TORONTO AUTO WORKERS IN THE 1920S

BLUE-COLLAR COMMUTING:
TORONTO AUTO WORKERS IN THE 1920S

By

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ABSTRACT

Working-class suburbanization was taking place in early twentieth-century North American cities such as Toronto. The impact of industrial decentralization upon the suburbanization of workers is examined with reference to automotive workers in Toronto in the 1920s. The main focus question is whether industry or workers suburbanized first. Labour turnover is examined, as well as the distance of the journey to work, the location of the workers by type of worker, and differences between the four companies -- Dodge, Durant, Ford and Willys-Overland.

The methodology involves using Toronto city directories to map and measure the commuting patterns of auto workers, and to infer patterns of suburbanization of auto workers. Few researchers have used city directories as a source of commuting data. It is argued that directories would be useful in the analysis of commuting and suburbanization in other North American cities.

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CHAPTER ONE:

INTRODUCTION

Working class suburbanization was taking place in early twentieth-century North American cities. Scholars have not adequately appreciated this trend, nor have they examined and weighed the possible causes. One of the more probable causes was the decentralization of manufacturing industry. In the first decades of the twentieth century, many industries were relocating from the city to the suburbs, or new businesses were being established on the periphery. Arguably, as a result, workers were also settling on the fringes of cities. The purpose of this thesis is to examine the impact of industrial decentralization upon the suburbanization of blue-collar families.

The suburbanization process will be examined with reference to automotive workers in Toronto in the 1920s. This thesis will contribute to our understanding of the spatial relationships between homes and workplaces in cities of the early twentieth century. Few studies have examined commuting at that period, or have focused on workers in the auto industry. There are various ways of tackling the decentralization of industry and workers. One might have attempted to document all industry and working-class

settlement in Toronto. However a case-study approach, analyzing the workforces of specific factories, was considered more manageable in being able to take into account various factors that influence commuting. This thesis infers commuting patterns from mapping and measuring the relationship between decentralizing industry and the locations of workers' housing.

Toronto is an appropriate city in which to investigate the question of suburbanizing workers and industry. In the first place, it was growing steadily. By the 1920s, it was a fair-sized city with about 522,000 population in 1921 that grew steadily to 631,000 in 1931. The growth rates of incorporated suburbs, such as New Toronto, and of the townships were much greater than in the City of Toronto during that period. The population of the city of Toronto grew 20.9 per cent between 1921 and 1931 while the population of the metropolitan area increased 33.8 per cent over the same period. Suburbs in the 1920s grew very rapidly. Contemporary sources, for example Might's City of Toronto Directories, use the term 'suburbs' to describe places beyond the City boundary. In reality, as far as many characteristics were concerned, there were also suburban areas developing within City boundaries. These included new residential areas being built in East Toronto and in North Toronto.

Secondly, although many industries stayed in the city, some were moving out. Toronto in the 1920s had a variety of industries ranging from old established ones, such as food processing (Canada Packers, Weston) and agricultural implements (Massey-Harris) to newer activities, such as electrical equipment (Canadian General Electric), photographic supplies (Kodak) and rubber tires (Goodyear in New Toronto). During the 1920s, other newly established industries included aircraft (de Havilland) and many different types of consumer goods, such as even chewing gum. Some of these industries were moving to the suburbs. Examples of industrial decentralization included the relocation of the Canada Kodak company in 1917 from King Street to a site five and a half miles out in the suburbs between West Toronto and Weston (Industrial Canada, May 1917), the relocation of Canada Cycle and Motor Co. to Weston in 1916, and the decentralization of Canada Wire and Cable from 1170 Dundas St W, 5.4 miles east to Leaside in 1914. Toronto then provides a number of examples of industrial decentralization within a larger context of suburban growth.

Automotive manufacturing is an especially appropriate industry to select as it was both growing rapidly to serve an expanding market and was decentralizing to the suburbs, unlike other industries such as textiles. Indeed, it provides examples of a variety of locational possibilities, and for

that reason makes possible an examination of the range of possible effects of industrial location on working class settlement. Different locational possibilities include, factories that were always located in the city, those that were newly established in the suburbs, those that were newly established in the city, or factories that relocated from the city to the suburbs.

Chapter Two cites and comments on a variety of literature on commuting, industrial decentralization within cities, and social processes in early twentieth century cities. Chapter Three explains the methodology and the sources used to address the question of industrial decentralization and working-class suburbanization. Both the workplaces and the workers and their residential location are discussed as well as the types of primary sources available. Problems of collecting the data and limitations of the source are also described. Chapter Four examines the nature of the workforce at the four factories, and addresses the issue of labour turnover. In this context, Chapter Five analyses the changing journey-to-work patterns of auto workers at the four Toronto plants. The distances between home and work for workers are examined as well as the relocation of certain workers. Differences in the length of the journey to work are compared for the four companies. Chapter Six returns to the broader questions addressed in the thesis and considers whether in Toronto,

factory workers or industrial entrepreneurs led the move from the city centre to the suburbs.

CHAPTER TWO:

ISSUES IN THE LITERATURE

Three issues are relevant to our understanding of the relationship between industrial decentralization and working-class suburbanization. These are the decentralization of industry, patterns of working class settlement, and the use of directory evidence to infer the extent of commuting between homes and workplaces.

2.1 Studies on Industrial Decentralization within Cities

Industrial location studies have assumed a high concentration of industry in central cities in the early twentieth century. In fact, industrial location was more mobile, diversified and often decentralized to gain access to power sources, transportation, or space. In late nineteenth-century Montreal, for example, the Lachine canal was a magnet for water- and steam-powered mills and a diversity of firms in the food, chemical, metal and wood industries located in the peripheral Saint-Anne district (Lewis, 1991). In Toronto, West Toronto Junction began luring away centrally-located industry as early as 1888 by offering free sites, cheap water and exemptions from taxation (Beeby, 1984).

Studies of decentralization of industry have considered the factors that were pushing or pulling industry out to the

suburbs. These are generally thought to have been land scarcity and expense in the inner city, in contrast with abundant, cheap land accessible by rail in the suburbs, lower taxes in the suburbs, and savings on insurance premiums by locating in open territory away from other factories that might be fire hazards for surrounding buildings (Pred 1964; Stilgoe 1982). Articles in trade journals in the 1920s, such as Industrial Canada, suggested that factories were also deserting inner cities due to poor quality housing and disease, lack of literate workers, high real estate costs and the need to build multi-storey factories which were less efficient in terms of production (Ferguson, 1923a & b).

Changes in the Production Process

In the case of new, large-scale industries in the early twentieth century, changes in production methods from a vertical, multiple-storey design to a more efficient horizontal layout required more land and new factories. Therefore auto assembly plants planning to build in the vertical style needed to decentralize to the suburbs. Among the most important locational criteria were cheap land with some room for expansion and access to the railway. These requirements differed from the locational criteria of other industries, such as central city locales for clothing manufacturing, and port locations for steel and food processing.

The early twentieth century was a time of rapid change in the production process. Automobile manufacturing in particular was transformed by the introduction of the fully automated assembly line in 1914. Assembly line changes in the years between 1914 and 1919 affected the workers a great deal.

Peterson (1987) has reviewed the introduction of Ford's continuous moving assembly line, which produced 1200 cars per day by 1914. This process replaced skilled craftsmen with semi- or unskilled workers doing the job faster, repetitively, and more uniformly with machines. In 1923, Ford estimated that 43 per cent of auto jobs could be learnt in one day. Thus the control over speed, the variety of tasks performed, and responsibility for problem solving moved from the workers to the managers and machines.

Control could extend beyond the workplace. Ford disapproved of hiring married women if their husbands had a job, so most women workers were young and single. The auto companies had initially a paternal interest in their workers. Ford set up its sociological department to ensure that workers' home lives were moral and he discouraged them from having boarders (Nelson, 1975). The Dodge Bros also showed personal interest in employees and the company had a welfare department.

One of the reasons why Ford was interested in the home lives of the workforce was that the auto industry had the

highest turnover rate of any industry in Michigan, over five per cent of the payroll quitting per month in 1928. Besides friends and familiarity, there was little incentive for the young and single to stay. There was no pension plan, job security or opportunity for job advancement.

The success of Ford's assembly line in Detroit stimulated the need to decentralize final assembly closer to the markets. Such regional decentralization of auto assembly plants in the United States early this century has been studied by Bloomfield (1990) and by Morales (1986) in Los Angeles. Morales noted that the Ford first assembly plant (1914) was located in an industrial district close to the central business district, but moved out to suburban Long Beach by the late 1920s. Similar regional assembly plants were opened by other firms, such as Willys-Overland (1928), Chrysler (1928), and both G.M. and Studebaker in 1936. Wachs (1984) looked at the effects of early automobiles, the beginning of the sprawl of Los Angeles in the 1920s.

During the 1920s, the auto industry was the largest in the United States, and due to the nature of the complex product and its use, then this stimulated other industrial growth. This growth was often in suburban locations as it had to expand or was coming in from outside. In the automobile context, this meant industries such as glass, rubber, paints, metals and machinery. Goodyear was an example of a branch

industry that located in suburban Toronto to service automotive assembly plants. Other activities such as the construction of new roads to accommodate the motor vehicle, involved the growth of branch industries, including themanufacturing of cement. For example, Canada Cement was located in suburban East Montreal.

The process of industrial decentralization involved two types of manufacturing decision making. One was individual manufacturers deciding to locate in the suburbs. These include the Ford Motor Co on Danforth avenue and the Canada Kodak Co in York Township (Ferguson, 1923a & b). These were single factories on their own with no other factories nearby. The second type of manufacturing decision making about suburbanization was a deliberate fostering of industrial nodes. These included West Toronto Junction in the late nineteenth century (Beeby, 1984) and New Toronto in the early twentieth century.

Cheaper Land in the Suburbs and Lower Taxes

Perhaps the most important factor drawing industry into the suburbs was cheap land. Taylor (1915) writing as a first-hand observer, noted examples of decentralization. These included Corn Products Refining Co. which moved from downtown Chicago to the suburb of Argo, Illinois and the movement of industries eastward across the Mississippi from St Louis so that they could save on coal toll charges. The South

Philadelphia works of the Westinghouse Co. chose a 500-acre site nine miles south of Philadelphia as it allowed room for expansion, and offered good access by rail and water and space for building workers' housing (Stilgoe, 1982). Firms had to make trade-offs in the early twentieth century between accessibility to the city centre and land availability on the periphery (Wood, 1974).

By the 1920s, there were three major locations of industry in cities -- central and often near the waterfront, along railway belt lines (such as the Ford factory at Dupont and Christie Streets), or suburban. There was limited urban planning associated with industrial location. Specific planning of industry did occur in a few places, such as Letchworth with its planned industrial estates and emphasis on skilled manufacture (Miller, 1989) and the creation of the Central Manufacturing district in Chicago.

Transportation and Suburbanization

Railways were a key factor in the suburbanization of factories. In the context of Toronto, the development of railway yards often encouraged the decentralization of industry, particularly in the case of West Toronto Junction (Beeby, 1984). Factories built in the period from the 1880s to the 1930s tended to cluster around railway belt lines. Industry in the early twentieth century needed to be close to both freight and passenger transportation services. Mass

transit allowed two types of commuting movements for workers. It allowed suburban workers to work downtown in manufacturing and it also allowed workers who resided downtown to work in suburban industry. In Detroit, the Ford plants at Highland Park and Dearborn were built ahead of housing for workers in nearby areas. Mass transit allowed workers to commute from all over Detroit.

Automotive transport increased distances between home and work and encouraged the suburbanization of the labour force. This was only starting to occur in the 1920s with greater purchasing of cars and the development of provincial highways. Jackson (1985, p.184) discusses the impact of truck transportation on the suburbanization of manufacturing. In conjunction with better highways and new methods of materials handling which favoured one-storey buildings, the truck made outer-city manufacturing more efficient than in the inner core. Warehousing and distribution also moved to the outer edge where almost all new industrial construction took place after 1925. The development of buses, cars and commuter railways altered the traditional linkages between place of work and residence. This also increased the quantity and quality of a firm's labour market (Pred, 1964). Factory location became more flexible; as factories used electricity it no longer became necessary to locate near a source of coal or on the waterfront.

Labour Problems in the Inner City

One other reason for leaving the central city was labour strife. Gordon (1984) cited examples of labour trouble in Chicago and Taylor (1915) observed that unions were less successful in the suburbs than they had been downtown as workers were more isolated. Industrial giants by the turn of the century were able to attract workers to decentralized sites. By this time, suburban areas had complementary factories and a supply of workers, instead of depending on central location for access to these things (Walker, 1981). Tensions between workers and management by the late nineteenth century were so severe that suburbanization was often seen as a way of attracting better labour and could promise home-ownership for stable workers. Thus industrialists not only relocated the factory but also took selected workers along with them and some also provided land, houses or credit for workers to buy homes (Walker, 1981, 401).

2.2 Patterns of Working Class Settlement

There have been different descriptions and interpretations of the location of industry and working-class housing in the early twentieth century. Burgess (1925) assumed that factories were located near the 'zone in transition', encircling the central business district. Just around this area of business and light manufacture were the residences of industrial workers who desired to live within

easy access of their work. The concentric zone model of cities, based on Chicago in the 1920s, continued outward with the "residential zone" and then the "commuter zone". Thus Burgess assumed that workers lived in or close to the downtown and that commuters were upper-income management or white-collar workers. Hoyt (1939), while he saw a sectoral rather than concentric model of residential rental neighbourhoods, did not address whether workers were suburbanizing.

There has been criticism of the concentric zone model, as developed by Burgess. Davie (1937) tested its validity in his study of New Haven. He concluded that the absence of any heavy industry or railways in the Burgess model distorted the results. The Burgess zones were drawn in terms of commerce, residences and light industry (Pred 1964; Quinn 1940).

Critics of the Burgess tradition would argue that industry, especially in the oil, steel and automobile sectors, was decentralizing during the first decades of the twentieth century and that workers were also moving out to be close to these sources of employment. Harris (1988) discusses the existence of working-class suburbs in many North American cities in the 1910s and 1920s. Many workers were living at the fringe of the city in industrial satellite cities. Industry had decentralized along rivers, waterfronts and railway belt lines, and workers could live in the suburbs and

then ride or walk to work. Examples included Chicago around the suburban stockyards and Detroit near the auto factories in Hamtramck and Highland Park. New York by 1911 had numerous examples of large manufacturing plants relocating or forming new communities in the suburbs (Pratt, 1911). New residential and industrial suburbs of Los Angeles developed around oil fields or refineries in the period between 1890 and 1930 (Viehe, 1982). The discovery of additional oil fields led to new suburbs and this helped industrialize the metropolitan region. This pattern of suburbanization conflicts with the traditional view that intercity rail transport and a middle-class quest for a rural ideal caused suburbanization.

Harris (1990b) challenges the urban theory of Burgess and Hoyt by documenting the working-class nature of suburbs in Toronto in the early twentieth century. Workers moved to the suburbs where they could build their own inexpensive dwellings. Harris suggests this experience also occurred in midwest and western US cities, western Canadian cities and even in Australia and Argentina. Using a systematic sample of 1,785 dwellings from the 1913 assessment rolls, these dwellings were traced back to 1907 and 1901. The results suggested that over a third of houses were self-built. Harris (1990a) examines the growth in home ownership in Toronto between 1899 and 1913, using assessment rolls. Samples of dwellings -- 911 in 1899 and 1200 in 1913 -- show the first

effects of the suburbanization of manufacturing, attracting workers to the periphery.

2.3 Commuting between Homes and Workplaces

Much of the literature on the journey to work was written between the 1940s and the 1960s. This was a period of rapid urbanization with a substantial growth in commuting by private car and an increasing length of the journey to work. Research on the journey to work was fostered by large-scale traffic surveys which generated substantial data on the spatial origins and destinations of commuters. Work on historical commuting was much more rare with the notable exception of Carter (1975).

Few people have used commuting patterns to infer the decentralization of industry and of workers. Commuting studies have generally been concerned with contemporary patterns of journeys to work and their effect on urban sprawl (Dickinson, 1967) and on future transportation demands (Lansing et al., 1964; Taaffe et al., 1963). Other factors in the spatial relationships between workplaces and residences have been probed. Simmons (1970) argued against the idea that residential locations in the metropolitan area were significantly determined by the journey to work. He suggested the need to study decision-making about the place of work. Other studies have focused on the impact of increasing commuting distances on the growth of dormitory towns, and the

increasing separation between communities and sources of employment (Humphrey 1965; Lawton 1968). Other geographers have examined metropolitan work trips associated with the suburbanization of employment in the United States in the 1960s (Scott 1982; Taaffe et al. 1980; Wheeler 1970).

Place of Work and Place of Residence

Decisions about home/workplace relationships are described in some of the commuting literature. Carroll (1952), in his analysis of six major US cities, discovered that when workers were choosing a place of residence, the place of work was the dominant factor. He also found that the pattern changed with different industries. In Flint and Detroit, for example, dwellings of workers was non-central due to the newly emerging automobile industries between 1900 and 1910.

Duncan (1956) and Hecht (1974) both saw socioeconomic status and the journey to work as being interrelated. Duncan (1956) found in a systematic sample of 2,000 households in the Chicago 1951 Occupational Mobility Survey that the degree of separation was greatest for high status employees in central-city workplace. She concluded that two main determinants in commuting patterns were the socioeconomic level of the worker and the centralization of the workplace. Hecht (1974), using evidence of 440 workers in ten industrial companies in Worcester, MA in 1967, found that older people tend to live

closer to the central city than younger ones and that wage rates were the strongest determinant of residential location.

Wolforth (1965) and Halvorson (1973) reported different findings. Using evidence from Vancouver, Wolforth (1965) suggested that workers only minimize their work-travel if all other things are equal, and if suitable housing is available near the workplace. The cost of housing was a more important determinant of residence than the absolute length of the journey to work. The higher socioeconomic groups tended to live in desirable areas, regardless of distance to work. Central-area workplaces drew people from all parts of the city. Thus different components of the labour force came from quite distinct areas of the city. Peripheral industrial workplaces tended to have workers clustered in the nearest available low-cost housing districts. The length of the journey to work did not vary with a worker's socioeconomic standing but with the location of the workplace within the city. Halvorson (1973) also argued that differences in journey-to-work distances could not be due to income, on the basis of a case-study in Charleston, West Virginia in 1967.

Historical Commuting Studies

Vance (1966; 1967) has pointed out that ties of workplace and residence are specific to a particular time and place, given current technological skills and the narrow limits of economic possibility that are set by income size and location

as well as legal restrictions, local conditions of topography, custom and tradition. Ericksen and Yancey (1979) were concerned with the changing relationships between work and residence in industrial Philadelphia. They found a positive relationship between income and the length of the journey to work -- with the lowest paid living closest to their jobs -- a similar finding to Duncan (1956). Higher-status workers appeared to commute longer distances, regardless of workplace location, while factory-owners always lived in exclusive districts, some distance from the factory. Pratt (1911) in his study of the economics of the journey to work in New York City in 1907, also found a strong correlation between wage level and length of journey to work.

Greenberg (1981) in her study of jobs and housing in Philadelphia between the 1880s and 1930, found that immigrants were the most constrained and thus lived near the factory. The 1880s marked the beginnings of suburbanization of industry when most people used mass transit or walked to work. By 1930, the most prosperous had relocated from the centre to the periphery, black zones expanded as inner industrial areas stagnated, and modest, owner-occupied housing was developing in the suburbs. Greenberg (1980) examined the decentralization of industry in Philadelphia in the early twentieth century. She found that, for decentralized industries, the relationship between work and residence was

particularly close. The greater the distance from the city centre, the greater the opportunity for the emergence of industrially based residential areas.

Singleton (1973) has traced the origins of suburbs in the United States and Ward (1964) the formation of early streetcar suburbs in Boston and Leeds. Monroe and Maziarz (1985) have commented on how the historical trend in work-trip lengths is closely related to the development in industry and transportation technology. During the era of the streetcar from the 1880s to the 1920s, a greater range of residential locations evolved with distances up to three kilometres from the workplace. The automobile allowed the city to expand spatially and lowered the population density, particularly after World War Two.

Goheen (1970) measured journey-to-work patterns from the evidence of city directories for some Toronto workers in 1860 and 1890. The 1860 places of work and residence were mapped for bakers and confectioners, three small manufacturing establishments, clerical workers in two banks, physicians and surgeons, and directors of three banks. Journeys to work were mapped for employees in various industry types in 1890 -- including two breweries, a newspaper publishing company, another publisher, a piano manufacturer with both central and suburban plants, a retail outlet, a life insurance company, two banks and a large department store. For the employees'

residences, Goheen also distinguished between owner-occupied and rental, using assessment rolls. He found that industrial workers had to commute longer distances than professionals in 1860, as they could not afford to live in more accessible locations. By 1890, while workers were still excluded from areas inhabited by higher ranking groups, they were no longer confined to a few unhealthy or undesirable parts of the city.

Methods of Studying Commuting Patterns of Workers

No studies that have been found use commuting evidence to study industrial decentralization and few studies use city directories for commuting patterns either. Carter (1975) examined the journey-to-work patterns at the C-K-D factory in Prague, Czechoslovakia between 1871 and 1920. He used employment registers for the machine company that had over 20,000 on its payroll. Many workers lived within two to three kilometres of the factory -- no more than a 30-minute walk to work. Hoskins (1987) used payroll records of the Point St Charles Shops of the Grand Trunk Railway in Montreal to study commuting patterns of workers in the period from 1880 to 1917, when between 2,000 and 3,000 men were employed. A large majority of these workers lived within practical walking distance of work, but the proportion living within two miles dropped from 90 per cent in 1902 to about 75 per cent in 1917.

In the absence of payroll and personnel records, city directories have been used to trace commuting patterns.

Bloomfield (1990) used city directories for the years 1897 and 1927 to study the journey to work of employees at six factories in the smaller urban community of Berlin (renamed Kitchener in 1916) and Waterloo, Ontario. These represented a variety of industries, such as furniture, buttons, shirts, agricultural machinery and distilling, and both blue- and white-collar workers. In 1897, as many as 80 per cent of the workers lived within one half-mile of their place of work, and under 5 per cent more than one mile away. By 1927, only two of every five workers lived within one half-mile, and one in five had to commute more than one mile.

Three major issues in the geographical and historical literature have been examined in this chapter -- the decentralization of industry, patterns of working-class settlement, and commuting patterns. In the early twentieth century, some growth industries were decentralizing because of high land costs and lack of space in the city. Workers' housing was also becoming suburbanized in this period, specifically in Toronto. The relationship between the suburbanization of workers and the decentralization of industry will be examined through analyses of commuting patterns of auto workers in the 1920s. The next chapter explains the methodology.

CHAPTER THREE:

METHODOLOGY

There are several ways of documenting the decentralization of industry and the suburbanization of workers' housing. Possible methods include the use of fire insurance atlases which would show the location of housing and industry at certain dates, or assessment records which would give details of occupational composition and would allow the blue-collar workers to be identified. Alternatively, debates in manufacturing journals over the decentralization of industry could be surveyed. The disadvantage of these methods and sources is that no specific links between home and work could be made.

The alternative is to use evidence on residence and place of work drawn from employee records or city directories. The ideal source would be company records, but in their absence, city directories provide information on home and work. There are several ways that city directories might be used. One would be to examine a suburb where people lived and determine from the directory their places of employment. If there were large numbers of suburbanites but they were mostly employed in the central city, this would suggest that the workers were decentralizing ahead of industry. However one would not be

able to tell so easily if there were workers living in the city and working in the suburbs. Another option would be to locate all industry and workers in the directory to determine the degree of suburbanization but this would be a mammoth task to undertake. Another alternative would be use a small sample in the directory, which would give one a changing picture of decentralization. But one would not learn anything about specific factories.

It was decided to focus on the workforces of specific factories, not a neighbourhood or suburb or any kind of random sample of residents in the City of Toronto, to measure the suburbanization of workers and industry in the 1920s. The advantage of choosing a specific workplace is that one already knows where the workers are employed so one can concentrate on the location of their residences. By examining the workforces of specific factories over time, one can get closer to understanding the detailed processes by which jobs influenced the location of workers and vice versa.

One could select different types of industries to compare the dates of suburbanization of the factory and the workforce, but it would be difficult to interpret the results as different industries have different locational requirements and tapped different labour forces. It is therefore desirable to focus on one industry group. The automobile industry was selected, with several different companies having similar

workforce, factory process and locational requirements but different specific locations in the 1920s.

The automotive industry was growing quickly with an increasing demand for motor vehicles in the 1920s. As it was pioneering mass-production on assembly lines in horizontal structures, new plants tended to be located in suburban areas. Numbers employed at the automotive plants in the 1920s are large enough to be significant.

Toronto was selected for study as it was a fair-sized city with about 522,000 population in 1921 that grew steadily to 631,000 in 1931. Table 1 illustrates the growth of the towns, villages and townships within 'metro Toronto'.[1] York Township grew from 57,448 to 118,883 by 1931. The growth rates of the incorporated places, such as New Toronto, and the townships were much greater than the City during that period. Figure 1 illustrates that the boundaries of East York, North York and York Townships date from the 1920s as well as those of Swansea and Forest Hill.

Toronto in the 1920s had a variety of industries from agricultural implements (such as Massey-Harris) to rubber tires (such as Goodyear in New Toronto). Figure 2 shows the major industrial zones in Toronto about 1928. Many industries were clustered near the railways, including the four auto assembly plants.

TABLE 1: POPULATION OF TORONTO AND ITS SUBURBS, 1911-1931

	1911	1921	1931
City of Toronto	376,471	521,893	631,207
Other Incorporated Places			
TOWNS			
Leaside	-	325	938
Mimico	1,373	3,751	6,800
New Toronto	-	2,669	7,146
North Toronto	5,362	(part of the city)	
Weston	1,875	3,166	4,723
VILLAGES			
Forest Hill	-	-	5,207
Long Branch	-	-	3,962
Swansea	-	-	5,031
	8,610	9,911	33,807
Townships			
Etobicoke	6,193	10,445	13,769
Scarborough	4,713	11,746	20,682
York (before 1922)	13,938	57,448	-
York	-	-	69,593
York, East	-	-	36,080
York, North	-	-	13,210
	24,844	79,639	153,334
Grand Total	409,925	611,443	818,348

Source: Census of Canada 1951 (retrospective tables).

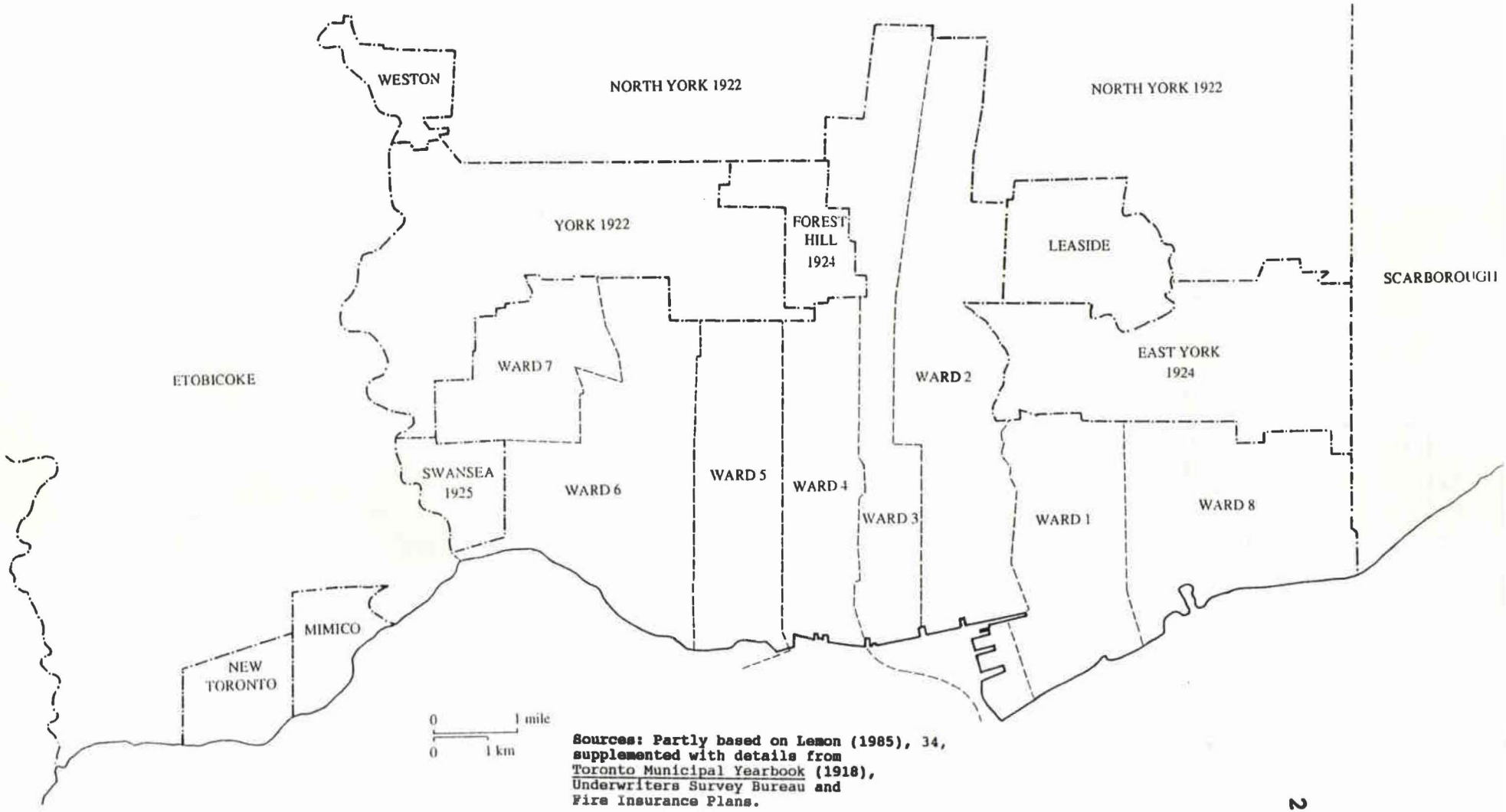
CITY POPULATION PERCENT OF THE TOTAL, 1911-1931

	1911	1921	1931
City of Toronto	91.8	85.4	77.1
Other incorp. Places	2.1	1.6	4.1
Townships	6.1	13.0	18.8
Total	100.0	100.0	100.0

GROWTH RATES OF POPULATION, 1911-1931 (Index numbers 1911=100)

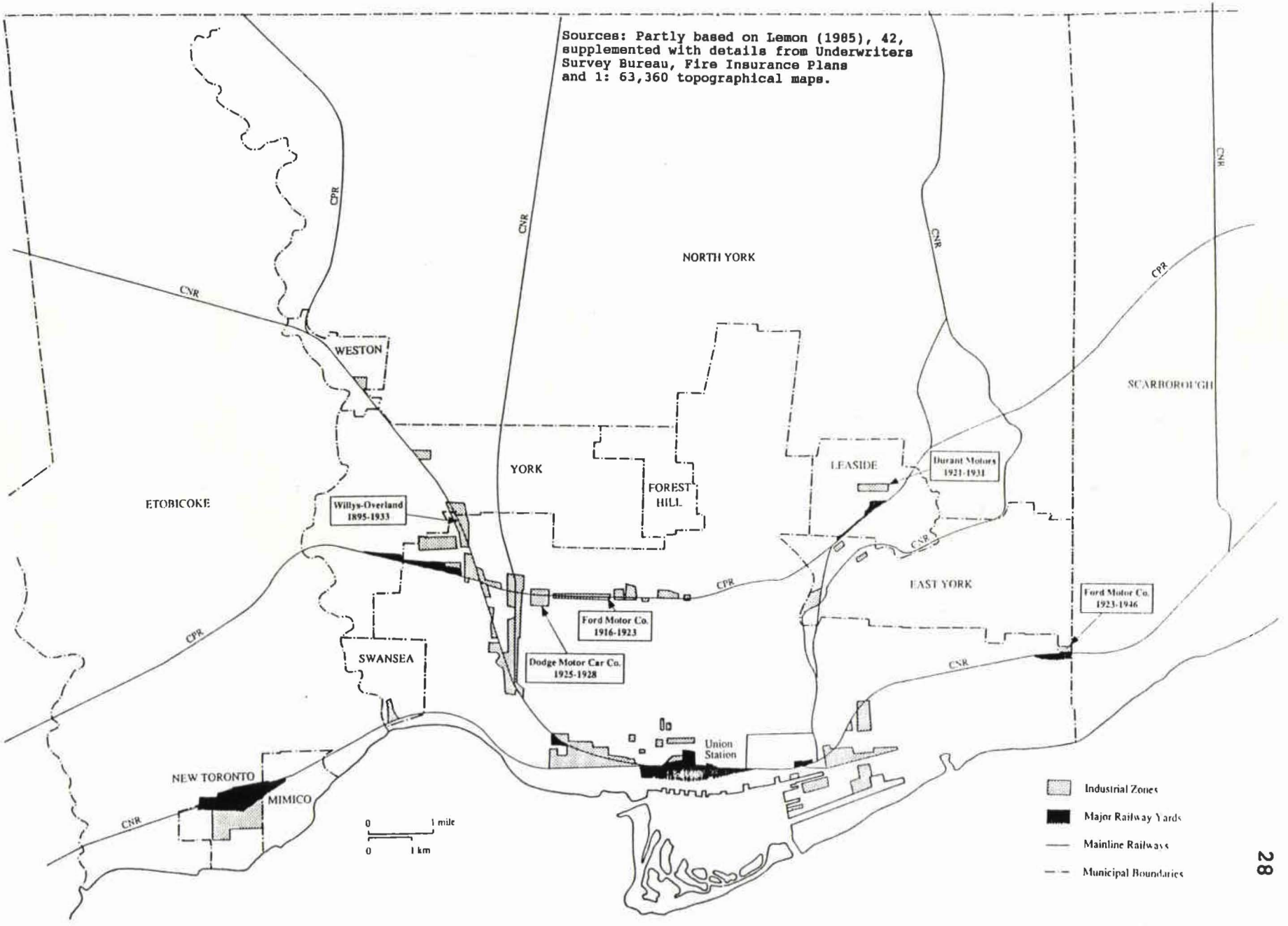
	1911	1921	1931
City of Toronto	100.0	138.6	167.7
Other incorp. Places	100.0	115.1	392.6
Townships	100.0	320.5	617.2
Total	100.0	574.2	1177.5

Figure 1:
TORONTO BOUNDARIES 1920s



Sources: Partly based on Lemon (1985), 34, supplemented with details from Toronto Municipal Yearbook (1918), Underwriters Survey Bureau and Fire Insurance Plans.

Figure 2:
INDUSTRIAL ZONES IN TORONTO c.1928



While Toronto in this period was growing quite rapidly both in terms of population and employment, it seemed to be a very compact city for its size. This largely reflected the policies of the Toronto Railway Company (TRC) to 1921, which did not allow the street railway to expand the built-up area (Armstrong et al., 1986; Doucet, 1982). Lemon (1985) notes that after the TRC was taken over by the Toronto Transportation Commission (TTC) in 1921, a revived public transportation system improved accessibility and commuting options. By 1923, the TTC was running over 230 miles of track, which had increased to 254 miles by 1930 (p.43). Figure 3-5 illustrate the TTC routes before September 1921, in December 1924 and in 1928. Toronto's economic and population growth was accommodated by considerable physical expansion in the 1920s. Harris and Luymes (1990) have documented the growth of Toronto from 1861 to 1941 by compiling maps of the built-up area, using fire insurance plans, topographic surveys and historical maps. Their work shows the extent of Toronto's built-up area in 1921 (Figure 6).

3.1 The Workplaces

A range of possible factory types could be studied to illustrate the decentralization of industry and of workers' housing -- factories that were always located in the city, those that were newly established in the suburbs, those that

Figure 3: TORONTO STREET RAILWAY AND INTERURBAN LINES PRE 1/9/1921

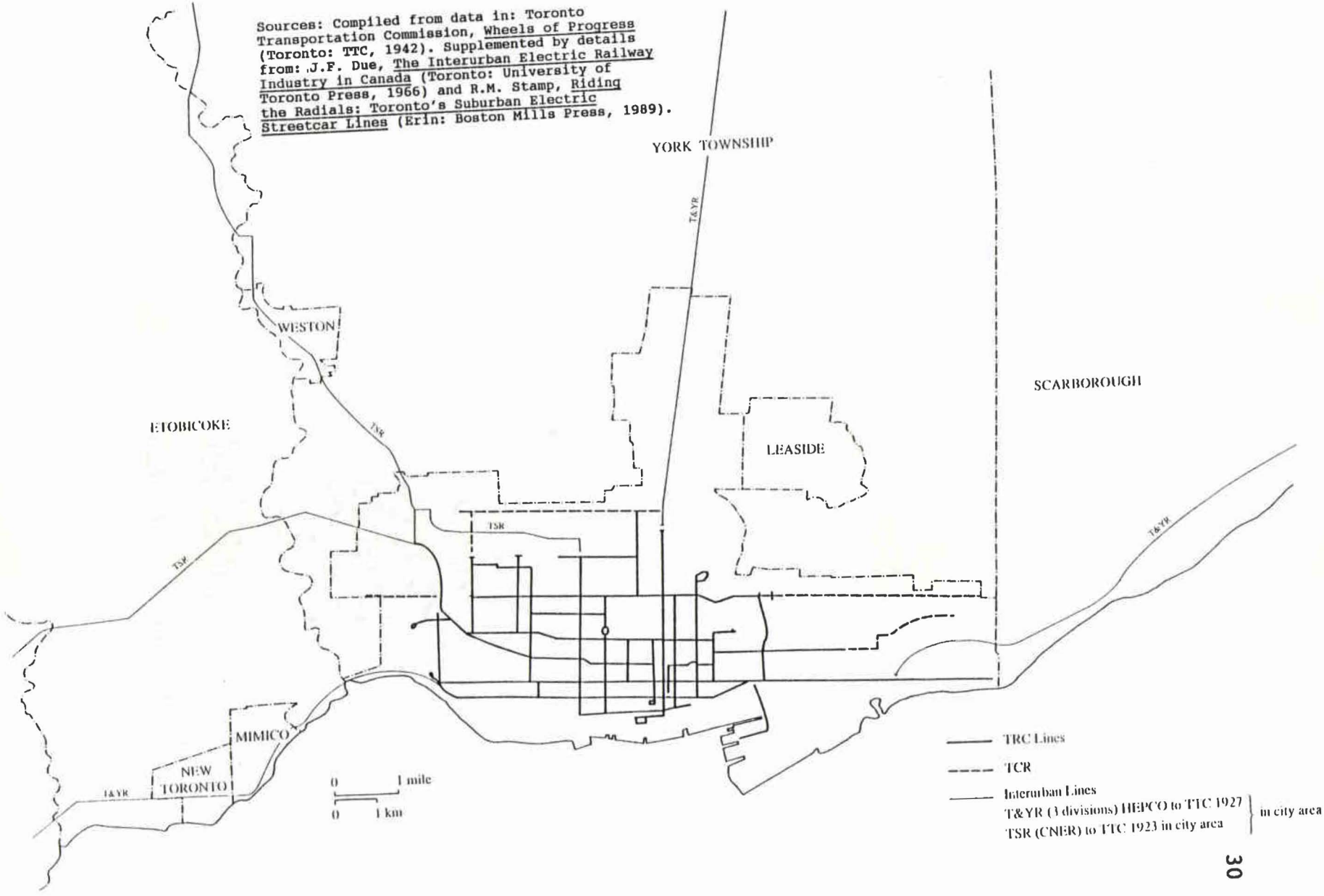


Figure 4: TORONTO STREET RAILWAYS AND INTERURBAN LINES, DECEMBER 1924

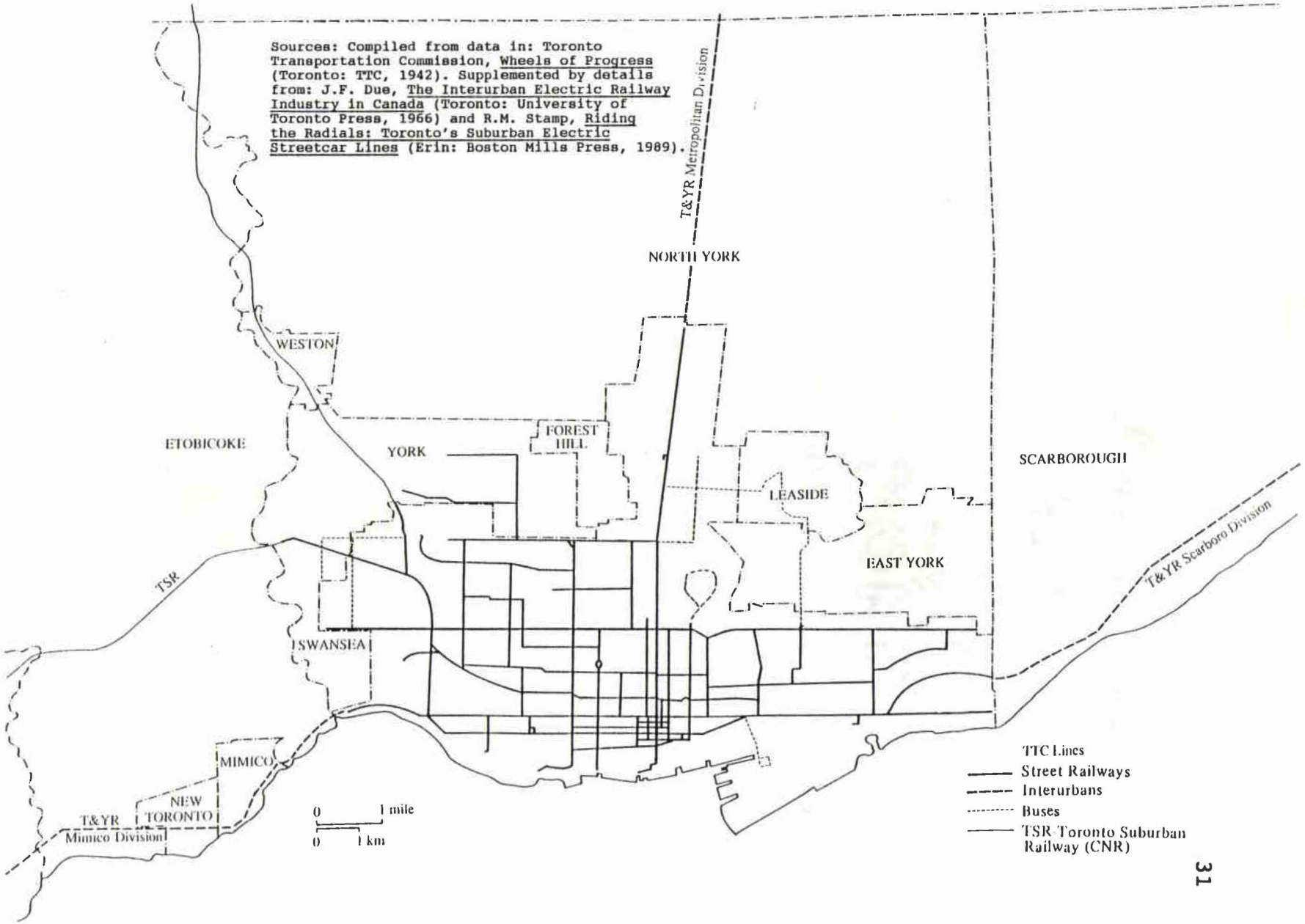


Figure 5: TORONTO STREET RAILWAYS AND INTERURBAN LINES 1928

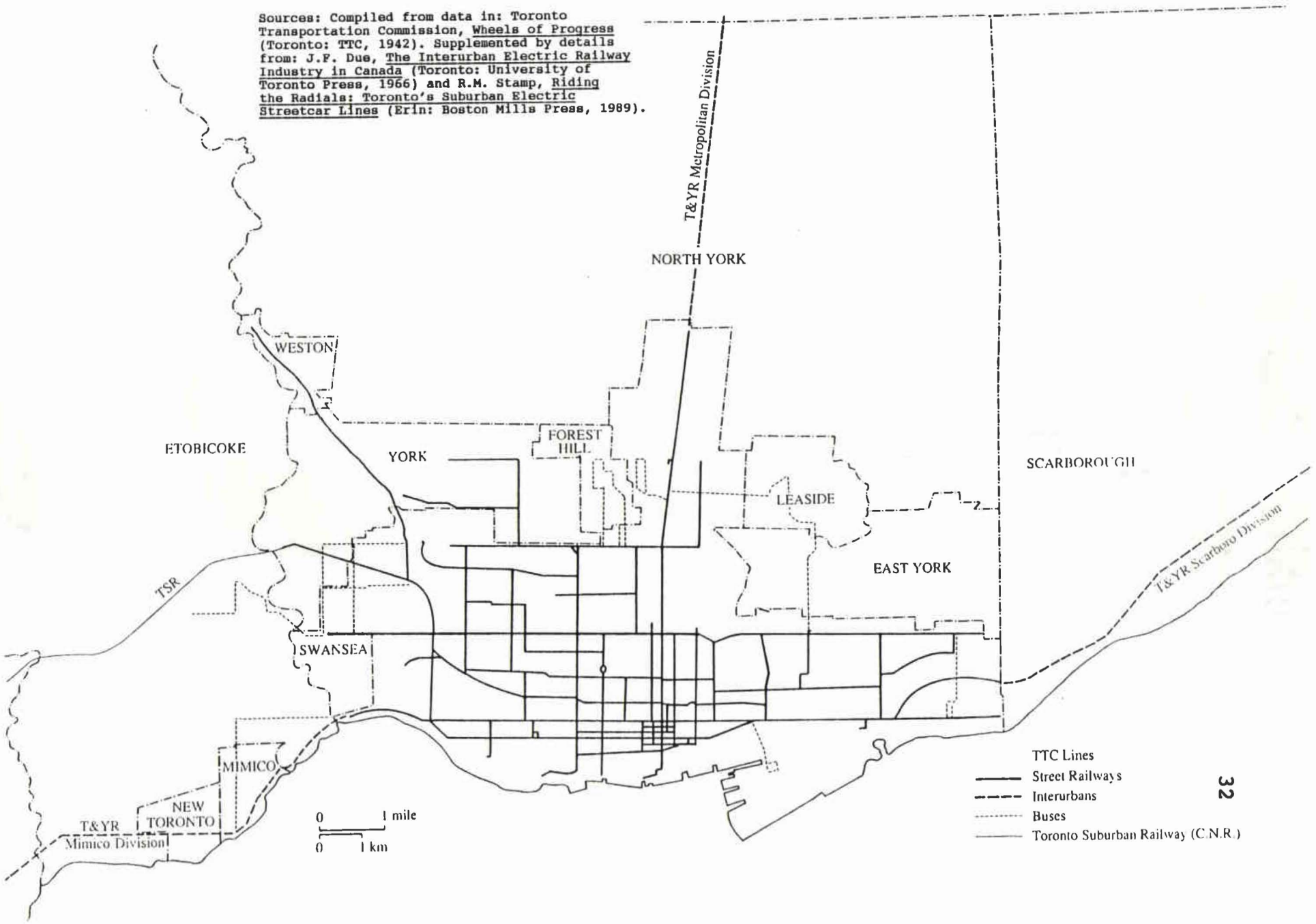
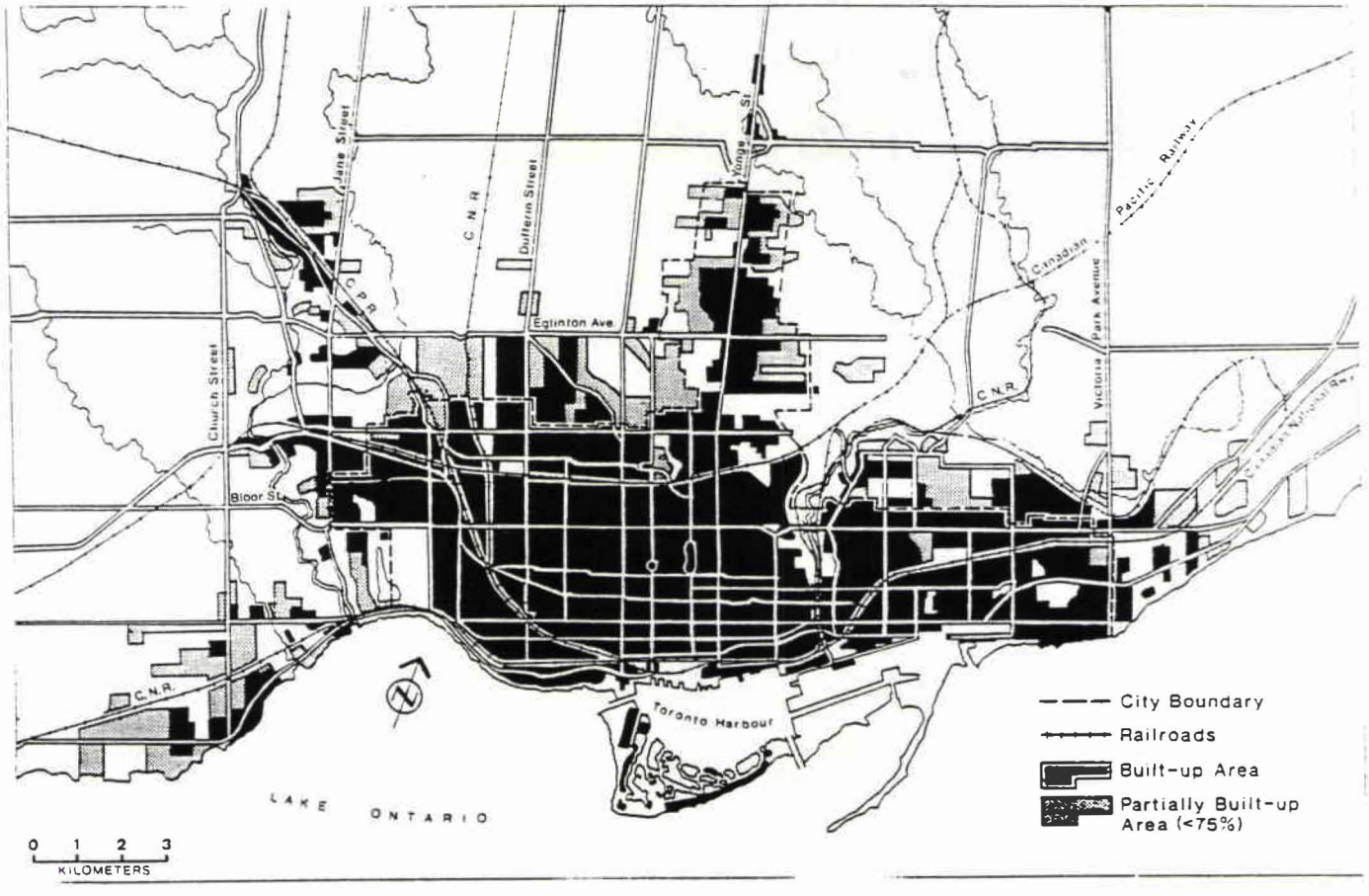


Figure 6: Toronto's Built up Area in 1921



Source: Harris & Luymes (1990), 253.

were newly established in the city, or factories that relocated from the city to the suburbs. Comparisons of the patterns associated with these types allow one to explore the question of whether jobs led workers to the suburbs in the 1920s and gives some insight into the dynamic relationship between work and residence.

For the companies that stayed in the city, it is possible to ask whether the workers suburbanized even though their workplaces remained central. For those companies that were established in the suburbs, one can ask the following questions. Did the new company locate near a potential workforce? Or did it attract workers to settle in the vicinity and if so, how soon? For the companies that established themselves in the city, why did they locate there instead of in the suburbs and did they draw upon a city or suburban workforce? Companies that relocated to the suburbs from the city would probably not retain their entire labour force from the old plant. How many original workers remained at their old residences? How many original workers relocated to the suburbs to be closer to the new factory? Did the new factory increasingly tap a new pool of labour in the suburbs?

The Toronto auto industry in the 1920s includes examples of each of these four ideal types (Figure 2). The Canadian auto industry was expanding between 1904 and 1929, both in terms of a local market as well as British Empire markets.

While Windsor/Walkerville and Oshawa were the biggest centres of production, Toronto was always the largest market (accounting for 25 per cent of motor vehicle registrations in Ontario in 1912/3 and 20 per cent in 1930).[2] The size of the market was an encouragement to the location of assembly plants there between 1915 and 1925. These were the Ford Motor Company, Durant Motor Company, Dodge Bros and Willys-Overland. The Ford factory relocated from a more central location to the suburb of East York in 1923; the Durant Motor Co. was established in the suburb of Leaside in 1922; Willys-Overland was an example of a factory that remained in the City of Toronto; Dodge Bros was newly established within City boundaries in 1925.

The factories are not perfect examples of the four ideal types, however. Ford moved to the eastern suburbs (6.5 miles from the centre), from the northwest sector of the City (three miles from the centre), not from the downtown. Although Willys-Overland and Dodge were both located within the City of Toronto, they were some distance from the central core.[3] Willys-Overland was 5.5 miles from the centre and Dodge 3.5 miles. Durant however fits the model of newly established suburban industry well, being 5.5 miles from the centre of Toronto.

All four factories were assembly plants and were branches of operations based in the United States. Ford's Canadian

headquarters were in Ford City[4], while Dodge's Canadian operations were directed from Detroit, Durant's from Flint, Michigan, and Willys-Overland's from Toledo, Ohio. Thus decisions that were made, such as the decentralization of the Ford plant or the closure of the Dodge plant, were non-local. Willys-Overland was much larger than the other plants and also manufactured some car bodies onsite. This helps to explain why Willys-Overland had a higher proportion of skilled workers than the other companies. Durant appeared to manufacture some upholstery onsite as well as assembly.

Ford was studied over a period when it relocated from a central site at Dupont and Christie Streets (where it had located in 1915/6) to just outside the City at Danforth and Victoria Park Avenue in East York (from 1923). The workers were traced for each of the two years before the move and each of the three years after, to throw light on labour turnover and commuting distance changes. Ford exemplifies a factory moving to the suburbs and it raises questions as to whether it retained its old workforce in their original homes, acquired a new workforce in the suburbs, or whether some of the original workers also relocated.

The Durant Motor Company located in suburban Leaside when it commenced assembly operations in 1922. It was interesting to consider how Durant workers, who lived outside this awkwardly located suburb, got to work each day. Durant

workers were traced for five years from its first year in business, as well as in 1928, a peak year in automotive production. The central question was whether Durant encouraged workers to locate close to the plant in the suburb of Leaside.

The Dodge Bros Motor Company was located within the City of Toronto at 1265 Dufferin Street. It began operating in 1925, so data were collected for 1925, 1926 and 1928. The evidence of the Dodge Bros workers allows us to compare the distance travelled by workers and their location to the suburban factories. Did Dodge workers suburbanize during the time the factory was in operation, despite the fact that the factory was not suburban?

Willys-Overland on Weston Road in West Toronto, was very different to the other factories. It was larger and had been established since the late 1890s as a bicycle factory that, as the Russell Motor Co., evolved into full car manufacturing in the early twentieth century. Willys-Overland was a full engineering works even in the 1920s, unlike the other plants which assembled components that were manufactured elsewhere and shipped to Toronto in railway cars. In that respect, it represented the more 'traditional' method of auto production. Willys-Overland employed at least twice the workers of Ford and Dodge and considerably more than Durant. The factory was located close to the City boundary in an industrial district

in West Toronto. It had previously been known as the Russell Motor Car Company to 1915, with which the Canadian Cycle and Motor Co. (CCM) had been linked. Because of its large workforce, the location of workers' residences was traced only in a few years, namely 1922, 1923, 1925 and 1928. It is not possible to trace employees of Russell (now reorganized as Willys-Overland) during the war years, for directories then did not report the names of employers. It was therefore necessary to examine a few years in the mid-1920s when the directories are more complete. The key question is whether the workers at Willys-Overland gradually suburbanized, despite the fact that the company was located within the City boundaries?

3.2 The Workers and their Residential Locations

In order to measure the distances between home and workplace for auto workers in Toronto in the 1920s, it was necessary to find a good contemporary source. Company records, such as those used by Carter (1975) and Hoskins (1987) are in some respects ideal, but are hard to locate.

As an alternative, city directories may be used, though it is important to recognize their limitations. Shaw (1984) and Harris and Moffat (1986) examine some of these, such as their bias towards listing the more stable elements of society and their omissiion of transients and casual workers. Hiebert (1991) points out that city directories listed the occupations

of individuals, which can only be imperfectly translated into class categories, and that ethnic background was not specified in the directory -- though these are problems with other sources as well. Shaw has commented on the need to compare the broad patterns derived from analysis of directory evidence to other sources such as the published census, especially if only sample data are extracted from the directories.

In the present study, it was not possible to make such comparisons between directory and published census data, as the time period being examined did not coincide with a decennial census that published any useful data on the automotive sector in Toronto. Efforts were made to compare the directory evidence of auto workers in Toronto in the 1920s with data from the Census of Canada for 1921 and 1931. Problems result from the lack of industrial or occupational classification that are fine enough in either year or consistent from one census to the next. According to the 1921 Census, 348 men and 26 women were recorded as working in the industry class: Automobile and bicycle repair and manufacturing in Toronto (Census of Canada 1921, Table 5). In 1931, 2,165 men and 155 women were reported to be employed in the industry class: Automobiles, cycles, and aircraft (Census of Canada 1931, Table 57). Occupational categories transcended industry groups so that, for example, one cannot distinguish painters, tool makers or general labourers in

automotive factories from all painters, tool makers or general labourers.

In absence of surviving payroll or employee data for auto workers in Toronto, Might's City of Toronto Directories for the 1920s proved on balance to be useful. Given the nature of other sources past and present, this is the best available source available for Toronto workers' residences and workplaces. Problems with the reliability of the directory data were considered to be offset by the following considerations. The directory evidence is unique in providing details of occupation, employer and place of employment, as well as street address and residential status in the same source. Directories with such details were published every year, allowing one to measure changes over time in labour turnover, residential locations, and commuting distances. All persons listed in the directories as employed by the four automobile plants were used in the analysis, rather than any kind of sample. Directory evidence was supplemented by research in assessment rolls for selected persons and groups, to obtain more details of whether householders were owners or tenants.

Data were collected from the Might's City of Toronto Directories published from 1923 to 1927, which contained information collected for the years 1922 to 1926 respectively. In addition, the directories for 1913, 1918 and 1929,

containing details of the preceding year in each case, were also analyzed. The 1929 directory was used because 1928 was a peak year in automotive production (particularly for the Ford Motor Company) and it was the last year that the Dodge Bros factory in Toronto was in operation. The 1918 directory was used to get a sense of how the two factories that existed then, Ford and Willys-Overland, were performing during World War One. Unfortunately, Willys-Overland had converted to war production then and all such employees were listed as 'munitions', 'munitions worker' or 'on active service', but not at which specific factory. The suburbs listed particularly few companies.

City directories in Toronto in the 1920s comprised four sections: an alphabetical section organized by last name, a street section, a Classified Business Directory by type of firm, and a suburban directory. The data for all employees of the four automotive firms listed in the microfilmed city directories were entered into dBASE on a microcomputer, directly from the microfilm reader. Over 1,500 pages for each of eight years were combed for names of workers, including the alphabetical section by name and the suburban directories, which listed employees, students and included married women with paid occupations. The suburban directory included the suburbs of Birch Cliff, Earlscourt, East York (after 1924), Mimico, Mount Dennis, Runnymede, Scarboro, Weston and Wychwood

and included both street and name sections. Table 2 lists the major suburbs and their population in the 1924 directory. Computerization of the data was useful for the sorting, indexing and printing capabilities. It also meant that the computer could be used to count the numbers of workers in each company in each year and to list them alphabetically by year and street (which facilitated mapping). It could also produce one large alphabetical printout of 3,121 records to measure labour turnover.

Various minor problems and inconsistencies were noted in the directories. The directory for 1924 had an addendum of about 30 pages at the beginning with hundreds of TTC workers and many extra Willys-Overland workers. Another problem was the different abbreviations used for each company by the compilers of the directory. Dodge was known as either Dodge Bros or Dodge Motor Co to distinguish it from the larger Dodge Mfg Co, a different engineering firm. Ford was called Ford Motors, Fords, or the Ford Co of Canada, while Durant was Durant Motor Works, Durant Motor Co or Durant. Willys-Overland was consistently Willys-Overland until after 1925, when it appeared either as Willys-Overland or the Willys-Overland Sales Co.

Two pairs of similar company names in the 1920s directories were potentially confusing. The Toronto Durant Co was a different enterprise from the Durant Motor Co and

TABLE 2: MAJOR SUBURBS AND THEIR POPULATION IN 1923

Suburb *	Population
Birch Cliff (Scarboro)	3,196
Cedarvale (East York)	4,890
Earlscourt (York Tp)	1,366
Fairbank (York Tp)	8,316
Lambton Mills (Etobicoke)	2,800
Leaside	838
Little York (East York)	5,625
Mimico	4,347
Mount Dennis (York Tp)	6,012
New Toronto	3,317
Oakwood (York Tp)	5,856
Runnymede (York Tp)	4,175
Scarboro	3,181
Silverthorn (York Tp)	2,531
Swansea	2,114
Todmorden (East York)	3,713
Weston	3,665
Wychwood (York Tp)	6,780

SOURCE: Might's 1924 Toronto City Directory, suburban section.
* as defined by Might's Directories.

Dodge Manufacturing was also very different to the Dodge Motor Co. It was important to be very careful when entering data to choose the right company. Willys-Overland, in the 1926 directory (for 1925) subsequently was divided into two companies. The manufacturing of automobiles continued at the West Toronto plant, while the Willys-Overland Sales Company was established at Bay and Breadalbane Streets. The latter was not included in the study as the people were salespeople and not blue-collar auto workers.

A further problem was the fact that the same people might appear twice in the directory, once in the City section and once in the suburbs. For instance, Howard Bligh, Durant employee in 1925, was listed in the City of Toronto section as living on 146 Merton and employed as a shipper, while in the Leaside suburban directory he was listed as: 'res To, Ship Clk'. Such duplicates had to be rectified, before mapping could take place. The evidence for Durant workers was the least specific with respect to place of residence. Often employees were listed in the Leaside directory as simply residing in the City of Toronto but were not listed in that section with specific addresses. This meant that there were always quite a few workers who could not be mapped each year. Table 3 shows the percentage of workers mapped out of the total found in the directories. In 1923, 1924 and 1928, only

TABLE 3: NUMBERS OF AUTO WORKERS LOCATED IN THE DIRECTORIES

COMPANY	TOTAL # FOUND	NUMBER MAPPED	PERCENTAGE
Ford			
1917	26	25	96.1
1922	31	31	100.0
1923	61	60	98.3
1924	105	103	98.0
1925	97	97	100.0
1926	108	108	100.0
1928	104	104	100.0
Durant			
1922	46	46	100.0
1923	244	147	60.2
1924	160	103	64.3
1925	130	129	99.2
1926	100	100	100.0
1928	176	106	60.2
Willys-Overland			
1922	103	103	100.0
1923	652	636	97.5
1925	351	351	100.0
1928	291	287	98.6
Dodge			
1925	68	66	97.0
1926	92	87	94.5
1928	171	165	96.4

Source of Data: Mights' Directories.

60 per cent of the workers could be mapped because of this problem.

It is difficult to be sure what proportion of the workers at each plant were listed in the directory. Company estimates of the number of their employees suggest that only one-third to one-half were listed in the directory.[5] The proportion of Willys-Overland workers caught in the directory appears to have been rather higher. Willys-Overland, with approximately 650 workers caught in 1924, probably accounted for about three-quarters of the workforce. Fewer workers were caught in later years because of the creation of the Willys-Overland Sales Company at a different address. Estimates of total numbers of company employees, such as in Industrial Canada, are not totally reliable as the auto labour force varied throughout the year. In the spring of 1926, Dodge in Toronto was said to employ 450 hands, Durant 600, with 858 at Willys-Overland.[6] The maximum numbers found in the directory for the companies were 174 at Dodge (38.6 per cent of the estimate), Durant 244 (40.6 per cent), and Willys-Overland 652 (75.9 per cent). The peak period of production each year was in the early spring, producing vehicles for use on the roads in the summer, probably about the time Might's collected its data each year. Other indications of factory size can be obtained by comparing factories of a similar size in the United States. Regional Ford assembly plants of 120,000 to 150,000 square

feet, such as Atlanta, Los Angeles and Seattle which were about the same as Ford's first Toronto plant, employed 150-200 workers (Bloomfield, 1990). If the Ford plant in Toronto employed an average of 175 workers, the directories listed between 35 and 62 per cent.

The directories also seemed to have gaps for those regular employees of a company who relocated. If workers changed their place of residence, they were often missed in the next directory. In fact many people who did move are missing from that year's directory. All the people who worked at the factories for several years, but were missing in an intermediate year, were double-checked. Many of these were movers but there were also those, such as Frank Coffey working for Ford in the 1924 directory, who was listed the next year but with no employment listed. Similarly, Richard J. Medland who worked at Durant in 1924 and 1926 was just listed as a 'labourer' (no company specified in 1925). None of these workers were mapped even if it appeared that they might be still working at the company. Another possibility is that many 'auto trimmers' and other titles, common in the directory without a company specified, were indeed working for one of the four companies but that this was not recorded by the directory takers.

The question of directory bias affects the interpretation of the results. Table 4 illustrates the fluctuating

TABLE 4: AUTO WORKERS BY OCCUPATION GROUP

COMPANY	MANAGEMENT #	MANAGEMENT %	WHITE COLLAR #	WHITE COLLAR %	BLUE COLLAR #	BLUE COLLAR %	TOTAL #
Ford							
1917	1	4.0	5	20.0	19	76.0	25
1922	2	6.4	11	35.4	18	58.0	31
1923	3	5.0	7	11.8	50	83.0	60
1924	4	3.8	20	19.4	79	76.6	103
1925	5	5.1	16	16.4	76	78.3	97
1926	3	2.7	6	5.5	99	91.6	108
1928	2	1.9	8	7.6	94	90.3	104
Durant							
1922	3	6.5	10	21.7	33	71.7	46
1923	10	6.8	55	37.4	82	55.7	147
1924	2	1.9	25	24.2	76	73.7	103
1925	5	3.8	27	20.9	97	75.1	129
1926	3	3.0	31	31.0	66	66.0	100
1928	3	2.8	13	12.2	90	84.9	106
Willys-Overland							
1922	5	4.8	31	30.1	67	65.0	103
1923	14	2.2	74	11.6	548	86.1	636
1925	9	2.5	29	8.2	313	89.1	351
1928	5	1.7	24	8.3	258	89.8	287
Dodge							
1925	2	3.0	14	21.2	50	75.7	66
1926	2	2.2	11	12.6	74	85.1	87
1928	5	3.0	20	12.1	140	84.8	165

Source of Data: Mights' Directories.

proportion of blue-collar workers located in the city directories. A low proportion of blue-collar workers was found for Ford and Willys-Overland in 1922 and Durant in 1923. The poor results for blue-collar workers in these years illustrates incomplete directory coverage. The proportion of blue-collar workers located in the directory generally increased during the period under study.

Other primary sources besides Might's Toronto City Directories were used. These included Industrial Canada published by the Canadian Manufacturers' Association that was examined between 1915 and 1930 for details of changes in the automotive industry and the scale and operation of the companies. The City of Toronto assessment rolls were searched for additional evidence about selected workers, the character of their homes and degree of owner occupation, as well as for checking factory information. Industrial Canada provides useful contemporary material not only on aspects of the auto industry but also invaluable contemporary views about industrial conditions and practices. Photographic collections at the City of Toronto Archives were also examined. Other primary sources such as a file on the Russell Motor Car Company at the Archives of Ontario proved useful.

The data were first mapped at a scale of 1:36,000 and these maps were later reduced. Altogether 20 maps of the location of auto workers were drawn up, including seven for

Ford (1917, 1922 to 1926 and 1928), six for Durant (1922 to 1926 and 1928), four for Willys-Overland (1922, 1923, 1925 and 1928) and three for Dodge (1925, 1926 and 1928). All the map patterns were measured, except for Ford in 1917 which had only 25 workers. Other maps, such as those of the ward boundaries and the suburbs and industrial zones in Toronto in 1928, and three maps showing the Toronto Street Railway and bus routes in 1921, 1924 and 1928, were drawn to provide a framework for interpreting the commuting patterns.

CHAPTER FOUR:

CHARACTERISTICS OF WORKERS IN AUTO FACTORIES

The changing nature of factory work in the early twentieth century is documented in Nelson (1975). The auto industry experienced a great deal of change at that time. The development of the assembly line marked a transition between the previous concentration of manufacturing in Detroit and the later decentralization of assembly plants around the world. The increasing volume of production, and the deskilling of work into repetitive tasks, led to more boring work and higher labour turnover.

Labour turnover was an aspect of employment that concerned automotive companies a great deal. The Ford Motor Company of Detroit hired about 52,000 people to fill 13,000 jobs in 1913. Ford mounted an aggressive and well publicized effort to reduce this problem. Three important measures were taken. In late 1913, seven classes of workers were established, each with specific wage rates, and the foreman's power to fire workers was now limited by a review procedure. The five dollar per day wage was a good means of recruiting and keeping men, and management used machine-paced work and supervisors to achieve production goals. A sociological department was set up to investigate the worker's home life

to insure that they conformed to the employer's middle-class values and thus warranted the five dollars per day.

Employers agreed that the new factory environment was a vast improvement over the old in economic and social terms (Nelson, 1975, 149/150). The five dollar per day wage is significant as it helped decrease labour turnover with higher wages. Accompanying it was a desire for control over employee's home environment. The payment of a family wage[7] may have been designed to eliminate boarders and keep the wife at home, as well as perhaps incidentally to encourage home ownership. This may have been an objective at the Ford factory in Toronto. Labour turnover is explored in relation to the four auto plants in Toronto in the 1920s and other aspects such as the percentages of householders and skilled workers are considered.

4.1 Job Classification of Auto workers

Meyer (1981) gives a breakdown of the types of jobs in the Ford Motor Company in Detroit between 1910 and 1930. Skilled workers, such as mechanics and machinists, were an important part of the factory with significant productive skills. In contrast, the labourer had few productive skills and according to F.W. Taylor, the work required 'little brains or special skill, but called for strength, severe bodily exertion and fatigue.... a human beast of burden' (quoted in Meyer, 1981, 44). At the turn of the century, a third

category, that of the 'specialist' emerged, a semi-skilled worker. Often the specialist did boring and repetitive work at a single machine and was deskilled after the technological revolution in the auto industry. Taylor saw the specialist as being closer to the labourer than to the mechanic. Yet a specialized job frequently was an avenue for upward mobility within the working class. Meyer provided an occupational classification of workers at Ford in Detroit. Of nearly 41,000 workers in January 1917, 55 per cent were semi-skilled, 15 per cent each were skilled and unskilled, 10 per cent were foremen and inspectors, and 5 per cent were office staff. Henry Ford had definite views on limiting the role and numbers of office workers in the Ford complex:

> But organization in the company office, he felt, must be kept in hand, lest the tail wag the dog. He had no patience with committees or with extended discussion. (Nevins & Hill, 1957, Vol 2., 271).

Ford believed that management should not be cumbersome:

> Do the job in the most direct fashion without bothering with red tape or any of the ordinary divisions of authority. (Ford, 1926, 196).[8]

Meyer's occupational structure was compared with the four auto companies in Toronto in 1923 (Table 5). Willys-Overland had a much higher proportion of skilled workers than the other companies with 35 per cent. Ford and Durant both had 24 per cent skilled workers, as opposed to Ford in Detroit which had only 16 per cent. This suggests that Willys-Overland had a

TABLE 5: PERCENT OF WORKERS IN DIFFERENT TRADES 1923

		Ford	Durant	Willys-Overland	Ford- Detroit 1917
Skilled Trades					
Carpenter		-	3	3	
Electrician		1	1	16	
Machinist		3	8	157	
Mechanic		9	39	45	
Tinsmith		-	-	25	
Tool Mkr		-	-	22	
Other		1	7	27	
	#	14	58	295	6,394
	%	23.7	24.1	44.9	15.6
Specialists					
Car Assemblr		4	-	52	
Enameller		-	1	11	
Operator		11	4	3	
Painter		-	7	18	
Shipper		2	2	-	
Trimmer		3	5	22	
Upholsterer		-	1	18	
Other		2	10	9	
	#	15	37	133	22,652
	%	25.4	15.4	20.2	55.3
Unskilled					
Janitor		-	2	2	
Labourer		3	3	19	
Other		10	28	27	
	#	13	33	48	5,986
	%	22.0	13.7	7.3	14.6
Other					
Foreman		1	7	5	
Inspector		2	5	32	
Other		-	-	2	
	#	3	12	39	4,056
	%	5.0	5.0	5.9	9.9
Office Staff					
Clerks		-	39	48	
Managers		2	6	5	
Sales Managers		-	1	3	
Service Managers		-	3	1	
Salesmen		4	6	23	
Stenographers		2	17	11	
Stockeepers		2	5	36	
Other		4	23	14	
	#	14	100	141	1,904
	%	23.7	41.6	21.4	4.6
Total	#	59	240	656	40,996
	%	99.8	99.8	99.7	100.0

Source of Data: Might's Directories, 1924.
Classification after Meyer (1981) Five Dollar Day, 48-51.

more skilled worker production process, rather than just an automated assembly line. This is to be expected, given that manufacturing of automobile components also occurred on this site. Willys-Overland also had a lower proportion of office staff (21 per cent) than the other companies. Durant had an exceptionally high percentage of office staff with 41 per cent. Durant and Ford both had low proportions of semi-skilled workers, only 15 per cent and 20 per cent, compared to over 50 per cent in Detroit. The higher proportions of skilled and office staff in Toronto, compared with Detroit, probably reflect some bias on the part of directory compilers.

Table 6 illustrates the percentage of workers in all four companies in 1928. Dodge resembled the Ford in Detroit model most closely with a high proportion of semi-skilled workers, 43 per cent. Willys-Overland had the greatest proportion of skilled workers, 33 per cent, while Dodge was lowest at 7 per cent. In order to illustrate the variable biases and inconsistencies of the city directories, the composition of the workforce at the four companies was averaged for six years for Ford and Durant, four years for Willys-Overland and three years for Dodge. Table 7 shows that Willys-Overland consistently had the highest per cent of skilled and unskilled workers and Dodge the highest proportion of semi-skilled and the lowest percentage of skilled workers. Durant the greatest proportion of office workers, understandable as the Toronto

TABLE 6: PERCENT OF WORKERS IN DIFFERENT TRADES 1928

		Ford	Durant	Willys-Overland	Dodge
Skilled Trades					
Carpenter		1	-	3	1
Electrician		1	1	3	1
Machinist		6	7	31	2
Mechanic		13	19	43	8
Tinsmith		2	-	2	-
Tool Mkr		-	-	5	-
Other		6	4	8	1
	#	29	31	95	13
	%	29.0	16.9	33.1	7.2
Specialists					
Car Assemblr		6	2	7	25
Enameller		1	-	1	-
Operator		5	6	1	-
Painter		1	2	2	23
Rivetter		-	1	3	-
Shipper		2	2	3	-
Trimmer		9	4	2	7
Upholsterer		1	1	3	-
Other		3	4	6	22
	#	28	40	27	77
	%	28.0	21.8	9.4	42.7
Unskilled					
Janitor		-	2	2	1
Labourer		4	2	6	2
Other		25	36	88	37
	#	29	40	106	40
	%	29.0	21.8	36.9	22.2
Other					
Foreman		-	-	1	4
Inspector		2	7	12	6
Other		-	5	1	1
	#	2	12	14	11
	%	2.0	6.5	4.8	6.1
Office Staff					
Clerks		4	15	10	12
Managers		2	8	5	2
Sales Managers		-	3	1	1
Service Managers		-	1	-	-
Salesmen		1	6	4	2
Stenographers		1	11	6	7
Stockeepers		2	5	5	9
Other		2	21	14	6
	#	12	60	45	39
	%	32.5	12.0	15.6	21.6
Total	#	100	183	287	180
	%	100.0	99.5	99.8	99.8

Source of Data: Might's Directories, 1929.
Classification after Meyer (1981) Five Dollar Day, 48-51.

TABLE 7: AVERAGE PROPORTION OF AUTO WORKERS BY TRADE 1920S

Average %	FORD	DURANT	WILLYS-OVERLAND	DODGE
Skilled	25.3	23.3	32.6	13.1
Semi-Skilled	24.1	15.1	17.4	40.8
Unskilled	15.7	12.9	18.8	14.7
Other	2.6	6.5	5.2	4.6
Office	30.0	43.5	25.7	23.0

Source of Data: Might's Directories.
Classification after Meyer (1981) Five Dollar Day, 48-51.

plant was the only Durant factory in Canada and would therefore need a fair-sized administration in Leaside. Ford and Dodge were however only small assembly plants, part of much larger operations managed from Windsor, and thus needed only small office staff. Willys-Overland's percentage of white-collar workers fell considerably from over 20 per cent to about fifteen per cent after 1925, when many workers relocated to the Willys-Overland Sales Co. Willys-Overland did require a fairly large administration in Toronto, again as it was the only factory in Canada.

4.2 Labour Turnover

Ford

In order to decentralize the production of Ford automobiles from Ford City (Walkerville) and to meet the expected demand for new cars, four major branch assembly plants/sales and service stations were constructed in Toronto, London, Montreal and Winnipeg, to serve regional markets. All were multi-storey buildings of brick and reinforced concrete, trimmed with terra cotta. The decentralization of the Ford assembly plant from Dupont and Christie Streets in 1923 to Danforth and Victoria Park Avenue in East York illustrated a transition from a Kahn-style, brick, five-storey factory (133,000 sq ft) with a vertical production process to a horizontal building (182,000 sq ft) and process in a greenfield site (Bloomfield 1985; Industrial Canada June 1916,

125). One factor that may have prompted the relocation of the Ford plant was the railway to which each factory was connected. The first Dupont and Christie Street plant was on the Canadian Pacific line. The second Danforth plant was on the Canadian National line, which could ship parts directly from the Windsor plant. Being on the CP line previously meant that cargo would have had to be shifted on the Essex Terminal Railway to reach the Ford City plant, located on the CN line, thus incurring extra costs. The Danforth plant remained in operation until 1941 and became a shopping mall in the 1960s.

The Ford assembly plants built in Canada in the early twentieth century influenced the rest of the Commonwealth, including Ford plants built in India, South Africa, Singapore, Australia and New Zealand. This was because the Ford companies in the other countries were subsidiaries of the Ford Motor Company of Canada Ltd. For example, the Lower Hutt plant in New Zealand (1936) was a scaled down version of the Windsor plant (Bloomfield 1985). The Ford plant at Geelong, Australia (1926) followed the newly built Canadian plants with a horizontal, continuous production process (Industrial Canada October 1926, 45).

Labour turnover in Toronto appeared to be quite high, particularly in the first factory at Dupont and Christie Streets. One measure of turnover is the proportion of workers who were employed in one year but no other. About fifty per

cent of workers in 1924, for example were only listed in that year, a proportion which fell to 43 per cent in the 1926 directory. Another forty per cent of auto workers were listed in the directories as working 2 or 3 years for the company. Only ten per cent of workers were recorded as working four or more years at Ford, the maximum possible being seven years. The relocation of the Ford factory from the City to East York meant an increased labour force, and slightly lower turnover at the new locale (Table 8). Thirty-seven workers, employed at Ford before 1923, relocated to the new plant. Thus Ford took about half its former labour force to the new site.

Workers who worked for five years or more at Ford, about five per cent of cases, included William Carson, painter who was living in Cedarvale (later part of East York) in 1917 and was located at 582 Greenwood Avenue in 1928, still working for Ford. He is recorded in all the intervening years, 1923 to 1925. Harvey A. Barrett, auto assembler of 34 Yarmouth Street (1923 to 1926 and 1928) lived quite close to the old factory, in contrast to the other two mentioned, who were both east of the Don Valley. James Freeman, variously described as shipper in 1917 and stock clerk, stockkeeper, stock manager in the 1920s was located in six years -- 1917, and 1922 to 1926. He relocated several times from boarding at 707 Bathurst in 1917, to having a home at 1185 Ossington Avenue in 1922. He then anticipated the Ford Motor Company's move east and himself

TABLE 8: LABOUR TURNOVER IN THE FOUR AUTO FACTORIES 1920S

	% caught for 1 yr	% caught for 2-3 yrs	% caught for 4-6 yrs
Ford			
Plant # 1	49 %	41 %	10 %
Plant # 2	43 %	47 %	10 %
Durant	36 %	55 %	9 %
Willys-Overland	40 %	55 %	5 %
Dodge	70 %	30 %	-

Percentage of Workers remaining at the Factories 1920s

	Ford	Durant	Willys-Overland	Dodge
1922-3	25.8 %	36.1 %	78.1 %	-
1925-6	32.9 %	35.0 %	-	14.7 %
1925-8	27.8 %	24.6 %	19.2 %	16.1 %

Source of Data: Might's Directories.

relocated to 147 Westlake Avenue in Little York in 1923 and was there in 1924 and 1925. In 1926, he was located at 116 Dawes Road in East York. Rates of blue-collar labour turnover at Ford, from the directory evidence, were about the same as turnover of white-collar workers and management. Of the various types of workers, skilled and semi-skilled had lower turnover rates than the unskilled.

Durant

The Durant Motor Co. factory was set up in 1922 in Leaside by William C. Durant (1861-1947), the founder of the General Motors Corporation in Detroit and president from 1908-10 and 1916-20. He took over Buick in Flint, Michigan in 1904 and merged it with Olds of Lansing to form General Motors (GM) in September 1908. In 1909, other companies such as Cadillac, the Oakland Co of Pontiac, McLaughlin Motors of Oshawa, Ontario were acquired by the company. In 1910, the company was in serious financial trouble, as some of the acquired companies were financial disasters. Durant was responsible for the bank loans and was forced to resign as a banking syndicate gained control of GM. Between 1911 and 1916, when Durant regained control of GM., he developed the Chevrolet car with Louis Chevrolet. In 1916, Chevrolet acquired GM (with Durant and the president of Du Pont buying up shares) and Durant became president on June 1. Durant's one-man style of organization no longer worked well in such a giant

conglomerate. People such as Walter P. Chrysler became disenchanted and left in 1919 to form Chrysler. Durant also tended to ignore GM as he concentrated on developing fridges and tractors. He lost control of the corporation for the second time when a recession hit in 1920. His dabbling in the stock market proved unwise as he lost a great deal of money and GM's stock value fell.

Six weeks after losing control of GM, in early 1921, he formed the Durant Corporation. He rapidly acquired factories in Elizabeth, NJ, Muncie, IN, Oakland, CA, Lansing and Flint, MI as well as just outside Toronto. Durant also lost this corporation by the late 1920s, due to his personal losses on the stock market, the unprofitability of some of the firms associated with Durant, and the overbuilding at the Flint plant. The Depression led to the closure and takeover of Durant factories, many of them by GM. Durant Motors was liquidated in 1933. Durant in Leaside ceased production in 1930/1. Thus William C. Durant influenced two of three major auto manufacturers in the US, founding GM, and influencing Chrysler who formed the Chrysler corporation and Charles W. Nash, who founded American Motors which was integrated into Chrysler in 1987. Durant had little effect on Ford, although he nearly acquired the company in 1909 (Gustin, 1973).

Labour turnover at the Durant plant in Toronto was the lowest of the four companies, with about 36 per cent of

workers appearing in one year only (Table 8). Of the more stable employees, about eighty-five per cent were listed for two or three years, while only fifteen per cent of those remaining were listed in the directories for four, five or six years at the same plant.

People working four to six years for the Durant Motor Company in this period included Edward Braithwaite, mechanic, who lived at 967 Lansdowne Ave in 1925 and 1926. He is just listed as working at Durant and residing in Toronto, from the Leaside directory with no reference in the Toronto directory for 1923, 1924 and 1928. Emmet F. Howley worked as traffic manager in 1923-6 and 1928 and was listed at 36 Lola Rd for two of the years and 'res To' the rest. Durant had a higher percentage of women working as clerks, switchboard operators and operators in the factories than the other companies. One was Zillah Clark, of 88 St George St in Toronto, switchboard operator, who was listed as working for Durant from 1923 to 1925 and in 1928. Several people changed their place of residence while working at Durant, including D.W. Clapper and Charles Knowles. Donald W. Clapper typified the exodus from Leaside that occurred in the first two years, as he lived in Leaside in 1922 and 1923 at 104 Sutherland Drive. By 1925 he had relocated to 188 Belsize Drive, close to Leaside, but now inside the City of Toronto. Charles Knowles who also worked

at Durant for the six years under study, moving east from 464 Clinton in 1922 to 155 Broadway by 1924.

Blue-collar workers at Durant were much less stable than management and white-collar workers. Durant, which had a higher proportion of these workers than the other companies, had very low labour turnover for management and white-collar workers. Yet it retained no unskilled workers, and limited numbers of semi-skilled and skilled workers.

Willys-Overland

The Willys-Overland factory in West Toronto had previously been used by the Russell Motor Car Co. between 1905 and 1915, before being taken over by Willys-Overland of Toledo, OH.[9] Willys-Overland experienced the largest volume of business in their history in 1927, allowing them to build an addition to the West Toronto plant. This plant enabled the company to build a large proportion of its own car bodies and thus have economies of material and reduce transportation and handling costs. By 1931, however, Willys-Overland showed a net loss, despite the introduction of attractive new models. On February 15, 1933, the Willys-Overland Company of Toledo, Ohio went into receivership and the assembly plant in Toronto closed down in June of that year. In 1938, CCM changed its corporate name to Russell Industries.[10] Though vehicles were no longer made in West Toronto, the plant continued in

engineering work until the early 1980s when it was demolished..

Willys-Overland had some very stable workers, with about fifty-five per cent of workers working for the company in two or more years studied. This included some workers who went to work at Willys-Overland in 1923 and then relocated to the Willys-Overland Sales Company in 1925. Forty per cent of the workers appeared for one year only (Table 8). Some workers were found for all four years studied -- 1922, 1923, 1925 and 1928 -- including William B. Holmes, inspector at 143 Day Avenue. He was also found in the directory for intervening years. William Boynton of 27 O'Hara Avenue who worked as stockkeeper for Willys-Overland in 1923 and 1925 was found to be working for the Canada Cycle and Motor Company (associated with the Russell company) in 1913 as foreman.

One problem occurred with the president of Willys-Overland, Thomas A. Russell, who was also president of Russell Motor Co sales outlet in Toronto and of the Acme Screw and Gear Co. Sometimes in the directory, he is listed as president of these other companies, which were all associated, not Willys-Overland. Living at 162 Walmer Road, he is listed under Willys-Overland for 1923 and 1928 but under the Russell Motor Co in 1925 and as president of Russell Gear and Machine Co in 1922.

Willys-Overland was the auto factory that retained the most blue-collar workers in Toronto in the 1920s. It in fact had a much lower rate of labour turnover among blue-collar workers than the other companies. Willys-Overland even had unskilled labourers working for three or more years in a row, such as Thomas Hamilton of Mount Dennis. The company was also most likely to retain skilled and semi-skilled employees for long periods, at least four years for skilled mechanics and machinists, and two to three years for the semi-skilled. One reason why Willys-Overland lost its white-collar labour force was the creation of the Willys-Overland Sales Co. in 1925, that transferred many employees to the downtown office, away from the factory site in West Toronto. The company also lost skilled workers and managers to Dodge and Durant.

Dodge Bros

The Dodge Bros Motor Co set up in March 1925 at 1265 Dufferin Street. This factory was closed when Dodge Bros became part of the Chrysler Corporation in 1928. The Canadian operation was rationalized and the production of Dodge vehicles moved to the newly built Chrysler plant in Windsor in 1929.

John M. Lyle (1872-1945), although perhaps best known for designing the Royal Alexandra Theatre (1907), the Ontario Reformatory at Guelph (1909) and many banks, also undertook some industrial commissions. Lyle's industrial works included

transformer and switching stations for Ontario Hydro, such as at Dundas (1910), Niagara Falls, Toronto, London, Guelph and Berlin. He also designed the Canadian Aeroplanes Ltd. factory on Dufferin Street, Toronto (1917) which became the Dodge Bros Motor Assembly plant in 1925. The factory was completed in 66 working days -- a record speed -- and encompassed ten large structures. It was built in brick with huge sheets of multi-pane glass, which allowed a maximum of air and light into the workspace (Hunt, 1982). Canadian Aeroplanes Ltd., which started in December 1916, relocated to Dufferin Street in 1917, employed over 2000 hands and turned out 29,000 aeroplanes (Sullivan 1919).

Labour turnover at Dodge is hardest to measure as the company was only studied in three years, its first and second years in operation (1925/6) and then its fourth and final year (1928). It appeared to have a higher level of turnover than the other companies. Seventy per cent of workers were found listed in 1925 only. By 1926, employees listed for only one year in the directories represented two-thirds of the labour force (Table 8). With the expansion of the workforce, up from 92 workers found in 1926 to 174 found in 1929, then the proportion of people only listed once increased to 79 per cent. Austin J. Deneau, clerk and assistant purchasing agent was one of the very few Dodge employees listed in the directory for all three years. He relocated from 146 Hilton

Avenue in 1925/6 (near Bathurst and St Clair) to 101 Alberta Avenue (closer to the factory) by 1929. The high degree of instability of Dodge's labour force was particularly evident for blue-collar workers. Dodge, which had a significantly higher proportion of semi-skilled workers than the other factories, experienced less labour turnover for this sector, particularly with car assemblers. Thus Dodge was more like Durant than Ford or Willys-Overland, with greater stability of management and white-collar workers.

Dodge did get some experienced employees from other companies. Six workers were traced as previously working at Willys-Overland and one at Durant; in return Dodge lost one worker to Durant. Durant lost three workers to Willys-Overland, one of whom relocated; Ford lost five workers to Willys, two of whom relocated. Willys-Overland, however, lost more than it gained with seven to Durant (one of whom relocated), six to Dodge, and three to Ford (one of whom relocated) (Table 9). There may have been other moves between the auto companies. The ones cited above are definite, based on names and addresses, while others are more tenuous. The numbers of workers shifting among the four auto companies were small, considering the size of the companies. This suggests that workers changed industries more commonly rather than transferring from one auto company to another. The distance between the firms may have discouraged workers from going to

TABLE 9: AUTO WORKERS MOVING FROM ONE COMPANY TO ANOTHER

ORIGIN	DESTINATION				net change
	Ford	Durant	Willys-Overland	Dodge	
Ford	-	-	5	-	-2
Durant	-	-	3	1	+4
Willys-O	3	7	-	6	-8
Dodge	-	1	-	-	+6

Source of Data: Mights' Directories.

work at another firm. However, given that Dodge and Willys-Overland were both located in the same sector of the City, more labour movement between them might have been expected.

The numbers of people who relocated, that is changed their place of residence while working for the same employer, were tabulated. Ford had 32 workers who moved house while working there (including one who moved twice), Durant had 23 people move, Dodge 11 and Willys-Overland 63. John M. Montgomery, who worked at Willys-Overland each year under study, as clerk and later as accountant, changed his address three times from Dovercourt Road, to Symington Avenue, to St Clair Avenue W, and finally to Sellers Avenue in 1928. Some people apparently took other jobs between periods of employment in the auto factories. William Kruse, for example, worked as a mechanic for Willys-Overland in 1923 and a foreman for Ford in 1926. In 1924, he was a repairman for the Toronto Dairy and in 1925 had no employment listed. Thomas W. Pinnell worked as an auto mechanic for Durant in 1922 and 1924, lived in Leaside and in 1923, went to work for the other major employer in Leaside, Canada Wire and Cable, as a motor mechanic. This is additional evidence for the hypothesis that ex-auto workers did not necessarily change to work for another auto company, because the diversity of industry in Toronto in the 1920s meant other employment could be found closer at hand.

Fairly frequently a member of the same family (defined as having same last name and same address) worked at the same company. This was particularly true of Willys-Overland which, given the size of the factory, is not surprising. It is also true of the Durant Motor Company. Examples included Mary and Sheana Drummond of 44 Craighurst, who both worked at Durant, and Joseph and Harry Allen of 579 Beresford in the suburb of Runnymede who both worked for Willys-Overland in 1928. It was also quite common for relatives to work for competitors, one at Willys-Overland and another at Dodge or Durant. George Adams of 81 Osler worked at Willys-Overland as an inspector in 1923, and then at Durant in 1926 and 1928 as a mechanic, while Leslie Adams of the same address worked at Dodge as a trimmer in 1926. The Ritchies of 75 Kirknewton Road both worked at different auto factories, Andrew as a mechanic at Willys-Overland in 1923 while Daniel was a carpenter at Durant in 1923, 1925 and 1926. It was rarer for relatives to be employed at Ford or to have one person in a family working there and someone else at another auto factory. This difference may have reflected the distance between the Ford factory and the other plants after the move to East York and also the relatively small size of the factory.

There were some women workers at the auto factories, mostly as clerks or switchboard operators but there were also some factory workers. While a few women that show up

consistently in the directory, most are listed as working only a year or two. Some women, like Alice Brennan and Mary Drummond at Durant, appear for three or four years working as operators, upholsterers and comptometers (operators of accounting machines). There are few such jobs at Ford or Dodge; the women there were mostly typists or clerks, like Mrs Jean L. Cotton of 16 Bain Avenue, who worked for Ford as stenographer in 1924, 1925, 1926 and 1928. Thus more women seemed to be employed at Durant, forming about 8-10 per cent of that workforce, compared to between 4 and 5 per cent at the other companies. They appeared to be mostly operators and comptrollers.

The actual labour turnover rates for the auto companies were probably lower than they appear from the city directories. People seem to have been missed from the directories in years when they changed residence or their place of occupation. However, rates of labour turnover were high in the automotive industry, in a period when there were no permanent jobs and no benefits. Peterson (1987) reports a high rate of labour turnover at Ford in Detroit, particularly in the 1910-1920 period, but also continuing into the 1920s.

4.3 Home-Residence Evidence in the Directory

Householder status and tenure are important elements in labour turnover, which in turn impacts on the commuting

results. In the Toronto city directories, workers were listed as 'res', 'h.', 'lvs.', 'bds.' or 'rms'. I entered exactly what was listed for each person working at the four auto assembly plants. 'Res To' indicated that workers lived outside the suburb where they worked, such as someone who worked in Leaside and lived in Toronto. A notation such as 'Res Mount Dennis' (or other suburb) meant someone who worked in the City and lived in the suburb of Mount Dennis. Sometimes these individuals were cross-listed in the suburbs, sometimes not. Thus in some years, there was a high proportion of 'Res To' for Durant workers, particularly 1923, 1924 and 1928, with no cross-listing in the City section of the directory for a specific address. 'H' referred to household heads and 'L' to other persons lives. Thus 'H' seemed to apply to men and 'L' to wives and other dependents, such as a son or daughter still living at home.

Ford had a much higher percentage of householders than the other companies, on average increasing from 48 per cent in 1922 to 85 per cent in 1928. This finding suggests that there were fewer women or sons working there and more male household heads and may be partly due to its location in the suburbs, nearer to household heads and less central for female clerks and stenographers. Willys-Overland also experienced an increase in the percentage of householders from about 40 per cent to 63 per cent. Dodge's householders, however, fell

from 47 to 36 per cent while the percentage of 'lvs' rose from 13 to 55 per cent. Durant's householders fluctuated from year to year, but was usually around 40 per cent. The other companies had between 40 and 60 per cent. Three of the companies had between 10 to 30 per cent of workers as 'lvs'. Dodge's proportions of such dependents tended to be higher, with 46 and 54 per cent listed in 1926 and 1928 respectively (Table 10).

The directory also lists those workers said to be rooming or boarding. The percentages of such workers seemed to decline over time, a trend occurring within the population as a whole in the 1920s. Yet in the case of Dodge, it declined dramatically from 37 per cent in the first year of operation to 6 per cent in 1928. This high percentage of boarders at Dodge in 1925 matched the high turnover rate of 70 per cent in that year. It is revealing to note the differences in the proportion of boarders between Dodge in 1925 and Durant in 1922, in each case the first year of operation. Table 11 illustrates similar results among blue-collar workers.

Until 1930, the city directory does not indicate whether workers owned or rented their accommodation. Further research in the City of Toronto assessments rolls was needed to determine whether auto workers were tenants or freeholders. It was assumed that freeholders would tend to be more stable both in their places of work and their places of residence.

TABLE 10: HOUSEHOLDER INFORMATION FROM CITY DIRECTORIES BY COMPANY

Company	"h"	"lvs"	"bds & rms"	"res"	Total #
Ford					
1922	48 %	32 %	16 %	3 %	31
1923	70 %	20 %	10 %	-	59
1924	66 %	18 %	11 %	5 %	106
1925	77 %	12 %	8 %	2 %	97
1926	82 %	11 %	7 %	-	108
1928	85 %	9 %	6 %	-	104
Durant					
1922	40 %	49 %	11 %	-	46
1923	33 %	21 %	10 %	36 %	244
1924	41 %	18 %	7 %	34 %	160
1925	53 %	26 %	18 %	2 %	130
1926	63 %	32 %	5 %	-	100
1928	41 %	14 %	6 %	40 %	176
Willys-Overland					
1922	42 %	39 %	14 %	5 %	103
1923	30 %	46 %	7 %	17 %	652
1925	46 %	25 %	15 %	14 %	350
1928	64 %	26 %	10 %	-	291
Dodge					
1925	47 %	13 %	37 %	3 %	68
1926	43 %	47 %	6 %	4 %	92
1928	36 %	55 %	6 %	2 %	174

Source of Data: Mights' Directories 1923-29.

TABLE 11: HOUSEHOLDER INFORMATION FROM CITY DIRECTORIES BY COMPANY FOR BLUE-COLLAR WORKERS

Company	"h"	"lvs"	"bds & rms"	"res"	Total #
Ford					
1922	53 %	20 %	26 %	-	15
1923	74	13	13	-	46
1924	70	17	13	-	71
1925	83	10	7	-	69
1926	84	9	7	-	98
1928	85	9	6	-	92
Durant					
1922	46 %	43 %	4 %	7 %	28
1923	40	26	12	22	151
1924	56	25	7	12	85
1925	54	25	20	1	89
1926	71	22	7	-	59
1928	49	14	8	29	115
Willys-Overland					
1922	53 %	32 %	10 %	6 %	53
1923	27	48	4	25	514
1925	46	24	16	14	303
1928	66	25	9	-	253
Dodge					
1925	47 %	12 %	37 %	4 %	51
1926	44	45	8	3	77
1928	38	55 %	4 %	3 %	135

Source of Data: Mights' Directories, 1923-29.

Two samples of auto workers were examined also in the assessment records. Those working at Durant in Leaside and living in Toronto's Ward 2, north of Mount Pleasant Cemetery, were found in the City of Toronto assessment rolls. Ford workers in East York and living in East York were found in the East York assessment rolls.

The assessment records were searched for the ages of auto workers, whether they were homeowners, and the value of their homes. The 1927 assessment rolls for Toronto's Ward 2 found fourteen Durant workers living on Davisville Avenue, Millwood Rd, Hillsdale Ave E, Balliol and Merton St S. Seven were found to be tenants and seven freeholders (Table 12). They included workers who were skilled, semi-skilled and unskilled. Only one of the fourteen was white-collar, Clarence Scott, and his value of buildings was predictably above-average at $2500. The property values of most Durant workers in Ward 2 were between $2200 and $2500, except for one at $3000, owned by Geo Love (freeholder), two at $700, and one at $550, owned by Murray Ambrose, trimmer, at 533 Soudan Avenue. All workers had between two and six children; all were public school supporters and most were Episcopalian. Sometimes assessment records provided additional information on the type of worker as well. For instance, William Leaming of 397 Balliol, was just listed as a Durant 'employee' in the city directory,

TABLE 12: ASSESSMENT RECORDS: DURANT & FORD WORKERS 1928

	Ford	Durant
# Found	12	14
Location	East York	Ward 2
# Blue-Collar	10	13
# Freeholders	6	7
# Tenants	5*	7

(* 1 unfinished house)

Source: City of Toronto Assessment Records 1927 for 1928, Ward 2, Division 5; Assessment Records for East York Township 1927.

while the assessment data specified his occupation as 'mechanic'.

Ford workers living in East York were on average older than workers in the Durant sample. The average age of Ford workers was 36, compared with 27 for Durant workers. This finding matches the results in Table 11, showing that a higher percentage of Ford workers were householders. The value of the Ford workers' properties was also considerably less than the Durant workers', an average of $700 compared with $2060. Ford workers had very small lots, often only 17 to 20 feet wide. The lower priced homes suggest more homeowners than tenants, and the older average age of Ford workers explains the higher percentage of 'H' in the directory. Many homes listed in the 1927 assessments for East York Township were unfinished dwellings.[11]

Various aspects of labour turnover, including tenure/freeholder status and householder/boarder status have been examined. The high percentage of boarders at Dodge in 1925 matched the high labour turnover, and the growing proportion of householders at Ford matched a more stable labour force at the second factory. Ford had an increasingly stable workforce after relocating to the suburbs. The Ford workforce became less office-oriented and had more skilled and semi-skilled workers after the move. Ford also appeared to have more heads of households, who were on average older,

working at its factory. Durant had a higher proportion of management and white-collar workers than the other auto factories. It had quite good labour stability with about 30 per cent of its labour force being traced in the following year (Table 8). Willys-Overland represented a more traditional factory with a high percentage of skilled workers. It had excellent labour continuity, particularly among less skilled workers. It is difficult to measure the stability of white-collar workers at Willys-Overland, as many relocated to a new site in 1925. Dodge had the least stable workforce with less than twenty per cent each year staying on. The Dodge workers in Toronto most closely approximated the Detroit workforce structure described by Meyer, with a high proportion of the workforce being semi-skilled.

CHAPTER 5:

COMMUTING

Directory evidence on the changing distances between the homes and workplaces of auto workers was examined to illuminate discussion of the suburbanization of workers' housing in relation to industry. This chapter presents maps and analysis of the spatial patterns of workers' homes in relation to their workplaces during the 1920s.

Though data for all workers in the four companies have been mapped, they relate mainly to blue-collar workers who constituted well over 70 per cent of those found in the directories in most years (Table 4). Exceptions were Ford in 1922 (58 per cent), Durant in 1923 (56 per cent) and 1926 (66 per cent), and Willys-Overland in 1922 (65 per cent). The blue-collar proportion tended to increase during the 1920s, so that 83 per cent of the 662 workers traced in 1928 for all four companies were in blue-collar occupations.

The residential locations of all employees found in the directories for each company have been mapped for several years in the 1920s (Figures 11 to 29). Average or mean distances have been calculated to show the changes in commuting patterns between homes and workplaces for employees of each company in each year (Table 13). As the use of means

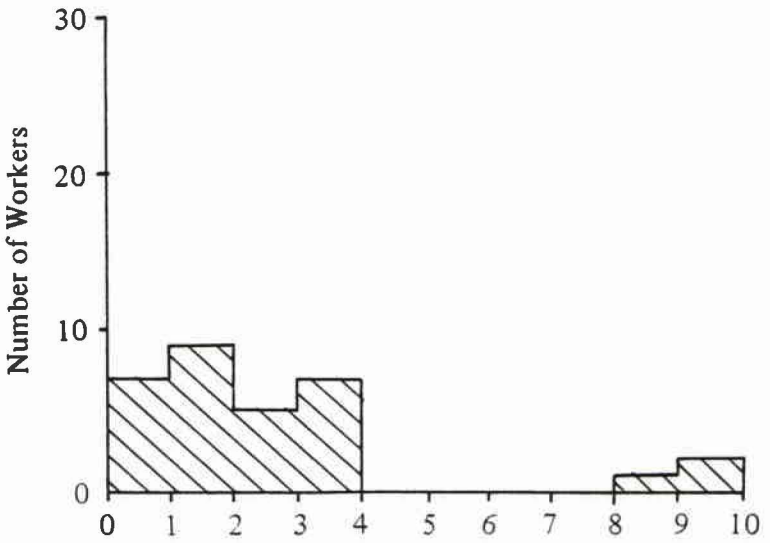
TABLE 13: AVERAGE DISTANCE BETWEEN HOME AND WORK

	Average Distance (km) All Workers	Blue-Collar	White-Collar
Ford			
1922	2.83	3.60	1.70
1923	4.17	4.09	4.10
1924	7.04	6.70	8.04
1925	5.74	5.45	6.83
1926	4.95	4.88	6.43
1928	5.20	5.30	2.90
Durant			
1922	4.42	4.10	4.70
1923	5.44	5.44	5.40
1924	5.22	5.08	5.60
1925	5.06	5.01	5.20
1926	5.89	5.90	5.50
1928	4.81	4.52	6.14
Willys-Overland			
1922	3.97	3.26	5.50
1923	3.32	3.14	4.50
1925	3.47	3.45	3.80
1928	2.64	2.50	4.10
Dodge			
1925	3.25	2.88	4.40
1926	3.52	3.33	4.95
1928	2.99	3.07	2.50

Source of Data: Mights' Directories.
Calculated from Figures 11-29.

FIGURE 7 : FORD MOTOR COMPANY HISTOGRAMS 1922 & 1928

A) 1922 Mean = 2.83 km



B) 1928 Mean = 5.2 km

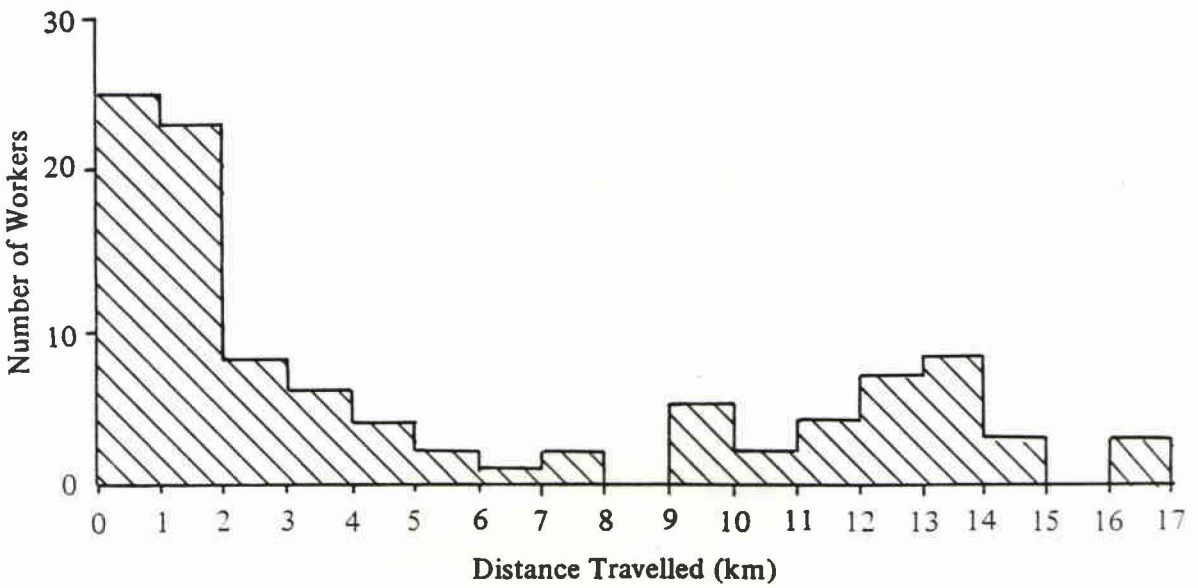


FIGURE 8: DURANT MOTOR COMPANY HISTOGRAMS 1922 & 1928

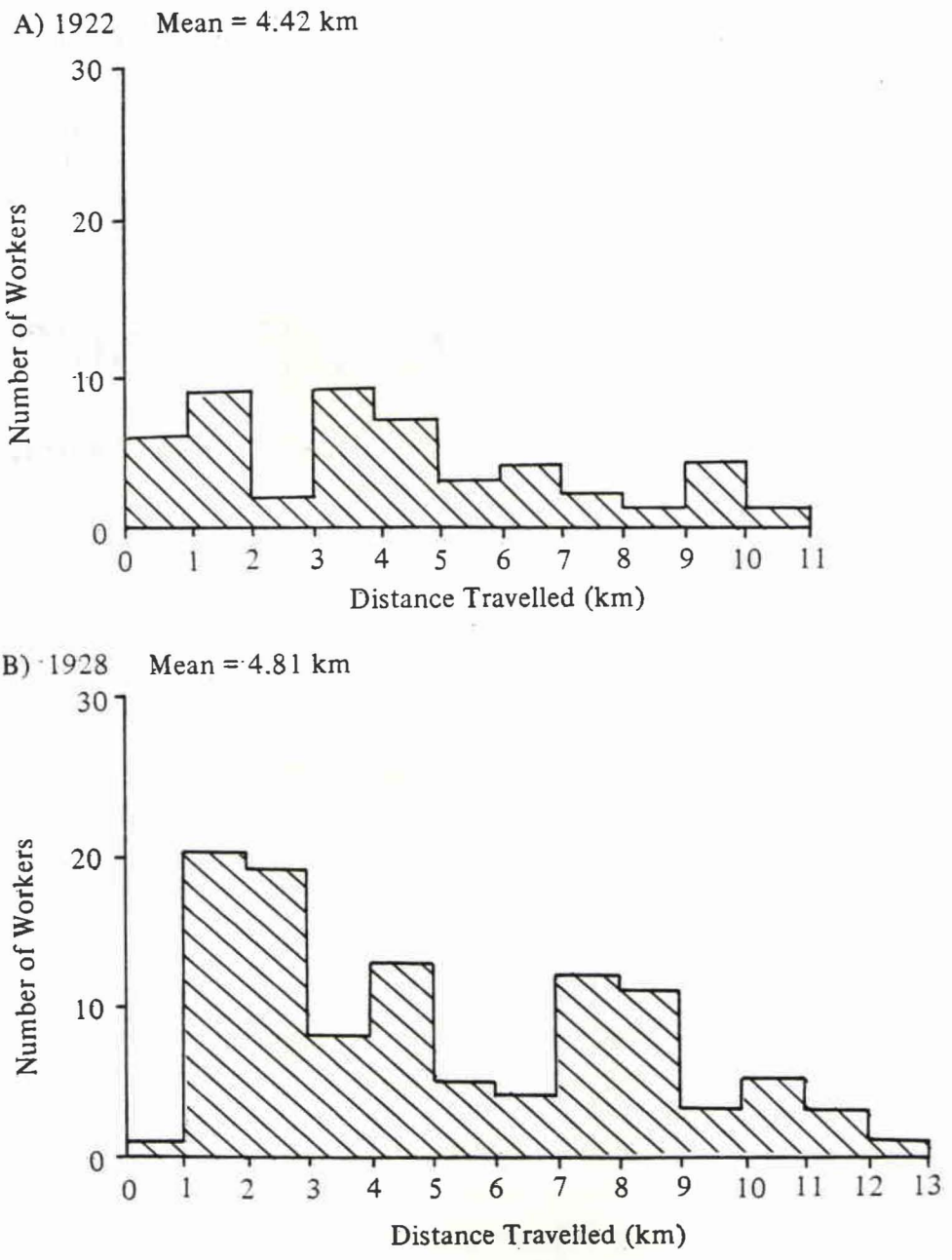
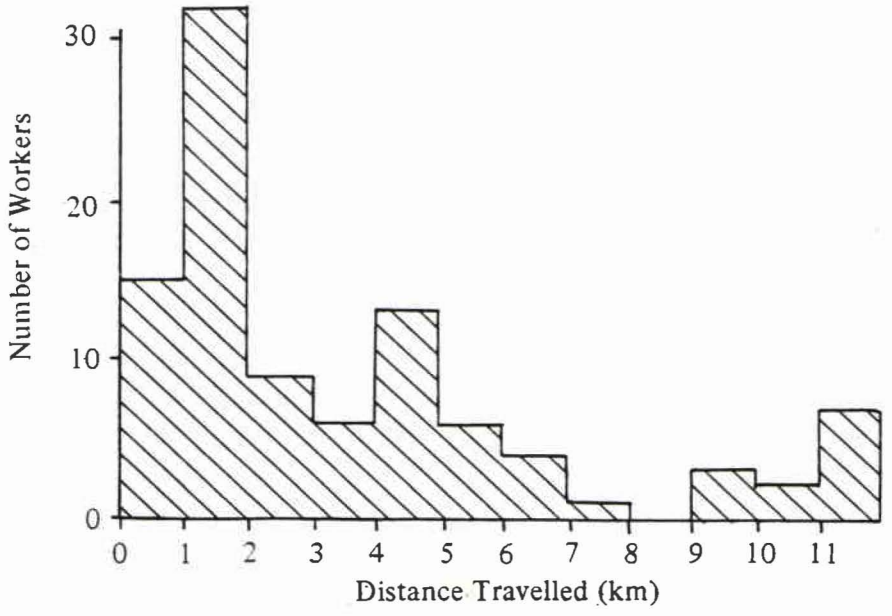


FIGURE 9: WILLYS-OVERLAND HISTOGRAMS 1922 & 1928

A) 1922 Mean = 3.97 km



B) 1928 Mean = 2.64

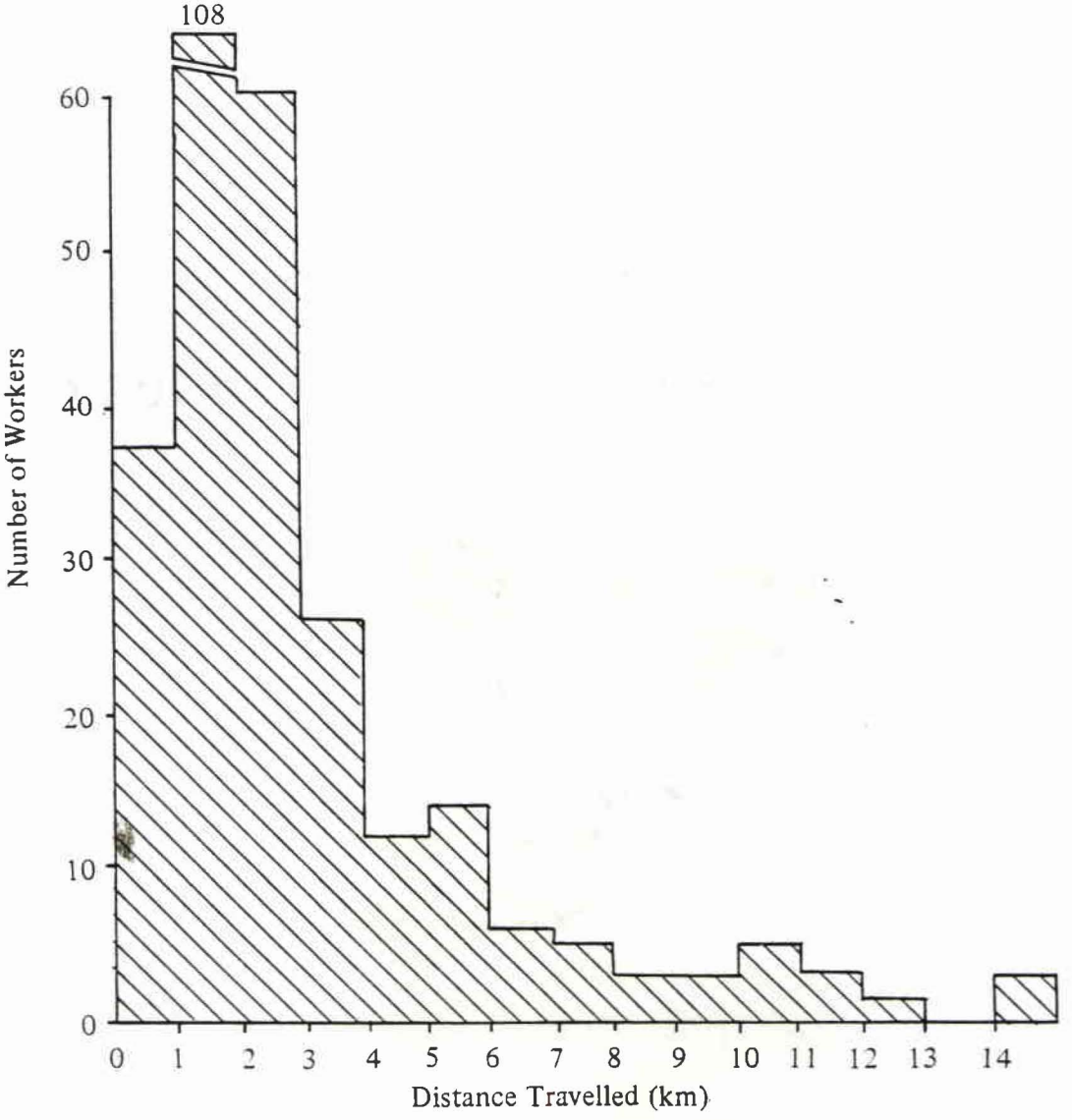
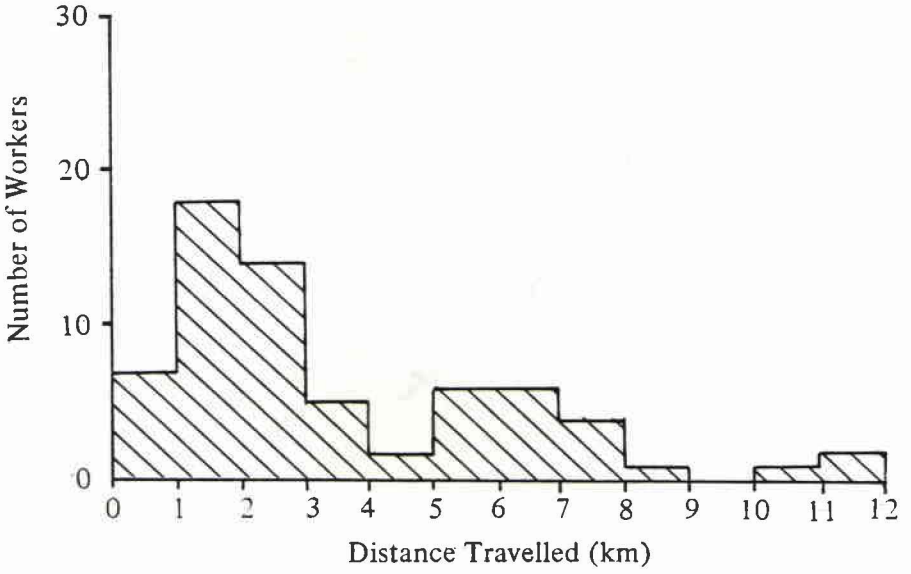
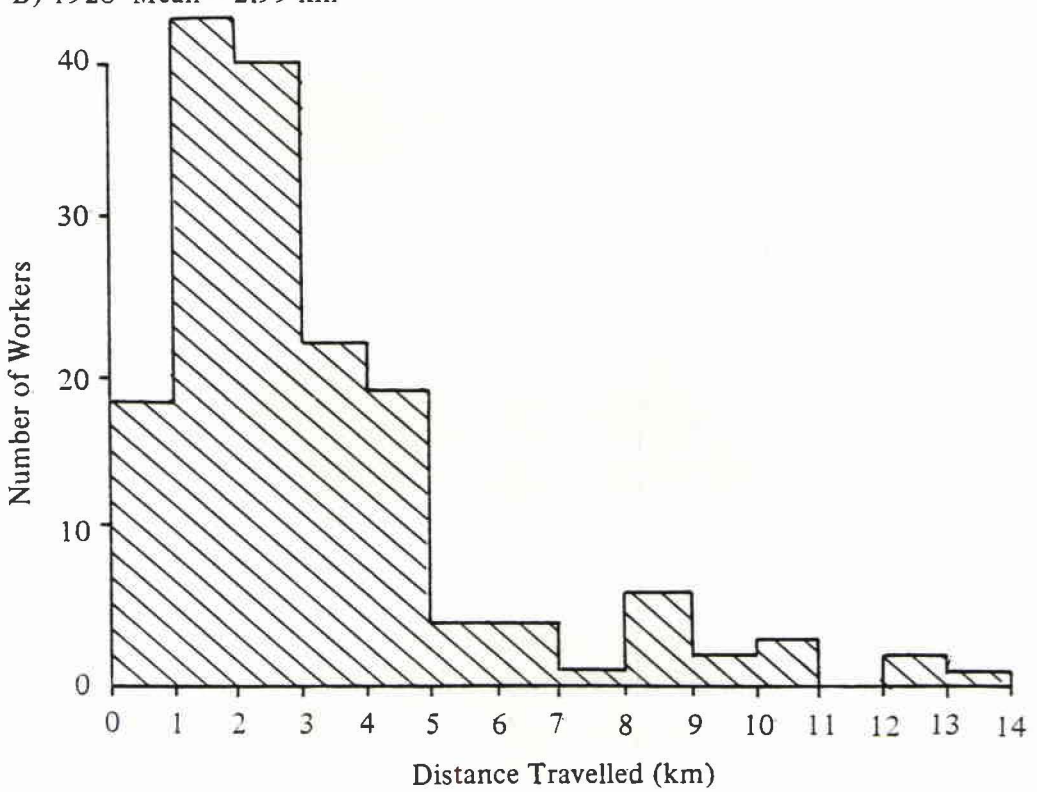


FIGURE 10: DODGE MOTOR COMPANY HISTOGRAMS 1925 & 1928

A) 1925 Mean = 3.25 km



B) 1928 Mean = 2.99 km



can mask the variability of distances from company to company and from year to year, histograms have also been drawn (Figures 7 to 10). The histograms serve two purposes in supplementing the mean values. They illustrate how a few workers living ten or more kilometres from the factory can somewhat inflate the means, when in fact most workers lived within four kilometres of their places of work. But they also illustrate the range of distances that some workers commuted. Generally, the larger the number of workers examined, for a specific company in a given year, the more closely the mean and median would be correlated.

5.1 Ford

Quite small numbers of Ford workers were found in the 1922 and 1923. In 1924, the year following the relocation of the Ford factory from Dupont and Christie Streets to Danforth and Victoria Park Avenue in East York, the number of Ford workers listed in the directories increased to 105 from 61 the previous year (Table 3). The move initially doubled the distance that workers had to travel to work.

The mean distance between home and work at the Ford factories doubled over the period examined. In 1917, workers at Ford lived very close to the factory, 80 per cent within 1 km and only two beyond 5 km. The average distance travelled was 2.3 km (Table 13). By 1922, 90 per cent were within 5 km of the factory, but only 22 per cent within 1 km. The average

distance travelled had increased to 2.83 km. The distance travelled increased to 4.1 in 1923 as people relocated to the east, apparently in anticipation of the factory's move. Sixty-eight per cent of workers lived within 5 km with only 11 per cent within 1 km of the factory. In 1924, only 41 per cent lived within five km of the new factory. Thus the average distance travelled increased to 7 km and the net effect was a doubling of the average distance travelled by workers. The average distance travelled by workers in 1925 fell to 5.7 km, as workers relocated to the eastern suburbs or Ward Eight. Fifty-six per cent now lived within 5 km of the factory. By 1926, 60 per cent lived within 5 km of the factory and the average distance travelled had fallen to 4.95 km as workers clustered around the new factory. In 1928, the average distance travelled was 5.2 km and 64 per cent lived within 5 km of the factory (Table 14).

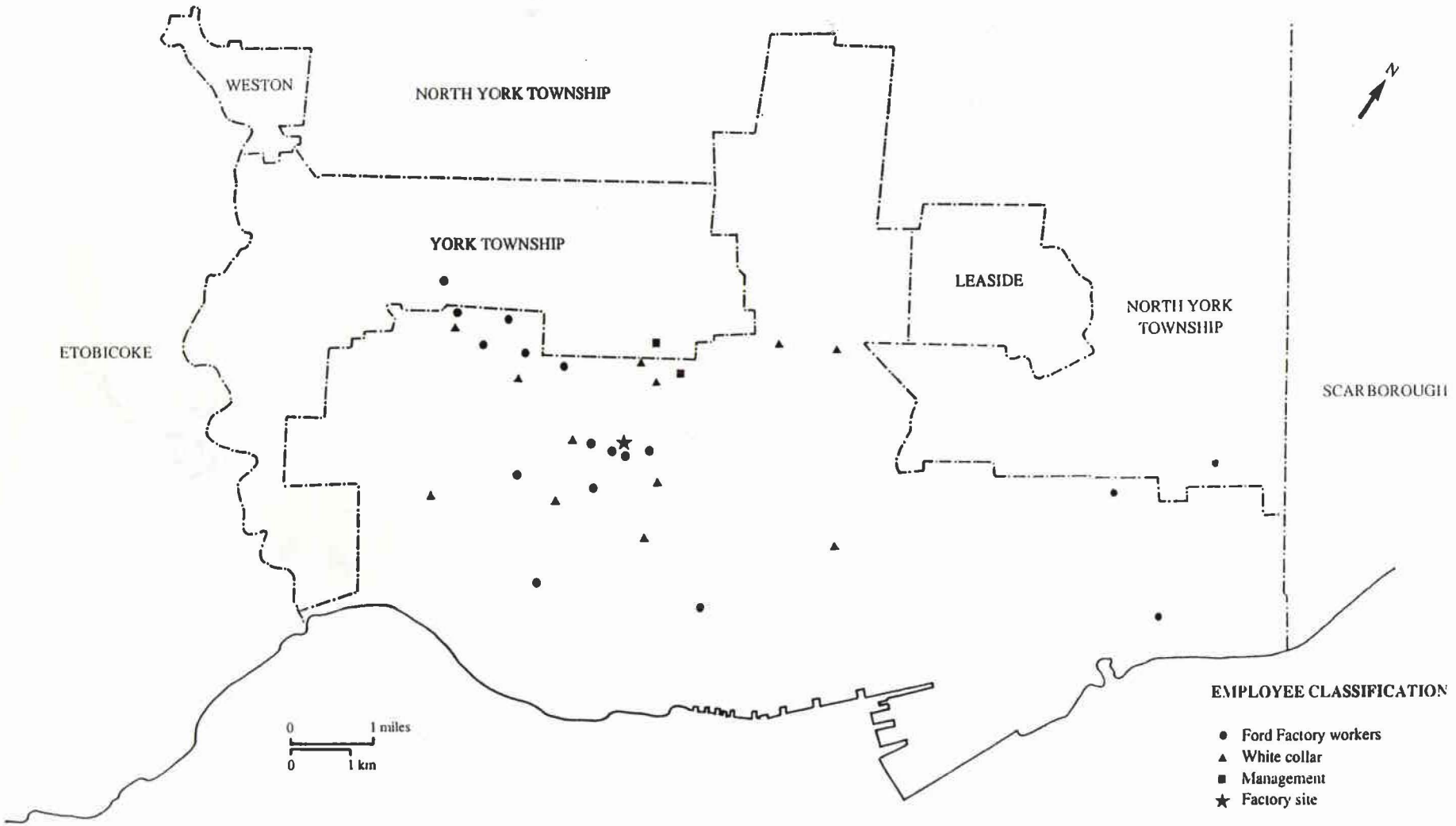
In summary, the average distance travelled by Ford workers rose and then fell in the time period examined. It peaked in 1924 when the factory was relocated about 11 km east of its former site and many workers continued to live around the old factory. The average distance then fell consistently until 1926, as workers relocated to the eastern suburbs or Ward Eight close to the factory and as new workers who lived nearby were taken on by Ford. In 1928, the average distance rose slightly, reflecting some workers who still travelled

from as far away as Humber Bay and York Township (see also Figure 7: 1928). Thus, even five years after the move, workers were still travelling nearly twice as far as they had been in 1923, before the factory relocated.

Average distances travelled by blue-collar workers at Ford were, in four of six years, shorter than for the total workforce (Table 13). White-collar workers apparently relocated to the suburban fringe more slowly than blue-collar workers. This finding seems to contradict the general notion that white-collar workers suburbanized earlier, although the proportion of white-collar workers found working at the auto factories was small. In 1925, white-collar workers were still concentrated near the original factory and the average distance was 6.8 km from the factory in East York. By 1928, white-collar and management were now closer to the factory than some blue-collar workers from the northwestern sector.

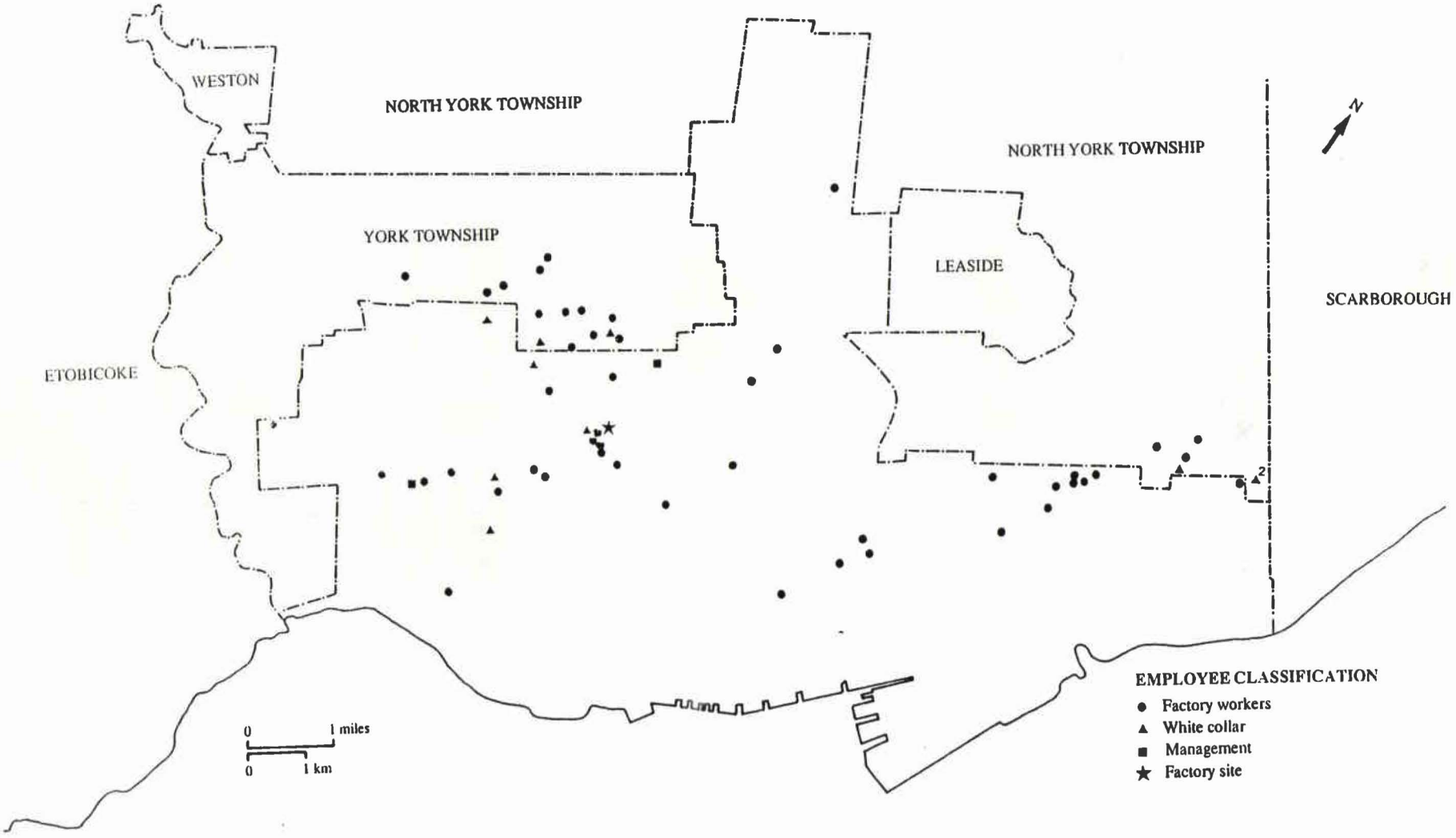
The relocation of the Ford factory from 672 Dupont to Danforth Ave involved a shift from the northwestern sector of Toronto to just outside the City in the east. The factory got a fixed assessment for twenty years from the Township of York in 1923 to locate in East York. Figures 11-16 illustrate the distributions of Ford auto workers in the years 1922 to 1926 and in 1928. In 1922, 90 per cent of workers found lived within the City boundaries, mostly in Wards Five and Six. Only 9 per cent of the workers lived east of the Don Valley.

Figure 11: FORD MOTOR COMPANY EMPLOYEES 1922



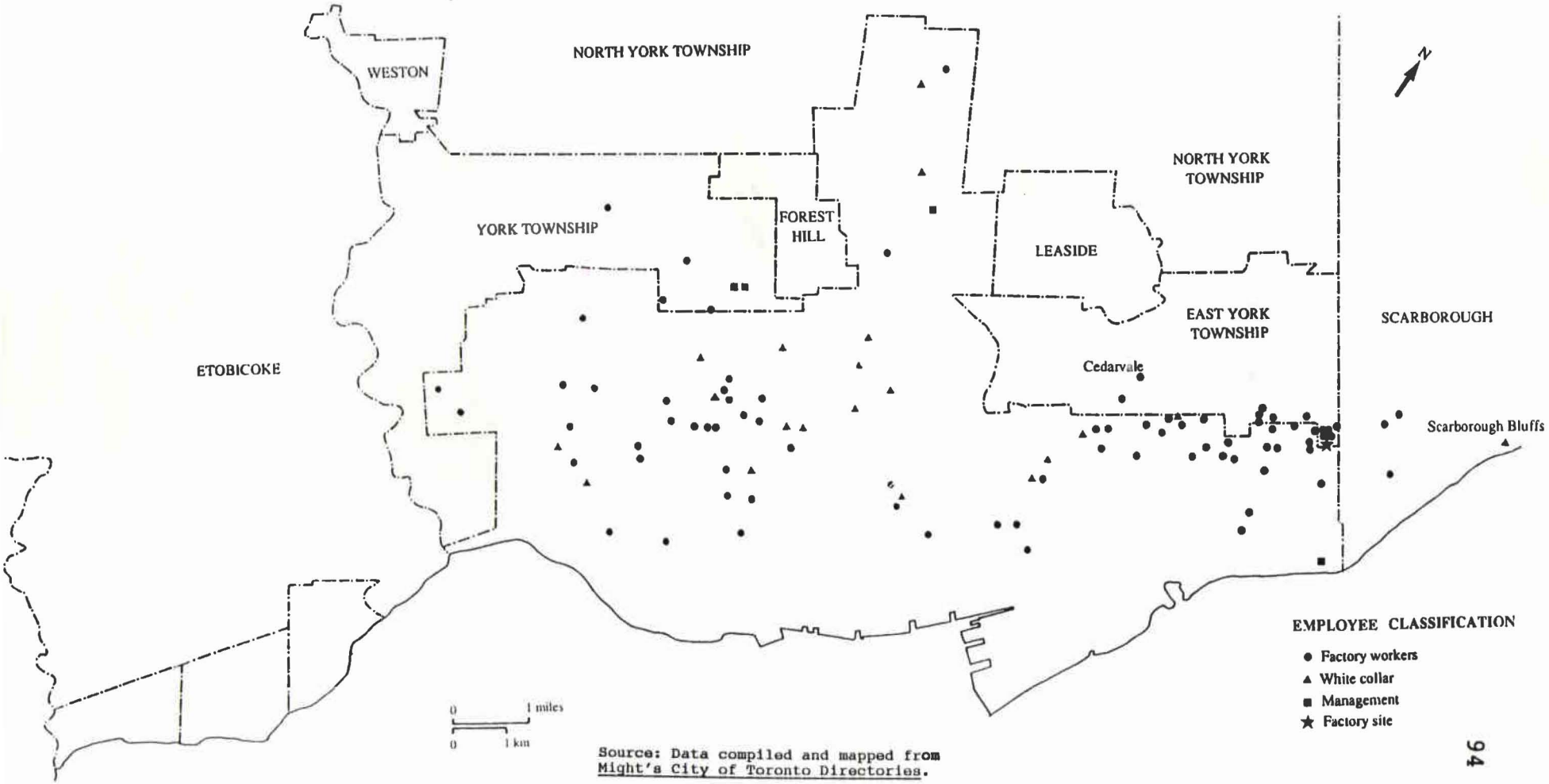
Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure12: **FORD MOTOR COMPANY EMPLOYEES 1923**



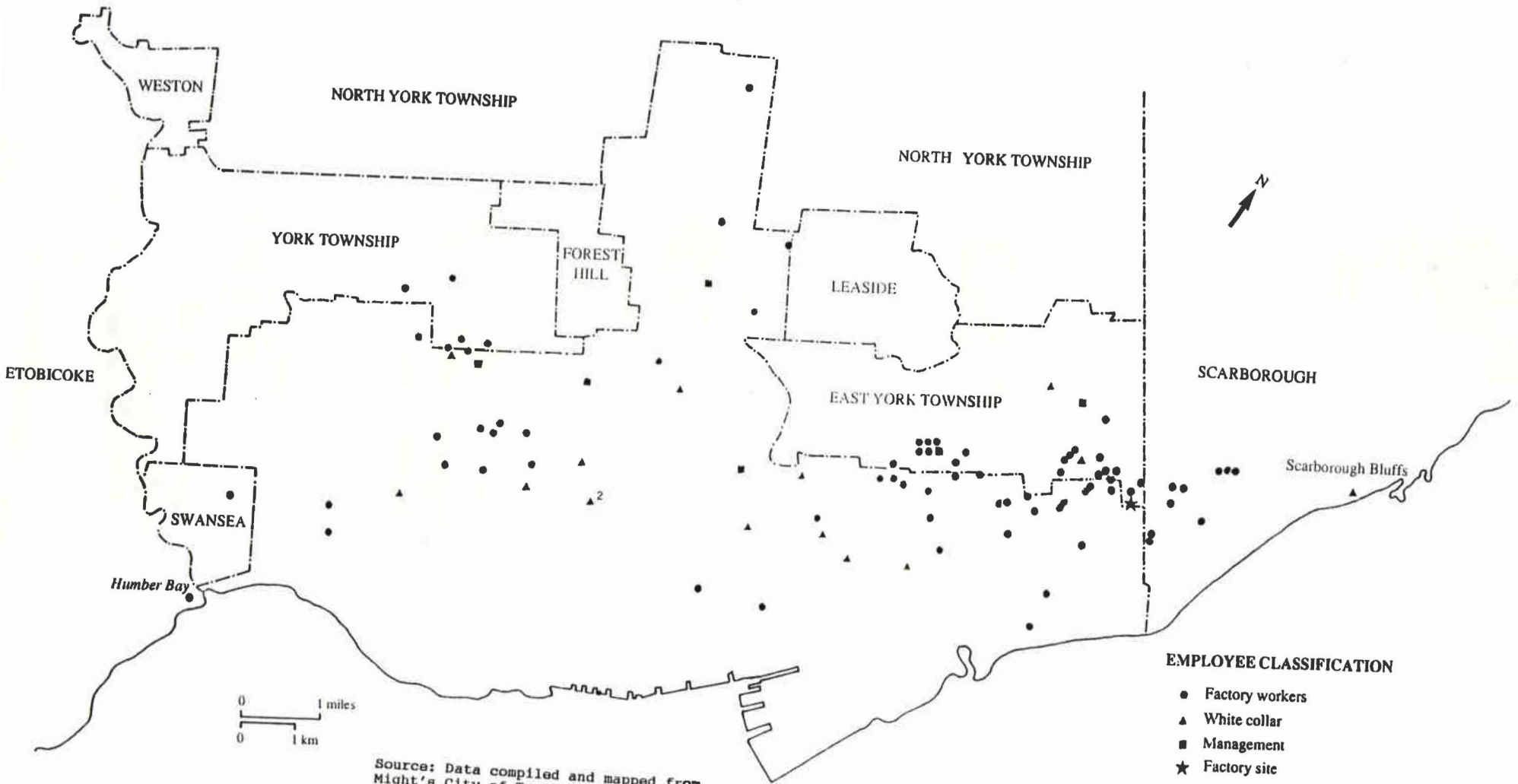
Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 13:
FORD MOTOR COMPANY EMPLOYEES 1924



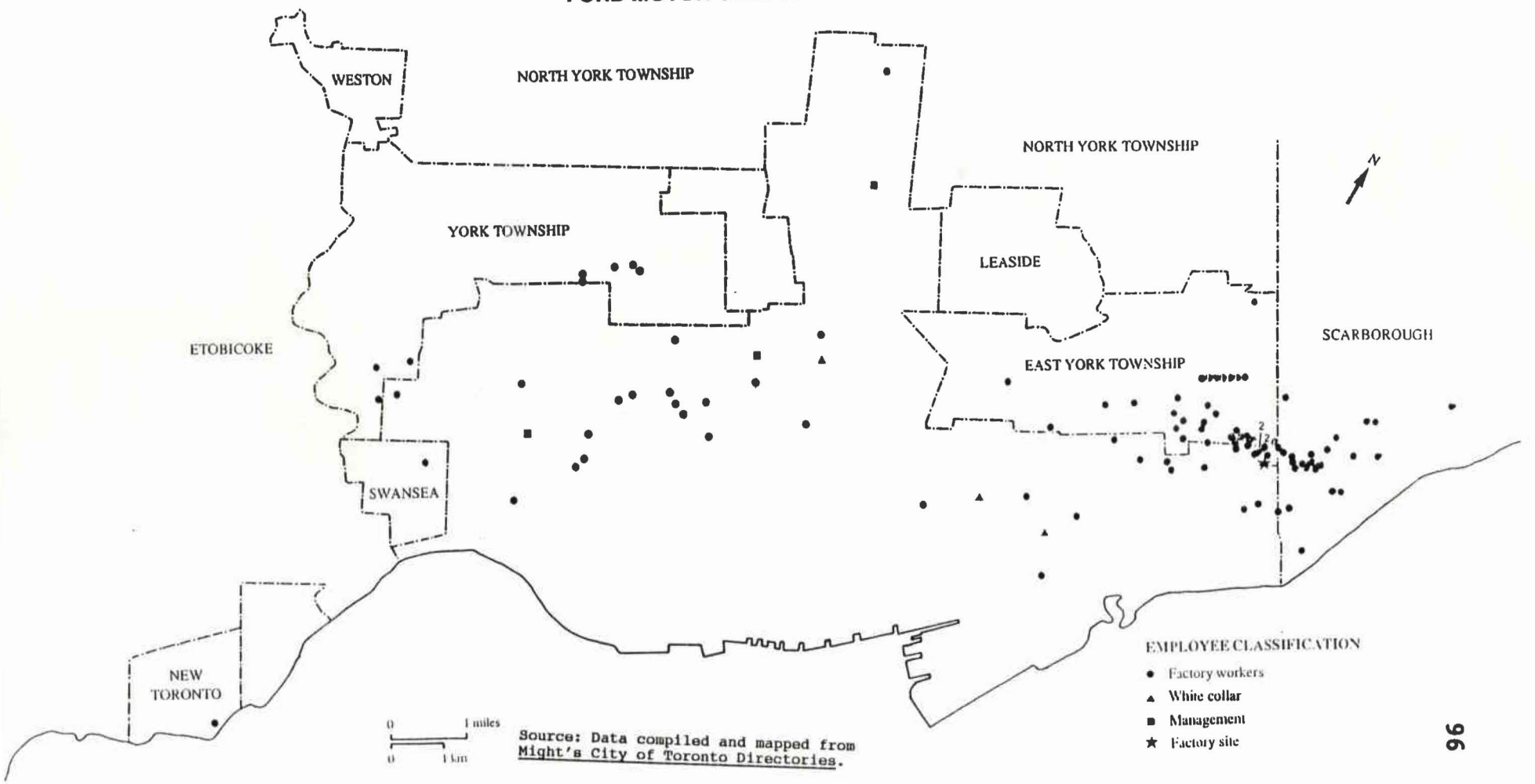
Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 14 :
FORD MOTOR COMPANY EMPLOYEES 1925



Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 15.:
FORD MOTOR COMPANY EMPLOYEES 1926



Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 16:
FORD MOTOR COMPANY EMPLOYEES 1928

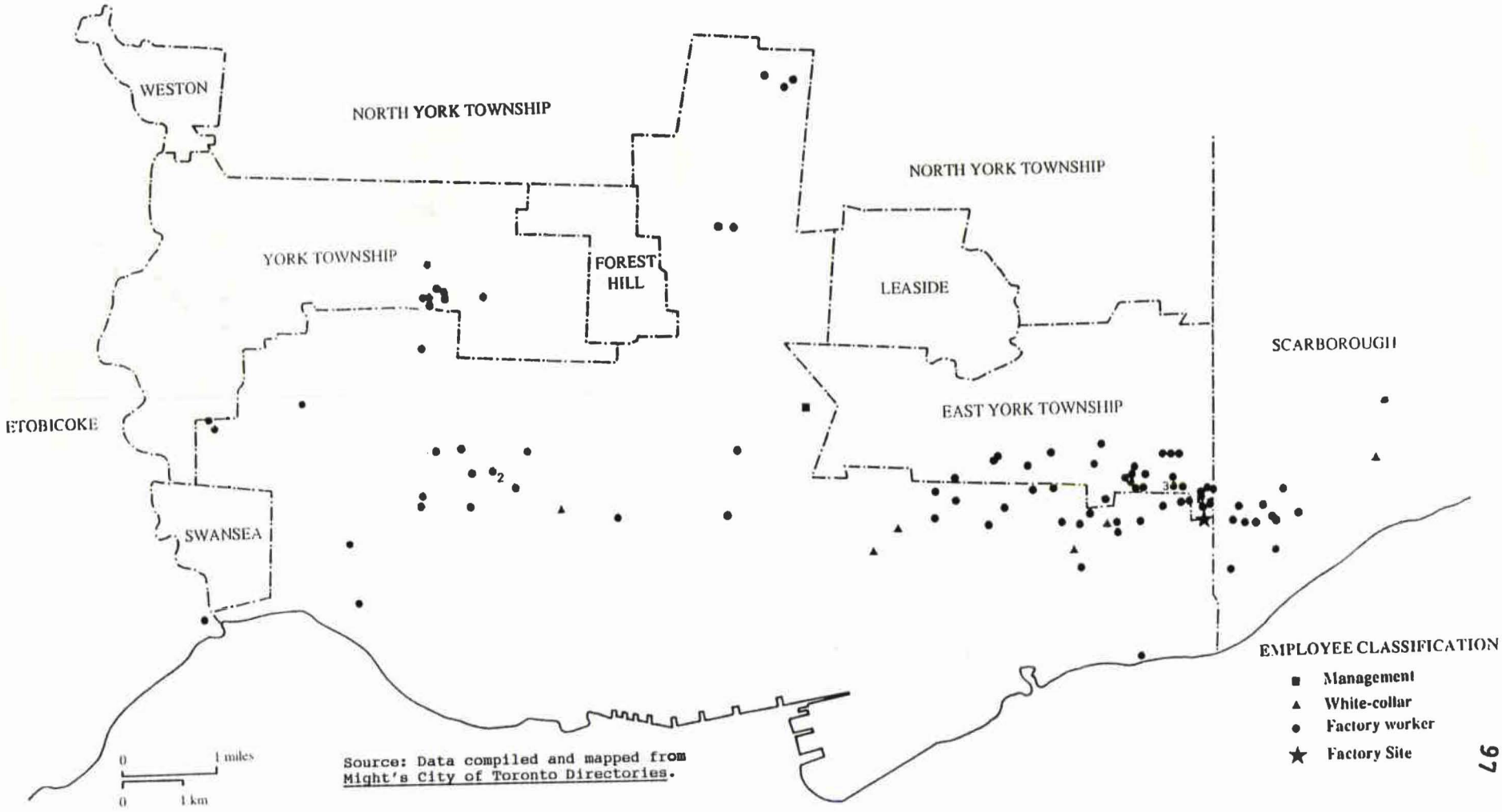


TABLE 15: NUMBERS OF AUTO WORKERS IN THE CITY AND THE SUBURBS

COMPANY	City	%	Suburbs	%	Total #
Ford					
1917	22	88.0	3	12.0	25
1922	28	90.3	3	9.6	31
1923	40	66.6	20	33.3	60
1924	80	77.6	23	22.3	103
1925	58	59.7	39	40.2	97
1926	38	35.1	70	64.8	108
1928	48	46.1	56	53.8	104
Durant					
1922	29	63.0	17	36.9	46
1923	111	75.5	36	24.5	147
1924	84	81.5	19	18.4	103
1925	107	82.3	22	17.6	129
1926	68	68.0	32	32.0	100
1928	84	79.2	22	20.7	106
Willys-Overland					
1922	82	79.6	21	20.3	103
1923	446	70.1	190	29.8	636
1925	196	55.8	155	44.1	301
1928	120	41.8	167	58.1	287
Dodge					
1925	61	92.4	5	7.5	66
1926	75	86.2	12	13.7	87
1928	134	81.2	31	18.7	165

Source of the Data: Mights' Directories.
Calculated from Figures 11-29.

TABLE 16: NUMBERS OF BLUE-COLLAR AUTO WORKERS IN THE CITY AND THE SUBURBS

COMPANY	City	%	Suburbs	%	Total #
Ford					
1922	15	88.2	2	11.7	17
1923	32	68.0	15	31.9	47
1924	61	76.2	19	23.7	80
1925	42	54.5	35	45.4	77
1926	31	31.0	69	69.0	100
1928	42	45.6	50	54.3	92
Durant					
1922	17	62.9	10	37.0	27
1923	97	79.5	25	20.4	122
1924	62	81.5	14	18.4	76
1925	72	78.2	20	21.7	92
1926	36	56.2	28	43.7	64
1928	68	78.1	19	21.8	87
Willys-Overland					
1922	51	73.9	18	26.0	69
1923	374	67.2	182	32.7	556
1925	177	53.6	153	46.3	330
1928	105	39.7	159	60.2	264
Dodge					
1925	45	90.0	5	10.0	50
1926	65	84.4	12	15.5	77
1928	114	79.7	29	20.2	143

Source of the Data: Mights' Directories.
Calculated from Figures 11-29.

TABLE 17: PERCENTAGE OF FORD WORKERS LIVING EAST OF THE DON VALLEY

Ford	% east of the Don Valley
1922	9.6
1923	25.4
1924	46.3
1925	62.2
1926	69.9
1928	67.3

Source of Data: Mights' Directories.
Calculated from Figures 11-16.

By 1923, 66 per cent lived in the City, mostly in wards five and six as well as eight (Table 15). Fourteen workers lived in York Township and six in East York. The proportion east of the Don Valley had increased to 25 per cent, probably in anticipation of the move later that year (Table 17).

The proportion living in the City in 1924 increased to 76 per cent. The growth was particularly evident in Ward Eight, which with 23 workers was the Toronto ward closest to the new factory. The number living in York Township fell to seven while the number in East York increased to 12. In 1924, nearly half the workers at Ford were living east of the Don Valley and, by 1925, this figure reached 62 per cent. In 1926, 37 workers lived in East York and 24 in Scarborough, so that 69 per cent of workers were living east of the Don Valley and the proportion living within City boundaries had fallen to 35 per cent. In 1928, 67 per cent of workers were living east of the Don Valley, including 47 workers in East York and Scarborough. Thus during the mid-1920s, Ford experienced a shift from a northwestern to an eastern labour pool, with its increasing numbers of blue-collar workers tending to take up residence in the suburbs of Scarborough and East York.

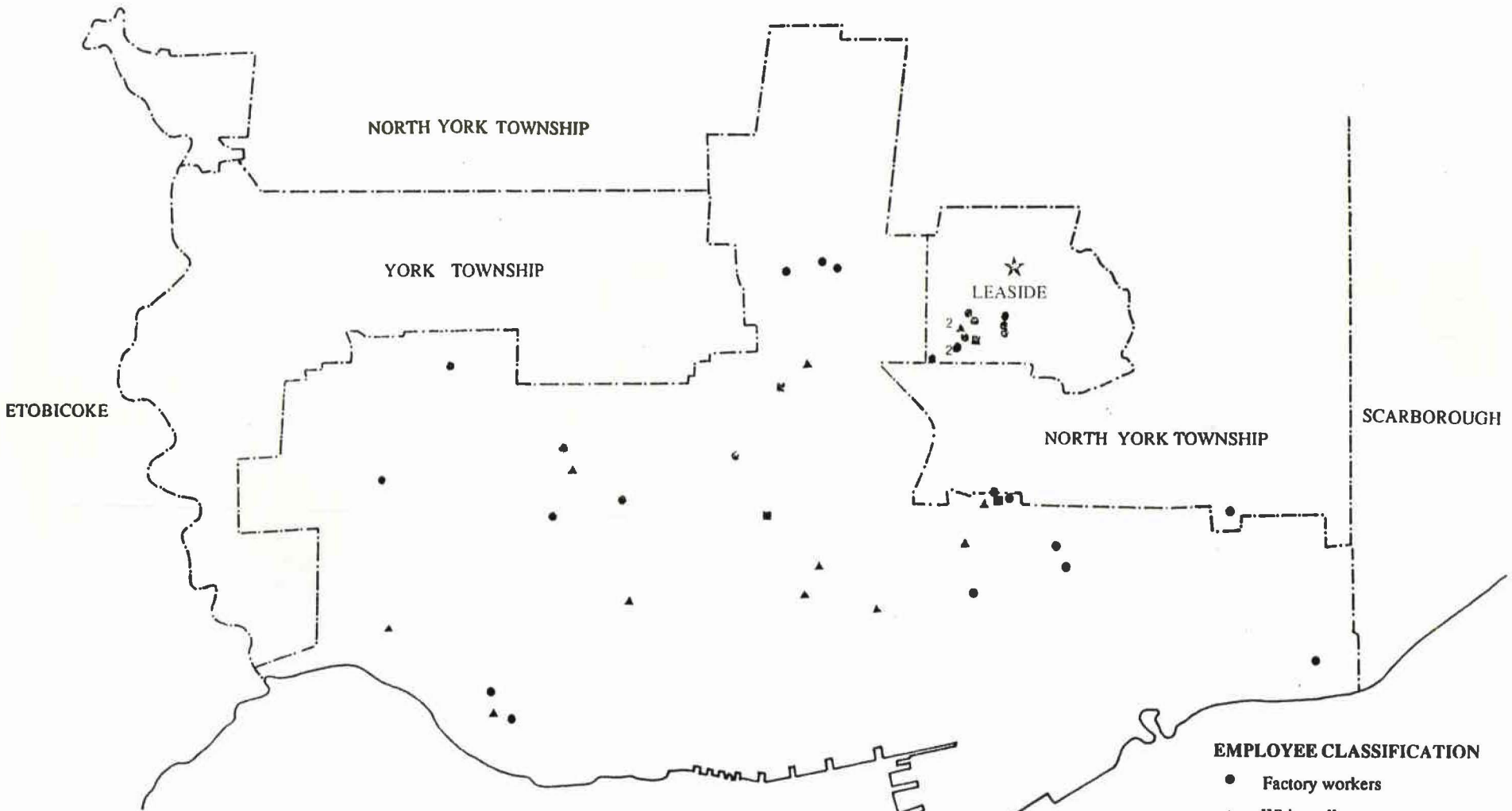
5.2 Durant

The Durant Motor Company manufactured its first cars in Leaside in March 1922. The average distance travelled by Durant workers rose between 1922 and 1923, then fell and then

rose again by 1926 (Table 13). In 1922, workers travelled an average of 4.4 km to work; this increased to 5.4 km in 1923, probably as few people lived in Leaside in the immediate vicinity of the plant. The average distance increased in 1926 to 5.89 km and then fell to 4.8 km in 1928. The proportion of workers living within 5 km of the factory generally decreased over the period from 1922 to 1928, dropping sharply from 67 per cent in 1922 to 38 per cent in 1923, then increasing slightly to between 48 and 56 per cent in the years 1924 to 1928 (Table 14). Durant's blue-collar workers, like their counterparts at Ford, also tended to live closer to work than white-collar or management.

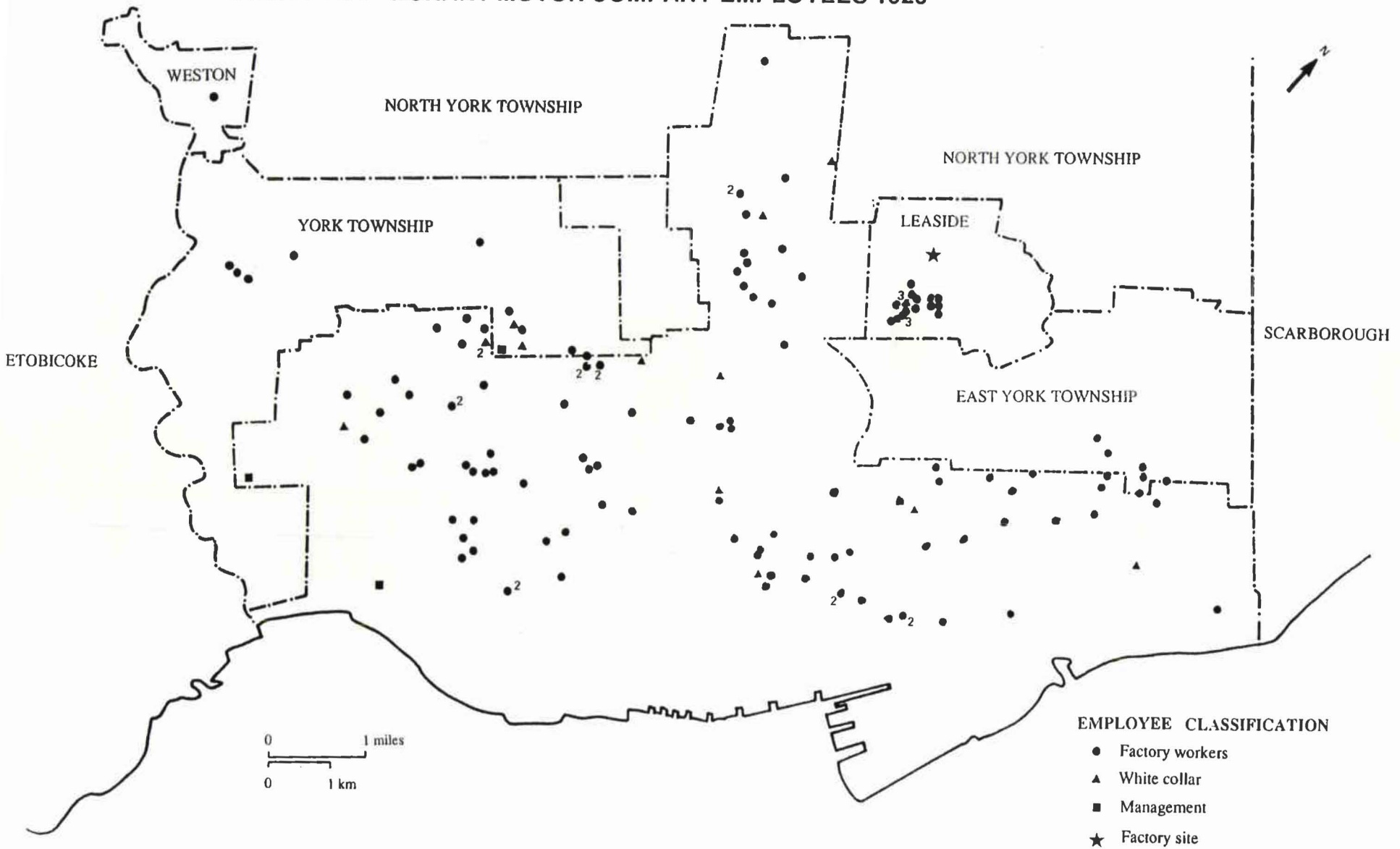
The company drew its labour from a wide area, including some workers from the western areas of the City of Toronto and York Township. Figures 17-22 illustrate the distribution of Durant auto workers in the years 1922 to 1926 and in 1928. Sixty-three per cent of workers in 1922 lived within the City of Toronto (Table 15). The rest of the workers lived in the suburb of Leaside close to the factory, with one person living in East York Township. However, by 1923, 75 per cent were living in the City. The proportion of people living in the suburbs, specifically Leaside, was declining until 1926 when it increased slightly. In 1924, 81 per cent lived in the City. Of those a growing proportion were living in Toronto's Ward Two, just across the boundary from Leaside. In 1925, one

Figure 17 : DURANT MOTOR COMPANY EMPLOYEES 1922



Source: Data compiled and mapped from Might's City of Toronto Directories.

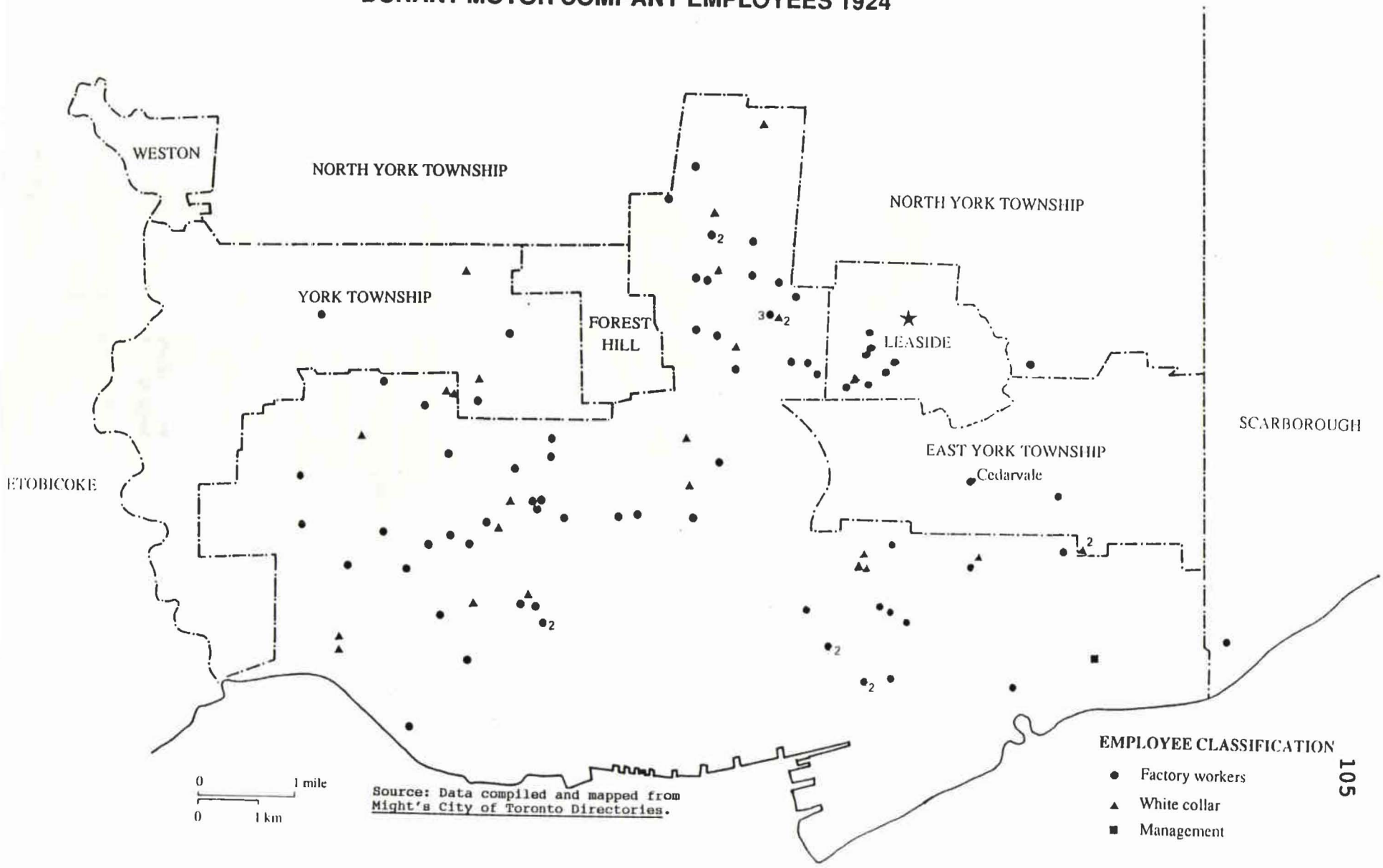
Figure 18: **DURANT MOTOR COMPANY EMPLOYEES 1923**



Source: Data compiled and mapped from Might's City of Toronto Directories.

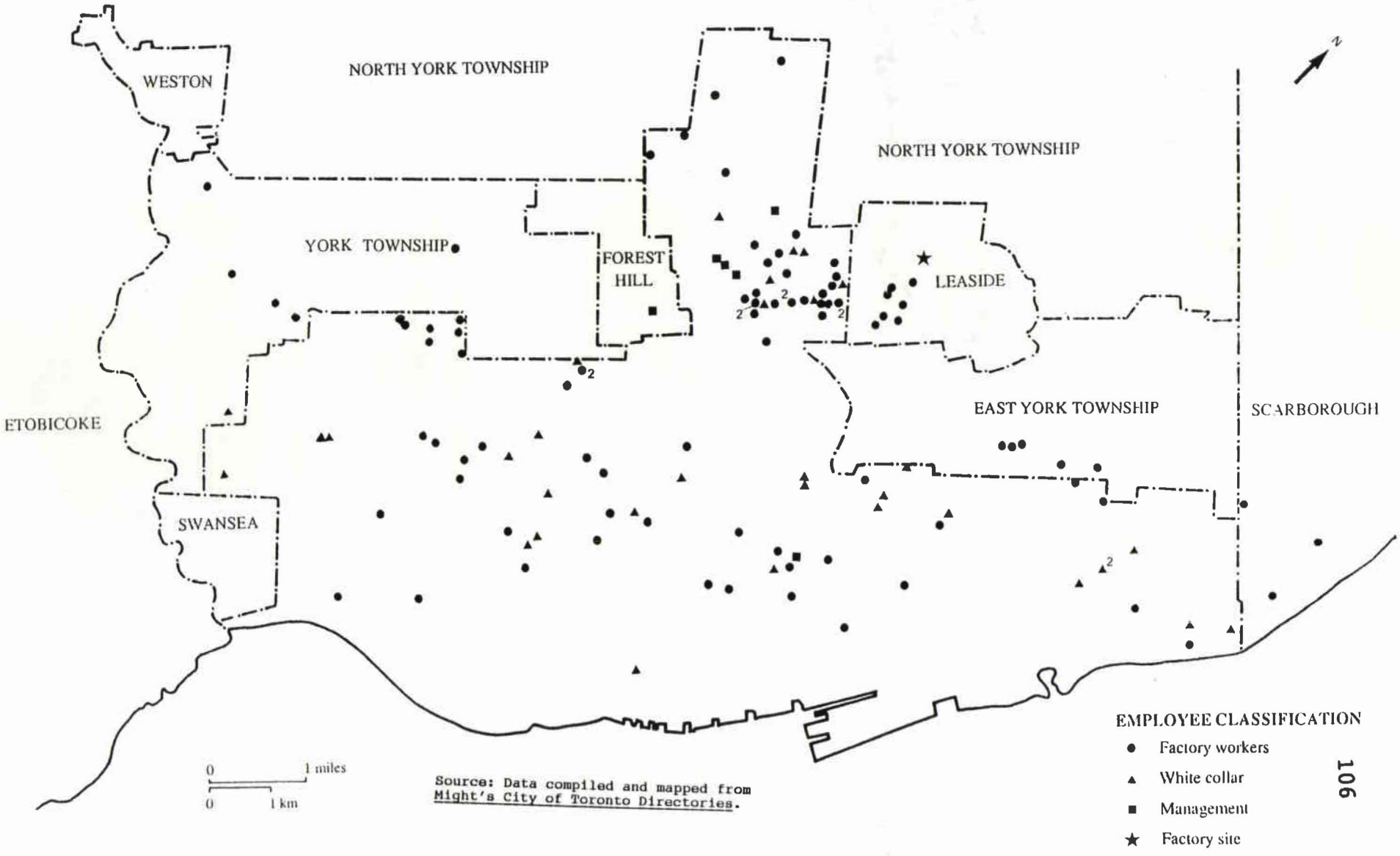
Figure 19:

DURANT MOTOR COMPANY EMPLOYEES 1924



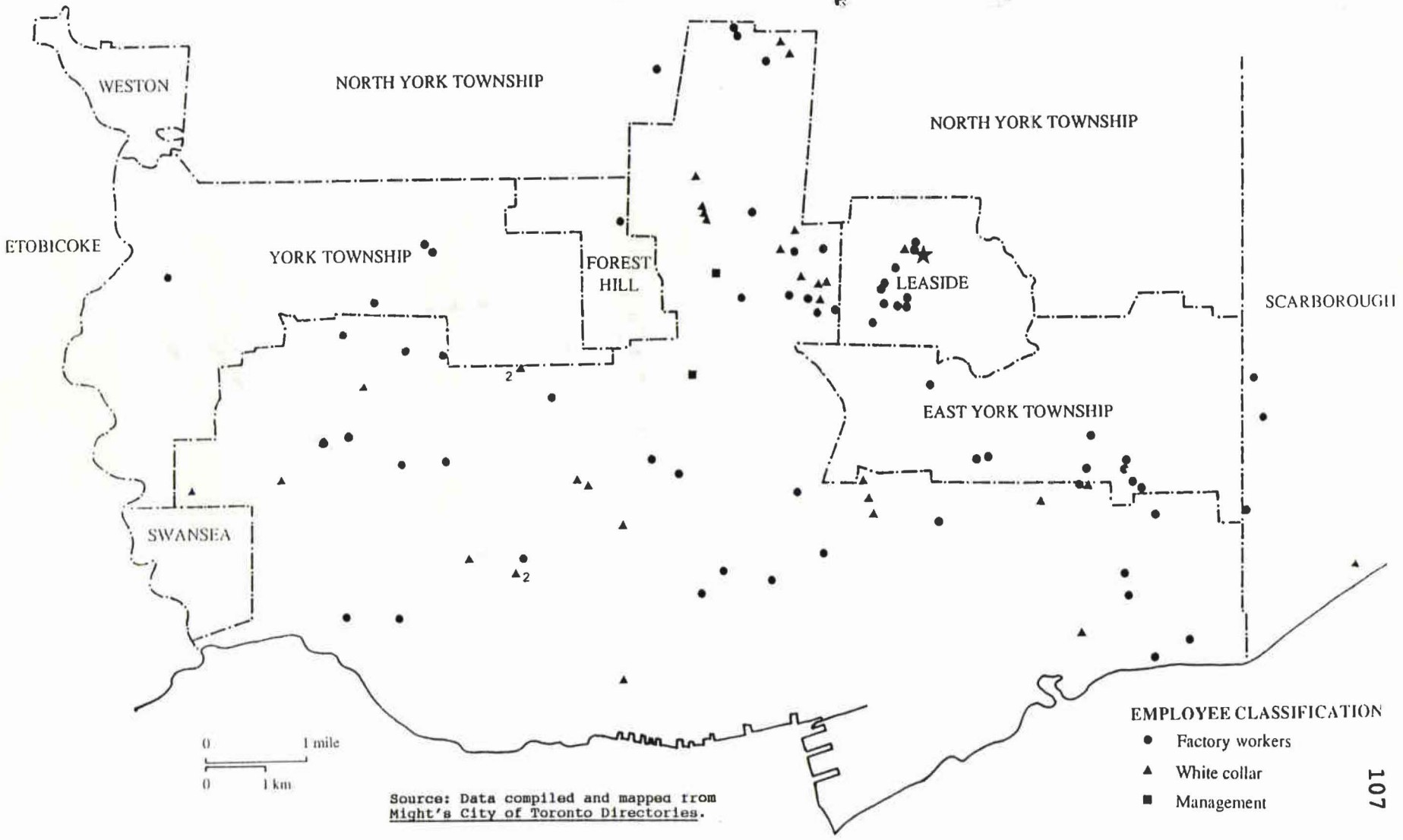
Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 20:
DURANT MOTOR COMPANY EMPLOYEES 1925



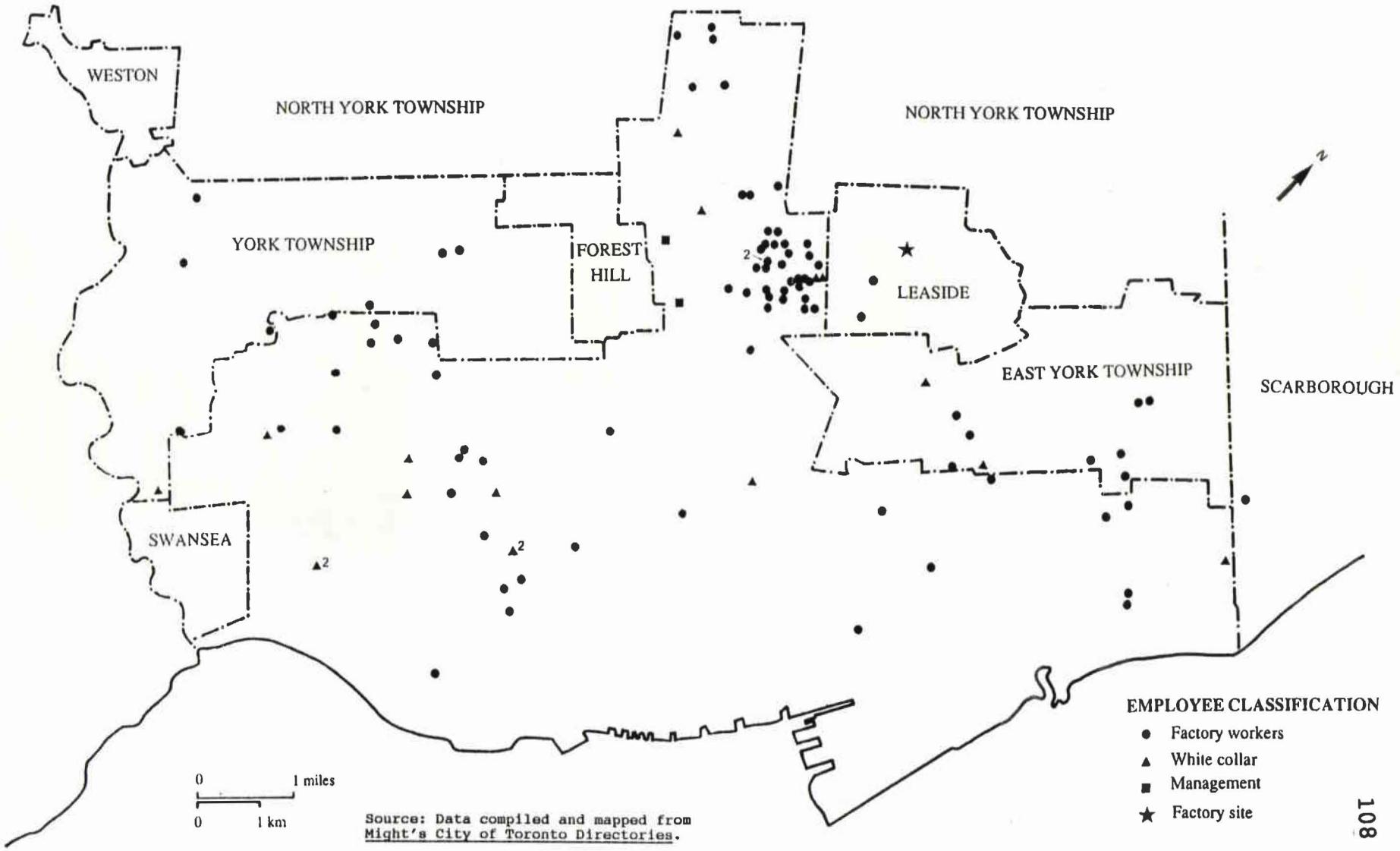
Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 21:
DURANT MOTOR COMPANY EMPLOYEES 1926



Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 22: **DURANT MOTOR COMPANY EMPLOYEES 1928**



Source: Data compiled and mapped from Might's City of Toronto Directories.

in three of all Durant workers lived in Ward Two. In 1926, the percentage of workers in the City declined to 68 per cent from 82 per cent in 1925. In 1926, eleven workers lived in Leaside (down from a high of 19 in 1923), nine workers resided in East York and five in Scarborough. Though the proportion of workers east of the Don Valley declined from 56 per cent in 1922 to only 25 per cent in 1925, it increased again in 1926 to 38 per cent. The long-term trend of workers' residence, however, was to locate in Ward Two rather than the suburbs. This trend reflects the undeveloped state of road connections between East York and Leaside. It was not until 1927 that a bridge connected the two districts. In 1928, 79.2 per cent of Durant workers lived in the City, with over one third of the workforce in Ward Two. Only 20 per cent of the workforce lived east of the Don Valley.

From only 325 in 1921, Leaside's population began to grow from 938 in 1931 to 6,183 in 1941. It is suggested that the development of Leaside was premature in the 1920s (Clay, 1958; Rempel, 1982). Canada Wire & Cable moved some of its Toronto operations to Leaside in 1914. Access to the suburb was difficult in early years and Canada Wire and Cable was forced to build a few houses in Leaside for its employees. The TTC extended a bus service to Leaside from the main line to North Toronto after 1925 (Figures 3-5). Leaside was cut off from Toronto's east end by the Don River ravine. The Leaside

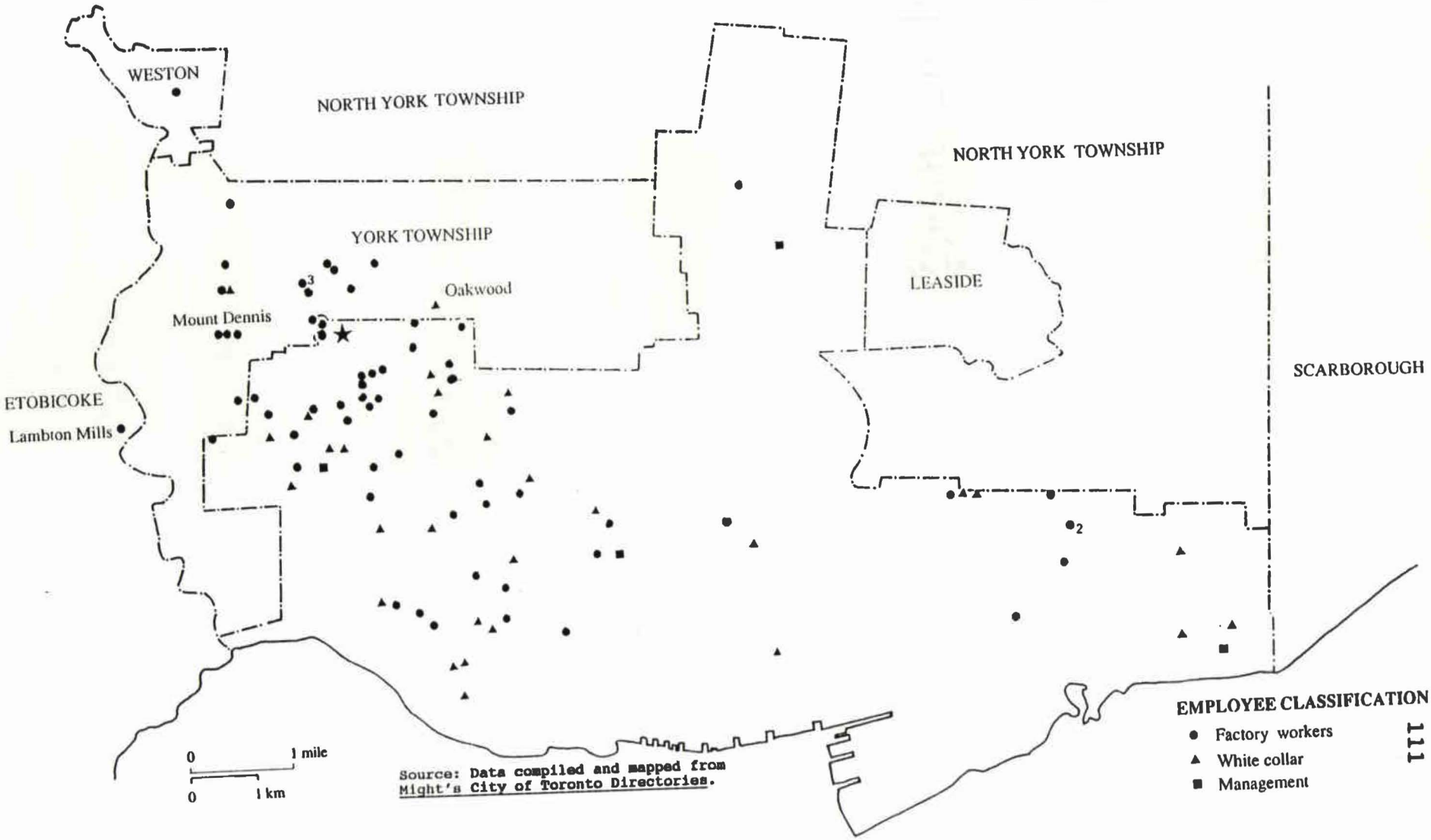
viaduct (Millwood Road) was completed by October 1927, thus establishing better links between Leaside, the City of Toronto and East York Township. The viaduct greatly accelerated the development of Leaside (Rempel, 1982, 26).

5.3 Willys-Overland

The Willys-Overland factory located in West Toronto, near the City boundary, tapped both a northwestern Toronto labour force as well as a suburban one, predominantly in York Township. The mean distance travelled by workers at Willys-Overland steadily decreased during in the 1920s; by 1928 the mean was only two-thirds what it had been in 1922. In 1922, the average distance was 3.9 km, in 1923 3.3 km, in 1925 3.4 km and in 1928 2.6 km (Table 13). The number of workers living within 5 km of the plant increased in the period under study from 70 per cent in 1922, 77 per cent in 1923, 81 per cent in 1925 to 84 per cent in 1928 (Table 14). Most of the Willys workers living within 2.5 km in 1928 resided in Toronto's Wards Six and Seven and in York Township. Blue-collar workers tended to live closer to the factory than white-collar employees, with slightly lower distances between home and work in each year.

Figures 23-26 illustrate the distribution of Willys-Overland auto workers in 1922, 1923, 1925 and 1928. The proportion of workers who lived within the City of Toronto boundaries and commuted to Willys-Overland fell consistently

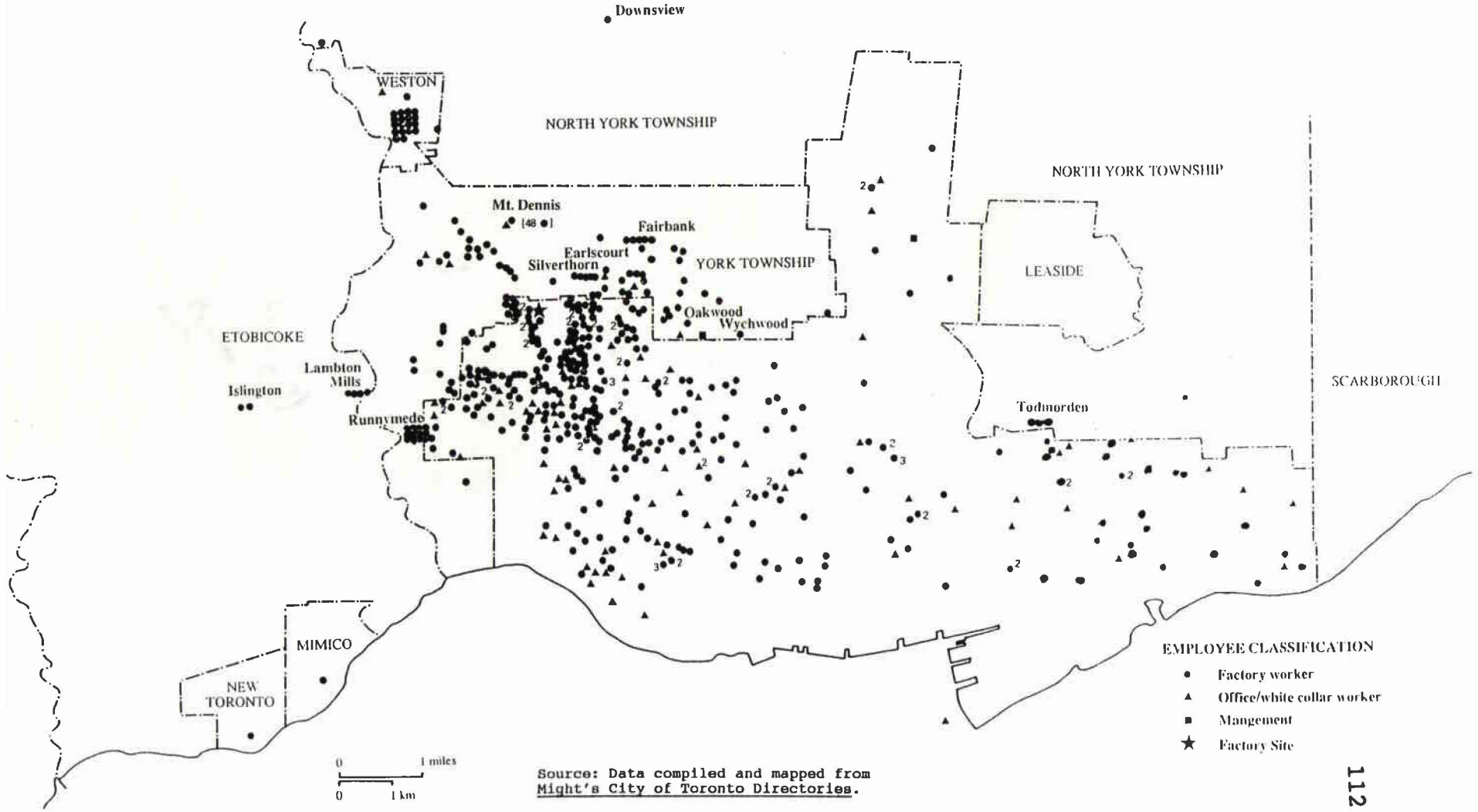
Figure 23:
WILLYS-OVERLAND EMPLOYEES 1922



Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 24:

WILLYS-OVERLAND EMPLOYEES 1923



Source: Data compiled and mapped from Might's City of Toronto Directories.

Figure 25: **WILLYS-OVERLAND EMPLOYEES 1925**

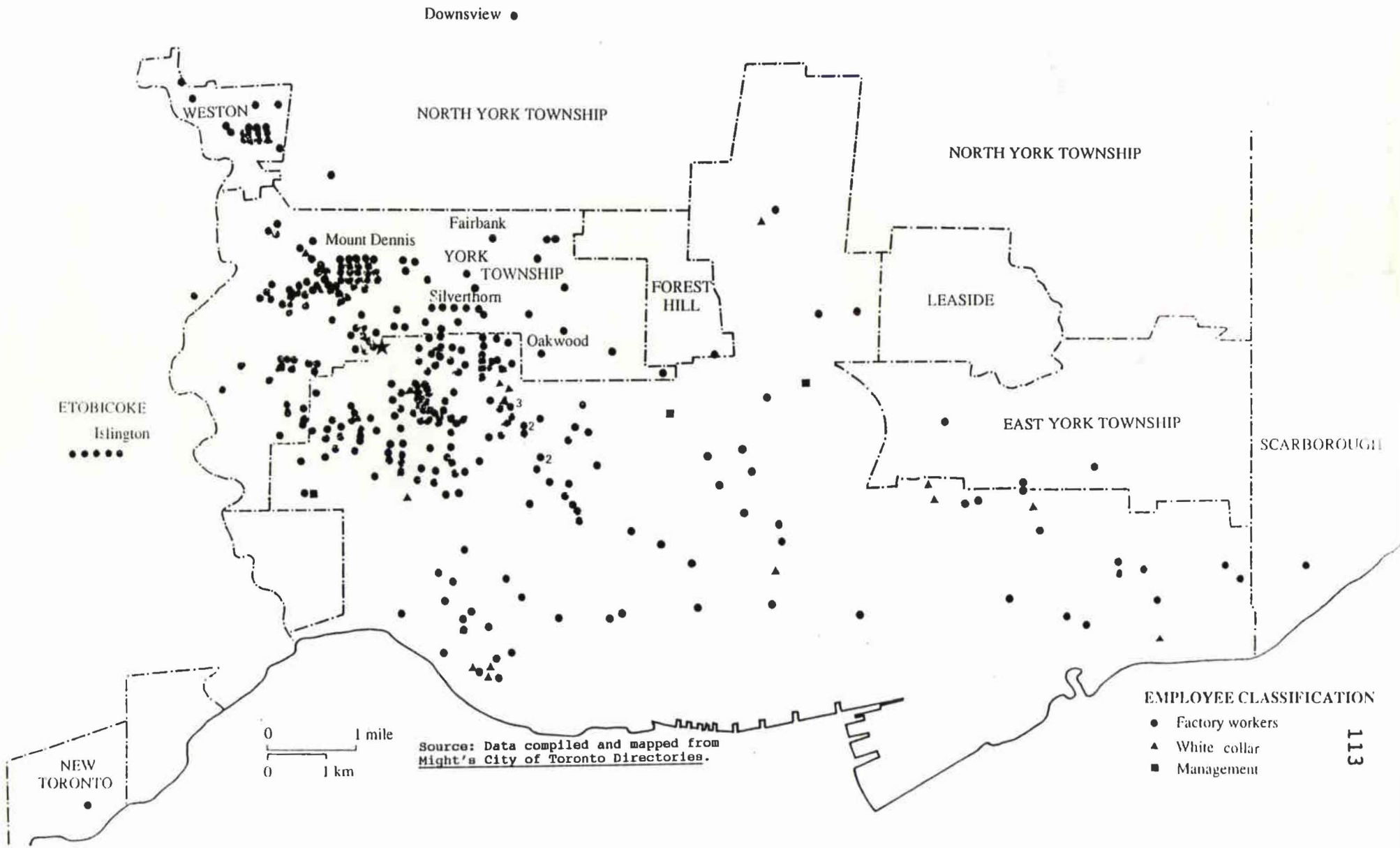
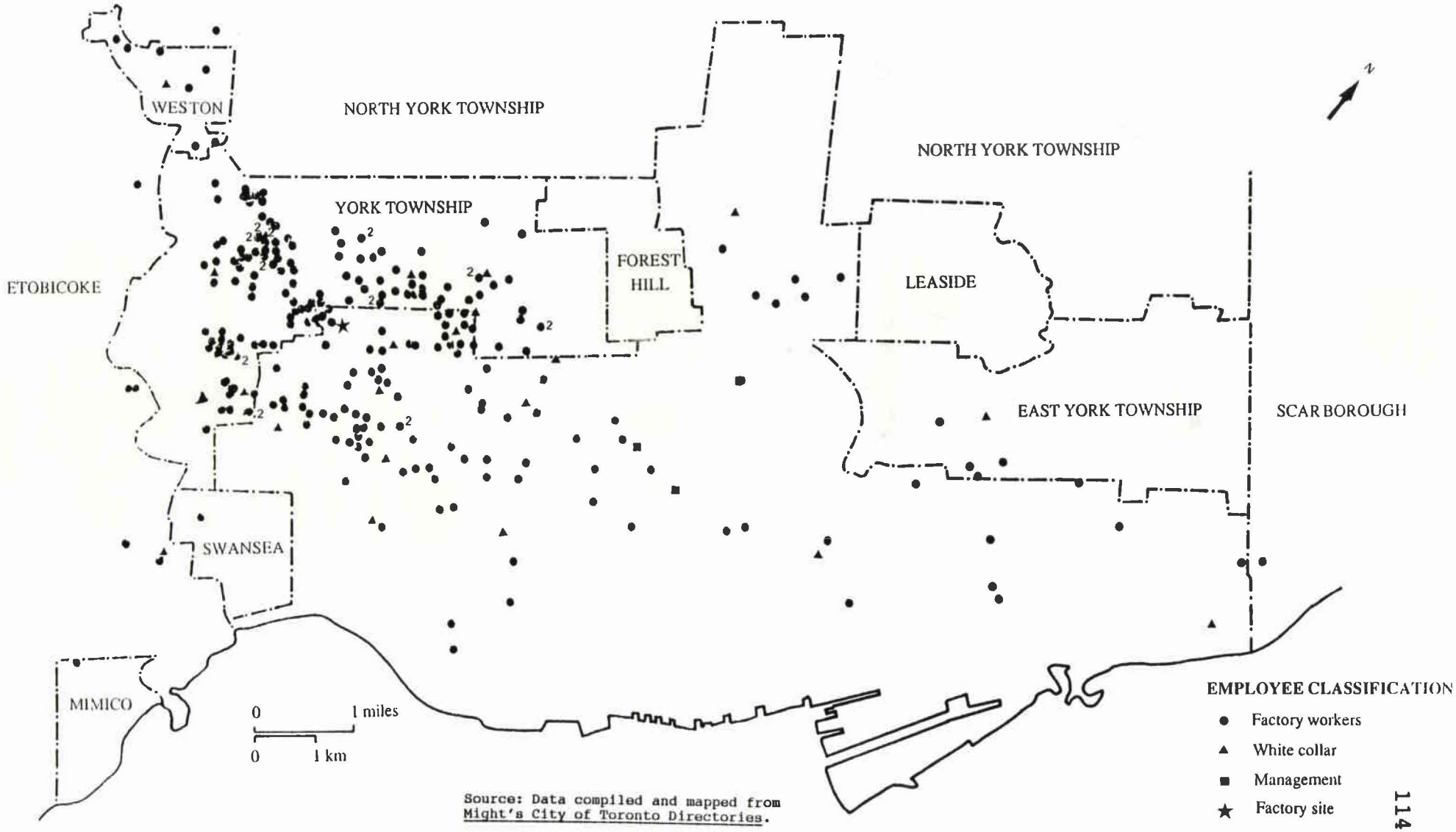


Figure 26: WILLYS- OVERLAND EMPLOYEES 1928



Source: Data compiled and mapped from Might's City of Toronto Directories.

from 79.6 per cent in 1922 to 41.8 per cent in 1928 (Table 15). Increasing numbers of Willys workers chose to live in the suburbs over a seven-year period; by 1928, 58.1 per cent of the plant's workers were living in the suburbs. This was even higher than Ford with 53 per cent suburban in 1928 but lower than Ford's high of 65 per cent in 1926. Durant and Dodge both had low rates of suburban workers in 1928 -- 20.7 and 18.7 per cent respectively -- with Dodge's rate tending to rise.

Workers at Willys-Overland were densely concentrated in the suburbs of York Township -- including Mount Dennis, Runnymede and Lambton Mills -- which accounted for 23 per cent of workers in 1923, 35 per cent in 1925, and 48 per cent in 1928. There were also some workers in Weston, Swansea, Islington and Thistletown ,as well as one each in Woodbridge, Toronto Island and Downsview in 1925. Within the City of Toronto, workers were heavily concentrated in Wards Six and Seven - usually over twenty per cent of workers within each. Clearly, Willys-Overland workers were increasingly locating in the suburbs by the late 1920s.

5.4 Dodge

The Dodge Motor Car Company factory was located on Dufferin Street, in a location similar to that of the first Ford plant, and tapped a northwestern labour pool. The number of workers found working for Dodge Bros increased from 68 in

1925, its first year in operation, to 92 in 1926 and 171 in 1928. The mean distance travelled by Dodge workers in 1925 was a little less than for Ford in 1923 and fewer Dodge workers lived in the suburbs (Tables 13-16).

The average distance between home and work increased from 1925 to 1926, and then decreased between 1926 and 1928. The average distance in 1925 was 3.2 km, in 1926 it was 3.5 km, and 2.9 km in 1928 (Table 13). Workers at Dodge Bros in 1928 were more concentrated around the factory and some new workers were living in York Township. The proportion living within 5 km rose and then fell slightly for Dodge Bros employees. In 1925, 62 per cent lived within 5 km of the factory, in 1926 the equivalent figure was 78 per cent did and in 1928 it was 73 per cent (Table 14).

Figures 27-29 illustrate the distribution of Dodge auto workers in 1925, 1926 and 1928. The proportion of Dodge workers living within Toronto's City boundaries declined somewhat between 1925 and 1928 (Table 15). This resembled the suburbanizing trend of Wills-Overland workers in the same sector of greater Toronto, though more slowly as Dodge was more centrally located. The proportion living in the City dropped from 92 per cent in 1925, to 86 per cent in 1926, and 81 per cent in 1928. Thus, although small, the proportion of workers living in the suburbs increased slightly. Within the City, workers tended to be concentrated in Ward Six,

Figure 27 : DODGE MOTOR COMPANY EMPLOYEES 1925

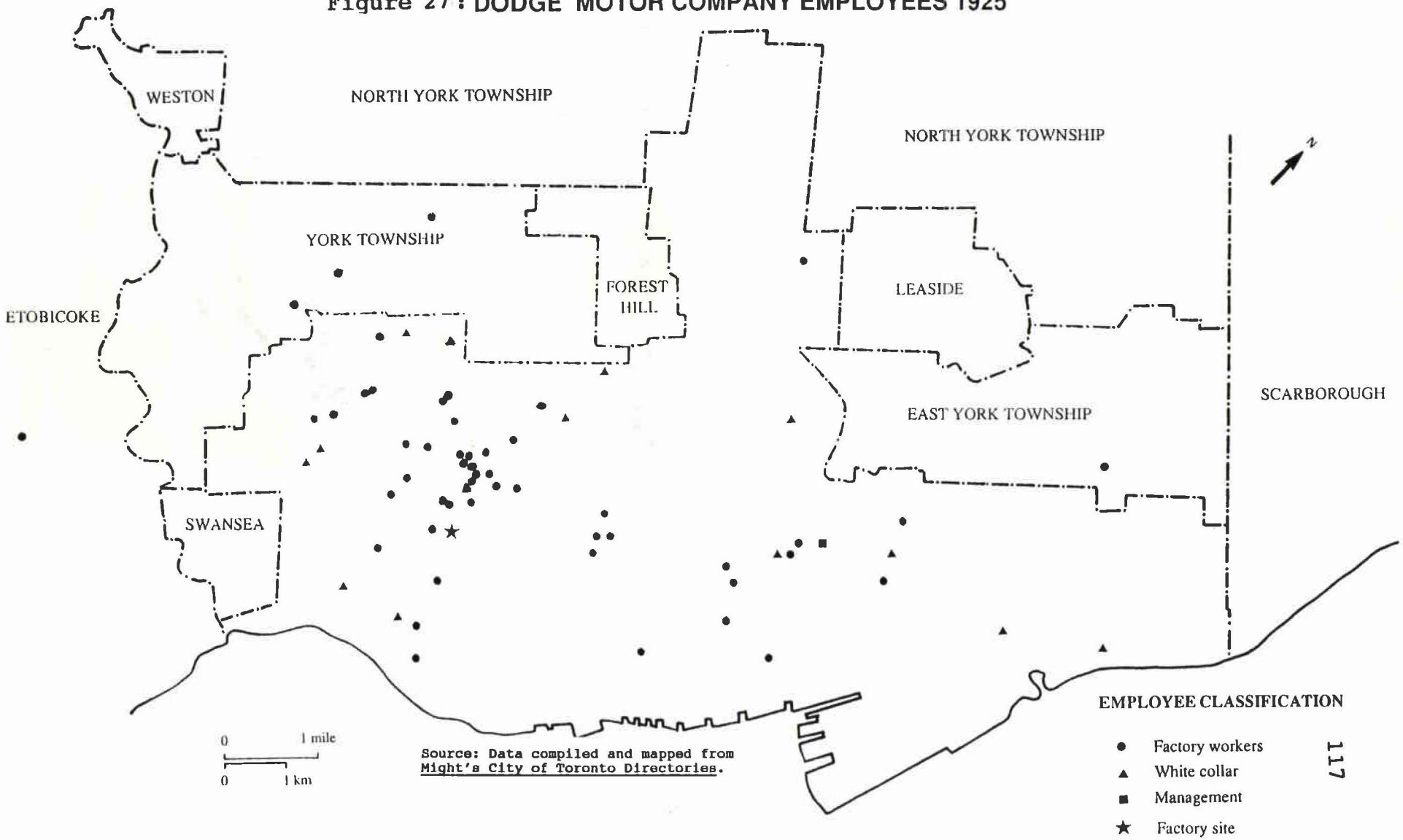


Figure 28: **DODGE MOTOR COMPANY EMPLOYEES 1926**

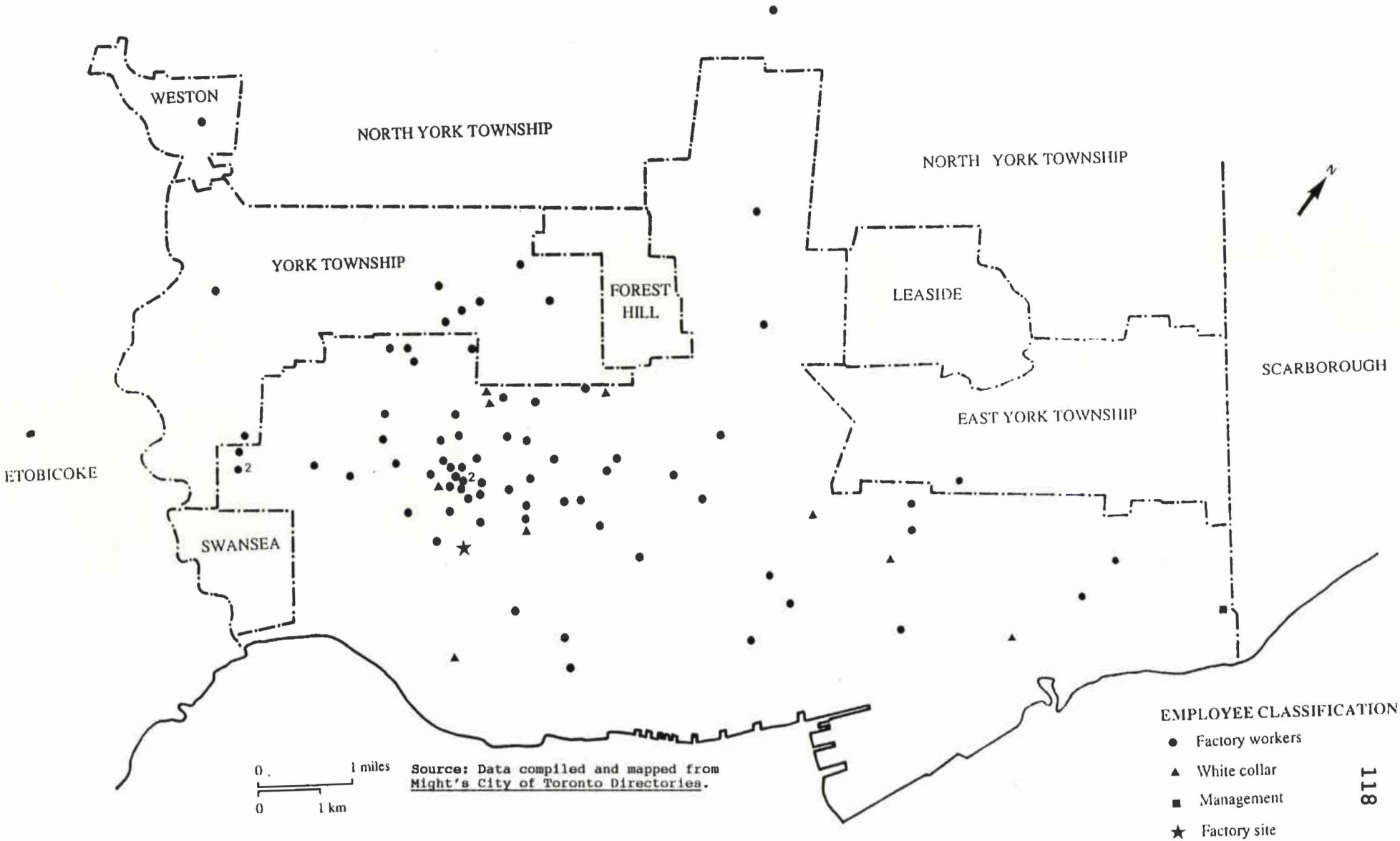
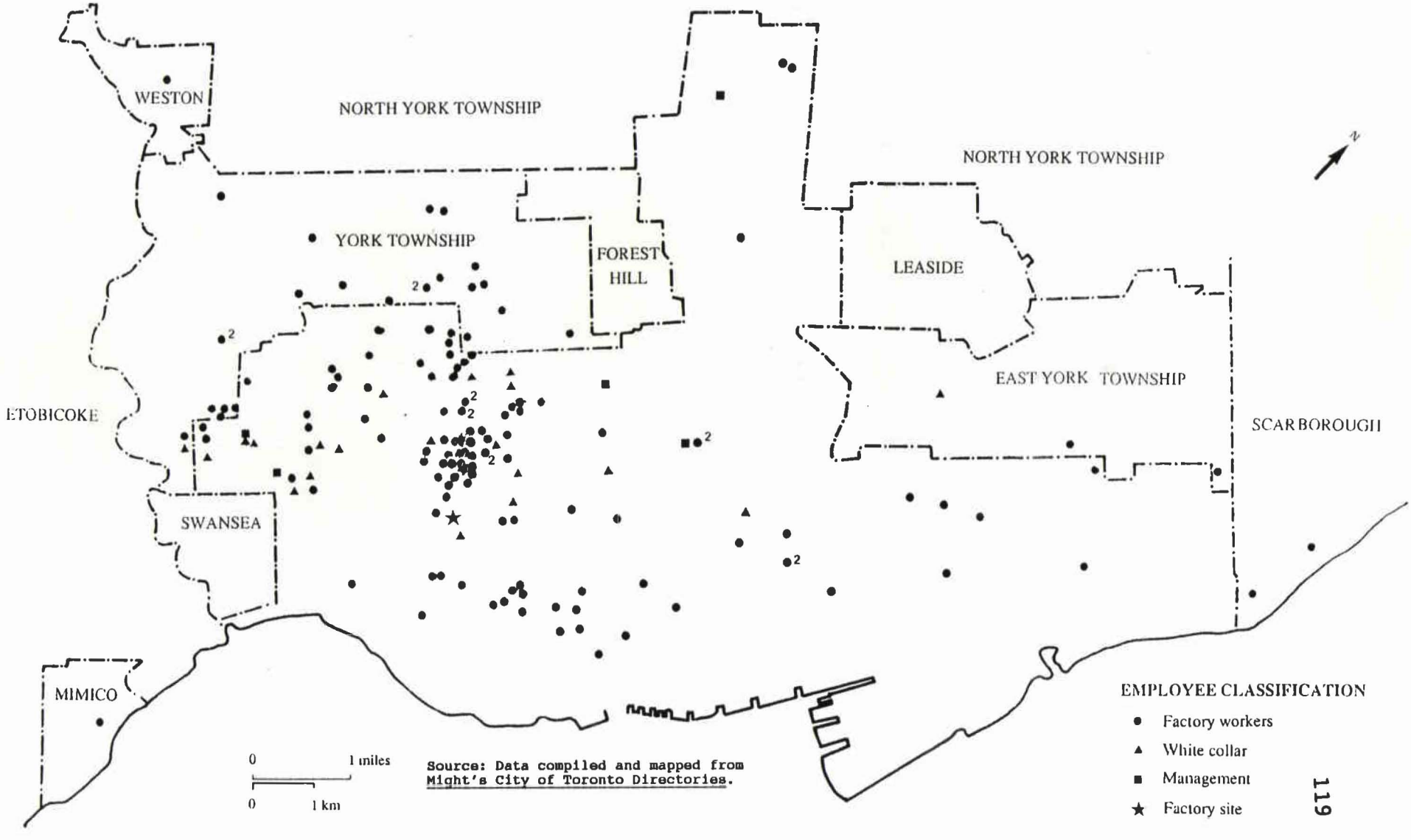


Figure 29: **DODGE MOTOR COMPANY EMPLOYEES 1928**



accounting for over one third of the workers each year. Of the 18.7 per cent of workers living in the suburbs in 1928, most were in the York Township localities of Runnymede, Fairbank, Earlscourt and Mount Dennis. There were also some workers in Islington, Lambton Mills and York Mills. Blue-collar workers at Dodge tended to live closer to work than management or white-collar workers in 1925 and 1926, but farther away in 1928.

In summary, the maps and measurements of commuting distances illustrate some contrasts among the auto plants. The average Ford worker doubled his commuting distance from 3-4 km, before the relocation of the factory, to over 7 km in 1924; it then fell to 5.2 km in 1928. The proportion of Ford workers living in the suburbs also increased from one third in 1923 to over half by 1928. The average distance travelled differed by occupational class, with white-collar workers commuting farther to work than blue-collar workers in each year until 1928, five years after the plant's move. Durant workers, in contrast to employees of the other companies, did not suburbanize. Indeed, a higher proportion of Durant workers lived within City boundaries in 1928 than in 1923. Increasingly, Durant workers were locating their homes in North Toronto, with over one third of the workforce living there by 1928. Willy-Overland workers decreased their commuting distances significantly between 1922 and 1928, and

as at the Ford plant, suburban residents accounted for over fifty per cent of the workforce by 1928. Dodge workers experienced much slower rates of suburbanization than the other company workforces, being still under twenty per cent in 1928.

In the next chapter, an effort is made to relate the patterns of commuting, that have been mapped and measured for the four automotive workforces, to the processes of industrial decentralization and working-class suburbanization.

CHAPTER SIX:

DISCUSSION - THE SUBURBANIZATION OF AUTO WORKERS IN TORONTO

City directories can provide an effective method of using residence-workplace data to infer industrial decentralization and can produce interpretable data on labour turnover and commuting. Given the general availability of city directories in North America from the mid-nineteenth century, the methods developed in this thesis could be used for various other historical-geographical studies. Directories are biased towards the more stable segments of society and are less reliable in recording transients and casual workers. General features of data extracted from city directories should be related to those of another source such as the decennial census, in order to assess their representativeness. Such comparisons are especially necessary if only a sample is being extracted from the directory listings.

In the present study, it was not possible to make such comparisons, as the time period being examined did not coincide with a decennial census that published any useful occupational data on the automotive sector. Problems with the reliability of the directory data were considered to be offset by the following considerations. The directory evidence is unique in providing details of occupation, employer and place

of employment, as well as street address and residential status in the same source. Directories with such details were published every year, allowing one to measure changes over time in labour turnover, residential locations, and commuting distances. All persons listed in the directories as employed by the four automobile plants were used in the analysis, rather than any kind of sample. Directory evidence was also supplemented by research in assessment rolls for selected persons and groups, to obtain more details of whether householders were owners or tenants.

The four factories examined in this thesis represent different locational possibilities of home-workplace relationships. Some questions were asked about these factory types. Did, for example, Willys-Overland's workforce suburbanize over time, even though the factory remained in the City of Toronto? Analysis of the directory evidence suggests that it did, the proportion of workers living in the suburbs increasing steadily over a seven-year period to 58 per cent in 1928. On a more modest scale, the same was true of workers at the Dodge plants, which tapped the northwestern sector of the greater Toronto workforce. The proportion of Dodge workers living in the suburbs increased during the three years under study, but was still only 18 per cent in 1928.

Durant established itself in the suburb of Leaside in 1922. The factory did, in one sense, locate near a potential

workforce, as there were some Canada Wire and Cable workers already living in Leaside in the 1920s. Yet, by all accounts, Leaside was very underdeveloped in this period with little housing, few transportation connections and no bridge to East York and eastern Toronto until October 1927 (Rempel, 1982). An aerial view of the factory site in 1928 revealed little residential development in Leaside, yet some foundations were being laid (Metropolitan Toronto - Past and Present, 1973, 31). Thus the Durant Motor Company attracted few of its workers to live in the suburb. In fact, there were fewer Durant workers living in Leaside in 1928 than there had been in 1922. Durant workers generally lived in Ward 2 in the City of Toronto, just north of Mount Pleasant Cemetery.

The Ford factory relocated to the suburban fringe in 1923. While it retained some workers who stayed at their original residences around the old factory and probably used the TTC's Danforth line to get to work, most workers moved closer to the new plant in East York. Ford retained about half of those who had been employed at the earlier site when the factory relocated. The new factory also seemed to employ many more workers than the old one, and most new employees lived close to the new plant in East York and Scarborough. Thus Ford increasingly tapped a new labour pool. Yet the Toronto labour market appeared not to be too segmented, in

that some workers continued to live in the northwestern sector and commuted to work on the eastern fringe of Toronto.

Distances between home and work varied considerably between the four companies. Workers at Dodge and Willys-Overland on the whole lived closer to the factories, at an average distance of about 3 km, than did Durant or Ford workers, for whom the mean distance was 5 km. This was probably due to the high concentration of blue-collar workers living in the northwest sector of Toronto in the 1920s. The average distance travelled first increased for Ford after its relocation in 1923 to the suburbs, and then later fell, as most workers either relocated in the eastern suburbs or as new workers living in East York and Scarborough were hired. However, the average distance travelled to the Ford plant in the later 1920s was still a great deal longer than the average distance in 1923. The average distance for Dodge workers increased between 1925 and 1926 and then fell by 1928, but the proportion of workers in the suburbs increased from 7.5 to 18.7 per cent over four years. The distance of workers at Willys-Overland dropped rather consistently. By 1928, a greater proportion of the workers were living in the suburbs of Mount Dennis, Runnymede, Lambton Mills and Weston than had been previously. Durant workers generally, after the first year in 1922 when more of them lived in Leaside, apparently

preferred to live in Toronto's Ward Two and presumably either walked to work or travelled by streetcar and then by bus.

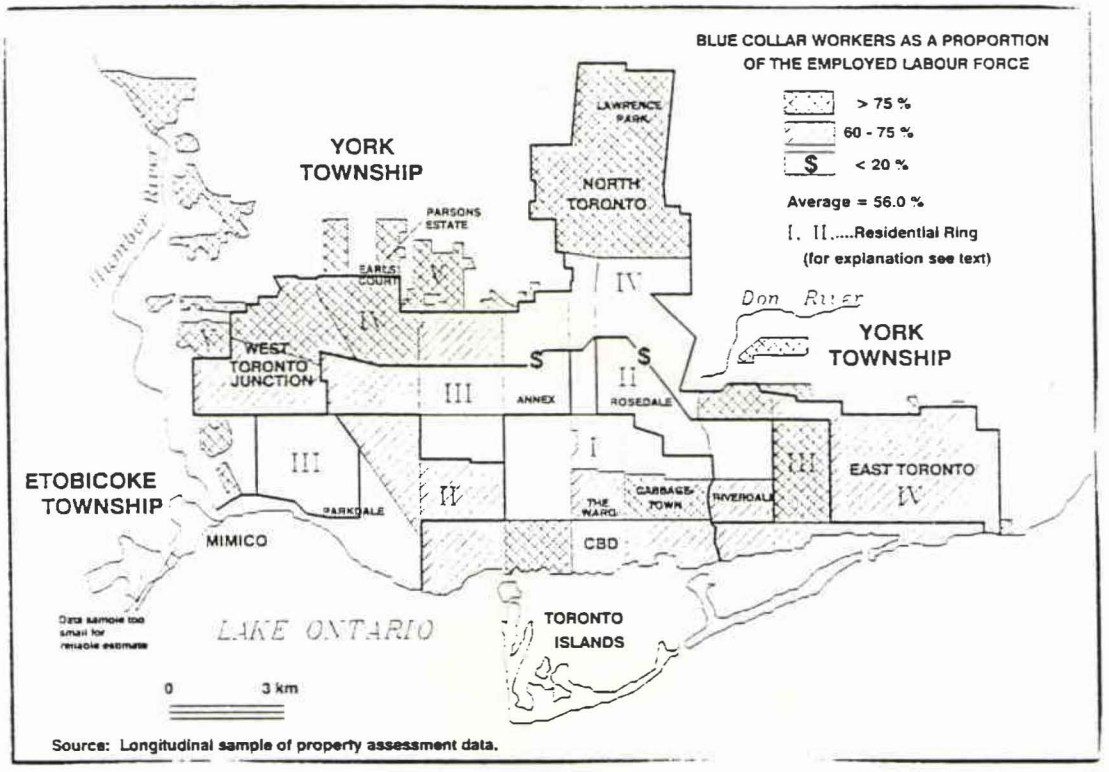
By the later 1920s, many auto workers lived either in the suburbs or on the outer edges of the City. This pattern was particularly true of the Ford and Willys-Overland workforces. Over fifty per cent of workers lived in the suburbs in 1928. Many Durant workers, if not technically in the suburbs, were close by. The Dodge factory, being some distance from the City boundaries, tapped a suburban workforce to a much lesser extent. It is noteworthy that blue-collar workers tended to be more suburban than the total labour force of the four factories (Table 13). The distance to work was a significant issue for many workers who often lived in the cheapest housing near the factory, which often meant the suburbs. In all four cases, there is evidence of blue-collar locational clustering. White-collar workers and management on average lived slightly farther away from the factory and tended to live in certain districts that were considered more desirable. White-collar workers, for example, tended to cluster just east of the Don Valley, and managers in Wychwood, Forest Hill or Wards Two and Three.

While most blue-collar workers lived within 4 km of their work, significant numbers commuted much greater distances. In all years and at all companies, there were some workers travelling from most zones of the City, not just from the

northwestern sector, in the case of Willys-Overland, Dodge and the first Ford factory. Figure 30 shows the areas of blue-collar settlement in 1913, 10-15 years before the period studied in this thesis. Auto workers were concentrated in the northwestern blue-collar sector near West Toronto, but there were few auto workers in other high-density working-class areas such as The Ward (home of the Jewish garment industry) or Cabbagetown. In the 1920s, blue-collar auto workers were increasingly locating in the suburbs -- York Township for Willys-Overland and Dodge workers, East York and Scarborough as well as East Toronto for Ford workers, underdeveloped North Toronto for Durant workers. Thus the labour market in Toronto was not too highly segmented as it was possible with good transportation connections for workers to live on one side of the City and work on the other side.

Major industrial zones in Toronto in 1928 were illustrated in Figure 2. Willys-Overland was located in the highly industrialized zone of West Toronto, near the railway yards. The first Ford plant and the Dodge factory are prominently located on the Canadian Pacific belt line. There was much less industry to the east. Durant and Canada Wire and Cable were located in Leaside with some paper mills in East York. The Ford plant in East York was very isolated, the only factory east of the City on the CN line. Other centres of industry included Goodyear in New Toronto, Stelco in

Figure 30: Toronto Working Class Zones 1913



Source: Harris (1990b), 391.

Swansea, and Kodak and CCM near Weston. All the automotive factories were located on major railway lines and usually also near railway yards. Thus the railway in Toronto can be shown to have been a leader in the location of industry. The railway preceded industrial development in West Toronto, New Toronto, Leaside and East Toronto.

Employees of the four companies traced in the Toronto city directories in the 1920s tended increasingly to locate in the suburbs, particularly if they were blue-collar workers. The gradual suburbanization of workers is clear for Ford, Dodge and Willys-Overland but less so for Durant. Durant's exceptional pattern may be explained partly by the inclusion of North Toronto's Ward Two with the City rather than the suburbs.

Did the factories lead workers to the suburbs or did they follow them? Most people would argue that the location of manufacturing precedes and stimulates the location of workers' housing, and the evidence presented here generally supports this thesis. In the case of Ford, Dodge and Willys-Overland, auto workers tended to locate in the nearest zone of affordable housing, which was often outside City boundaries in the suburbs. The Durant case seems to be somewhat different, perhaps partly due to the underdevelopment of the suburb of Leaside until the 1930s. It appears that residential development in East York, Scarborough and Leaside

followed rather than led the location of industry in those suburbs.

In a case study of suburban housing in East York Township close to the Ford plant, assessment rolls in the late 1920s were examined. They reveal that there were still many new and unfinished dwellings in the subdivisions of Dentonia Park Avenue, Sibley, Danforth, and Victoria Park Avenue quite close to the Ford plant five years after it moved to this site. These dwellings were modest in size and cost, being small enough to fit 20-foot frontages and on average worth between $600 and $900. Some houses were rented out and there were quite a few boarders and lodgers (East York Township Assessment Rolls; The Golden Years of East York, 1976). Given the lack of other industrial employment in the area, the Ford factory appears to have stimulated the development of these residential suburbs in East York. In Leaside, too, residential development of the suburb on any scale began only in the 1930s, after Durant had ceased operations, although Canada Wire and Cable continued to be a major employer there.

Factors that directly encouraged the decentralization of Toronto's auto factories in the 1920s were the need for a horizontal production process in automotive assembly, as well as the cheaper land and fire insurance costs of peripheral sites, and municipal tax incentives in some cases. Factors that encouraged the suburbanization of workers' homes, in

addition to the location of industrial employment, included the growth of a more integrated TTC street railway network in the City and the suburbs after 1924 and the possibilities of cheaper housing in the suburbs.

This study has shown that workers generally followed rather than led their industrial employers to the suburbs. However, it is very likely that industrial entrepreneurs and managers were aware of the opportunities that a suburban location would provide their workers to develop their own affordable housing in nearby subdivisions. Further research focusing on the processes of land development and the operations of the housing market in Toronto between 1900 and 1930, as well as on the phenomenon of self-building, will doubtless illuminate this factor.

ENDNOTES

1. 'Metro Toronto' included villages and towns such as Leaside, Mimico, New Toronto, Swansea and the townships of Etobicoke, Scarborough and York (known as York, North York and East York townships from 1924).

2. The City of Toronto had 2,185 vehicle registrations (including passenger cars and commercial vehicles) in 1912/3; 32,334 registrations in 1920; and 113,850 in 1930. York County had 3.6 percent of the Ontario total in 1920 and 1930. (1912/3 compiled from special records in the Archives of Ontario; 1920/30 from Department of Public Highways Annual Reports).

3. One other locational possibility not covered in the thesis, is a relocation from the suburbs to the city.

4. Ford Canada was headquartered in Ford City (Windsor), Ontario. It was always a separately run company from the Ford Motor Company of Detroit. That company was more involved in Ford overseas, such as in England (Wilkins & Hill, 1964). Since the Canadian operation was always so separate from the American company, there are no records of Canadian plants in the Detroit archives.

5. This is similar to the proportion found by Bloomfield (1990) in her study of workers at five companies in Berlin/Kitchener-Waterloo in 1897 and 1927.

6. "The Attack on the Automobile Industry", Industrial Canada. 1926: 27 (1) 39-42. It should be noted that company estimates of workforce size in advertisements and trade journals were sometimes inflated for boosterist purposes.

7. The family wage in historical context refers to paying the man enough to keep himself and his family.

8. Henry Ford saw white-collar workers as "paper-pushers" and hence tried to limit their numbers in his Highland Park operation; a purge of workers following World-War One illustrated this. "The fate of the office force was even less certain than that of the research and factory crews: soon the survivors in the empty factory perceived that little would be left of it." (Nevins & Hill, 1957, Vol 2, 158).

9. It is interesting to note that the Canada Cycle and Motor Co. (incorporated in 1899 out of the merger of six earlier companies and with continuing corporate links with the Russell Motor Car Co.) relocated to Weston in 1916 from West Toronto, to produce skates

and bicycles there (Miller, 1987). CCM's plant in 1916 was an example of a one-storey, horizontal factory, illustrating changing factory design in the early twentieth century. It was surrounded on three sides by green fields and was adjacent to the Canadian Pacific and Grand Trunk railways (Industrial Canada April 1917, 1406). The principal outputs of the factory were bicycles (900 per week manufactured and shipped to the US and the British Empire) and skates, and about 524 hands were employed at the factory in 1917. The bicycle assembly line was introduced in 1946 and the plant closed in 1983.

10. Annual Meeting Reports of the Russell Motor Car Co 1927-1938 - Russell File Folder, Archives of Ontario.

11. East York Township assessments were arranged differently from those of the City of Toronto. Properties were not ordered by street, but instead by plan and lot number as the precise legal description of the property. This arrangement did not match street addresses given in the city directories very readily. Industrial properties were located at the back of the East York assessment rolls. The second Ford factory at 3927 Danforth was also located in the East York Township assessments. It was described as having a 15-acre property, its total assessment was valued at $120,000, and it had to pay only $7,272 for school purposes. The assessment rolls recorded that the Ford factory had a fixed assessment and that the Canadian head office in Ford City paid the tax.

BIBLIOGRAPHY

Primary Sources

Assessment Rolls of the City of Toronto. 1927, Ward 2, Division 5; 1927, Ward 8, Division 5; 1929, Ward 2, Division 5 (City of Toronto Archives).

Assessment Rolls of East York Township. 1927, Divisions 1-4, 6 volumes (East York Municipal Offices).

Census of Canada 1921, Table 5.

Census of Canada 1931, Table 57.

Houston, W.R., compiler. 1930. The Annual Financial Review - Canadian - Volume X. Toronto: Houston's Standard Publications.

Industrial Canada. Toronto: Canadian Manufacturers Association, v.16-27, 1915-1927.

Might's City of Toronto Directories for 1913, 1918, 1923-27, 1929. Toronto: Might's.

Russell Motor Car Company. Archives of Ontario (File Folder: MU 7105 #1).

Secondary Sources

"A Striking New Industrial Plant - description of the extensive premises of the Canadian Kodak Company Ltd. on the outskirts of Toronto", Industrial Canada. May 1917, 65-69.

"An Interesting New Plant at Weston", Industrial Canada. April 1917, 1406-7.

Armstrong, C. & H.V. Nelles. 1986. "Suburban Street Railway Strategies in Montreal, Toronto and Vancouver 1896-1930" in Stelter & Artibise, Power and Place: Canadian Urban Development in the North American Context. Vancouver: University of British Columbia Press, 187-218.

Beeby, D. 1984. "Industrial Strategy and Manufacturing Growth in Toronto, 1880-1910", Ontario History. 76 (3) 199-232.

Bloomfield, E. & G. with P. McCaskell. 1983. Urban Growth and Local Services - The Development of Ontario Municipalities to 1981. Guelph: Department of Geography, University of Guelph.

Bloomfield, E. 1990. "Home-Workplace Distributions of Factory Workers in Berlin/Kitchener-Waterloo, 1897 and 1927", Research Report to The Historical Atlas of Canada, Volume III.

Bloomfield, G.T. 1985. "Albert Kahn and Canadian Industrial Architecture 1908-1938", SSAC Bulletin. 10 (4) 4-10.

Bloomfield, G.T. 1990. "Coils of the Commercial Serpent - A Geography of the Ford Branch Distribution System, 1904-33", in J. Jennings, Roadside America - The Automobile in Design and Culture. Ames, Iowa: Iowa State University Press, 40-51.

Boylen, J.C. 1954. York Township: An Historical Summary 1850-1954. Township of York: Municipal Corporation and the Board of Education.

Carroll, J.D. 1952. "The Relation of Homes to Workplaces and the Spatial Pattern of Cities", Social Forces. 30: 271-282.

Carter, F.W. 1975. "C-K-D Employees - Prague 1871-1920: Some Aspects of their Geographical Distribution", Journal of Historical Geography. 1: 69-97.

Clay, C. 1958. The Leaside Story. Leaside Council.

Davie, M.R. 1937. "The Pattern of Urban Growth", pp.133-161 in G.P. Murdock editor, Studies in the Science of Society. Yale University Press.

Dickinson, R.E. 1967. "The Journey to Work", pp 69-83 in J. Gottman & J. Harper editors, Metropolis on the Move: Geographers look at Urban Sprawl. New York: Wiley.

Doucet, M.J. 1982. "Politics, Space and Trolleys: Mass Transit in Early Twentieth Century Toronto", in Stelter and Artibise, Shaping the Urban Landscape. Ottawa: Carleton University Press, 356-381.

Duncan, B. 1956. "Factors in Work-Residence Separation: Wage and Salary workers, Chicago, 1951", American Sociology Review. February: 48-56.

Durnford, H. & G. Baechler. 1973. Cars of Canada. Toronto: McClelland & Stewart.

Ericksen, E.P. & W.L. Yancey. 1979. "Work and Residence in Industrial Philadelphia", Journal of Urban History. 5: 147-

182.

Ferguson, G.H. 1923a. "Decentralization of Industry and Metropolitan Control", Journal of the Town Planning Institute of Canada 2 (4) 5-12.

Ferguson, G.H. 1923b. "The Advantages of Decentralizing Industry", Industrial Canada. Toronto: Toronto Manufacturers' Association, Volume 24, 51-53.

Ford, Henry. 1926. Today and Tomorrow. Garden City, New York: Doubleday, Page.

Goheen, P.G. 1970. Victorian Toronto 1850-1900: Pattern & Process of Growth. Chicago: University of Chicago Research Paper #127.

The Golden Years of East York. 1976. Toronto: Centennial College Press.

Gordon, D.M. 1984. "Capitalist Development and the History of American Cities", pp 21-53 in W.K. Taab & L. Sawers, Marxism and the Metropolis - New Perspectives in Urban Political Economy. (Second Edition). New York: Oxford University Press.

Greenberg, S.W. 1980. "The Relationship between Work and Residence in an Industrializing City: Philadelphia 1880", pp 141-168 in The Divided Metropolis: Social and Spatial Dimensions of Philadelphia, 1800-1975. Westport: Greenwood Press.

Greenberg, S.W. 1981. "Neighbourhood Change, Racial Transition and Work Location: A Case Study of An Industrial City, Philadelphia, 1880-1930", Journal of Urban History. 7 (3) 267-314.

Gustin, L. 1973. Billy Durant - Creator of General Motors. Grand Rapids, William B. Eerdmans.

Halvarson, P.L. 1973. "The Income Factor in the Journey to Work: Attitudes and Behaviour", Professional Geographer. 25: 357-362.

Harris, R. & B. Moffat. 1986. "How Reliable is the Modern City Directory?", The Canadian Geographer. 30 (2) 154-8.

Harris, R. 1988. "American Suburbs - A Sketch of a New Interpretation", Journal of Urban History. 15 (1) 98-103.

Harris, R. 1990a. "Household Work Strategies and Suburban Homeownership in Toronto, 1899-1913", Environment & Planning D. 8: 97-121.

Harris, R. 1990b. "Self-Building and the Social Geography of Toronto, 1901-1913: A Challenge for Urban Theory", Transactions IBG. 15: 387-402.

Harris, R. & R. Luymes. 1990. "The Growth of Toronto, 1861-1941", Urban History Review. 18: 3, 244-256.

Hecht, A. 1974. "The Journey to Work Distance in relation to the Socio-economic Characteristics of Workers", Canadian Geographer. 18: 367-377.

Hiebert, D. 1991. "Class, Ethnicity and Residential Structure: The Social Geography of Winnipeg, 1901-1921", Journal of Historical Geography 17 (1) 56-86.

Hildebrand, G. 1974. Designing for Industry - the Architecture of Albert Kahn. Cambridge: MIT Press.

Hoskins, R.F.H. 1987. "An Analysis of the Point St Charles Shops of the Grand Trunk Railway", Shared Spaces. (8) Montreal: Department of Geography, McGill University.

Hoyt, H. 1939. "The Pattern of Movement of Residential Rental Neighbourhoods", in Mayer and Kohn, Readings in Urban Geography. Chicago: University of Chicago Press, 499-510.

Humphrys, G. 1965. "The Journey to Work in Industrial South Wales", Transactions IBG. 36: 85-96.

Hunt, G. 1982. John M. Lyle: Toward a Canadian Architecture. Kingston: Queen's University Press.

Jackson, K.T. 1985. Crabgrass Frontier - The Suburbanization of the United States. Oxford: Oxford University Press.

Johnston, R.J. 1987. Geography and Geographers - Anglo-American Human Geography since 1945. (3rd Edition) London: Edward Arnold.

Knox, P. 1987. Urban Social Geography. Harlow: Longman.

Lansing, J.B. et al. 1964. Residential Location and Urban Mobility. Ann Arbor: University of Michigan.

Lawton, R. 1968. "The Journey to work in Britain: some trends and problems", Regional Studies. 2: 27-60.

Lemon, J. 1985. Toronto since 1918: An Illustrated History. Toronto: Lorimer.

Lewis, R.D. 1991. "The Development of an Early Industrial District: the Montreal Ward of Saint-Ann, 1851-71", Urban History Review. 19 (3) 166-180.

Linteau, P.A. 1987. "Canadian Suburbanization in a North American Context - Does the Border make a Difference?", Journal of Urban History. 13 (3) 252-274.

Metropolitan Toronto - Past and Present. 1973. Willowdale: Donald B. Kirkup.

Meyer, S. 1981. The Five Dollar Day - Labor Management and Social Control in the Ford Motor Company 1908-1921. Albany: SUNY Press.

Miller, G. 1987. City of York - A Local History. York: Board of Education for the City of York.

Miller, M. 1989. Letchworth - The First Garden City. Chichester: Phillimore & Co. Ltd.

Monroe, C.B. & T. Maziarz. 1985. "American Work Trip Distances: A Reversal of the Historical Trend", Geography. 70 (4) 359-362.

Morales, R. 1986. "The Los Angeles Automobile Industry in Historical Perspective", Environment & Planning D. 4: 289-303.

Nelson, D. 1975. Managers and Workers - Origins of the New Factory System in the United States 1880-1920. Madison: University of Wisconsin Press.

Nevins, A. & F.E. Hill. 1957. Ford - Expansion and Challenge, 1915-1933. New York: Charles Scribner's Sons.

Park, R.E., E.W. Burgess and R.D. Mackenzie. 1925. The City. Chicago: University of Chicago Press.

Peterson, J.S. 1987. American Automobile Workers, 1900-1933. Albany: SUNY Press.

Pratt, E. 1911. Industrial Causes of Congestion of Population in New York City. New York.

Pred, A. 1964. "The Intrametropolitan Location of American Manufacturing", A.A.A.G.. 54 (2) 165-180.

Quinn, J. 1940. "The Burgess Zoned Hypothesis and its Cities", American Sociological Review. 5 (2) 210-218.

Rempel, J.L. 1982. The Town of Leaside - a Brief History. Toronto: East York Historical Society.

Scott, A.J. 1982. "Production System Dynamics and Metropolitan Development", A.A.A.G.. 72 (2) 185-200.

Scott, A.J. 1988. Metropolis: From the Division of Labor to Urban Form. Berkeley: University of California Press.

Shaw, G. 1984. "Directories as Sources in Urban History: A Review of British and Canadian Material", pp. 36-44 in Urban History Yearbook 1984.

Simmons, J.W. 1970. "The Workplace Decision and the Journey to Work", pp 357-362 in Proceedings of the Canadian Association of Geographers.

Singleton, G.H. 1973. "The Genesis of Suburbia: a complex of Historical Trends", pp. 29-50 in L. Masotti & J.K. Hadden editors, The Urbanization of the Suburbs. Beverly Hills: Sage Publications.

Stilgoe, J.R. 1982. "Moulding the Industrial Zone Aesthetic: 1880-1929", Journal of American Studies. 16 (1) 5-24.

Stilgoe, J.R. 1983. Metropolitan Corridor - Railroads and the American Scene. New Haven: Yale University Press.

Sullivan, Alan. 1919. Aviation in Canada 1917-18. Toronto: Rous & Mann Ltd.

Taaffe, E.J. et al. 1963. The Peripheral Journey to Work, A Geographic Consideration. Northwestern.

Taaffe, E.J. et al. 1980. "Extended Commuting and the Intermetropolitan Periphery", A.A.A.G.. 70 (3) 313-329.

Taylor, G.R. 1915. Satellite Cities - A Study of Industrial Suburbs. New York: D. Appleton.

Vance, J.E. 1966. "Housing the Worker: the Employment Linkage as a Force in Urban Structure", Economic Geography. 42: 294-325.

Vance, J.E. 1967. "Housing the Worker: Determinative and Contingent Ties in Nineteenth-Century Birmingham", Economic Geography. 43: 95-127.

Viehe, F.W. 1981. "Black Gold Suburbs - the Influence of the Extractive Industry on the Suburbanization of Los Angeles, 1890-1930", Journal of Urban History. 8 (1) 3-26.

Wachs, M. 1984. "Autos, Transit and the Sprawl of Los Angeles: the 1920s", Journal of the American Planning Association. 50: 297-310.

Walker, R.A. 1981. "A Theory of Suburbanization: Capitalism and the Construction of Urban Space in the United States", pp 383-429 in M.J. Dear & A.J. Scott, Urbanization and Urban Planning in Capitalist Society. London: Methuen.

Ward, D. 1964. "A Comparative Historical Geography of Streetcar Suburbs in Boston, Massachusetts and Leeds, England", A.A.A.G.. 54: 477-489.

Wheeler, J.O. 1970. "The Structure of Metropolitan Work Trips", The Professional Geographer. 22 (3) 152-158.

Wilkins, M. & F.E. Hill. 1964. American Business Abroad: Ford on Six Continents. Detroit: Wayne State University Press.

Wolforth, J.R. 1965. Residential Location and the Place of Work. Vancouver: Tantalus Research.

Wood, P.A. 1974. "Urban Manufacturing: A View from the Fringe", pp.129-154 in J.H. Johnson, Editor. Suburban Growth - Geographical Processes at the Edge of the Western City. London: John Wiley & Sons.

Zunz, O. 1982. The Changing Face of Inequality: Urbanization, Industrial Development and Immigrants in Detroit 1880-1920. Chicago: University of Chicago Press.