

No Parking Here to Corner London Reshaped by the Automobile, 1911-61

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Résumé de l'article

L'automobile a été, au cours du vingtième siècle, un puissant facteur de transformation du paysage et du milieu urbains. C'est le sujet de cet article, qui traite spécifiquement de l'augmentation du parc automobile, du développement du réseau autoroutier et de l'essor des activités commerciales liées à l'automobile à London, Ontario. L'auteur distingue trois périodes. Jusque vers la fin des années trente, la structure urbaine a absorbé sans transformation notable la présence croissante de l'automobile. Par la suite, la congestion routière a rendu inéluctable la décentralisation des activités vers la nouvelle banlieue. Puis, durant les années cinquante, la mobilité des consommateurs, de plus en plus nombreux à posséder une automobile, s'est accrue au point de contribuer à remodeler la ville dans son ensemble.

***No Parking Here to Corner:
London Reshaped by the Automobile, 1911-61***

Gerald T. Bloomfield

Abstract

The motor vehicle has been a powerful force reshaping cities in the 20th century. This study, with a focus on London, Ont., examines the role of the automobile in urban areas. Motorization, highway development, and the growth of the automotive business sector are considered in three phases of growth. Until the late 1930s the automobile could be accommodated within the existing urban structure with only comparatively minor changes. The increase of traffic congestion after this period, however, was a compelling force in the decentralization of activities to a new suburban zone. Wider ownership of automobiles in the 1950s resulted in greater consumer mobility, which in turn was a major contributor to the development of a new physical layout for London.

Résumé

L'automobile a été, au cours du vingtième siècle, un puissant facteur de transformation du paysage et du milieu urbains. C'est le sujet de cet article, qui traite spécifiquement de l'augmentation du parc automobile, du développement du réseau autoroutier et de l'essor des activités commerciales liées à l'automobile à London, Ontario. L'auteur distingue trois périodes. Jusque vers la fin des années trente, la structure urbaine a absorbé sans transformation notable la présence croissante de l'automobile. Par la suite, la congestion routière a rendu inéluctable la décentralisation des activités vers la nouvelle banlieue. Puis, durant les années cinquante, la mobilité des consommateurs, de plus en plus nombreux à posséder une automobile, s'est accrue au point de contribuer à remodeler la ville dans son ensemble.

In a commissioned report on future travel requirements and the changing shape of metropolitan America published in 1961, traffic engineering consultants Wilbur Smith and Associates commented:

Cities are evolving to a form that is directly related to the personal mobility made possible by the automobile.... New patterns of travel have evolved. Instead of flowing radially between homes in the suburbs and jobs in the city center, traffic now flows over wide areas. Symbolic of the new city are the two-car family, the single family subdivision, the shopping center, the one story factory, the motel and the drive-in restaurant.¹

As the automobile enters its second century, it is increasingly clear that, as Pontus Hulten has remarked:

No other technical innovation has altered life as radically as has the automobile: it has changed our cities, the landscape and the way we see it, the environment, architecture, our lifestyles.²

What were the roots and origins of these changes? When and where within cities was the impact of the automobile experienced? How similar was the experience of cities in the general process of motorization? This paper explores these questions in relation to London, Ont., a regional city that appears to typify many of the features of a changing city in the early 20th century. The main focus is upon the economic activities and the built environment of the city. Related issues of public policy responses to the motor vehicle will be examined in a future paper.

Recent work on the effects of the automobile on urban places has emphasized three interrelated elements: the intracity features, the intercity or highway influences, and the overall landscape change resulting from the adoption of the motor vehicle. Most of the studies about internal changes in cities have emphasized the shift from public to private

transport.³ In such cities as Los Angeles and Detroit, visibly dominated by automobile consumption and production, the task of analysis has been easier than in places where adaptation was more gradual and confused.⁴ The complex relationships of urban growth, planning, and politics have been the focus of studies of individual cities extending from Portland, Ore., to Toronto.⁵

Changes within cities cannot be separated from the overall growth of traffic and highway development. Recent studies have examined the role of the Good Roads Movement in the early phase of motorization as well as the more recent impact of the interstate construction boom of the early 1960s.⁶ The effects of change have also been examined for individual highways in the United States and Canada.⁷ Motorization has been a great facilitator, providing a new force to enhance, modify, and extend other spatial trends over large zones across the landscape.⁸

The motor vehicle has changed the landscape in a much more profound way than the railways. Most of the railway influence, as J.P. Stilgoe has explained, was concentrated along corridors lining the tracks.⁹ In contrast the "open road" and the many possibilities for escape took the influence of automobiles far and wide. "As soon as working men could afford to buy motor cars the autocracy of space vanished," remarked Robert Dufus in 1930.¹⁰ J.B. Jackson's recent work has firmly placed the automobile and its culture within the vernacular traditions of the landscape and has restored the role of people in the shaping of impersonal technological and economic forces.¹¹ Landscape influences of the motor vehicle have been examined in small towns, in the formation of modern suburb, and more widely in the urban built environment.¹² The highway commercial strip (and its associated roadside architecture) has been one of the most distinctive artifacts created by the automobile. After decades of condemnation, the strip is now being appreciated as a

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dynamic example of buildings, functions, and popular culture in the automotive era.¹³

Given our almost overwhelming familiarity with the automobile, it is difficult to recognize, identify, and classify the effects of motor vehicles in urban areas. Consequently the automobile tends to receive cursory treatment in most urban histories. The evidence of paintings, photographs, and plans, as well as written records, needs to be reappraised for a more comprehensive sense of how the motor vehicle induced changes in the urban landscape. Since so many early structures were ephemeral and have disappeared or have been buried beneath later growth, some archaeological work may be also needed.¹⁴

The Automobile and London

The role of the automobile in the gradual reshaping of cities may be appreciated by examining the interrelated elements of motorization, highway development, and the growth of the automotive business sector. Although each city has its own individual qualities, general patterns can be identified. London's experience appears typical of most middle-ranking regional cities. As the dominion statistician remarked in the 1920s:

London is a microcosm of Canadian life, one of the most typical of Canadian cities, a community backed and surrounded by a prosperous agriculture to which it sells and for which it manufactures, at the same time reaching out to the markets of the world.¹⁵

The term motorization is now frequently used to describe the general process of the acceptance and widespread adoption of automobiles.¹⁶ Statistics of motor vehicle registration provide a measure of this process (see Table 1) and give a sense of the waves of growth. While the absolute numbers have some interest in their magnitude and in the relative proportions of cars and commercial vehicles, ratios of motor vehicles to population have much more value for comparative



The Ford assembly plant (1915), 680 Waterloo Street, is one of the last structures remaining from the adoption phase.

purposes. Adoption rates vary from region to region and between urban and rural places, reflecting purchasing power and many other economic and social variables. Table 2 and Figure 1 illustrate some of the comparative features of motorization from 1912-13 to 1961. The City of London experienced consistent growth over the whole period. "Rural" motorization as represented by Middlesex County grew faster than that in the city in the 1920s. In common with most other rural areas, it declined slightly in the 1930s.¹⁷ Its decline in 1949 was a result of purely local forces, notably the young suburban population settling in London and Westminster Townships beyond the city boundary. When the boundary was extended in 1961, the ratio was readjusted to a new high point. The general prosperity of London and Middlesex throughout the period resulted in higher ratios than for Ontario as a whole.¹⁸ Ontario, which was a leading adopter of motor vehicles in Canada, always lagged behind Michigan. Generally Canadian cities tended to have lower ratios than their American counterparts.¹⁹

Motorization created traffic and the resultant demands provided the impetus for road

improvements.²⁰ Southwestern Ontario was a core region in the evolution of the Good Roads Movement, which lobbied for improved roads especially in rural areas. In 1894 the Ontario Good Roads Association was established, with headquarters in St Thomas, and Andrew Pattullo of Woodstock was a leading figure in its early growth.²¹ Two years later A.W. Campbell, city engineer of St Thomas, was appointed as the first provincial instructor in road making, an office attached to the Department of Agriculture. For the next two decades "Good Roads Campbell" was a major figure in Ontario highway improvement.²² The Ontario Highways Act of 1915 established a Department of Public Highways, increased subsidies to counties for road improvement, and allowed the formation of road commissions in cities with populations over 10,000. Further legislation in 1917 empowered the province to designate any road as a provincial highway and to establish a system of roads extending from Windsor to the Quebec border connecting the centres of population.²³

By the early 1920s London was a major nodal point on the new provincial highway systems of southwestern Ontario (see Figure 2).

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Table 1
Growth of Motor Vehicle Registrations

	City of London			Middlesex County ¹		
	Passenger		Commercial	Passenger		Commercial
	Total	Cars	Vehicles ²	Total	Cars	Vehicles
1903-46	—	—	—	—	—	—
1912-13	273	—	—	135	—	—
1919	2,964	2,570	394	2,624	2,524	90
1929	12,759	11,333	1,426	10,350	9,617	733
1939	15,090	13,137	1,953	10,695	9,814	881
1949	21,649	18,212	3,437	13,857	11,162	2,695
1961	54,411	48,999	5,412	21,682	16,973	4,709

Notes: 1. Excluding City of London.
2. Trucks, vans, buses, etc.

Sources: Compiled from original registration records in Archives of Ontario (1903-4, 1912-13); *Annual Reports*, Ontario Department of Highways (1919, 1929, 1939); Dominion Bureau of Statistics, *The Motor Vehicle*, Catalogue no. 53-203 (1949), Catalogue no. 53-219 (1961).

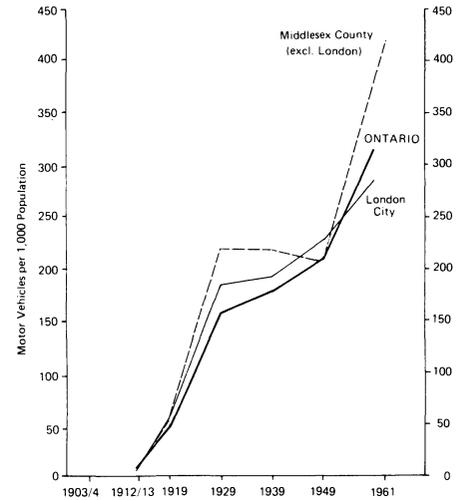
Table 2
Changing Ratios of Motor Vehicles and People Motor vehicles per 1,000 population

	City of London	Middlesex County ¹	Ontario	Michigan
1912-13	5.8	2.7	9.3	17.9
1919	48.6	57.2	47.4	88.8
1929	179.3	219.8	156.4	290.0
1939	193.1	218.1	178.9	283.5
1949	227.1	207.4	208.1	346.0
1961	320.8	418.1	340.1	428.8

Notes: 1. Excluding City of London

Sources: Calculated from data in Table 1; M.C. Urquhart and K.A.H. Buckley, *Historical Statistics of Canada* (1965); U.S. Department of Transportation, *Highway Statistics: Summary to 1975* (1977); Canada, *Census*; *Statistical Abstract of the United States*.

Figure 1: Motorization: Waves of Ownership Growth to 1961



The transprovincial highway (Highway 2) traversed the city, and Highway 4 linked London with Highway 3 (Niagara Falls to Windsor) and Highway 7 (Sarnia to Brampton, later extended to Peterborough and Ottawa). As the benefits of a provincial network were recognized, small towns lobbied for inclusion. Most of the highway network shown in Figure 2 was paved by the end of the 1920s. Paving of the secondary provincial network began in the 1930s and was completed after World War II. The building of improved highways reinforced the earlier railway corridors and was an important influence on the shape of the overall urban system of southern Ontario.²⁴

Local and trunk road improvement facilitated the growth of traffic year-round, especially when winter snow clearing became common in the late 1920s. Selected data from the annual census of traffic give a partial sense of the growth of motor transport (see Table 3). The use of horse-drawn vehicles was totally overtaken by that of motorized vehicles during World War I. After the war the pace of traffic growth quickly overwhelmed the initial efforts of the highway engineers, at least in the peak summer periods. The flow of American

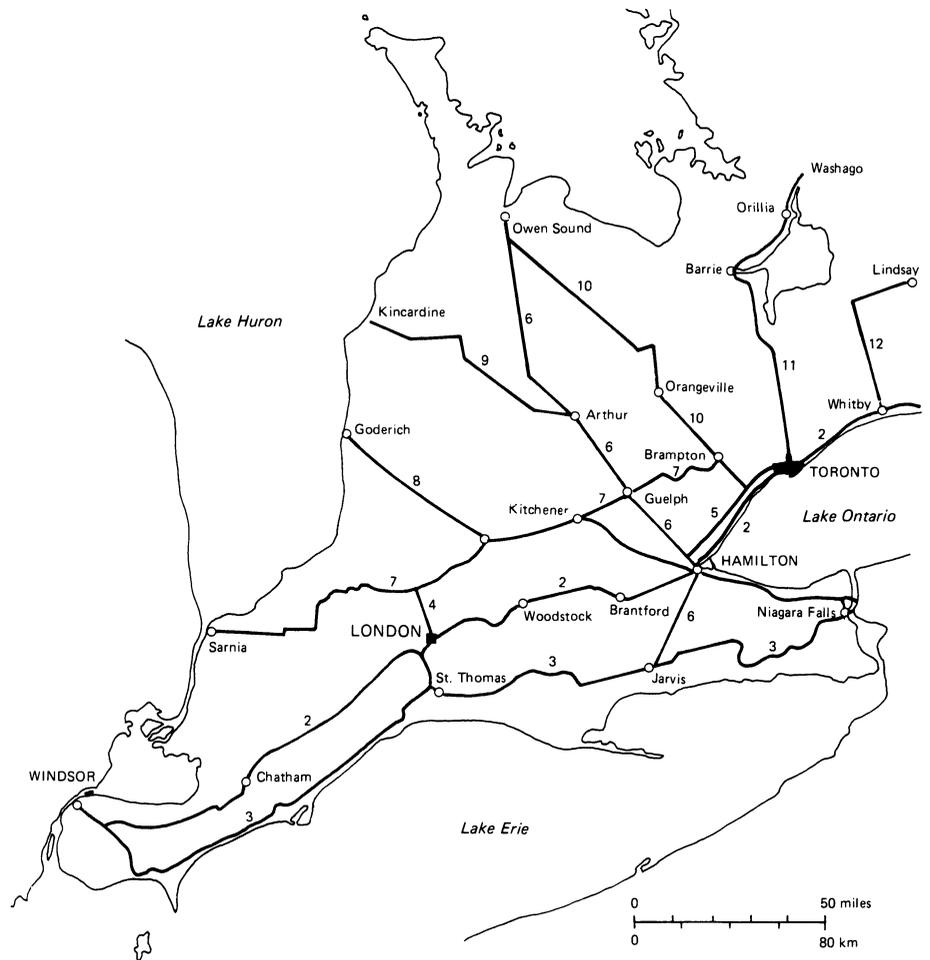
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tourists was an important contributor to the growth, as motorists used the shortcut across the Ontario peninsula from Buffalo to Detroit or Port Huron.²⁵ Customs permits for American cars, for more than 24 hours but less than one month, at the Bridgeburg (Fort Erie) border crossing increased from 31,684 in 1926 to 123,426 in 1928.²⁶ Similar rates of increase were shown at other ports of entry in Ontario.

Summer tourist traffic generally declined in the Depression years but other forms of traffic increased, although at a slower rate than in the 1920s. Intercity bus movement began to grow as operators such as the Toronto-based Gray Coach developed a substantial network. The transport of freight by truck emerged in the 1920s as the paved highways facilitated long-distance movements. By 1932 the president of Hoar Transport in Toronto was able to claim that tractor-trailer units could be as efficient as railways for distances up to 250 miles.²⁷ Several truck lines were already operating; Thibodeau Express, formed in Windsor in 1928, operated a daily service to Toronto. Labatt's brewery in London was an innovator in long-distance movements by using its streamlined vehicles, introduced in 1936, not only for haulage to Toronto but also as mobile advertising.²⁸

The growth in motor vehicle numbers and the development of long-distance motor traffic created a new business sector to serve the various automotive demands. Automobile service businesses in London expanded rapidly in the first phase of motorization to 1930. Vernon's *London City Directory* recorded 17 establishments in 1912 and 33 in 1919. By 1930, when the first census of merchandising enumerated businesses, there were 123 automotive establishments in the city. Existing firms selling bicycles or serving horse-drawn vehicles (livery stables and carriage and wagon shops) adapted to the new trade. At the same time new entrepreneurs launched themselves into specialized repair work and the sale of an increasing volumes of gasoline, tires, spare

Figure 2: Provincial Highways in Southwestern Ontario 1922



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parts, and accessories. Tables 4 and 5 show the growth of the automotive sector in London from 1930 to 1961. By the beginning of the period the value of sales in the automotive sector was 18 per cent of total retail sales in the city. At the end of the period automotive sales amounted to 39 per cent, almost double the value of food retailing. By 1961 about 25 percent of all retail employment was in the automotive sector. Curiously, despite its dominance in urban retailing, the automotive sector tends to receive cursory treatment or to be excluded altogether from most studies of retailing.²⁹

In any attempt to assess the effects of a new innovation, the framework of the life cycle of the product has considerable value.³⁰ Figure 1 helps to define some phases of the automobile product cycle. There is an early phase of introduction of motor vehicles extending from the beginning of the century to about 1919. A second phase, from 1920 to 1939, may be described as diffusion, as automobiles are extended to a broader market. While the second phase covers the interwar period, in many respects 1929 may be regarded as the high point of growth and development. The third phase, from 1946 to 1961, is one of rejuvenation of growth and represents the development of a fully motorized society as the automobile becomes a mass-market product.

These three phases of growth form the underlying framework of this analysis of the motor vehicle's impact on the spatial structure of London. Rapid motorization in the second phase (1920-39) created tremendous pressure on urban places. "The city is strangling itself with the congestion of vehicles that are themselves choked in the tangle of city streets," wrote Arthur Gallion in 1950.³¹ The qualities of congestion were most evident in downtown areas and along the arterial commercial strips leading out of the central business district. On the periphery of cities a new zone emerged where the highways were flanked by "haphazard wayside development known as the motor

Table 3
Growth in Traffic: Highway 2 East of London¹

	Summer Average Daily Traffic Flow Type of Vehicle (percentage)				
	Total	Auto	Truck ²	Horse- Drawn	Foreign Owned ³ Autos
1914	199	44.0	0.2	55.8	—
1922	935	92.8	4.6	2.6	—
1925	2,149	95.3	3.9	0.8	49.4
1927	3,014	93.5	6.5	—	42.5
1929	3,911	92.4	7.6	—	45.0

Notes: 1. Traffic survey point at Crumlin Corners 1914-22; Whyton Road 1925-29.

2. Includes motor buses

3. American

— Not available, negligible.

Sources: Ontario, Department of Public Highway, *Annual Reports*.

Table 4
London: The Automotive Group in Retail Trade

	Number of establishments	Percentage of all retail establishments	Value of sales	Percentage of all retail sales
1930	123	11.4	6,402.6	18.0
1941	143	13.1	7,986.4	20.0
1951	167	17.2	30,534.6	26.7
1961	322	23.9	93,126.0	39.1

Source: *Canada, Census of Merchandising*: 1931, vol X, table 22; 1941, vol X, table 6; 1951, vol VII, table 3; 1961, vol 6.1, table 7.

Table 5

	Total		Motor vehicle dealers		Used car dealers		Garages stations		Filing		Accessories		Other ¹	
	Number	Value (\$000)	Number	Value (\$000)	Number	Value (\$000)	Number	Value (\$000)	Number	Value (\$000)	Number	Value (\$000)	Number	Value (\$000)
1930	123	6,402.6	19	4,352	—	—	16	255.4	70	1,467.1	—	—	18	327.3
1941	143	7,986.4	16	5,035.6	—	—	12	120.4	98	2,288.9	—	—	17	541.5
1951	167	30,534.6	14	21,920.3	15	1,340.0	28	719.2	81	4,519.0	14	1,652.5	15	383.6
1961	322	93,126.0	24	64,923.1	17	—	45	1,349.3	179	15,773.5	18	6,921.7	39	4,158.4

Notes: 1. Residual values. In 1951-61 paint and body shops, other specialty repair shops, car washes, and second-hand parts shops were included. — Not available, included in "other". Sources: See Table 3.

slum."³² While the process of motorization continued apace in the postwar period, there were more substantial efforts to attack the problems of the urban circulatory system. Public policies to deal with urban traffic congestion became more active: tighter regulations on downtown parking and movements were imposed and there was municipal investment in parking facilities together with new construction work on road improvements and by-pass freeways. Commercial and industrial responses to congestion took the form of decentralization - relocation to spacious sites on the edge of the city where there were few restrictions on movement. These simultaneous developments, together with a renewed expansion of residential areas, had begun to create a new form of dispersed city by the early 1960s.

Three Phases of Development

I Adoption of Automobiles 1903-19

Metropolitan cities were the earliest centres of adoption of automobiles, but their dominance was short lived as ownership was diffused down the settlement hierarchy.³³ When Ontario began the compulsory registration of vehicles in 1903, Toronto was clearly the dominant centre, with 148 out of the 243 vehicles licensed; London and Ottawa had 6 each and the remaining 67 were scattered in 41 other places.³⁴ Within a decade the dominance of Toronto had been reduced (see Table 6). The fast rates of motor vehicle adoption in rural areas and associated small towns diminished the proportion in Toronto and other cities throughout the 1920s. Large-scale urbanization and the growth of mass-market motorization after World War II raised the city proportions once again.³⁵

Automobile adoption in London developed slowly at first, from 6 vehicles in 1903-4 to 273 in 1912-13 and then rapidly to 2,964 in 1919. Who were the early adopters of automobiles in the city? The general impression is that the first generation of

owners were either the wealthy, who could afford the automobile as a pleasure carriage, or the enthusiasts, who could maintain and partially rebuild vehicles themselves. Details from the early registration records tend to support this generalization. Two of the six owners in 1903-4 were in the wealthy class, and the others were small businessmen who must be placed in the auto enthusiast category. One of the original owners, C.E. Bernard, became a garage proprietor by 1912-13 and was a member of the executive of the London and Western Automobile Club in 1915. The ownership of vehicles by 1912-13 was becoming more diffused, ranging from the elite families of London - Carlings, Smallmans, Hymans, and McClarys - to professionals, garage proprietors, and even a few commercial users.³⁶ Businesses such as the London Bill Posting Agency, Western Canada Realty, and the London Free Press saw advantages in owning an automobile, and some city departments, such as police, fire, and hydro-electric supply, were also starting to experiment with vehicles. The Dominion Abattoir had two trucks for moving meat supplies within the city. Motorization of local cartage began about this time, although horse-drawn delivery vehicles survived in some trades for a long time. Furniture removal was one of the earliest road haulage businesses to be motorized and was also one of the first long-distance haulage trades.³⁷ These cargoes were of high value and movers were prepared to pay a premium for fast door-to-door pick-up and delivery.

Motorization as a process depended on a great deal of promotion in the early phase. Potential car buyers needed information on performance and reliability, while public highway authorities had to be persuaded to undertake expensive improvements. Automobile clubs were an important force in promotion. The London and Western Automobile Club, formed in 1911 with 26 members, quickly became an important local promoter and, through its affiliations with the Ontario Motor League, added its voice to the provincial lobby group. By 1915 clubs were

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even being established in smaller centres in the London area such as St Thomas, Belmont, Strathroy, and Ingersoll. While the officers and executive of the London club reflected the city's elite, their annual orphans' outing to Springbank Park on the western fringes of the city provided a social service and another way of publicizing the automobile. The London club was the most active OML group in sign posting, erecting some 900 standard black-and-yellow arrow signs along the roads of the area. At the annual general meeting in February 1916 over half the membership attended to hear W. A. McLean, deputy minister of highways, address the group. The recent increase in the licence fee was not, he said, "for general purposes nor a war tax but made with a view to enabling the Government to carry on an aggressive road building program." McLean also requested the support of the club for furthering the scheme for a transprovincial highway passing through London.³⁸

The development of a service infrastructure for motor vehicles was one of the critical early needs if the new innovation was to expand. Problems of service provision were compounded by the large number of distinct makes on the market. Analysis of the vehicle registrations in London for 1912-13 shows that there were 51 makes among the 273 vehicles licensed. Only five makes had ten or more vehicles. The varied mix of manufacturers included well-known names as well as a few local ones.³⁹ The Harding, a two-seater runabout priced at \$750 and described as "the first real car on the Canadian market at the price," was built by a machine shop in London. Most of its sales were local but some Hardings were sold as far away as Winnipeg and New Brunswick. One other car was made in the London area during this phase, at Mount Brydges, a small village west of the city. Here an inexperienced group assembled the Crow-Elkhart for the national market as the Canadian Crow. About 100 cars were assembled from American components in 1916 but after poor sales in

the next year the firm declared bankruptcy in 1918.⁴⁰

For the larger manufacturers the development of markets depended on the creation of a substantial and reliable local base of sales agencies and repair facilities. The experience of the agricultural implement manufacturers suggested the development of company-owned branches in the major regional cities.⁴¹ The McLaughlin Carriage Company established a branch in London some time after 1911 to supervise local sales and service. Ford followed with a small branch and in late 1915 opened a large new building on Waterloo Street. The Ford branch operation in London combined a large showroom with a parts warehouse and assembly facilities for the Model T.⁴² Ford's investment in substantial buildings such as this was confirmation that the motor age was firmly established outside the metropolitan cities. Company-owned branches not only provided direct service to new owners but supervised the growing networks of dealers and organized the flow of spare parts and accessories. Tighter control of franchised dealers from this time ended the looser and inconsistent features of earlier distribution channels.⁴³

By 1919 a service infrastructure was in place, although the establishments, with the exception of Ford, were still small and somewhat unspecialized. At this time the city directory listed 24 garages and 9 auto suppliers selling parts, tires, and batteries. Most of these automotive businesses were located in the streets around the edges of the central business district (see Figure 3). There was also a scattering of establishments along Dundas Street, the main commercial and traffic axis. The two manufacturers of motor vehicles, Ford and Barton & Rumble (a small garage just starting to build trucks for the local market), were more isolated.

The location of the service establishments reflected the general physical structure of London, which was dominated by a large central business district (see Figure 4). As in most cities at this time, the downtown area was the focus of the street railway system, and transport was dominated by rail movement. Within the city, the London Street Railway provided local services. The interurban line of the city-owned London and Port Stanley Railway (electrified in 1915) gave a direct link to St Thomas and the Lake Erie port for access to rural suppliers and recreation.⁴⁴ Intercity services were provided

Table 6
Ontario: Location of Registered Motor Vehicles (percentages)

	1903-4	1913	1919	1929
Toronto	60.9	37.8	18.9	20.8
Other Cities ¹	20.1	21.5	20.4	25.4
Towns	13.6	21.3	60.7	53.8
Rural & Villages	5.4	19.4	60.7	53.8
	100.0	100.0	100.0	100.0
Number of vehicles	243	16,372	138,649	527,936

Notes: 1. As defined by municipal legislation.

Sources: Motor Vehicle Licence Book no. 1 1903-04 (Archives of Ontario, RG14, B9, Box 3); *Report of the Public Roads and Highways Commission of Ontario* (1914): 102; Ontario, Department of Public Highways, *Annual Reports*.

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by the Grand Trunk and the Canadian Pacific railways.

The impact of the motor vehicle was still limited at the end of the adoption phase but, as F.H. Armstrong has noted, "Considerable progress was made in the more mundane aspects of city life; street paving and the sewer system were greatly extended."⁴⁵ These improvements to the infrastructure were a precondition of the rapid growth of motorization. Motorized traffic was largely focused within the city and had yet to clutter the downtown streets. With the exception of the Ford branch, the service facilities were modest in size and barely visible. Most vehicles were carefully housed in new purpose-built residential garages or converted coach houses and were only seen when in use. The conditions of visibility and usage would change rapidly after 1919.⁴⁶

II Diffusion of Automobiles 1920-39

By the early 1920s the automobile and the truck were serious modes of transport and strong associations existed between highway improvement and the growth of urban business. As the *Canadian Motorist* reported:

The announcement that the government will pave the "Sarnia Gravel" - the road from London to Sarnia - with concrete was received with jubilation in the latter city which ranks only second to Niagara Falls as a port of entry for U.S. motor tourist traffic. London too is delighted. There, largely backed by citizens of the Forest City, a million dollar hotel is in the course of construction, and the merchants of London are keenly appreciative of the all year high efficiency roads tributary to the city.⁴⁷

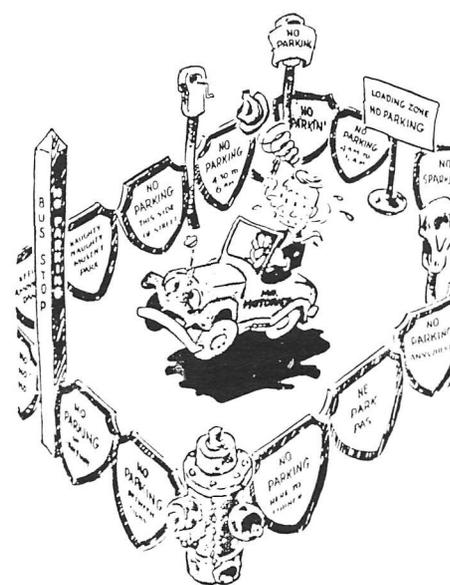
The growth of motor vehicle ownership in the city (see Table 1) and the rapidly increasing volume of traffic (see Table 3) reflected the wider diffusion of automobiles in the local area and far beyond. The 1941 census showed that 41.4 per cent of dwellings in the



Market Parking Building completed in 1956.

city had an automobile.⁴⁸ Motorization was, however, most evident in the 1920s, when the numbers of vehicles in London increased by 330 per cent - from 1928 to 1939 the growth rate was only 18 per cent.

More vehicles on the road and more driving for business and pleasure created major demands for automotive services. Between 1919 and 1930 the numbers of establishments directly servicing motor vehicles increased from 33 to 123. If the "informal" sector of work in sheds and backstreet shops were included, the growth would be even more substantial. Much of the growth occurred in the central business district (see Figure 5), where the number of automotive establishments increased from 20 in 1919 to 76 in 1929. Although there was no dominant "automobile row" in the way that many American cities had developed, there were clusters of business in the northwestern and southwestern sectors of the central business district. It may be suggested that the northwestern cluster was partly orientated to the wealthier northern residential districts while the southwestern zone was more related to through traffic and was certainly part of the existing warehouse district.



Perceptions of downtown restrictions: "Behind the Iron Curtain," *London Free Press*, 23 Sept. 1954.

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Figure 3: Automotive Business in the London Central Business District, 1919

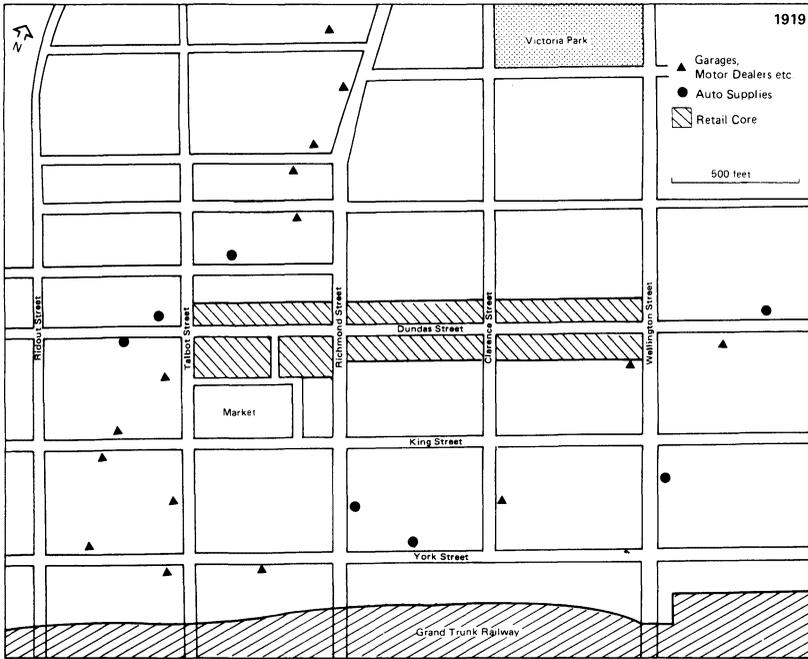
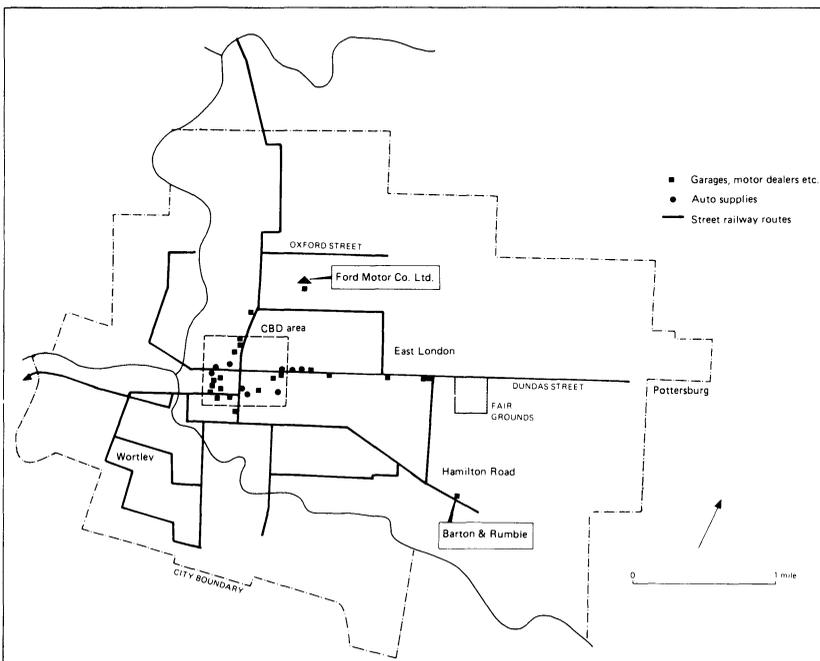


Figure 4: Location of Automotive Business in London, 1919



During the 1920s the automotive business became more specialized, as the larger garages focused on the rapidly expanding retail trade while the service station/filling station became a widespread element in the urban landscape. Other sectors of the automotive business included the specialized tire and battery stores, the machine shops for major mechanical work, and paint and body shops for repairs. This work became more complex as the automobile shifted from the open form to the closed vehicle.⁴⁹ The used car business also expanded as old cars, especially Model T Fords, were traded in for newer vehicles in the late 1920s. While the central business district (CBD) was the main focus of automotive activity in the 1920s, some outward movement had become apparent. The lower value sectors of the business were tending to develop beyond the CBD where rents were much lower, and where parking and general motorized accessibility was much easier. Traditional commercial strips of two-storey buildings along the street railway routes were the first zones to be invaded by the decentralizing automotive services.⁵⁰ In 1919 there were seven automotive establishments on Dundas Street beyond the CBD and the eastern boundary of the Fair Grounds at Egerton Street (see Figure 4). A decade later there were 18 automotive businesses in this zone. In addition there were a further ten establishments straggling along Dundas Street eastward to Pottersburg and extending beyond the city boundary.

As the motor market expanded, the distribution arrangements began to change. There were fewer motor vehicle manufacturers especially for mass-market cars, which by the 1920s meant Ford, General Motors (dominant after 1928), and Chrysler (from 1925). Vehicle-making in London continued in the 1920s with a new group of firms and then disappeared. London Motors built 98 London Six cars between 1921 and 1926. Dubbed "Canada's Quality Car," it was one of the last attempts to build for the high-value end of the market. Barton &

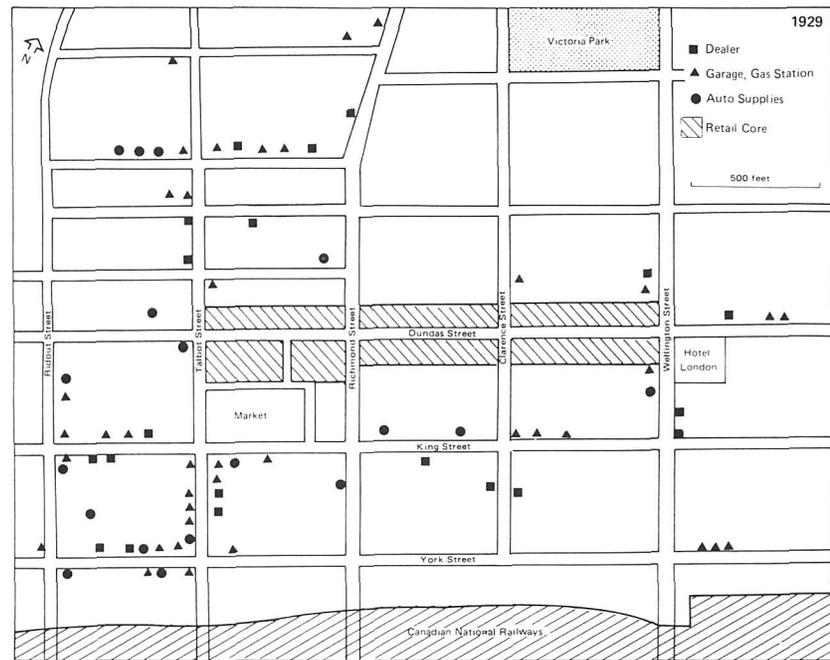
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Rumble built about 50 trucks for local users in the period 1917-23.⁵¹ A well-designed plant for the Ruggles truck (a branch of the Saginaw, Mich., plant) was built in 1921 but closed in 1926, when Kelvinator refrigerators took over the building. Ford ended local assembly of Model T cars during the same period. The development of franchise arrangements between manufacturer and local dealers provided more exclusive distribution and initial servicing of new vehicles and assured manufacturer and buyers that there was a higher degree of quality control than in the earlier and looser arrangements of agencies. As the franchise system developed, the Ford and McLaughlin/General Motors branch houses decreased in significance and were replaced by zone offices in the central business district.⁵² Franchising also became increasingly significant in tire distribution services and in the retailing of gasoline.



Dundas Street, East London. This former Supertest gas station (1920s) was built in the industrial zone that included Emco plumbing fittings (1906), Ruggles Trucks (1923), and the McCormick Biscuit factory (1913).

Figure 5: Automotive Business in the London Central Business District, 1929



Roadside filling stations were the most visible new creations of motorization in the 1920s. Most of the gas stations were independently owned or managed, but franchise arrangements with the large petroleum companies, as well as loans for new buildings and structures from the same companies, created a modern image for this new sector of retailing. By 1939 half of the 109 gas stations were affiliated with four large companies - British American, Canadian Oil Companies (White Rose), Imperial, and Supertest. The latter company, established in London in 1923, grew rapidly thereafter as sales increased from \$678,000 in 1925 to \$3,900,000 in 1932. Ensign Oil in Montreal was acquired by Supertest in 1926 and six years later the company was serving a wide area from its bulk terminals, not only in London but in Leaside (Toronto), Belleville, and Saint-Jean, Que.⁵³ Supertest's distinctive maple leaf sign and its slogan - "Canada's All Canadian Company" - were two of the new symbols on the roadside. Most of the gas stations built by Supertest in the 1920s had a distinctive half-timbered Tudor cottage design.⁵⁴

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To what degree had the general process of motorization transformed London by 1939? Motor vehicles were evident in all parts of the city, on and off the road, in the glossy showrooms and dumped in a back yard. Automobiles had become commonplace artifacts. Problems created by increased vehicle usage were clearly apparent in the CBD by the mid 1920s where congestion and parking problems called for new solutions. The chairman of the London Town Planning Commission at this time was recommending the designation of arterial highways to divert traffic out of the downtown area, but the value of this proposal was limited without stronger powers.⁵⁵ Some engineering works, such as the subway grade separation (1931) beneath the CNR tracks at Richard and Wellington Streets, improved traffic flow, and the construction of the Richmond Street South bridge (1934) opened another arterial route to the southern part of the city.⁵⁶

The very substantial increase in the level of motorization achieved between 1920 and 1939 had begun to leave a mark on the physical structure of the city. Downtown London was profoundly influenced with the growth of traffic volumes, street congestion, and parking problems. A new business sector with some new purpose-built structures was added around the edges of the downtown zone. Residential zones of the city accommodated the expansion of motor vehicle ownership and usage. Most residential streets were paved, cars were sheltered in household garages, and neighbourhood gas stations provided more localized service needs. Maps prepared from the 1941 census showed a gradient of household conveniences (including the automobile) which extended from a poor zone, mostly in the southeast of the city with few cars, to wide areas in the north and south, which owned all the contemporary conveniences.⁵⁷ Motor vehicles became much more intrusive in residential areas in the 1920s; they were used day and night and throughout the year as winter snow clearance became normal.⁵⁸ As John Weaver has



Classic automotive strip of the 1950s on Dundas Street East. Across the road is the White Village Motel, which evolved from earlier tourist cabins.

recorded for Vancouver, gas stations became a pervasive threat to property values on some suburban street corners, and the early morning starting of trucks in poorer neighbourhoods could create new stresses.⁵⁹

Outside the central business district the greatest effect of the motor vehicle was visible on the arterial roads.⁶⁰ Automobile use tended to reinforce a broader trend towards decentralization which was apparent in the rapid growth of chain grocery stores. The first Dominion store opened in London in 1922, and by 1929 the company had opened 15 stores (there were also two branches of Loblaw's). By 1939 the other major regional competitors, A & P and Carrolls (Hamilton), had opened stores in the city. Most of these stores were on the main traffic arteries. The service nodes of East London, Hamilton Road and Wortley, highlighted on the maps, were further reinforced in the late 1920s by the opening of movie theatres. Automotive services, notably gas stations, also located on the major arterial routes, particularly the provincial highways. Increasingly, in the competitive quest for the business from transient traffic, many automotive services, but especially the gas stations, were

established in a new extended commercial strip. On Dundas Street, east of the Fair Grounds (see Figure 6), the number of automotive service establishments doubled from 10 in 1929 to 20 in 1939. Many of these were developed beyond the city boundary, where there were essentially no barriers to development. Similar development took place on Wharncliffe Road on the southwestern boundary.⁶¹ In 1939 there were 41 gas stations located on the provincial highways, 22 in the central business district; the remaining 46 establishments were sited in neighbourhoods or on city arterials.

The building of improved and paved highways beyond the city transformed business and recreation travel. London's retailing influence was extended further from the city, gradually eroding the commercial base of nearby hamlets and small towns. Recreational travel by motor, which before 1919 extended little beyond Springbank Park on the western outskirts, reached out to Lake Erie and Lake Huron. A large pavilion erected at Port Stanley in 1926 (later the Stork Club) was a new destination for some motorists.⁶² The recreational pressures on Lake Huron resulted in demands for public open space,

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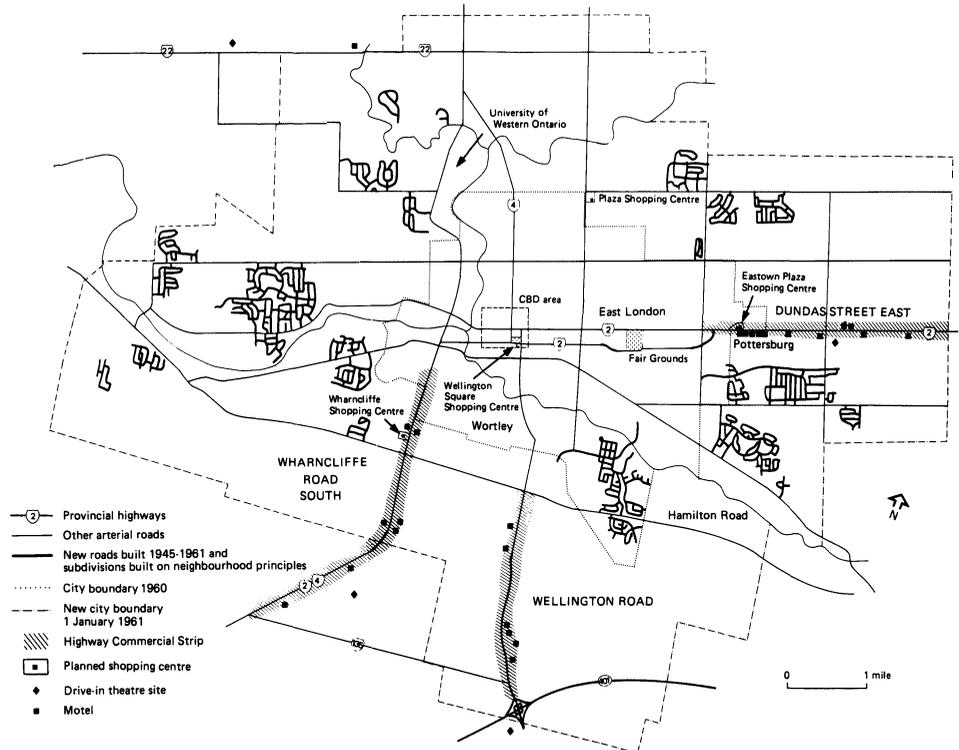
which eventually led to the creation of the Ipperwash Provincial Park in 1938.⁶³ Competition from automobiles greatly effected the electric railway network in the area. While freight traffic showed an upward trend, the number of passengers carried on the London and Port Stanley Railway declined from 1,100,000 in 1922 to 600,000 in 1929. On the street railway service, car mileage increased by 44 per cent between 1920 and 1930 while revenue passengers carried declined by 19 per cent. The London Street Railway Company bought its first buses in 1926 and began reducing the street car routes; the last street car was replaced in November 1940.⁶⁴

Despite the growth of motorization, the basic plan of London could still accommodate the new form of transport without fundamental changes. Industrial zones continued to cluster around the railways in the city centre, East London, and the southeastern sector. The relocation of the University of Western Ontario to a new site (1924) on the northwestern edge of the city and the opening of the London airport (1940) near Crumlin in the northwest would be strong influences in later suburban expansion. Most residential expansion took place within the extended city boundary of 1912 and followed the general grid street plan. Only two small subdivisions in south London adopted curvilinear layout, which during the interwar period became common in residential planning.⁶⁵ Such plans recognized the dangers of motor traffic and assisted in the segregation of movement on arterial routes from strictly local traffic.

III A Motorized City 1946-61

Throughout this period all indicators of motorization showed substantial rates of increase. The growth in the number of motor vehicles between 1939 and 1949 was double that of the previous decade, and the number of vehicles in London increased by 150 per cent between 1949 and 1961. All this growth was, of course, taking place within the context of an economic and demographic boom.⁶⁶

Figure 6: Provincial Highways and Gasoline Service Stations in London, 1939



A large proportion of London's expansion after World War II took place beyond the city boundary fixed in 1912. Extensive residential subdivisions and a big industrial zone in the east were established in the townships where there was land available for immediate development. Suburban growth, prompted by overall expansion locally and nationally and facilitated by the motor vehicle, was a major characteristic of the postwar period. A large boundary extension at the beginning of 1961 brought most of the new suburban areas into the city.⁶⁷ The 1961 census reveals many aspects of the postwar expansion. Data on the age of occupied dwellings, for example, showed that 45.3 per cent of the dwellings had been built since 1945 compared with only 19 per cent built between the wars and 35.7 per cent built before 1920. The radius of urban development was doubled between

1946 and 1961. Before this period practically all urban London was located within a 2 to 2.5 mile radius of Richmond and Dundas streets. By 1961 the outer limits of the built-up area were 5 to 5.5 miles distant.

By 1961 in the city 79.5 per cent of occupied dwellings had a passenger automobile,⁶⁸ a large increase from both 1951 (51.6 per cent) and 1941 (41.4 per cent), and 11.1 per cent of dwellings had two or more automobiles. The general pattern of ownership, by census tract, is illustrated in Figure 7. Most of the newer zones of the city had in excess of 90 per cent, reflecting the rise of full-fledged motor age suburbs. Only two tracts, the central business district and one in East London, had percentages below 50. The general pattern revealed in London was similar to most cities across the country as

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general growth coincided with the full development of a mass market for motor vehicles.

Traffic flows also increased significantly. Average summer daily traffic flows along Highway 2 east of the city doubled between 1929 and 1949 from 3,911 vehicles to 7,899. Later surveys calculated annual daily averages rather than just the summer peak flows. By 1956 such annual averages had reached 10,000 vehicles a day. This inexorable growth of traffic created a demand for road widening and new highway construction. The conceptual planning for a new transprovincial multilane divided highway began in the late 1930s, but actual construction did not begin until the 1950s. Urban bypasses of congested cities, especially Toronto, Kingston, and London, were the first priority. The Eastwood (Woodstock) to Lambeth section of Highway 401 was opened in 1957 as part of the first phase of development (see Figure 8). In a second phase of construction, the bypasses were linked together so that the eastern extension to Kitchener and Toronto was opened in 1961 and the western link to Chatham and Windsor was completed in 1963. The building of the London bypass gave some immediate relief from through traffic. Average annual daily traffic flows on Highway 2 fell from 10,000 vehicles in 1956 to 8,800 in 1957. But local traffic, perhaps reflecting the growth of regional commuting, continued to rise and by 1960 traffic flows on Highway 2 reached 12,500 daily, well above the level of 1956.

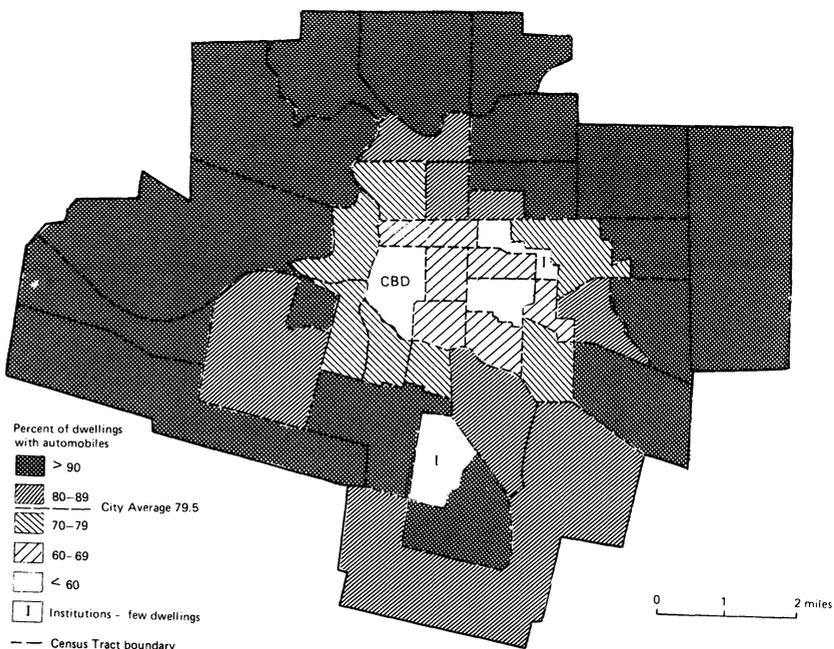
The opening of Highway 401 and the linkages to the expanding interstate network in the United States facilitated more and faster long-distance movement. Already by the late 1950s the large tractor-trailer units had replaced the railways for much transport and had become an integral part of the production line, bringing parts from extensive networks of plants and delivering finished products to warehouses and retail sales

outlets. More traffic prompted further rounds of highway improvement, which were quickly overtaken by the expansion of motor traffic. The network of provincial highways was extended to serve smaller places (see Figure 8) and road improvement by county and township councils reached out to every corner of the settled area. Such improvements facilitated various forms of centralization as, for example, in education, where the school bus, introduced widely after 1945, aided the process of rural school consolidation. The widespread use of motor vehicles had a tendency towards concentration of many services in the larger urban centres, and yet at the same time there were significant trends of decentralization. Such forces were clearly evident in recreation, as the provincial government began to develop more parks to accommodate the pressures of urban motorized travellers. In the London area such expansion took place with the designation in 1957 of the Pinery Provincial Park near Grand

Bend and the Port Bruce Provincial Park between Port Stanley and Port Boswell. The creation of conservation authorities, mostly for flood control, also resulted in the development of multi-purpose reservoirs which served a motorized urban clientele. Fanshawe Lake on the northeastern edge of London tended to replace the Springbank Park of the 1870s as the recreation area on the edge of town.⁶⁹

Automotive services were a major beneficiary of the growth of motor vehicle ownership and traffic. The number of establishments nearly doubled between 1951 and 1961, while the value of sales tripled (see Tables 4 and 5). Changes in the relative significance were equally impressive and the value of automotive group sales increased from 26.7 per cent of total retailing in 1951 to 39.1 per cent in 1961. Such rapid and substantial growth in sales reflected the increasing proportion of household expenditure devoted to motor vehicles. All the subsectors of the automotive business expanded. The number

Figure 7: City of London: Dwellings with Automobiles, 1961



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of motor vehicle dealers grew as some new franchises were opened to serve the expanding population of the city. In addition, the growth of small car imports from Britain and West Germany created new opportunities for dealerships. VW London Motors Ltd, for example, had two suburban dealerships in 1961, one on Wharncliffe Road South, the other on Dundas Street East. The number of filling stations grew with the market and with the activity of new entrants to the London area, such as Fina, Sunoco, and Texaco. Specialized body shops, radiator and electrical repair shops, and accessories outlets all boomed. Many of the tire companies, especially Goodyear and Firestone, opened new comprehensive service facilities. Accessory retailers such as Canadian Tire were beginning to expand on a larger scale through franchises. Canadian Tire opened its first associate store in London in 1941 and had two stores by 1961.

Data from the 1961 census of merchandising were used in preparing Figure 9 which shows the spatial pattern of sales in the automotive sector. While only 19.3 per cent of all establishments were located in the central business district (a slightly larger area that is shown in Figure 10), the high proportion of the total sales volume (64.2 per cent) shows the continued dominance of this zone.⁷⁰ Decentralization had already taken place in used car lots, some new vehicle dealerships, and garages and service stations. Dundas Street East was a major zone of such activities. The map also emphasizes the significance of automotive business in the new areas of the city, where gas stations often preceded other forms of retail business.

Many other forms of highway-orientated services were developed in the postwar period as a drive-in culture became commonplace.⁷¹ The drive-in theatre was a highly visible new addition to the landscape of the outer areas of the city. At least four, with such grandiose names as Star Top and Sky Way, were built in the late 1940s and early 1950s but only two survived to 1961. Retailing

Figure 8: Provincial Highway Network in the London Area, 1959

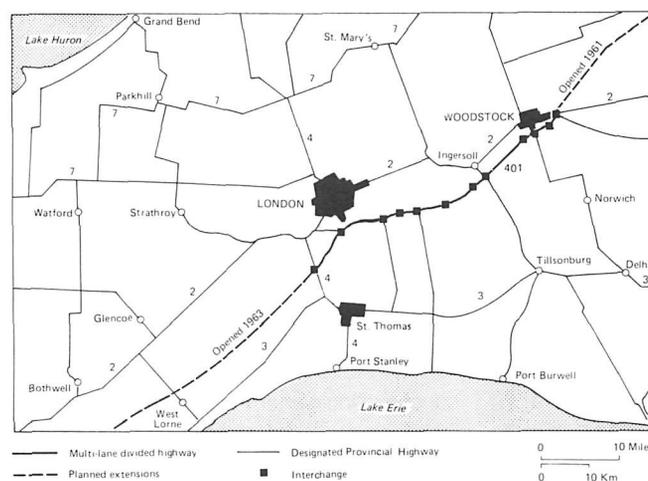
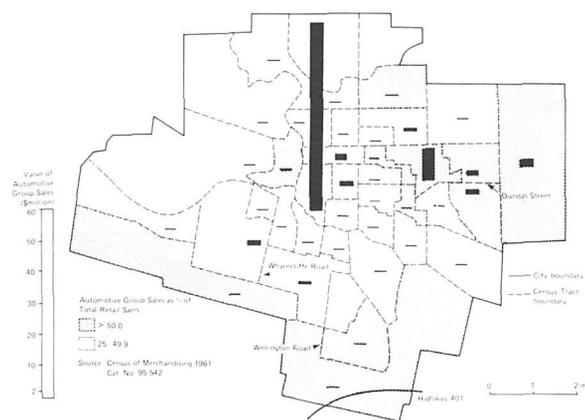


Figure 9: City of London: Location of the Automotive Group Sales, 1961



This Firestone service centre on Dundas Street East is typical of many of the franchised automotive services lining the strip.

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became more suburban, especially the food sector where the large chains dominated. During the 1950s the supermarket became dominant as Dominion and its competitors built large new stores surrounded by parking lots. In three cases the supermarket became the commercial anchor for shopping centres. The increasing demand for accommodation by long-distance travellers was met by new forms of service. Earlier downtown hotels, a small number of tourist homes on arterial roads, and a motor camp were partly replaced in the 1940s by tourist cabins. In the next decade these were expanded into motels, and some newly designed motor hotels began to appear in the late 1950s. By 1961 a new wave of "fast food" outlets such as Dairy Queen and A & W had supplemented the earlier coffee shops and snack bars associated with a gas station.

The persistent pressures from rapid motorization in the broader context of total growth of the city resulted in a partial reshaping of London by 1961. In the central business district the continued substitution of automobiles for public transport had created more congestion and parking problems. Streetside parking meters were introduced in 1948, two of the main east-west downtown arterials became one-way streets in 1950, and the old market place was replaced by a combined market and parking building in 1956. The city became directly involved in the ownership and operation of car parks in 1959.⁷² Major employers, such as London Life Insurance, acquired adjacent properties for conversion into parking lots. The map of the central business district by the late 1950s (see Figure 10) shows a strong presence of parking areas. London was one of the earliest Canadian cities to organize comprehensive commercial renewal - an enclosed mall, Wellington Square, was opened in August 1960 at a cost of \$11 million.⁷³ Anchored by a large Eaton store and supported by a Dominion supermarket, the shopping centre also included roof-top parking. Increasing land values and congestion had already reduced the automotive sector in the

downtown area as dealers and other firms moved to the fringes of the central business district or to the edge of the city on the expanding arterials. Other commercial activities began to migrate outward in the 1960s.

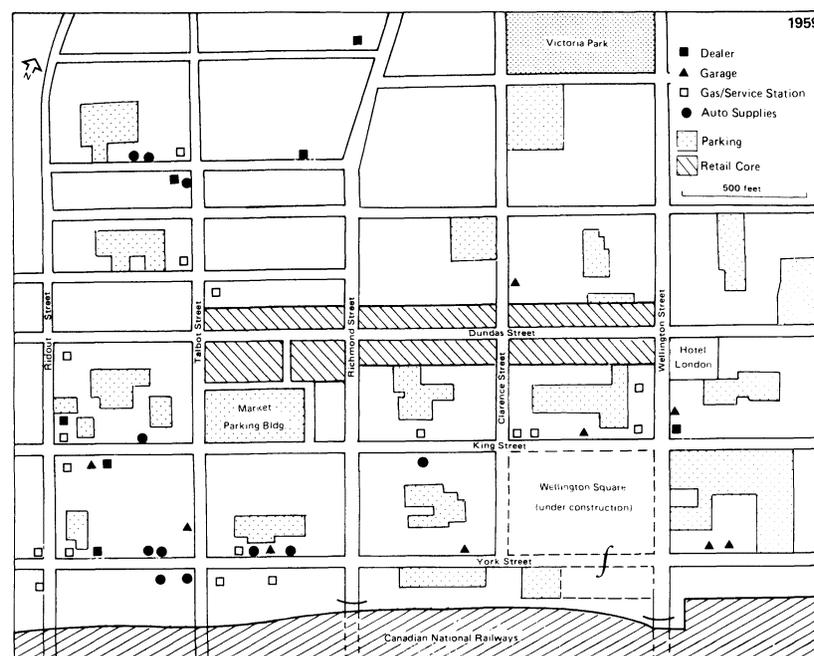
As the older rectilinear residential subdivisions were completely built up by the early 1950s new plans began to take shape on the suburban landscape. Planning ideas derived from earlier garden cities, the concept of neighbourhood, and the Radburn example were gradually adopted for the new subdivisions (see Figure 11).⁷⁴ These outer areas were fully able to accommodate the automobile - an increasing proportion of house plans included a garage as an integral part of the design.

The Highway Commercial Strip

The full physical impact of the motor vehicle was expressed in the arterial roads that were

being widened from two to four lanes. A new highway commercial strip was created in this period, especially along the provincial highways and Wellington Road, the new connecting route to Highway 401. Based on the earlier sporadic development before World War II, these strips became a dynamic commercial zone in the 1950s. Three complementary forces contributed to the creation and expansion of the commercial strip.⁷⁵ There was the attraction of large, low-cost sites with limited planning controls. Such sites were accessible to the highway for direct use by travellers - gas stations, tourist cabins/motels, snack bars. Other new services associated with a more mobile population included drive-in theatres, golf driving ranges, trailer parks, and even private cemeteries. A second force impelling change was general commercial decentralization with businesses from older parts of the city seeking more space at lower cost, as well as freedom from congestion and the ability to serve the mobile consumer on the outer parts

Figure 10: Automotive Business in the London Central Business District, 1959

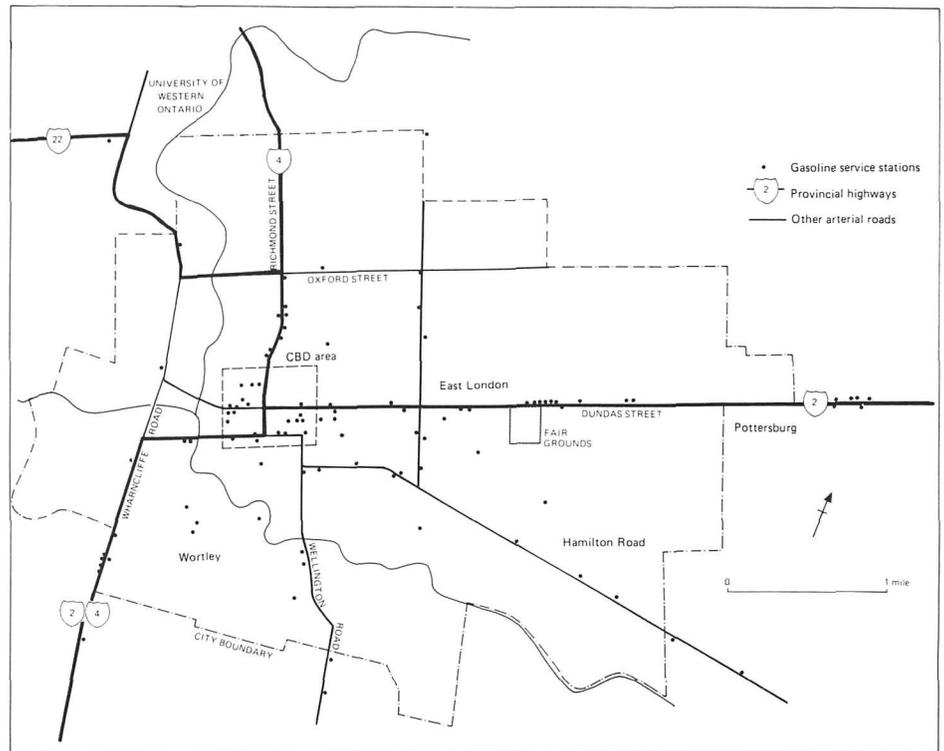


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of the city and to provide off-street parking areas.⁷⁶ Automotive services such as new and used car dealers, body shops, tire shops, and accessories outlets tended to relocate on the strip. Several forms of retailing, such as grocery chains and beer and liquor stores, previously established in the older commercial strips, also relocated in the new strips. This process was apparent on Dundas Street where Loblaws and Dominion, along with Brewers Retail and the Liquor Control Board of Ontario, built new stores in the outer strip. Many wholesalers also began moving from the downtown warehouse district to the new strip. Massey Ferguson and International Harvester relocated their London branches to Dundas Street East. Some offices of organizations such as Encyclopedia Britannica and National Cash Register moved out of the centre to this expanding commercial zone. The third complementary force in generating growth on the strip was the overall suburban expansion of employment and housing which was infilling the areas between the arterial highways. Such growth created additional demands for services and was met by the development of facilities such as new bank branches in the outer zone.

In the earlier phases of development the few businesses of the strip were in small-scale individual or family ownership. There were few large, well-capitalized firms in the strip zone until the 1950s, when franchise operations began to take off and the facilities became more standardized. Service stations were among the first activities to be modernized and standardized by the major integrated petroleum companies.⁷⁷ They featured extensive concrete forecourts, multi-bay service buildings with well-advertised clean washrooms, and newly designed pumps. The new buildings were often designed in bright-coloured enamelled steel panels - bright blue and yellow for Sunoco, white with red and green trim for Texaco and Supertest. Most companies had a basic rectangular box structure, newcomers like the Belgian-owned Fina featured a semi-circular

Figure 11: Automotive Age Development in London, 1945-61



modernist office as part of the building facade.

Much of the business of the strip was ephemeral, with few establishments remaining in the same ownership and even function for more than a decade. This was obvious in the old commercial strips where dealers had given way to used car lots, gas stations to dry cleaners.⁷⁸ In the new outer strips change was often rapid, reflecting new tastes and fashions. The Skyway Drive-in on Dundas Street was thriving in 1949 but was abandoned when the 401 highway was opened. Dining lounges appeared, changed names, and disappeared very quickly. As fashion changed, some businesses moved up-market to take advantage of new commercial opportunities. On Dundas Street East, Len's Coffee Shop of 1949 had become the Red Rooster Grill ten years later.



This drive-in theatre was built at the Wellington Road interchange shortly after the bypass freeway opened in 1957.

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American influences in the features of the strip were clearly apparent. Gas station designs followed those in the United States. Many of the early fast food franchisers were American (such as A & W and Dairy Queen). The open air drive-in theatres had their origins in California. Even the names of motels reflected southern influences - Arizona Hotel, Arvilla Grande Motel, American Tourist Court, Golden Gate Motel, and South Winds Motel. The American term "golden mile" was often used to describe these new brightly lit commercial strips on the edge of the city.⁷⁹

The process of development of these outer commercial strips was generally uncontrolled. Consequently there was a tendency for new entrants to leapfrog earlier growth in the hope of capturing trade and also of purchasing land at lower prices. Development was uneven, with bright new structures beside decaying buildings of earlier rural origins. The grand names of the new strip businesses often contrasted starkly with the unfinished realities of the total roadside environment of the arterial highway. These rough edges of the highway entry to cities provided the basis for a great deal of contemporary criticism from architects and commentators on the urban scene.⁸⁰

The propulsive strength of the forces generated by all the facets of motorization was clearly evident in the physical structure of London by 1961. In place of the centripetal forces of rail transport, which sustained a strong central business district, the motor vehicle and its uses supported centrifugal forces, which decentralized activities into the low-density outer suburbs. Figure 11 provides some evidence of the physical reshaping of London - substantial outward expansion, new forms of residential subdivision, the new highway commercial strips which heralded the entry into the urban area. The strength of the new forces was clearly evident in London after the opening of Highway 401 in 1957. Within four years Wellington Road had become a major artery, with six motels, a drive-in theatre, eleven gas stations, and other

roadside services. New factories and warehouses were being built around the interchange (Northern Telephone and an LCBO warehouse).⁸¹ The reorientation of London towards the 401 left the old arterial routes fossilized until a new wave of development in the 1970s revitalized many of their commercial functions, which were to serve local and city purposes rather than the earlier through traffic.

The Motor Vehicle and the City

When the London Fire Department bought its first motorized unit in 1911, the automobile had just emerged from the experimental phase of technical development.⁸² Over the next 50 years vehicle designs were improved and quickly accepted into virtually every facet of life. The urban landscape was transformed; gradually at first, and then at a quickening pace in the 1920s as the provincial highway network was developed and automobile ownership grew at a fast rate. The most profound growth and change took place in the period after World War II. During this time a new landscape dominated by automobiles was evolving.

It was increasingly clear by the early 1960s that many profound and irreversible changes in the physical structure of cities had taken place in the two previous decades.⁸³ As Arthur Lower remarked, the great god car had:

threatened to turn us all into nomads, and his wheels like Juggernaut, levelled every physical and psychical obstacle they met. They invaded every urban open space and threatened to destroy every blade of urban grass. They called imperiously for straight wide roads to be carved out of our diminishing fertile fields.⁸⁴

The decentralization of people and work away from the crowded and congested central city promoted by earlier commentators had been partially accomplished in the immediate postwar period.⁸⁵ But not all the results of this

decentralization were satisfactory. Humphrey Carver's *Cities in the Suburbs* was both a lament for what was being lost and a plea for something more than mediocrity. In the final chapter he made a forceful plea for a commitment to excellence in city building beyond "the ultimate efficiency that we may some day expect from motor cars and the whole network of expressways and traffic engineering."⁸⁶

While motor vehicles and their drivers were subject to an increasing battery of regulations, the general evolution of usage took place within a context of *laissez-faire*. Apart from zoning regulations introduced by the city in the 1920s and then growing parking restrictions in the city centre from the 1940s, the overall physical impact was constrained by few official impediments. This would begin to change in the 1960s as London began to adopt comprehensive planning frameworks for land use, traffic, and highways. The need for comprehensive planning had been apparent for many years and had been promoted by local groups and then increasingly by the province. The extended boundaries of 1961 showed a recognition of the need for new policies.

Since the period reviewed in this paper, London has continued to grow, but much of this growth has been shaped by planning.⁸⁷ The rough edges of the earlier strip developments have been largely tidied up and the auto dominated suburbs of 1961 have now become an integral part of the outer city.⁸⁸ Earlier radial traffic flows to and from the city centre have now been overlain by much more complex linkages between residential, commercial, and employment areas in the suburbs. One index of growth and change will suffice to show the expansion of the outer city from the early 1960s. London in 1961 had only three small suburban shopping plazas, with about 150,000 square feet of floor space in total. By 1986 there were 24 shopping centres with about 3,700,000 square feet.

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Despite all the planning, the inexorable growth of traffic since the early 1960s has meant that many of the ideals of a "townless highway" have yet to be achieved. While residential neighbourhoods have been segregated from arterial roads, new subdivisions are still visually dominated by the car. Highway commercial ribbons continue to expand, though more tidily than the past. The bypass freeways no longer sweep traffic past the urban area but are increasingly caught in the expanding web of the outer city.⁸⁹ Conflicting values of industrial expansion and cultural growth in the motor age, which concerned Benton MacKaye in the late 1920s and Humphrey Carver 30 years later, still await resolution.



A new generation of highway accommodation, motor hotels, on Wellington Road near Highway 401. These hotels averaged about 80 rooms compared with the 30 units of motels. The Holiday Inn was opened in 1962.

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⁴ S.L. Bottles, *Los Angeles and the Automobile: The Making of the Modern City* (Berkeley, Calif., 1987); D.F. Davis, *Conspicuous Production: Automobiles and Elites in Detroit 1899-1933* (Philadelphia, 1988).

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System: Engineers and Policy Makers (Philadelphia, 1987); J.E. Vance, *Capturing the Horizon: The Historical Geography of Transportation* (New York, 1986), especially 485-528.

⁷ T.J. Schlereth, *U.S. 40: A Roadscape of the American Experience* (Indianapolis, 1985); R.M. Stamp, *QEW: Canada's First Superhighway* (Erin, Ont., 1987); J.C. Van Nostrand, "The Queen Elizabeth Way: Public Utility versus Public Space," *Urban History Review*, 12 (1983): 1-23.

⁸ W. Simpson-Lewis and R. McKechnie, *Land and the Automobile: A Selected Bibliography* (Ottawa, Environment Canada, Lands Directorate, Working Paper no. 12, 1981).

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¹⁰ R.L. Dufus, "Detroit: Utopia on Wheels," *Harpers*, 162 (Dec. 1930): 51.

¹¹ J.B. Jackson, *Discovering the Vernacular Landscape* (New Haven, Conn., 1984).

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Architecture of American Chain Restaurants (New York, 1986).

¹⁴ See Schlereth, Chapter 1, and David Burgess-Wise, *Automobile Archaeology* (Cambridge, 1981).

¹⁵ F.H. Armstrong, *The Forest City: An Illustrated History of London, Canada* (Burlington, 1986): 165.

¹⁶ *The Economic and Social Effects of the Spread of Motor Vehicles*, ed. Theo Barker (London, 1987): 2.

¹⁷ Further context is provided in G.T. Bloomfield, "Motorization on the New Frontier: the Case of Saskatchewan, Canada, 1906-34," in *ibid.*, 165-93.

¹⁸ London with 320.8 motor vehicles per 1,000 population was above the Canadian average (302.5) in 1961. Ratios of large metropolitan cities were: Montreal 261.3, Toronto 306.2, Winnipeg 315.7, Calgary 352.3, and Vancouver 335.8.

¹⁹ M.A. Goldberg and J. Mercer, *The Myth of the North American City: Continentalism Challenged* (Vancouver, 1986): 152, 252.

²⁰ The general context of road improvement is presented by Larry McNally, "Roads, Streets and Highways," in *Building Canada: A History of Public Works*, ed. N. R. Ball (Toronto, 1988): 30-58.

²¹ St. Thomas is still the headquarters of the Ontario Good Roads Association. The monthly *Municipal World* magazine has been published there since 1892.

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- ²² A.W. Campbell (1863-1927) became deputy minister of the federal Department of Railways and Canals in 1915 and was responsible for administering the \$20 million highway improvement fund authorized by the Canada Highways Act of 1919.
- ²³ Ontario, *Statutes*, 1917, "The Provincial Highway Act."
- ²⁴ C.F.J. Whebell, "Corridors: A Theory of Urban Systems," *Annals, Association of American Geographers*, 59 (1969): 1-26. See also: Maurice Yeates, *Main Street: Windsor to Quebec City* (Toronto, 1975): 246-55.
- ²⁵ The significance of American motor tourists is well argued by D.F. Davis, "Dependent Motorization: Canada and the Automobile to the 1930s," *Journal of Canadian Studies*, 21 (1986): 106-32. Motor travel between the U.S. and Canada was facilitated by the opening of several new border crossings in the interwar period: Peace Bridge at Fort Erie (1927), Ambassador Bridge at Windsor (1929), Detroit-Windsor Tunnel (1930), and Blue Water Bridge at Point Edward/Sarnia (1938).
- ²⁶ Canada, Department of Railways and Canals, Highways Branch, *Circular* no. 8 and 10 (Ottawa, 1927 and 1929). After this time statistics on border crossings were published by the Dominion Bureau of Statistics.
- ²⁷ Ontario Trucking Association, *The Golden Years of Trucking 1926-1976* (Toronto, 1977): 41.
- ²⁸ Armstrong: 267.
- ²⁹ See, for example, Ken Jones and Jim Simmons, *Location, Location, Location: Analyzing the Retail Environment* (Toronto, 1988). M.S. Moyer and G. Snyder, *Trends in Canadian Marketing* (Ottawa: Dominion Bureau of Statistics, 1961 Census Monograph Series, 1967). Studies of motor dealers are surprisingly rare. See H.S. Dominguez, *The Ford Agency: A Pictorial History* (Osceola, Wis., 1981).
- ³⁰ The product life cycle is now outlined in most text books on retailing, such as D.M. Lewison and M.W. De Lozier, *Retailing* (Columbus, Ohio, 2nd ed., 1986): 424-25. Four stages (introduction, growth, maturity, and decline) are distinguished. The motor vehicle reached the third stage in the 1930s. A new growth cycle began after World War II. Within any broad cycle there are clearly fashion cycles (chrome fins in the 1950s, customized vans in the 1970s). Innovative manufacturers are always promoting new ideas for particular market segments in the stage of maturity.
- ³¹ A.B. Gallion with Simon Eisner, *The Urban Pattern: City Pattern and Design* (Princeton, N.J., 1950): 193.
- ³² Benton Mackaye, "The Townless Highway," *New Republic*, 12 March 1930: 94.
- ³³ J.J. Flink, *American Adopts the Automobile 1895-1910* (Cambridge, Mass, 1970).
- ³⁴ Compiled from Archives of Ontario, RG 14, B9, Box 3, Motor Vehicle Licence Book no. 1, 1903-4.
- ³⁵ In 1961 the proportions were Toronto 26.3 per cent, other cities 30.7 per cent, and towns, rural, and villages 40.3 per cent.
- ³⁶ Data derived from Ontario motor registration index cards for 1912-13, discovered in the Archives of Ontario in 1980.
- ³⁷ The London firm of Dixon the Mover (later Dixon Van Liners) was established in 1917. Ontario Trucking Association (1977), 85.
- ³⁸ News items in the *Canadian Motorist* (published by the Ontario Motor League) that are reprinted in: *Sixty Golden Years 1915-1975: The Story of Motoring in Ontario* (Sudbury, 1975).
- ³⁹ A tabulation of makes in London during 1912-13 provides the following results:
- | | No. | Per cent |
|----------------------|-----|----------|
| Ford | 80 | 29.3 |
| McLaughlin | 36 | 13.2 |
| Studebaker | 19 | 6.9 |
| Overland | 14 | 5.1 |
| Oakland | 11 | 4.0 |
| Others
(46 makes) | 113 | 41.5 |
| | 273 | 100.0 |
- Source: Archives of Ontario, Motor Vehicle Registration index cards 1912-13.
- ⁴⁰ Hugh Durnford and Glenn Baechler, *Cars of Canada* (Toronto, 1973): 133, 256-57.
- ⁴¹ G.T. Bloomfield, "Coils of the Commercial Serpent: A Geography of the Ford Branch Distribution System 1904-1933," in *Auto Archeology: Essays in American Culture*, ed. Jan Jennings (Ames, Iowa, forthcoming).
- ⁴² *Ford Times*, Canadian Edition, May 1916, 453-54. The building with 50,000 square feet of floor space cost \$161,000. The London branch was a smaller version of contemporary Ford assembly plants erected in Toronto, Montreal, and Winnipeg.
- ⁴³ T.G. Marx, "The Development of the Franchise Distribution System in the U.S. Automobile Industry," *Business History Review*, 59 (1985): 465-74.
- ⁴⁴ J.F. Due, *The Intercity Electric Railway Industry in Canada* (Toronto, 1966): 74-78.
- ⁴⁵ Armstrong: 172.
- ⁴⁶ The penetration of the motor vehicle into most facets of the ordinary London scene was captured in the images of Harry Hines, who owned a photographic studio on Dundas Street in East London. See the excellent photographs in Alan Noon, *East of Adelaide: Photographs of Commercial, Industrial and Working-Class Urban Ontario, 1905-1930* (London, 1989).
- ⁴⁷ *Canadian Motorist*, Nov. 1926: 456.
- ⁴⁸ Canada, Census, 1941, Volume X, Table 30.
- ⁴⁹ In 1920 only 10 per cent of cars made in Canada were closed. By 1929 the figure was 82 per cent and by 1 939 99 per cent. See Canadian Automobile Chamber of Commerce, *Automobile Facts and Figures* (Toronto, 1937): 10.
- ⁵⁰ See Liebs: 12-15.
- ⁵¹ Durnford and Baechler: 166.
- ⁵² By 1931 General Motors rented space in the new Bell Telephone Building for the zone office. General Motors Acceptance Corporation, an important unit in the growth of car sales on credit, had its office in the Huron and Erie/Canada Trust Building.
- ⁵³ Details from Financial Post Corporation Service, Supertest Petroleum Corporation Ltd card, revised June 1950. Supertest remained independent until 1972 when acquired by B.P. Many former Supertest stations remain under the banner of Petro Canada.
- ⁵⁴ A fine example is shown in Wayne Paddon et al, *St. Thomas: 100 Years a City 1881-1981* (St Thomas, 1981): 37.
- ⁵⁵ V.P. Cronyn, "Grade Separation and Arterial Highway Planning in London, Ont.," *Journal of the Town Planning Institute*, (Dec. 1928): 144-46. For other contemporary work on urban traffic problems see Elizabeth Bloomfield, "'Ubiquitous Town Planning Missionary': The Careers of Horace Seymour, 1882-1940," *Environments*, 17 (1985): 29-42.
- ⁵⁶ Armstrong: 187.
- ⁵⁷ Canada, Dominion Bureau of Statistics, *London, Housing Atlas* (Ottawa, 1946), DBS Catalogue no. 98-1941M-19. This series of 13 atlases using 1941 census data provides a valuable source of maps of major cities at this time.

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⁵⁸ The City of London took responsibility for snow clearance on streets from 1921. Before that it was a local effort or the responsibility of the London Street Railway on streets where its tracks ran. R.W. Packer column in *The Operational Geographer*, 13 (1987): 53.

⁵⁹ J.C. Weaver, "The Property Industry and Land Use Controls: The Vancouver Experience 1910-1945," *Plan Canada*, 19 (1979): 214-15.

⁶⁰ There were, however, few grand structures symbolizing the new influence of motor vehicles comparable to the monumental High Level Bridge in Hamilton described in Nicholas Terpstra, "Local Politics and Local Planning: A Case Study of Hamilton, Ontario, 1915-1930," *Urban History Review*, 15 (1985): 114-28.

⁶¹ Such exurban roadside development was being described as a "motor slum" by contemporary observers. See Mackay: 24.

⁶² Thomas Hinch and Richard Butler, "The Rejuvenation of a Tourism Centre: Port Stanley, Ontario," *Ontario Geography*, 32 (1988): 29-52.

⁶³ K. Morrison, "The Evolution of the Ontario Provincial Park System," in *Recreational Land Use: Perspectives on its Evolution in Canada*, ed. G. Wall and J.S. Marsh (Ottawa, 1982): 107-8.

⁶⁴ W. Glen-Curnoe, *The London and Port Stanley Railway 1915-1965* (London, 1976): 88; C.K. Morningstar, *From Dobbins to Diesel* (London, 1973): 43.

⁶⁵ The new subdivisions: Croxton Road, East and West, Foxbar Road; Franck Place; and Windsor Crescent were established by 1928. For a similar subdivision see R. Paterson, "The Development of an Interwar Suburb: Kingsway Park, Etobicoke," *Urban History Review*, 13 (1985): 225-35.

⁶⁶ The general details of growth are set out in K.J. Rea, *The Prosperous Years: The Economic History of Ontario 1939-75* (Toronto, 1985). The population of metropolitan London (the city together with the encircling townships of London and Westminster) grew from 97,210 in 1941 to 128,977 in 1951 and to 181,283 in 1961.

⁶⁷ The city area from 1912 to 1950 amounted to 7,285 acres. Between 1950 and 1959 630 acres were annexed. On 1 Jan. 1961 34,635 areas were annexed from London and Westminster townships.

⁶⁸ Canada, Census, 1961, Census Tract series, *London, Ontario* (CT11), DBS Catalogue no. 95-526.

⁶⁹ See R.S. Lambert, *Renewing Nature's Wealth: A Centennial History of Public Management of Lands,*

Forests and Wildlife in Ontario 1763-1967 (Toronto, 1967) and A.H. Richardson, *Conservation by the People: The History of the Conservation Movement in Ontario to 1970* (Toronto, 1974).

⁷⁰ Details from the last census of merchandising in 1971 show a very rapid decentralization from the central business district:

Automotive Services in CBD		
Per cent of total city		
	Establishments	Sales
1961	19.3	64.2
1971	5.7	25.3

⁷¹ See K.J. Rea: 90-93, and Jackson, chapter 14.

⁷² Armstrong: 198, 204.

⁷³ Armstrong: 204.

⁷⁴ The degree to which the ideas and policies of the Central Mortgage and Housing Corporation (CMHC) influenced such plans is worth detailed exploration. See Humphrey Carver, "Building the Suburbs: A Planner's Reflections," *City Magazine*, 3 (1978): 40-45. Very few Radburn plans were ever implemented in Canada. The small Wildwood subdivision in Winnipeg (1946) is a rare example. H.J. Selwood, "Lots, Plots and Blocks: Some Winnipeg Examples of Subdivision," *Society for the Study of Architecture in Canada, Bulletin*, 11 (1986): 6-8.

⁷⁵ Contemporary ideas and practices of retailing are well summarized in R.L. Nelson, *The Selection of Retail Locations* (New York, 1958). Few Canadian studies have examined the strip; see F.W. Boal and D.B. Johnson, "The Functions of Retail and Service Establishments on Commercial Ribbons," *Canadian Geographer*, 9 (1965): 154-69.

⁷⁶ R.J. Claus and W.G. Hardwick, *The Mobile Consumer: Automobile Oriented Retailing and Site Selection* (Don Mills, 1972).

⁷⁷ B.A. Lohof, "The Service Station in America: The Evolution of a Vernacular Form," *Industrial Archaeology*, 11 (1974), 1-13; D.I. Vieyra, "Fill'er up: An Architectural History of America's Gas Stations (New York, 1979).

⁷⁸ The properties at 345-47 Dundas Street in the inner commercial zone show the following changes as recorded in the city directories:

1919	Houses
1929	Chrysler Sales Room
1939	London Central Motors
1949	Hancock Tire/Dundas Motors
1959	Hertz-Drive-Ur-Self car rentals

⁷⁹ The term was being used in Canada by the early 1950s. See *Toronto Star*, 16 Oct. 1952, for a description of Canada's "Golden Mile" of Industry along Eglinton Avenue in Scarborough Township. This industrial zone was just east of the contemporary shopping centre development of the same name. Golden Mile Motors adopted the name for its used car business on Dundas Street East.

⁸⁰ See, for example, Peter Blake, *God's Own Junkyard: The Planned Deterioration of America's Landscape* (New York, 1964); Ian Nairn, *The American Landscape: A Critical View* (New York, 1965). Changing attitudes to the strip in Toronto from the 1970s are outlined in Judy Morgan, "Planning for Strong Retail Strips," *The Operational Geographer*, 7 (1989): 19-21.

⁸¹ The role of motor transport in industrial location is well described in J.F. McCarty, *Highways, Trucks and New Industry* (Washington, D.C., 1963).

⁸² Armstrong: 172.

⁸³ W. Owen, *Cities in the Motor Age* (New York, 1959); G.A. Jellicoe, *Motopia* (London, 1961); W.L. Garrison et al, *Studies of Highway Development and Geographic Change* (Seattle, 1959); R.R. Boyce and E.M. Horwood, *Studies of the CBD and Urban Freeway Development* (Seattle, 1959); Lewis Mumford, *The Highway and the City* (New York, 1963).

⁸⁴ A.R.M. Lower, *Canadians in the Making* (Toronto, 1958): 425.

⁸⁵ See, for example, Eilii Saarinen, *The City: Its Growth, Its Decay, Its Future* (New York, 1943).

⁸⁶ Humphrey Carver, *Cities in the Suburbs* (Toronto, 1962): 114.

⁸⁷ The population of the city increased by about 60 per cent between 1961 (169,569) and 1986 (269,140) in virtually unchanged boundaries.

⁸⁸ W.G. Hardwick, "Vancouver: The Emergence of a Core Ring Urban Pattern," in *Geographical Approaches to Canadian Problems*, ed. R.L. Gentile (Toronto, 1971): 112-18; P.O. Muller, *The Outer City: Geographical Consequences of the Urbanization of the Suburbs* (Washington, D.C., 1975); P.O. Muller, *Contemporary Suburban America* (Englewood Cliffs, N.J., 1981).

⁸⁹ New traffic problems created by massive office and other commercial development in the outer suburbs are described in Robert Cervero, *Suburban Gridlock* (New Brunswick, N.J., 1986).