THE LABOURSHED OF POINTE CLAIRE INDUSTRIAL PARK

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ABSTRACT

This study examines the spatial relationships between Pointe Claire Industrial Park, a recently established employment centre in an outer suburb of Montreal, and the residences of its employees. The factors influencing the observed patterns of residential distribution are investigated and the processes of their development analyzed. Consideration is also given to the effects of changes in industrial location on the redistribution of the labour force within the metropolitan area. A questionnaire distributed among employees provided the main data source for the study, but supplementary material was derived from interviews with company managers and officers of the City of Pointe Claire. It was found that the Park's labourshed encompassed almost the entire metropolitan region, but within these limits there were heavy concentrations of the labour force in close proximity to the Park and in areas where there existed adequate supplies of the type of labour required. Overtime, labour turnover and movement of employees into the vicinity caused the labour force to become distinctly more clustered around the Park.

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CHAPTER I

INTRODUCTION

The study of spatial linkages between the various functional areas in cities is a topic of increasing interest to urban geographers. Merely to distinguish and classify the different functions and to establish their patterns is insufficient, since only when the degrees of interaction and interdependence between them is appreciated can the rationale underlying their relative positions be fully understood and subsequent changes in their pattern be predicted.

In recent decades, and especially since the Second World War, there has been a dramatic change in the structure of Western cities. The density of development on both industrial and residential land has been considerably reduced as a result of technological advance and, in particular, the advent of motor transportation. Due to internal pressures and the attractions of suburban areas, the closely knit structure of cities is being broken down as a greater proportion of industrial activity and additional people move to more spacious accommodation on the outskirts of cities. While this shift is by no means a new occurrence, the rate at which it is taking place has accelerated to a degree where it has initiated serious concern among all students of the city.

The conditions giving rise to the migration of

industry and population to the suburbs have been well documented but certain aspects, although recognized, have received relatively superficial attention. As Vernon notes: "The vast shift in urban population from the cities to the suburbs over the past few decades has been chronicled and dissected about as thoroughly as any major development in contemporary America." (1, p.135). Vernon, himself one of the main contributors, has shown how the population of central New York has suffered an absolute decline since 1950 (2), and Bogue (3) and Hawley (4), among many others, have described the general trend of outward movement from other North American city centres. The dispersal of industry from more central city locations has been discussed almost as fully. As early as 1936 Creamer (5) was able to show that the trend was well under way, and Hoover (6) has described the acceleration of the trend during the Second World War as innovations in technology gained general acceptance. Further evidence of industrial suburbanization has been provided by Kitagawa and Bogue (7) and Cuzzort (8). The factors encouraging the migration of industry and population to the suburbs have been outlined in detail by the writers quoted and therefore need not be reiterated here. However, although most authors have drawn attention to the reciprocal effects of these migrations, there have been few studies attempting to assess directly the effects of industrial moves on the distribution of the labour force. Literature concerning the spatial relationships between employees and their place of

work is considerable and a summary is provided in Chapter II, but again there is a shortage of material dealing with changes in the location of industry and the resultant changes in employee distribution. Furthermore, relatively greater emphasis is given to employees' relations with centrally located work areas than to their distribution with respect to peripherally located work centres. Very little information at all is available on the development of patterns of employee distribution. This thesis endeavours to help fill these gaps, and generally to throw more light on the spatial linkages between labour and industry.

1. The Study Objectives

The study has several specific objectives. The first aim will be to establish the labourshed or effective labour market area serving the industries of Pointe Claire Industrial Park, an employment centre in the western suburbs of Montreal. Once this has been achieved, the observed pattern of employee distribution will be explained in terms of the distribution and characteristics of the Metropolitan population as a whole. Then, paying special attention to the reactions and migratory adjustments of workers to the new employment centre, the processes contributing to the development of Pointe Claire's labourshed will be analysed. During the course of the work results will be compared with those of other studies of a similar type, and the general validity of hypotheses relating to labourshed patterns will be assessed. Inferences drawn from the study will be used to speculate upon the future

trends to be expected in Pointe Claire's development and, finally, the wider implications of the location of employment centres in suburban districts will be considered.

2. Selection of Study Area

With the limited resources available, the study was necessarily restricted in scope, but there were several advantages in the selection of an industrial park as the area to be covered. William Lee Baldwin, after hearing the opinions of discussants at the Dartmouth College Conference on Industrial Parks, was led to define an industrial park as follows:

> An industrial park is a planned or organized industrial district with a comprehensive plan which is designed to insure compatibility between the industrial operations therein and the existing activities and character of the community in which the park is located. The plan must provide for streets designed to facilitate truck and other traffic, proper setbacks, lot size minimums, architectural provisions, landscaping requirements, and specific use requirements, all for the purpose of promoting the degrees of openness and park-like character which are appropriate to harmonious integration into the neighbourhood.
>
> The industrial park must be of sufficient size and must be suitably zoned to protect the areas surrounding it from being devoted to lower uses. The management is charged with the continuing responsibility of preserving compatibility between the park and the community as well as protecting the investments of the developer and the tenants. (9, p. 27).

Industrial parks have become, since the Second World War, a fairly typical expression of the diffusion process taking place in cities. For example, the Urban Land Institute found that, in 1960, there were more than 1,000

organized industrial districts in the United States and Canada (10, p. 29), and Meyer found that in 1962, in Chicago alone, there were 37 such districts being developed (11, p.140). Their introduction has lagged in Canada but, at the time of writing, operations had commenced in three areas of Montreal.

Of the three, Pointe Claire was chosen because it was the longest established, most readily accessible and, most important, the City's Planning Department actively supported the research by providing background material and assisting in gaining the cooperation of firms operating in the Park. The Park's more formal and cohesive structure greatly facilitated the organization of fieldwork. Another advantage of the area was that, although the Park was the oldest example in Montreal, it was still in the early stages of development. It could therefore be expected that, in this dynamic situation, any adjustments made by the labourforce would be more readily observable. The fact that Montreal is a city dominated by peoples of two cultures and languages and therefore perhaps somewhat atypical, is not considered to be a disadvantage, for a study of atypical situations can lead to a better understanding of the typical.

3. The Research Material

The study is based on material drawn primarily from a survey of the Park's employees which was conducted during the months of December 1964 and January 1965. This was approximately six years after operations in the Park first commenced. A questionnaire distributed among employees

obtained details of: their occupation, period of service with their company, personal characteristics, current and previous addresses, date of their last change of residence, their motivations for change, and any desire that they might have to move closer to work. In requesting an account of past actions, developments prior to the survey period could be assessed, while some indication of future trends could also be inferred from the information given. Most of the remaining data was obtained by way of interviews with company officials and officers of the City of Pointe Claire.

4. Organization of the Thesis

The work is presented in the following sequence:

(1) Chapter II contains a summary of the large volume of literature on the subject of spatial relationships between home and work. It covers such topics as: the type of work carried out, the methods of investigation, and the conclusions drawn.

(2) The material presented in Chapter III deals with such characteristics of Metropolitan Montreal and the City of Pointe Claire as might be relevant to the analysis of employee distributions. These include a discussion of the physical layout and the overall patterns of development.

(3) Chapter IV describes the growth of Pointe Claire Industrial Park in both historical and physical terms.

(4) The fifth chapter outlines the survey of the Park's employees, details the responses given to the questionnaire,

and analyses the personal characteristics of respondents. (5) Chapters VI and VII are concerned with the analysis of the patterns of residential distribution and their modifications, while the final chapter provides the summary and conclusions to the study.

CHAPTER II

PREVIOUS WORK

The pattern of spatial relationships between workplace and residence, being so fundamental to an understanding of the city, has received attention from many disciplines. Urban planners, traffic engineers, sociologists, urban ecologists, economists and geographers have all made their contributions. This chapter provides a cross-section of the type of work that has been produced in the various disciplines and a summary of the results obtained.

1. Lines of Research Followed

Because of the several types of data source possible, the various studies differ considerably in their content. Data either have been derived from earlier surveys or collected specifically for the study in hand. A major source - at least in Europe - has been the census. One of the earliest of these was the German Census of 1900, but many other countries have, at times, included journey to work information (12, p. 111). A second source has been found in the many traffic surveys produced. Personnel records of individual firms have also been used. At times some or all of these sources have been utilized together with perhaps further sampling done by the researcher. This has been done because of the incompleteness

of any one source taken on its own. Census figures are useful in that they provide countrywide information but are usually published in a form that gives only the gross characteristics. Most traffic surveys also have this failing. Recently, however, more comprehensive surveys have been done - of these there will be more written. Personnel records can be very good sources of data if they are made available! They can often provide supplementary information on workers. The disadvantage here - as with the individual's sample survey - is that it is difficult to assess the overall representativeness of the results. The usage of the various types of data has of course been derived from the different methods of approach and purposes of the research, while these have, in turn, tended to be biased by the researcher's particular discipline.

Urban planners and traffic engineers have probably produced more material on the journey to work than have other disciplines. However, much of their work has sought only to establish the amounts of traffic involved and the directions that it takes. Traffic studies to gauge these demands have had quite a long history but they have shown considerable refinement over the years. From mere cordon counts and volume counts they have been developed into origin-destination studies and, of late, into such large scale intensive studies as the Detroit and Chicago transportation studies. These were the first to really investigate how and why the observed traffic patterns were generated. Although traffic studies take all

trip purposes into consideration, the majority are in fact workplace-residence journeys. Thus it is the journey to work which has received most attention.* A good example of what a fully comprehensive planning programme can produce is the Anatomy of a Metropolis by Hoover and Vernon (14). In this study of the New York Metropolitan Region a journey to work survey was completed on employees from a sampling of firms stratified by their sizes. A fairly similar procedure was used in Edmonton by Gertler (15), although in this case the journey to work data formed only part of an industrial survey. Of course there have been literally hundreds of other urban travel studies completed as planners have attempted to assess the traffic needs of their cities. In fact more than 150 origin-destination surveys have been carried out in the United States alone since 1946 (13, pp. 26-27). Many have been used to further advantage by the more academic disciplines.

The interests of sociologists and urban ecologists are generally centred around the more personal aspects of workplace-residence separation and the journey to work. They have been concerned with how personal motivation can influence the journey to work, how the journey to work affects the individual, and how the social characteristics of the population

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* A concise history of the development of traffic studies and a discussion of their merits is given by Oi and Shuldiner in their book An Analysis of Urban Travel Demands (13).

are reflected in and affected by the physical structure of the city. Two of the most comprehensive studies to have been produced on the subject have come from sociologists.

Still regarded as a classic is Liepmann's study of the journey to work in England (12). Based on surveys and records of 36 quite large firms spread over the country together with an extensive summary of previous work, it touches upon all aspects of the topic. Her major concern, however, is with the economic and social costs of work journeys and the consideration which should be taken of the workplace-residence relationship in the planning of cities.

Carroll's work is the equivalent to that of Liepmann's but, in this case, it deals with conditions in the United States (16). His data is derived from numerous traffic and journey to work surveys and, as his central theme, he attempts to demonstrate the desire of people to minimize their work journey. He also recognizes the important distinction between the characteristics of employees in central and off-centre workplaces.

The remaining studies by sociologists have been directed towards more specific aspects of workplace-residence separation or, bordering on this topic, on such questions as residence location or mobility.

Duncan and Duncan investigated "... some relationships between the pattern of location of industry in the city and the pattern of residential differentiation according to the industrial affiliations of the work force." (17, p.37).

Using data obtained from the Urban Analysis Project of the Chicago Community inventory 1951-1953, they attempted to build a gravity model of "workplace potentials" for a number of industries, then to see how these compared with the residential distribution of the labourforce by occupation group.

Again in Chicago B. Duncan, using data obtained from 1243 persons in a sample survey, investigated the effects which socio-economic levels of employees and location of workplace (i.e. downtown or non-central) had upon the degree of workplace-residence separation (18). Also concerned with the effects of socio-economic level on the journey to work, Reeder tested a series of hypotheses on variations in the time of journey and costs of travel. He used data obtained from 331 respondents sampled in Spokane (19).

Schnore, dissatisfied with previous explanations of workplace-residence separation, attempts a purely theoretical approach. Concerned at researchers' preoccupation with the principle of least effort, he puts forward as a possible alternative hypothesis: "The maximum distance from significant centres of activity at which a unit tends to locate is fixed at that point beyond which further savings in rent are insufficient to cover the added costs of transportation to these centres." (20, p. 342). This suggestion, given in terms of economic principles, leads us to consider the work of economists on the subject.

Economists have been interested in the location of labour primarily because of its importance as a factor of

production. However, their interest has usually stopped once the presence of a metropolitan labour market has been established. Relatively little work has been done on the characteristics of sub-metropolitan markets. One of the few studies to be produced is by Goldner (21). In his theoretical discussion of factors which help define such markets he introduces the concept of the"normal preference area". Based on diverse social and economic controls, it is the area around a worker's residence in which he is prepared to commute to work. The aggregate of workers' normal preference areas and their relationship to workplaces will define the labourshеds within the greater metropolitan labour market.

Some particularly useful work has been produced by Burtt in his studies of the labour characteristics of firms located on or near Route 128 in Boston (22, 23). He discusses the relocation of firms from the centre of Boston to new peripheral sites with special reference to the ways in which they coped with their labour supplies. Data for the studies were obtained from interviews with officials from a sample of the industries and, in the later study, further information was provided by a questionnaire. One of the most useful attributes of these studies is the attempt to show the changes taking place over time.

The work of geographers, like that of the economists, has tended to emphasize labour as a factor of production and, consequently, its areal relationships with industry has seldom received more than superficial attention, whereas the location

of industry itself has been investigated quite thoroughly. There are numerous examples of this type of treatment but there are others which give increasing notice to the characteristics of local labour market areas and their importance to industry. This field of research is not particularly new to geographers however.

In 1938 Howell made a study of the labour sheds of 24 collieries in the South Wales Coalfield, using the addresses of miners as supplied by the colliery offices. He also discusses the adjustments made by workers to the changing locations of their jobs as caused by the closure of local pits (24).

Dickinson's works on commuting patterns in West Germany (25) and the Netherlands and Belgium (26) provide good examples of the use of census data on workplace-residence relationships. With this material Dickinson is able to show little more than the major employment centres and dormitory areas of those countries. The gross patterns and some of the relationships between them are then partially explained with the help of information supplied by several large manufacturers in the area.

Of more relevance to the present paper is Vance's study of Natick, a Boston suburb (27). He uses data gathered from a number of sources including transit schedules and house-to-house survey results to illustrate his theories on the formation of labour sheds and employment fields. Vance's study is important in that it underlines the need for geographers to understand the processes which contribute to the establishment

of labourshed and to the changes in their patterns.

Of late, greater attention appears to be being paid by geographers to the more detailed analysis of labourshed. A factor contributing to this is perhaps the increased emphasis being given to the study of industries located in off-central districts of cities. Some examples of this trend are seen in the works of Carlson (28), Meyer (11), Kerr and Spelt (29), Kenyon (30, 31), and Taaffe (32).

Carlson discusses the location of an electronics plant about 60 miles from Boston - an example of dispersed industry - while Meyer writes of the establishment of a large industrial park on the outskirts of Chicago. Although both writers are chiefly concerned with illustrating recent trends in industrial location, they give more than passing reference to the availability of labour.

Kerr and Spelt deal with the diffusion of industry in metropolitan Toronto. From information supplied by management they analyse the reasons why diffusion is taking place. Also discussed in some detail are companies' attempts to retain their workers when changing their location and the labour supply situation in the new peripheral location.

Kenyon has perhaps done more than any other geographer to demonstrate the spatial linkages that exist between industries and their workers. In his studies of industrial districts in Paterson-Passaic, New York and Skokie in Chicago he pays considerable attention to the distribution of their employees. He is able to define the labourshed by means of

data supplied by company officials and can compare those of older districts with those of more the recently established ones. Kenyon also summarizes the labour market implications for industries that relocate within a metropolitan area and the factors which contribute to the evolution of labourshed patterns.

Taaffe's work compares favourably with that of Kenyon. Using material drawn from the Chicago Area Transportation Study, he concentrates on aspects of the journey to work to a peripherally located manufacturing district in the western suburbs of Chicago. After comparing these characteristics with those of the journey to work to the Central Business District, Taaffe then tries to account for the peripheral pattern in terms of: population distribution, the composition of the labour force, the spatial distribution of income and the spatial distribution of alternate employment opportunities. As an aid to his analysis he develops probability models based on the Monte Carlo simulation of diffusion. Taaffe however, deals with a non-dynamic situation and, although his models may be of use in predicting future labourshed patterns, they do not explain how they actually change.

The foregoing section has given a short and by no means exhaustive survey of research that is relevant to the spatial relationships between industry and labour within metropolitan areas. The following section attempts to summarize the results of this research.

2. Summary of Findings

There are many factors operating to complicate the spatial distribution of workplace and residences relative to each other and the consequent diurnal movements of people to and from their jobs. The dominance of the Central Business District as a work centre, although still apparent, is weakening as industry becomes more dispersed through the urban area, and the once comparatively simple pattern of convergence towards a common centre is breaking down. The fact that suburban districts are specializing in the functions of providing employment or supplying labour has been amply demonstrated by Dickinson and many others, and the degree of specialization is said to be increasing. Not only is specialization occuring, but so is the degree of segregation as both industry and population spread themselves more thinly and widely over urban areas. This has of course been due to the general acceptance of motor transportation and the increased mobility that it provides.

So great has been the impact of the automobile that there has been a tendency to suggest that its users no longer consider distance as a factor in the journey to work. Hawley in fact speculates on the possibility that the journey to work might supersede more permanent migration as a means of adjustment to changes in job location (33, p. 337), and Meyer concludes from his study of Centex Industrial Park that the " . . . ubiquitous automobile and the expressways have made

the entire metropolitan labour force of Chicago one . . ." (11, p. 145).

Researchers have been led to conclude that improved highways and the automobile have allowed people working in the suburbs to live far from their jobs. Automobiles are invariably used more for travelling to off-centre workplaces than they are to city centres. Indeed, public transit facilities have consistently been found inadequate to meet the demands set up by suburban sites and use of the automobile is therefore often obligatory. Those that do not own cars, where feasible, take up with car pools. Even when public transportation is readily available car owners are, because of the added convenience, just as likely to drive themselves to work. It is not therefore unusual to find more than 80 per cent of a suburban located firm's employees commuting by automobile. Burtt in fact found that 92 per cent of the employees working in the Route 128 firms arrived at their jobs in cars (23, p. 45). Several studies have shown how urban expressways have allowed employees to live at greater distances from their place of work while still not being subjected to longer journeys in terms of time. Kenyon (31, p. 195) concludes that the dispersal of population and industry brought about by such developments in urban transportation will encourage further increases in the aggregate commuting distance.

In studies investigating living preferences and choice of residence location, time and distance from work

have now shown very high on the list of requirements. Martin, in a survey of urban fringe residents in the Eugene-Springfield area, found that a number of people enjoyed spending time on the journey to their work and that the decision to live on the fringe was " . . . almost completely independent of time expended daily in traveling to work" (34, p. 45). Only 7.5 per cent of Martin's respondents gave proximity to work as a major reason for their choice of home location. Very similar results were obtained by Caplow in a study of people's home location preferences in Minneapolis (35). Enough examples have been quoted generally concerning people who live great distances from their jobs and who spend up to three hours and more a day in travelling to and fro for there to be some justification for arguments against there being strong ties between workers' homes and their jobs. However, there are even stronger arguments to the contrary. While there are people who are prepared to live long distances from their work, this does not appear to be the desire of the majority.

The predilection of workers to cluster around their workplaces has been established beyond all doubt. In a comprehensive survey of travel patterns in the United States done for NASA it was estimated that although the average commuting distance from suburb to central city was " . . . somewhere in the vicinity of 10 to 12 miles for all U.S. metropolitan areas." (36, p. V-31), not more than 5 per cent of all commuters travelled one-way distances of more than

5 miles, and the average time taken for the journey was generally well below 30 minutes (36, p. V-28-31). It is therefore apparent that work trips to suburban employment areas are appreciably shorter than those made to central districts. Carroll expresses this relationship in terms of dominance. The central district dominates, drawing its labour from all over the urban area, while the suburban areas, or sub-dominants, attract their labour from nearby sources (37, p. 282). The clustering effect is usually very much in evidence around off-centre employment foci. Distribution graphs of worker's residence distances from such foci drawn by Carroll (37), Taaffe (32) and Gertler (15) show a very steep rise to a peak within a short distance of the workplace and then taper off fairly steeply as distances are further increased. Taaffe found that almost 50 per cent of workers in the West Suburban district of Chicago travelled less than four miles to work and it was only within this "frictionless zone" that he did not have to consider distance as a factor in his simulation model (32, p. 42).

The sizes of plants and of the cities in which they are located can cause variations in the extent of the labour-shed. It is logical that larger plants would need to draw on a larger population, while the density of population would naturally affect the area it covered. Carroll, when comparing median trip lengths to work in different cities, found that

there was a positive relationship between distances travelled and size of city (16, p. 141).

Liepmann was one of the first to show how the composition of a firm's labour force affects its distribution. She points out that "primary" wage earners - i.e. heads of households - are more likely to travel further distances to work than are "subsidiary" earners who have less need to seek out the most lucrative jobs (12, p. 121). Thus industries requiring skilled, male workers would tend to draw on a more widely dispersed labour force than those employing mainly unskilled females. Goldner, in discussing the extent of the normal preference area within which workers are likely to seek work, suggests that the unskilled would be more likely to find a job close by their home than would those having specialized skills to offer (20, p. 122). Empirical studies tend to substantiate this hypothesis. Duncan showed that the higher a worker's socio-economic level, the greater the distance he tended to live away from work. His observations on the distances travelled by the different sexes is illuminating:

> The difference by sex in average separation is of negligible size for individuals working in the CBD . . . However, for white collar workers outside the CBD, the average separation for males, 6.2 miles, is significantly greater . . . than that for females, 3.0 miles. For manual workers outside the CBD, the average separation for males, 4.0 miles, is slightly greater than that for females, 3.2 miles. (18, p. 53).

When Duncan broke down the figures into the different manufacturing groups it was found that this did not appreciably alter the results. The studies produced by Taaffe (32) and Hoover and Vernon (14) give similar results, and though less sophisticated in their analysis of this particular factor, others reach the same conclusions. However, Kenyon's findings in his Skokie study give reason for caution. There he found that less skilled workers were drawn from further away than might be expected, this because the Skokie industrial area was surrounded by newer, fairly high class residential suburbs (30).

Taking the analysis a stage further, Duncan and Duncan (17) show that, while the character of the labour force is important, the true determinant of where industry will draw its workers from is its accessibility to the areas which contain high proportions of the types of labour that it requires. The importance of this reasoning has been very nicely illustrated by Gertler (15) who found that clustering of lower income workers was very pronounced if low income housing existed close by the plant and, furthermore, higher income groups were more inclined to live in quality suburbs close to their workplace rather than in similar districts more removed. Taaffe (32) found that such tendencies were amplified when alternative job opportunities lay between plants and what otherwise might have been potentially good sources of labour.

Another factor controlling the degree of cluster around workplaces is the length of time that firms have been operating at a particular site. Both Liepmann (12) and Kenyon (31) discovered that where industries had changed their locations but had remained within the same city, many of their workers were found to be clustered in the neighbourhood of the previous site, this throwback effect often lasting for a number of years. It probably explains Meyer's (11) failure to notice appreciable clustering around Centex Industrial Park. It seems necessary therefore to study the dynamic situation, and to consider more fully the effects of industrial movement on the disposition of the labour force.

While it is perhaps understandable that people might not want to live on top of their workplace, on the other hand, they do not appear to be so unconcerned about their distance away as has been suggested by some writers. Industry has recognized this and has taken it into account when contemplating a move. Kerr and Spelt found:

> The most compelling reason which made a manufacturer [relocating from elsewhere in the Toronto metropolitan area] favour one suburb rather than any other was labour. Permanent employees of a manufacturing company tended to choose a home in the suburbs as close as possible to the plant. Thus companies, when selecting a new location, took into consideration the distribution of their employees in order to avoid the loss of valuable staff . . . (29, p. 14).

Kerr and Spelt also found that owners had a tendency to locate their new plants in close proximity to their own residences.

Workers, when faced with a change in the location of their workplace, have three alternatives open to them: they can resign from their job and seek an alternative in their home neighbourhood, they can stay with their job but remain at the same residence, or they can move in sympathy with the company. Of course, as illustrated in the above quotation, a company move can bring about improvements in the degree of workplace - residence separation, but where this is not the case a worker has to decide on which alternative he will take. His decision will rest on a number of considerations, among which can be counted: general economic conditions and the availability of other work, his attachment to the company, his ability to finance a move, and his ties with the neighbourhood in which he lives.

Burtt attempted to assess labour turnover in plants relocating on Route 128 which could be directly attributable to industrial moves. Although having difficulty in obtaining precise figures, he was able to discern certain relationships. The greater the distance the company moved, the higher was the proportion of quits recorded. Firms relocating from central Boston lost more workers than those moving from the middle and outer suburbs. Burtt also found that there was a negative relationship between the number of quits and the level of occupation, and that firms employing high proportions of female labour were prone to losing high proportions of their staff. " . . . administrative, professional and 'key' personnel were rarely lost by the transfer to the suburbs,

since this group were likely to live in the suburbs and to gain by the relocation." (22, p. 21).

Those not profiting by company moves and not wishing to leave their employment have the option of moving or of accepting a longer journey to work. It is evident that the latter has been the decision of a great number. Vernon (1, p. 146) suggests that reverse commuting, the most important change in commuting patterns now taking place, is the result of workers' failures to suburbanize as quickly as their jobs. This he attributes to a lack of financial wherewithal. Liepmann (12) and Kenyon (31), discussing cases where clusters existed around former plant locations, reached similar conclusions, that is, that workers either could not afford to move at all or could not afford to move to a neighbourhood closer to the new plant location. Obviously, it was the lower income classes who dominated this group.

Residential mobility does not, however, rest solely on financial ability and, as previously noted, studies of living preferences have found that people do not normally attach great importance to the location of their home in relation to that of their place of work. Neighbourhood ties can provide strong restraints against moving, while people's mobility varies with stages in the life cycle and changes in the size of family. Decisions to move are, most often, contingent upon needs for extra space and a desire for increased prestige or amenity and, while location of a new

residence is usually governed first by price, the next most important attributes sought after are again those of prestige and general amenity of the neighbourhood. Normally, it is only after these demands have been satisfied that proximity to work is considered (34, 38, 39). However, Rossi (40), in a study of residential mobility in Philadelphia, found that, in choosing their home location, more people admitted to being interested in the availability of transportation to work than to being concerned with the reputation of a neighbourhood. Moreover, Carroll gives evidence of an increasing willingness on the part of workers to move as the distance widens between their home and their work, and he is led to suggest that " . . . any change in workers' homes will be in the direction of reducing work travel distances." (16, p. 162).

These apparent contradictions lead to further speculation on the validity of arguments which depreciate the importance of spatial relationships between workers' residences and their places of employment.

CHAPTER III

AN INTRODUCTORY SURVEY OF MONTREAL AND POINTE CLAIRE

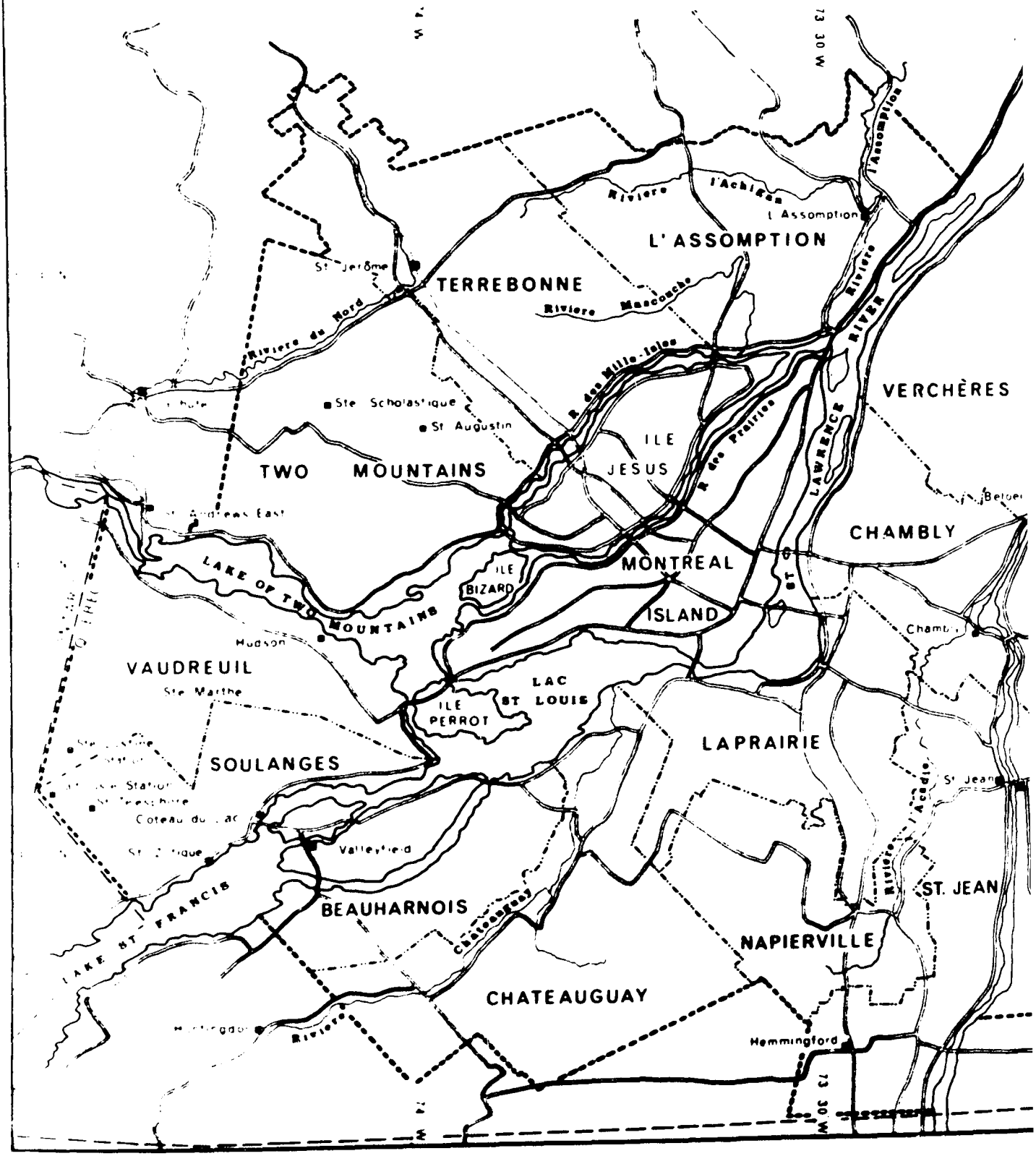
A general introduction to Pointe Claire and the metropolitan area in which it lies is essential for an appreciation of the processes taking place there. For, while it is true that the phenomena of industrial diffusion and population suburbanization are almost world wide in occurence, the details of these processes will be greatly influenced by the particular environment in which they take place. The development of Pointe Claire Industrial Park and the resultant reorientation of a segment of the Montreal workforce can therefore only be fully understood when set into perspective with the evolution of the Metropolis as a whole. The site of Montreal encouraged its early establishment as a population centre, its situation has assured its continued prominence, and both have been in many ways responsible for the pattern of development within the area. Montreal's economy has had a history of continual adaptation to changing circumstances through time and this must have had its repercussions upon the working population. The composition of the population affects its distribution and might be expected to have some bearing on the nature of changes wrought by industry. Pointe Claire itself and the characteristics of the immediately surrounding municipalities must also be considered. But, first, there comes

a brief outline of the metropolitan region.

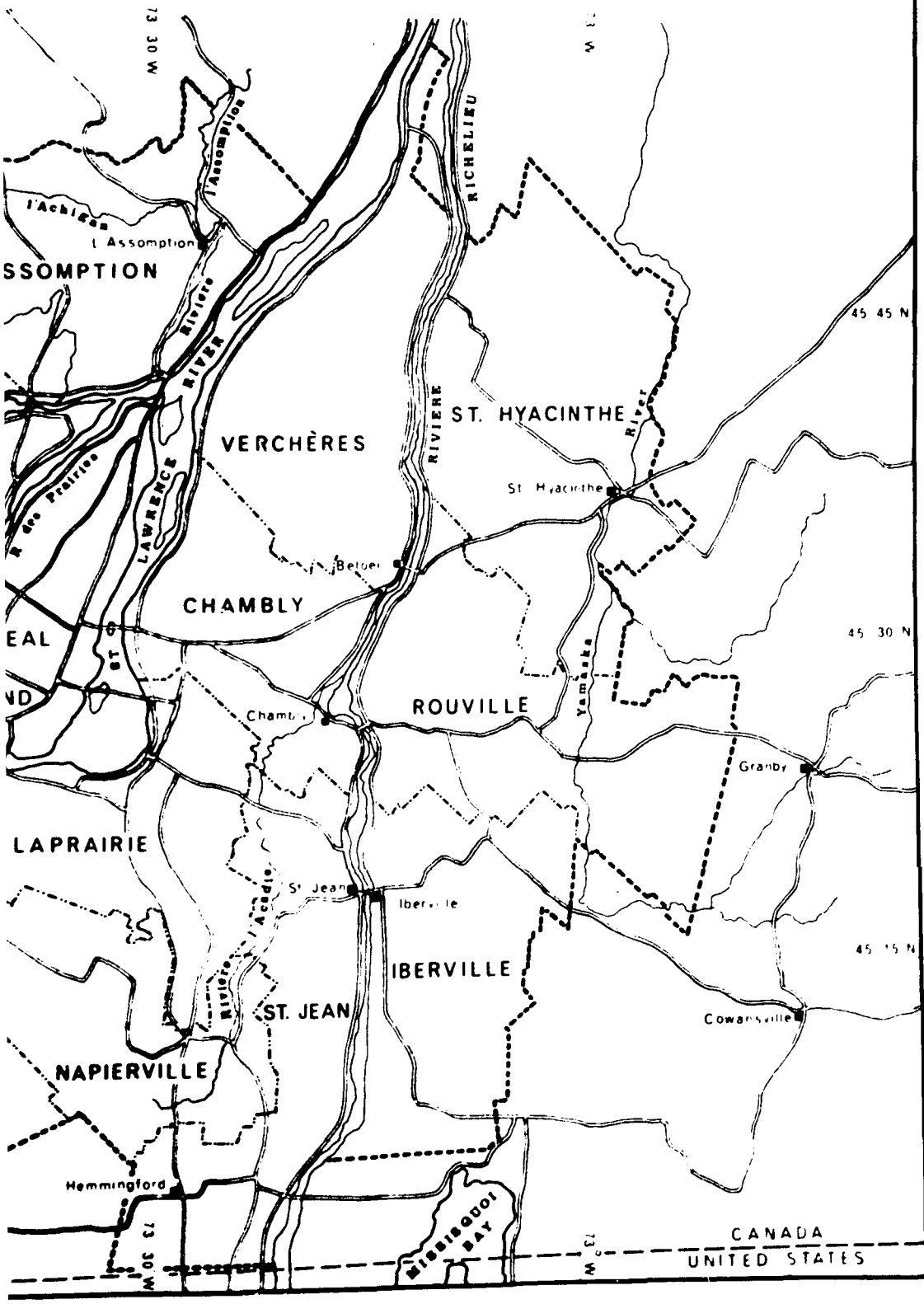
1. The Montreal Region

Montreal is located in the St. Lawrence - Great Lakes Plain just downstream from the confluence of the St. Lawrence and Ottawa rivers. The central city occupies only the southeast section of Montreal Island but the effective boundary of the metropolis, when recently studied by the Montreal City Planning Department (41), was discovered to include the entire island complex in the St. Lawrence River together with the greater part of 14 surrounding counties - an area of approximately 3,400 square miles. (see Figure 1) Montreal Island itself is almost exactly 200 square miles in area. It is shaped in the form of a dog-leg and is oriented on a northeast, southwest axis. (Montrealers, however, commonly disregard this fact and place the Island on an east-west axis. This simplification is adopted in the remainder of the present study.) To the north the Rivière des Prairies separates Montreal Island from Île Jésus, the next largest island, and beyond this the Rivière des Mille Isles forms another barrier to the mainland. Other important islands are Île Perrot and Île Bizard which lie in lakes Saint Louis and Deux Montagnes respectively. These lakes are actually wider sections of the river system but assume quite large proportions and very effectively interrupt overland communications. At Lachine the St. Lawrence River narrows and forms the rapids

MONTREAL REGION



ITREAL REGION



LEGEND

- Regional boundary
- County boundaries
- International boundary
- Provincial boundary

Source MÉTROPOLE NO 1 Montreal City Planning Dept.

SCALE

0 5 10 miles

FIGURE 1

that prevented ocean vessels from penetrating further inland. Bridging of the St. Lawrence has been possible at this point. In most cases, however, egress from Montreal Island is achieved by using the lesser islands as stepping stones for bridges.

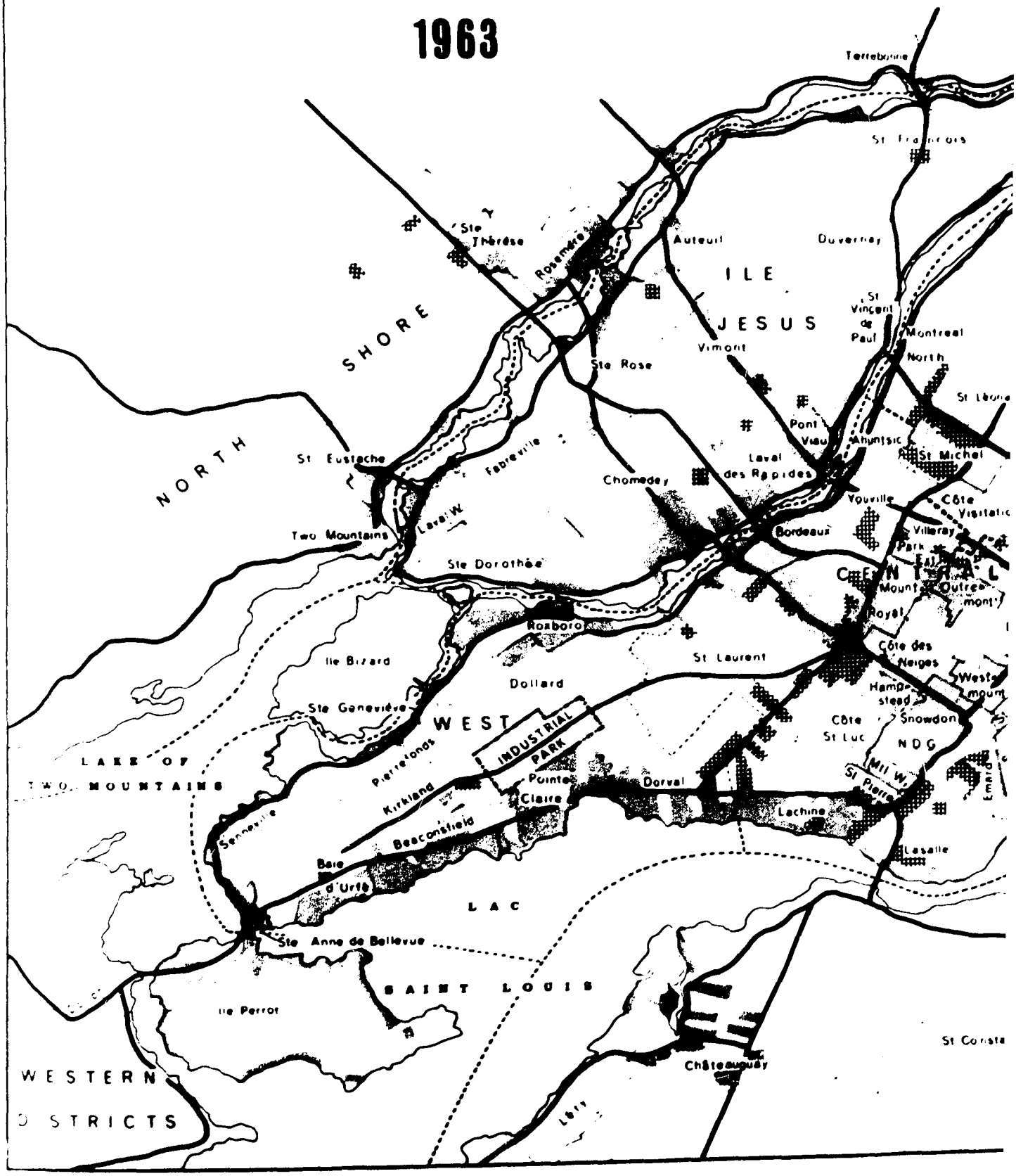
Over much of the region variations in elevation are of little consequence but on Montreal Island they are of great significance. In the surrounding plain the isolated igneous intrusions, known as the Monteregian Hills, provide local relief but generally the remainder is very flat and, in clay areas, often poorly drained. A large part of Montreal Island is also quite flat but Mount Royal, one of the Monteregian hills, rises steeply to an altitude of more than 750 feet less than two miles from Montreal's central business district. The Mount, which forms such an effective backdrop to the city, has also been most effective in shaping its development. On the southern side of the Mount, and parallel to the St. Lawrence, are a series of river terraces and rock benches which likewise have dictated in some degree the shape of Montreal's expansion.

Montreal was first settled in 1641 on a site which now forms part of the central city. Its early growth from the banks of the St. Lawrence was along the lower terraces, giving an elongated shape to the settlement. With continued growth, however, the city pushed northward to the upper

terraces but eventually had to skirt Mount Royal. This took place on the eastern side which was more convenient to the city centre and where the steep terrace bluffs were more easily breached. By the turn of the present century the built-up area reached halfway across the island and by the Depression had merged with the small communities on its northern shores. Up until this time the density of development was quite high except for the exclusive districts which had grown up on the slopes of Mount Royal. More recent developments have, however, followed the pattern of most western cities. In the first stages the lower density suburbs merely formed accretions on the periphery of existing central development but soon took on a radial-nodal pattern as new subdivisions were added to the nuclei provided by villages spotted along the highways leading out of the city. Most of these highways were closely associated with the lakeshores, and bridgeheads were popular areas for development. The next stage was the infilling of gaps along the radials. Most recently, there has been what Langlois (42) calls "disorderly widespread dispersal", in which there have been innumerable new subdivisions scattered over the metropolitan region (see Figure 2).

Montreal owes much of its growth and prominence to its strategic location. Although around 1000 miles from the sea, it is the eastern gateway to Canada, being until recently

RESIDENTIAL AND INDUSTRIAL LAND USE
1963



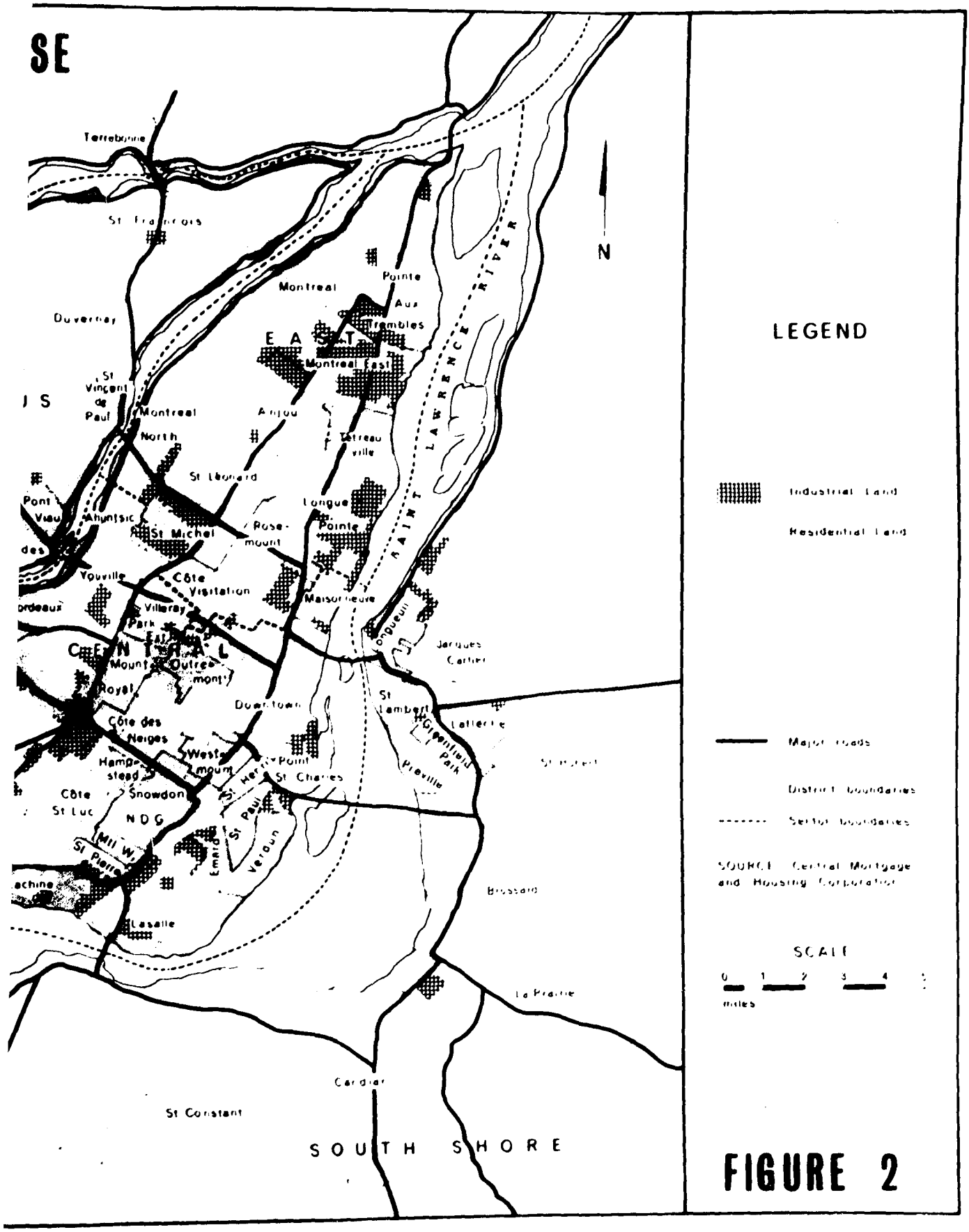

SE
Terrebonne
St François
Montreal
Pointe Aux Trembles
Duvernay
EAST
Montreal East
St Vincent de Paul
Montreal North
Anjou
Tetreau ville
St Léonard
Pont Viau
Ahuntsic
St Michel
Rose-mount
Longue Pointe
Côte Visitation
Maisonneuve
Villeray Park
CENTRAL
Mount Royal
Outre-mont
Downtown
St Lambert
Jacques Cartier
Côte des Neiges
Hampstead
Westmount
Point St Charles
Côte St Luc
Snowdon
NDG
St Pierre
Verdun
Lasalle
Brossard
La Prairie
Candiac
St Constant
SOUTH SHORE
SAINT LAWRENCE RIVER
N
LEGEND
Industrial Land
Residential Land
Major roads
District boundaries
Sector boundaries
SOURCE: Central Mortgage and Housing Corporation
SCALE
0 1 2 3 4
miles

FIGURE 2

at the head of navigation of the St. Lawrence River. The accompanying map (Figure 3) shows its present strong position with respect to other population centres and the potential markets that they represent. Ontario's major population agglomeration is easily reached via the Upper St. Lawrence and the Great Lakes. Via this route also lie the considerable market areas of Chicago and other American Great Lakes cities. The huge markets of the American northeastern megalopolis are approachable via the Hudson River and Lake Champlain. Ottawa and Northern Ontario can be reached by means of the Ottawa River valley and, not least, the remainder of Quebec and the Maritime Provinces with a combined population of more than seven million are readily accessible by way of the Lower St. Lawrence. The latter route also of course leads to the great European market area. Over time all the inland routes have been improved upon, first with rail and currently with fast intercity express highways. With completion of the St. Lawrence Seaway fears were expressed that Montreal would lose some of its preeminence to cities more to the west. However, there is little doubt that Montreal will continue to adapt itself to change as it has done in the past.

From the first days of settlement Montreal's economic functions have changed their emphasis when circumstances have required it. The city received its first impetus

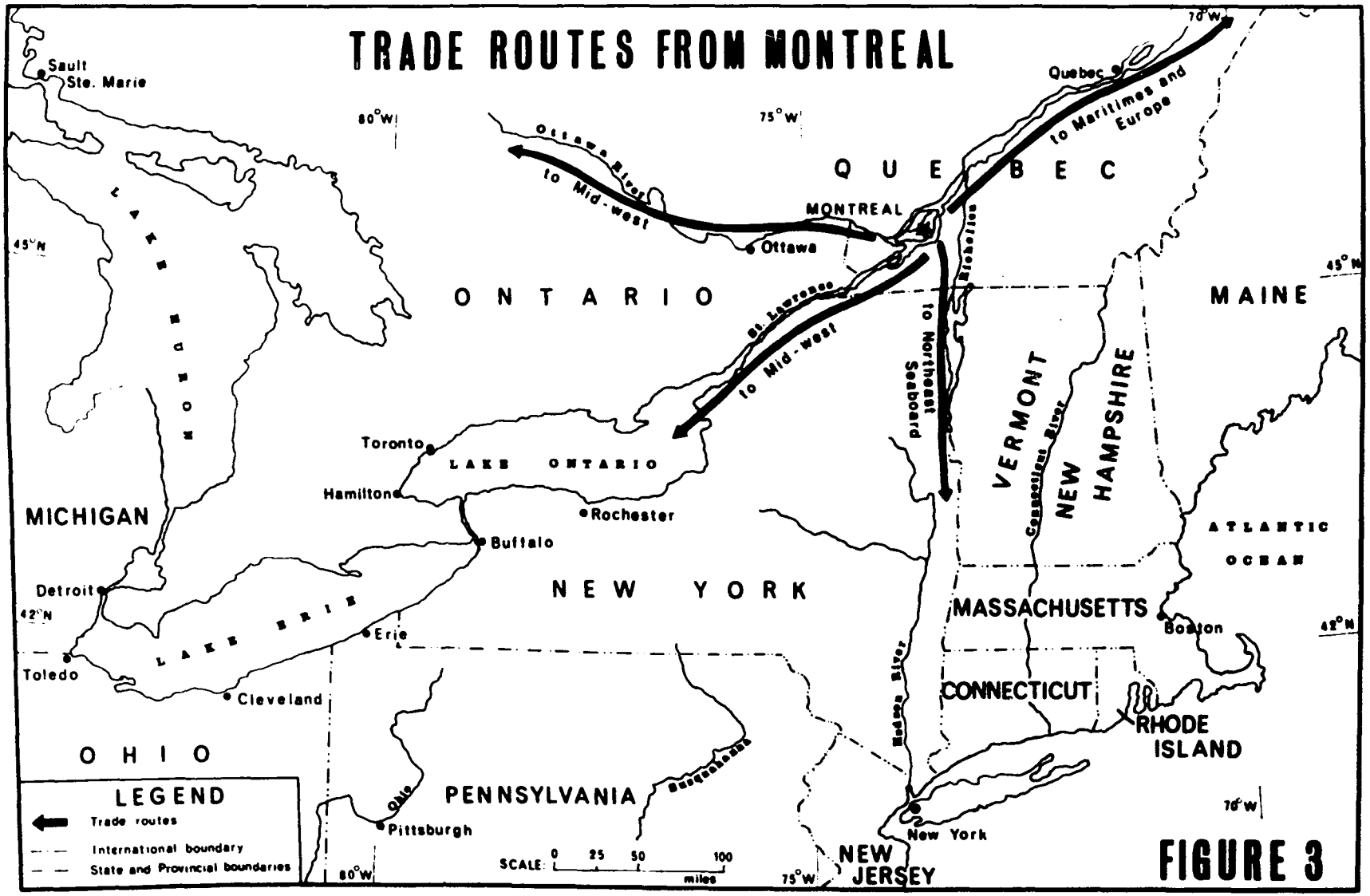

TRADE ROUTES FROM MONTREAL
Sault Ste. Marie
80°W
75°W
70°W
Quebec
to Maritimes and Europe
Ottawa River
to Mid-west
QUEBEC
MONTREAL
Ottawa
45°N
LAKE HURON
ONTARIO
St. Lawrence
to Mid-west
Richelieu
to Northeast Seaboard
MAINE
VERMONT
NEW HAMPSHIRE
Connecticut River
Toronto
LAKE ONTARIO
Hamilton
Rochester
MICHIGAN
Buffalo
ATLANTIC OCEAN
NEW YORK
Detroit
42°N
LAKE ERIE
Erie
MASSACHUSETTS
Boston
Toledo
Cleveland
Hudson River
CONNECTICUT
RHODE ISLAND
OHIO
LEGEND
Trade routes
International boundary
State and Provincial boundaries
PENNSYLVANIA
Ohio
Susquehanna
Pittsburgh
SCALE: 0 25 50 100 miles
New York
NEW JERSEY

FIGURE 3

for growth when it served as the basing point for the fur trade. With the conquest of New France and the consolidation of Canada after conferation, Montreal capitalized on its position as the main entry point from Europe, won superiority as the first port of Canada, and established itself as the nation's financial and commercial capital. This era lasted until the First World War by which time there had been a shift westwards of the financial and commercial functions to Ontario. Montreal's response was to become the major manufacturing centre in Canada. Most recently there has been evidence of another change of emphasis which will perhaps be accelerated by the St. Lawrence Seaway. Montreal has turned increasingly towards its more local markets in eastern Canada as they have become larger and more demanding (43, 44). These shifts in emphasis have, however, only been in degree for Montreal is still a major fur centre, maintains a very strong financial and commercial sector and exports a large proportion of its products.

Montreal's experiences have proven its versatility and have provided it with a viable economic base. In 1961 there were more than 5,000 manufacturing plants in the metropolitan region - of other Canadian cities only Toronto could come close to matching this figure. The majority of plants were of medium size, employing between 50 and 100 workers, and producing a great variety of goods and services (44, p. 279).

The distribution of industry in Montreal (see Figure 2) is fairly well defined and, but for the latest developments, has been adequately described by Beauregarde (44). He determines five different zones which demonstrate how the pattern has evolved and where the various industries are grouped. Site influences are also clearly manifested. The first zone parallels the Lachine Canal and is largely comprised of heavy industries. Zone two, also fairly heavy in character, is similarly linked with water transportation. It stretches along the north shore of the St. Lawrence and includes the harbour installations, grain terminals and refineries. The third zone, situated centrally along a north-south axis, contains a great number of quite small and mixed industries. The needles and printing trades are well represented in this district. In an arc around the northern side of Mount Royal are many industries located in conjunction with railway facilities. Variety is very apparent in this zone also. The fifth zone in the neighbourhood of Dorval and Côte de Liesse is more recent and contains industries that are oriented towards highway transportation. Since Beauregarde's paper was published additional developments of significance have taken place in outlying districts such as Ville D'Anjou, Candiac and Pointe Claire. These also express very plainly the emphasis on highway orientation and are representative of the general diffusion of industry that is taking place in Montreal.

Concomitant with the growth of industry there has been a corresponding growth in Montreal's population and workforce. The population in 1961 was 2,109,509, making Montreal the largest city in Canada and, despite its size, it was also in the decade 1951-1961 one of the fastest growing cities in the country. During this period the population grew by 43 per cent (45, p. 162). There are several reasons for this fast rate of growth. Foreign immigration has been high but the urbanization of French Canada and the above average French-Canadian birth rate have made very substantial contributions (46).

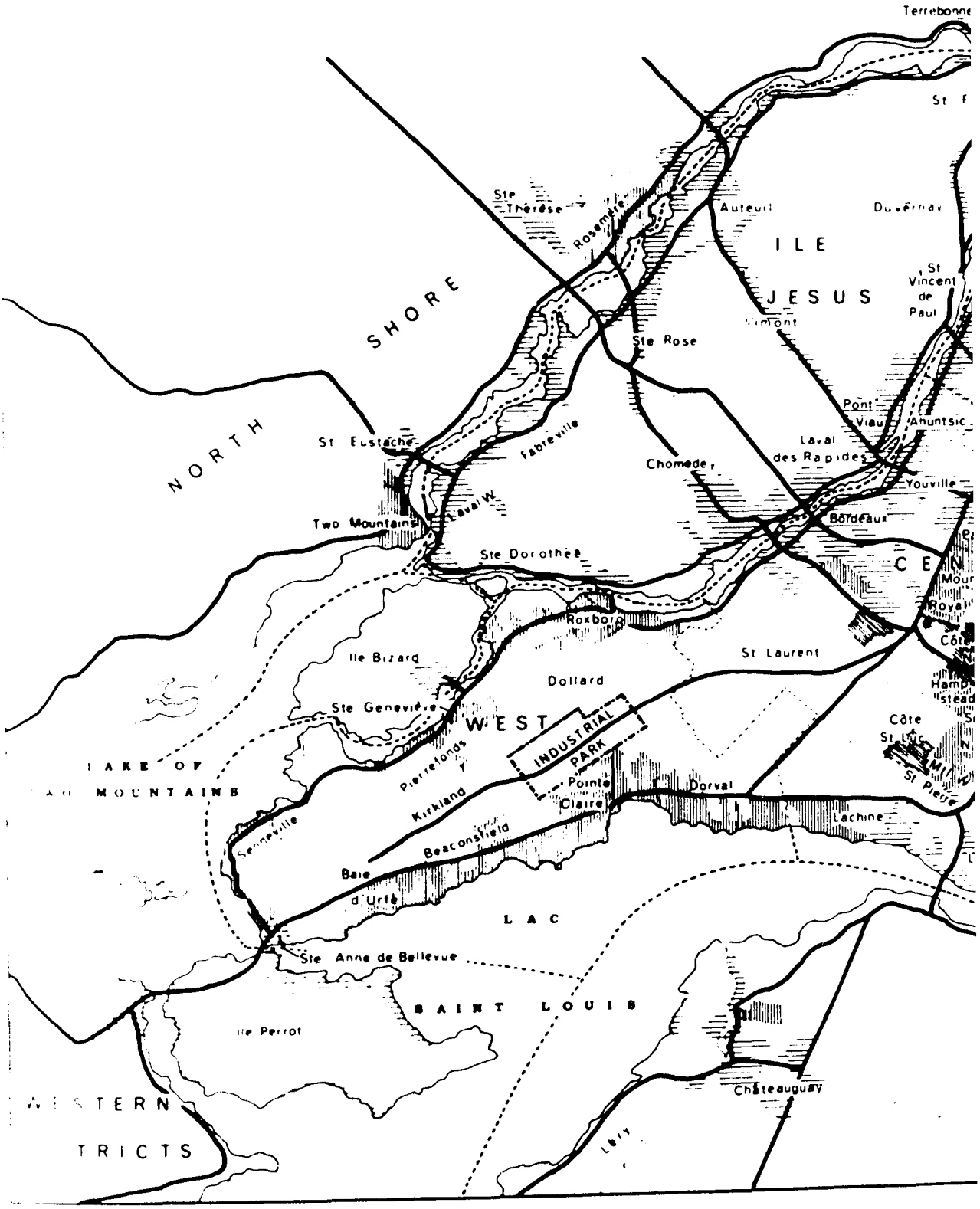
Montrealers commonly boast that, but for Paris, theirs is the largest French speaking city in the world, but although the French do constitute a large majority, Montreal's population is in fact quite polyglot in character. The strong British influence dates back to the conquest of New France and the further influx of Empire Loyalists during the American War of Independence (47). Italians form the next highest minority group. These ethnic differences will be seen to create important variations in the distribution of occupation groups within the metropolitan area.

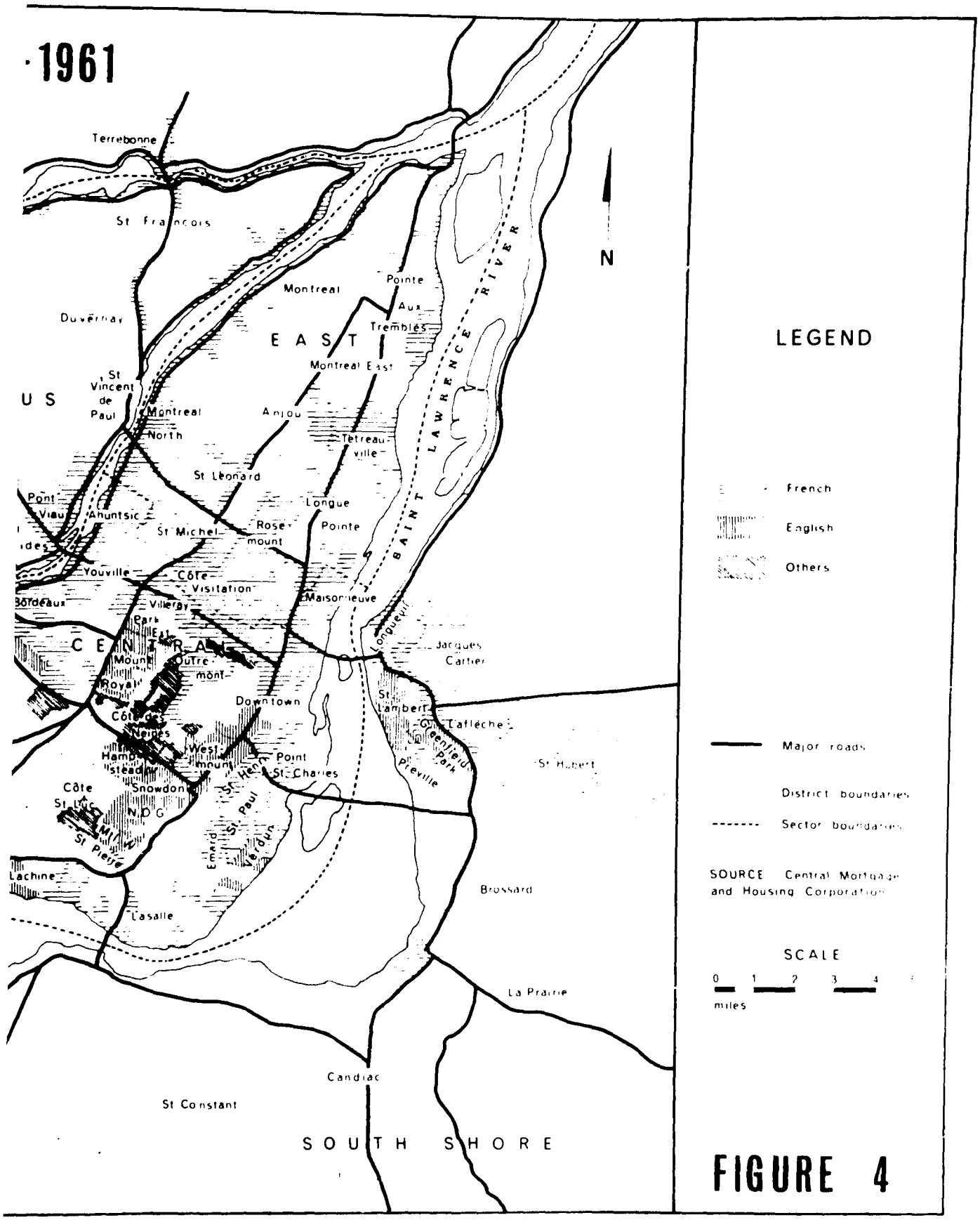
The British influence in the labour force has been out of all proportion to its minority position relative to total population. Allen (48, 49) in a study of occupation groups in Quebec has clearly demonstrated this. In both

secondary and tertiary industry the British occupied propriety and administrative positions to a much higher degree than their numbers in the Province would indicate. On the other hand, the French were more strongly associated with less skilled and manual jobs than was to be expected. Although there are trends which point to these disporportions being rectified, other ethnic groups than the French have been making relatively greater gains in the professional fields. The French, while they have been gaining a more representative proportion of the responsible jobs, have made their slowest progress in the manufacturing sector, especially at the intermediate levels such as inspector and foreman. A similar situation exists in the female workforce. Lacoste (50, p. 195) observes that English females dominate the office jobs whereas factory jobs are more often occupied by French women.

Bearing in mind these relationships between ethnic group and occupation there is value in roughly describing their distributions. It can be seen from Figure 4 that these might well be of significance to the availability of the various types of labour required in Pointe Claire Industrial Park. In the west end of the Island, where the Park is situated, the English are in a fairly solid majority. East of Dorval, however, they become relatively fewer in number until beyond central Montreal they form only a small minority. The only

DISTRIBUTION OF ETHNIC MAJORITIES - 1961




1961
Terrebonne
St François
Montreal
Pointe Aux Trembles
Duvernay
EAST
Montreal East
St Vincent de Paul
Montreal North
Anjou
Tetreauville
St Leonard
Pont Viau
Ahuntsic
Longue Pointe
St Michel
Rosemount
Youville
Côte Visitation
Bordeaux
Villeray
Maisonneuve
Park Ex.
CENTRAL
Mount Royal
Outremont
Jacques Cartier
Downtown
St Lambert
Côte des Neiges
Hampstead
West Mount
Point St Charles
Côte St Luc
Snowdon
N.D.G.
St Henri
St Paul
Verdun
Pierrefonds
Lachine
Lasalle
Brossard
La Prairie
Candiac
St Constant
SOUTH SHORE
SAINT LAWRENCE RIVER
N
LEGEND
French
English
Others
Major roads
District boundaries
Sector boundaries
SOURCE Central Mortgage and Housing Corporation
SCALE
0 1 2 3 4
miles
FIGURE 4

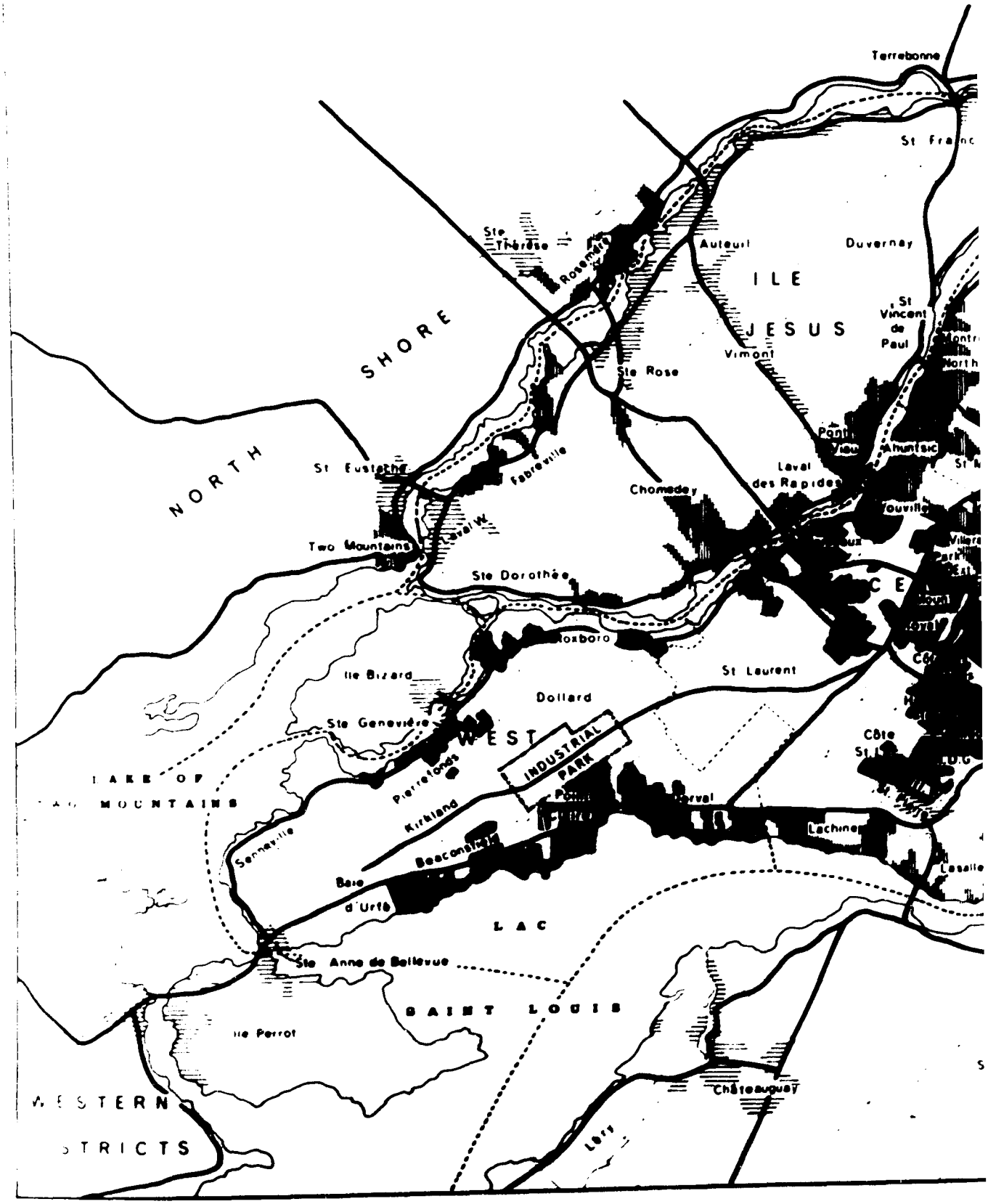
exceptions to this pattern on the main island are Westmount, which does contain an English majority, and Mount Royal which is close to 50 per cent English in composition. The French are predominant in the eastern portion of Montreal Island and have a majority at the extreme western end in the small town of Sainte Anne de Bellevue. They also outnumber other ethnic groups in almost all other localities in the metropolitan area.

The distribution of population by occupation groups bears a strong resemblance to the distribution by ethnic groups. Allen's conclusions appear therefore to have continued validity up to 1961. In the predominantly English areas there are almost inevitably higher proportions of administrative, professional and technical workers relative to total workers. These groups are therefore most concentrated in the west end of Montreal Island and in the better class, more central suburbs such as Mount Royal and Hampstead. Although the foregoing description does lend continued support to Allen's findings, it should not be inferred that such a direct relationship exists between ethnic groups and occupations. Lacoste in fact contends that education and salary are of greater importance than ethnic group in influencing where a person lives (50, p. 208). It can be noted that these additional factors are positively correlated with occupation and therefore they follow very similar patterns of distribution. They are also illustrated quite clearly in the distributions

of housing types and average monthly rents.

The same housing types do not always command the same rents since the latter appear to be more dependent on location than on structure. Therefore, while the type of dwelling can help place the class of occupant, the rent is usually a better guide. Because of the very high proportion of Montrealers (70 per cent) who are tenants rather than owner-occupiers, rents are a particularly good indicator. Another rather distinctive feature of Montreal's housing is the large number of rental units in smaller buildings such as duplexes and triplexes. These are more usually occupied by the French. The English, although equally prone to living in rented accommodation, have a greater tendency towards living in apartments in larger blocks (42, p. 2). Figure 5 shows that the older sections in east central Montreal and Verdun were the largest areas of lower rents on Montreal Island. These localities are largely composed of terraced, three to four storied, walk-up apartments and their average rent in 1961 ranged from 45 to 60 dollars a month. Although containing a similar type of housing, rents in the area immediately north and west of the central business district were approximately 20 dollars a month higher. In the higher class districts of west central Montreal they were more than 90 dollars a month. Large, single family residences occupy much of this area but there are also a great many apartments,

AVERAGE RENTS - 1961



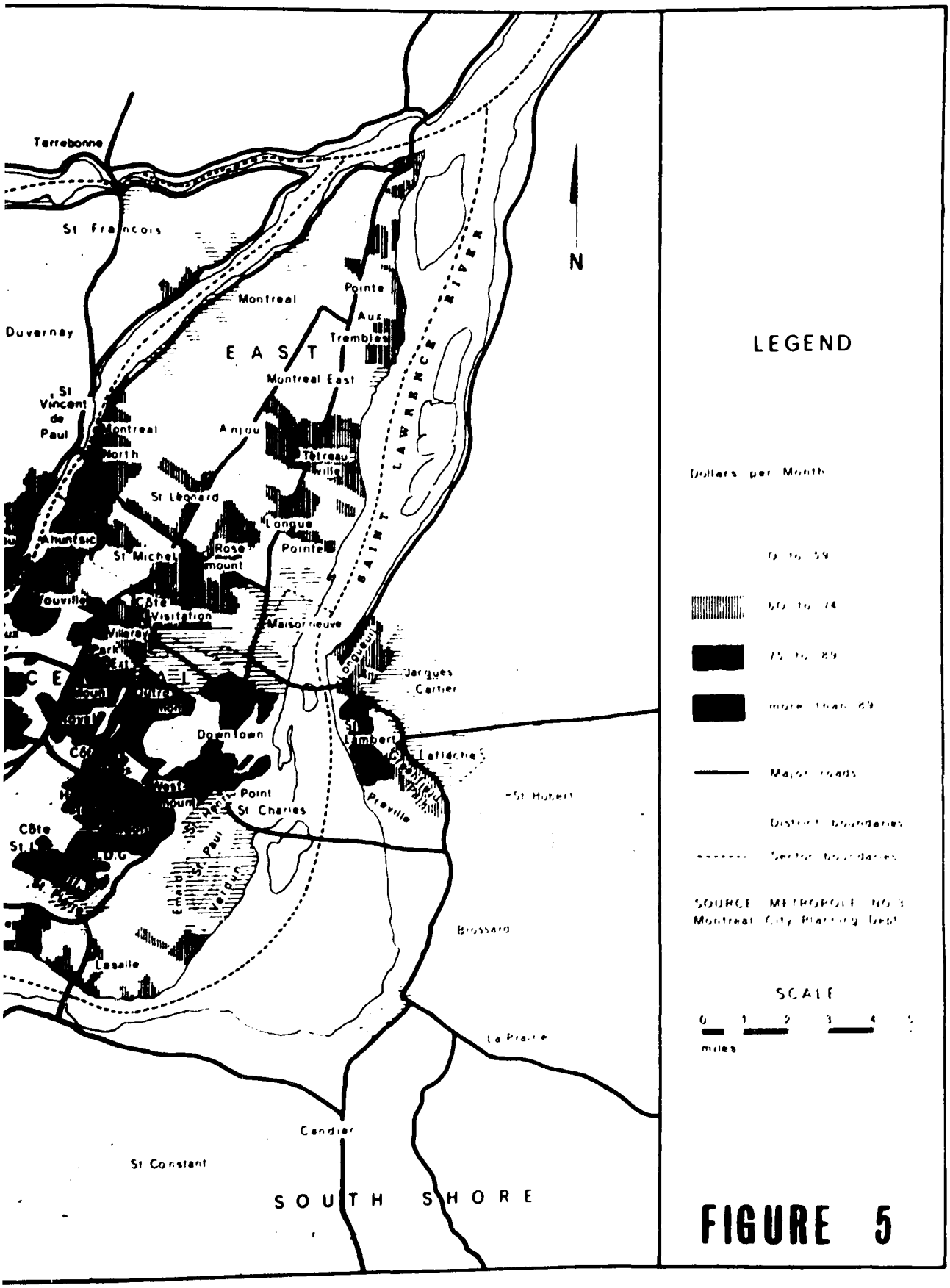
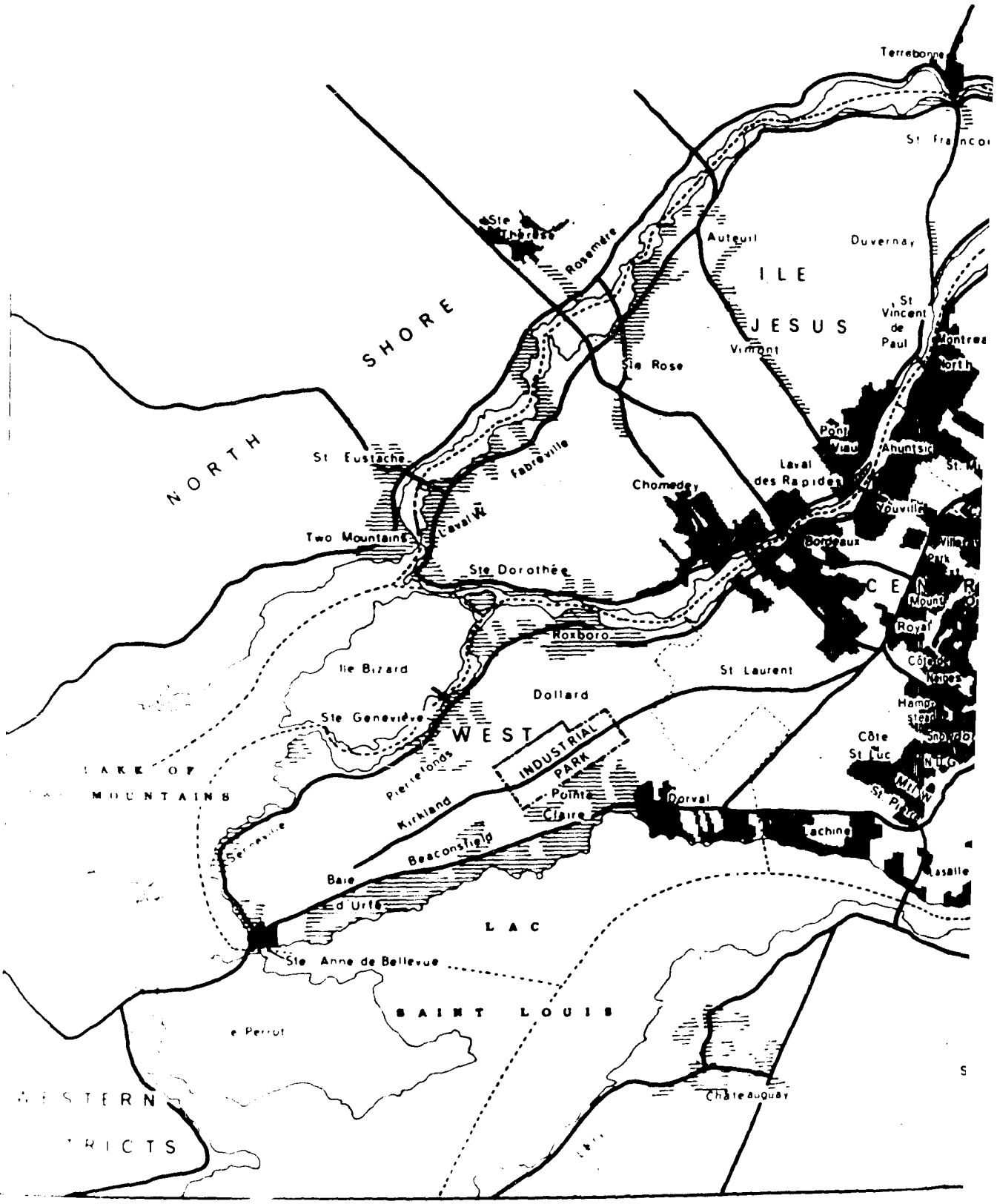

Terrebonne
St François
Duvernay
Montreal
Pointe Aux Trembles
EAST
Montreal East
St Vincent de Paul
Montreal North
Anjou
Tetreauville
St Leonard
Longue Pointe
Ahuntsic
St Michel
Rosemount
Côte Visitation
Maisonneuve
Jacques Cartier
Downtown
St Lambert
Laflèche
Point St Charles
Prévile
St Hubert
Côte St L
Lasalle
Brossard
La Prairie
Candiac
St Constant
SOUTH SHORE
SAINT LAWRENCE RIVER
N
LEGEND
Dollars per Month
0 to 59
60 to 74
75 to 89
more than 89
Major roads
District boundaries
Sector boundaries
SOURCE METROPOLE NO 5
Montreal City Planning Dept
SCALE
0 1 2 3 4 5
miles

FIGURE 5

duplexes and triplexes. A similar mixture of housing types occurs over the eastern portion of Montreal Island and the South Shore but here rents were appreciably lower falling into the 60 to 75 dollar bracket. Elsewhere single family residences predominate but monthly rents varied considerably according to the district. At the west end of Montreal Island rents were almost everywhere higher than 90 dollars whereas in the east they ranged from 45 to 75 dollars. The latter figures also applied to districts on the other islands and the mainland (51). Not surprisingly, the variations in house type give rise to different population densities.

The density of population and its location help summarize the position of Pointe Claire Industrial Park with respect to the metropolitan labour force. Figure 6 shows the distribution of population as it existed in 1961. The highest densities range up to 200 persons per residential acre and are situated in the older sections of Montreal. They are concentrated in Verdun and in the east central spine of the Island. Areas of medium density (40-100 persons per acre) also are found in these districts and extend beyond them to create a wider broken band stretching across the central portion of the Island. Enclaves of lower density within this central section correspond to the higher class residential districts. Beyond the major population concentration the areas of fairly low density development correspond to the more recent suburban

POPULATION DENSITY - 1961



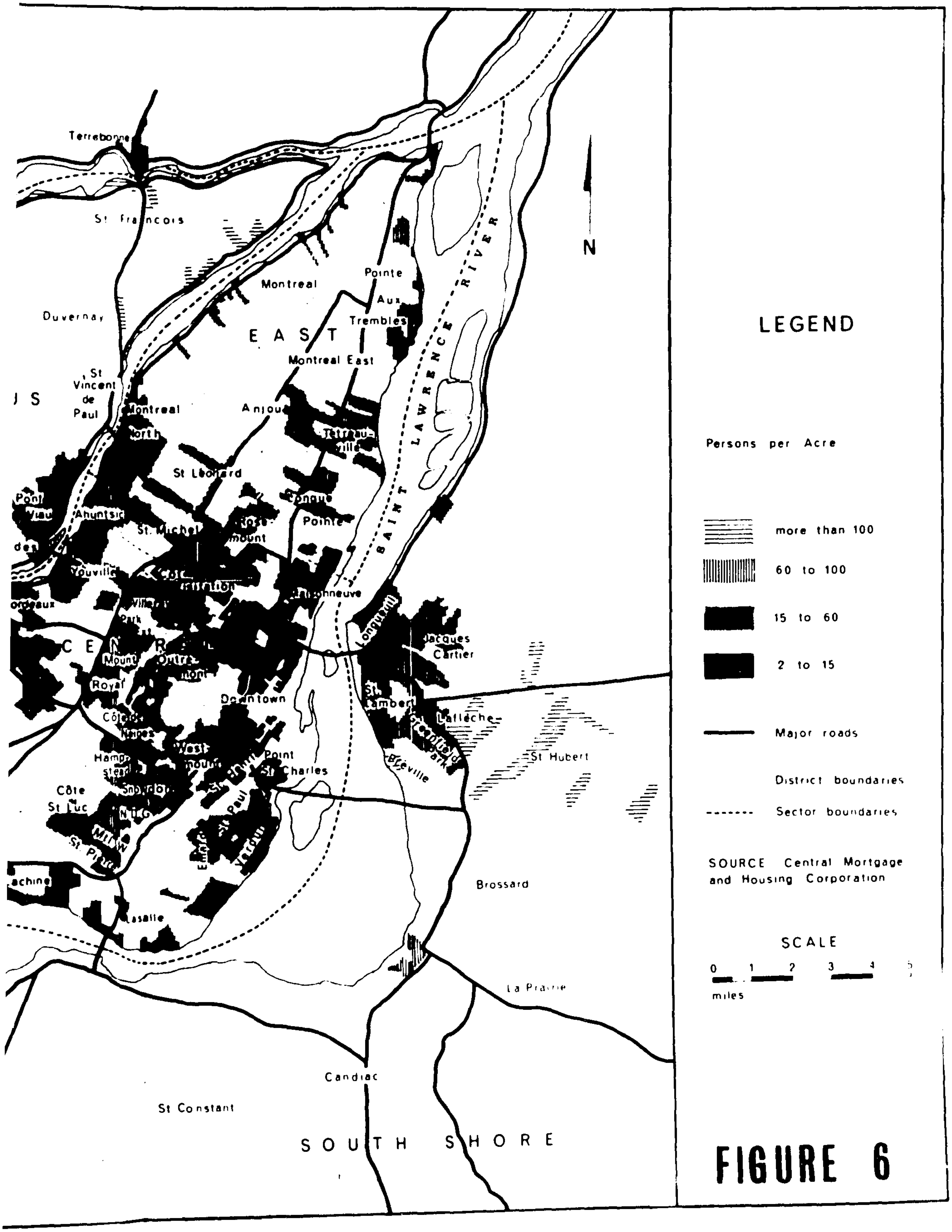

Terrebonne
St Francois
Duvernay
Montreal
Pointe
Aux
Trembles
E A S T
Montreal East
St Vincent de Paul
Montreal North
Anjou
St Leonard
Ahuntsic
St. Michel
Rosemount
Longue Pointe
Youville
Villeray
Maisonneuve
Mount Royal
Outremont
Downtown
Longueuil
Jacques Cartier
St. Lambert
Lafleche
Greenfield Park
St Hubert
Côte des Neiges
Hampstead
Westmount
Point St Charles
Côte St Luc
Snowdon
N.D.G.
St Paul
Verdun
Lasalle
Brossard
La Prairie
Candiac
St Constant
SOUTH SHORE
SAINT LAWRENCE RIVER
N
LEGEND
Persons per Acre
more than 100
60 to 100
15 to 60
2 to 15
Major roads
District boundaries
Sector boundaries
SOURCE Central Mortgage and Housing Corporation
SCALE
0 1 2 3 4 5
miles

FIGURE 6

growth described by Langlois (42). Post 1961 developments are not shown on the map but should be noted. These consist primarily of extensions to newer suburbs and, because they are almost all of lower density do not appreciably alter the map's utility. However, important to Pointe Claire, there has been significant activity in the west end of the Island and the adjacent localities of Île Bizard, Île Perrot and Dorion.

2. The City of Pointe Claire

The City of Pointe Claire is located approximately 12 miles to the west of downtown Montreal. It now encompasses an area of 4680 acres bounded to the south by Lake Saint Louis, to the east by Dorval, to the north by Dollard des Ormeaux and to the west by Beaconsfield and Kirkland. All main highways and rail lines linking Montreal with points west traverse the city. Originally settled in 1698 by the French, the latest census figure gives a population of more than 20,000 and the City's planners estimate that it could ultimately reach 85,000.

Although established as a community more than 250 years ago, it has only been recently that Pointe Claire has assumed any importance as a Montreal suburb. It was not until the beginning of this century that there was any change in its function from that of a small, rural, French village and summer retreat for Montrealers. In 1911, when Pointe Claire was incorporated as a town, there were fewer than 800 inhabitants,

many of whom were summer residents only. From that time onwards, and especially in the years following World War II, Pointe Claire has become increasingly attractive as a dormitory suburb. Blanchard (53), writing of Pointe Claire in 1949, noted that the only local industry of consequence at that time was a brick factory which employed upwards of 60 people, whereas an estimated 600-700 people commuted from Pointe Claire into Montreal each day.

The post-war population boom has greatly altered Pointe Claire's character and form. From the initial nucleus of settlement on the lakeshore the centre of gravity has shifted a mile or so to the north so that it now lies between the Trans-Canada Highway and Highway No. 2. An indication of the city's growth rate since the War is provided by its population figures. These include those of the recently annexed adjoining municipality of Saint Joachim de la Pointe Claire. In 1941 there were 5,072 persons, in 1951 this figure had grown to 9,375 and by 1961 it was 22,709 (54). Already in 1951 the long established French community was outnumbered by the British newcomers by about three to one. The British influx has continued to the present. In response to the population boom plans were successfully carried out to relieve the domestic tax load by creating an industrial park and regional shopping centre. As a result Pointe Claire has become an important employment centre. However, in order to try and

retain the "essential characteristics" of the City zoning by-laws which prohibit the admixture of conflicting uses are strictly adhered to; the residential area is divided into distinct neighbourhoods, and a complete range of community facilities are provided (52). But despite these precautions changes in the nature of the residential areas have been inevitable. The older, two-storied dwellings bordering the lakeshore now contrast with the single story housing of the new suburbs, duplexes and town houses are appearing, and a number of apartment blocks have been built.

The new housing is above average in quality and is attracting a fairly restricted class of people. Close to the waterfront new high-rise apartments were, in 1963, being rented for up to 160 dollars a month, and in anticipation of their need by workers in the Industrial Park, there were some 100 low-rental apartment units built under agreement with the Central Mortgage and Housing Corporation close to the Park. These were rented at 75 dollars a month for a two-bedroom unit. Prices of single-family homes ranged from 15,000 to 22,000 dollars. The people occupying these homes were predominantly British and were usually in the 8,000 to 12,000 dollars a year income bracket. Mobility rates were high with about ten per cent of the housing changing hands each year. New housing was still being built but pressure on the remaining land in Pointe Claire was, however, beginning to make itself apparent.

Consequently, the rate of growth was declining and the surrounding municipalities were starting to experience the boom that appeared to have reached its peak in Pointe Claire.*

The municipalities surrounding Pointe Claire have slightly different characteristics from their neighbour and, consequently, can be expected to differ in their potential influence on the Industrial Park's labourshed. Beaconsfield and Baie D'Urfé to the west and bordering Lake Saint Louis are rather more exclusive suburbs than is Pointe Claire. In these localities people feel an even stronger antipathy towards changing the nature of their district than once existed in Pointe Claire. They contain a very high proportion of Britishers. The municipalities to the north, however, contain a much higher proportion of French-speaking people. There is also some evidence that a significant percentage of the new suburbs are being occupied by the French. Land values in these localities are relatively lower than in Pointe Claire and housing is slightly cheaper as a result. In Pierrefonds, Ste. Geneviève and Dollard des Ormeaux especially, new subdivisions of single-family homes are being created at a rapid rate. Dorval, to the east, experienced its fastest rate of growth at approximately the same time as Pointe Claire. Development there, however, has been more mixed and its status

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* Interview with Mr. McMurchie, Chief Assessor of the City of Pointe Claire.

as a suburb is generally considered to be lower than that of Pointe Claire's. Slightly further afield but still within easy reach of Pointe Claire, Dorion and the island communities of Île Bizard and Île Perrot are also experiencing a growth boom. These areas are traditionally French and the new migrants appear to be maintaining the status quo.

This chapter has attempted to show very briefly the environment in which Pointe Claire Industrial Park is situated. It can be seen that the Park has the advantages of being located in a metropolitan area which is strategically placed with respect to extremely large markets and that it has a substantial and versatile labour force which it can call upon. However, as is usual in metropolitan areas, the diversity and size that are the strengths of such a labour force produce physical groupings of the different labour types with sometimes appreciable distances between them. The Park appears to be ideally placed to tap the upper echelons and there are indications that it has resort to nearby labour sources at the intermediate levels of skill. But it lies on the periphery of the major concentration of the work force in Montreal. Having outlined the main characteristics of the workforce and some of the rationale behind its distribution, it remains to be seen what sort of workers Pointe Claire requires and how it has succeeded in attracting them both to work and to live.

CHAPTER IV

POINTE CLAIRE INDUSTRIAL PARK: ITS GROWTH, COMPOSITION AND LABOUR REQUIREMENTS

Pertinent to an analysis of the disposition of Pointe Claire's workforce, is the nature of the demand for labour and the way in which the demand has developed. This chapter summarizes the Park's evolution, provides a description of the industries located there, briefly discusses the size and characteristics of the workforce, and outlines some of the employment policies and labour problems encountered by firms operating in the Park.

1. Development of Pointe Claire Industrial Park

In the early 1950's Pointe Claire gained such popularity as a suburb Town officials became increasingly concerned as to their ability to finance the additional services required to cope with the influx of population. This led them to consider the possibilities of attracting industry and, after succeeding in almost doubling the Town's area by annexing the northern parish of Pointe Claire, they hired consultants to assist them in drawing up a by-law which would provide for an industrial zone. The area finally selected covered the entire northern portion of the Town, encompassing approximately 1450 acres of land. Much of this was at the

time being held for eventual residential subdivision but the most influential landowner was persuaded to cooperate in the plans for industrial development. He ultimately became a most enthusiastic proponent of the scheme. The Town officials and private owners then launched into a strong campaign to attract industry. It was during this initial period that the term "Industrial Park" was adopted as a promotional catch-phrase. An industrial commissioner was hired to publicize the Park and provide information for interested companies while the individual land owners also devoted a considerable amount of capital to advertizing.

Apart from the general advantages of the Park's situation in being located in metropolitan Montreal and within striking distance of the major markets of Ontario and the eastern United States, the site itself had numerous attractions. Montreal's International Airport in Dorval was only two miles distant and the existing main highway link west to Toronto ran only a mile to the south. The Park site was on level, well-drained land and the ground presented little difficulty for building construction. Adequate water supplies could be readily obtained and both electricity and natural gas lines already fed the area. Roads, sewers and watermains were provided up to property lines throughout the Park. In having to reassure sceptical local residents that their property values would not be placed in jeopardy, the Town officials introduced fairly

stringent by-laws to ensure that industries locating in the Park would not be of an obnoxious type, buildings would be of good design and would present an attractive façade to the public eye. This aspect has been turned to advantage by the Park's promoters who have stressed its prestige value to prospective occupants.

Since its inception, the Park has greatly improved its transportation facilities. When the development plans became known both the Canadian Pacific and Canadian National railways were interested in servicing the area. The Canadian National Railway subsequently arranged with the Town to provide a spur line and thus also became active in promoting the site. Much of this was doubtless due to there being a large company (Procter and Gamble) seriously considering locating in the Park but only on condition that rail facilities were provided. Soon afterwards it was decided to route the new Trans-Canada Highway through the Park. This six lane, limited access highway, although splitting the Park into two sections, effectively cuts down the time required both to enter central Montreal and exit from the City.

Pointe Claire Industrial Park effectively came into being in 1958 and infilling of the area has progressed fairly consistently since then. At the end of the first year four companies had commenced operations and there is little doubt that the continued growth of the Park has been due in part to

the stature of two of the original firms. The Pulp and Paper Research Institute of Canada - a government enterprise - and Procter and Gamble - a company with very substantial holdings - provided almost a guaranteed success to the venture. By the end of 1960 there were 18 plants in operation and, at the time of this study in early 1965, there were 49 occupying approximately 280 acres or 20 per cent of the Park's area. Excluded from these figures are several retail enterprises which have intruded into the original industrial zone. A further major intrusion has been the 85 acre site of the Fairview Regional Shopping Centre located at the north-west corner of the Trans-Canada Highway and St. Johns Road intersection. Of the area remaining for industrial use there was another 30 per cent which had already been purchased by over 50 more companies wanting to locate in the Park. This left just over 700 acres or 50 per cent of the land still uncommitted (see Figure 7).

It is apparent from the map that the pattern of growth in the Park has been very irregular. The City does not own any land, and the large areas of dead land interspersed among the developed sites have resulted from the strong element of private enterprise in the venture, a lack of programming or staging of development, and the absence of any prescribed date before which construction must take place on committed land. Zoning by-laws have dictated the manner in which lot

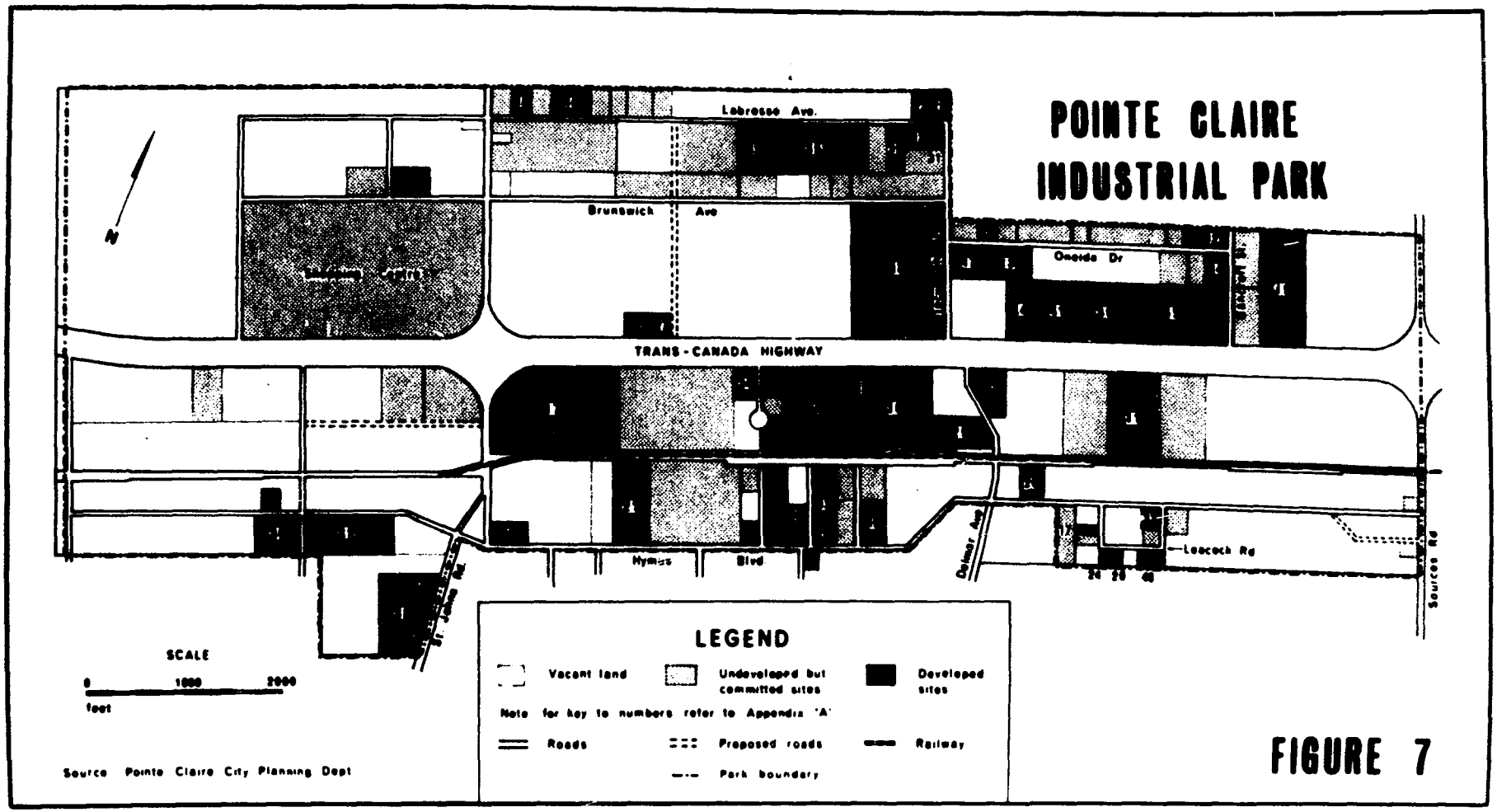
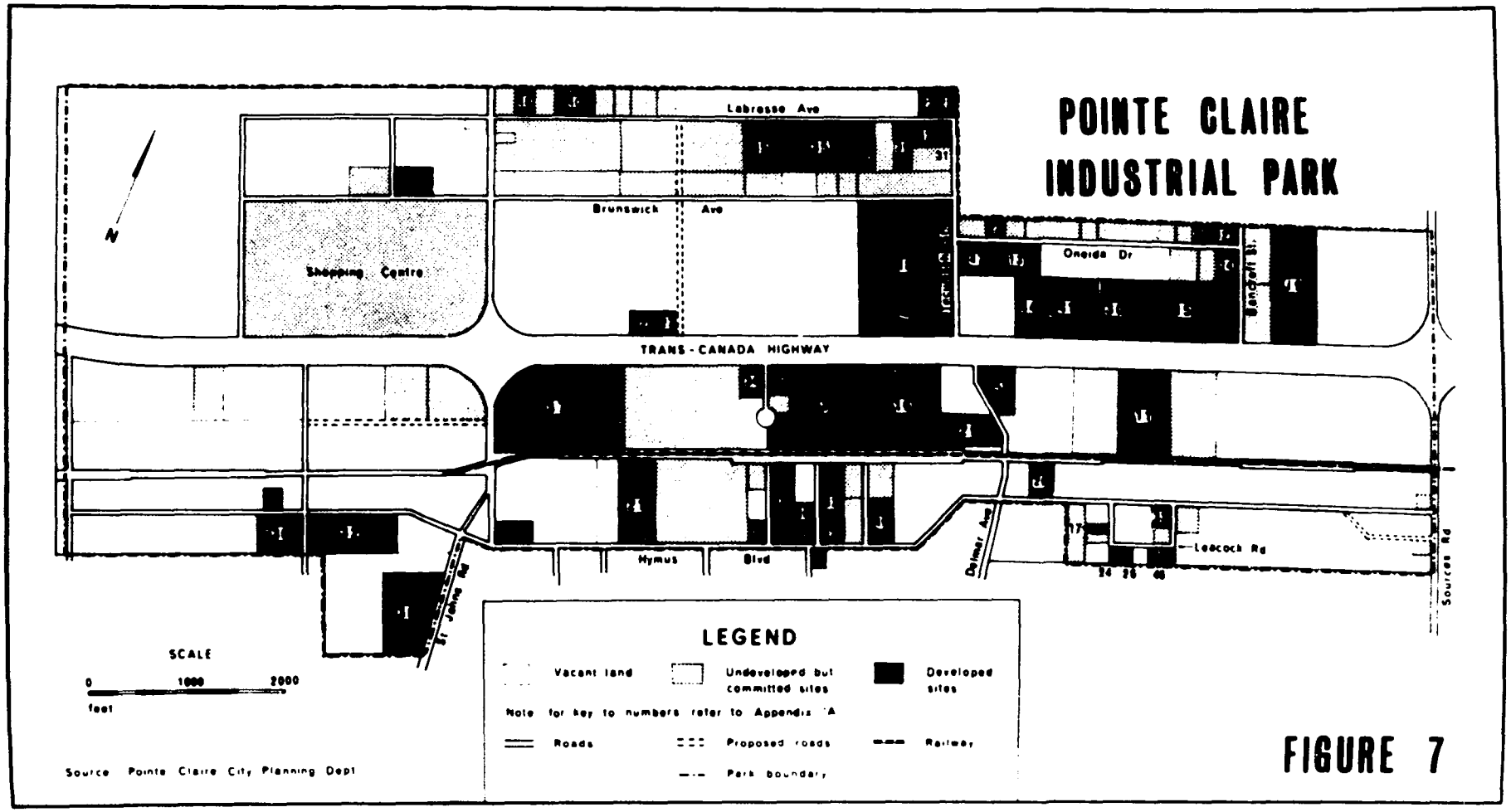

POINTE CLAIRE
INDUSTRIAL PARK
Lebrosse Ave.
Brunswick Ave
Oneida Dr
TRANS-CANADA HIGHWAY
Hymus Blvd
Leacock Rd
Source Rd
SCALE
0 1000 2000
feet
LEGEND
Vacant land
Undeveloped but committed sites
Developed sites
Note for key to numbers refer to Appendix 'A'
Roads
Proposed roads
Railway
Park boundary
Source Pointe Claire City Planning Dept

FIGURE 7


POINTE CLAIRE
INDUSTRIAL PARK
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Lebrosse Ave
Brunswick Ave
Shopping Centre
Oneida Dr
TRANS-CANADA HIGHWAY
Hymus Blvd
Leacock Rd
SCALE
0 1000 2000
feet
LEGEND
Vacant land
Undeveloped but committed sites
Developed sites
Note for key to numbers refer to Appendix 'A'
Roads
Proposed roads
Railway
Park boundary
Source Pointe Claire City Planning Dept
FIGURE 7

sizes are distributed (55). In general, the largest lots front on to the Trans Canada Highway, while the smallest are located in the area of Leacock Road. Although building has proceeded fairly steadily, much of it has taken place on sites acquired some time ago and recently there has not been a corresponding rate of new committals. A principal reason for this has been the very considerable increase in land values since the Park's inception. Land which at that time could be purchased for only two to three cents a square foot was, in 1964, selling for 85 cents to one dollar. Since the low price of land has in the past been an important factor in encouraging new plants, there appears to be some danger that many of the existing empty sites will remain that way in the future. In order to counteract this tendency, there has been a recent move by developers to build rentable accommodation for companies without the necessary finance to purchase a site.*

Of particular significance to this study is the fact that the majority of companies in Pointe Claire have relocated there from other districts of Montreal. Only 13 are completely new to the Metropolitan Area. Figure 8 shows the previous distribution of plants moving from other parts of Montreal. All of them came from places on Montreal Island and Noranda Copper and Brass Limited, in coming from their refinery in

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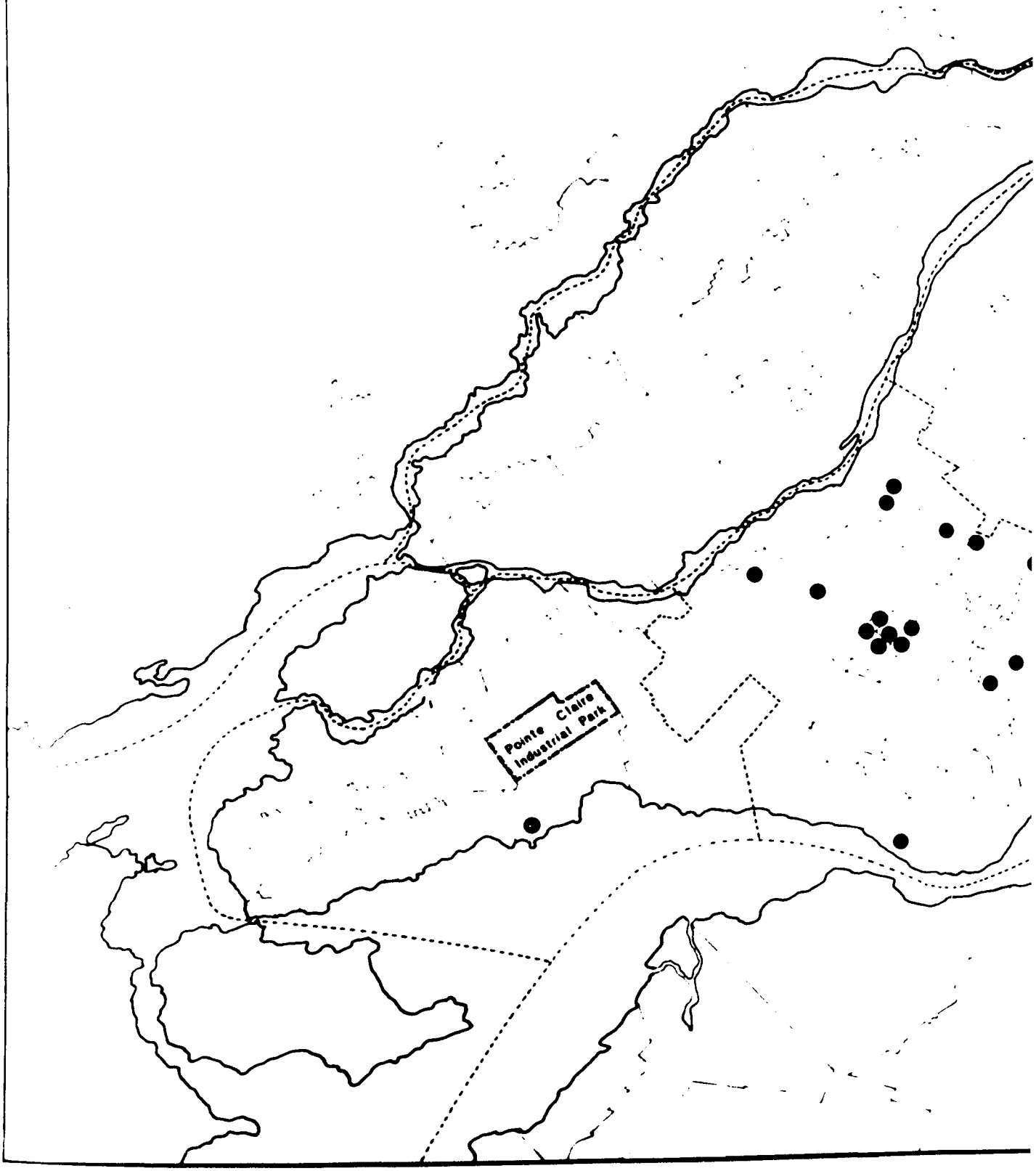
* Much of the information in this section was acquired during an interview with Mr. R. Labrosse, former City Manager of Pointe Claire.

FORMER LOCATIONS OF POINTE CLAIRE'S INDUST



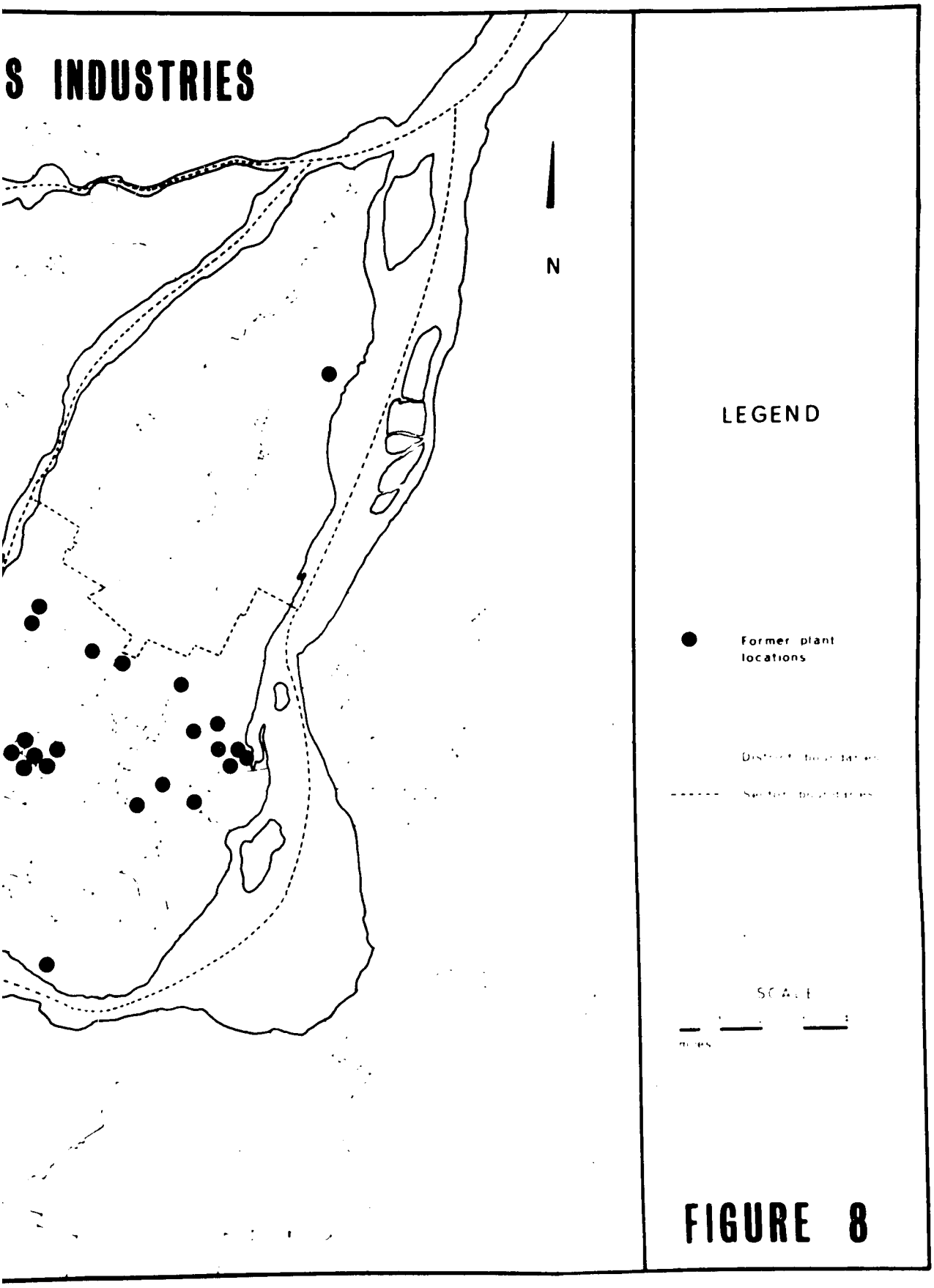


FIGURE 8

East Montreal, made the longest move of 18 miles. Six firms were previously located downtown, but the majority moved from the industrial areas north of the city from such districts as St. Laurent, Mount Royal, south of Décarie Circle and in the vicinity of St. Laurent Boulevard. Reasons given for moves to Pointe Claire were primarily the need to expand, cheap land and prestige. Very few companies gave any but the most superficial attention to questions of labour supply.

2. The Industries and Employees of Pointe Claire

This section describes in more detail certain characteristics of the companies located in Pointe Claire Industrial Park which have some bearing on the nature of its labour force. Information has been gathered on all companies so as to give a comprehensive view of their structure and allow a more reliable appraisal of the employee survey. Most of the information was obtained from interviews with company officials conducted by the writer, but where contact proved particularly difficult, Pointe Claire's Planning Department made similar enquiries. The Planning Department also supplied the information on company sizes. Other aspects considered in this section are: the functions of companies and their employment structure.

The functions of companies were fairly typical of those usually found in industrial parks. While the emphasis was on light manufacture, wholesaling and warehousing were

major activities and research was significant. Twenty-five of the 49 companies were engaged in manufacture, and in this sector light electrical goods and other light machinery were the predominant products. Some companies were, however, responsible only for assembly and packaging. Firms producing chemicals or pharmaceuticals were well represented as were food processing plants and manufacturers of building supplies. Warehousing and wholesaling was the principal function of 13 firms, the largest of which dealt in automotive parts, road building equipment and household goods. Both the manufacturing and warehousing plants were often also responsible for distribution and sales. Three companies were engaged solely in research, but several of the manufacturers also employed research staff. Other service industries represented in the Park were trucking firms, building contractors and an advertizing concern. (for comprehensive list see Appendix A).

There was considerable variation in the site areas of individual plants (see Table I). Their average size was approximately 5.6 acres, but the range lay between just over 20,000 square feet up to almost a million and a half square feet. The latter was occupied by Hewitt Equipment, the wholesaling firm specializing in road building machinery. Proctor and Gamble, the largest manufacturer, possessed a site of almost a million and a quarter square feet. The average site size for warehousing and wholesaling companies

TABLE I

SITE AREAS OF PLANTS IN POINTE CLAIRE INDUSTRIAL PARK

Site Area (000's of sq. ft.)	Number of Plants			
	Mfg.	Whsale & Warehsg.	Research	Other
20 - 49	2	6	-	5
50 - 99	9	-	-	1
100 - 499	9	4	2	2
500 - 999	4	2	-	-
1,000 and more	1	1	1	-
Total	25	13	3	8

was 290,000 square feet, slightly larger than their manufacturing counterparts with an average of 228,000 square feet. However, six of the thirteen warehousing plants were on sites of less than 50,000 square feet, while only two of the twenty-five manufacturing plants fell into this category. All three research organizations were on large sites. The Pulp and Paper Research Institute, with an area of more than 1,000,000 square feet, boasted the third largest site in the Park and the other two were over 400,000 square feet in area. Adequate parking space was provided on all sites and, frequently, ground coverage was less than the allowable maximum because many companies appeared to have purchased sufficient land to accommodate further expansion of their plants.

Many companies had large expanses of outside storage space which would not be available for future building but, even so, the approximately 2,000,000 square feet of covered floor space amounted to only 16.2 per cent of the developed area. Almost 80 per cent of this was devoted to warehousing and factory use with the rest being used for offices and laboratories. Avon Products with close to 50,000 square feet had the largest amount of office space while General Motors with 214,604 square feet had the largest covered area of warehousing space. The average amount of covered warehousing and factory space per plant was of course much higher than required for offices. For the former it was 31,250 square feet, but office space averaged only 8040 square feet per

plant. These figures do not, however, express the true importance of office functions in the Park. Employment figures give a more reliable indication.

In the period during which the survey was taken, the total employment figure had reached 3533. This did not take into account day-to-day variations caused by employee turnover, neither did it include any temporary help, nor any persons such as salesmen who did not normally work within the Park's boundaries. Of the total labour force, 63 per cent were employed by manufacturers, 24 per cent by warehousing forms and six per cent by research organizations. A rough breakdown of the labour force by occupation helps clarify the relative importance of operations within companies (see Table II). Very close to half were salaried staff and, although a high proportion of these were professional and technical workers, there still remained a strong component of administrative and clerical personnel.

As might be expected, the range in employment figures for individual plants corresponded in some degree to variations in their physical size, but the correspondence was by no means perfect. The firm employing the least had only three staff whereas the largest employer, Avon Products, had 575 on its permanent staff and hired over 100 additional hands when the work load demanded. Thirteen plants employed more than 100 people, 18 employed less than 20, while the

TABLE II

COMPOSITION OF LABOUR FORCE BY OCCUPATION GROUP

Occupation Group	Number		Per Cent	
Managers and Professionals	505		14.3	
Clerical and Technical	542		15.3	
Manual	1464		41.4	
MALES		2511		71.0
Clerical	641		18.2	
Manual	381		10.8	
FEMALES		1022		29.0
TOTAL		3533		100.0

average per plant was 70.6. Employment densities were found to vary from six to the acre for the research institutions, through 12 to the acre for warehousing, to 17 people to the acre for manufacturing plants. The average density amounted to 77.8 persons per acre of covered floor space, or 560 square feet per person.

Employee densities give only a most general basis for predicting the labour force that the Park can ultimately contain. From the density of 12.6 persons to the developed acre calculated from existing total employment, the potential for the entire Park comes to approximately 17,500. This figure, however, is subject to a number of qualifications. Much will depend on the final structure of company operations within the Park. That there is ample room for error is demonstrated by the range of densities found in those industries already established. Moreover, it must be remembered that many of these were not yet developed to their fullest capacity and the existing densities were not necessarily representative of those to be expected in the long run. A recent survey does however, show that the densities obtained for Pointe Claire conformed reasonably well to similar industrial districts elsewhere in North America. The Urban Land Institute's survey in 1960 showed privately developed districts to have acreages of 9-14 employees per site acre, and districts sponsored by joint government-private, local

community groups an average of 11.8 employees per site acre (10, p. 48). It appears likely therefore, that the original estimate of 17,500 is as valid as can be hoped for in the light of available evidence.

3. Employment Policies and Problems

This section briefly summarizes employment policies and problems encountered by companies located in the Park. The labour force is composed almost entirely of those workers who remained with their employers notwithstanding the change in workplace location, and those who were attracted to the area to fill vacancies resulting from company expansion or by employee turnover. A very small minority - and only those in the upper administrative or technical echelons - were transferred to Pointe Claire from other branches of the local companies. The firms relocating within the Metropolitan Area were usually happy to retain as many of their workers as they could but seldom went to great lengths to do so and, in at least one case, compensation was given to workers not prepared to work in Pointe Claire. Recruitment policies used to attract new labour were standard, although there were enough reports of difficulties in obtaining additional labour supplies for it to be evident that some tightness existed in the labour market. However, difficulties which could be attributed to the workplace location were restricted to only certain sectors of the labour force, and with the passage of time, these conditions were to some degree ameliorated.

Labour turnover caused by the relocation of companies from elsewhere in Montreal is difficult to assess precisely. Companies did not keep records and workers seldom gave reasons for their leaving employment. Furthermore, since the decision to relocate was usually announced some time before the moving date, the period during which a check would need to be kept was quite prolonged. According to the personal recollections of company administrators however, there was almost always some turnover which could be ascribed to relocation. Quoted percentages of company staff who left work on or around the time of the move ranged from zero to about eighty, but these figures were to some degree inversely proportional to the number employed by the firm. More important was the fact that the workers who were not prepared to adjust to their firm's move were almost inevitably from the lower income groups and especially female staff who had no means of transportation out to Pointe Claire. This corresponded with the results of Burtt's surveys of Route 128 firms (22, p. 14). Burtt also found that there was a positive relationship between the distance moved by companies and their turnover percentages (22, p. 10), but such a relationship was difficult to ascertain in the present study due to the unreliability of the figures quoted.

Half-a-dozen of the companies involved tried to minimize staff losses by raising wages slightly, and some

firms in the early stages provided transportation for their workers. Nevertheless, these measures were of little value since turnover in the companies concerned did not appear to be appreciably lower than in companies which did nothing to encourage their employees to remain with them. It was not long also before transportation facilities were discontinued as people either found an alternative means of reaching work or left the company. Only one firm still maintained a special bus service for its workers and this served the rural area to the west of Montreal Island.

The sources and means of advertizing for vacancies in Pointe Claire varied with the type of worker being sought. For executive and higher professional positions advertizements were placed in journals and newspapers with Canada-wide or even international circulations, and in some instances desired staff were approached in person. The Montreal daily newspapers were normally used to advertize for skilled tradesmen. However, company policy was generally to attempt to fill as many of the less-skilled jobs as possible from local sources by using the facilities offered by the district's newspapers, a privately run employment agency in Dorval and the government employment office in Ste. Anne de Bellevue. Only when these services failed were the vacancies advertized more widely. Other important sources of supply were people who learned of jobs through contacts already working in Pointe

Claire or those who called at firms on the off-chance of obtaining work.

Conflicting reports were heard regarding the ease of recruiting workers. Of the 28 companies questioned, half were quite satisfied with the situation while the other half ranged in their opinion from mild concern to extreme anxiety at their inability to attract labour. But while it was generally admitted that shortages of skilled workers were merely a reflection of prevailing conditions across Canada, the great majority felt that the situation with respect to unskilled and female help could be immensely improved if public transportation were provided. In support of this argument numerous cases were cited where employment offers had been made but had been turned down when it was pointed out that the prospective employee would need a car to get to work. A third of the companies actively tried to arrange car pools for their employees but this practice was not encouraged by a couple of firms who were fearful that if the driver were to terminate his employment they would tend to lose his passengers as well.

Several companies needing unskilled labour found it very difficult to obtain them from sources on Montreal Island and were forced to seek them in outlying country districts where alternative opportunities for employment were not so readily available. A contributary factor was possibly the

fact that the government employment office serving Pointe Claire was in Ste. Anne de Bellevue at the extreme western end of Montreal Island. Company officials suffering from labour shortages therefore tended to feel that they were not given proper access to the metropolitan labour market. On the other hand, there were companies that expressed surprise at the relatively high number of "drop-in" enquiries after employment and, although it was felt by some that the larger companies fronting on to the Trans-Canada Highway would gain the greatest benefit from this source of supply, there were those located on the lesser streets which had successfully obtained workers in this manner.

Officials of the larger, longer established companies were generally less perturbed about future labour supplies, for although often experiencing early difficulties, they had seen some improvements in the market. One of the first companies to locate in the Park which had originally provided transportation for people it wished to interview for jobs had recently received far more "drop-ins" than could be coped with and no longer found it necessary to advertize vacancies. It was the opinion of the personnel manager that an important factor in easing the situation was the wider recognition of Point Claire as an employment centre. Of perhaps more importance was the greatly improved accessibility of the Park when it was linked by the Trans-Canada Highway to the north-central suburbs of Montreal and their high population.

CHAPTER V

THE SURVEY OF THE PARK'S EMPLOYEES

Having discussed the Industrial Park and its setting, it is now possible to study the evolution of its labourshed as revealed by the survey of employees. This chapter outlines the survey procedures, the questionnaire and the representativeness of the survey returns. Furthermore, by providing details of the respondents' personal characteristics, it gives some insight into their residential locations.

1. The Survey Procedures

Success in obtaining the required information about workers in the Park lay in gaining the cooperation of their employers. An initial approach was made to the companies through a letter sent to the directors by the Pointe Claire Planning Department. This explained the purposes of the study, indicated the sort of material required and attempted to arouse the support of companies by suggesting that the Park's future operations might be improved with knowledge gained from the study. The next step was to arrange personal interviews with management. Further details of the method and purpose of the study were then given, reassurances made concerning the confidential treatment of material provided, and the cooperation of management was asked for in the distribution of questionnaires to employees.

The method of survey had to be adapted to the reactions of company officials to the study. Information which could be supplied by companies was generally insufficient to meet the study objectives since the majority of companies were extremely reluctant to compromise their relationship with employees by releasing confidential personnel records. It was therefore necessary to approach the employees themselves. Optimally, the situation called for personal interviews with a representative sample of the employee population. Such a procedure proved impossible since company officials would not allow their employees to be subjected to interviews. The idea of a questionnaire did not arouse so much opposition but most companies still expressed doubts as to the advisability of calling on a selected group of employees - even though they would be chosen at random. Therefore the only feasible method of acquiring the data was by means of a questionnaire giving blanket coverage of those companies disposed to cooperate in the survey.

The period during which questionnaires were in circulation in the Park as a whole was late December 1964 and through January 1965. This was necessary because of the length of time it took to canvass company officials and the need to allow them to choose a time to circulate the questionnaires within the plant which would fit in with company operations.

The responsibility of distributing and collecting

questionnaires to employees was in the hands of company officials. They were urged, when the questionnaires were delivered to them, not to compromise their employer-employee relationship in any way, but to achieve the return of questionnaires from employees in the shortest possible time so that there would be less likelihood of their being mislaid. The distribution and collection procedures varied from plant to plant. In the larger plants the usual method was to give department heads the responsibility for circulation of the questionnaires, while at the same time posting a notice giving employees some further information on the purpose of the study. In other plants the questionnaires were merely placed in a conspicuous position - for example, by the time clock - and the returns were collected later. On the other hand, some company officials went to great lengths to obtain the highest possible returns. In some cases each employee was called in and given assistance in completing the questionnaire - sometimes to the extent that illiterate workers' forms were filled in by management. The completed questionnaires were normally picked up from plants within a week of delivery.

2. The Questionnaire

The questionnaire's layout was kept as simple as possible, because it was directed to employees of varying intelligence and the writer had no opportunity to assist in its interpretation on a person-to-person basis. A further

important consideration was that workers should not be confronted with too long an assignment, for it was feared that this might generate hostility towards their devoting their energy to its completion. It was also likely that company officials would be less disposed to sponsor a long and involved questionnaire that would occupy their employees' time. A maximum of one page was therefore allowed, but because the questionnaire needed to be in two languages a foolscap size sheet was used.

Before finally deciding upon its format, a draft of the questionnaire was given a test run in two of the smaller companies appearing to employ a fairly representative cross-section of the labour force. A copy of the version ultimately distributed is included in Appendix B.

The questionnaire's title attempted to reassure respondents as to the purposes of the survey. This was felt to be necessary since company officials were to be responsible for its distribution and the possibility existed that respondents might otherwise be suspicious of company motives.

The initial questions were concerned with personal characteristics of the labour force. They included: age, sex, marital status and number of dependents since these factors have been found to influence a worker's mobility and his position in the labour market. Living habits are highly dependent on age and position in the life cycle and males and females differ in

heir abilities to move and travel to work. Once married, a erson has wider responsibilities and this will have some earing on his decisions. The number of dependents affects person's freedom of movement and influences his desire to ive in certain surroundings. This question originally ppeared in the form "size of family", but it was found to be mbiguous and difficult to interpret.

Occupation was the only real indication of a person's education and income - factors which could be expected to have considerable bearing on living preferences and ability to adjust to change. However, problems existed in that responses were liable to be vague, and even if given precisely, there would be difficulties in assessing the job content - and hence the skill required and income derived - from the job title. Jobs with similar content would undoubtedly be given different titles in the several companies and, on the other hand, similar titles would be given to jobs requiring different degrees of skill. To ensure legitimate comparisons, job classifications were checked with company officials.

The next set of questions sought details of residential locations. Knowledge of present residences enabled distances to the Park to be calculated and established the existing labourshed, while former residences made a reconstruction of its development possible. As a further check on the degree of workplace-residence separation workers were asked

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to give the amount of time they spent on the journey to work.

The relevance of replies to questions related to former locations depended on the length of time the employee had worked for his company and the date of his move relative to the time of the company's relocation. These dates therefore had to be ascertained.

In order to overcome any reluctance employees might have had to disclose their address, only the nearest street intersection was requested. Thus the residential location could be obtained with sufficient accuracy while not antagonizing the respondent. In the questionnaire's trial run this procedure was fairly successful, but there were a number of misinterpretations. Either the actual address was provided or only the municipality was given. The former case presented no problem but the latter gave rather vague information. In the event that respondents were intentionally vague there was nothing that could be done to elicit more specific replies, but where the question had been carelessly read, there was a possibility that this could be remedied by emphasizing the need for greater detail. This emphasis was introduced by underlining the requirement of both the intersection and the municipality.

As a direct probe into the importance of the relationship between workplace and residence, workers were asked

the reasons for their most recent move and whether they had any desire to move closer to work. It was hoped that replies would indicate some break point that would give the maximum distance which people were willingly prepared to travel to work and establish what residential moves there might be towards Pointe Claire in the future. Pointe Claire's Planning Department was eager to receive such information.

Housing characteristics were sought after for the same reason. This information was felt to be of use in assessing future trends as well as indicating the forces acting to shape the past.

Enquiries into workers' incomes and their ethnic affiliation were intentionally omitted from the final version of the questionnaire. In view of the rather tense situation existing between the two major ethnic groups in Montreal during the period of the survey, it was felt to be an inopportune time to enquire too obviously into company employment policies regarding them. Furthermore, enough companies were sufficiently against questions being asked about incomes that there was no alternative but to omit them. However, partial answers to both queries were possible. The bilingual form of the questionnaire provides some intimation of ethnic affiliation, and although company officials were not always prepared to discuss incomes in detail, enough information was made available to indicate general wage levels in the Park.

3. Representativeness of the Survey Returns

Bias is difficult to eliminate completely from any sample survey and, in this study, it can stem from four sources. The first is caused by the omission from the survey of a number of companies operating in the Park. The second is brought about by non-response from employees having the opportunity of completing a questionnaire but not doing so. The third possibility of error can arise as a result of respondents' misinterpretation of questions, while the fourth lies in the possible misinterpretation of responses to open-ended questions that were incorporated in the questionnaire. At this stage only the first two potential sources of error will be considered. Problems arising from misinterpretation, both by the respondent and the analyst, will be noted where most appropriate. Unfortunately, due to the fortuitous nature of the survey sample, probability statements about its reliability are not possible. However, there are a number of facts known about the total population of the Park, and comparisons of these with the sample results give some indication of how well the total is represented.

The 28 companies in Pointe Claire that cooperated to the extent of permitting circulation of the questionnaire gave a good cross section of the total operations. Of the 25 firms engaged in manufacturing, 14 assisted in the distribution of questionnaires. Seven out of the 13 warehousing

firms cooperated to the same degree, as did all of the firms engaged in research. Questionnaires were also circulated through construction firms, a trucking firm and the advertizing concern. All types of company activity were therefore well represented.

The circulation of questionnaires was also balanced in terms of company origins and the length of time they had been operating in Pointe Claire. These included the longest established companies and some of the newest arrivals. The dates on which other participating companies commenced their operations were distributed fairly evenly over the period since the Park's inception. Cooperating in the survey were 21 of the 37 plants relocated from elsewhere in Montreal, together with 7 out of the 13 plants totally new to the area.

The sample was biased in favour of companies employing larger numbers of workers. The average number of workers employed by the collaborating firms was 97.4, but only 32.1 in the firms not involved in the survey. Only four out of fourteen of the firms with more than 100 employees did not participate, whereas the questionnaire was circulated in less than half of the companies employing fewer than 25 workers. However, the level of response was consistently higher in the smaller companies that did participate than it was in the larger firms. The bias in favour of larger companies had the advantage of giving a high proportion of the total labour force

an opportunity to complete the questionnaire. For, although only 56 per cent of the companies shared in its circulation, they employed 77 per cent of all workers in the Park.

Of the 2726 workers given the opportunity to complete the questionnaire, 1883 (69.1 per cent) did so to the extent that their responses could be used. Questionnaires were returned therefore from 53.3 per cent of the total population. Table III shows the levels of workers' responses as classified by their occupation.

The variations in response are as might be expected. Higher returns were obtained from both male and female office workers than from their counterparts in the plant. The only occupation group not providing returns for at least 50 per cent of their total numbers in the Park was that of the male blue-collar workers. Comparative figures for the white-collar groups were closer to 60 per cent.

Percentage returns for all groups were, of course, appreciably higher when taken in relation to only those employees receiving questionnaires. Thus the response rate for the managerial and professional group was better than 80 per cent - as against less than 60 per cent of the total number employed in this group. Such contrasts reflect the composition of the non-participating companies. These plants, being generally smaller, were normally "top-heavy" in administrative personnel but did not possess large supporting clerical staffs.

TABLE III

EMPLOYEES' RATES OF RESPONSE TO QUESTIONNAIRE

Occupation Group	Number of Respondents	Per Cent Response Rate in Participating Companies	Percentage of Total Employees in Park
MALE			
Managers and Professionals	311	80.6	58.7
Clerical and Technical	334	74.7	64.7
Manual	651	61.5	44.6
FEMALE			
Clerical	398	76.4	62.2
Manual	189	60.4	50.9
ALL GROUPS	1883	69.1	53.3

Companies not participating in the survey justified their action in a variety of ways but, whatever the reason given, there was no concrete evidence to suggest that their employees were materially different in their characteristics from those of the participating companies. Some of the non-participants felt that their staffs were too busy to spare the time, while others refused to inconvenience their workers under any circumstances. On the other hand, a few companies did in fact promise to collaborate but, despite promptings, eventually never circulated the questionnaires delivered to them. It could perhaps be argued that companies appearing to be disinterested in a study of possible benefit to their employees, might employ people who had no particular affinity for their jobs and who therefore would be less likely to make any adjustments to keep them. However, there were officials in some of the participating companies who were also not overly enthusiastic about the study who, nevertheless, agreed to co-operate and who would presumably hire a similar category of workers.

There is little doubt that the response rate did vary in some degree with the enthusiasm of company officials responsible for circulating the questionnaire, but this relationship was not consistent since returns were also high from companies that were not enthusiastic but merely efficient. The actual method of circulation appeared to be equally sig-

nificant. This is evident in the higher rates of return from smaller companies where the questionnaire was usually distributed to individuals on a more personal basis.

Non-response by employees who did receive a questionnaire could be attributed to a general anathema towards filling in forms - as was verified by company officials. The higher returns from office staffs were partially due to their greater readiness and ability to cooperate and, since most questionnaires were completed in company time, it seems plausible that they would have more convenient access to writing materials than would plant workers. Although it might be postulated that a negative attitude on the part of workers towards the survey could indicate a negative attitude towards the subject it dealt with, there is nothing to suggest that all non-respondents reacted in this manner. If the survey is biased in favour of employees with singular concern for problems of the journey to work, this still should not completely nullify the results.

Because of the limitations of the survey, it is not possible to state with precision the degree to which the results are biased. And, just as it is dangerous to extrapolate the results of any non-random sample survey to larger populations, there is a similar hazard in applying those of the present survey to the Park's entire labour force. Nevertheless, the questionnaire has been shown to have penetrated

a good cross-section of the Park's industries and to have been completed by a large proportion of its employees. The shortcomings should be borne in mind when weighing the validity of results.

4. Personal Characteristics of Respondents

Respondents have been grouped according to their job occupation and sex into five major categories. The problems inevitably arising from such generalization were largely overcome with the assistance of company officials who described the nature of the jobs performed by their employees and, in several instances, provided the opportunity of observing them at work. Where possible, incomes were taken into consideration as well. Even so, there were borderline cases in which classification decisions were necessarily somewhat arbitrary. The number of respondents in each group and the proportions that they form of the total sample are given in Table IV.

In general, the occupation group titles are self-explanatory, but further details of the job categories included in each of the groups are as follows: (i) The managerial and professional group covered all executive staff and, in the larger companies, heads of the more important departments (e.g. plant superintendents). Professionals were normally those people with academic qualifications engaged as engineers, chemists or in similar capacities. (ii) The remaining males

TABLE IV

COMPOSITION OF LABOUR FORCE SAMPLE BY OCCUPATION GROUP

Occupation Group	Number	Per Cent
Managers and Professionals	311	16.5
Clerical and Technical	334	17.7
Manual	651	34.6
MALES	1296	68.8
Clerical	398	21.1
Manaul	189	10.1
FEMALES	587	31.2
TOTAL	1883	100.0

in white-collar or white-coated jobs were designated as clerical workers. Thus laboratory technicians and draftsmen fell into this category. (iii) The third male category could well be described as the blue-collar group since it embraced almost all plant workers from the skilled foreman and mechanic down to assembly-line workers, packers and labourers. This group therefore was fairly broad in coverage but further subdivision proved impossible. Female employees were divided into only two categories. (iv) The clerical group mainly consisted of the secretarial and technical workers and, since there were only a very small number of women professional and executive staff, these were also included. (v) The remaining female employees such as assemblers, operators, cleaners and cafeteria staff were designated as manual workers.

Language was only partially successful in segregating employees into ethnic groups. There were 757 or 40 per cent of the respondents who used French to complete the questionnaire. Table V shows how they were distributed in the various occupation groups. Although it was expected that a high proportion of the more skilled workers would be of British origin, the preponderance of responses in English was surprisingly high. Discreet enquiries confirmed the suspicion that an unknown segment of the French population, seeing the questionnaire's source, had completed it in English. Therefore,

TABLE V

LANGUAGE USED IN COMPLETING QUESTIONNAIRE

Occupation	English		French	
	Number	Per Cent	Number	Per Cent
MALE				
Managerial	287	92.3	24	7.7
Clerical	242	72.4	92	27.6
Manual	283	43.5	368	56.5
FEMALE				
Clerical	281	70.6	117	29.4
Manual	33	17.5	156	82.5
ALL WORKERS	1126	59.8	757	40.2

while in all probability the English bias is less pronounced among manual workers than among the professional groups, data concerned with ethnic affiliation should be treated with caution. The question does arise, however, as to whether the French who did not respond to the questionnaire in their own language, might be well assimilated with the English and therefore be no different from them in other ways.

Employees were generally quite young, their average age being only 33.6 years. Approximately 28 per cent were under 25 and only seven per cent were over 50 years of age. Even the most senior group, the managerial, averaged only 38.5 years. Clerical staff, the youngest of the male groups, averaged 32.3 years of age, but the corresponding figure for plant workers was very close at 33.9 years. Females of both groups had a fairly similar age distribution. Clerical workers, with an average age of 32.2 years, were slightly older than female manual workers who were the youngest of all groups with an average of 29.1 years.

Statistics on marital status and family size generally reflected the age pattern (see Table VI). Almost 90 per cent of the managerial group were married and there were also high proportions in the other male groups. Close to 70 per cent of the clerical group were married as were 75 per cent of the plant workers. A smaller proportion of the female employees were married, although in both groups there were

TABLE VI

AVERAGE AGE, MARRIED STATUS, AND AVERAGE NUMBER OF DEPENDENTS OF EMPLOYEES BY OCCUPATION GROUP

Occupation Group	Av. Age (years)	Married (per cent)	Av. No. of Dependents *
MALE			
Managerial and Professional	38.5	89.7	2.9
Clerical	32.3	68.8	2.4
Manual	33.9	75.5	2.6
FEMALE			
Clerical	32.2	51.7	-
Manual	29.1	46.3	-

* These averages relate only to married personnel.

approximately 50 per cent who fell into this category. Family size varied only slightly between the male groups as the great majority of personnel had few dependents. Out of more than 950 married men, only 24 had seven or more dependents, while 279 supported only one. French personnel in the managerial group had the highest number of dependents with an average of 3.0, and lowest in the range were English clerical workers with an average of 2.3. Although in each of the male groups French respondents had higher averages, these differed by no more than one-tenth from those of their English counterparts. It would appear that variations in marital status and size of family can be explained largely through the age structure of the workforce. Ethnic affiliation has a negligible influence, while occupation, although reflecting the age structure, does not in itself bring about these differences.

Occupations, and the status and income attached to them are, however, more pertinent to the discussion of workers' housing (see Table VII). Age structure is still significant in that the younger groups are less likely to have reached the point of buying a home. Nevertheless, the degree of home ownership in the managerial and professional group was more than twice that of either of the other two male groups. Whereas over 62 per cent of the professional group owned their homes only 30 per cent of the clerical workers and 23 per cent of the blue collar workers did so. Home ownership was only

TABLE VII

CHARACTERISTICS OF EMPLOYEES' HOUSING

Occupation Group	Type of Dwelling			Dwelling Ownership
	House (%)	Duplex (%)	Apt. (%)	(%)
MALE				
Managerial and Professional	65.6	12.2	22.2	62.1
Clerical	48.4	22.4	28.7	29.7
Manual	42.7	27.0	31.2	22.6
FEMALE				
Clerical	55.4	16.9	27.7	37.6
Manual	57.5	20.6	21.8	15.9

slightly more prevalent among English workers than among the French.

The type of accommodation bore a strong relationship to that of ownership. More than 65 per cent of the managerial group lived in single family dwellings, 12 per cent in duplexes, and 22 per cent in apartments. Apartments and duplexes were considerably more "popular" among the groups of lower status. Twenty-nine per cent of the male clerical workers and 31 per cent of the blue-collar workers lived in apartments. Comparative figures for duplexes were 22 and 27 per cent respectively. Thus less than 50 per cent in either group lived in single family dwellings. In all groups there was a tendency for the French to prefer duplexes, whereas the English not living in a house were more inclined towards apartments.

Although less relevant, it is interesting to note the housing characteristics of female employees. While approximately 55 per cent of both groups lived in single family dwellings, there was a pronounced difference in ownership figures. Only 16 per cent of the manual workers occupied homes of their own as against almost 40 per cent of the office employees.

In summary, the composition of Pointe Claire's labour force can best be expressed in terms of workers' occupations. Personal characteristics vary within the groups but

wider variations exist between them. The population as a whole is fairly youthful and this is reflected in family structure and housing characteristics. Ethnic affiliation does not appear to be responsible for any particularly striking contrasts within occupation groups, but it is evident that the French predominate in the lower status jobs. However, this tendency is reinforced by the biased response to the questionnaire. Knowing the characteristics of the employees of Pointe Claire, it is now appropriate to analyze their distribution.

CHAPTER VI

EXISTING DISTRIBUTION PATTERNS OF POINTE CLAIRE INDUSTRIAL PARK'S LABOUR FORCE

Although at the end of 1964 Pointe Claire's labour-shed was still in the early stages of its evolution, certain patterns were already becoming apparent. These patterns will be described, first in terms of the time taken by employees on the journey to work, then in terms of the distances travelled, and finally with reference to the areas of residential concentration. Giving further detail to the description is an outline of the ways in which the various components of the labour force differ from each other and contribute to the overall pattern of distribution.

1. Employees' Commuting Times

Data on the time expended on the journey to work give a good first impression of the spatial relationships between employees' residences and their workplaces. The duration of work trips for all respondents is plotted in Figure 9. The graph does not illustrate very clearly the hypothesis that workers tend to minimize their journeys, but it must be remembered that a certain amount of distortion will exist due to a tendency on the part of respondents to approximate the trip duration. If the curve is smoothed out and the peaks at the

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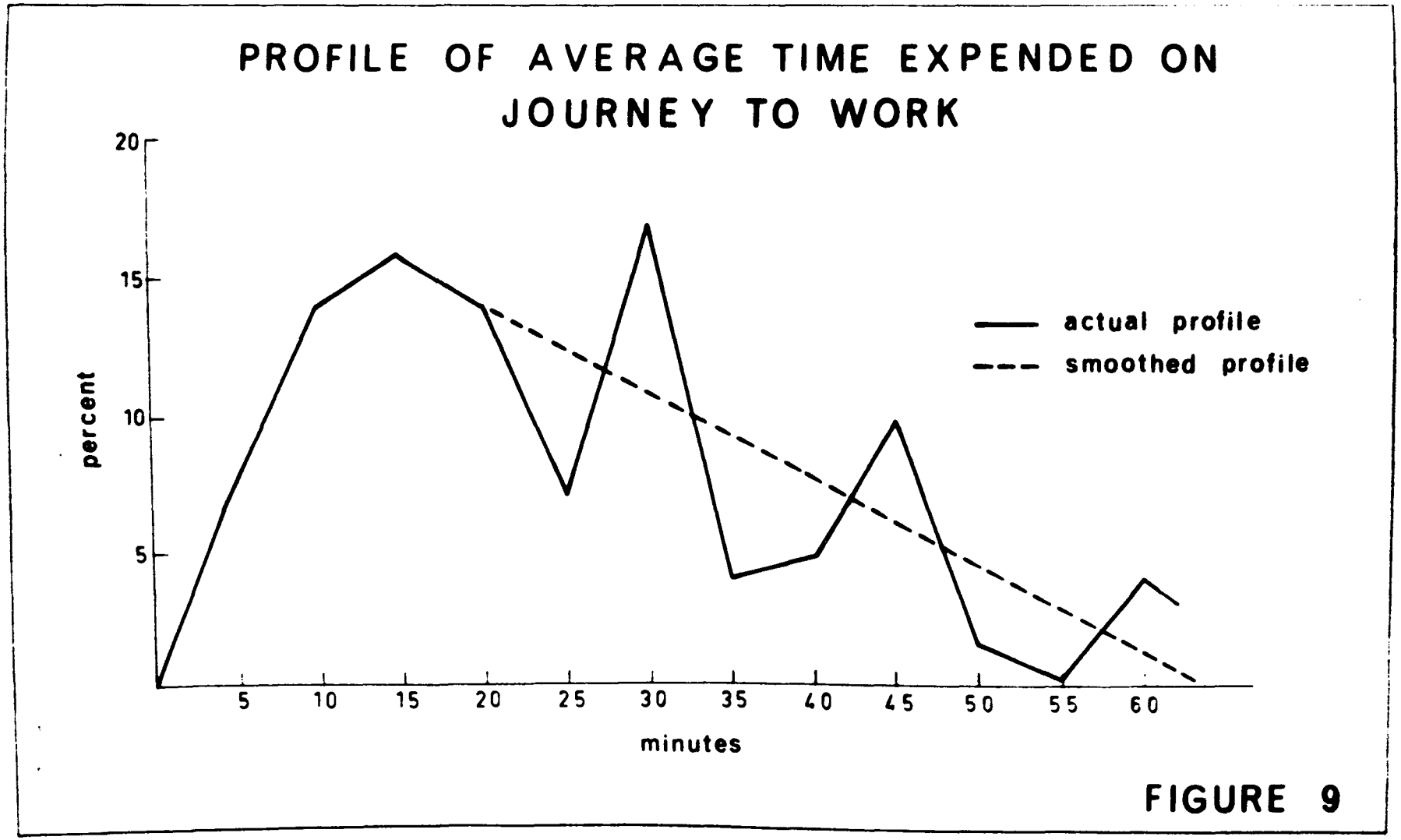

PROFILE OF AVERAGE TIME EXPENDED ON JOURNEY TO WORK
20
15
10
5
percent
actual profile
smoothed profile
5
10
15
20
25
30
35
40
45
50
55
60
minutes

FIGURE 9

30 minute, 45 minute and one hour intervals are spread more evenly over the adjacent time periods, the result gives a much more readily observable pattern of the decline in numbers with increasing travel time. Although there were a few people who had journeys of up to an hour and a half, 98 per cent of all trips were of less than an hour's duration and 93 per cent were of 45 minutes or less. Moreover, 20 per cent of all employees spent ten minutes or less on the one-way trip and 50 per cent took 20 minutes or less. The average trip time for all workers was 25 minutes.

Figure 10 shows how the various occupation groups contribute to the overall pattern. It can be seen that the managerial and female clerical staff, as groups, spent appreciably less time in travelling to work than did workers in the other groups. Managerial and professional staff spent an average of 20 minutes on the journey and 58 per cent took 15 minutes or less. Female clerical staff averaged only 21.5 minutes and 47 per cent took 15 minutes or less. Both the male clerical group and female plant workers followed the overall trend fairly closely, although the latter were less concentrated in the shorter time periods. Only 26 per cent of the female plant workers spent 15 minutes or less on the journey. It was, however, the male plant workers who, as a group, were mainly responsible for raising the overall average. This group spent an average of 30 minutes on the journey, with

OGIVES SHOWING TRAVEL TIMES BY OCCUPATION GROUP

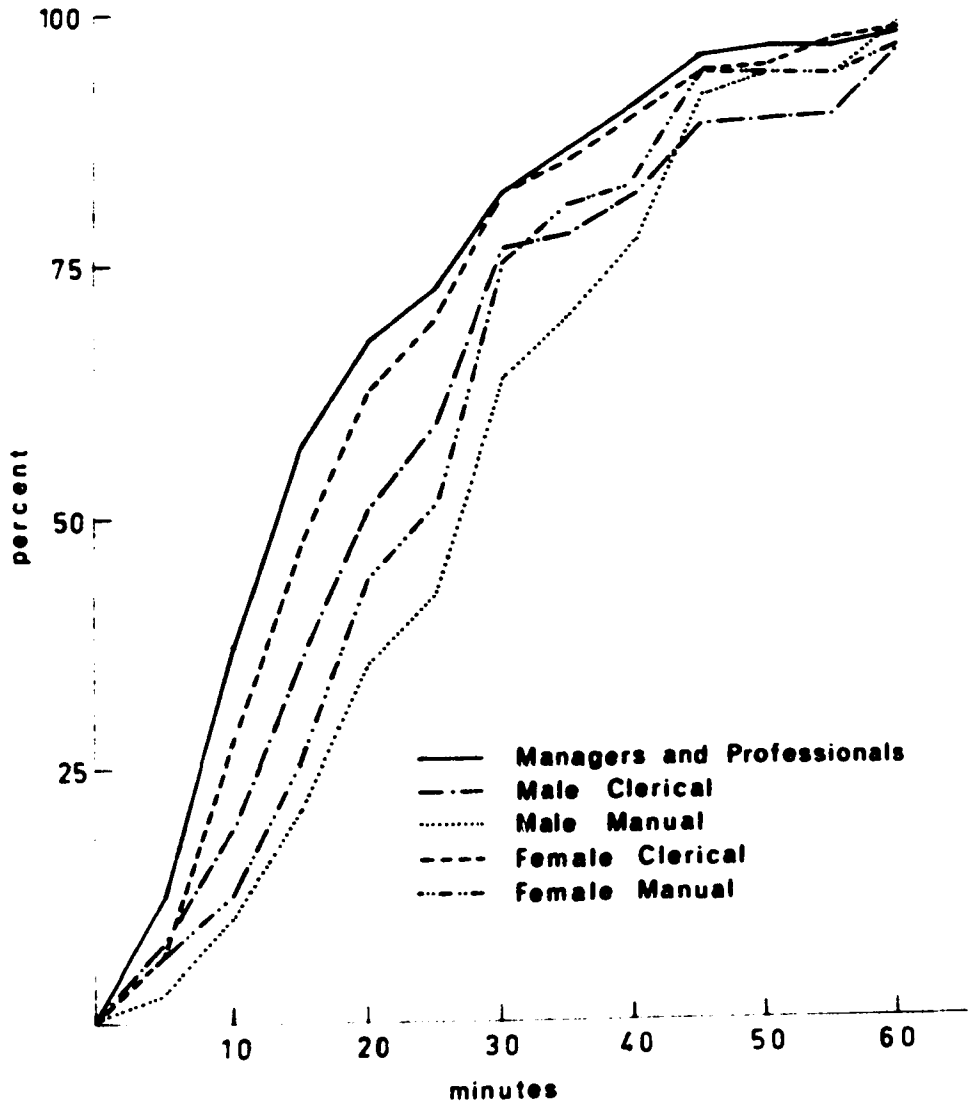


FIGURE 10

only 21.5 per cent living within 15 minutes travelling time from work.

There are of course many factors influencing the observed pattern of travel times. Day-to-day variations would exist because of changing road and traffic conditions, but since respondents obviously tended to round off their trip times to a personal average, the quoted values, although over-emphasizing the quarter-hour periods, would still provide a fairly reliable approximation. The great majority of employees (92 per cent) started work between the hours of eight and nine a.m. and it is not likely therefore that those workers travelling outside this period would significantly alter the pattern. Most of those not travelling at the peak period were plant workers who had to be at work before eight a.m. Some of the variation in travel time was probably a reflection of the type of transportation used, for, over the same distance, the automobile is appreciably faster than alternative means (36, pp. V32-37). Variations will also be apparent between car users. People travel at different speeds and a person driving only himself will spend less time on the journey than someone who stops to pick up the members of his car pool.

Just over 90 per cent of all respondents in the survey normally made use of an automobile to reach work. Only one per cent used buses for the entire journey. Most

of the remainder used some combination of private and public transportation. A few people took a taxi and a negligible proportion walked (see Table VIII).

Although the proportion of car users was fairly stable at around 90 per cent for all occupation groups, there was a significant variation between them in the use of car pools. As status diminished the use of car pools increased. Whereas less than four per cent of the managerial group were involved in car pools, the figure reached 14 per cent for male clerical staff and 18 per cent for the blue-collar group. The figures for female workers were much higher, and clearly demonstrated their lesser degree of mobility. Almost 39 per cent of office staff were attached to car pools, while among plant workers the very high figure of 69 per cent was obtained. (Many workers almost made a business out of transporting their fellows, some charging as much as five dollars a week for their services.) While it is true that the managerial group made the greatest use of the fastest means of transportation, this was not the sole reason for their spending the shortest average time on the journey to work. The distance covered is of greater significance.

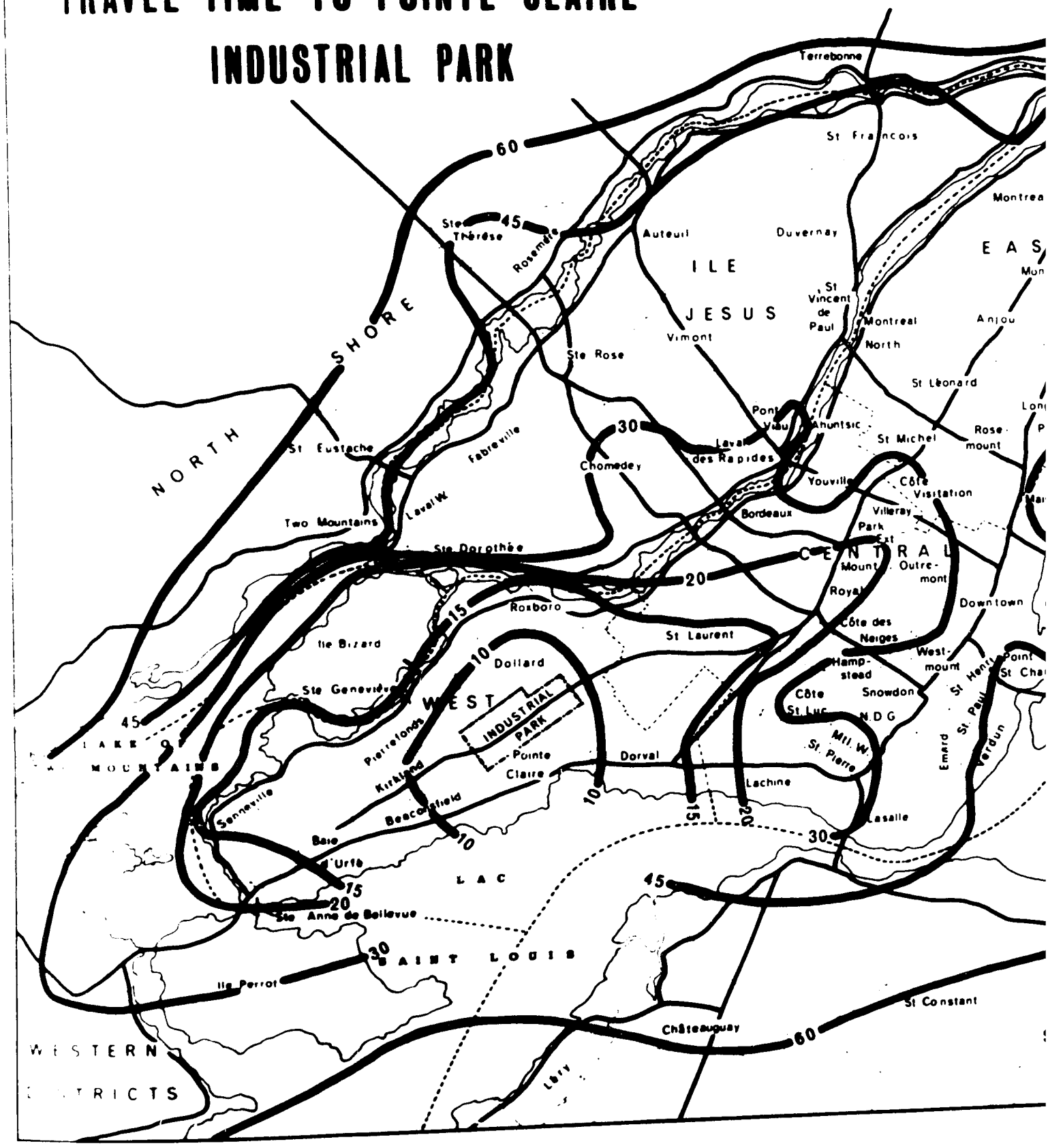
The isochrone map (Figure 11) shows how trip times increase with distance from Pointe Claire. This map, compiled from data provided by all respondents using cars to reach work, does not attempt to demonstrate any more than the average

TABLE VIII

MODES OF COMMUTER TRANSPORTATION

Mode of Transport	Occupation Group					
	Managerial and Professional (%)	Male Clerical (%)	Male Manual (%)	Female Clerical (%)	Female Manual (%)	All Groups (%)
Own Car	88.4	78.9	73.4	49.1	23.4	66.7
Car Pool	3.9	13.6	18.4	38.7	63.3	24.0
Bus	0.3	0.6	1.2	0.5	4.2	1.1
Combination Bus and Car	2.6	3.3	3.3	3.3	3.7	3.2
Other	4.8	3.6	3.7	8.4	5.4	5.0

TRAVEL TIME TO POINTE CLAIRE INDUSTRIAL PARK



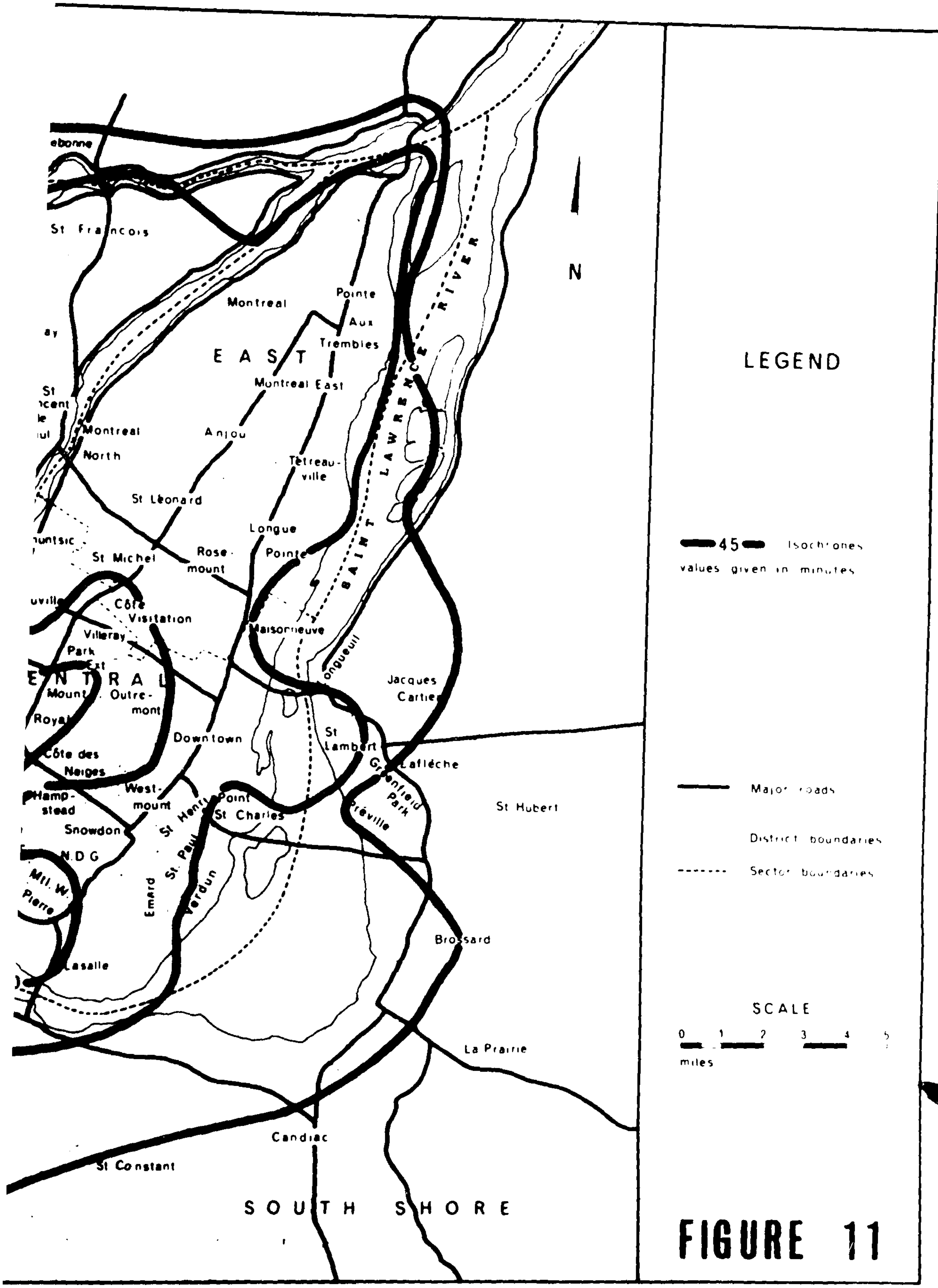

ebonne
St Francois
ay
St
ncent
le
ul
Montreal
North
Montreal
E A S T
Pointe
Aux
Trembles
Montreal East
Anjou
Tetreau-
ville
St Leonard
Longue
Pointe
untsic
St Michel
Rose-
mount
Côte
Visitation
Villeray
Park
Ext
N T R A L
Mount
Royal
Outre-
mont
Maisonneuve
Longueuil
Jacques
Cartier
Downtown
Côte des
Neiges
St
Lambert
Lafléche
Greenfield
Park
Préville
Hamp-
stead
West-
mount
St Henri
Point
St Charles
St Hubert
Snowdon
N.D.G.
Mtl. W.
Pierre
St Paul
Verdun
Emard
Brossard
Lasalle
SAINT LAWRENCE RIVER
N
La Prairie
Candiac
St Constant
SOUTH SHORE
LEGEND
45 Isochrones
values given in minutes
Major roads
District boundaries
Sector boundaries
SCALE
0 1 2 3 4 5
miles

FIGURE 11

time taken from the various districts of Montreal. However, it is apparent that the entire western portion of Montreal Island together with Île Bizard and parts of St. Laurent and the Town of Mount Royal are within 20 minutes' journey of the Park. Within the 30 minute isochrone and still on Montreal Island are Lachine and the districts north of Mount Royal with ready access to the Trans-Canada Highway. The 30 minute isochrone also encompasses the norther part of Île Perrot, Dorion on the western mainland, and Chomedy and western Pont Viau on Île Jésus. Almost the entire area of both Montreal Island and Île Jésus are within 45 minutes' driving time of Pointe Claire. Exceptions are the areas immediately to the east and west of the central business district. These two areas suffer the disadvantages of being bottled in by narrow streets and heavy traffic. Small areas surrounding bridgeheads on both the North and South Shores are also encompassed by the 45 minute isochrone but beyond these the journey to Pointe Claire soon becomes of more than one hour's duration.

2. Employees' Commuting Distances

Distances between employees' residences and Pointe Claire have been computed for all respondents. This was done on a straight line basis taking the central point of the Park as zero and plotting a series of concentric rings or zones each of one mile in width. Distances actually travelled proved too difficult to ascertain as few people gave full

details of the routes they travelled. Generally, however, they chose the most straightforward route available to them and, wherever possible, gained access to arterial highways at the first opportunity. Straight line measurements are shorter than routes travelled, of course, but serve as a reasonable approximation. Moreover, since almost all other studies of a similar kind use straight line distances, they are more readily compared.

The graph showing the overall pattern of distances travelled by Pointe Claire's workers, like that of the trip durations, is complicated by a series of peaks and troughs. (see Figure 12). Only 1.4 per cent of the workforce lived within one mile of the Park's centre but the second mile zone, containing 13.4 per cent, could lay claim to a higher proportion than any other zone. With increasing distance there was a steep decline in numbers out to the fifth mile which contained only 2.9 per cent. Beyond this the numbers again increased, reaching peaks in the seventh and ninth mile zones and rising to a final peak in the twelfth mile away from the Park. Just over 25 per cent of the employees were concentrated in the eleventh, twelfth and thirteenth mile zones and a further eight per cent lived at greater distances. Thus, although the 31.7 per cent living within four miles of the Park did display a degree of clustering, this effect was by no means overwhelmingly apparent. The

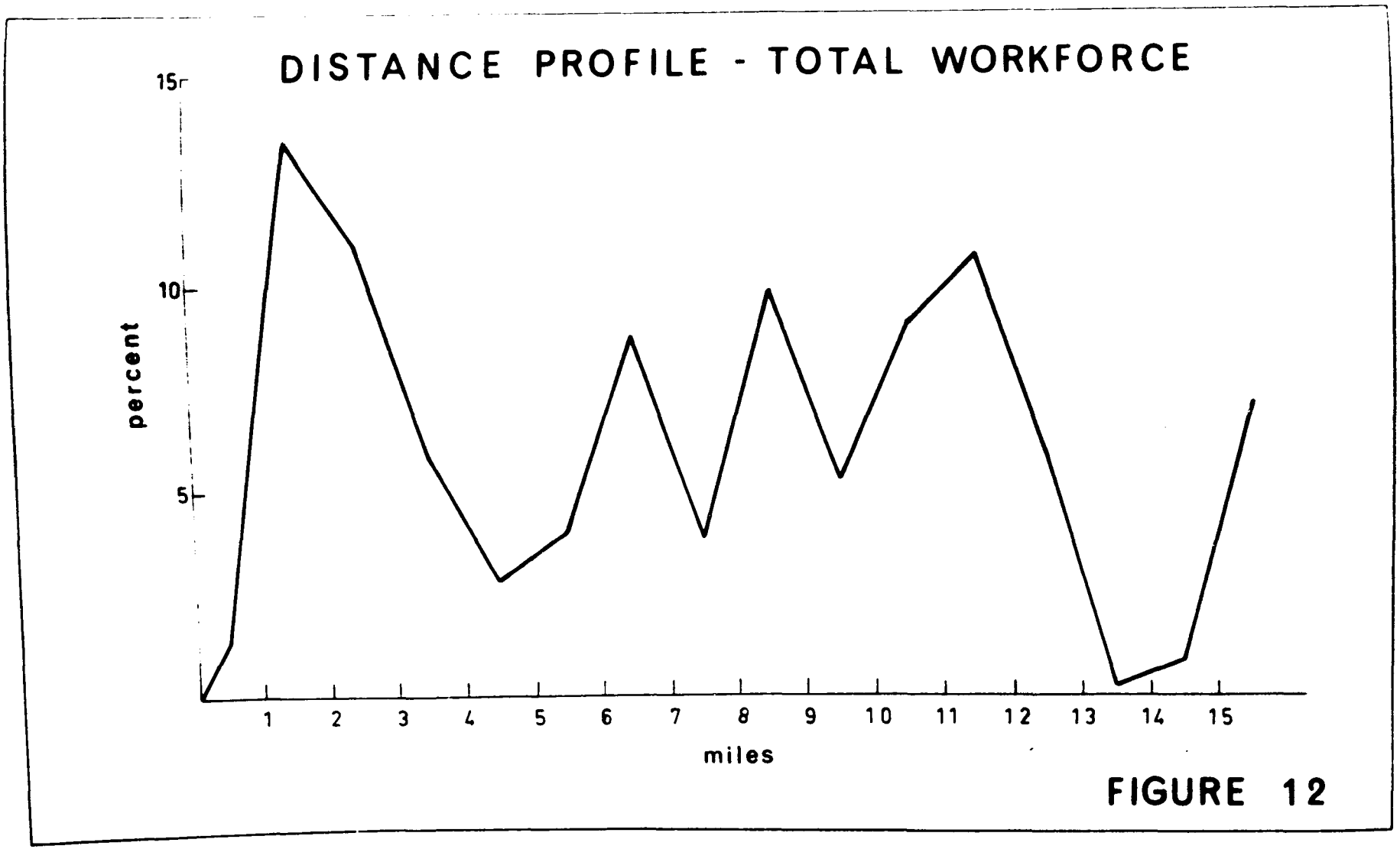

DISTANCE PROFILE - TOTAL WORKFORCE
15
10
5
percent
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
miles

FIGURE 12

average commuting distance was 7.6 miles.

There were distinct contrasts in the distances travelled by employees in the different occupation groups. Table IX shows that whereas the average distances travelled by the manual workers of both sexes were well above the overall mean, the reverse was true for the higher status groups. Male clerical workers were close to the overall mean, but managerial and female clerical staff, as groups, travelled the shortest average distances.

Further contrasts between the occupation groups can be seen in the graphs of Figure 13. Managerial and female office staff showed an obvious tendency to cluster in the neighbourhood of the Park. Almost 40 per cent of both groups lived within three miles of their work. Beyond this distance there was a fairly even distribution over the remaining zones. The only one showing any marked concentration was the ninth which contained close to nine per cent of the female clerical workers and 13.5 per cent of the managerial and professional staff. Male clerical workers not only came the closest to travelling the same average distance as the overall total, their proportions in each zone hardly diverged from those of the total workforce. Approximately 25 per cent lived within three miles of the Park. Manual workers of both sexes showed only a slight tendency to cluster around Pointe Claire. While 18 per cent of the female plant workers lived

TABLE IX

AVERAGE COMMUTING DISTANCES

Occupation	Average Distance (miles)
MALE	
Managers and Professionals	6.0
Clerical and Technical	7.2
Manual	9.2
FEMALE	
Clerical	5.9
Manual	9.1
ALL WORKERS	7.6

DISTANCE PROFILES - BY OCCUPATION GROUP

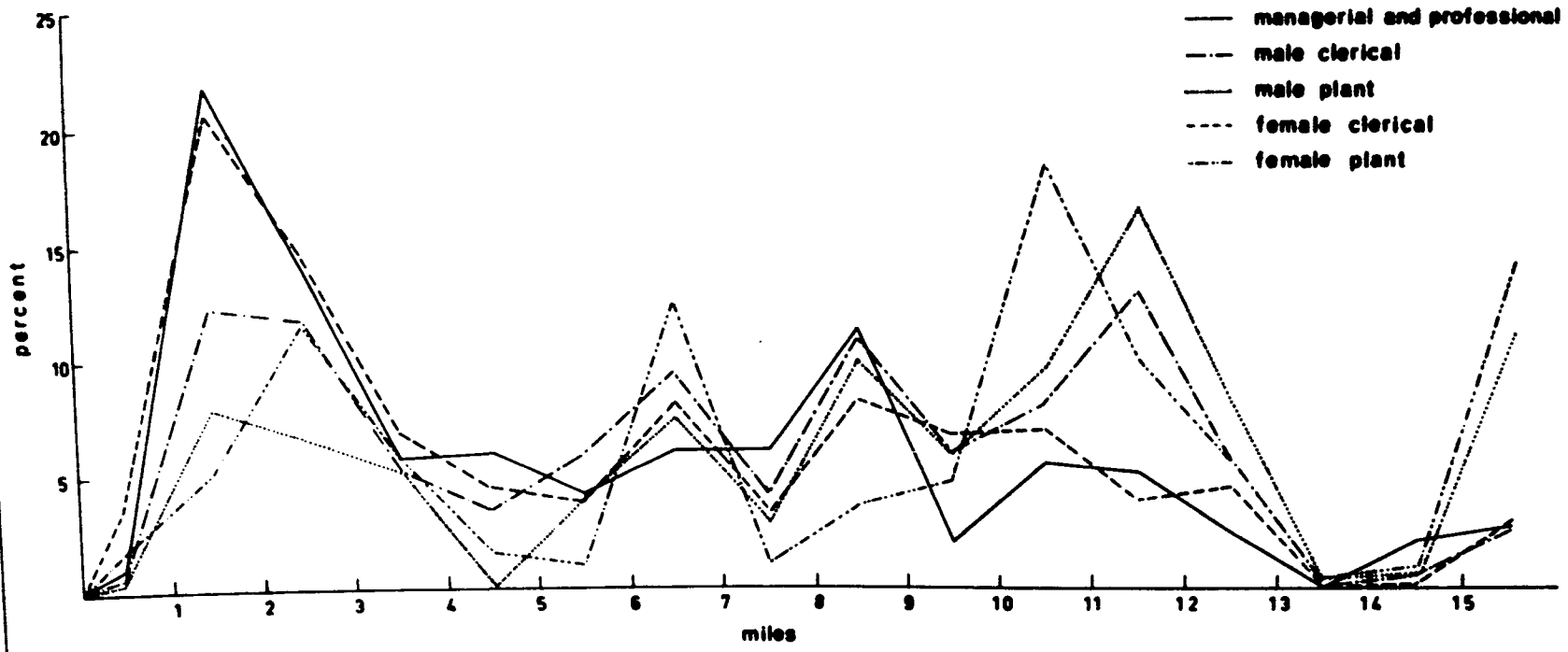


FIGURE 13

within three miles only 15 per cent of the males did so. There were concentrations of male plant workers in the intermediate distances but the zone containing the greatest number was the twelfth which held 16.7 per cent. Another 11 per cent lived more than 15 miles from their work. An even greater proportion of the female plant workers lived this far away, there being 14.3 per cent, a higher proportion than in any other group. The distribution of female plant workers was anomalous in other ways. Their major concentrations were in fewer and different zones than the other groups. More than 18 per cent lived in the eleventh mile zone, nearly 13 per cent in the seventh and almost 12 per cent in the third.

In all groups French speaking employees contributed towards raising the average distances travelled, but the degree of influence varied with the proportions of them in each group. In the manual groups containing the highest proportions of French, the average distances for groups as a whole were less than a mile below those of the French separately. However, in the other three groups the distances travelled by the French were from 1.8 to 2.4 miles greater than for the groups as a whole, with the former figure applying to female clerical workers and the latter to both the male white-collar groups.

The spatial distribution of respondents in the Pointe

Claire survey provide some interesting contrasts with the results of other studies of a similar type. Taaffe found a much greater degree of clustering and a more steady decline in the number of workers as distance from the industrial area increased. Females in all occupations, and especially those in manual jobs, were considerably more clustered than males. The higher income groups tended to have the longer journey to work, while craftsmen and operatives showed the least propensity to cluster (32, pp. 59-88). Similarly, B. Duncan found that manual workers, on average, lived in closer proximity to their workplaces than did white-collar workers (18, p. 52). But although both Taaffe and Duncan were studying the patterns of employees' residences for off-centre workplaces, they were obviously dealing with industrial areas with different spatial relationships to their potential sources of labour supply than occurs in the Pointe Claire case. For example, the industrial area studied by Taaffe is far less peripheral to central Chicago than Pointe Claire is to central Montreal. The seemingly conflicting results of the present study should not therefore be taken to imply that Pointe Claire's employees are in any way peculiar, rather they emphasize Montreal's morphology and pattern of land use.

3. Employees' Residential Locations

The observed distribution of Pointe Claire's em-

ployees can be best illustrated with the aid of maps, and in the same way, their distances from the Park can be more readily accounted for. Figure 14, the first in the map series, gives a very generalized idea of the main residential concentrations of the labour force, but clearly illustrates the more remote locations providing employees. Figures 15 to 19, on the other hand, show in detail how each occupation group contributes to the overall pattern.

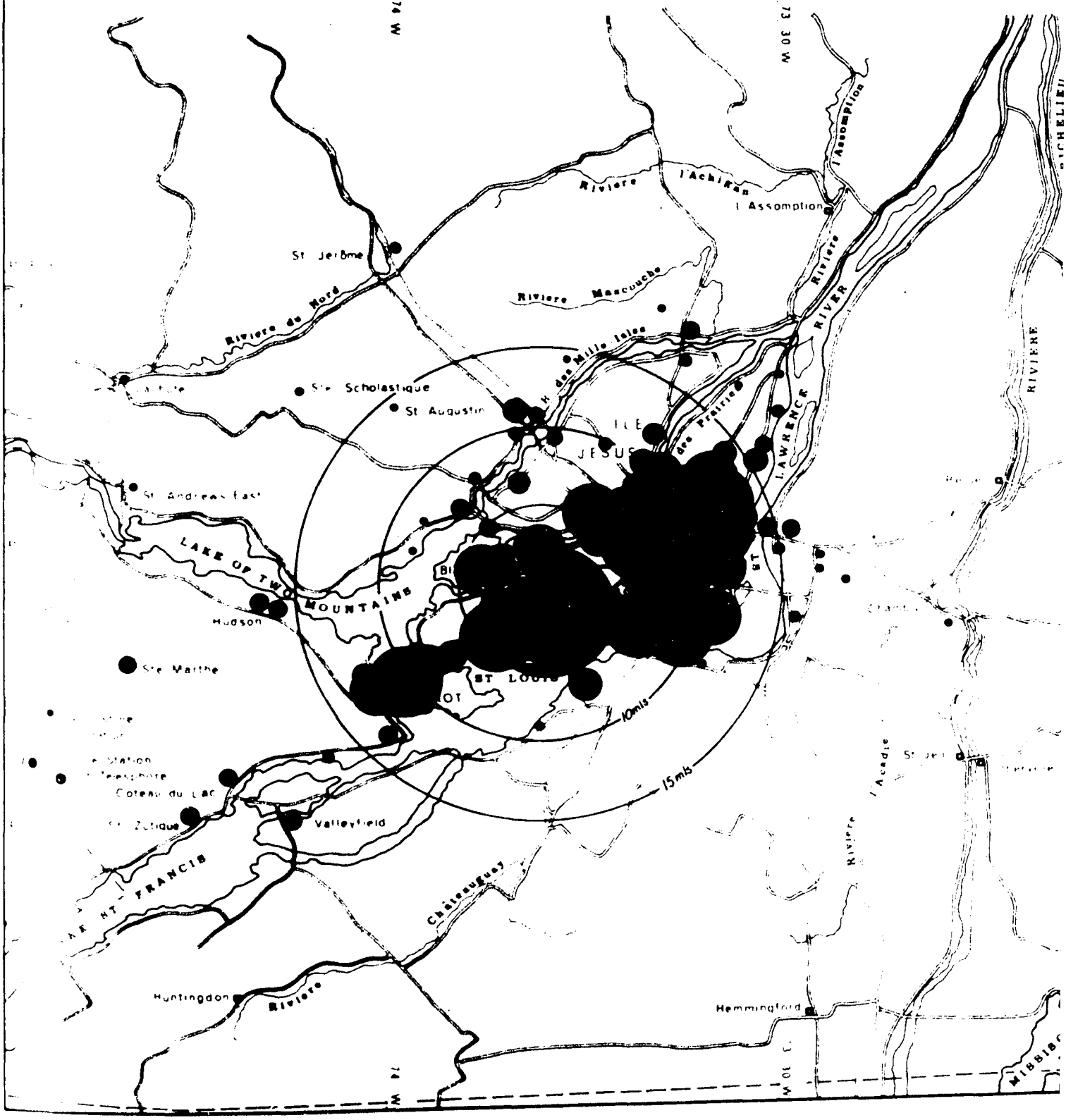
It can be seen how Montreal's site and land use pattern influence the curve on the graph showing workers' distances from Pointe Claire. The size of the Park itself is very largely responsible for the small numbers living within a single mile of its centre. Residences, apart from those required on company premises, are zoned out of the Park and much of the remaining area is not yet built upon. This then helps to explain why the graphs rise to peaks in the second and third mile zones. The lower concentration of employees residing from four to six miles from the Park can be attributed to the presence of water bodies and the large expanses of non-residential land in these zones. Roughly a quarter of the area impinges upon Lake Saint Louis, and in the east the zones encompass the extensive transportation centres of Dorval and Côte St. Luc together with their associated industries. Much of the remaining area to the north and west is rural in character. This also applies to

all further zones, but from hereon until the fifteenth mile, they traverse the densely populated areas of central Montreal which provide Pointe Claire with so much of its labour.

The Park, although drawing its labour from a wide area, taps certain sources a great deal more heavily than others. Table X gives an indication of the major areas of concentration for the various occupation groups, while Figures 14 to 19 provide a visual summary. Broadly speaking, there are two primary areas of employees' residences. The first is the western end of Montreal Island in the centre of which is situated the Park, and the second is the mid-section of the Island where lies the great bulk of Montreal's population. Beyond these areas distance, lack of population and the barrier effects of waterways and alternative job opportunities make themselves felt. Almost negligible proportions were drawn from the North and South Shores and only just over six per cent of respondents were attracted from Île Jésus. Just less than ten per cent came from Île Perrot, Île Bizard and the western mainland. Thus, in general, employees were drawn from zones containing a sizeable labour pool, and especially from those in closer proximity to the Park. In addition, there was a definite tendency for members of each occupation group to come from the residential areas which were suited to their status.

DISTRIBUTION OF EMPLOYEES

total



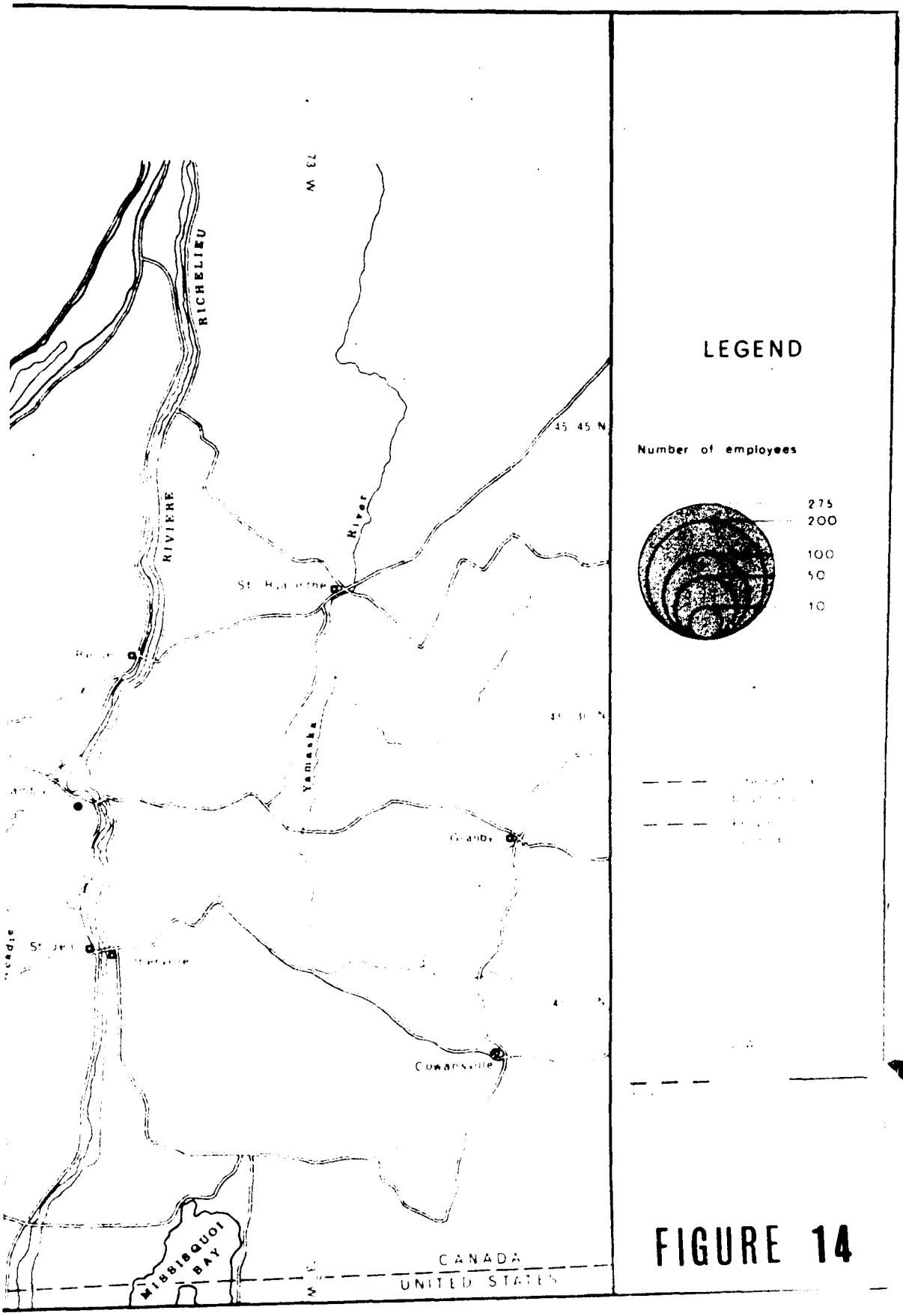
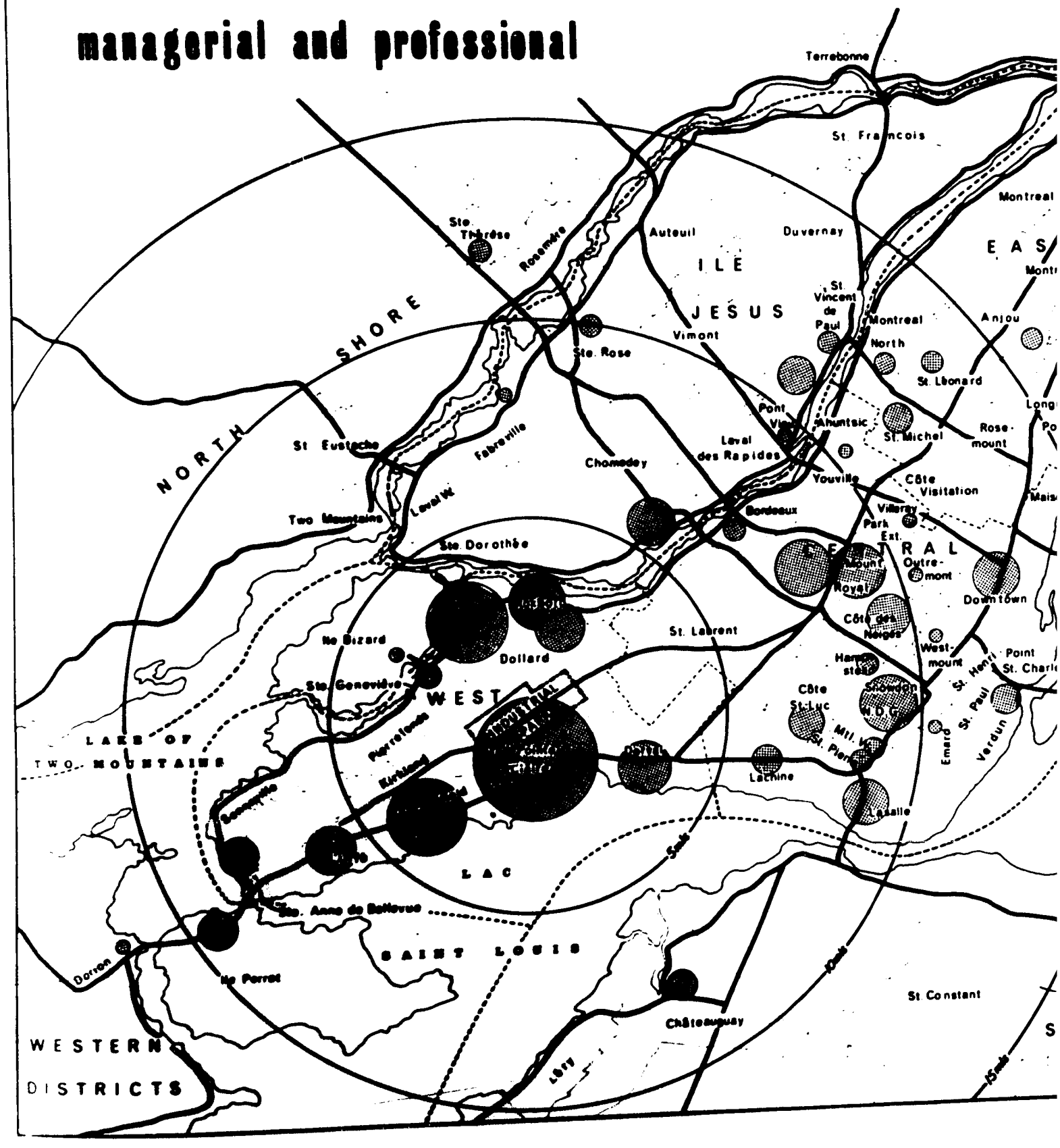

RICHELIEU
RIVIERE
River
Yamaska
St Hyacinthe
Granby
Cowansville
MISSISQUOI BAY
CANADA
UNITED STATES
LEGEND
Number of employees
275
200
100
50
10

FIGURE 14

DISTRIBUTION OF EMPLOYEES
managerial and professional



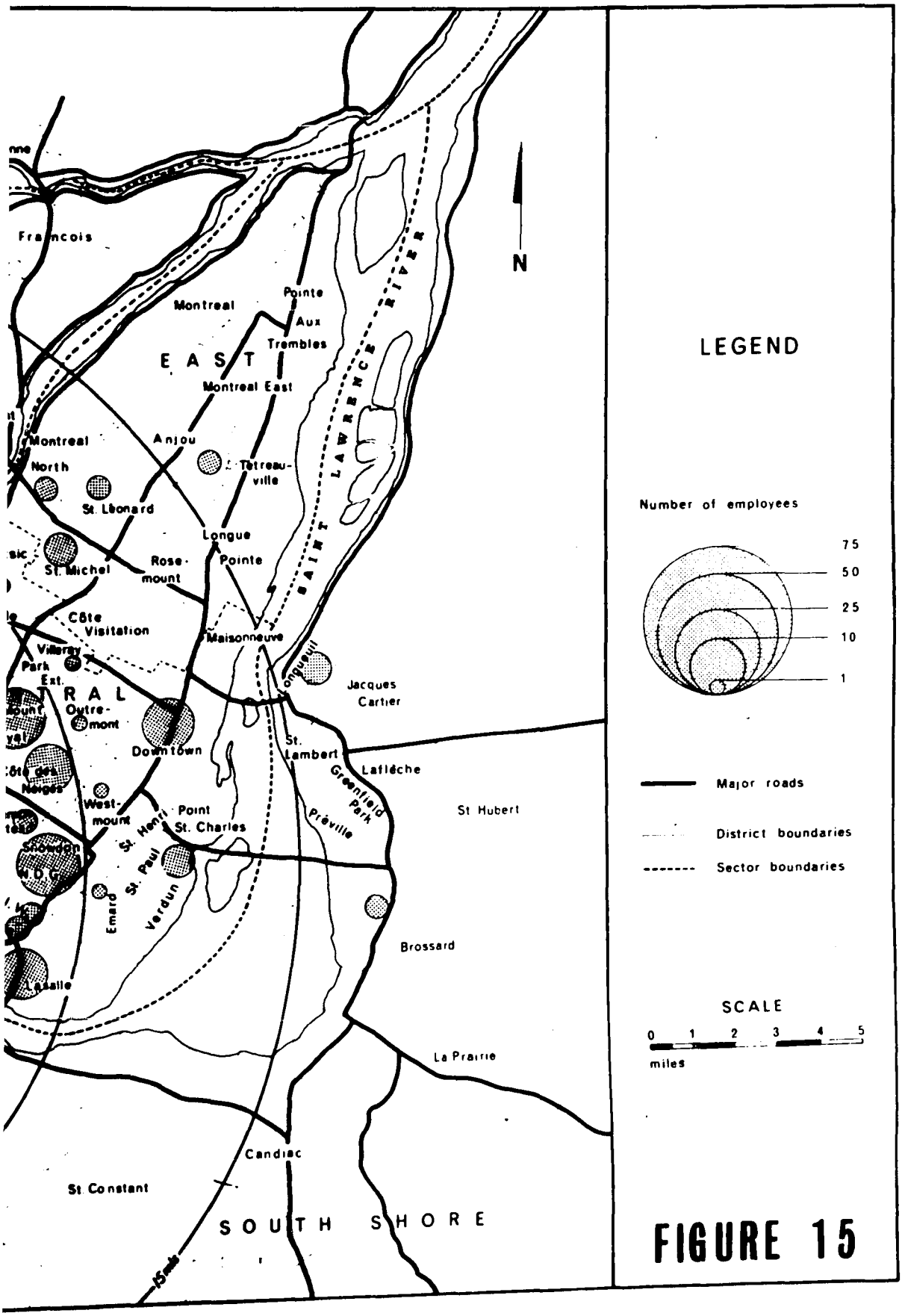
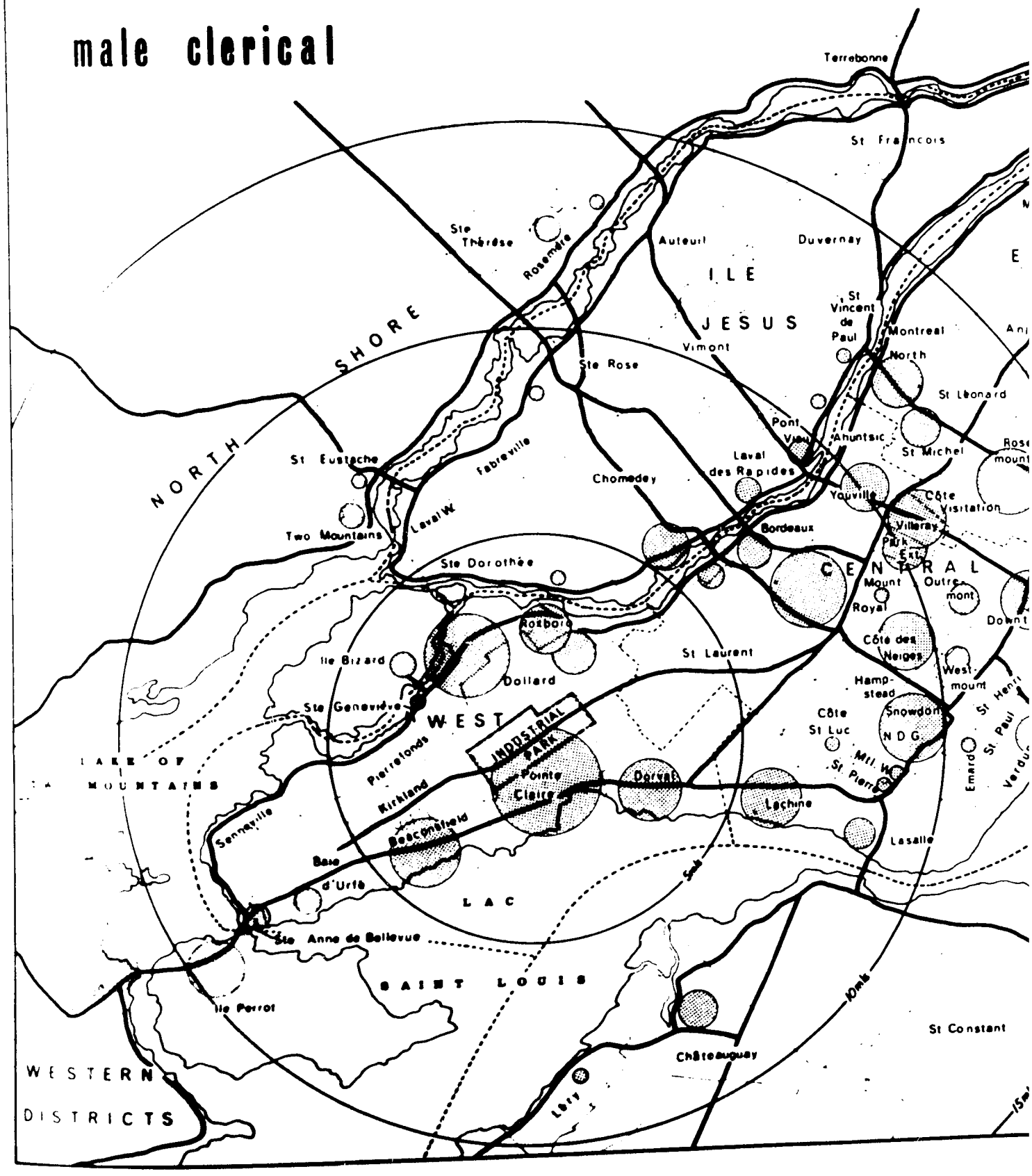
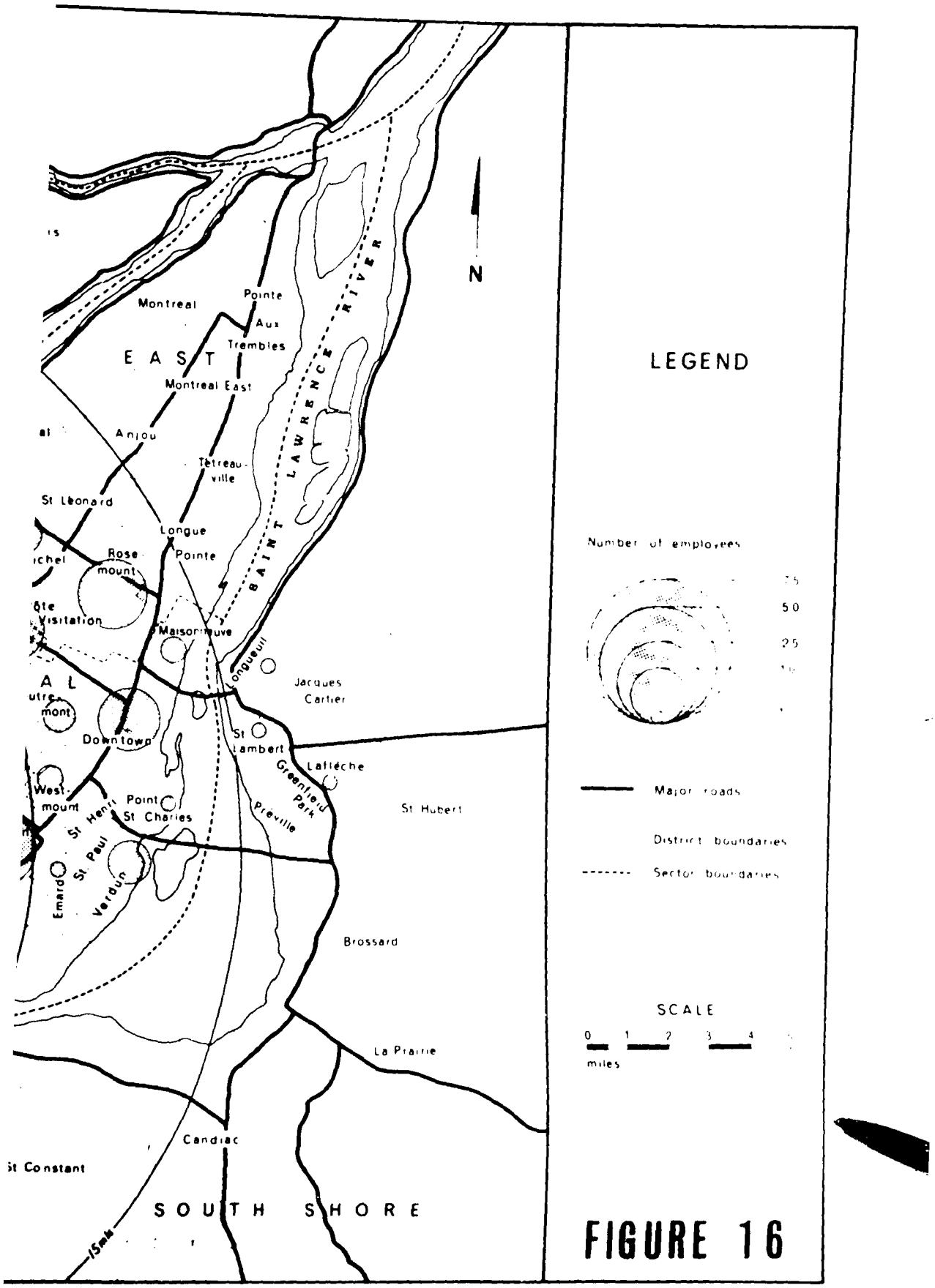

N
Montreal
Pointe
Aux
Trembles
EAST
Montreal East
Anjou
Montreal
North
St. Léonard
Tétreau-
ville
Longue
Pointe
St. Michel
Rose-
mount
Côte
Visitation
Maisonneuve
Park
Ext.
Outre-
mont
Downtown
Jacques
Cartier
St.
Lambert
Laflèche
Greenfield
Park
Préville
St Hubert
Côte des
Neiges
West-
mount
Point
St. Charles
St. Henri
St. Paul
Verdun
Brossard
La Salle
La Prairie
Candiac
St Constant
SOUTH SHORE
SAINT LAWRENCE RIVER
LEGEND
Number of employees
75
50
25
10
1
Major roads
District boundaries
Sector boundaries
SCALE
0 1 2 3 4 5
miles

FIGURE 15

DISTRIBUTION OF EMPLOYEES

male clerical




N
Montreal
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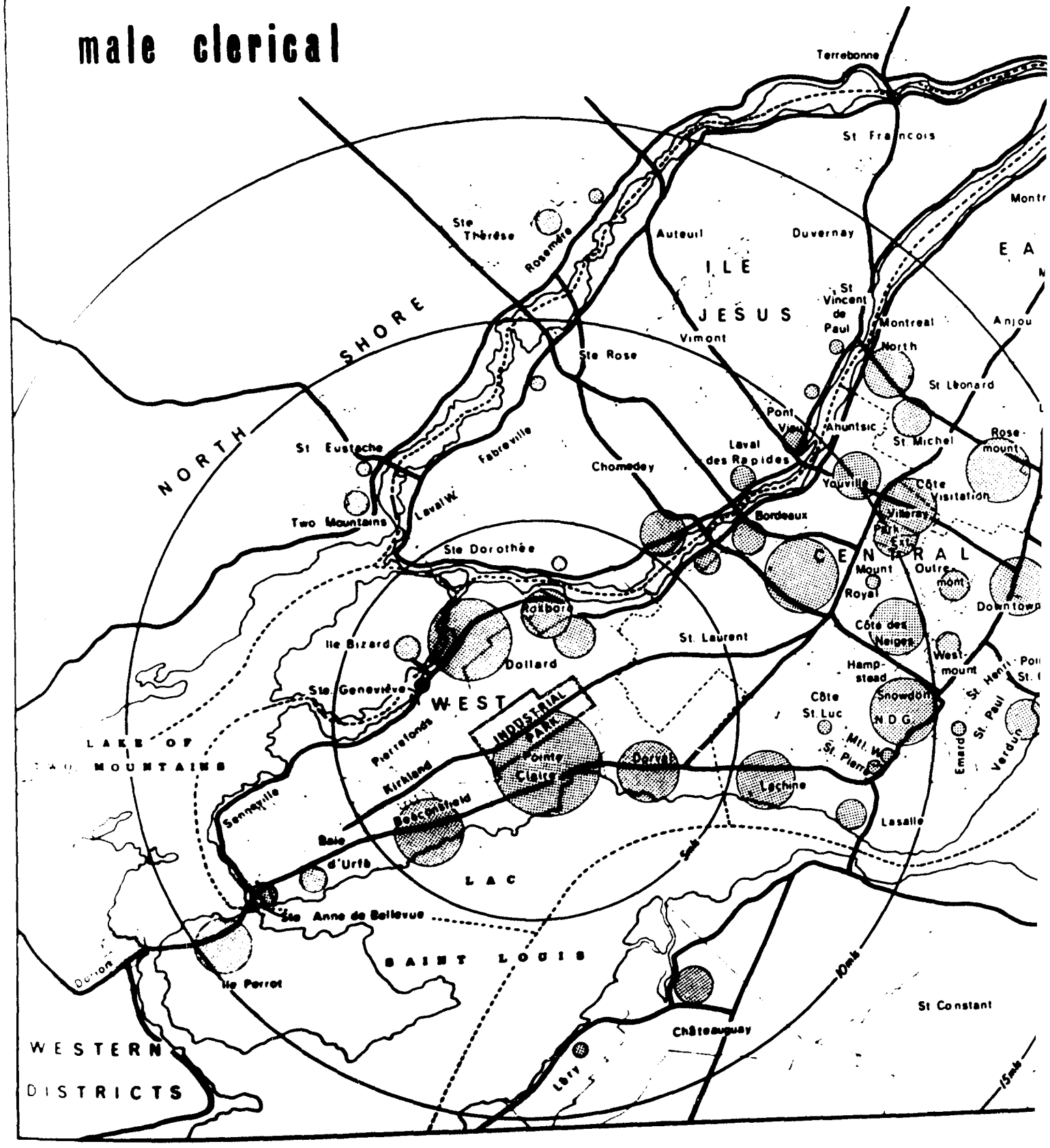
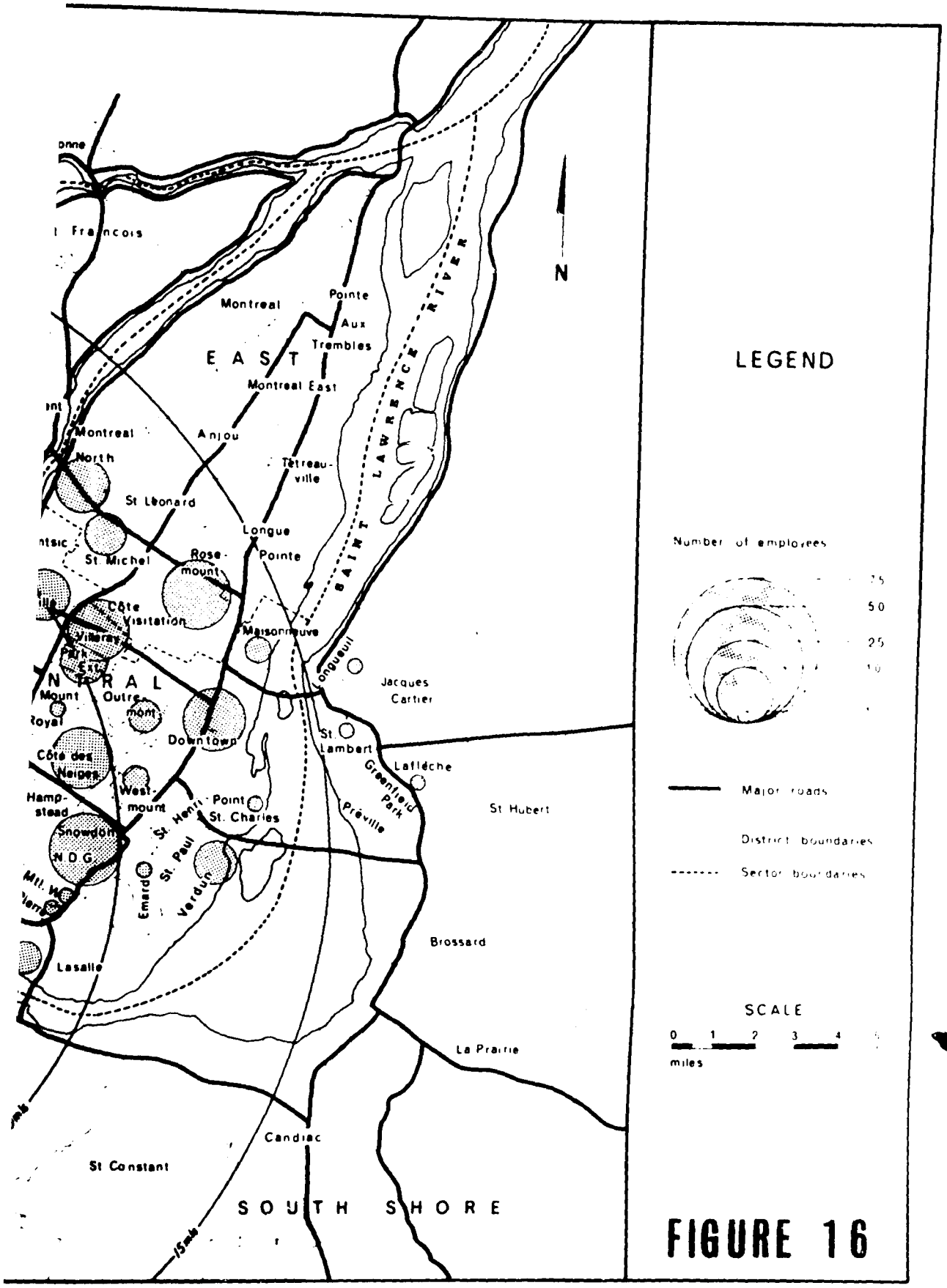
Aux
Trembles
EAST
Montreal East
Anjou
Tetreau-
ville
St Leonard
Longue
Pointe
Rose
mount
Visitation
Maisonneuve
Jacques
Cartier
Downtown
St
Lambert
Lafleche
Greenfield
Park
Preville
St Hubert
West-
mount
Point
St Charles
St Henri
St Paul
Verdun
Brossard
La Prairie
Candiac
SOUTH SHORE
SAINT LAWRENCE RIVER
LEGEND
Number of employees
75
50
25
Major roads
District boundaries
Sector boundaries
SCALE
0 1 2 3 4
miles

FIGURE 16

DISTRIBUTION OF EMPLOYEES

male clerical




N
Montreal
Pointe
Aux
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Montreal East
Anjou
Montreal
North
Tetreau-
ville
St Leonard
Longue
Pointe
St Michel
Rose-
mount
Côte
Visitation
Villeray
Park
Ext.
Maisonneuve
Jacques
Cartier
Mount
Royal
Outre-
mont
Downtown
St.
Lambert
Côte des
Neiges
Lafléche
Greenfield
Park
Préville
Hamp-
stead
West-
mount
St. Henri
Point
St. Charles
St Hubert
Snowdon
N D G
St. Paul
Verdun
Emard
Lasalle
Brossard
La Prairie
Candiac
St Constant
SOUTH SHORE
SAINT LAWRENCE RIVER
LEGEND
Number of employees
75
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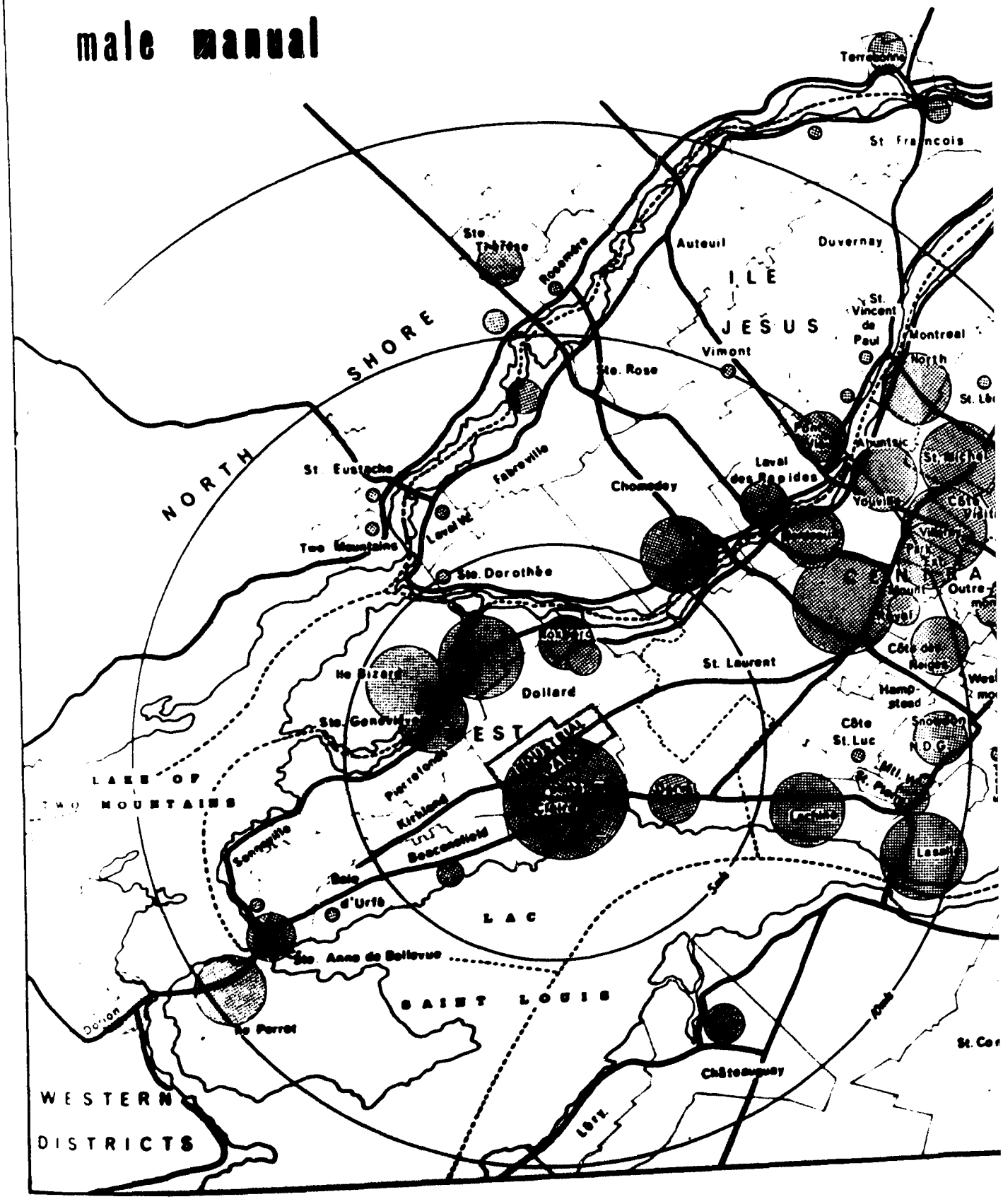
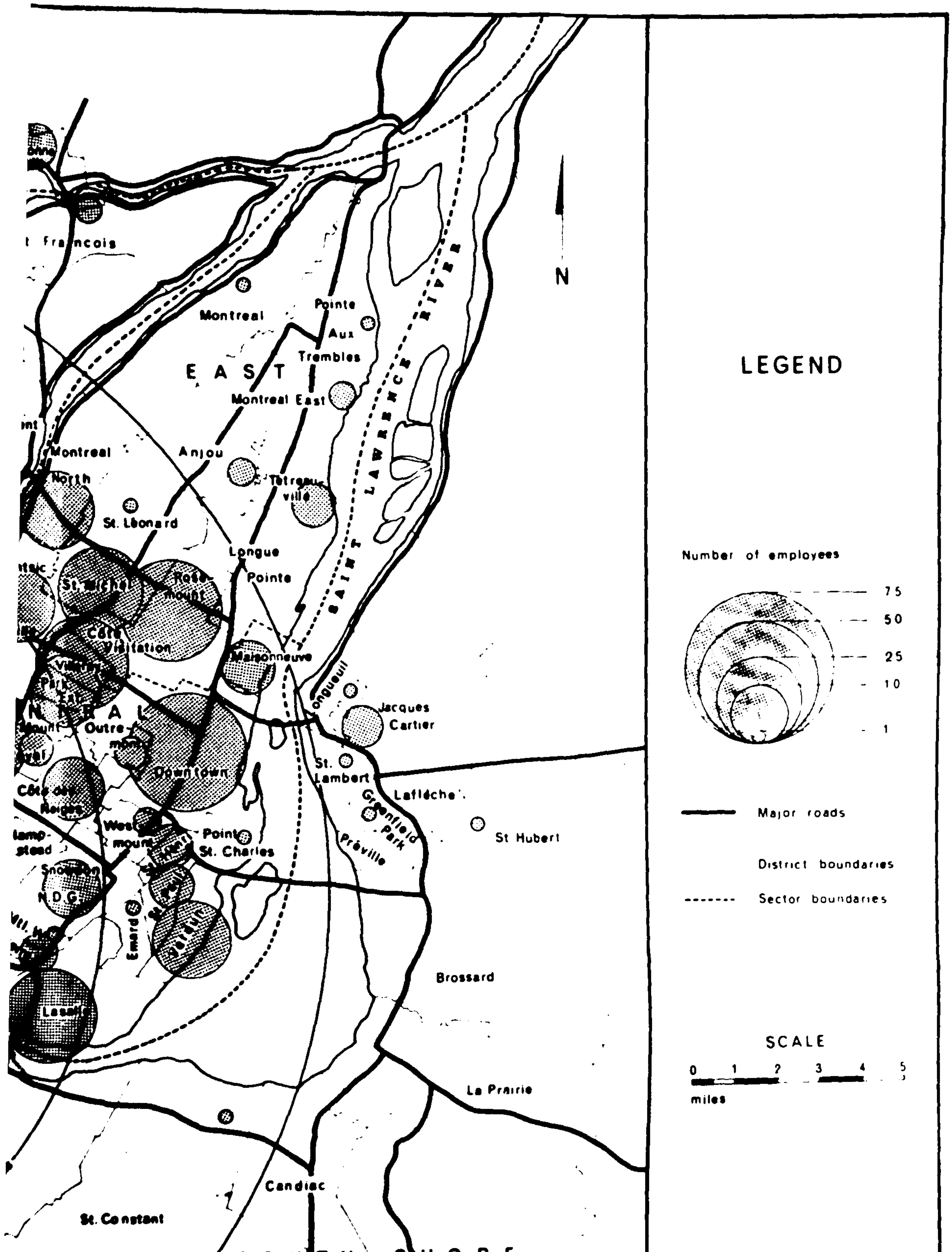
25
10
Major roads
District boundaries
Sector boundaries
SCALE
0 1 2 3 4
miles

FIGURE 16

DISTRIBUTION OF EMPLOYEES

male manual




N
LEGEND
Number of employees
75
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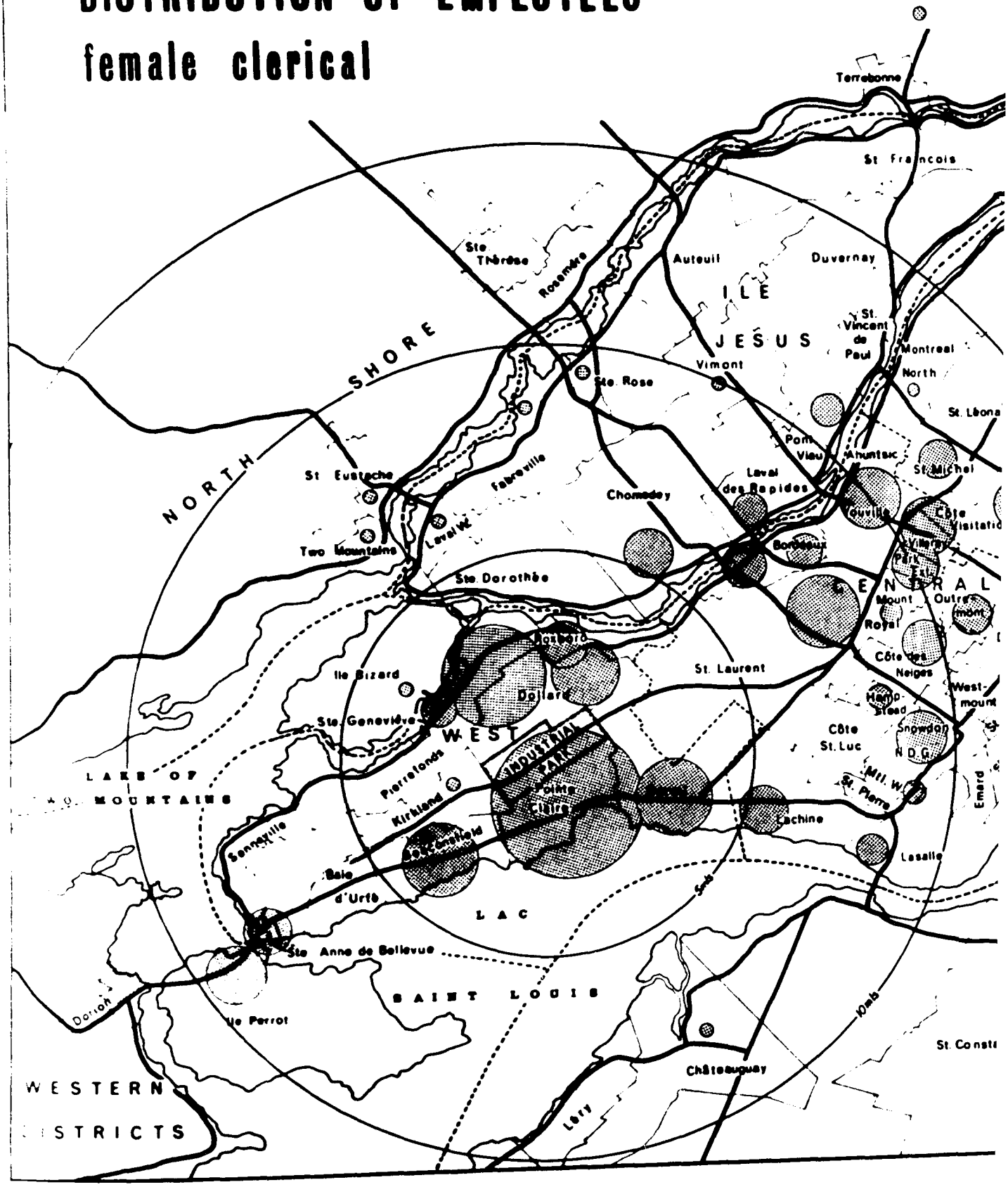
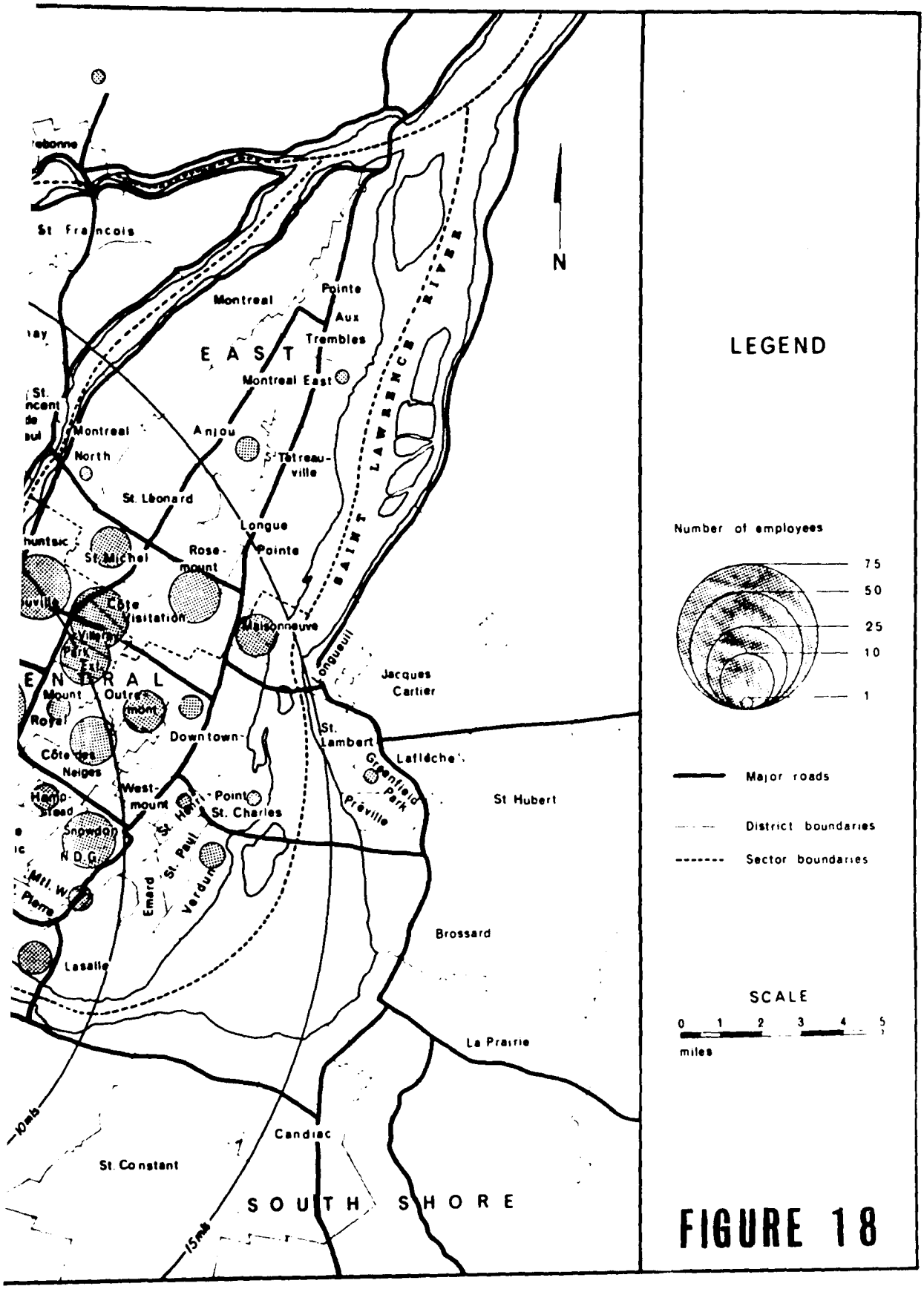
Major roads
District boundaries
Sector boundaries
SCALE
0 1 2 3 4 5
miles
Montreal
EAST
Pointe
Aux
Trembles
Montreal East
Anjou
Montreal
North
St. Léonard
Longue
Pointe
Rose-
mount
St. Michel
Côte
Visitation
Maisonneuve
Outre-
mont
Downtown
Côte des
Neiges
Snowdon
N.D.G.
Emard
Point
St. Charles
SAINT LAWRENCE RIVER
Jacques
Cartier
St.
Lambert
Laflèche
Greenfield
Park
Préville
St Hubert
Brossard
La Prairie
Candiac
St. Constant
SOUTH SHORE

FIGURE 17

DISTRIBUTION OF EMPLOYEES

female clerical




N
LEGEND
Number of employees
75
50
25
10
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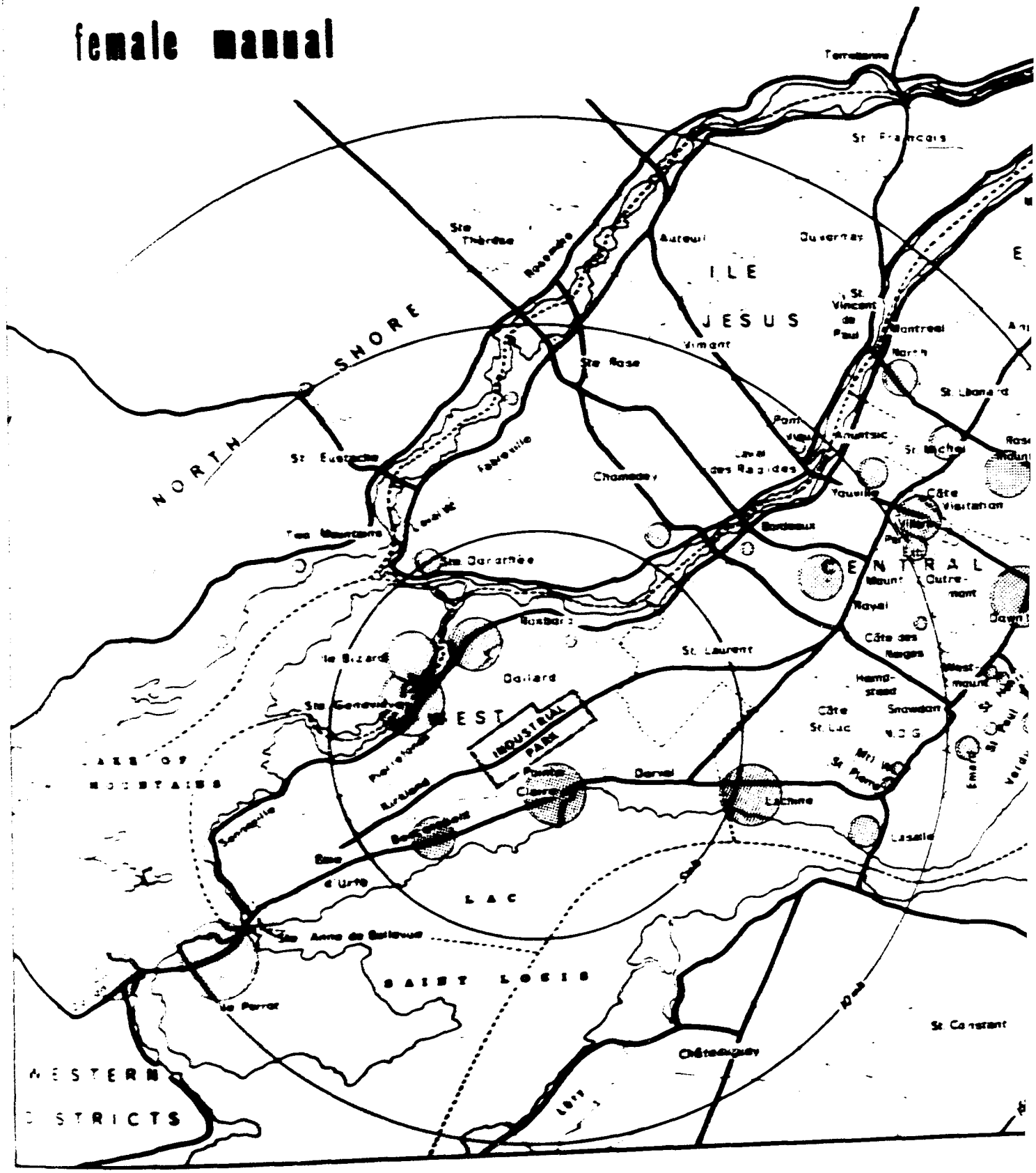
Major roads
District boundaries
Sector boundaries
SCALE
0 1 2 3 4 5
miles
EAST
CENTRAL
SOUTH SHORE
Montreal
Pointe Aux Trembles
Montreal East
Anjou
St. Léonard
Longue Pointe
Rosemount
St. Michel
Côte Visitation
Maisonneuve
Jacques Cartier
Mount Royal
Outremont
Downtown
St. Lambert
Laflèche
Côte des Neiges
Westmount
Point St. Charles
Greenfield Park
Préville
St Hubert
Snowdon
N.D.G.
Verdun
Brossard
Lasalle
La Prairie
Candiac
St. Constant
SAINT LAWRENCE RIVER
FIGURE 18

DISTRIBUTION OF EMPLOYEES

female manual



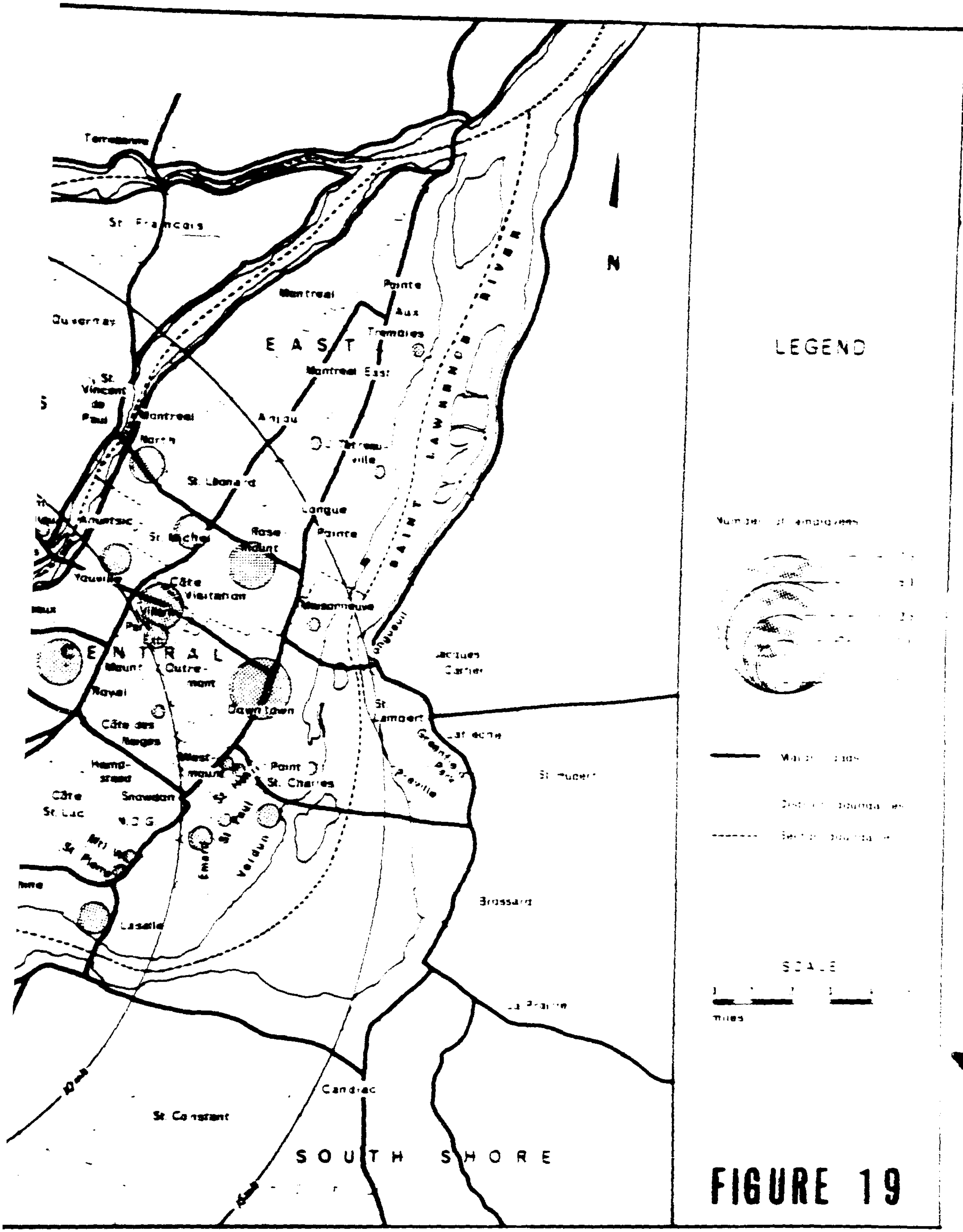
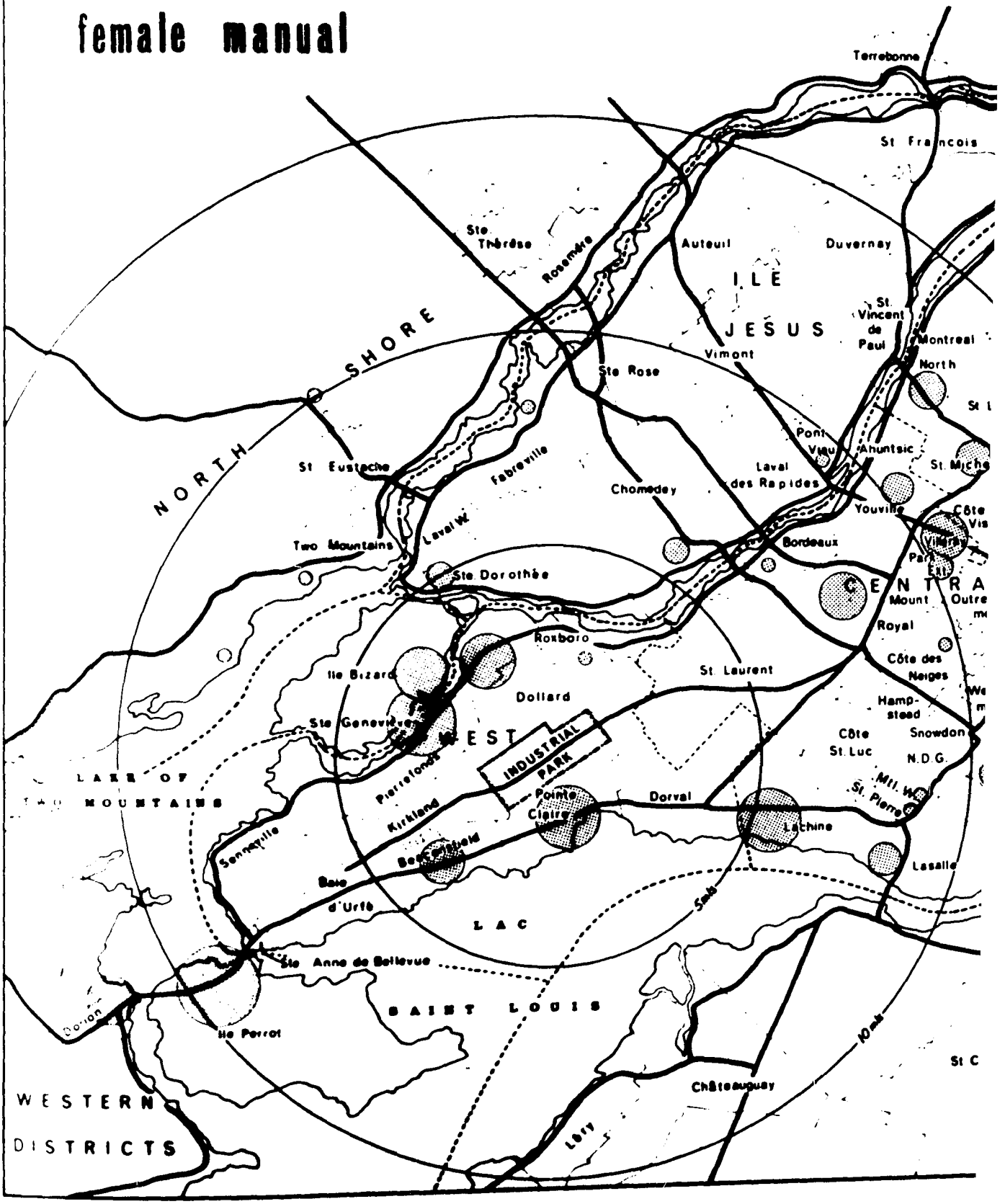

E A S T
C E N T R A L
SOUTH SHORE
SAINT LAWRENCE RIVER
N
Montreal
Pointe Aux Trembles
Montreal East
Anjou
St. Leonard
Montreal North
St. Vincent de Paul
Ahuntsic
St. Michel
Rose-mount
Longue Pointe
Maisonneuve
Côte Visitation
Outre-mont
Down town
Mount Royal
Côte des Neiges
Hamp-stead
Snowdon
Côte St. Luc
N.D.G.
Point St. Charles
Verdun
Lasalle
St. Lambert
Jacques Cartier
Brossard
St. Hubert
La Prairie
Candiac
St. Constant
St. Francois
Terrebonne
LEGEND
SCALE
miles

FIGURE 19

DISTRIBUTION OF EMPLOYEES

female manual



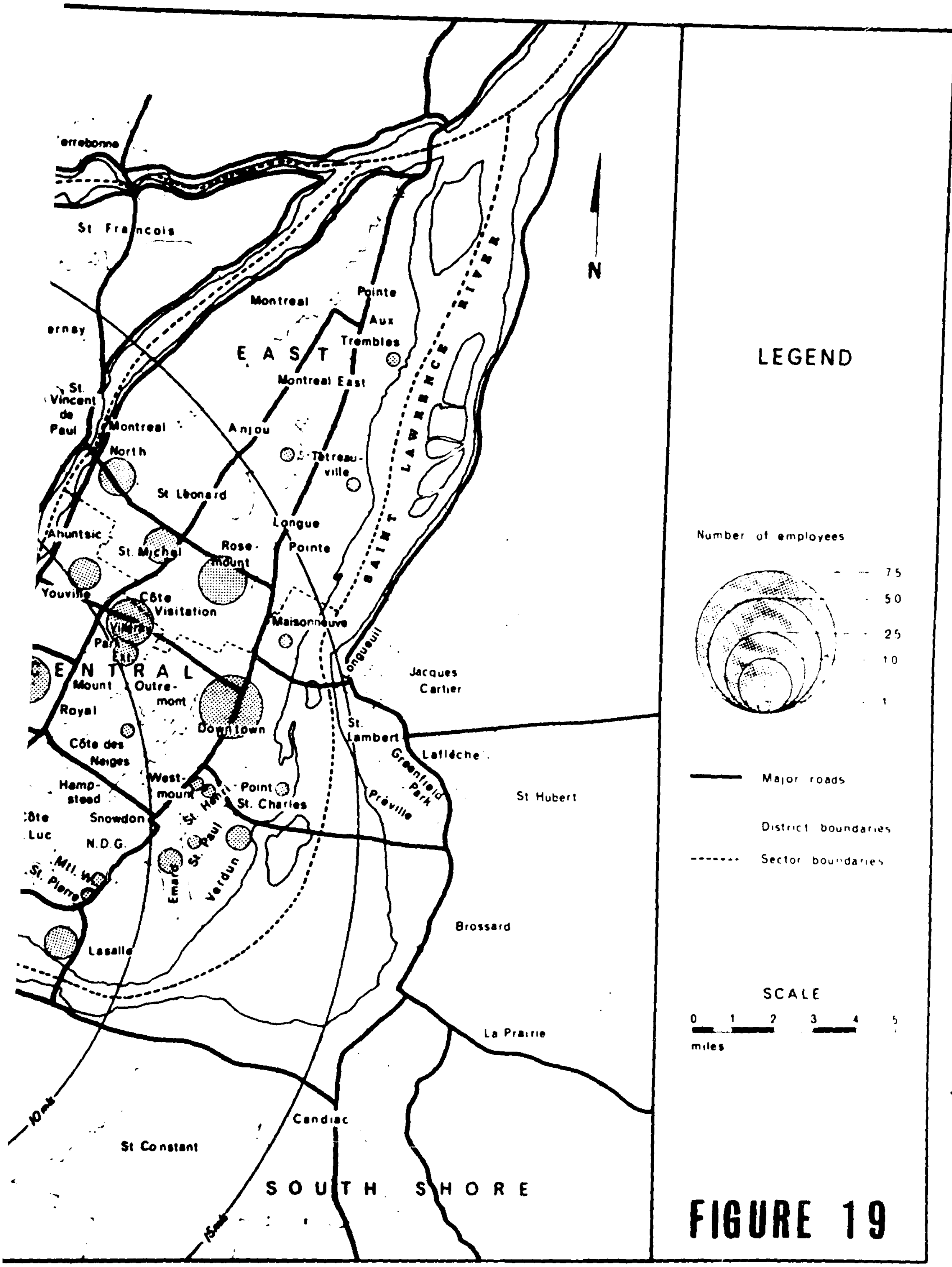

errebonne
St Francois
ernay
Montreal
Pointe
Aux
Trembles
EAST
Montreal East
St. Vincent de Paul
Montreal North
Anjou
Tetreauville
St Leonard
Longue Pointe
Ahuntsic
St. Michel
Rosemount
Youville
Côte Visitation
Villeray
Park Ext.
Maisonneuve
CENTRAL
Mount Royal
Outremont
Downtown
Côte des Neiges
Hampstead
Westmount
St. Henri
Point St. Charles
Snowdon
N.D.G.
St. Paul
Emard
Verdun
Mtl. W.
St. Pierre
Lasalle
SAINT LAWRENCE RIVER
Longueuil
Jacques Cartier
St. Lambert
Laflèche
Greenfield Park
Préville
St Hubert
Brossard
La Prairie
Candiac
St Constant
SOUTH SHORE
N
LEGEND
Number of employees
75
50
25
10
1
Major roads
District boundaries
Sector boundaries
SCALE
0 1 2 3 4 5
miles

FIGURE 19

TABLE X

PERCENTAGE DISTRIBUTION OF EMPLOYEES BY DISTRICT

District	Occupation Group					
	Managerial and Professional (%)	Male Clerical (%)	Male Plant (%)	Female Clerical (%)	Female Plant (%)	All Groups (%)
Montreal Island - West End	55.6	35.6	20.0	51.8	24.7	36.5
Montreal Island - Central	25.1	40.1	42.7	29.4	32.6	35.6
Montreal Island - East End	4.8	8.1	12.8	5.0	9.0	8.6
Ile Jesus	7.1	4.5	7.6	7.0	4.8	6.1
South Shore	2.6	3.3	2.3	0.5	0.0	1.9
North Shore	0.6	1.5	3.2	0.8	1.2	1.7
Western Districts	4.2	6.9	11.4	5.5	27.7	9.6

The managerial and professional group were mainly concentrated in the western end of Montreal Island. Almost 60 per cent lived in this area and 67 of them, or 22 per cent, lived within the boundaries of Pointe Claire itself. Pointe Claire was also the most preferred location for the French managerial staff. Beaconsfield and Pierrefonds were the areas of next highest concentration with 29 and 24 personnel respectively. Baie D'Urfé, Dollard des Ormeaux, Dorval and Roxboro contributed another ten or more each. In the central portion of the Island, Notre Dame de Grace and Snowdon, Mount Royal and St. Laurent were the preferred locations, each district contributing from ten to twelve employees. Chomedy and Duvernay on Île Jésus formed other minor nodal points. Some of the more remote points from which employees of this group came were Sainte Thérèse, Longueuil and Hudson Heights, but these districts supplied only two or three workers apiece.

The highest concentrations of male clerical workers lay in the central districts of Montreal Island. Better than 40 per cent came from this area as compared with 35 per cent from the Island's western end. However, Pointe Claire, containing just over 13 per cent of all employees in the group, still remained the most popular individual district. Pierrefonds, to the north of the Park, was next in popularity. No district in the mid-section of the Island stood out as a major

source except perhaps for St. Laurent which provided 22 employees or nearly seven per cent of the total. Slightly less than 25 per cent of the remainder were drawn from other parts of Montreal and but two localities formed nodal points. These were Rosemount and Côte Visitation in the Island's eastern section and Île Perrot to the west. Respondents from the latter area indicated that they were English-speaking but those from the former were predominantly French. Almost 50 per cent of the French in the group were from the central portion of Montreal Island and especially from the districts of Ahuntsic and Villeray. The English, on the other hand, came primarily from the western end of the Island. Apart from this, their main areas of concentration were St. Laurent, Notre Dame de Grace and Snowdon. Employees in the male clerical group extended the boundary of the Park's labourshed to its furthermost western limits. Two workers were from Dalhousie Station, a small settlement almost on the Ontario-Quebec boundary and more than 30 miles from Pointe Claire. A lone worker from Cowansville, over 50 miles from Pointe Claire, fixed the labourshed's eastern limit.

Male plant workers were less strongly concentrated in the western section of Montreal Island than any other group, whereas they were more prevalent in the central section than their co-workers. Even so, Pointe Claire was the most favoured of all districts in the Montreal area. In this

group however, Pointe Claire residents accounted for only 8.8 per cent of the total while merely one-fifth lived in the Island's western section. Pierrefonds and Ste. Geneviève were the other preferred districts in this section. The 43 per cent living in the central portion were dispersed over all districts but, stated in order of preference, nodal points existed in the areas of: the central Montreal wards, St. Laurent, Lasalle, Villeray and Verdun. However, Rosemount and Côte Visitation, St. Michel and Montreal North, all located further to the east, were equally well represented. Apart from relatively minor nodes at Chomedy on Île Jésus, Île Bizard, and the western localities of Dorion and Île Perrot, the remaining members of the group were quite scattered. Fourteen came from the South Shore but mainly from Montreal's outer suburbs. Rural settlements on the western and northern mainlands supplied an additional few. St. Jérôme, providing two workers, was the most northern point of supply. Although there was a general tendency for workers of this group to congregate in the more central section of Montreal, it was still possible to discern some variation in the ethnic patterns. The English were far more prevalent in the western part of the Island. This was not so evident in the central section, but whereas the English dominated in Lasalle and St. Laurent, the French were in a definite majority in the downtown area and Villeray. They were also dominant in the

eastern suburbs, Île Bizard and Île Perrot.

Of all groups, female clerical workers were undoubtedly the most favourably located with regard to Pointe Claire. More than 53 per cent lived in the western section of Montreal Island, and within this area, 21 per cent resided in Pointe Claire itself and another 10 per cent in Pierrefonds. The English-speaking respondents again showed a much stronger propensity to reside in the western section than did the French. Beaconsfield, Dollard des Ormeaux and Dorval each contributed significant numbers of the former, but Pointe Claire and Pierrefonds were the only two localities supplying ten or more French-speaking employees. The Island's central section contained 30 per cent of the group's employees where they concentrated mainly in the northern suburbs, Lachine, Notre Dame de Grace and Snowdon. The latter three were important sources of English-speaking employees as was St. Laurent in the north. Fewer than 17 per cent of the clerical staff came from areas outside western and central Montreal Island, and these again formed nodes in Chomedy and Île Perrot. The north and South Shores together provided only five employees.

Female employees in manual jobs were the only group for which the Island's western and central sections together did not supply at least 60 per cent. Neither was Pointe Claire the district containing the greatest number.

in the Island's western section, with 25 per cent of the total, Pointe Claire, Pierrefonds and Ste. Geneviève were much the preferred locations. However, while in Pointe Claire there were equal proportions of French and English, employees from the latter two districts were almost exclusively French. The main areas in the Island's central part were, in order of their contributions: Montreal's central wards, Lachine, Villeray and St. Laurent, and of these, only Lachine provided more than two English-speaking workers. Further to the east, Rosemount and Côte Visitation were additional sources. The western districts, supplying over 27 per cent of the group, were very significant. Île Perrot, with 15 per cent of all workers in the group, was the most preferred district. But Île Bizard, Dorion and Vaudreuil were also important sources, as were the rural settlements still further to the west. Employees from these areas were almost all French-speaking. Only two employees came from the North Shore and none from the South.

4. Summary

From the foregoing description it is very evident that the density and distribution of Montreal's population have been of very great influence in shaping Pointe Claire's labourshed. Pointe Claire, although supplying more employees than any other individual locality, provides only a minority of the total numbers required, and even the entire western section of Montreal Island does not provide the majority.

As a result, the central suburbs lying more than six miles and from 20 to 30 minutes driving time from the Park are very important sources of labour supply. The eastern suburbs are from 10 to 13 miles and more than 30 minutes away, while in the west the other important subsidiary sources of Dorion and Île Perrot are the same distance from Pointe Claire but somewhat closer in terms of time. Chomedy, the only significant source of labour on Île Jésus, is within seven miles straight-line distance of the Park but the journey takes almost 30 minutes. On the other hand, Île Bizard, the sole remaining area making a noteworthy contribution is within four miles and very little over 15 minutes driving time. These districts comprise the effective labour market area. Beyond them the extreme limits of the labourshed involve distances of up to 50 miles and more but encompass few additional employees.

The social pattern of residential land use in Montreal is creating a fairly distinctive spatial arrangement for the component parts of Pointe Claire's workforce. Thus each of the occupation groups is developing its own subpattern within that of the primary labourshed. The higher status groups in both the male and female categories tend to live in closer proximity to Pointe Claire and this can be attributed to the fact that the Park is located in an area of higher class residences. Furthermore, the ethnic

composition of these groups is such as to reinforce this situation since, in general, the western section of Montreal Island is more strongly favoured by the English than it is by the French. Being dominated by people of French extraction and of lower status and income, the plant workers of both sexes can less afford to live in the immediate vicinity of the Park. Consequently, they are drawn from the more remote neighbourhoods where they live in greater numbers. The distribution of male clerical workers lies between these two extremes and reflects their intermediate position in the hierarchy. However, as yet the study has been restricted to a description of the pattern of workers' residences at a single point in time. Moreover, Pointe Claire's labourshed has, even in the short period of its existence, been in considerable state of flux. Therefore, before reaching any final conclusions, the development of these patterns should be examined.

CHAPTER VII

EVOLUTIONARY PHASES IN THE DISTRIBUTION OF POINTE CLAIRE INDUSTRIAL PARK'S LABOUR FORCE

From its inception Pointe Claire's labourshed has been subjected to a series of changes which have combined to create its existing form. Firstly, a majority of firms in the Park have relocated from elsewhere in Montreal and in the process have brought with them a proportion of the workers already in their employment. Secondly, losses caused by relocation, expansion of company operations and the introduction of firms new to the Montreal area, have provided a considerable number of job vacancies which have been filled by other workers having no previous connection with the Park. Finally, workers themselves have, over their period of employment in Pointe Claire, had the opportunity to change their residences within the Metropolitan Area. However, because all industries did not commence operations in Pointe Claire at the same time, these events, although often succeeding each other within individual firms, have been occuring concurrently in the Park as a whole as the industries have in turn settled into production. Thus the various discrete phases outlined in this chapter are in fact artificial and serve only to clarify the complex super-

imposition of events leading to the existing distribution of the labour force.

An early intimation of the trends taking place is revealed by the comparison of employee distributions for relatively long established companies with those of the more recent arrivals. Whereas the average distance travelled by employees of firms with up to three and one half years occupancy in the Park was 8.0 miles, the corresponding figure for employees of firms with a longer period of occupancy was slightly lower at 7.2 miles. Even the most superficial examination would therefore indicate that there has been some concentration of the labour force towards Pointe Claire. That this concentration has been a result of changes in the nature of company operations is doubtful, since considerable diversity has been maintained throughout all stages of the Park's development. The demand for employees has been extended to all job categories and not just to those most likely to be filled by people living in the immediate neighbourhood, although without doubt the increased concentration has been affected by the hiring of newcomers.

1. <u>The Initial Phase, and Effects of Labour Recruitment</u>

Almost half of the employees responding to the survey had worked for their company prior to its move to Pointe Claire. (For convenience this group in future will be referred to as "old" workers in contrast to those hired subsequent to the

commencement of operations in the Park. Henceforth, these will be designated as "new" workers.) Table XI gives a breakdown of these two segments of the labour force according to their occupations. Only two occupation groups differed materially from the overall composition. In contrast to the rest, a majority of the managerial group were associated with their companies before these moved to Pointe Claire. On the other hand, by far the greater number of female manual workers were recruited subsequent to their firm's having commenced operations in the Park. The remaining groups were fairly similar in composition to the average in that each contained rather more new workers than old.

It is very evident that, prior to any changes in residential location, the distribution of old workers was more closely related to their firm's previous site than it was to Pointe Claire. This linkage is illustrated in Table XII which gives the average workplace-residence separation for each of the occupation groups first to Pointe Claire and then to former company locations. It is immediately apparent that only the managerial group suffered no particularly adverse effects when their companies relocated. All told, company relocations presented just over 80 per cent of the employees who remained with their firms and an unknown number who sought jobs elsewhere with a longer journey to work. However, almost 40 per cent of the managerial group benefited

TABLE XI

NUMBERS AND PROPORTIONS OF OLD* AND NEW** EMPLOYEES

Occupation Group	New Employees		Old Employees	
	Number	Per Cent	Number	Per Cent
MALES	677	52.2	619	47.8
Managerial and Professional	123	39.5	188	60.5
Clerical	187	56.0	147	44.0
Manual	367	56.4	284	43.6
FEMALES	371	63.2	216	36.8
Clerical	234	58.8	164	41.2
Manual	137	72.5	52	27.5
ALL EMPLOYEES	1,048	55.6	835	44.4

* Refers to employees hired prior to their firm's location in Pointe Claire.

** Refers to employees hired subsequent to their firm's location in Pointe Claire.

TABLE XII

AVERAGE DISTANCES OF EMPLOYEES' RESIDENCES TO POINTE CLAIRE INDUSTRIAL PARK AND PREVIOUS WORKPLACES

Occupation Group	Average Distances	
	Pointe Claire (miles)	Previous Workplaces (miles)
MALES		
Managerial and Professional	7.6	7.3
Clerical	9.1	6.2
Manual	10.8	6.1
FEMALES		
Clerical	8.4	5.8
Manual	11.4	6.3
ALL EMPLOYEES	9.3	6.5

from the shifts in job location. Male plant workers, among whom fewer than 10 per cent found themselves living closer to work, were the hardest hit. In the other groups, 20 per cent of the female clerical staff were favourably affected, as were 17 per cent of the male clerical workers and 14 per cent of the female plant workers. The concentration of old workers in the neighbourhood of previous workplaces was largely responsible for the high proportions living in zones at intermediate distances from Pointe Claire.

Workers hired subsequent to company relocations were distinctly more concentrated around the Park. Contrasts between the two categories are brought in Table XIII. The table indicates that old workers' residences were on average just over two miles more distant than those of new workers. Moreover, employees of all occupation groups recruited by companies at their Pointe Claire location were generally more conveniently situated. The only group whose overall average separation was not appreciably reduced by the hiring of new workers was the managerial which, on the other hand, was already the most favourably located. As might be expected, the average workplace-residence separation of both female groups was substantially reduced by the new recruits.

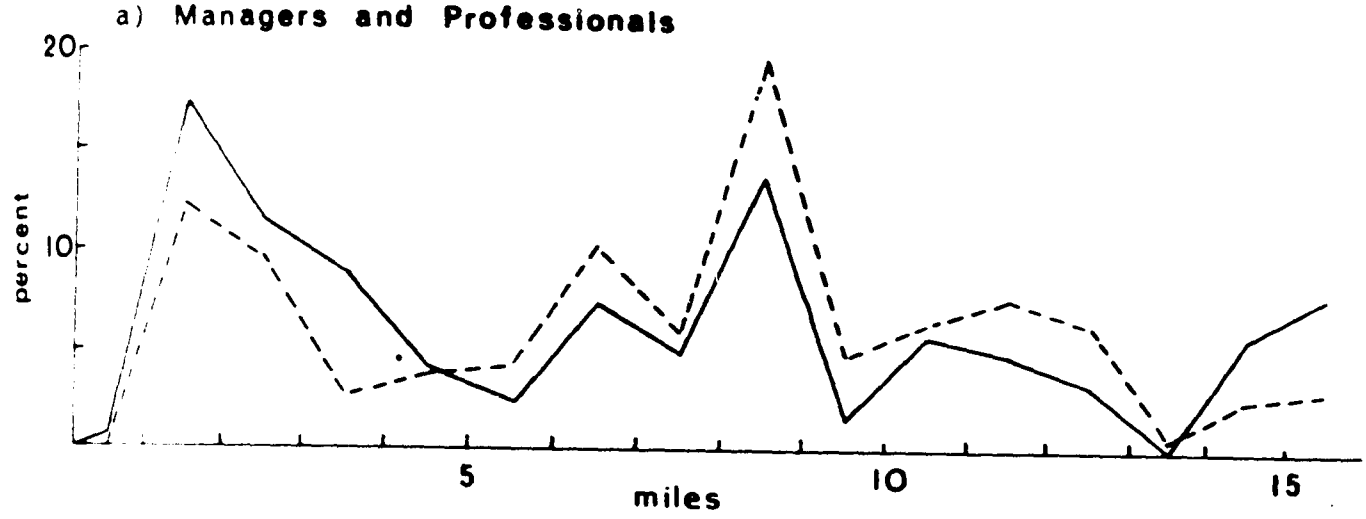
Figures 20 (a) to 20 (f) give a graphical summary of how both new and old workers' residences were distributed with respect to their distances away from the Park. In each

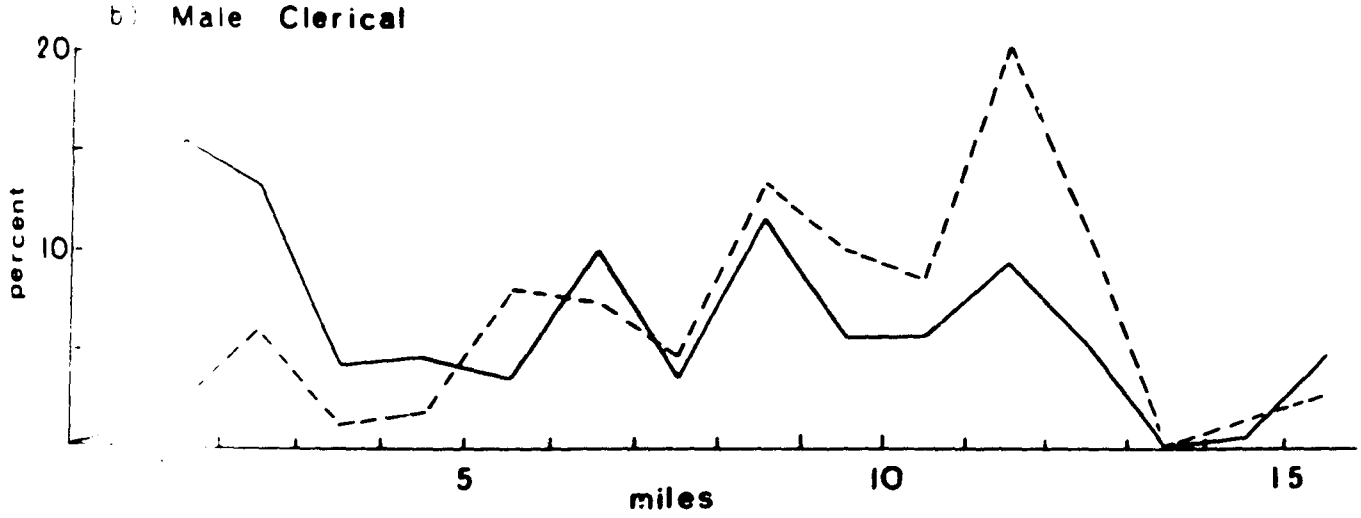
TABLE XIII

AVERAGE DISTANCES TO POINTE CLAIRE INDUSTRIAL PARK OF OLD AND NEW EMPLOYEES PRIOR TO CHANGES IN RESIDENCE

Occupation Group	Average Distances	
	New Employees (miles)	Old Employees (miles)
MALES		
Managerial and Professional	7.2	7.6
Clerical	7.0	9.1
Manual	8.6	10.8
FEMALES		
Clerical	4.5	8.4
Manual	8.2	11.4
ALL EMPLOYEES	7.2	9.3

DISTANCE PROFILES FOR OLD AND NEW

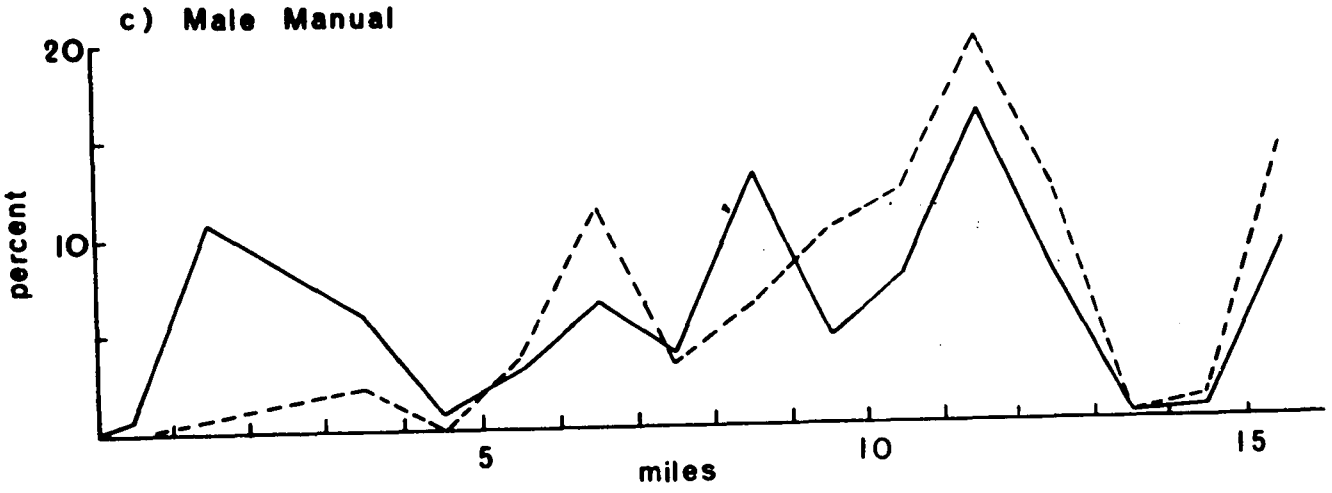


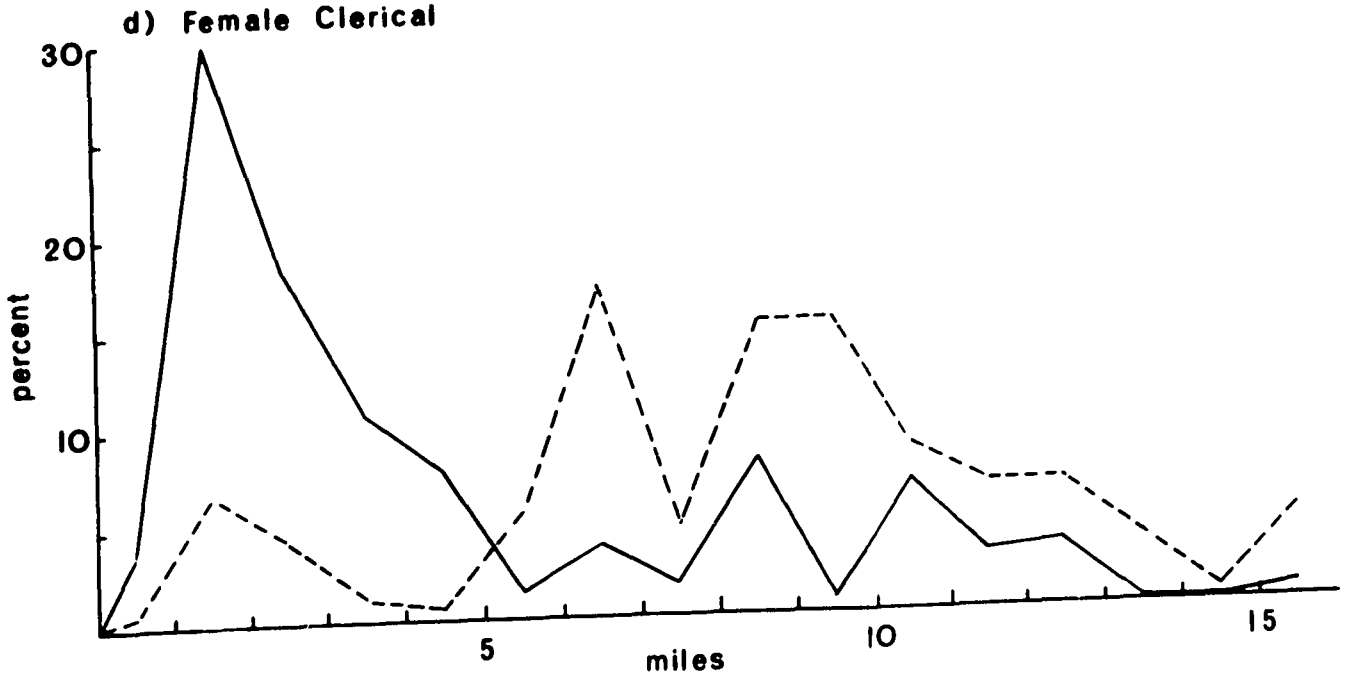


-- Old workers

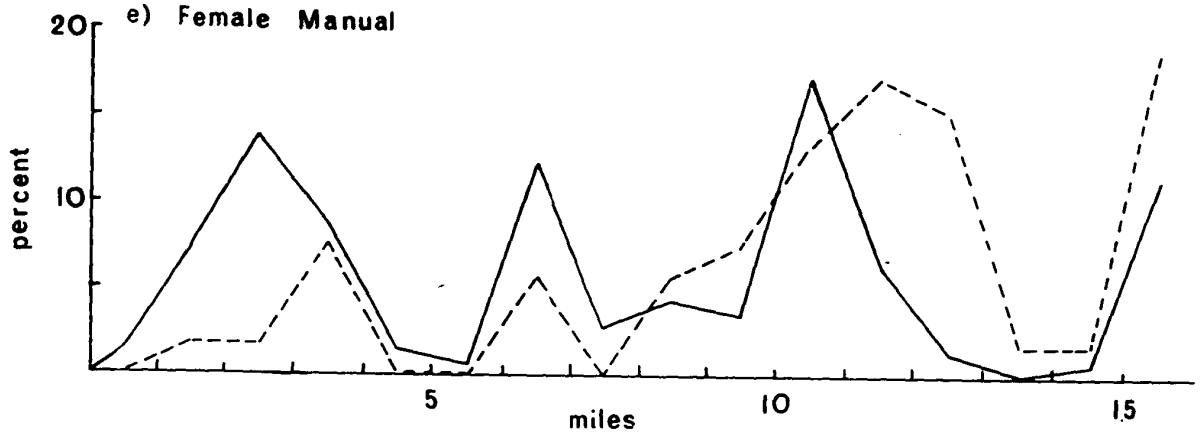
— New workers

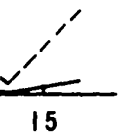
) NEW WORKERS PRIOR TO ANY CHANGES IN





IN RESIDENCE





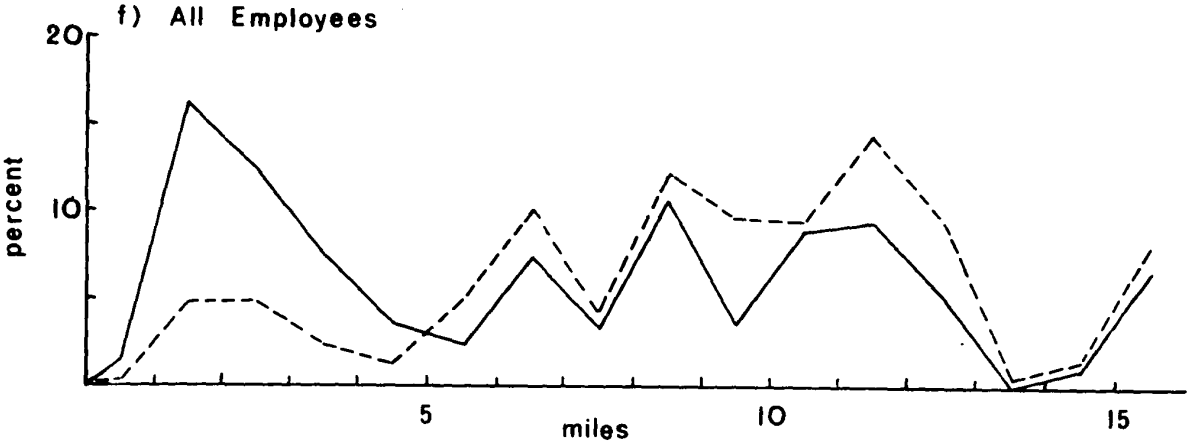


FIGURE 20

case the five innermost zones contained a higher proportion of new workers while the more distant zones generally were dominated by old workers. The most striking contrast was provided by the female clerical group (see Figure 20 (d)). More than 50 per cent of this group's new workers were recruited from areas within three miles of the Park's centre in comparison with the 12 per cent residing there prior to their employer's arrival. Figure 20 (a) confirms the suggestion that new workers of the managerial group merely reinforced the already significant numbers living in close proximity to the Park. An important point arising from a survey of the graphs in general is that, notwithstanding the tendency for new workers to be recruited from areas local to the Park, there were appreciable numbers still being drawn from areas which had supplied the former plant sites. In almost all instances where peaks occur in the graphs of old workers' distances, the corresponding graph for new workers shows a similar trend, although perhaps not to the same degree. This fact lends further support to the suggestion that workers of a particular type are drawn from the areas best able to supply them.

The source areas described in the previous chapter are therefore applicable to both old and new workers, although differing in degree of importance. Normally, however, with new workers there is a shift of emphasis from central districts

to those in the western section of Montreal Island and adjacent areas. Undoubtedly some of the shift has been due to the efforts of the government employment office situated in Ste. Anne de Bellevue. This branch contains Pointe Claire and the region west as far as the Ontario border within its area of jurisdiction. It is evident from the foregoing description that Pointe Claire's industries were still effectively recruiting new workers from over a wide area of the Metropolis. However, the general tendency has been towards a consolidation and clustering of the workforce in the more immediate environs of the Park.

2. Effects of Employees' Changes in Residence

As yet, the analysis has ignored the influence of personal moves in reshaping the overall distribution of the labour force. These however have occurred in large numbers, since almost 34 per cent of all respondents changed their residences at least once subsequent to commencing employment in Pointe Claire. Managerial staff, with 45 per cent of the group having moved, were the most mobile; next were the male clerical workers with 38 per cent, then female clerical staff and manual workers with 32 and 30 per cent respectively. Male plant workers, of whom 29 per cent had moved, were the least mobile. Differences in the degree of mobility between old and new workers, with the exception of the female groups, was minimal. In all three male groups the separation amounted

to less than two percentage points, whereas in both female groups almost ten per cent more old workers had moved than had new workers. The French in all cases were proportionally less mobile than their English co-workers. Appearing to have considerable bearing on the degree of mobility was a worker's stage in the life cycle. Younger married men with small families were appreciably more mobile than either single men or those with larger families. A partial cause of single workers' lower than average mobility was the fact that a large proportion of them had only recently been hired and therefore had not had much opportunity to move. Those single males who had been employed by their company elsewhere in Montreal differed little in mobility from old workers generally.

Changes in residence on the part of old workers have been considered only if they took place subsequent to changes in company locations. This in some instances excludes moves made by personnel in anticipation of company moves. However, notice to employees of company intentions to relocate, although usually given some months in advance, varied sufficiently between firms to necessitate an arbitrary but consistent date being taken. Such a procedure is therefore likely to underestimate somewhat the number of changes in residence directly attributable to company action. It was found that the average length of time elapsing between company relocation and residence moves ranged from 13 to 23 months for the

various occupation groups, while 30 per cent of all moves took place within six months of company action. In general, males allowed a shorter period of time to elapse before moving. The average period for them was less than 18 months, whereas for females it was very close to two years. Even allowing for a period of some months for adjustment, it would not appear therefore that all moves, and especially those made by females, would have been caused by company relocations.

Of course by no means all changes in residence were motivated by changes in company location or even with the object of shortening the journey to work. It has already been noted that almost one-fifth of the old workers benefited from company moves to Pointe Claire, and a comparison of the mobility rates of those who did benefit with those that did not shows only a slight favouring of the employees who were adversely affected. In fact there was a higher degree of mobility among females who were not adversely affected than among those who were. This situation was, however, reversed among male employees. Whereas 50 per cent of the managerial group who did not benefit by their employers' moves themselves moved, only 34 per cent of the remainder did so. Both other male groups followed the same pattern, although not to the same degree. Forty per cent of the adversely affected clerical workers moved as against only 30 per cent of those

benefiting by the shift of industry to Pointe Claire. Corresponding figures for plant workers were 32 per cent and 23 per cent respectively. There appears to be no explanation for the opposite tendencies on the part of females other than that the reasons for their moves were less influenced by their relationship to their workplace. This explanation is reasonable when it is recognized that females, not normally being heads of households, do not have so strong a commitment as males to maintain the security of their jobs. Nor would they exert the same degree of influence in decisions to move. The higher turnover among females gives additional weight to this argument. The reasons given by them for their moves lend further support.

Replies to the question on reasons for changes in residence were processed for all respondents who had moved since working in Pointe Claire. The rate of non-response among females was 15.7 per cent, while for males it was 7.9 per cent. Replies were sorted into seven categories and are reproduced in Table XIV in terms of the proportionate number of times that they occurred. The results of this enquiry confirmed the earlier assumption that most moves were generated by transition through the life cycle. Together, marriage, home purchase and the need for more spacious accommodation accounted for 40 per cent of replies by males and almost as many of those by females. Moreover, in com-

TABLE XIV

RELATIVE FREQUENCIES OF REASONS GIVEN BY MOVED EMPLOYEES FOR CHANGING RESIDENCE

Occupation Group	Frequency of Reasons Given ✱						
	To be Closer to Work (%)	To Purchase Home (%)	More Spacious Accommodation (%)	Improved Accomm. (%)	Improved Location (%)	Marriage (%)	Other (%)
MALES	24.8	15.3	17.0	15.0	19.0	7.8	1.1
Managerial and Professional	31.0	13.3	12.4	16.7	22.8	3.3	0.5
Clerical	19.3	16.7	18.7	16.1	18.7	9.3	1.2
Manual	22.1	16.6	21.0	12.1	14.9	11.6	1.7
FEMALES	11.8	16.1	15.1	22.0	24.2	7.0	3.8
Clerical	12.2	19.1	11.5	21.2	25.3	6.9	3.8
Manual	10.9	9.1	23.6	23.6	21.8	7.3	3.7

✱ Given as a percentage of total number of responses offered by employees of each occupation group.

paring the relative frequency of these replies between male occupation groups, they occur in a pattern to be expected from the age composition of employees. A similar variation between groups, although this time related more to income and status, is apparent in the proportions of males indicating that their decision to move was based on the desire for general improvements in location and accommodation. It is understandable that managerial staff, who would presumably have the most freedom of choice in decisions concerning desires rather than needs, should give the highest proportion of replies to this effect. Their obviously greater concern with the desirability of being within reasonable proximity of their work thus falls into place. Employees in the lower ranks, notwithstanding a strong preoccupation with the more basic necessities of housing, were still conscious enough of the advantages of having a shorter journey to work to quote this as a reason for moving more frequently than any other. Old workers who moved stated that they had done so in order to be closer to work with slightly greater frequency than new workers, but the difference amounted to only five percentage points. The responses given by female employees quite clearly demonstrated their stronger concern for the hone environment. For them the journey to work was a secondary consideration. It should be noted that the possibility exists of there being some bias in responses to the enquiry into

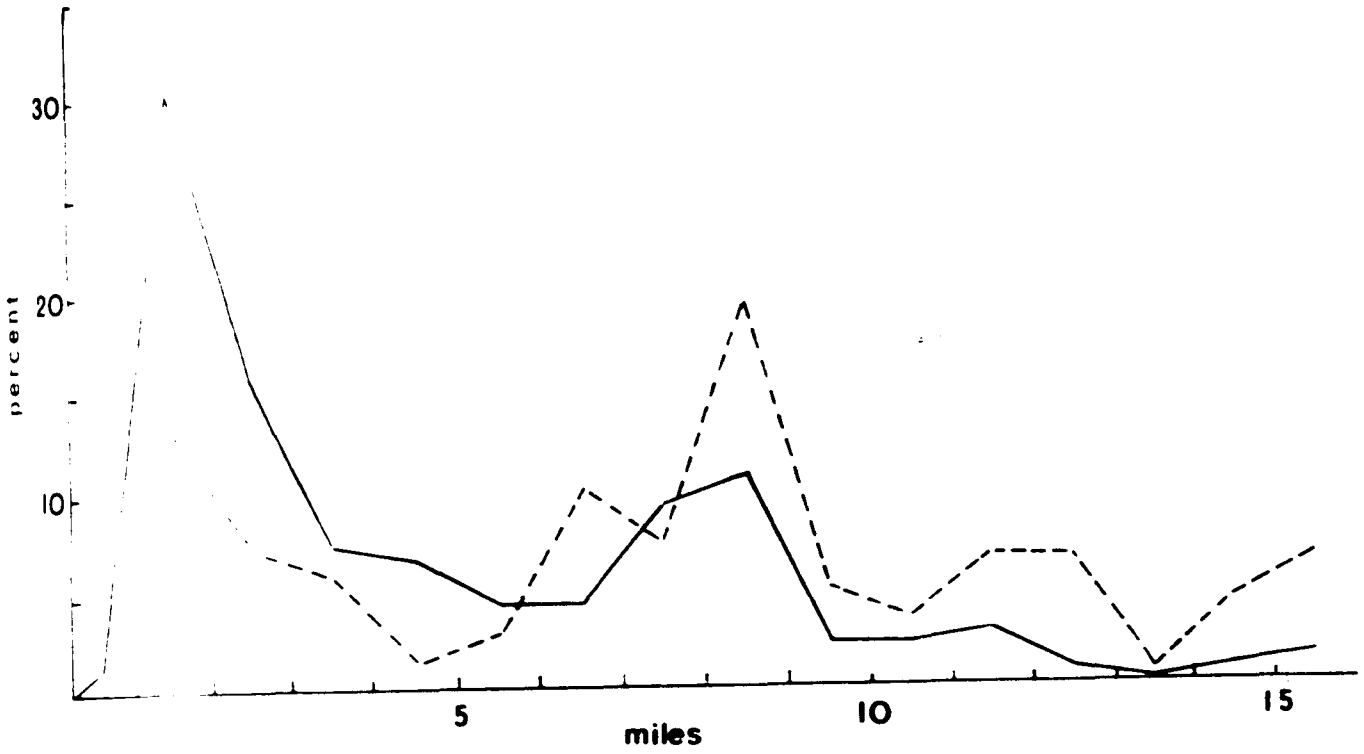
motives underlying moves, since the nature of the questionnaire was such as to bring unavoidable attention to the relationships between home and work. However, it will be seen that actual shifts in residential location confirm the preceding results.

A greater number of employees in fact reduced the length of their work trip than their stated reasons would indicate. Of all changes in residential location, 47 per cent resulted in shorter distances between home and work than had been previously the case. A further 32 per cent did not affect the distance from work, leaving 21 per cent which increased the degree of separation (see Table XV). On the whole, the direction of moves was related to the original distance from Pointe Claire. Moves from zones within six miles of the Park were, as often as not, contrary to its gravitational pull. However, in zones beyond this limit the number of moves contributing to a greater clustering of employees around the Park in all cases outnumbered those to still more remote zones (see Figure 21 (f)). The net effect was to decrease the average distance between the Park and the residences of employees who had moved from 8.3 to 6.6 miles, a reduction of 1.7 miles.

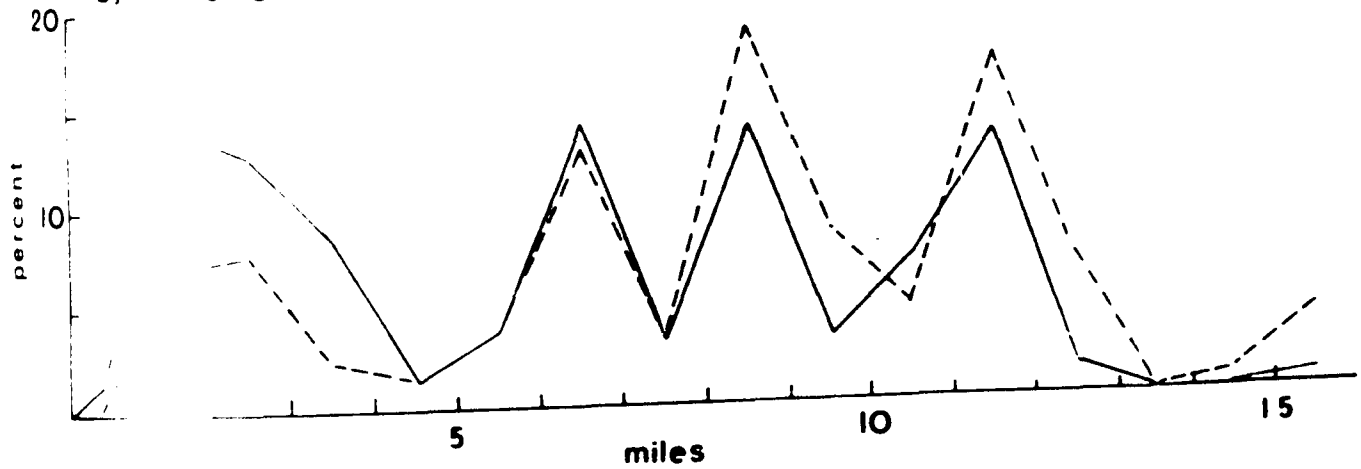
Changes in residential location by the various segments of the workforce were generally consistent with the overall pattern. Table XV demonstrates that old workers were

DISTANCE PROFILES FOR MOVED WORK

a) Managers and Professionals



b) Male Clerical



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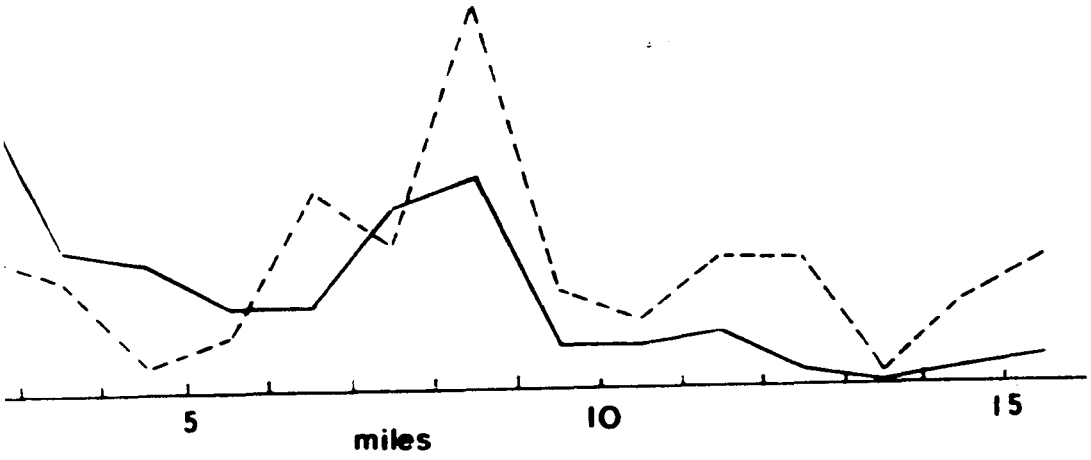

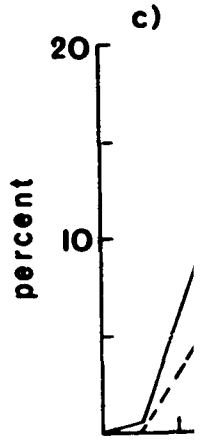

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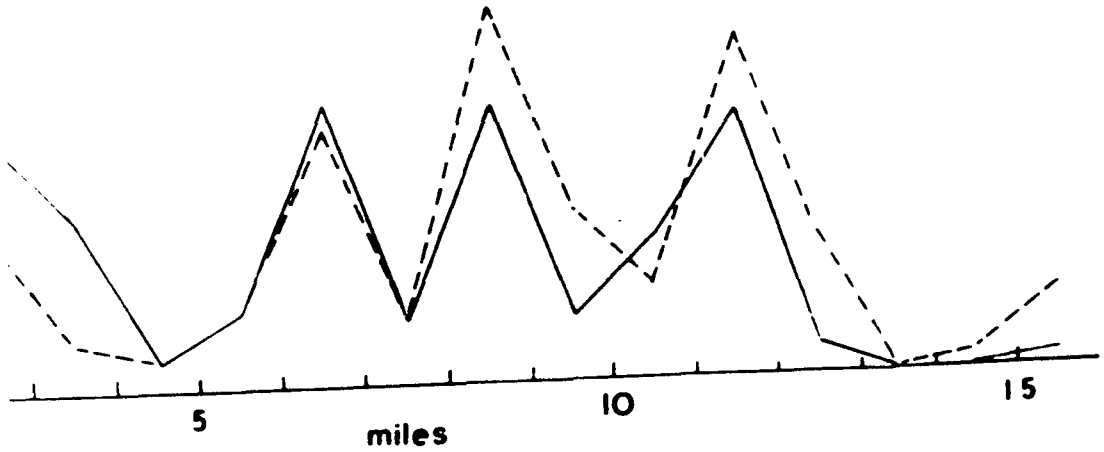

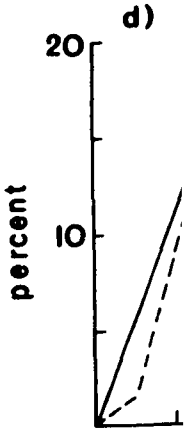

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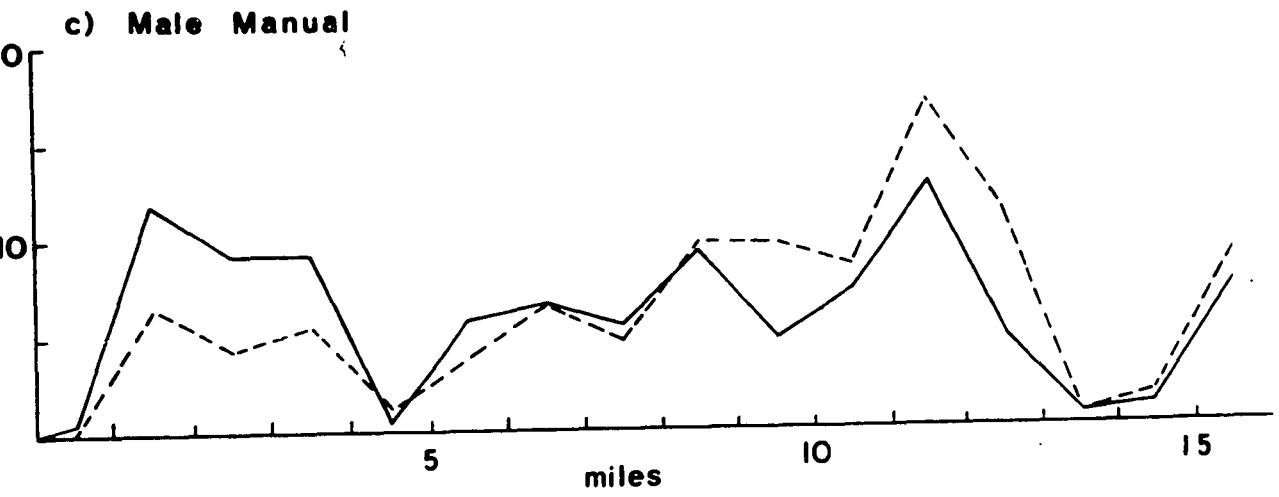

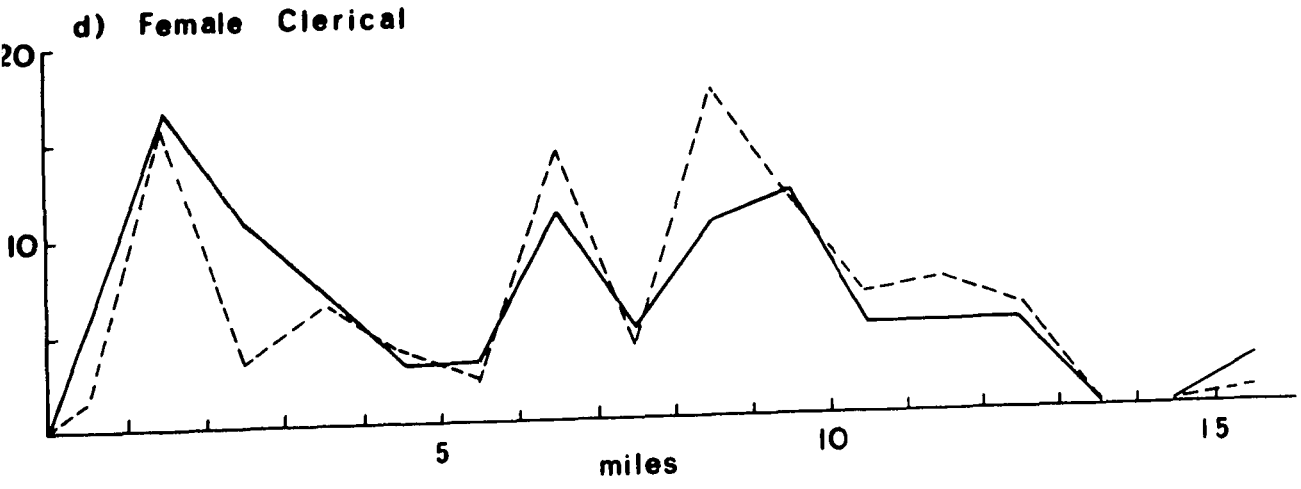

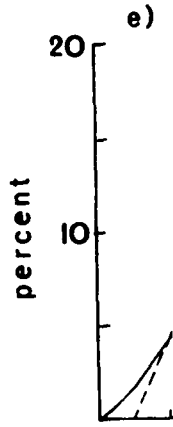

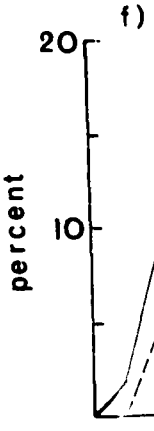

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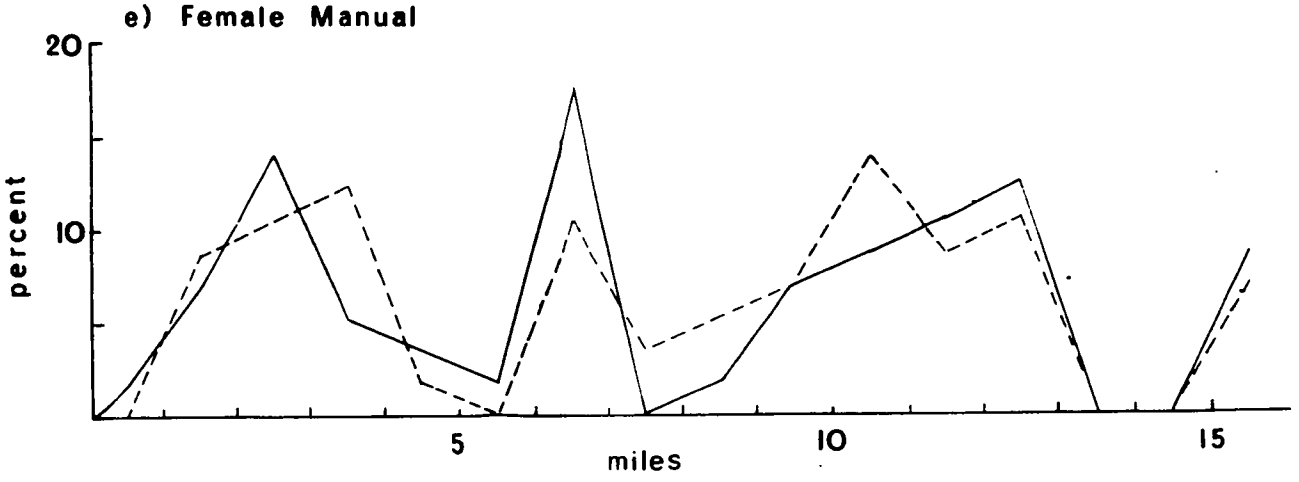


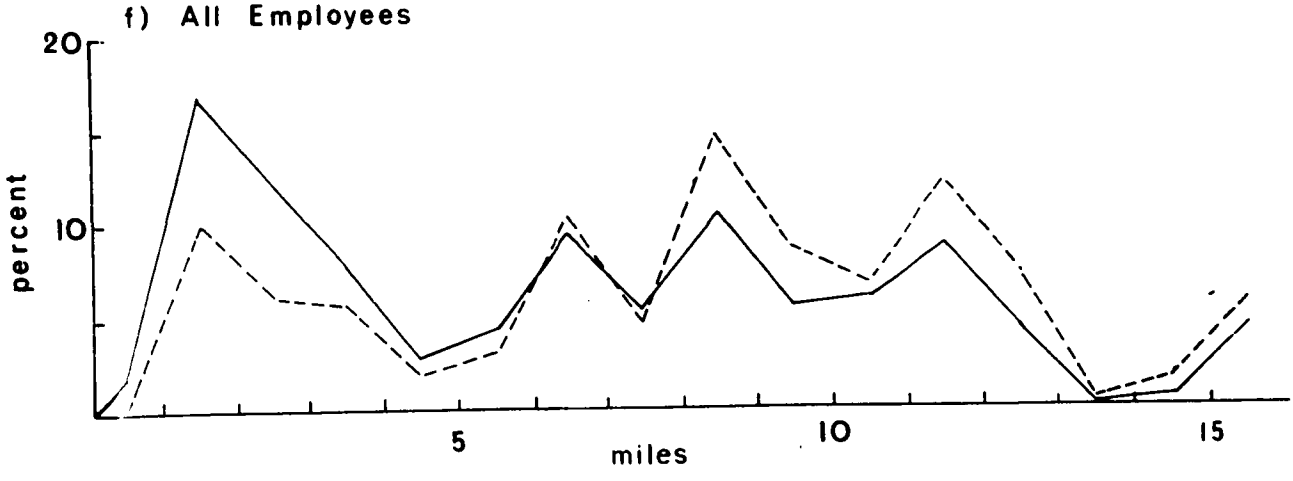


FIGURE 21

slightly more prone to move closer and less likely to move further away than employees hired at the new work site, this probably due to their already higher concentration in the Pointe Claire area. Movements by French employees were not markedly in contrast to those of the British, the chief difference being that the British had a lesser tendency to move between areas of equal distance from Pointe Claire (see Table XVI). Although a greater proportion of the British shortened their journey, there were, on the other hand, a slightly lower proportion of the French who increased the length of their journey. Only small differences were apparent between the movements of single and married employees (see Table XVII). The former showed a very slender preference for gravitating towards the Park. One reason for this was perhaps the fact that a number of single employees were still living with parents. Certainly when female workers were excluded from calculations the contrast increased. Among single males who moved, only 12 per cent did so in a way which lengthened their journey to work. The most striking fact arising from this series of calculations was provided by the single males who were first employed by their firms elsewhere in Montreal. Of the 26 moves made by employees in this category only one was in a direction contrary to that which might be expected. As a rule, females acted differently from males. Whereas females accounted for only 29 per cent of all moves, they

TABLE XV

EFFECTS ON DISTANCE TO WORK OF EMPLOYEES' CHANGES IN RESIDENCE BY OCCUPATION GROUP AND SENIORITY

Occupation Group and Seniority	Effects on Distance		
	Shorter Distance (%)	No Change (%)	Longer Distance (%)
MALES			
Managerial	58.9	20.1	20.8
New	56.4	21.8	21.8
Old	60.7	19.0	20.2
Clerical	46.5	36.2	17.3
New	45.7	30.2	24.3
Old	47.4	43.8	8.8
Manual	41.9	40.9	17.2
New	38.8	39.8	21.4
Old	45.8	42.2	12.0
FEMALES			
Clerical	45.3	25.0	29.7
New	43.4	17.0	39.6
Old	46.7	30.7	22.7
Manual	36.8	38.6	24.6
New	31.6	44.7	23.7
Old	47.4	26.3	26.3
ALL WORKERS	46.8	32.0	21.2
New	43.3	31.3	25.4
Old	50.3	32.7	17.0

TABLE XVI

EFFECTS ON DISTANCE TO WORK OF EMPLOYEES' CHANGES IN RESIDENCE BY ETHNIC AFFILIATION

Ethnic Affiliation	Effects on Distance		
	Shorter Distance (%)	No Change (%)	Longer Distance (%)
FRENCH	42.8	38.1	19.1
ENGLISH	48.8	28.9	22.7

TABLE XVII

EFFECTS ON DISTANCE TO WORK OF EMPLOYEES' CHANGES IN RESIDENCE BY MARITAL STATUS

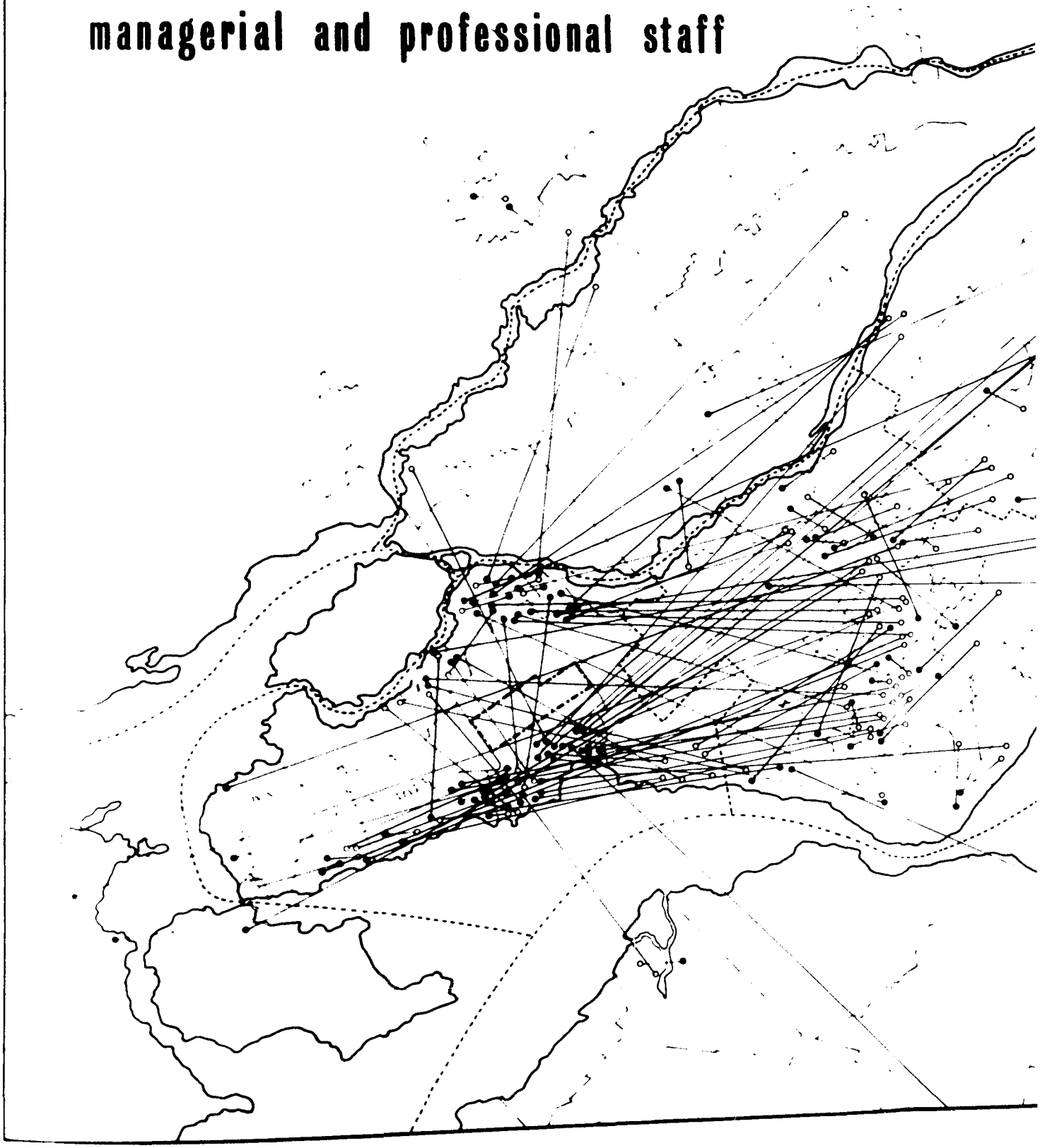
Marital Status	Effects on Distance		
	Shorter Distance (%)	No Change (%)	Longer Distance (%)
MARRIED	46.6	31.1	22.3
SINGLE	47.3	35.1	17.6

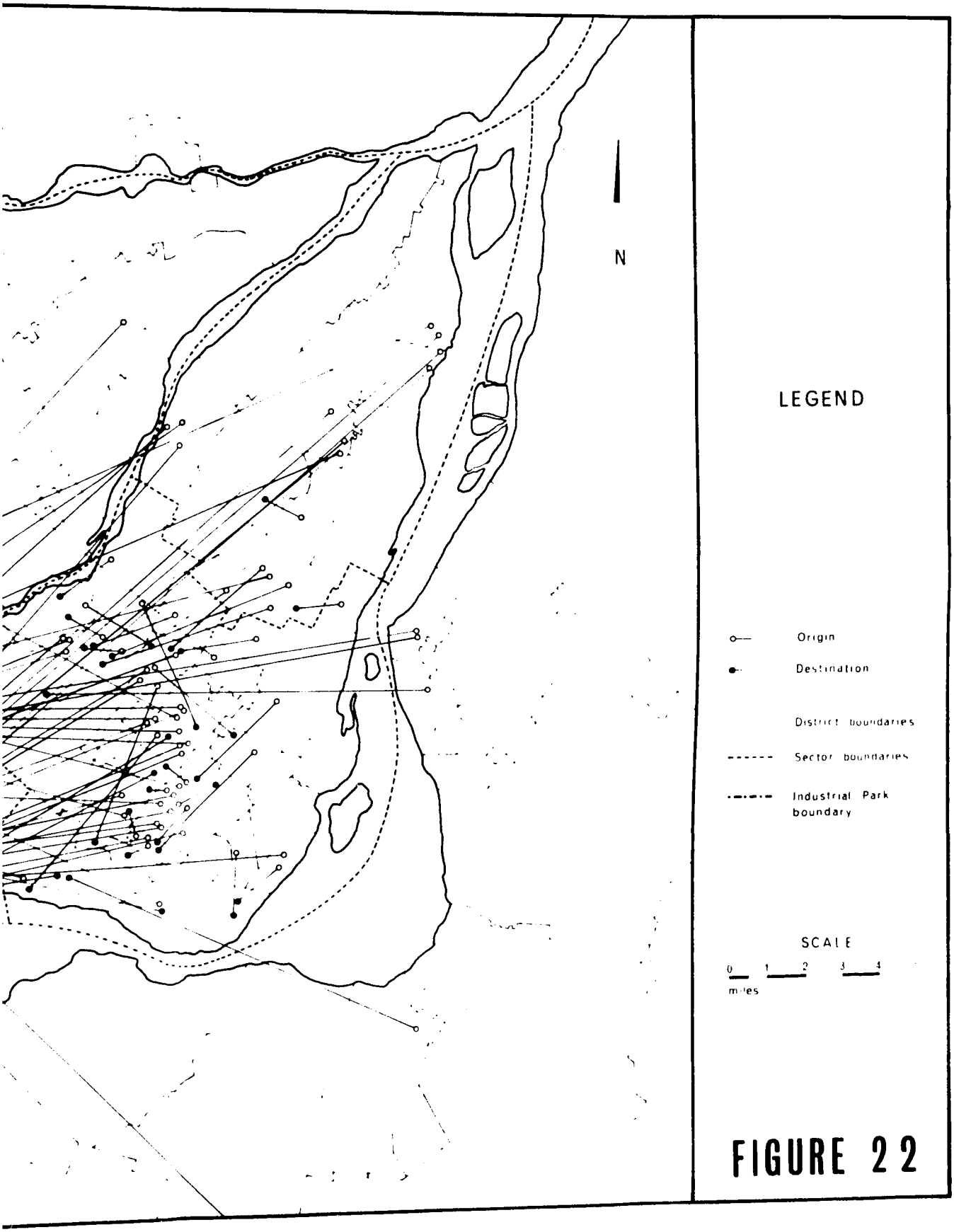
were responsible for 38 per cent of those which resulted in a greater degree of separation between home and work. Patterns of movement and comparative distances prior to and subsequent to changes in residence are provided for each of the occupation groups in Figures 22 to 26 and Figures 21 (a) to 21 (e) respectively.

Managerial and professional staff who changed their residences were distinctly more inclined to shorten their journey to work than other groups. Almost 60 per cent did so, reducing their average distance from 7.7 miles to only 4.8 miles and forming a very definite cluster in the immediate neighbourhood of Pointe Claire. Figure 21 (a) shows that whereas prior to changes in residence a mere 20 per cent of those who moved lived within three miles of the Park's centre, the proportion rose to more than 45 per cent after the changes had been made. Figure 22 illustrates how these shifts occured, indicating a substantial exodus from the central portion of Montreal Island. Areas experiencing the greatest in-migration were, in order of preference, Pointe Claire itself, Pierrefonds, Beaconsfield and Dollard des Ormeaux, all of which are in close proximity of the Park. Of the 139 people in the group who moved, fewer than a dozen chose a new residential location decidedly more remote from Pointe Claire. However, it must be remembered that the western suburbs of Montreal Island generally possess the type of accommodation demanded by this group.

CHANGES IN RESIDENCE

managerial and professional staff

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District boundaries
Sector boundaries
Industrial Park boundary
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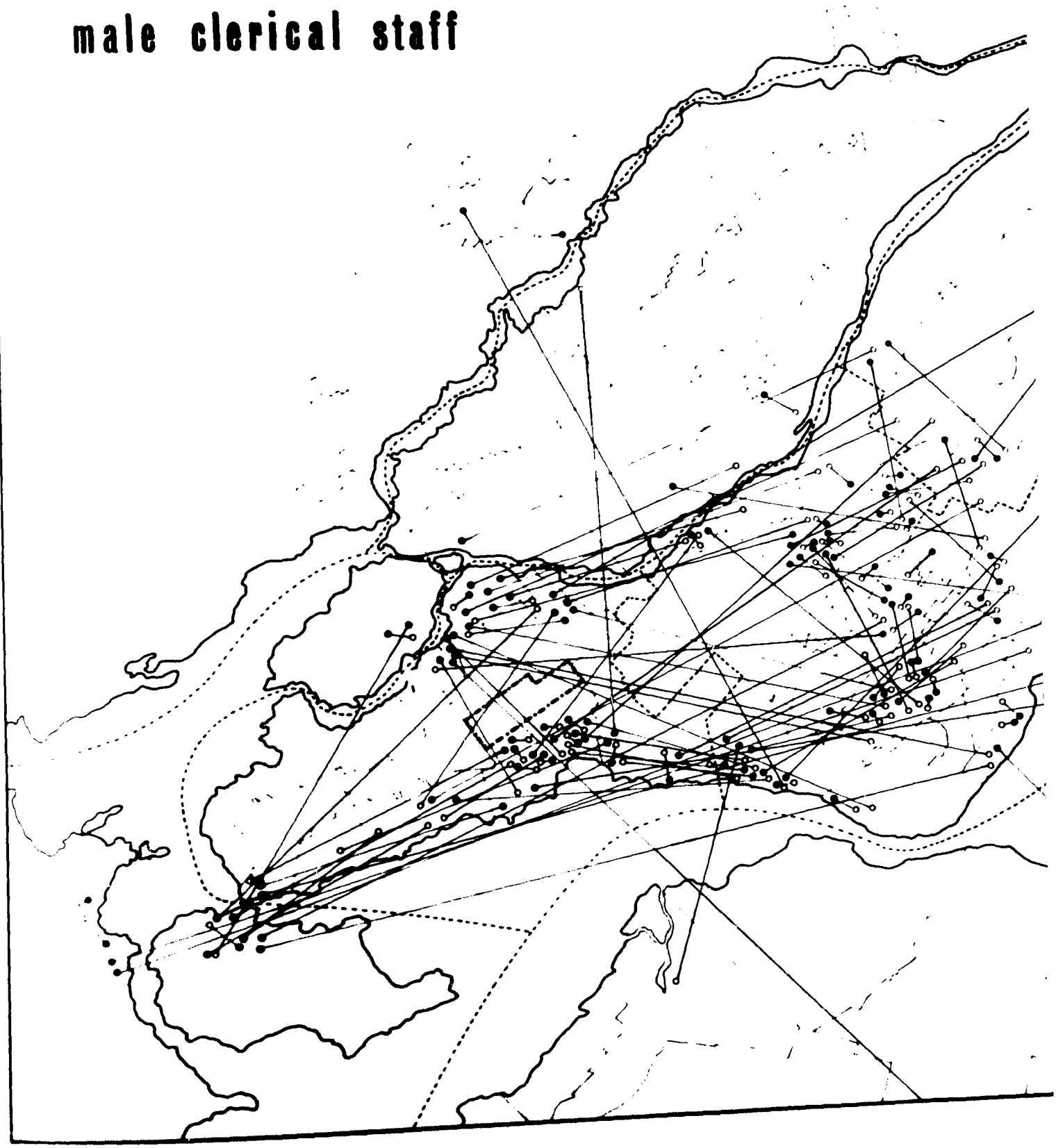
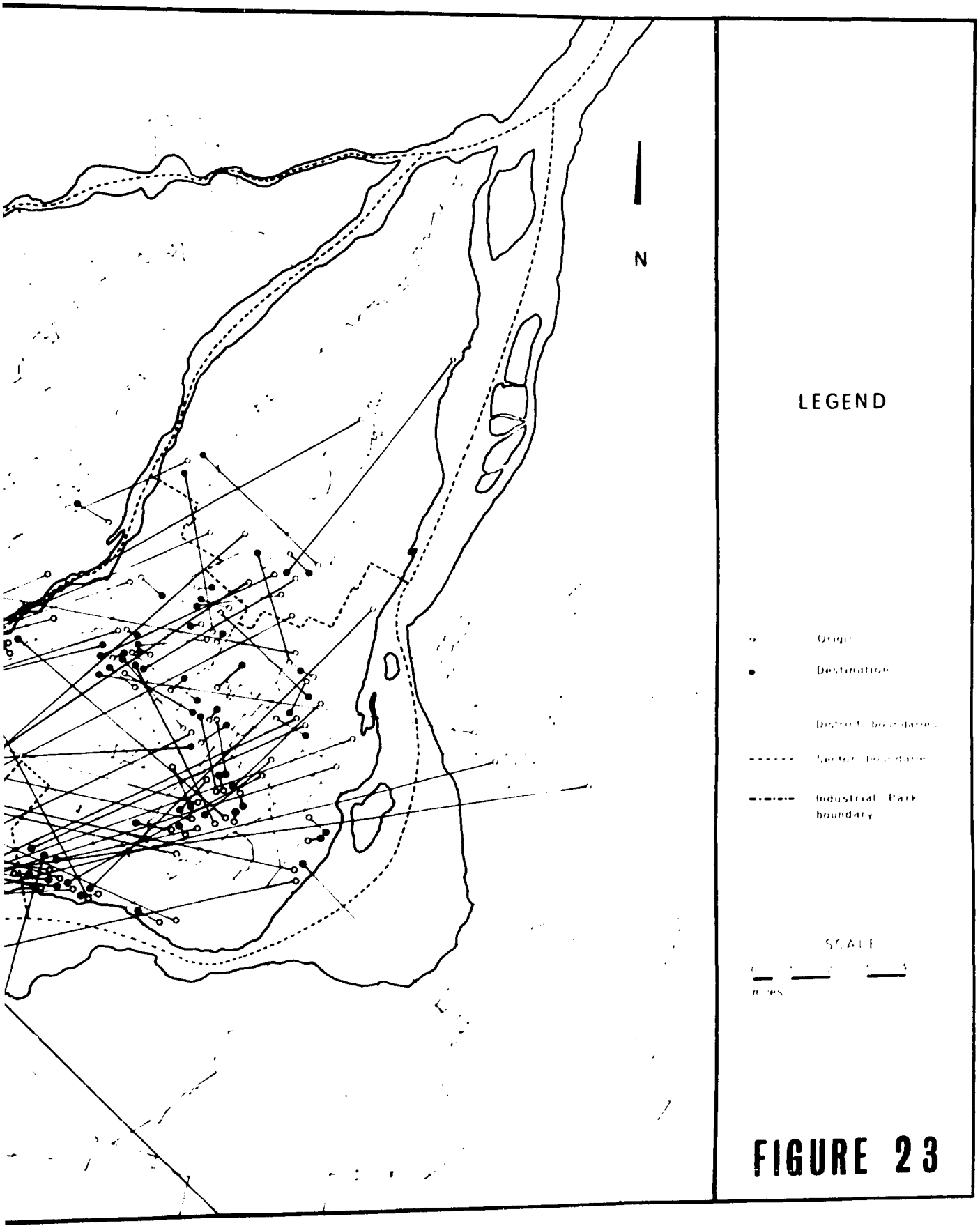
miles

FIGURE 22

Male clerical workers were less inclined to shorten their work trips than were managerial staff, but to some degree compensating for this there were relatively fewer who moved in the reverse direction. Another contrast between the two groups was that almost twice as high a proportion of clerical workers' moves did not alter the distance separating them from the Park. This probably reflected lower salaries, the group's more youthful composition and the greater number of French workers. However, notwithstanding these contrasts, clerical workers still succeeded in reducing their average distance away from work by a significant amount. Whereas previously it was 8.4 miles, changes in residential location brought it down by two miles to a new figure of 6.4 miles. Figure 21 (b) is indicative of the effectiveness of moves in concentrating the group around Pointe Claire. All zones within four miles of the Park's centre showed increases in the proportions of workers they contained, and over the four zones there was a net influx of 26.8 per cent. The westward direction of migration is readily discernible from the map (see Figure 23). Although Pointe Claire in this case was not so popular an area of in-migration it still received the second largest influx. Pierrefonds was the slightly preferred location. Other west Island localities were not so popular but, on the other hand, Île Perrot and Lachine proved attractive. The great majority of employees moving into these

CHANGES IN RESIDENCE
male clerical staff

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Destination
Industrial Park boundary
SCALE
miles

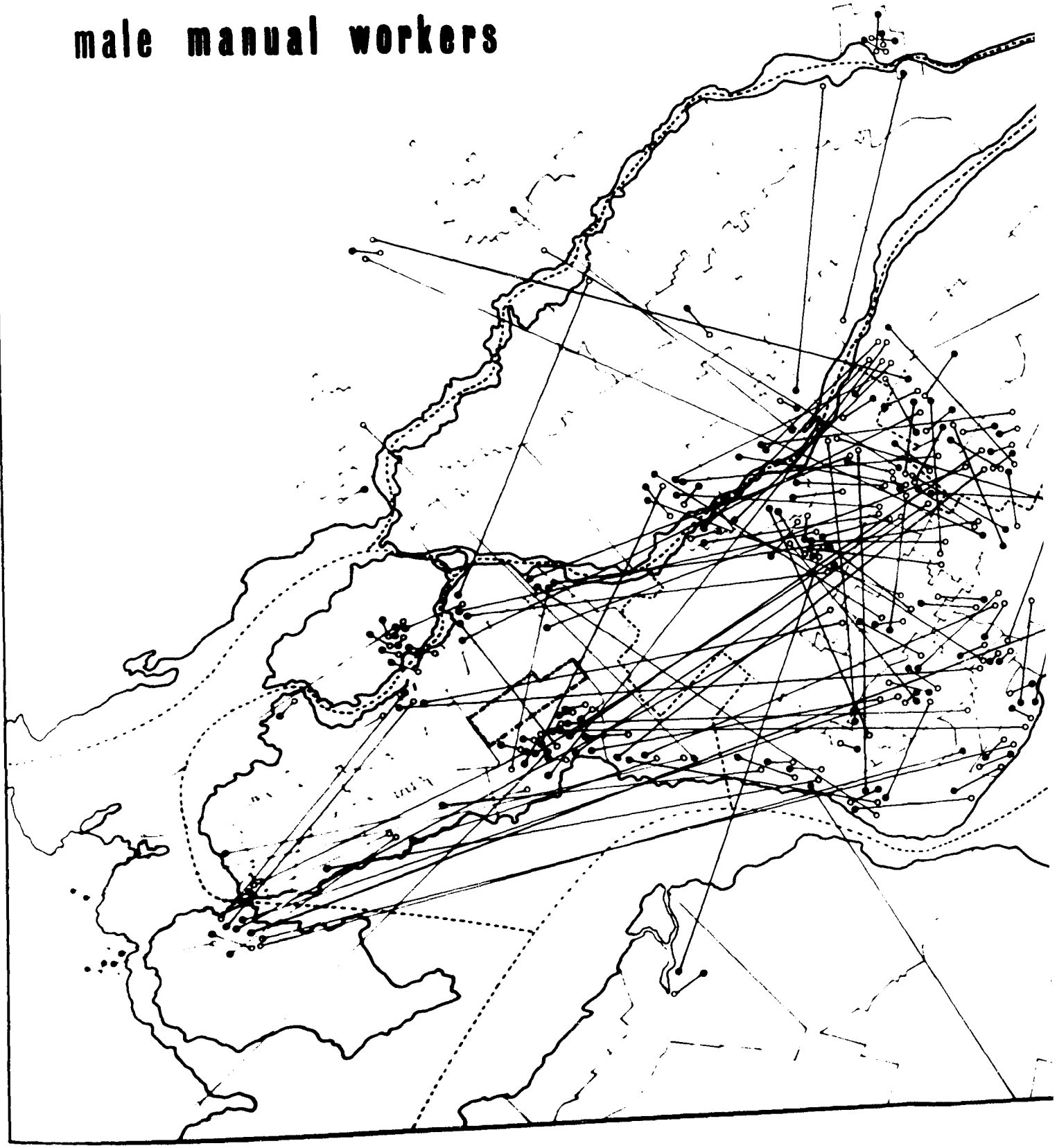
FIGURE 23

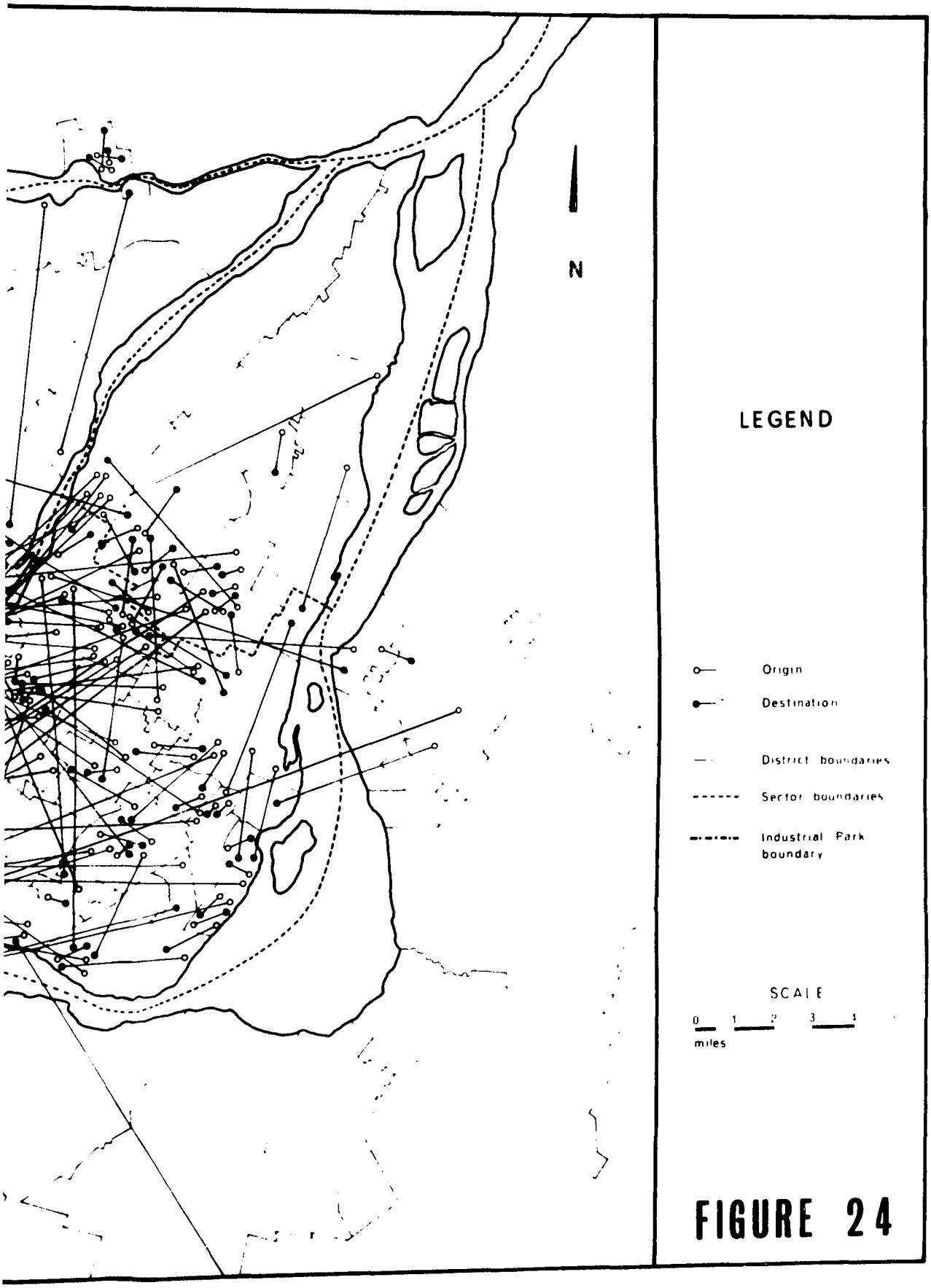
districts were English-speaking, the French largely remained in the more central sections of Montreal. Only 10 of the 127 moves appreciably lengthened work trips.

The characteristics of moves made by male plant workers were basically similar to those made by the clerical group, but there were again fewer moving closer to work and more who did not effectively alter their distance away from Pointe Claire. As a result, the net decrease in the average distance separating plant workers' homes from the Park was not so great as in previous cases. However, the drop of 1.5 miles from 9.5 to 8.0 miles was still significant, and there was a noticeable movement of plant workers into the Park's vicinity. Subsequent to the changes in residential location the inner four zones contained 14.5 per cent more workers than before (see Figure 21 (c)). Figure 24, showing the direction of moves, is more complex than for other groups, but despite this, the underlying migration to the west can be distinguished. Pointe Claire and Pierrefonds were again the recipients of more migrants than any other localities, while Île Perrot also proved attractive. The group's French component was, in this group, relatively well represented in the westward migration. In the main, however, movement was concentrated in the mid-section of Montreal Island. There were not a great number of moves made away from the Park, but it is apparent that Île Jésus provided an effective alternative

CHANGES IN RESIDENCE

male manual workers

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District boundaries
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Industrial Park boundary
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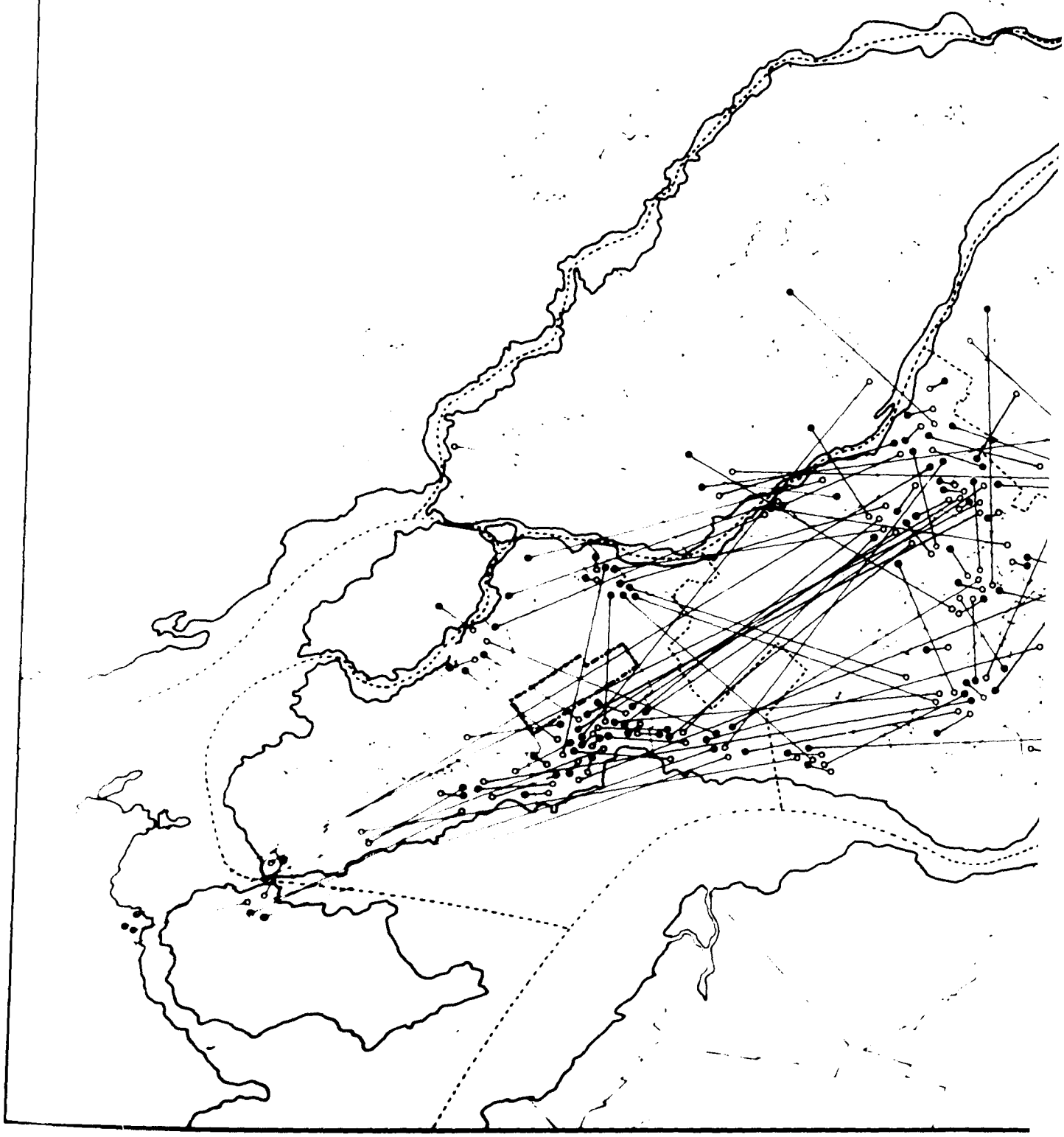
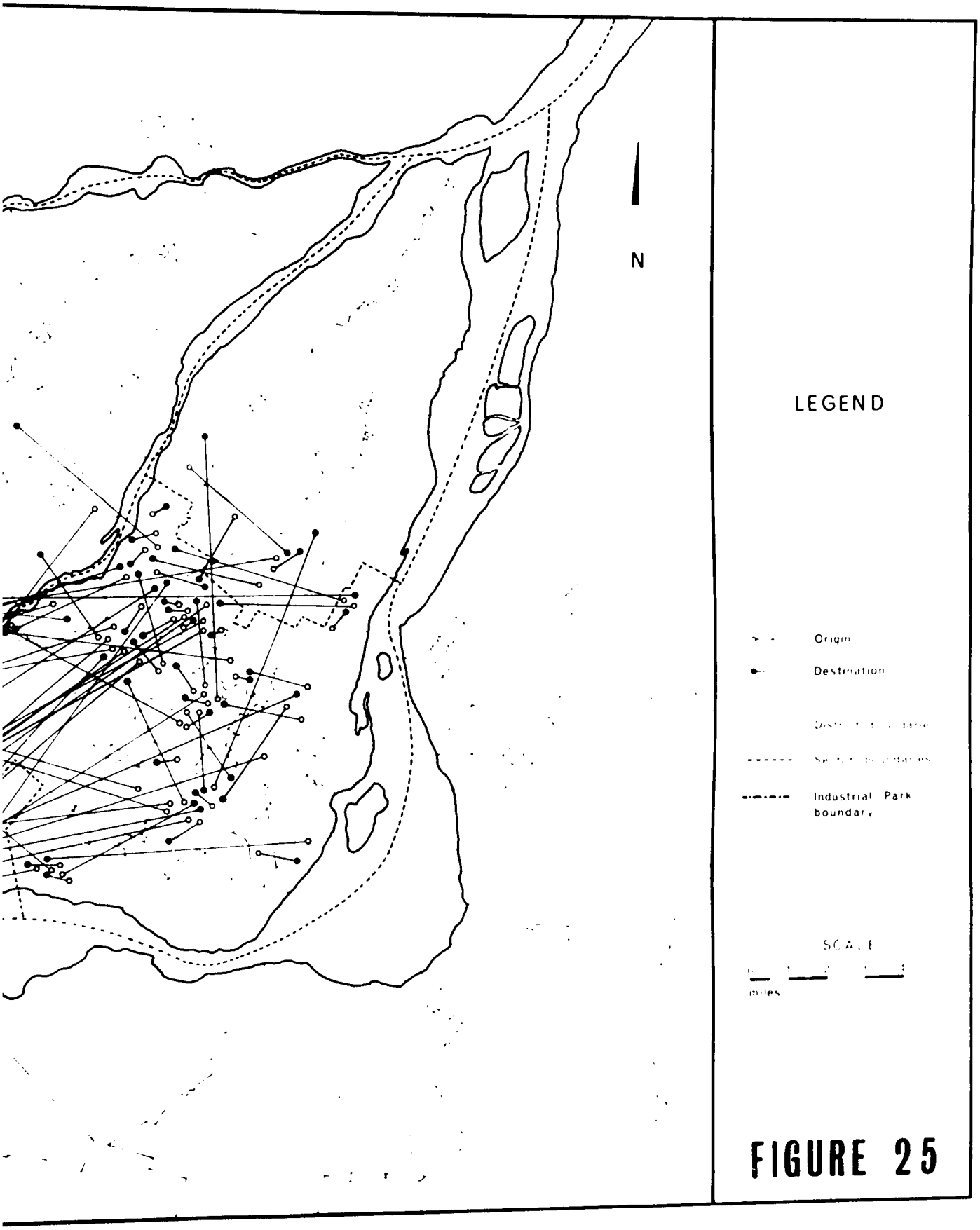
FIGURE 24

to Montreal Island's western suburbs. Thus, on the whole, plant workers were either less able or less willing to shorten their journey to work by gravitating towards Pointe Claire.

The female clerical workers who migrated were slightly more prone to move in the direction of Pointe Claire than male plant workers but, on the other hand, there were a considerably higher proportion who moved in the opposite direction. Therefore, although there was some reduction in the average distance separating homes from the Park, it was insignificant when compared with those already noted. In this case it fell from 6.9 to 6.2, a mere 0.7 miles. Figure 21 (d) shows, however, that changes in residential location did result in a greater concentration than previously existed around Pointe Claire, since subsequent to the changes, the inner four zones contained an additional 12.5 per cent of the group's migrants. When it is remembered that women normally have less opportunity to dictate their movements such an increase is perhaps a little surprising. Nevertheless, the map (Figure 25) does show that, although many of the moves resulting in a shorter work trip were in themselves so short as to be almost irrelevant, there were a number from central Montreal into the Park's close vicinity. Since only about half of these could be attributed to unmarried employees, it would appear that a good portion of the moves in the direction

CHANGES IN RESIDENCE
female clerical staff

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Origin
Destination
Industrial Park boundary
SCALE
miles

FIGURE 25

of Pointe Claire might be a reflection of the area's general attractiveness rather than of a deliberate intention to live closer to work. It is unfortunately not possible to ascertain whether or not the husbands of married women moving into Pointe Claire might have had any connection with the Park's operations. For the group as a whole, the evidence suggests that the Park's location was less critical a factor shaping the pattern of migration than it was for male employees. Not only was there a higher proportion of the female clerical staff who increased the distance separating their homes and their work, but there were a number who moved to locations quite definitely more remote from the Park.

Changes in residential location on the part of female manual workers were even more illustrative of the Park's lack of drawing power. Fewer than 40 per cent were to locations at closer quarters, a smaller proportion than found in any other group. Moreover, the percentage of moves leading neither to an increase nor to a reduction in the distance from the Park was higher than previously experienced, and although the proportion which did lead to an increase was only a little above average, the net result of all moves was to make absolutely no difference to the average degree of separation. This remained constant at 8.2 miles. Furthermore, subsequent to the moves taking place, there was in fact a slight reduction in the numbers living within four miles

of the Park's centre (see Figure 21 (e)). The obvious conclusion to be drawn from both the graph and the map (see Figure 26) is that almost all moves were completely independent of the workplace location, since even those made in the Park's general direction were seldom to within its immediate proximity. Several factors contributed to this situation. Firstly, most employees in this occupation group had been working at Pointe Claire for a relatively short period of time and would therefore have had less opportunity to move at all. Secondly, the great majority were French and it has been shown that French workers were not only less mobile but also when they did change their residence they were likely to move only a short distance. The third and fourth factors were probably of greatest significance. These were that the group's youth and sex severely handicapped their independence of movement, and that the residential districts surrounding the Park were plainly not of the kind that encouraged their entry. Not all employees were happy with this situation however.

Dissatisfaction amongst all employees in fact increased almost directly with the distance separating home and work. Figure 27 reveals that, in all, 24 per cent of the respondents expressed a desire to move closer to work. However, when only those living within 10 miles of the Park were considered, the proportion dropped to 18.1 per cent, and within

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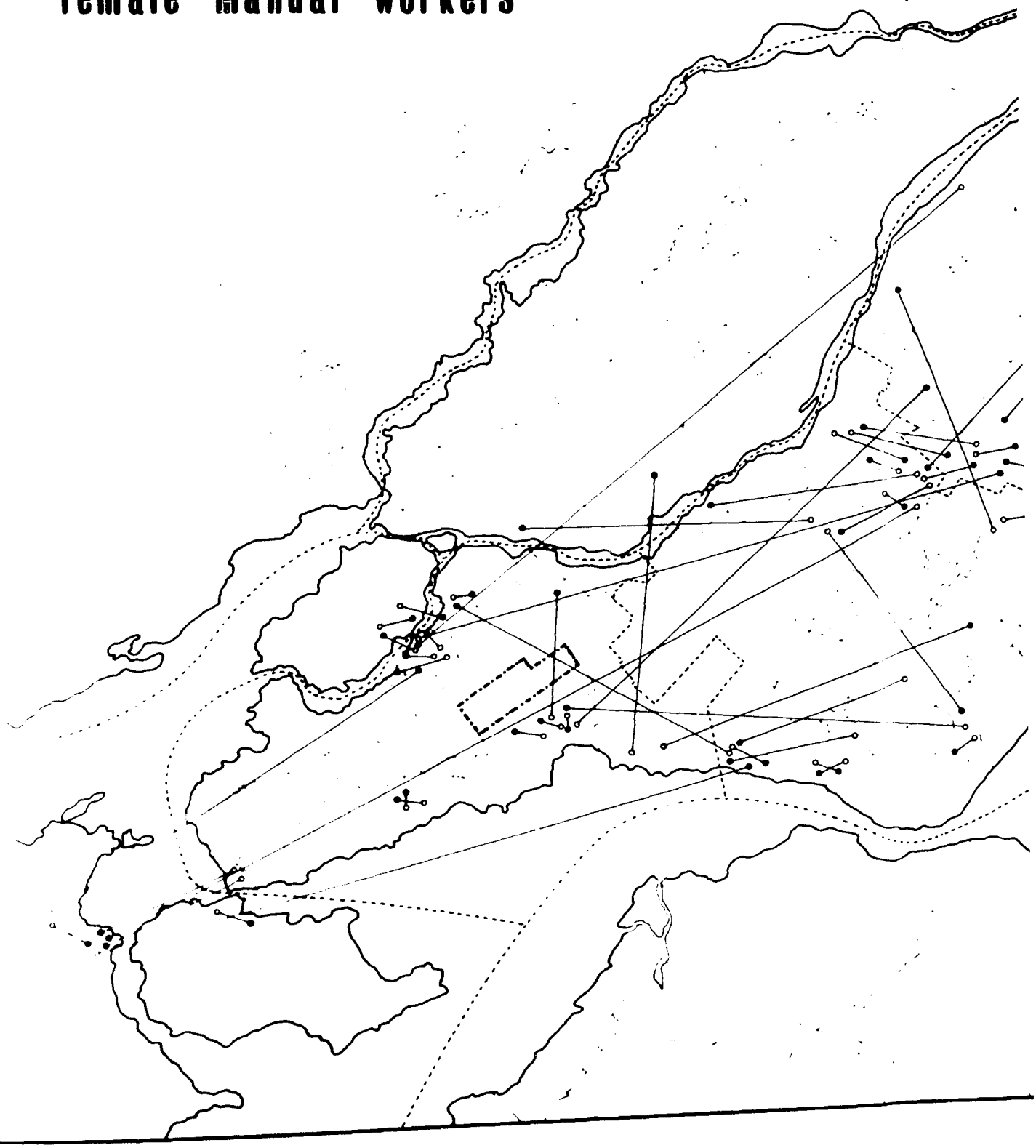
CHANGES IN RESIDENCE
female manual workers



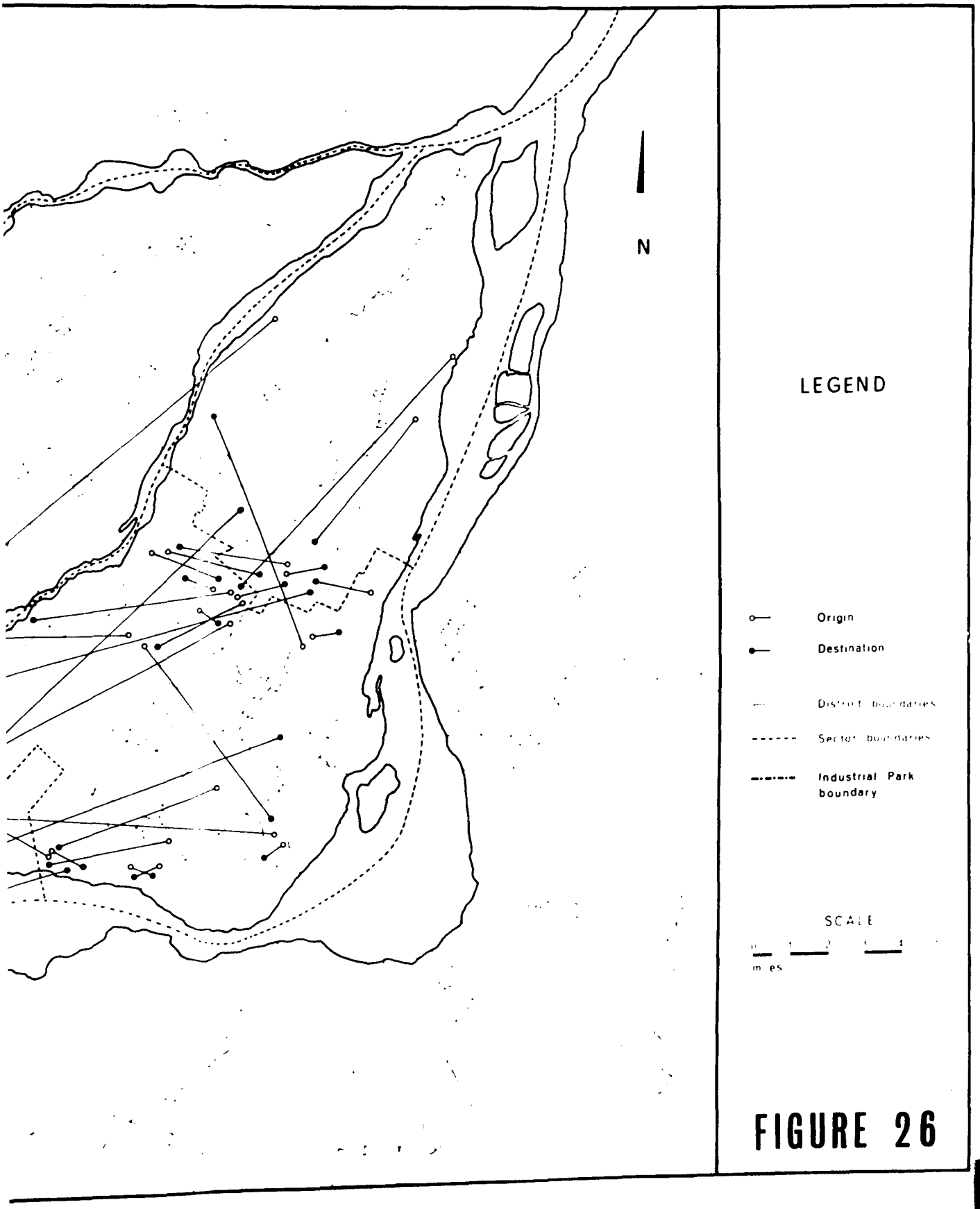

N
LEGEND
Origin
Destination
District boundaries
Sector boundaries
Industrial Park boundary
SCALE
miles

FIGURE 26

CUMULATIVE PERCENTAGES OF EMPLOYEES DISSATISFIED WITH COMMUTING DISTANCE

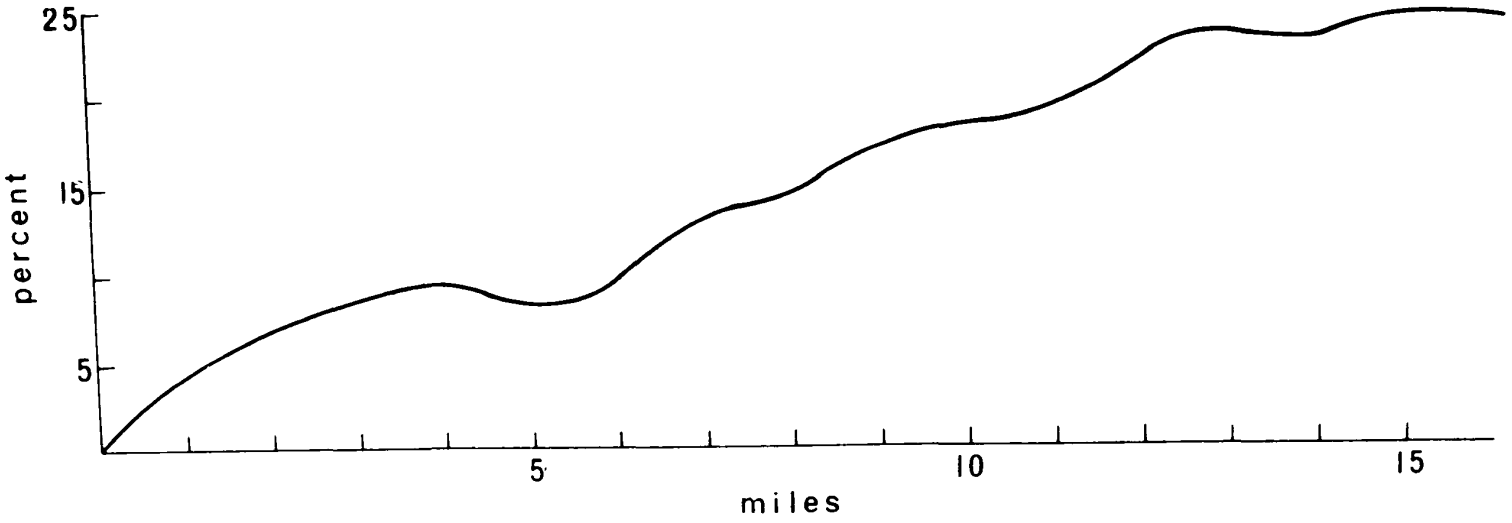


FIGURE 27

five miles there were a mere 8.4 per cent who wished to move closer. The proportion of respondents expressing dissatisfaction differed between occupation groups, but since there appeared to be no positive relationship between the type of transportation used and the desire to move closer to work, this again must have been in most instances a reflection of spatial distribution. For example, almost 16 per cent more of the male plant workers wanted to move closer to work than did managerial staff, but on the other hand, plant workers lived an average distance of more than three miles further away from the Park. Although a similar relationship existed between the two female groups, there was not nearly so strong a desire to move closer among them as there was among males. Thus yet again they gave evidence of weaker ties with their workplace. Notwithstanding a seeming indifference shared by French employees towards moving closer to Pointe Claire, the numbers expressing a desire to do so were above average and it is not therefore entirely coincidental that the occupations containing higher proportions of this ethnic group followed the same pattern. Furthermore, it will be remembered that the French in general lived at greater distances from the Park than their English co-workers.

There was a strong tendency for those employees who had moved since working at Pointe Claire to be more satisfied with their proximity to work. However, by no means all of

them were. This was especially true among male plant workers of whom 32 per cent were still dissatisfied with the distance they had to travel. Even 13 per cent of the managerial staff who had moved were of the same mind, and the conclusion which must be drawn is that, although the desirability of living within reasonably close proximity to work was generally recognized, it was not always possible or conveniently arranged.

3. Summary

The preceding remarks make it apparent that, although considerable changes have occurred in the distribution of Pointe Claire's labour force, there is little reason to believe that any form of equilibrium has yet been reached. It has been established that as the Park has grown increasing numbers of employees have been drawn from the surrounding residential districts and the labour force has become more clustered in its vicinity. The clustering effect has been fostered by two processes, namely: the recruitment of new labour supplies to replace lost employees and to meet the demands of expansion, and secondly, the migration of employees into the western suburbs. The first process has been the most important in that more people have been involved, but the second has been of no small significance. Recruitment was of particular relevance in the case of female employees who clearly demonstrated weaker ties with their jobs. While recruitment also accounted for most of the concentration of

male employees they, and especially those at the managerial and professional level, were obviously more attached to their work and were consequently more willing to adjust themselves to its location either by accepting longer journeys or by moving closer to it. The Park's youth is reflected by the concentration of old employees still living in the area of former plant locations, although migration and turnover have reduced their numbers. Indeed, the densely settled central portion of Montreal Island remains a major supply area for new recruits, and this is indicative of the Park's continued reliance upon established labour sources. However, in all probability the shift of emphasis from these established sources to the west would have been accelerated if there had been a wider range of housing situated in the area. Managerial, professional and female clerical staff were readily available close by the Park, and so was the type of accommodation they required. These groups therefore showed the greatest degree of clustering. Lower ranking workers were not so well placed and evidently seldom had the means to improve their position substantially even when they had the desire to do so. Thus the findings of the present chapter confirm the main conclusion drawn in the one previous to it. That is, that the distribution of Pointe Claire's labour force is dictated by the location of the residential areas best able to

supply the type of worker in demand. The future success of the Park will rest on its ability to attract the workers it requires from these areas.

CHAPTER VIII

CONCLUSIONS

This chapter summarizes the major findings of the research and speculates on their significance in future developments. While special attention will be given to the observed trends as they relate to Pointe Claire, their more general application will also be considered. Finally, some suggestions are offered for future research.

1. Summary of Findings

After approximately six years of existence the labourshed of Pointe Claire Industrial Park had evolved to a stage where certain definite patterns could be discerned. The extreme limits from which labour was drawn were far flung, extending as much as 50 miles and one-and-a-half hour's travelling time from the Park. This degree of dispersal was, however, not in any way representative of the majority of the workforce, for the average separation between workers' homes and their place of employment was 7.6 miles straight-line distance, while the average time expended on the journey was 25 minutes. By far the greater majority of the Park's employees were drawn from the western and mid-sections of Montreal Island. Further analysis showed the various components of the workforce tending to concentrate in different areas within the overall pattern of distribution. The residences of two occupation groups, the

managerial and female clerical staff, were strongly associated with the districts in the more immediate vicinity of the Park. The other groups, although showing some proclivity to cluster in its locality, were scattered more widely over the remaining source areas.

These patterns have been modified over time. Turnover, and the recruitment of additional labour, concentrated workers' residences more effectively around the Park. Residential mobility among workers made a similar contribution. Again, however, there were differences between the components of the workforce. New recruits among female clerical staff were very obviously drawn primarily from the Park's close environs, but although there was still a definite tendency for workers of other groups to be supplied by these areas, it was less marked among the lower status groups. Company recruitment policies were therefore only partially successful in attracting staff from the western suburbs, and despite a shift of emphasis away from the more populous and traditional labour market of central Montreal Island, this area continued to serve as the most important source of new recruits for lower income jobs. Nevertheless, the far western suburbs of Dorion and Île Perrot were becoming significant. Residential mobility proved to be an effective means of clustering the workforce in the vicinity of Pointe Claire. Its effectiveness was best illustrated by the moves made by managerial and

professional staff, but it was also noticeable in the adjustments made by males in the other occupation groups. Females, on the other hand, were far less inclined to shorten their commuting distances by changing their residence. If they found the journey too inconvenient they appeared more likely to leave their job. Unfortunately, details on turnover were not available and it was not possible to ascertain with precision just how potent a force it was in changing the pattern of worker distribution, but without doubt it was initially of some importance. The net results of all modifications in the pattern were to bring about among all components of the workforce a greater degree of clustering around the Park than previously existed.

Contrary to what has been implied by some writers, the automobile and good highways do not appear to be eliminating such tendencies. While it was true that the great majority of employees used automobiles and districts bordering the Trans-Canada and other main highways supplied a large proportion of the Park's labour requirements, there was, in fact, a negative correlation between the freedom of automobile use and the distance separating people from their work. Furthermore, the desire to move closer to work was not related to the type of transportation used but rather to the commuting distance. Residence changes showed clearly that there was a stronger tendency to shorten the work journey once the distance

from the Park became greater than about five miles. Thus, while improved transportation might have made it possible for employees to disperse over the entire metropolitan area, they did not regard the idea with enthusiasm.

Various factors can be put forward to account for differences between the patterns found to exist in the present case and the higher degree of clustering distinguishable in other studies of suburban industrial areas. Pointe Claire Industrial Park, being largely comprised of firms which had relocated from more central districts of Montreal, was still in the early stages of development, and the residences of a great number of employees who had been engaged by their firm prior to its shift to Pointe Claire still reflected the previous job locations. Other aspects of the composition of the labour force, when considered in relation to social patterns of residential land use, were also relevant. Montreal's western suburbs were generally areas of relatively high quality and high rental housing, dominated by people of British ethnic origin. Consequently, whereas the Park's industries found the recruitment of more highly qualified staff from nearby suburbs comparatively easy, there was no equivalent source of semi- and unskilled labour in the vicinity. These had to be obtained from further afield. Similarly, while it was usually possible for higher income staff to find accommodation to meet their requirements within easy reach of the Park, this was

less often so for lower income workers. The present study therefore confirms the contention of Duncan and Duncan (17) that patterns of employee distribution are primarily determined by the composition of the workforce and the relative accessibility of residential areas containing pools of the type of labour required. The fact that 24 per cent of the survey's respondents expressed dissatisfaction with the distance they had to travel to work is a strong indication that, with the passage of time, there will be a tighter concentration of the Park's employees in the western suburbs.

2. Implications for Pointe Claire Industrial Park

The Park's future prospects are enhanced in a number of ways. It is well located on good transportation routes and situated in a fast growing sector of one of the fastest growing metropolitan areas in Canada. Montreal's rapid growth and its accessibility to other population centres assures the Park's industries of ready markets for their goods and services. Pointe Claire's city officers, through their encouragement of commercial and industrial development and efforts to retain the quality of the residential environment, are building a viable community, and the spirit of cooperation between the City, industrial management, and promoters has resulted in the Park being effectively administered and attractively maintained. It is therefore now widely recognized as a prestige location for industry. Furthermore, workers are

beginning to perceive it as a significant employment centre. As the surrounding suburbs continue to grow, they will be capable of supplying local labour in increasing numbers. These factors make it probable that the Park will eventually be filled and the employment figure reach its estimated potential of around 17,500.

The future, however, is not so bright as might at first be suggested, for certain of the Park's apparent strengths could possibly be its weaknesses. There might well be difficulties in attracting industries to fill the remaining uncommitted land in the Park. As the area has gained in reputation, the amount of available space has decreased and land prices have risen considerably. There are already signs of a slowing down in the rate of growth, and continued price rises could cause further development to cease. Another factor which could divert potential occupants from Pointe Claire is the initiation of competitive industrial development schemes in neighbouring districts. Dorval, immediately to the east of Pointe Claire, is in the process of opening up a large area of land for industrial use adjacent to the Trans-Canada Highway. In the absence of any restrictions, additional developments of a similar type will undoubtedly appear elsewhere along the Highway. Such developments would not only compete for industry, they would also compete for labour.

The Park's position with regard to labour supplies

appears to be its greatest weakness. Although it already obtains a high proportion of its labour force from nearby suburbs and further development of these will add to the supply, the danger exists that local sources will continue to be deficient in the variety of labour available. In all probability the western suburbs will attract sufficient professional and skilled labour to meet future requirements, but because new housing in the area will be for the most part more expensive than the average and lower income workers have been used to, it is doubtful whether the same can be said for these. More outlying districts such as Dorion and Île Perrot with less expensive housing will probably assume greater importance as suppliers of lower income workers, but indications are that the Park's industries will be forced to continue to use Montreal's more central suburbs as a significant source of this type of labour. However, because of the tendency for workers to cluster in the neighbourhood of their jobs, the central suburbs must, in the future, be considered as marginal to Pointe Claire's labourshed. In tight labour conditions especially, the Park's industries will be at a disadvantage in competing for workers living in these suburbs compared with firms closer to the source. Not only would new recruits be more difficult to obtain, but firms already employing a sizeable proportion of workers living some distance from Pointe Claire could also find themselves in a

vulnerable position if alternative job opportunities were to develop in more readily accessible locations. The large number of the Park's employees expressing a desire to be closer to work highlights this problem, and it appears that female employees in particular would be affected since they have less mobility in terms of both transportation and residence change. Because of their lack of transportation even women living locally might prove difficult to recruit. Lastly, with the increased emphasis on Quebec markets, it is necessary that French-speaking people form a substantial part of the labour force. These might be hard to obtain from nearby sources. However, such problems can be minimized if they are anticipated and steps taken where possible to alleviate them.

The Park's ultimate success will rest on the cooperation and initiative of those concerned in its future. The promoters have already reacted to the increase in land prices by offering leased sites and ready-built accommodation to prospective tenants. Such flexibility should do much to sustain growth. One course open to the Park to guard against labour shortages, is to encourage the location of firms whose labour needs correspond to the supplies which are readily available in the immediate neighbourhood. Thus continued emphasis should be placed on research establishments and other activities employing a high proportion of professional and technical staff. A probably less attractive alternative, is

to provide more lower rental housing accommodation than is presently available in the area. Attempts in this direction have, however, been rather unsuccessful, perhaps because the facilities provided have still been relatively more expensive than accommodation in the older suburbs of Montreal. The feasibility of providing housing at high rates of subsidy seems limited, since it is the City's policy that the Park should support the community rather than vice versa and, furthermore, there would undoubtedly be general public resistance to lower standard housing schemes. Nevertheless, should the situation develop where it becomes imperative to attract labour, the authorities should not neglect their responsibilities in this field. The problems associated with obtaining female employees are likely to be eased with the provision of public transportation services to the Park and its surrounding neighbourhoods. At present there may not be sufficient demand for this facility, but as the Park grows so will the demand. The problem of recruiting skilled French workers is probably quite general throughout Montreal and not confined to Pointe Claire. The survey suggests that, while French-speaking workers are not prevalent in the western suburbs, they seem to have no particular aversion towards living there. As Lacoste (50) has previously demonstrated, incomes rather than ethnic affiliation appear to be the main limiting factor. Presumably therefore, no special steps need

be taken to acquire sufficient supplies of French-speaking staff. The situation with respect to the French, as it is with the English, will depend on the rates at which their general level of skills and standards of living rise. In the long run, it is to be hoped that these will reach a level where most people can afford to live in reasonable proximity of their work. Meanwhile, however, the present shortcomings should be borne in mind and precautionary measures taken. Otherwise, more extreme measures might need to be applied in order to meet competition and maintain adequate labour supplies. Pointe Claire Industrial Park is currently able to capitalize on its advantages, and with attention given to its problems should consolidate its position as an important employment centre.

3. General Implications

This study is limited in scope and cannot claim to provide definitive statements on the nature and development of metropolitan areas in general. It has sought only to contribute further to knowledge of the processes influencing city structure by substantiating certain ideas on spatial relationships between residences and workplaces and questioning the validity of others.

The survey results strongly support the contention that there is a predilection among employees to cluster around suburban work sites. This effect becomes more pronounced with the passage of time, and contrary to the assertions

of some writers, there is a tendency for sub-regional labour markets to develop within the broad sphere of metropolitan influence. When new suburban employment centres are initiated, they create their labourshed by tapping existing labour sources, but employees also cooperate in its formation by changing their residences so as to reduce commuting distances. Although Carroll's suggestion that any residential movements will be of this nature is not fully supported by the present enquiry, the analysis certainly shows that workers have a greater propensity to shorten their journey as the distance from work increases. This is especially noticeable when they live beyond a distance which might be considered the equivalent of Taaffe's "frictionless zone". The many variables dictating where a person lives are extremely difficult to isolate and quantify, and about all that can be said at the present is that most people would prefer to live within reasonable distance of their place of employment while at the same time maximizing the amenities of their home. Unfortunately, in most cities it is not possible for all workers to find accommodation which will satisfy both these desires, since residential areas are different in character and segregated as to quality, whereas workers differ in their aspirations and their ability to pay for housing. Because almost all industries demand a cross-section of the workforce to carry out their operations, the labourshed pattern surrounding

an industrial zone is primarily dependent on the distribution and proximity of residential districts supplying the types of labour required by the industries concerned.

Industrial zones located in the city's outer suburbs usually impose severe restraints on the degree of clustering possible. The variety of housing available in these areas is normally limited to workers with above-average incomes so that lower income workers cannot adjust their residences to the new work location and are forced to commute over longer distances than desirable. Not only is this generally expensive, but the bulk of the expense is carried by the workers who can least afford it. Therefore, in order to rationalize the changing structure of cities and to allow residence-workplace relationships desired by workers to be fulfilled, it would seem necessary to go a step further and provide a full range of housing in the outer suburbs so that workers of all categories would have the opportunity of living in close proximity to their place of employment.

It has been suggested that the automobile has caused the aggregate length of the journey to work to increase, but in large metropolitan areas the opposite is now probably true. With total reliance upon public transportation it is doubtful whether peripheral work centres could have developed at the rate they have. City growth would necessarily have had to continue at high densities along progressively length-

ened public transportation radials. The automobile, while permitting lower densities, has greatly improved accessibility to off-centre nodal points, and as is apparent from the relatively higher concentrations of employees around suburban industrial sites compared with centrally located sites, is tending to reduce commuting distances. Therefore, there is a strong argument for encouraging the further development of suburban work centres. With adequate overall planning such multi-nucleate urban concentrations could prove to be a most efficient and desirable form of city structure.

4. Opportunities for Further Research

To ask city planners to adopt any one form of development without undertaking additional research would be premature. This thesis has investigated the spatial relationships of employees' residences with only one industrial centre, and notwithstanding the weight of confirmative evidence provided by other studies, there remain a great many more questions which need to be answered. An interesting line of investigation arising from this study would be a detailed analysis of the distribution and characteristics of workers who left their jobs rather than adjust to their employer's changed location. A study of the locations of the workplaces they chose instead might prove fruitful. Very little work indeed has been done on the intra-urban migratory movements of employees in relation to their workplaces. This subject re-

quires considerably more analysis before definite conclusions can be drawn. In addition, there needs to be detailed investigation of factors influencing the facility with which migration is accomplished. Answers should be sought to the many questions concerned with the costs of housing and commuting, and the feasibility of providing varied accommodation in the suburbs should be considered. This should not, however, discourage research into the numerous alternative schemes which are possible. Finally, continuous basic research is needed to keep pace with the ever changing technology and the dynamism displayed in the realm of city growth.

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APPENDIX A

LIST OF FIRMS OPERATING IN POINTE CLAIRE INDUSTRIAL PARK IN THE SURVEY PERIOD

Name of Firm	Type of Operation
1. Avon Products of Canada Ltd.+	Manufacture and sales of cosmetics.
2. Bardahl Lubricants (Canada) Ltd.+	Manufacture and sales of lubricants.
3. Bell Telephone Co. of Canada	Servicing.
4. J. Brookes & Co. Ltd.	Distributors of pumps.
5. Brown, Boveri (Canada) Ltd.	Manufacture of heavy electrical equipment.
6. Bovril (Canada) Ltd.+	Manufacture of beef essence.
7. Canada Gunite Co. Ltd.+	Office and warehouse, construction.
8. Canadian Standards Assocn.	Testing laboratory.
9. Central Dynamics Ltd.+	Manufacture and design of electronic equipment.
10. Central Scientific Ltd.+	Sales and warehousing of laboratory equipment.
11. Chrysler Corp. of Canada Ltd.+	Parts warehouse, automobile equipment.
12. Custom-Aire Products Manu. Co. Ltd.+	Manufacture of aluminum extrusions.
13. B. W. Deane & Co.	Manufacture of chemicals - and distribution.
14. Dominion Herb Distributors Inc.	Manufacture and distribution of chemicals.
15. Electrolux (Canada) Ltd.+	Manufacture of electrical appliances.
16. General Motors Products of Canada Ltd.+	Parts warehouse, automobile equipment.

	Name of Firm	Type of Operation
17.	Harling Match Co.+	Advertizing and direct mail.
18.	Hewitt Equipment Ltd.+	Warehousing and sales of highway construction equip.
19.	Hunter Douglas Ltd.+	Manufacture of house sidings.
20.	Hus-Ski Ltd.	Manufacture of motor toboggans.
21.	ITT Royal Electric Co. (Quebec) Ltd.+	Manufacture and distribution of light electrical equip.
22.	H.C. Johnston Co. Ltd.	General contractors.
23.	Kal-Kar Insulation Corp.	Manufacture of polystyrene insulation.
24.	Klockner-Moeller Canada Ltd.	Assemblage of electric motor controls.
25.	Lakeshore Movers and Warehousing (Canada) Ltd.+	Furniture movers.
26.	Lepage's Ltd.	Warehousing and sales of adhesives.
27.	F. P. Lalonde Ltd.	Manufacture of electrical appliances.
28.	Martin Black Wire Ropes (Canada) Ltd.+	Warehousing of cable.
29.	Mallinkrodt Chemical Works Ltd.+	Manufacture and warehousing of 'fine' chemicals.
30.	Metropolitan Stores of Canada Ltd.	Warehousing of household goods.
31.	Montreal Reefer Service	
32.	Noranda Copper & Brass Ltd.+	Metallurgy research.
33.	Norman Wade Co. Ltd.+	Supplier of drafting materials.

	Name of Firm	Type of Operation
34.	Pascal Hardware+	Warehousing and showrooms - household goods.
35.	Pentagon Construction Co. Ltd.+	Contractors - maintenance of equipment.
36.	Pharma-Research (Canada) Ltd.+	Research in pharmacology.
37.	Proctor & Gamble Co. of Canada Ltd.+	Manufacture of food products.
38.	Pulp & Paper Research Institute of Canada.+	Research.
39.	Que-Mar Equipment Ltd.	Distributor.
40.	Rousseau Controls Ltd.	Assembly and distribution of hydraulic pumps.
41.	Schering Corporation Ltd.+	Manufacture of pharmaceutical chemicals.
42.	Square "D" Company Canada Ltd.	Assembly and distribution of light electrical equip.
43.	Standard Electric Time Ltd.+	Manufacture of light electrical equipment.
44.	Taggart Service Ltd.	Trucking.
45.	Terry Machinery Co. Ltd.+	Manufacture of diverse light machinery.
46.	Timberland-Ellicott Ltd.	Sales and servicing of logging equipment.
47.	Toastees Ltd.	Manufacture of electrical appliances.
48.	Vipond Automatic Sprinklers Co. Ltd.	Manufacture of sprinkler systems.
49.	Wallace Barnes Co. Ltd.+	Manufacture of steel springs.

+ Firms participating in survey of employees.

APPENDIX B

COPY OF QUESTIONNAIRE USED IN EMPLOYEE SURVEY

Recherche at étude entreprisent par le Départment de Géographie de l'Université McGill et la municipalité de Pointe Claire sur: Le transport au travail des ouvriers du Parc Industriel de Pointe Claire.

Joint Research Study by the Department of Geography, McGill University and Pointe Claire Municipality on: The Journey-to-Work by Work Staff of Pointe Claire Industrial Park.

Age) Sexe) Stat civil)
Age)_____Sex)_____Marital Status)_____

Nombre de personnes qui dépendent de vous)
Number of dependents you support)_____

Occupation)
Occupation)_____

Durée de temps à l'emploi de cette compagnie?) (ans) (mois)
Length of time with present employer?)_____ (years)_____(months)

Location de votre résidence actuelle? (l'intersection la plus proche et municipalité)
Location of present residence? (nearest intersection and municipality)

_____

Genre de résidence?) appartement) duplex) maison unifamiliale)
Type of residence?) apartment)_____duplex)_____single family dwelling)_____

Etes-vous propriétaire ou locataire?) propriétaire) locataire)
Do you rent or own your home?) owner)_____ tenant)_____

Indiquez la date de votre dernier déménagement) (année) (mois)
When did you last move?)_____(year)_____(month)

Raisons primaires pour ce déménagement?)
What were your major reasons for moving?) 1._____
2._____ 2._____

D'où avez-vous demenage? (l'intersection la plus proche et municipalité, ou cité si en dehors de Montréal).

Where did you move from? (nearest intersection and municipality, or city if from outside Montreal).

_____

Aimeriez-vous déménager plus près de votre travail?)
Would you like to move closer to work?)_____

Moyen de transport pour aller au travail?) Autobus) auto personnelle)
Means of travel to work?) bus)_____own car)_____

Auto en commun) train) autres moyens)
car pool)_____train)_____other means)_____

A quelle heure commencez-vous à travailler?)
At what time do you start work?)_____

Durée du trajet?)
Time taken to reach work?)_____

Route parcourue? (rues utilisées)
Route taken? (streets used)_____

_____

Avez-vous travaillé pour cette compagnie dans en endroit autre que Pointe Claire?)
Have you worked for your company in a location other than Pointe Claire?)_____

APPENDIX B

COPY OF QUESTIONNAIRE USED IN EMPLOYEE SURVEY

Recherche at étude entreprisent par le Département de Géographie de l'Université McGill et la municipalité de Pointe Claire sur: Le transport au travail des ouvriers du Parc Industriel de Pointe Claire.

Joint Research Study by the Department of Geography, McGill University and Pointe Claire Municipality on: The Journey-to-Work by Work Staff of Pointe Claire Industrial Park.

Age) Sexe) Stat civil)
Age)_____ Sex)_____ Marital Status)_____

Nombre de personnes qui dépendent de vous)
Number of dependents you support)_____

Occupation)
Occupation)_____

Durée de temps à l'emploi de cette compagnie?) (ans) (mois)
Length of time with present employer?)_____ (years)_____(months)

Location de votre résidence actuelle? (l'intersection la plus proche et municipalité)
Location of present residence? (nearest intersection and municipality)

_____

Genre de résidence?) appartement) duplex) maison unifamiliale)
Type of residence?) apartment)_____duplex)_____single family dwelling)_____

Etes-vous propriétaire ou locataire?) propriétaire) locataire)
Do you rent or own your home?) owner)_____ tenant)_____

Indiquez la date de votre dernier déménagement) (année) (mois)
When did you last move?)_____(year)_____(month)

Raisons primaires pour ce déménagement?)
What were your major reasons for moving?) 1._____
2._____ 2._____

D'où avez-vous demenage? (l'intersection la plus proche et municipalité, ou cité si en dehors de Montréal).
Where did you move from? (nearest intersection and municipality, or city if from outside Montreal).

_____

Aimeriez-vous déménager plus près de votre travail?)
Would you like to move closer to work?)_____

Moyen de transport pour aller au travail?) Autobus) auto personnelle)
Means of travel to work?) bus)_____own car)_____

Auto en commun) train) autres moyens)
car pool)_____train)_____other means)_____

A quelle heure commencez-vous à travailler?)
At what time do you start work?)_____

Durée du trajet?)
Time taken to reach work?)_____

Route parcourue? (rues utilisées)
Route taken? (streets used)_____

_____

Avez-vous travaillé pour cette compagnie dans en endroit autre que Pointe Claire?)
Have you worked for your company in a location other than Pointe Claire?)_____