

# The Queen Elizabeth Way: Public Utility Versus Public Space

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## Article abstract

This paper provides an informal history of the Queen Elizabeth Way — Canada's first "superhighway" and one of the earliest controlled-access roads in North America. It traces this history from the 1930s, the period of original design and construction to the present day. Throughout, the author examines not only the changing perception of the highway held by its designers and users, but also, its role as a key element in the development of the "Golden Horseshoe," one of the most heavily populated regions of North America. Most importantly, this paper explores the demise of the Queen Elizabeth Way as a combined traffic-artery-cum-regional-public-space and its transformation into a utilitarian object. It concludes by speculating that one of the key lessons to be learned from this experience is the need, in future highway design, to redirect our efforts to strike a more effective balance between these two roles.

# The Queen Elizabeth Way: Public Utility Versus Public Space

John C. van Nostrand

## Résumé/Abstract

*Cet article nous présente un exposé historique du «Queen Elizabeth Way» — la plus ancienne des grandes autoroutes du Canada et l'une des premières routes à accès limités en Amérique du Nord. Le texte se propose de décrire cet historique depuis les années 30, période de la conception et de la construction initiales de cette route, jusqu'à nos jours. L'auteur s'est intéressé tant aux aspects pour lesquels les ingénieurs et les usagers envisageaient la question de l'autoroute qu'au rôle, clef du «Queen Elizabeth Way» dans la croissance du «Golden Horseshoe», l'une des régions les plus peuplées de l'Amérique du Nord.*

*Deux thèmes ont d'abord et avant tout été mis en valeur dans cette étude: premièrement, l'importance décroissante du «Queen Elizabeth Way» à titre à la fois de voie de circulation et de lieu public destiné à la collectivité la région et, deuxièmement, sa transformation en un objet purement utilitaire. Il en ressort que nous nous devons peut-être d'examiner à nouveau nos objectifs quant à la conception future de l'autoroute afin de rétablir le jeu de ces deux forces, quitte à en éprouver la même expérience.*

*This paper provides an informal history of the Queen Elizabeth Way — Canada's first "superhighway" and one of the earliest controlled-access roads in North America. It traces this history from the 1930s, the period of original design and construction to the present day. Throughout, the author examines not only the changing perception of the highway held by its designers and users, but also, its role as a key element in the development of the "Golden Horseshoe," one of the most heavily populated regions of North America. Most importantly, this paper explores the demise of the Queen Elizabeth Way as a combined traffic-artery-cum-regional-public-space and its transformation into a utilitarian object. It concludes by speculating that one of the key lessons to be learned from this experience is the need, in future highway design, to redirect our efforts to strike a more effective balance between these two roles.*

The present generation of Canadians has witnessed a remarkable change in the public's perception of the role of large-scale engineering works in everyday life. To a great extent, this change has been fueled by the parallel rise of the environmental movement, and the subsequent entrenchment of its principles in most major provincial and federal planning programmes. Accordingly, highways, hydro-electric transmission lines, gas pipelines and trunk water and sewage mains, which were earlier celebrated by a society deeply concerned with improving urban and rural living conditions, are today maligned as the harbingers of a progress which is considered to be threatening, undesirable and, ultimately, unnecessary. Thus, these public utilities, which throughout the nineteenth and early twentieth centuries served to establish a coherent framework of highly accessible urban public space, have since been either "undergrounded" or removed to the fringes of our towns and cities where, covered in coniferous copses or hidden behind carefully sodded earth berms, they have been rendered completely inaccessible and impotent as public spaces.

In spite of the proliferation of the environmentalists "no-growth" or "limits-to-growth" philosophies, Canadian governments have continued to expand their regional and municipal servicing infrastructures at high levels of public investment. In Ontario, these have included an intercon-

nected network of major freeways, a new 500-kilovolt electric transmission grid, an expanded public transit system and the first of a series of regional liquid waste disposal systems. As these begin to occupy more and more rural land (e.g., the new transmission corridors are typically as wide as two football fields placed end-to-end), the public's concern has begun to extend beyond simply their utilitarian role to include their usefulness as future public space. With this in mind, the purpose of this paper is to review the historical development of one of the earliest and most successful examples of regional technological infrastructure in Canada — the Queen Elizabeth Way. In fact, this road was one of the first so-called "superhighways" to be built in North America. Originally conceived as a combined traffic artery and regional public space, it has since been transformed into a wholly utilitarian object. The paper traces the course of this transformation and draws some conclusions which could be applied to the conceptualization and design of future highways and other public utilities.

## The Original Concept

By 1930, the Department of Highways of Ontario had developed an extensive and continuous network of Provincial Highways which served most of southern Ontario. This network overlaid the pre-existing colonial road grid and was composed of a series of major roads which, because they linked important towns and villages, had been redesignated,



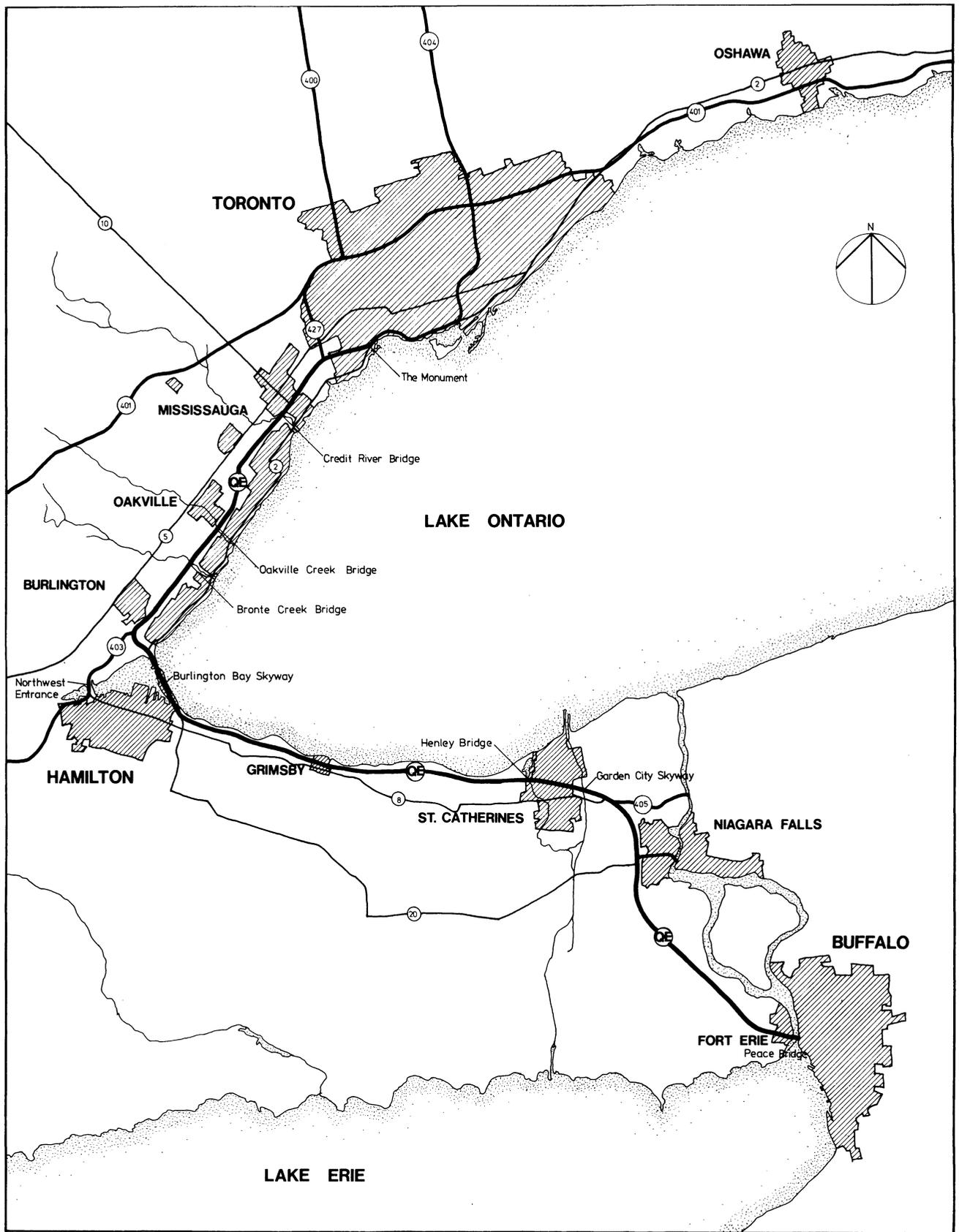
**FIGURE 1.** A new signpost erected along the Queen Elizabeth Way near Bronte. At this time, double lighting fixtures were located within the central median.

SOURCE: Ontario Archives

widened, crowned, paved and properly drained. Two such highways had been reconstructed within the Toronto-Hamilton corridor — Highway No. 2, the first paved road built in Canada in 1910, following the alignment of the ancient Lakeshore Road, and Highway No. 5, following the route of the colonial “Dundas Highway” which had been built under Governor Simcoe in 1797. By the mid-1920s, however, both of these were severely congested due to the increase in automobile ownership which accompanied the rapid growth of Toronto, Hamilton and the numerous small towns which lined their routes.

The concept of a new highway, to be located between these two (Map 1), in order to relieve the pressure on both, was first advanced by the Toronto-Hamilton Highway Com-

mission in 1916. Construction, however, did not commence on the “Middle Road” until 1929 at which point it was initiated as a labour relief programme during the Depression. Like its predecessors, this new road was initially redesignated as a four-lane Provincial highway following the alignment of two existing rural roads, the rights-of-way of which were to be widened from 66 to 86 feet (20 to 26 metres). By 1934 the Middle Road had been graded from the western edge of Toronto to Port Credit, where a new bridge was under construction crossing the Credit River. However, with the election that year of a new Liberal Provincial government led by Premier Mitch Hepburn, and his subsequent appointment of T.B. McQuesten as Minister of Highways, the original concept for the Middle Road was to be dramatically elaborated.



**MAP 1.** Map showing the location of the Queen Elizabeth Way within the Toronto-Hamilton-Buffalo region, which is known as the "Golden Horseshoe."

SOURCE: John van Nostrand

Thomas B. McQuesten had already had considerable involvement in the realization of two major roadworks. As a member and subsequent Chairman of the Niagara Parks Commission, which had been formed following the completion of the International Peace Bridge in 1927, he had actively supported the proposal for a Niagara Parkway which would link this bridge, located at Fort Erie/Buffalo, with the Falls View Bridge at Niagara Falls. The planning and design of this pleasure road had been greatly influenced by Frederick Law Olmsted's similar works, built in the 1890s, across the Niagara River at Buffalo. Olmsted had introduced the "park-road" or "parkway" to North America as a means of linking his inner city parks with the new garden suburbs. In 1882 he wrote that:

a park road is pleasant by reason of that which adjoins it, or is open to contemplation from it, *not because it favours speed*. Mainly the value of a park depends on its disposition and the quality of its woods, and the relation of its woods to other natural features; ledges, boulders, declivities, swells, dimples, and to qualities of surface, as verdure and tuftiness.<sup>1</sup>

Olmsted, however, failed to anticipate the full impact of the car.

By 1930, the date at which McQuesten became involved in his second major roadwork — the design and construction of a new North-West Entrance to Hamilton, his hometown — efficiency of automobile movement had assumed equal, if not greater, importance with (than) the condition of the surrounding landscape. Unlike the Niagara Parkway which was to be developed primarily for the purposes of recreation, the Hamilton project was based around the completion of a new four-lane truck road and, in particular, the erection of a high-level bridge over the Desjardins Canal which would provide more efficient access to the central city. McQuesten, however, envisaged that such a road, designed primarily for improved traffic flow, could still serve as a parkway — a positive public space. Consequently, he commissioned John Lyle, architect, and Carl Borgstrom and Humphrey Carver, landscape architects and town planners, to work on this project in close association with Proctor and Redfern, highway and bridge engineers.

Unlike the earlier parkways, the entrance road to Hamilton was designed to achieve efficiency of automobile movement and, consequently, it followed as straight an alignment as possible. Under Borgstrom's direction, however, the pavement was widened on both sides to create a series of lay-byes. These in turn were located at the foci of a complementary series of carefully defined vistas of Hamilton Bay, to the north, and Coote's Paradise, to the south. In the parkway tradition, the lay-byes were linked with each other, and with the sidewalks crossing the new bridge, by a combination of footpaths, woods and open glades formed by picturesque plantings of native trees and shrubs. Finally, these

landscape works were highlighted by Borgstrom's magnificent Hamilton Rock Garden which was built on the site of an abandoned gravel pit.

Unlike Borgstrom, who aligned himself with the parkway tradition in seeking to recreate the "natural" qualities of the Ontario landscape, Lyle, in his design for the high-level bridge, introduced a distinctly man-made, or urban, motif. In doing so he consciously broke with tradition, which had previously produced bridges and underpasses which were designed in a rustic or picturesque fashion as an extension of the surrounding landscape. Lyle was an early proponent of "modern" architecture in Canada and, through his earlier buildings, which included Toronto's Union Station, he had advocated a return to classical form. These, it was considered, could not only serve to represent the grand optimism of the 1920s but also be "simply" and "honestly" rendered in such contemporary building materials as cut stone, steel and reinforced concrete. The application of these principles, previously reserved for urban building types, to the design of the bridge at Hamilton, can be seen to anticipate the role that regional infrastructures, such as the highway, were expected to fulfill in this period of reconstruction.

Lyle's design for the bridge was dominated by four, massive, neo-Egyptian stone pylons placed to create entry gates to both the bridge itself and the city (Figure 2, a and b). Each pylon was tapered in the direction of traffic flow and scored with four sets of vertical "stream-lines" — a distinctive trademark of the modern movement. These were linked by intermediary open, wrought iron guardrails which, at the base of each pylon, were terminated by low stone walls. These, in turn, supported large lamp standards, designed in the form of Egyptian funeral urns. Clearly, the bridge was intended to accommodate the anticipated grand procession of automobile traffic.

The significance of the North-West Entrance to Hamilton, completed in 1931, and its affect on McQuesten's subsequent re-evaluation of the Middle Road in 1934, cannot be underestimated. Here he had apparently managed to strike a new balance between the dual roles of the highway, both as a more efficient traffic artery and as a more useful and scenic public space. The fact that this had been accomplished within a single right-of-way effectively countered contemporary highway theorists who were arguing that, while "recreational" and "commercial" roads were both important, they should be placed in separate, parallel rights-of-way. Moreover, the working association which he had nurtured between the apparently disparate professions of engineering, architecture and landscape architecture had resulted in the introduction of an unprecedented combination of pastoral and urban elements which, when placed together, were capable of defining the emerging regional import of the highway. Over the next four years, with these achievements still fresh in his mind, McQuesten completely revised the original concept for the Middle Road and, in



**FIGURE 2.** (a) The high-level bridge at the north-west entrance to Hamilton, designed by John Lyle, Proctor and Redfern, erected in 1931.

SOURCE: Ontario Archives



**FIGURE 2.** (b) The Bronte Creek Bridge, as it appeared in 1938.

SOURCE: John van Nostrand

doing so, set down the conceptual basis of the design for the Queen Elizabeth Way — the first “superhighway” in North America.

The first major revision adopted under McQuesten was that the Middle Road should not only be completed as far as Burlington, but should also be linked with a second new highway running from Burlington to the American border. It was hoped this second road — known initially as the New Niagara Highway — would also serve to relieve congestion on existing Highways No. 8 and No. 20 which connected Hamilton and Niagara Falls through the Niagara Peninsula (Map 1). The idea of a single, high speed road which would facilitate efficient transportation between Toronto, Hamilton and New York State was strongly supported by the recently re-elected Liberal federal government under Prime Minister Mackenzie King. Since his first term in office in the early 1920s, King had sought to consolidate Canada’s alliance with the United States, across what he and President Roosevelt had proudly declared to be the longest undefended border in the world. From a provincial standpoint, automobile ownership in Ontario had risen from 4,230 in 1910 to 470,000 in 1934, and the majority of these vehicles were located in the Toronto-Niagara region. Traffic moving into this region from the United States had also

increased dramatically, particularly during the summer months, when more and more Americans were vacationing in the northern part of the province. By 1934, the tourist industry constituted an important segment of the provincial economy. Together with the federal government, Ontario was hoping that the Niagara Highway would also attract new industries from south of the border.

Grading of the Niagara Highway commenced in 1937, while the Middle Road was still under construction. The first major stretch of what by then had been renamed the “Queen Elizabeth Way,” running from just west of Toronto to St. Catharines, was officially opened in 1939. An additional section, the three mile entrance into Toronto, was opened in 1942. However, due to wartime delays, the final section, from St. Catharines through to Fort Erie was not completed until 1949.

The second set of revisions adopted under McQuesten was concerned with the emerging concept of “traffic engineering.” The primary objective of these new standards was improved efficiency and automobile transportation safety, which, in turn, implied maintaining a continuous flow of traffic. To this end, the first new engineering standard adopted by the Department was that opposing lanes on the



FIGURE 3. (a) The Middle Road before 1930.

SOURCE: Ontario Archives



**FIGURE 3.** (b) The Middle Road after it was widened in 1939 to form the Queen Elizabeth Way.

SOURCE: Ontario Archives

Middle Road/Niagara Highway would be divided. McQuesten introduced this new standard as giving rise “to a new type of highway, which not only gives a means of rapid transit over long distances but provides a degree of safety not possible in any other type of highway heretofore developed.”<sup>2</sup> In fact, this principle had already been adopted on a number of contemporary American parkways but it had never been applied over so great a distance (i.e., 90 miles or 144 kilometres). As a result, the previous new right-of-way was widened where possible, from 86 feet (26 metres) to a maximum of 132 feet (40 metres). This permitted the construction of two two-lane pavements (each 20 feet wide), a central median (varying from 3 to 30 feet wide) and two adjacent verges (each 30 feet wide) to accommodate gravel shoulders, drainage ditches and landscaping (Figure 3).

The second, complementary standard introduced by the Department was variously described as “restricted” or “controlled access.” This gave rise to two design principles: one, “that by concentrating traffic at a relatively few intersections the Department would be in a better position to concentrate its time and money (on these) . . . and they could be economically improved by some higher form of design”<sup>3</sup>; and, two, that every effort should be made to restrict direct

access to the highway from abutting private properties. As a result of the adoption of these principles, two important “higher forms of design” were introduced for the first time in Canada.

The first of these was the “cloverleaf interchange” which consisted of a grade-separated underpass and four circular access ramps, arranged to permit an uninterrupted flow of traffic. The first cloverleaf (Figure 4) was built at the intersection of the Middle Road and Highway No. 10 (Huronario Street) in 1937, and two variations were subsequently completed at Burlington (“a partial cloverleaf”) and Stoney Creek (an at-grade “traffic circle”). The second was the “fully-controlled access” portion which was built at the entrance to Toronto. From the outset of construction the Department sought to control or limit private access to the highway by a procedure of granting licenses. This proved to be difficult to administer in light of the fact that it called for a complementary and contestable restriction of private rights. Particular problems were experienced on those portions of the highway which followed the alignment of a pre-existing road, along which people already had developed their homes or businesses. Consequently, the subsequent Toronto portion was redesigned in accordance with “freeway” principles,

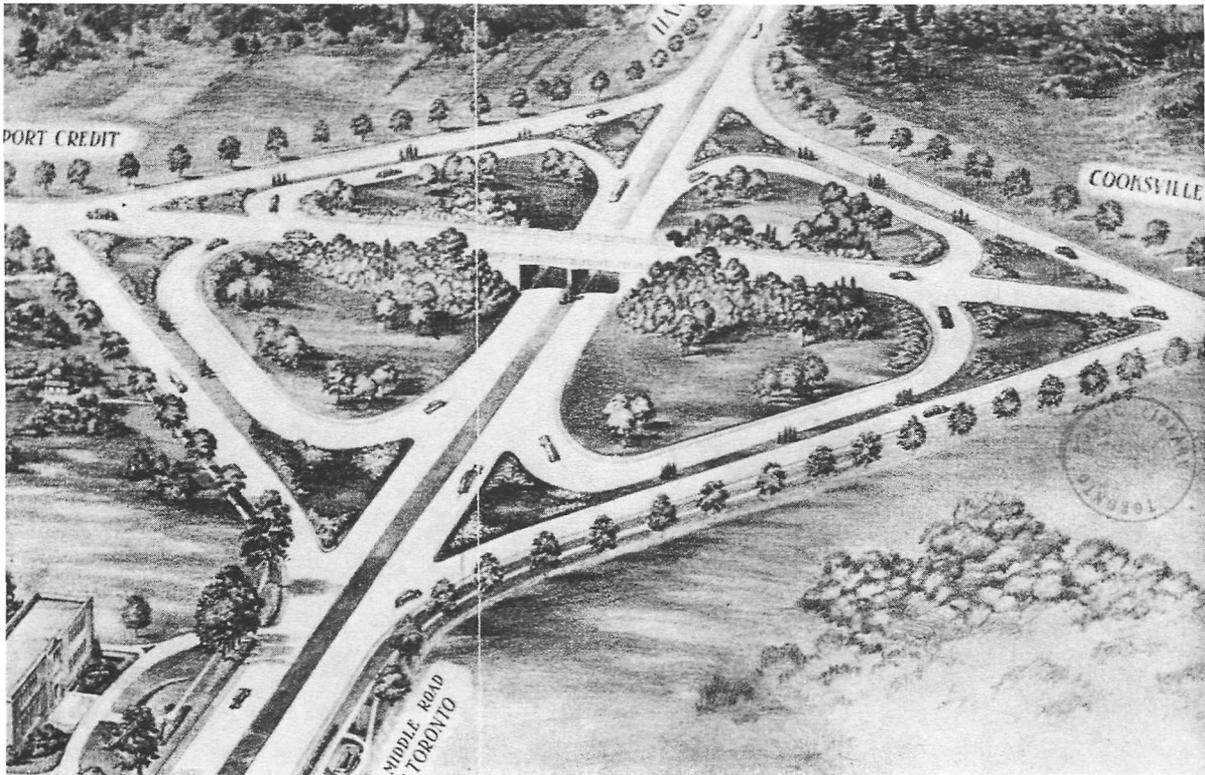


FIGURE 4. (a) Sketch for a cloverleaf at the intersection of the Middle Road and Hurontario Street, the first of its kind in Canada.

SOURCE: Toronto Public Library

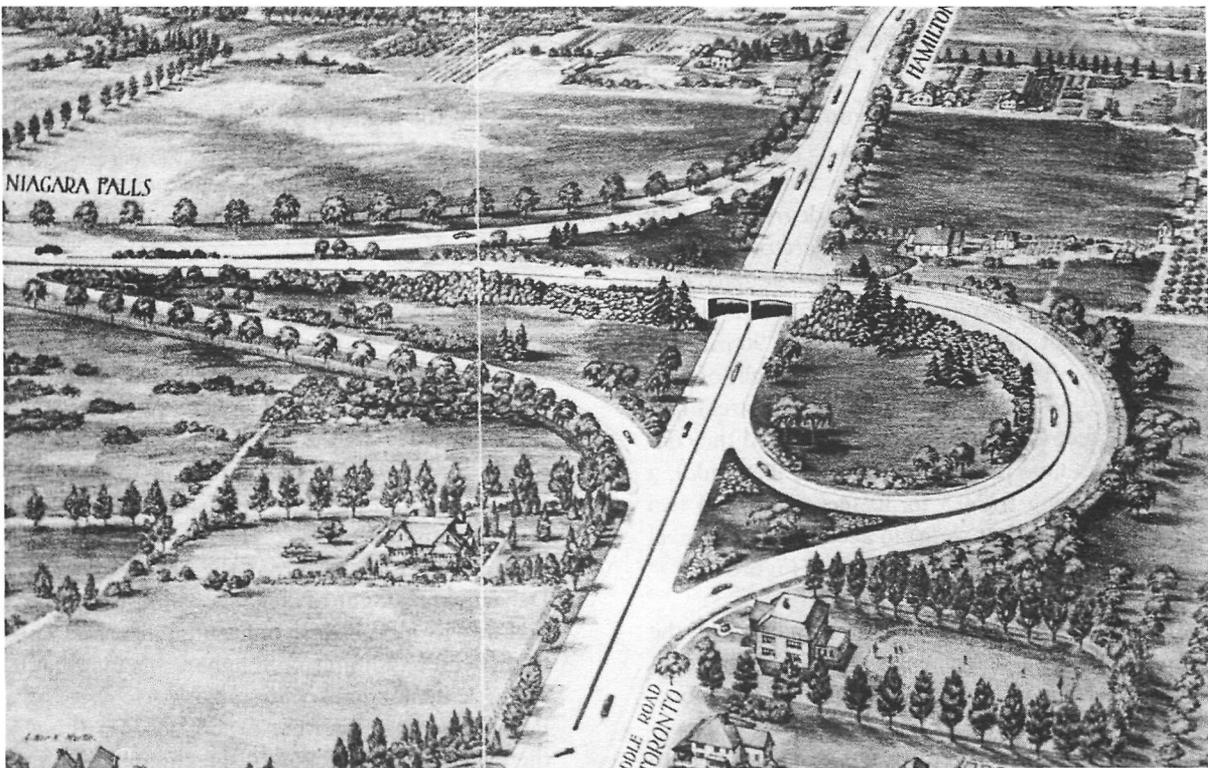


FIGURE 4. (b) A partial-cloverleaf at Burlington.

SOURCE: Toronto Public Library

meaning that all the major intersections were grade separated and entrances even under licence were not permitted.

Both the overall cost of land purchase and the implementation of the above revisions were generally facilitated by the fact that the Middle Road was located at some distance from most existing built-up areas. Furthermore, this permitted the Department to concentrate its initial efforts at controlling public access at those intersections where major sideroads linked the new highway with existing settlements. Given the early problems of private access, however, the Niagara Highway was also aligned away from existing roads. At Grimsby, direct contact with the town could not be avoided and the entire highway was depressed in order to maintain the continuity of three existing streets which were placed on overpasses.

As at Hamilton, in addition to introducing these new concepts of highway engineering, McQuesten placed equal emphasis on the simultaneous development of the Middle Road/Niagara Highway as a public parkway. Thus, he again commissioned a team of architects, landscape architects, artists and planners to work on the design of the highway in association with the Department's engineers. This team was to concentrate its efforts not only on the technological components of the highway — the bridges, underpasses, interchanges and lighting fixtures — but also the landscaping of the right-of-way and certain adjacent natural areas. The Hamilton project was to serve as a prototype for what in North America proved to be the first application of these principles over an entire region.

While the extent of John Lyle's involvement in the design of the highway components has yet to be determined, his previous design for the high-level bridge was clearly of considerable influence. The first components to be completed under McQuesten's direction were the three concrete and reinforced-steel bridges which carried the Middle Road over the Credit River (1934) and Oakville (1935) and Bronte (1936) Creeks (Figure 2). Each of these consisted of two main arches and eight smaller arches which supported four undivided traffic lanes and two six-foot-wide sidewalks. As at Hamilton, each bridge was flanked by two pairs of enlarged, tapered, neo-Egyptian concrete pylons, which served as gates and also terminated the intermediary open, wrought-iron, guardrails. In spite of their exaggeration, these pylons were considerably lower than those on the high-level bridge and, consequently, the characteristic stream-lines ran horizontally, not vertically. In this position, however, they not only emphasized the direction of traffic flow but echoed similar lines which were being rendered in chrome in contemporary automobile design. A similar motif was applied in the design of the intermediary pylons. Following the re-naming of the highway as the "Queen Elizabeth Way," wrought-iron lamp standards, bearing the royal ensignia "ER (Elizabeth Regina)" (Figure 7) were mounted on these, in order to extend what was the largest continuous lighting sys-

tem in the world over the valleys. Similarly designed pylons and guardrails were subsequently incorporated into the design of the first series of underpass-bridges and the neo-Egyptian motif was used up to 1959. The image projected by the repeated application of these modified, classical forms over the entire 90-mile distance was that of a great imperial road.

During the late 1930s, McQuesten returned to Borgstrom and Carver and asked them to design and lay out a planting scheme for a section of the Middle Road running from Brown's Line (Highway No. 27) to the Bronte Creek. In the intervening years Borgstrom had carried out a number of small highway improvements for the Department in the form of plantations of pine and spruce which were placed at a number of small triangles of land which had been created by the realignment of some of the earlier Provincial highways. As at Hamilton, these had been conceived as evocations of the primeval Ontario landscape and this approach was subsequently extended to the Middle Road. Carver has since written that

The route of this new freeway was through an area that had already lost its original landscape character and our planting was intended to restore the impression that here one was passing through orchard land, now through a strand of mixed woodlot, and there along the route of an old (colonial) concession road with hedges and tall elms on the fence-line.<sup>4</sup>

He has since summarized the overall concept for the scheme as being

to disguise and conceal the rigidity of the engineering and to simulate the Ontario landscape.<sup>5</sup>

The landscape design which was realized on this first portion of the highway was composed of a combination of existing and new plant materials. As many as possible of the original avenues of elms and maples, which had lined the pre-existing colonial roads and fields, were retained. In turn, these were offset by a series of native trees and shrubs brought from Lorne Park, which were placed along the median and verges, and at the centre of the cloverleaves (Figure 5). The overriding principle of the new schema, as described by Carver, was

to place poplars at the high points, pine woods where the ridges and hills opened up, and flowering ornamental trees in enclosed spaces.<sup>6</sup>

In effect, the existing rural landscape of the region, represented by the rectangular pattern of trees and hedgerows which had been planted in colonial times, was being replaced, symbolically, by a new highway landscape created in the image of the wilderness — a wilderness which, in the first instance, had been annihilated to make way for rural colonization.

Borgstrom and Carver's work on the Middle Road was reinforced over the next decade by extensive additional plantings which were carried out along the entire length of the highway. During this same period, the Department introduced a series of road-side parks. Some of these, such as the Jordan Park at vineland, which also provided access to a beach on Lake Ontario, were quite elaborate. Generally, however, the potential of the corridor from a recreational point-of-view, was never as fully developed as it had been at Hamilton.

The Middle Road/Niagara Highway was officially open from just west of Toronto to St. Catharines by King George VI and Queen Elizabeth (the current Queen Mother) on June 7, 1939. At the same time it was renamed the "Queen Elizabeth Way." The use of the word 'way' was itself unusual and served to reinforce McQuesten's concept that this road was neither just a highway nor completely a parkway. This also placed it in the company of such great imperial thoroughfares as the Pharaoh's Way and the Appian Way and gave rise to a series of final works which sought to enshrine this role.

The first of these was the Henley Bridge (Figure 6) across the Welland River, to commemorate the royal opening at St. Catharines. Although similar to the earlier bridges, here the opposing roadways were split and carried on separate quadruple-arch structures. The symbolism of the divided highway was further heightened by the placement of a sculpted, stone Egyptian barge on the 'median' of the bridge, breasting oncoming waves. In turn, this ship carried the crests of the nine provinces, symbolizing the national role of the Queen Elizabeth Way in establishing the first link of a much-discussed "Trans-Canada Highway."

In 1942, a second monument (Figure 7) commemorating the royal visit, was dedicated by McQuesten when he opened the entrance to Toronto. Sculpted by Francis Loring, this took the form of a 40-foot high triumphal column, supporting a replica of the Crown, and at its base guarded by an enormous lion. This column was also placed on the median of the highway, at a small ridge which afforded the driver a first panoramic view of the city.



**FIGURE 5.** Landscaping at the QEW/Hurontario cloverleaf, as it appeared in 1942.

SOURCE: Ontario Archives



**FIGURE 6.** The Henley Bridge (1939) sculpted in the form of an Egyptian barge, bedecked with the nine provincial emblems, and symbolizing the QEW's role in the envisaged Trans-Canada Highway.

SOURCE: Ontario Archives

Two final structures — the customs houses and toll plazas at Niagara Falls and Fort Erie — were completed in 1942 and 1954 respectively. Both buildings were designed in the style of the highway components completing its transformation, initiated by Lyle, from building to road and back to building. Unlike the highway, both were also designed in association with elaborate formal gardens and both were as carefully designed for pedestrian use as the highway had been for vehicular movement.

Following its official opening, the Queen Elizabeth Way — the “Queen E” or “QEW” as it came to be more affectionately known — proved immensely popular with daily drivers and tourists alike. Motorists were known to travel hundreds of miles out of their way to enjoy a Sunday’s outing along it (Figure 8). Local newspapers raved over the “magnificent new thoroughfare,” naturally divided by generous plantings, made where no trees had existed before,” and having “curves so gradual as to be imperceptible.”<sup>77</sup>

McQuesten’s vision of combining the construction of an effective engineering project with the creation of a scenic and useful landscape, had apparently met with considerable success.

### **Transformations**

Since its official opening and subsequent completion to Fort Erie in 1947, the Queen Elizabeth Way has been in a constant state of redesign and reconstruction. Given that highway construction programmes usually comprise a myriad of separate and overlapping contracts, covering an extensive period, it is difficult to describe accurately the completed state of the QEW at any particular time during the past 34 years. It is, however, possible to identify three general stages of reconstruction, each of which has been heralded by the introduction of a new or revised set of engineering standards. In all cases, the introduction of these has been directed towards improving the efficiency and safety of automobile movement.



**FIGURE 7.** “The Monument,” sculpted by Francis Loring, and originally located at the western entrance to Toronto. Note also the lamp standards.

SOURCE: Ontario Archives



**FIGURE 8.** Picnicing along the Queen Elizabeth Way at Jordan Harbour; 1954.

SOURCE: Ontario Archives

Consequently, each of these stages has also included the implementation of a significant new series of engineering components, designed to replace or supplement (some original components still exist) those already in place. Given the balance which was struck, in the original design, between the engineering function of the highway and its capacity to serve as a positive public space, these new standards and components have had the effect of substantially altering the form of the original right-of-way and, in particular the composition of the landscape located therein. In addition, they have also had a dramatic effect on the regional role of the highway, as demonstrated by the rapid urbanization of most of the corridor-region, and the consequent development of those lands lying directly adjacent to the highway. The fact that the entire region through which it passes is now perceived as a single conurbation — known as “The Golden Horseshoe” — can largely be attributed to the presence of the QEW.

Thus, the original relationship of the engineering, architectural and landscape elements has undergone a series of transformations. During each stage new relationships have

been formed between these elements, and between the highway and the region which surrounds it. In this section, it is intended to examine these changing relationships in an effort to not only clarify the contemporary idea of the role of the highway but also give some indication of its significance for future highway projects. Before doing so, however, from a strictly historical point of view, it is important to realize that each stage has overlapped with the next in both time and space. It has often been the case that improvements initiated during one stage were still under construction while, 70 miles away, those of the next were already being erected to replace or supplement these. Generally speaking, most of the works discussed below were initiated within the Toronto-Hamilton corridor.

The first stage of reconstruction lasted from 1948 to roughly 1957. At the outset of this stage, the Department had cause for the first time, to worry about the increase in traffic accidents. In 1952, this highway, which ten years earlier had been so highly praised, was described by a Hamilton magistrate as “two dangerous snakes . . . a deathtrap.”<sup>8</sup>

Two major sources of accidents were identified — the at-grade intersections at major sideroads, which were controlled by stoplights, and the host of other minor intersections with private laneways and drives, which the Department had been unable to close by means of regulation. A 1952 survey showed, for example, that 500,000 motorists travelling across the QEW at a particular intersection in Oakville ignored the stoplight that year. At the same time, the Department faced constant litigation from adjacent property owners who sought to maintain their right of direct access. Many of these not only continued to use their driveways but had also established a series of roadside concessions where they sold fruit, vegetables and flowers.

These predicaments introduced two complementary problems which were to recur again and again in the ensuing years. The first of these stemmed from the Department's inability to implement a consistent design throughout the system as a whole. For example, while it ultimately sought to promote continuous traffic flow, and had at certain points constructed cloverleaves to facilitate this, it expected drivers to come to a complete halt at stoplights a mile further along. Under these, and subsequently similar circumstances, drivers consistently opted for the most convenient solution. They began to ignore the stoplights to the extent that it was soon as dangerous to stop as not. The second arose from the difference which surfaced between the Department's perception of the engineering function of the highway and the public's traditional understanding of the road as a public space. For centuries, roads had served both as a means of transportation and access to one's private property. Consequently, they also served as a forum for commerce and public communication. The Department's aspiration that the public would abandon this common understanding for the single purpose of improving automobile movement proved to be short-sighted.

In 1952 the Department initiated a twin programme aimed at resolving these problems. First it began to replace the most dangerous at-grade intersections with grade-separated underpasses and/or interchanges. Seventeen crossroads were eliminated by 1957. Second, it introduced new "frontage roads" in conjunction with several of the key interchanges. The purpose of these was to provide access to adjacent properties while limiting direct access to the main highway. They were placed parallel to the existing lanes and carried local traffic to an interchange, from which it gained direct access to the highway. To provide space for the new service roads, the original express lanes were realigned at the centre of the right-of-way and the existing medians, verges and complementary trees were removed. Also, the new underpasses were redesigned to span both the express and service lanes.

While, on the one hand, the new service roads and interchanges solved certain engineering problems, on the other,

they served to establish a more useful framework for subsequent urban development. By the mid-1950s much of the land along this first series of service roads had been re-subdivided and occupied by single family homes which faced the highway (Figure 9). The service roads also provided primary access to lands lying further away from the highway and were soon incorporated into a local road pattern which serviced these. Moreover, the interchanges, which lay at the centre of these new communities, served by both the local roads and the main highway, began to attract major new community facilities.

Canada's first shopping centre — the Dixie Plaza (Figure 9) — was built during this period at the Dixie Road interchange. In addition to its functional relationship with the highway and surrounding community, this was one of the first private buildings to acknowledge the highway as a significant public space. The main building was L-shaped and set back from the interchange so as to define an extensive parking plaza. Moreover, it was sited to face one of the cloverleaves which constituted a kind of garden-forecourt of the plaza, the periphery of which was also subsequently landscaped. The overall effect was of a super-cornerstore located on a super-corner.

This formal architectural relationship which began to develop between the highway and larger-scale buildings erected along it, is further illustrated by the Ford Motor Plant, built during this same period at Oakville. Here, the main office building faced the highway and an elaborate front garden was designed to extend the highway landscape to the main entrance which was enlarged in order to be clearly seen by passing drivers. As opposed to the Dixie Plaza, which was built after an interchange had been completed, the Ford development necessitated the reconstruction of two feeder arteries and the development of two adjacent grade-separated interchanges to serve its employees and clients.

The roadside development which accompanied the first stage of reconstruction posed a further, somewhat ironical, problem for the Department's engineers. A.R. Dick, Senior Solicitor, summarized this as follows:

At the present time, it is almost axiomatic that a modern highway will develop the countryside through which it passes, and yet this same development, if uncontrolled, will ultimately result in the elimination of the highway as a traffic artery capable of performing the function for which it was primarily constituted.<sup>9</sup>

In fact, by 1958, traffic from the adjacent new developments had increased to the extent that even the Deputy Minister was forced to admit that the QEW had again become a deathtrap. During the period 1952-58, 7,000 accidents were reported and 170 persons killed. One Hamilton motorist wrote:



FIGURE 9. (a) The Queen Elizabeth Way, west of Dixie Road, as seen from the air in 1953.

SOURCE: *Boomtown: Metropolitan Toronto/A Photographic Record of Two Decades of Growth*, D.B. Kirkup (publisher), Toronto, 1967



**FIGURE 9.** (b) The same area in 1969. The Dixie (right) and Applewood (left) Plazas were built during this period to the south and north of the highway respectively. A pedestrian overpass was also erected immediately west of Applewood Plaza. Note that, at this time, houses were built facing the road.

**SOURCE:** *Boomtown: Metropolitan Toronto/A Photographic Record of Two Decades of Growth*, D.B. Kirkup (publisher), Toronto, 1967

A drive to Toronto and back is the modern equivalent of high adventure and derring-do, like jousting or yachting on the Spanish Main.<sup>10</sup>

The second stage of reconstruction was launched with the announcement that the Department planned to widen the entire Toronto-Hamilton portion to six lanes. In conjunction with this it also planned to construct service roads and grade-separated interchanges throughout, in an effort to attain fully-controlled access — in other words, “freeway conditions.” Construction of these improvements lasted up until 1971.

Several new engineering standards and components were introduced during this period. First, all of the existing stop-lights were removed and replaced with grade separated interchanges. At Sheridan, a new “rotary” interchange was introduced which combined the previous four-leaf design with an inner traffic circle. Several major new interchanges were also built with connecting highways. Second, the widening to six lanes and the construction of service roads required the removal of all the medians and a substantial reduction

in the size of the adjacent verges. With these went the original light standards and most of Borgstrom and Carver’s plantings. In support of this one civil servant commented that

The shrubs also produce night-time ghosts — phantom pedestrians made by shadows sent across the road from oncoming headlights.<sup>11</sup>

The three older bridges at Port Credit, Oakville and Bronte were also widened. Third, the Department introduced new laws to control the form and location of roadside development. The first of these reads as follows:

No person may place an advertising device or pole line within one quarter of a mile, or a shopping centre, stadium or other facility generating traffic within one half of a mile of a controlled access highway.<sup>12</sup>

Finally, the Department built the first of two spectacular “skyways,” the largest span bridge in Canada, crossing the Hamilton Ship Canal at Burlington Beach, a traditional bottleneck (Figure 10).



**FIGURE 10.** The Burlington Bay Skyway, as seen from Aldershot Beach, 1960.

SOURCE: Ontario Archives

A significant new perception of the highway emerged during this period. With the elimination of the original landscape and its replacement by four additional lanes of traffic, its role as a public space began to decline. From the Department's point of view, the onus for the appearance of the highway was shifted to adjacent municipalities, and it claimed that

their (building) set-back distance should provide some protection for the attractive appearance of the lands adjacent to the highway.<sup>13</sup>

In the meantime, the new service roads had severed direct access to the roadside parks and portions of these which remained were sold off to private developers. On the other hand, the planning departments of these local municipalities, seeing eight lanes of traffic, decided that the QEW had officially become unpleasant. Consequently further residential development was restricted along the service roads and these lands were set aside for "more appropriate" industrial and commercial buildings.

This altered perception affected highway and building design. While, until this point most of the new highway components had incorporated the original classical motif, the new bridges did not. At Burlington, the Department's design guidelines called for a "skillful blending of utilitarian requirements with attractiveness of appearance and without ostentation."<sup>14</sup> The key design criteria were subsequently identified to include the design of the central truss, the colour of the exposed steelwork and the space between the bridge and the ground. In other words, given the contemporary perception of the highway as wholly utilitarian, the content of its new image was considered to rest almost solely with the existential beauty of the engineering alone. Similar principles were extended to the design of the new series of open-span bridges and underpasses.

Industrial buildings in the first generation of the new roadside were, typically, located at the front of their lots, facing directly onto the highway. The facades of many of these, such as the G.H. Woods Plant at Toronto or the Canadian General Electric Building at Oakville, were exaggerated in order to emphasize their street-like relationship with the highway. At Christmastime, these were decorated with elaborate, electrified displays which further enhanced this image. Later buildings, however, were set well back from the road, at the rear of extensive front gardens which had the effect of replacing the landscape which, by then, had been eliminated from within the right-of-way itself. A good example of this type is the Ontario Research Foundation at Sheridan Park (Figure 11). Here, the main building had a virtually featureless facade and was placed at the rear of an industrial "park." A grand suburban boulevard enters off the service road through an enormous gate which addresses the high-

way. The building is seen, by the driver, as an isolated pavilion within the park.

By 1971, traffic had again increased to such an extent that a third stage of reconstruction was initiated. This stage, which is still in progress, began with widening the Toronto portion from six to eight and, in some places, ten lanes, allowing for a six-lane central freeway and two two-lane collector roads. This necessitated the redesign of several interchanges to redirect traffic to the collector lanes which now merge at selected locations with the express lanes. In turn the pre-existing service roads were either eliminated or realigned to link with arterial roads located outside the highway corridor. A number of buildings suddenly had the principal access from the rear rather than the front. These widenings necessitated the reconstruction of the Highway No. 427 intersection and, as a result, the first "tri-level" interchange was introduced to the system. An additional tri-level has since been built at Niagara Falls.

These recent improvements have placed considerable pressure on the rest of the corridor. Ironically, traffic is already so congested during rush hour west of Toronto that stoplights have been introduced on a number of entry ramps to optimize the flow of traffic on the freeway. Already, a number of new interchanges are under construction at entirely new locations where the spacing of existing access points is insufficient to cope with the increase in traffic. It remains to be seen what will happen next.

Ironically, many of the new interchanges occupy so much land that large areas have been left empty and a new wave of landscape planting is currently underway within the right-of-way. This is being offset, however, by the introduction of a much more consequential landscape element — on lands bordering the highway. Typically this takes the form of a massive linear earth berm, 15 to 20 feet high, which is intended to isolate adjacent development from the highway. Where insufficient space exists for these, they are replaced by eight-foot high concrete walls for the same purpose. The berms are often planted with trees and shrubs and the walls "hidden" by rows of pine trees. The highway is now perceived to be so entirely technological — not to mention noisy and dirty — as to require its psychological and visual removal from daily public life. In other words, landscape elements which were once used to enhance it as a positive public space are currently being used to hide it.

In turn, these berms are having a considerable affect on adjacent urban development. For example, it is once again possible to build single family homes off the service roads, provided that they are separated from it by a berm and face the opposite direction. Such developments must also be served by internal roads which do not have direct access to the service roads. This form of development reinforces the highway as a negative public space.



**FIGURE 11.** View of Sheridan Industrial Park, 1983, from the South Service Road, showing the entry gate and ceremonial drives.

SOURCE: John van Nostrand

The design of contemporary buildings along the highway constitutes a further extension of this new perception. Unlike the Dixie Plaza, the recent Sherway Mall, built at the Highway No. 427 interchange and the new "Oakville Place," completely reject the highway apart from the utilitarian access it provides. In fact, both use it to reinforce the sought after sense of alienation created in their exterior surroundings. In its stead both offer enclosed interior malls, lavishly planted with *figus benjamina*, as a new, alternative, "public" space.

### Future Potentials

During the relatively short period of forty years, the Ministry of Transportation's perception of the role of the Queen Elizabeth Way has altered significantly. While McQueen originally sought to combine the improvement of traffic movement with the creation of a picturesque, regional public space, the Ministry's attention since 1952, has focussed almost exclusively on the highway's utilitarian function. In the process, not only has its original form been virtually annihilated, but its potential to serve as a useful public space has been undermined — to the extent that the QEW is now viewed as some sort of technological monster which is best eliminated from everyday urban life (Figure 12).

Ironically, this *simplification* of the perceived role of the highway has occurred despite the fact that, if anything, the observable impact of the QEW on the emerging pattern of urbanization within the corridor during this period, has called for an *expansion* of the original concept. For it soon became clear that the highway was neither simply an agent of traffic efficiency nor a picturesque landscape, but, a major public element giving shape to, and eventually forming an integral part of adjacent urban communities.

The wedge which, in the 1950s, began to be driven between the engineering and social roles of the highway was more apparent in the design of two new freeways which were built immediately on the heels of the Queen Elizabeth Way. The improvements which were ascribed to Highways No. 400 and 401 (the latter the MacDonald-Cartier Freeway) — improvements ostensibly drawn from the lessons on the QEW experience — paid little attention to their role as major public spaces. While on the one hand, the Ministry acknowledged that the QEW "had influenced the location of more factories, warehouses, office buildings, split levels, high rises, schools, churches, service stations, motels and shopping centres than anyone had dared dream of" on the other, it viewed this phenomenon as a *problem* requiring more sophisticated controls to ensure its elimination, rather than an *opportunity* to expand and improve on the highway's role as a major determinant of urban form.<sup>15</sup> As a result, the Ministry set forth designs and standards for these two new

freeways which were essentially anti-urban. For example, the two new rights-of-way were widened to 300 feet, not to provide more space for a more-permanent landscape, but rather to allow for future widenings when and if they should be required. Also, fully-controlled access was introduced along their entire lengths from the outset, facilitated by their even further removal from existing settlements. Above all, the Ministry sought to eliminate what it characterized as "haphazard" roadside development by regulating the type and locations of all buildings and structures to be built adjacent to it. In other words, rather than face the planning problems which it had confronted along the QEW, the Ministry chose to ignore these, delighting, in their stead, in the engineering function of the highway alone — "the clean lines, dramatic simplicity and sense of airiness featured at the major interchange complexes."<sup>16</sup> Having effectively cut Highway No. 401 off from all contact with the adjacent city, one official went so far as to describe it as "Metro Toronto's Great White Way, minus flashing signs and neon-lit billboards,"<sup>17</sup> the symbolic accoutrements of everyday urban public space.

By the late 1960s, Geography Professor E.G. Pleva could describe Highway No. 401 as:

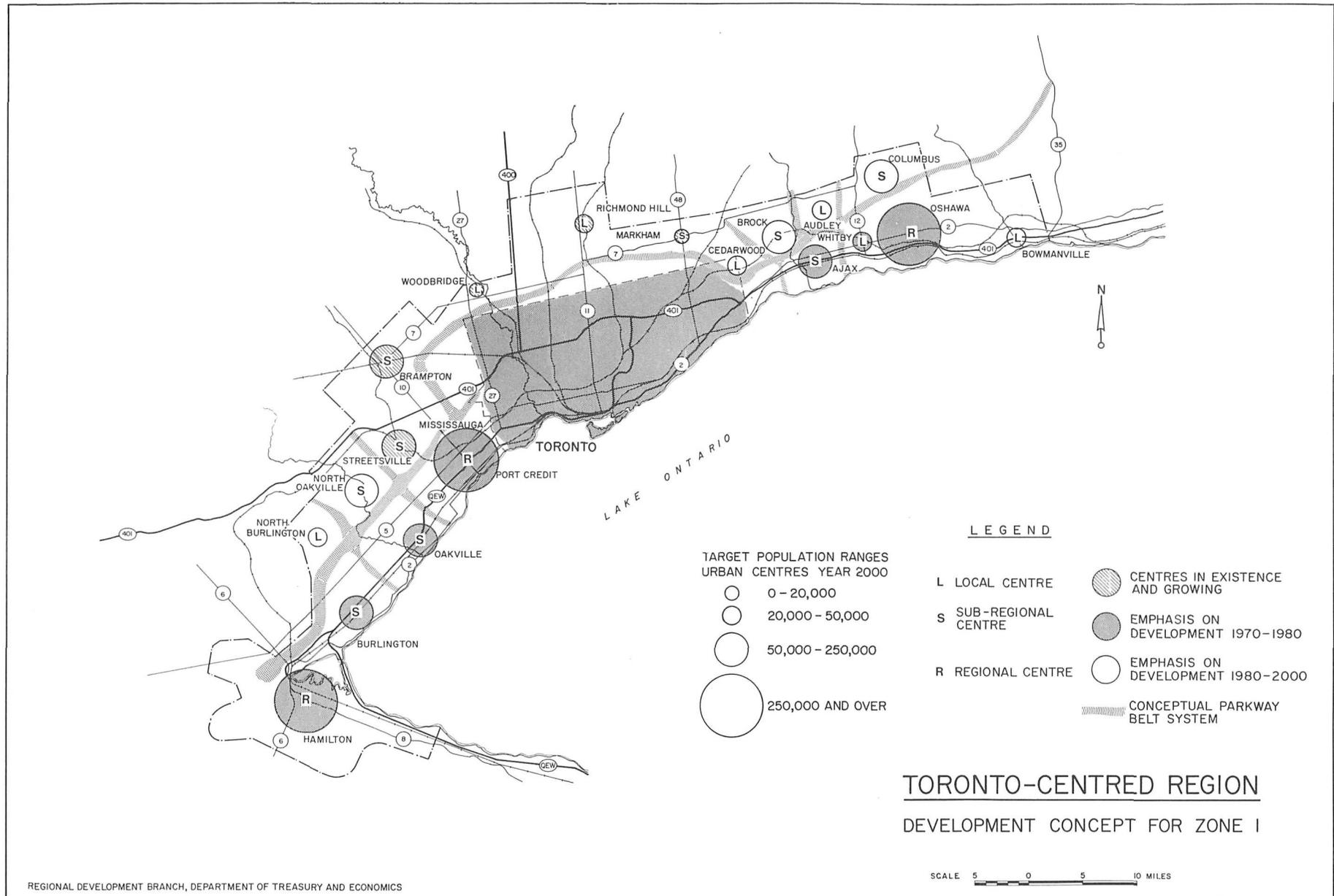
... The most important single development changing the social and economic pattern of Ontario. It is still transforming the Province's economy and the social, work and spending habits of its people.<sup>18</sup>

While the Ministry could be justly proud of this achievement, despite its efforts to the contrary, it was once again engaged in a catch-up game with urban expansion. This was particularly true where it passed near pre-existing towns and cities, such as Kitchener-Waterloo, Guelph, Kingston or Brockville. Soon these towns were all growing towards it, necessitating additional service roads which, in turn, spawned ad-hoc industrial and commercial roadside growth. Clearly, two key lessons from the QEW were still being ignored: first, the highway's influence on the form of adjacent urbanization and, second, its potential, once urbanized, to serve as both a traffic artery and a useful urban public space. Both of these concerns were resurrected shortly thereafter in the Metropolitan Toronto and Region Transportation Study (MTARTS) report, which formed the basis of the subsequent "Toronto Centered Region Plan." Recognizing the linear form of urban development which accompanied highway projects, this Plan not only sought to identify and plan for new centres of urban growth but also to designate a continuous network of public space called the "Parkway Belt." According to this concept, as it was first advanced by Humphrey Carver, new highways were to be grouped with other similar utilities — hydro lines, gas lines, trunk water and sewage mains, rail-lines, and so forth in common rights-of-way. In turn these were to be surrounded by a mile-wide swath of parkland and reforestation, in order to isolate them from anticipated new urban developments (Map 2).



**FIGURE 12.** Erecting “noise-barriers” along the Queen Elizabeth Way, west of Dixie Road, 1983.

SOURCE: John van Nostrand



**MAP 2.** Toronto-Centred Region: Development Concept for Zone I, showing the relative locations of the Queen Elizabeth Way and the proposed Parkway Belt System.

SOURCE: *Design For Development: The Toronto-Centred Region*, Government of Ontario, May, 1970

While the original Parkway Belt scheme recognized the dual potential of the anticipated new highways, it was quite unworkable. The costs of purchasing such extensive swaths of land was prohibitive, particularly given that the proposed use of the majority of these was simply to hide the engineering works. Thus the original rights-of-way were reduced to between 400 and 1000 feet. This meant, however, that very little room was left for anything except the utilities and the highway's potential to jointly serve as useful public spaces was, once more, virtually eliminated. Moreover, there was little evidence to suggest that people would be prepared to run, cross-country ski or picnic in such "buffer-zones" located, as they would be, at some distance from their homes and local parks.

The realities of current economic and social conditions, and the experience of the Queen Elizabeth Way, suggest that further revisions are in order regarding the construction and reconstruction of existing and new highways. Given current land values, and the competition for space within the Toronto region, the efficiency and safety of highway movement will continue to take precedence. At the same time, however, highways are being supplemented by more extensive networks of public transportation including trains, buses and light rail transit. In either case, were the rights-of-way for these to be approached as positive and complementary public spaces, the use of this land and the effectiveness of the transportation system, road or otherwise, could be effectively multiplied. That is, were these lands to be designed as intricate parts of the larger urban fabric, instead of buffer zones, the parks and other recreation grounds developed within them would be more readily accessible and more attractive to the public. Such a concept would require some foresight on the part of the Ministry, to recognize that certain sections of these transportation and utility corridors would eventually lie within the boundaries of future urban communities. Consequently, appropriate building types would need to be designed along the edges of the rights-of-way, which not only concentrated vehicular or pedestrian

traffic, but also served to reinforce these as major public spaces.

The further exploration of this concept will necessitate the development of a more effective working relationship between civil engineers, planners, architects and landscape architects. Above all it will require a clear understanding of problems such as are posed by the Queen Elizabeth Way, and the vision of people like Thomas McQuesten.

#### NOTES

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