construction sector)

Bi = (Total Labour Force (Population over 15 years of age))

** This value was then multiplied by a Total Labour Force weight.

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

OWN: (%) Percent of owner-occupied private dwellings

Formula: **OWN** = ((Ai / Bi) * 100) * DWELWGT

Ai = (Total number of occupied private dwellings - owned)

Bi = (Total number of occupied private dwellings)

** This value was then multiplied by the total occupied dwellings weight.

Weight = DWELWGT

Formula: DWELWGT = Ai/ΣB

A = (Total number of occupied private dwellings per census tract)

ΣB = (Sum of Total number of occupied private dwellings in the inner city)

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1991)

OWNGT: (%) Percent of owner-occupied private dwellings, where the owner pays greater than 30 % of household income towards major payments.

Formula: **OWNGT** = ((Ai / Bi) * 100) * DWELWGT

Ai = (Total number of Owner's major payments >= 30% of household income)

Bi = (Total number of occupied private dwellings)

** This value was then multiplied by the total occupied dwellings weight.

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

RENT: (%) Percent of rented, occupied private dwellings

Formula: **RENT** = ((Ai / Bi) * 100) * DWELWGT

Ai = (Total number of occupied private dwellings - rented)

Bi = (Total number of occupied private dwellings)

** This value was then multiplied by the total occupied dwellings weight.

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1991)

RENTGT: (%) Percent of rented, occupied private dwellings, where the occupier pays greater than 30 % of income towards rent.

Formula: **RENTGT** = ((Ai / Bi) * 100) * DWELWGT

Ai = (Total number of renters gross rent >= 30% of house hold income)

Bi = (Total number of occupied private dwellings)

** This value was then multiplied by the total occupied dwellings weight.

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

INCOM: (%) Percent of Household Income

** This variable is used simply to indicate an area's standing in incomes relative to another; hence, an area with a high positive value has greater overall median income than an area with a lower or negative value.

Formula: **INCOM** = Ai/ΣB

A = (Median income, household income per census tract)

ΣB = (Sum of Median incomes, household income in the inner city)

Source of Data:

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2(1986),
Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 2 (1991)

DEPENDENT VARIABLES:

TOTAL = (%) Percent of building permits registered and R.R.A.Ps/ C.A.H.R.Ps issued

Formula: **TOTAL** = ((Ai / Bi) * 100) * HOUSWGT

Ai = (Total number of registered building permits for single detached and semi-detached homes and issued R.R.A.Ps and C.A.H.R.Ps 1983-1991)

Bi = (Total number of single detached and semi-detached homes in 1981)[1]

** This value was then multiplied by the 1981 housing weight.

Weight = HOUSWGT

Formula: HOUSWGT = Ai/ΣB

A = (Total number of single-detached and semi-detached dwellings per census tract in 1981)

ΣB = (Sum of Total number of single-detached and semi-detached dwellings in the inner city 1981)

Source of Data:

City of Winnipeg, Environmental Planning Department, List of single-detached and semi-detached issued building permits from 1983 to 1991 for selected inner city neighbourhoods and the CMA of Winnipeg (1992),

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1981)

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[1] Two reasons for using 1981 as a base year: a) the year of data recording for building permits began in 1983; and b) the 1986 census year did not desegregate homes by the single detached and semi-detached categories, which made it unreliable to use.

PERM = (%) Percent of building permits registered

Formula: **PERM** = ((Ai / Bi) * 100) * HOUSWGT

Ai = (Total number of registered building permits for single detached and semi-detached homes 1983-1991)

Bi = (Total number of single detached and semi-detached homes in 1981)

** This value was then multiplied by the 1981 housing weight.

Source of Data:

City of Winnipeg, Environmental Planning Department, List of single-detached and semi-detached issued building permits from 1983 to 1991 for selected inner city neighbourhoods and the CMA of Winnipeg (1992),

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1981)

RRAP = (%) Percent of R.R.A.Ps/C.A.H.R.Ps issued

Formula: **RRAP** = ((Ai / Bi) * 100) * HOUSWGT

Ai = (Total number of registered R.R.A.Ps and C.A.H.R.Ps for single detached and semi-detached homes 1983-1991)

Bi = (Total number of single detached and semi-detached homes in 1981)

** This value was then multiplied by the 1981 housing weight.

Source of Data:

City of Winnipeg, Environmental Planning Department, List of single-detached and semi-detached issued building permits from 1983 to 1991 for selected inner city neighbourhoods and the CMA of Winnipeg (1992),

Statistics Canada, Winnipeg Census Metropolitan Area, Profile No. 1 (1981)

ACTUAL NUMBERS FOR EACH CENSUS TRACT
1986 and 1991

APPENDIX III

LIST OF RAW DATA FOR INNER CITY CENSUS TRACTS - 1986

CT	S-DET81	TOTRRAP	PERMONLY	TOTPERM	POP86	TOTHSLD	OWNED	RENT	HUS-WIFE	NO-KIDS	W-KIDS	S-PARENT	RENT>30
011	230	5	42	47	6322	4015	910	3105	1205	990	210	165	230
012	110	3	34	37	4716	2880	140	2740	630	445	180	240	280
015	470	5	52	57	6633	3745	300	3440	830	525	310	330	405
016	375	8	57	65	2653	1280	340	935	390	210	185	95	100
017	795	21	100	121	3736	1585	720	865	660	320	340	170	75
021	1415	31	140	171	6924	2390	1185	1200	1205	465	745	375	220
022	530	14	56	70	5194	2145	395	1750	760	265	495	345	350
024	50	5	3	8	570	130	45	85	40	25	20	10	15
025	370	7	91	98	3525	1185	200	985	445	140	310	185	145
026	370	7	48	55	2328	860	210	650	360	110	255	130	120
027	395	9	26	35	1788	685	335	345	335	140	200	65	35
028	875	23	105	128	5683	1995	775	1225	1030	365	665	300	255
029	1195	26	109	135	5277	1980	1070	905	1010	370	635	235	145
033	255	10	39	49	1046	350	195	155	200	60	140	55	30
034	345	10	48	58	2808	1095	265	830	335	130	205	250	180
035	370	10	49	59	2327	680	325	350	280	110	170	155	90
036	165	9	41	50	956	405	125	280	140	65	80	65	35
042	505	21	75	96	2893	1090	455	635	490	195	300	220	180
043	930	39	128	167	4497	1815	710	1100	725	305	415	325	265
044	775	35	70	105	2598	1045	590	455	510	240	270	175	60
045	1575	78	177	255	6352	2380	1400	980	1225	515	710	400	275
048	1735	74	174	248	4612	1855	1580	280	1145	575	575	195	80
116	860	7	131	138	5924	2770	790	1980	1045	605	440	215	205
117	535	5	157	162	2915	1190	495	695	530	250	285	90	75

CT	POP>65	POP-IMMG	POP>5	POP>15	UNIV-DG	P>15LAB	OWN>30P	MED-INC	ABORIG	TOTPROF	TOTTERT	TOTMANU	TOTCONST
011	1635	1200	6130	5995	1715	3910	20	25956	60	1875	1515	145	80
012	660	1055	4425	4205	695	2855	0	15385	150	980	1115	265	145
015	1105	1600	6175	5820	790	3605	20	12667	490	945	1525	445	150
016	200	625	2325	2120	360	1605	25	17617	165	515	625	165	120
017	320	805	3385	3000	760	2275	50	23174	70	945	835	200	75
021	620	2595	5965	5105	255	3480	95	20258	470	450	1495	770	245
022	470	2200	4670	4085	140	2645	50	10936	600	215	940	825	180
024	55	90	535	510	10	295	0	9899	145	50	80	70	30
025	405	1615	3230	2730	100	1410	10	9897	430	135	445	465	95
026	220	1100	2135	1840	95	1015	20	10999	160	90	315	360	80
027	200	625	1440	1270	125	840	15	19205	35	185	355	130	45
028	495	2840	5160	4360	235	2840	65	16801	350	325	1000	880	200
029	955	2315	4865	4190	225	2485	95	17735	210	450	1020	610	190
033	80	415	1020	845	0	495	10	18899	170	30	145	105	100
034	495	825	2550	2110	70	885	35	10017	740	95	305	205	100
035	265	455	1630	1350	65	695	30	16343	240	155	230	135	50
036	190	150	820	700	15	265	5	10858	145	40	110	55	15
042	340	850	2580	2225	90	1325	45	14473	330	175	500	245	75
043	795	1245	4090	3455	60	1725	45	11621	695	130	570	550	115
044	450	485	2405	2115	90	1185	40	17847	185	200	445	240	70
045	895	1760	5795	4870	180	2945	110	17235	595	395	1200	600	210
048	870	915	4350	3805	100	2170	65	22627	120	295	910	405	220
116	1185	555	5295	4870	470	2925	65	17761	70	950	1235	250	125
117	530	180	2645	2365	215	1440	35	18699	5	395	560	155	125

APPENDIX III...Continue

LIST OF RAW DATA FOR INNER CITY CENSUS TRACTS - 1991

Geos:	POP91	TOTHSLD	OWN	RENT	TOTCFAM	T-FNKIDS	T-FWKIDS	SPAR	POP>65	ABORG	IMMG
11	6202	3970	1105	2865	1275	915	185	175	1675	105	1065
12	4538	2685	105	2580	860	440	160	255	575	415	965
15	5990	3440	275	3160	1070	455	225	385	930	840	1100
16	2549	1125	310	810	490	175	175	135	140	280	540
17	3366	1485	690	800	760	290	295	180	255	130	505
21	6392	2450	1095	1350	1380	390	650	340	820	755	2420
22	4954	1920	350	1565	1025	235	440	355	360	815	1955
24	616	195	95	105	80	55	15	15	35	110	110
25	3704	1155	175	980	615	90	300	220	425	800	1540
26	2203	780	200	575	465	95	220	150	225	485	830
27	1776	680	310	365	410	150	190	70	220	90	750
28	5203	1795	695	1100	1220	300	600	320	440	800	2565
29	5194	1970	1025	945	1220	365	615	240	910	315	2400
33	1018	320	180	140	255	55	130	70	75	185	365
34	2555	1075	215	865	510	105	165	235	400	1135	550
35	2275	650	290	360	390	105	155	130	225	405	525
36	930	405	130	275	190	65	75	60	160	185	100
42	2701	1035	430	610	635	165	265	205	280	685	580
43	4600	1860	645	1220	1050	260	405	390	715	1355	1000
44	2561	1090	575	510	665	235	255	170	500	230	595
45	6016	2345	1365	980	1530	475	640	415	870	935	1280
48	4583	1850	1575	275	1265	515	545	200	925	120	1000
116	5561	2725	770	1950	1175	555	375	245	1170	135	590
117	2858	1200	510	690	615	230	280	100	465	65	190

Geos:	POP>5	POP>15	UNIV-DG	TOTPROF	TOTTERT	TOTMANU	TOTCONST	RENTGT	OWNGT	MED-INC
11	5915	5870	1710	1755	1575	115	40	165	30	31730
12	4190	4060	805	805	1255	200	50	305	15	18490
15	5215	5165	675	900	1240	200	140	290	35	14204
16	2235	2055	285	525	485	165	65	110	35	20279
17	3000	2650	840	870	755	150	55	90	65	28915
21	5625	4930	365	480	1270	615	85	200	70	22590
22	4090	3895	155	175	950	580	190	305	25	12111
24	350	590	70	135	90	20	20	10	10	22662
25	2655	2650	90	150	390	305	60	220	25	12153
26	1880	1655	85	90	370	205	95	115	10	13868
27	1530	1390	185	240	315	165	50	40	30	26075
28	4645	3900	175	305	825	655	170	260	70	19668
29	4700	4085	260	415	1075	700	105	115	85	25575
33	890	745	0	30	130	90	40	75	0	22201
34	2190	1815	55	90	220	130	55	175	15	9845
35	1525	1380	45	95	260	120	50	105	25	15009
36	845	740	0	50	115	70	40	45	10	13090
42	2400	1995	55	160	380	280	60	165	25	19416
43	4095	3380	75	165	520	355	80	240	60	15680
44	2355	2035	55	105	495	225	60	145	65	17787
45	5430	4605	180	340	990	515	250	235	115	22333
48	4235	3750	95	350	870	385	150	60	70	28814
116	4850	4490	460	735	1305	260	155	175	115	20626
117	2430	2360	310	415	595	155	120	80	45	28537

APPENDIX IV
Abbreviations and Definitions

APPENDIX IV
Abbreviations and Definitions

Abbreviations (in sequential order)

CMHC		Canada Mortgage and Housing Corporation
CT		Census Tract
RRAP		Residential Rehabilitation Assistance Program
CAI		Core Area Initiative
CBD		Central Business District
CAHRP		Core Area Home Repair Program
FNKID	}	
FWKID	}	
SPAR	}	
ABORG	}	
IMMG	}	
PROF	}	Acronyms for Independent Variables defined in Appendix II
TERT	}	
MANU	}	
CONST	}	
OWN	}	
OWNGT	}	
RENT	}	
RENTGT	}	
INCOM	}	
POPOLD	}	
TOTAL	}	
PERM	}	Acronyms for Dependent Variables defined in Appendix II
RRAP	}	
NIP		Neighbourhood Improvement Program
CMA		Census Metropolitan Area
CSP		Community Services Program

Employment Category Definitions

Tertiary describes employment categories dealing with services. These include sales, clerical, hotel and restaurant workers and other service categories.

Quarternary employment categories describe all professional and highly skilled employment and higher paid jobs including those in management, health, legal, banking (etc.) sectors.