PLANNING FOR TRANSPORTATION CORRIDORS IN THE CONTEXT OF REGIONAL DEVELOPMENT

by

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ABSTRACT

Throughout most of the populated areas of North America, the phenomena of urbanization continues at a rapid pace. As urban centers grow in population they are also expanding in areal extent, and as a result, are coalescing both in form and functional interrelationships. Increased mobility on behalf of the individual and the growing functional inter-dependencies of expanding metropolitan areas will result in a demand for additional urban and regional transportation facilities.

The basic problem then, which this thesis investigates is how to acquire corridors of land through rural, urbanizing, and urban regions which will accommodate these transportation facilities, while at the same time compatibly integrating the different modes with the surrounding land uses.

As a solution to this problem, it is hypothesized that in order to compatibly integrate transportation facilities with land use in the urban and regional context, the transportation corridor concept should be adopted. The concept is defined in Chapter I as a linear parcel of land, of varying width, forming a passageway to accommodate different modes of ground transportation. Included in the definition is the three-dimensional aspect of the corridor which provides for multiple development, including air rights. The overriding functions to be performed by the transportation corridor are as a channel for the interregional movement of goods and people and as a potential instrument in the hands of planners to influence the form of future regional development. The Northeast Corridor from Boston to Washington, and Mississauga, the linear urban

area along the northwest end of Lake Ontario, are cited as examples of emerging population and transportation corridors in differing degrees of development.

To aid in the acquisition of land for corridors and to assist in the compatible integration of transportation facilities with the surrounding land use, it is proposed that a comprehensive approach to the problem be undertaken by creating a design concept team. Members of this multiple-disciplinary team would represent the various social, aesthetic, economic and political aspects of land use relative to the corridor. The corridor concept involves the integration of transportation facilities with such dissimilar land uses as urban renewal, parks and recreation areas.

The methods of investigation undertaken include a review of land use regulation devices used in the United States. Devices such as highways plans, zoning, tax concessions, and subdivision control are considered as a means of regulating land use to keep land in open space for future acquisition as corridors. The investigation of a range of land acquisition techniques is also undertaken and includes the following: acquisition and resale with use restrictions, acquisition and lease with use restrictions, compensatory regulations, conservation easements, and, installment purchase with concurrent use restrictions. Chapter II concludes with a discussion of the possibilities of establishing a land bank.

Canadian expropriation powers relating to the federal, provincial and municipal levels of government are investigated in Chapter III. Municipal planning powers and the contribution they can make toward regulating and acquiring land for corridor use, is also described. Through the coordination of governmental powers at the three levels, it was found that both land acquisition and its financing, for transportation corridors, could be undertaken.

The road building and financial responsibilities of the three governmental levels are assessed, and particular attention is given to the successful financial arrangements agreed to by the federal and provincial governments under The Trans-Canada Highway Act. This Act was instrumental in providing for joint federal - provincial participation in the construction and financing of the Trans-Canada Highway which was officially completed in 1962. It is concluded from the investigation that the concept of transportation corridors, as outlined in the thesis is basically valid and therefore is capable of being developed. For the compatible integration of transportation facilities with the surrounding land uses, it is resolved that a comprehensive planning approach be undertaken by the creation of a multiple-disciplinary team. This team would attempt to resolve a variety of conflicts which may arise.

Through the coordination of constitutional powers it was found that a method of acquiring land for corridors could be developed. However, due to the successful experience of the Trans-Canada Highway Act, new legislation is proposed as a superior alternative to the intergovernmental coordination of powers. It is concluded that the financial and constitutional arrangements utilized in the Trans-Canada Highway Act agreements, because they have been historically successful, provide a sound foundation upon which to base the new legislation which provides for federal financial assistance in acquiring land for transportation corridors. Complementing the legislation is the proposal to create a provincial administrative framework to coordinate the finances and the acquisition of land required for the successful development of the transportation corridor concept.

As a second alternative it is proposed that a crown corporation be created to provide financial assistance to provinces and municipalities. It is deduced that crown corporations have achieved a wide degree of

acceptance in the Canadian economy, and that the creation of another to aid financially in land acquisition programs for transportation corridors, provides a viable alternative to the proposal for new legislation.

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INTRODUCTION

Statement of the Problem

The phenomena of urbanization and population growth continue throughout North America. Coupled with these, and aided by a rising standard of living, is an increasing demand for travel both for business and for pleasure. In order to accommodate an increasingly mobile society, transportation routes to facilitate various modes must be planned to provide for the future movement of both people and goods.

The problem which will be investigated in this thesis is how to acquire corridors of land through rapidly urbanizing regions, and urbanized areas, within which transportation facilities can be constructed as dictated by demand. Concurrent to the land acquisition, effort must be made to minimize the dislocation of people and business establishments, and to reduce the disruption and destruction of natural and man-made features located within the boundaries of the proposed corridor.

Importance of the Problem

The importance of acquiring land corridors for additional transportation facilities is applicable in both the urban and the regional context. The coalescence of metropolitan areas, aided by urban sprawl, in many parts of North America, is lessening the opportunity to establish corridors without causing dislocation to the area's residents. As this urban development spreads across the landscape the costs of acquiring land increases. Alternatives must be sought to the present system of major expenditures of public funds by a single governmental department, the Highway Department, for the outright purchase of land. Increasing ownership and use of motor vehicles, notably private passenger vehicles, will

in turn increase the demand for future transportation facilities. With the spatial growth of metropolitan areas, planners can use the corridor as an implement in guiding the direction and form of urban and regional development. Such an important undertaking demands an inter-disciplinary team approach.

Purpose of the Study

The primary purpose of the study is to identify ways and means which exist, or which may be devised, to acquire land for use as transportation corridors. Included also is a description of functions to be performed by transportation corridors in the urban and regional context, as well as an identification of selected locational criteria which may be utilized in the designation of these corridors.

Importance of the Study

The approach to planning for transportation corridors, as undertaken in this thesis, has not until very recently, been considered in a comprehensive manner. In the past, transportation and land use planning were not sufficiently coordinated. Consequently, highways in urban areas for example, were not properly treated as an integral element in the structure of the city. This is evidenced by the concern expressed by various groups that transportation planners should strive to reduce the dislocation of homes and business establishments, the isolation and deterioration of neighborhoods, and the destruction of historical and conservation values. Due to a lack of coordination between disciplines related to transportation and land use planning, fragmentation of the urban and regional fabric has taken place. By adopting a comprehensive and multi-discipline approach to land use and transportation planning,

through the establishment of transportation corridors, many of the above problems can be minimized if not overcome. Finally, the importance of the study is in its demonstration of a positive approach to comprehensive land use and transportation planning on an urban and regional basis through the establishment of transportation corridors.

Scope of the Study

The scope of the study includes a definition of the concept of transportation corridors, and an identification of the functions which may be performed by them. Selected methods to be used, or considered, for the acquisition of land in urban and rural areas for future transportation corridors are also discussed. These include selected techniques utilized in the United States and Canada for the acquisition of land by expropriation and, devices for the regulation of land use such as zoning, subdivision control and community plans. The prospective usefulness of a land bank, and the multiple-use-development concept of the corridor is investigated. Selected locational criteria for corridors and the disciplines which would cooperatively plan for transportation corridors are explored. The study concludes by outlining what party or parties would be responsible for the adoption of three possible alternatives which would lead to the implementation of a land acquisition program for future transportation corridors.

The study, while recognizing their importance, will not include a discussion of the economies of land valuation with regard to acquisition or traffic engineering studies.

The study includes the following assumptions: firstly, that transportation studies when undertaken will indicate the need for additional

transportation facilities which can be accommodated in a transportation corridor and, second, that new legislation, if required, can be enacted to assist planners in establishing corridors.

Hypothesis

The need to acquire land within which transportation facilities can be constructed, will continue for some time into the future. As metropolitan areas continue to merge into linear patterns of urban growth the need will persist for additional transportation modes to move the increasing volumes of people and goods. The acquisition of land needed for future facilities is often difficult to acquire due to exorbitant land prices, development taking place on the proposed route, and possible disruption of existing land uses situated within the proposed route. The constitutional responsibility for land use planning and for the construction of roads rests with the provinces. However, neither the provinces nor the municipalities who have been delegated limited responsibility for land use planning and road construction, can afford to undertake extensive programs of land acquisition for future corridors. The hiatus in land acquisition for future transportation corridors requires that a comprehensive approach be undertaken to solve these difficulties. Therefore, this thesis proposes

> that in order to acquire land for the compatible integration of transportation facilities with the surrounding land uses in the urban and regional context, the transportation corridor concept should be developed.

As a guide to undertaking such a project, it is proposed that a multi-discipline approach to transportation corridor planning, aided by the financial participation of all three levels of government be adopted.

Definitions - for the purpose of this thesis are as follows:-

Rapid growth areas - those parts of a country which are experiencing relatively higher rates of population, areal growth and urbanization, than the respective national rates. The Lower Mainland of British Columbia with approximately one-half of the province's population is an example of this type of area.

Region - an areal unit definable for the purpose of describing particular phenomena located within that area.

Regional plan - a policy document of goals and objectives reflecting the kind and degree of development within the region to which its residents aspire.

Transportation corridor - a strip of land of varying width forming a passageway for transportation facilities used in the movement of people and goods. Other functions of the corridor include its three-dimensional use through the development of air rights and the combined use as a transportation - scenic corridor. The definition refers to that area above and below as well as the land surface.

Transportation facilities - include highways, rail lines, transit lines, pipelines, electric power and communication transmission lines. A combination of transportation facilities constitutes a transportation system.

Urban land development program - is a program synonymous with an official community plan or regional plan, but refers to an individual municipality.

CHAPTER I

THE TRANSPORTATION CORRIDOR CONCEPT

The Concept Defined

For the purpose of this thesis, the concept of a transportation corridor may be defined as a strip of land, of varying width, forming a passageway within which different modes of transportation are located. In effect, the corridor can contain a number of "individual" rights-of-way side by side, above one another, or any combination of these. Sharing the corridor could be highway, railway, and rail transit facilities, combined with power transmission lines, pipelines, sewer and water. Included, where applicable, might be inland waterways such as canals and rivers. The flexibility of the corridor provides for the accommodation of present transportation facilities as well as those proposed for the future. Transport facilities travel above, below, or at grade, depending upon the relative location of the corridor within the urban and regional context. A transportation corridor may therefore be considered as possessing potential for three dimensional development. One example is the construction of an elevated highway above a railroad, another being buildings located within the corridor with the highway passing under or through them. "In the more densely developed portions of urban areas, air rights development notably over depressed freeways, is receiving increased application."[1]

In addition to an "inner zone" of the corridor containing the transportation facilities and other integrated developments, there is an "outer zone" consisting of panoramic views of the landscape. These "scenic corridors", as the outer zone is known, include

> the scenic and recreation areas traversed and extending outward beyond the right-of-way. /They also include/ the elements which make for outstanding scenic vistas and the facilities for enjoying them. These may be within the immediate roadside area or may be part of a sweeping distant panorama. The features found in such a corridor normally would include: (a) lakes, streams, other bodies of water, and wetlands; (b) striking stands of timber; (c) unusual geological formations, outstanding mountain or desert scenes; (d) exceptional pastoral scenes and even notable urban views; and (e) cultural and historical features that offer the /traveller/ enjoyment and edification." 2

The concept of transportation corridors then, combines the movement of people and goods by various modes within a common passageway with routes through scenic landscape, plus the feature of multiple development within the right-of-way.

Because the transportation corridor can accommodate a number of facilities within rights-of-way which are theoretically interchangeable, the corridor concept, as it relates to highways, will receive the greatest emphasis in the thesis. "The 'highway corridor' is one of the most important innovations to be added to American planning concepts in the present decade /1960's/. Although it is not altogether a new idea, its application to highway programs is new, and as a result, no extensive body of doctrine or experience exists for those seeking to apply this concept to real situations."3

The Functions Of Transportation Corridors

The functions performed by a transportation corridor are numerous and interrelated. Its prime purpose however, is that of providing a passageway for the movement of people and goods by various modes of ground transportation. In a regional context, the corridor concept has increasing potential both as a channel for interregional movement of goods and people and as a potent tool in the hands of planners to influence the form of

future regional development.

Nowhere in North America has this concept greater application than in the metropolitan areas which contain approximately 80 per cent of the country's population. These metropolitan regions are experiencing a significant growth phenomenon, and it is in this context that transportation corridors can play an important role.

More rapid rates of growth are occurring in the suburban areas around the central cities than in the central cities themselves. "From 1950 to 1959 the central cities in the standard metropolitan areas [U. S. A.] increased by only 1.5 per cent in population; in the area outside the central cities the increase was 44.3 per cent."[4] Professor Hauser has estimated that, "out of a total metropolitan area increase of sixty million persons from 1950 to 1975, some 50 million will locate in the growth rings outside of central cities."[5] Much of this growth is linear in form rather than in consecutive growth rings, reflecting a possible indication of tomorrow's urban structural form. Many North American cities are growing together, and the urban forms which appear to be emerging are population corridors, whose growth has historically followed transportation routes. Today, there are several corridors of this type evolving on our continent.[6]

"In [some] respects, super region characteristics begin to appear at a relatively early stage in the interaction between metropolitan areas and nearby cities. The corridors connecting them generally become the most important corridors within each urban area and within the embryonic super-region. Along these corridors development usually tends to occur more rapidly than elsewhere in such areas."[7] If this trend continues, the need for co-ordinated transportation facilities planning and land use planning will necessarily increase. We can no longer afford to engage in the

"chicken-and-egg" debate of "Do traffic and transport facilities affect and shape land uses or do land uses require transport facilities?"[8] Historically, transportation technology profoundly influenced urban land development. Today, many metropolitan areas are a force in themselves, and are self-generating. "Looking ahead to ever larger numbers of inhabitants, it would seem that the internal, intra-metropolitan, transport systems must respond to the demands of the people and the land."[9] If we can assume that our society can define the environment it desires, it is important that the use of land resources within metropolitan areas be carefully examined with an aim to directing their future development.

One useful tool in the planner's arsenal which can be employed to direct development within and between the numerous and growing regions, is the transportation corridor. Through the simultaneous planning of land use and transportation routes, a program can be developed to guide regional development.

> Whether we are able to accommodate the urban population growth in a satisfactory manner, . . ., depends upon the pattern in which we direct the population growth.
>
> A total pattern of growth is composed of numerous factors: the amount of development which takes place, the direction in which the growth occurs, the extent to which it is distributed throughout the region, the way it is arranged, and also the quality of that growth. The outcome of our future pattern of growth will depend upon what kind of decisions we make or do not make regarding these factors.[10]

Presently, plans are being made to accommodate one linear pattern of urban growth by proposing the development of a transportation corridor. Within the urbanized region, or population corridor, running from Boston to Washington, on the United States eastern seaboard, planners are suggesting a modernized high-speed rail system. This is where traffic is heaviest today, and where it seems likely to remain heaviest in the future.

There were about thirty-eight million people in the corridor in 1965, and population forecasters indicate that there will be fifty to fifty-five million in this same region in the year 1980.[11] The Northeast Corridor, as this urbanized region has been labelled, is recognized as "more than a series of neighboring metropolitan areas, /but/ that it has real cohesiveness, and that in many matters each metropolis from Boston to Washington is affected by the successes and failures of the other metropolitan areas."[12] Establishment of the transportation corridor will expedite the movement of people and goods throughout the length of this eastern seaboard region, and may also be used by land use and transportation planners as a tool to influence the location and form of future urban development.

A situation not unlike the Northeast Corridor is developing around Toronto. A number of cities, aided by urban sprawl, are coalescing around the western end of Lake Ontario. "This is the undefined and unexamined city of the year 2000 called Mississauga by Professor D. P. Putnam. It has also been called Conurbation Canada,[13] for it will probably have a population of 5,000,000 before the end of the century, and will certainly render our present-day terms and definitions of urban development obsolete. The conurbation will very rapidly link the lakeshore settlements into a linear city."[14] With urban development forming a corridor along the lakeshore and strengthened by continuing evidence of this pattern of growth, the need is increasing for a transportation system to effectively serve this rapid growth area. One four-lane highway, the Queen Elizabeth Way, parallels the western end of Lake Ontario, as does a Canadian National Railway line. The provincial government of Ontario, recognizing the need to serve this corridor of population, introduced G. O.[15] Transit which serves a portion of the conurbation. "The provincially subsidized commuter train

service [runs on the C.N.R. line] east from Toronto to Pickering, and west to Hamilton along the populous Lake Ontario shore."[16] Essentially G O Transit represents an attempt on behalf of the Ontario government to provide this area of rapid growth with additional transportation facilities, in order to handle an increasing number of commuters.

G O Transit in Ontario is an example of a rudimentary transportation corridor containing a four lane highway and a rail commuter service. The modes are complementary in moving large numbers of people either by auto or rail transit. In addition to providing the service of moving people, as well as goods, the corridor has another significant contribution to make. Planners, who propose future extensions of these transportation services, have in their grasp, a potentially powerful implement with which to influence future form and direction of urban and regional development.

As cities and towns continue to spread in areal extent and coalesce into metropolitan population corridors, predicated by their historical location along transportation facilities, the need increases for improved methods of transport. One approach to providing for the increasing transportation needs of the expanding population within these emerging linear urban areas is through the establishment of transportation corridors. In rapid growth areas such as "Mississauga," both urban and regional planners, in concert with transportation planners, should be engaged in the preparation of present and future regional development plans. Included as an integral element of these plans should be the concept of transportation corridors. Not only should corridors be considered to serve present settlements, but also they should be considered as a positive guide to the timing and location of new towns within the region. In the latter case, transportation corridors would serve as a means of implementing a regional plan.

Another function performed by transportation corridors would be to provide the traveller with a view of the area's landscape personality. Scenic easements paralleling the corridor, would effectively control development and prohibit billboards within their boundaries. This would preserve the natural amenities of the area and provide safe, pleasurable transit to and through scenic and recreational areas. Complementary to scenic easements would be control of access by the corridor. The latter function prohibits the uncontrolled growth of ribbon business and housing site developments which tend to decrease the carrying efficiency and capacity of the highway. The result is a lessening demand for new highway improvements and a reduction of public expenditures.

Where topographical conditions permit, the inclusion of separate rights-of-way into one common corridor can reduce the amount of land that would otherwise be required. Further, costs of acquiring several separate rights-of-way may be reduced by having them located adjacent to each other within the single corridor.

In an urban context, transportation corridors perform functions both similar, and in addition to those in the regional setting. By accommodating all modes of ground transportation, the corridor reduces the fragmentation of the city and thereby conserves expensive and limited urban land. "In an effort to minimize additional fragmentation of the urban area, some localities have incorporated freeways with existing or new railroad or rapid transit lines, into so-called transportation corridors."[17] Right-of-way costs would still be high, but divided between more than one transport mode or related agencies, the cost would be relatively reduced.

To date most transportation facilities through urban areas have separate rights-of-way containing only the physical transportation plant

within their boundaries. The transportation corridor concept provides not only for different modes of transport within its right-of-way, but also for multiple development by the use of air rights. Through the development of air rights both a higher density of land use and a more aesthetically pleasing cityscape may be realized. When co-ordinated with urban renewal projects, the corridor concept allows for the integration of new land uses with the transportation facilities. Land uses can occupy the air space both above and below the transportation facilities.

In addition to serving as a means to assist the implementation of an urban development program, the transportation corridor may be located to complement yet separate incompatible land uses, and act as a buffer between neighborhoods of unlike character. Corridors in urban areas represent a joint inter-agency undertaking resulting in a right-of-way wider than normal, by purchase of whole rather than partial parcels and blocks of land. This interdisciplinary approach to integrating transportation facilities with land use must lead to an aesthetically pleasing cityscape. "Visual aspects of [corridor] location and design should be considered from the points of view of both the user and of the people in the areas through which it passes. . . ."[18] Most importantly, the transportation corridor must combine the concept of "the view from the road" with "the view of the road" to be an integral part of the urban structure and fabric. It is a blending of these two important ingredients, form and function, that is the rationale for the transportation corridor concept.

Summary

The transportation corridor can be considered as a passageway on land for the travel of different modes of ground transportation. It also

encompasses the idea of transportation within a scenic corridor for the benefit of the traveller and the resident in the area through which the route passes. Of great significance particularly in the densely urbanized areas is the prospect for multiple development of air rights within the corridor. Through carefully co-ordinating and integrating these three major functions of the transportation corridor, planners have an implement both to move people and goods and to influence the direction and form of future urban and regional growth and development.

Footnotes

[1]B. G. Barkan, "Latest Methods Of Determining Urban Highway Routes," Journal of the Urban Planning and Development Division, Proceedings of the A.S.C.E., Vol. 93, No. UP4 (Dec., 1967) p. 11.

[2]David R. Levin, "Scenic Corridors" Highway Corridor Planning and Land Acquisition, Highway Research Record 166, (1967) p. 15.

[3]Highway Corridor Planning and Land Acquisition Foreword, Highway Research Record 166, 1967.

[4]Richard U. Ratcliff, Real Estate Analysis Toronto: McGraw-Hill Book Company, Inc., 1961, p. 317.

[5]Philip M. Hauser, Proceedings of the Thirteenth Annual Conference for Senior Executives in Mortgage Banking, New York University Business series, No. 13, 1958, p. 46.

[6]"Transportation for Super-Regions" Metropolitan Vol. 63, No. 1, Jan.-Feb., 1967, p. 21. Demographers in the United States have identified 21 such corridors in various stages of development in different parts of the nation.

[7]Ibid., p. 20.

[8]J. Douglas Carroll, Jr., ". . .New ways to see Land Use and Transportation," Civil Engineering Vol. 34. August, 1964, p. 62.

[9]Ibid., p. 62.

[10]J. Stanley Parnell. "Planning Transportation Facilities To Guide Urban Development" Traffic Quarterly April, 1966, p. 279.

[11]Clarence D. Martin, Jr. "The Northeast Corridor - Widening The Planning Range" Traffic Quarterly April, 1965, p. 156.

[12]"The Northeast Corridor" Metropolitan Jan.-Feb., 1967, pp. 12-18.

[13]From an article entitled "Conurbation Canada" in the Canadian Geographer, Vol. 4, 1961.

[14]Norman Pearson, "Planning Mississauga". Regional and Resource Planning in Canada R. R. Krueger, et al. (ed.) Toronto: Holt, Rinehart and Winston of Canada, Ltd., 1963, p. 33.

[15]G O stands for the Government of Ontario.

[16]"Standing Room Only" Time Canada Edition, Jan. 5, 1968, p. 11.

[17]Barkan, loc. cit., p. 10.

[18]Ibid., p. 16.

CHAPTER II

PLANNING FOR FUTURE CORRIDORS

A Comprehensive Approach

The planning and design of future transportation corridors will require the adoption of a new outlook and attitude on behalf of their creators. The necessity of an interdisciplinary approach to locating transportation corridors merits serious consideration. Highway departments, for example, can positively take the initiative by endorsing a multiple-discipline undertaking for future route locations in both the urban and rural context. Although this proposal is not unique, its application in North America has suffered from lack of initative on the part of highway departments. What must be considered, is a comprehensive approach to the problem of transportation route planning and implicit in this statement is the need to create a design concept team. In urban areas this team would be composed of at least the following professionals: architects, planners, landscape architects, economists, sociologists, housing experts, transportation engineers, acoustical and lighting engineers and colour consultants.

For example, the housing expert's role may be viewed in the following manner. In a situation where a corridor location has been established in an area, slated for redevelopment, the need to relocate displaced residents often arises. This circumstance is applicable when the transportation route is coordinated with urban renewal and a swath of homes is removed, thus displacing their occupants. The incidence of dislocation created by this joint venture emphasizes the need for a more comprehensive approach to corridor location planning and the need for both awareness and participation

on behalf of particular team members.

The problem of relocation arises when persons are displaced by the impending construction of the transportation facility. At this juncture the role of the housing expert is foremost. He is as much responsible for the satisfactory relocation of dislocated persons as for advising on the reconstruction of new housing facilities in conjunction with the multiple-development corridor concept.

In response to the critics' charges that urban highways are blighting communities, the cities of Boston, Baltimore, Chicago, Seattle and Washington, D. C. are considering the creation of design concept teams. In Baltimore "the team will examine highway plans in the light of such questions as: What will it look like, what views will it block, what noise will it create, what people will it displace, how will it affect the economies and the atmosphere of the surrounding area, what should go along side it or over it--housing, shops, warehouses?"[1] This proposed comprehensive approach to highway route planning in Baltimore is akin to the multiple-development concept of the transportation corridor described in an earlier chapter. The study will eliminate the taking of wide strips of land for unilateral use and will develop designs that integrate the highway into its surroundings. The designed corridor would be "an integrated block-wide strip with space devoted to the highway, high-rise apartments, commercial buildings, parks and recreational facilities."[2] Such an undertaking should result in a more aesthetically pleasing and functional highway system being inscribed into the cityscape.

In the rural, as in the urban area, there exists the need for a design team capable of interpreting and plotting transportation route locations within the rural landscape. Agriculturists, landscape architects,

conservationists, economists, park planners, transportation engineers, foresters, and regional planners should be represented on the team. Together, its members could develop a mapping system upon which they could indicate significant elements of the terrain to be considered when establishing the final alignment of the corridor. This coordinated approach would permit both a broader consideration being given to the impact of the transportation corridor on natural ecological areas and an opportunity to harmonize the facility with the quality-giving features of the environment.

"If /transportation/ systems are going to be laid out in close proximity to natural features. . .an approach with more and closer collaborative efforts between the design team and the engineering team"[3] will be needed.

Selected Criteria For Corridor Location

Complementary to the need for design concept teams to plan the layouts of transportation corridors, is the need to move beyond the traditional evaluative technique of a cost-benefit type of analysis in which several measurable costs are compared with measurable benefits over a period of amortization. Without undertaking a discussion of the evaluation of costs and benefits related to highway construction, an attempt will be made only to identify selected factors which, although they defy quantification, are nevertheless, to be considered by the team in locating the corridor. ". . .highways cannot be located by choosing the shortest route, the least costly to construct, or even the one that gives the highest traditional benefit - cost ratio. An attempt must be made to identify all the factors that can influence a choice, direct or indirect, tangible or intangible. Only after. . .evaluation of all these factors can a choice be made."[4]

Besides the necessary considerations included in locating the corridor route, such as costs of construction, terminal facilities and its relationship to other transportation systems, other factors related more closely to the scenic corridor bordering the route, must be evaluated.

Levin suggests that the merits of alternative scenic corridors be considered, based on a selection of criteria agreed upon by the design team. He identifies the significant features which a route should have to "provide people with an opportunity for an outstanding travel experience. Thus, the landscape or recreation resources within the corridor are the key to selection rather than the road itself."[5] The quality of the landscape is a major feature to be considered in the determination of corridor locations. This includes the scenic, historic, and cultural character of the region. For example, an outstanding view of a geological outcrop, a prime stand of timber or a pond are integral parts of the landscape's quality and contributes to the traveller's pleasure. Similarly, a mining ghost town or a monument to pioneer days reflects a sample of our heritage to be observed and enjoyed. The identification and inclusion of particular ethnic dominated areas within the scenic corridor contributes a rich individual quality to the landscape.[6]

Variety of specific resources within the landscape is another important feature. Specific resources, once identified within the region, will assist in guiding the location of land acquisition for the proposed corridor. Man-made resources of interest may include old forts, blacksmith shops and historic churches, while natural resources may include any number of wild animal or bird habitats, waterfalls, caves, bathing beaches or outstanding rock formations. After plotting the location and extent of the natural and man-made resources throughout the region a potential scenic corridor can be

identified to relate to the transportation route. Recognition of the existence of certain of these resources is of importance. While not necessarily influencing the design team to plot the route in the immediate vicinity of the resource, it may in fact protect it from being disturbed or obliterated by a particular alignment of the transportation corridor.

Compatibility, then, is another significant feature of the route. The transportation and scenic corridor should be coordinated with other outdoor recreation and conservation objectives and should not disrupt certain specified resources such as wildlife or fish habitats, and nature preserves. Likewise, it must not impair the enjoyment of features having scenic or cultural interest.[7] In effect, the design team undertakes an inventory of the resource patterns within the region. "If the natural ecological area will suffer unduly from the highway, the highways can be re-aligned to relieve this pressure. The same thing can be done in connection with development of the scenic potential of the highway corridor."[8] With the inventories completed, the team members can evaluate where and what the significant features are, and be more conclusive in establishing the corridor's final location. Attention can then be directed toward a program of land acquisition or reservation.

Selected Methods for Creating Corridors

Incumbent on the members of the design concept team is the duty not only to plan in a coordinated manner but also to undertake joint financing of land acquisition. Implicit in the multiple development concept of the transportation corridor is the opportunity to cooperate and coordinate finances to further the objectives of the various disciplines represented on the team. Within the rural areas of a region, for example, transportation engineers, park planners, and conservationists may be interested in

acquiring land in the same location. Conservationists may wish to obtain wetland acreage for the preservation of peculiar flora and fauna, or for scientific study of the natural ecology. Park planners might also be considering a much larger area, which incidentally encompasses the wetlands, for a particular classification of park. Both objectives can be realized and can also be coordinated with the transportation engineer's objective of establishing the location of a transportation corridor within scenic easements. By coordinating both planning and financing efforts, the individual objectives are more easily realized.

A coordinated development technique similar to the one proposed above is not unique in North America. The combined parkway - boulevard concept was developed in New York and Chicago during the early 1900's.[9] Two complementary factors which this concept embraced were land requirements and accessibility. Both parks and roadways have land requirements and the former requires accessibility. In the cities quoted as examples, parks were often two hundred acres or more, and were situated within the metropolitan area. Significantly, the cities contain samples of linear parks which are highly complementary to the land requirements of transportation facilities. Chicago's Burnham and Lincoln parks and New York's Jones Beach and Giglo State parks are all linear in form.

Programs for the acquisition of parks or recreational lands are being pursued throughout North America to provide outdoor facilities for a society with increasing leisure time. An existing instance is "Chicago's 1000-acre Lincoln Park [which] preserves a 5.5 mile stretch of Lake Michigan shoreline for regional recreational use. Controlled access Lake Shore Drive extends the full length of the park, and offers an excellent example of freeway park coordination."[10] Recently, a similar proposal was

put forth in New York. "In Binghamton a regional park has been proposed for a 2.5 mile section of right-of-way lying between [Interstate] 1-81 and the Chenango River. The area involved totals about 250 acres and was acquired for highway drainage and flood protection."[11] In both examples large bodies of water formed a border of the coordinated freeway park system. Similarly, entire, or portions of, river basins may be acquired to serve a similar function. "River basin corridors represent an outstanding scenic and landscape resource in nearly every state. . . . Since most important urban areas have been located historically along rivers or coastlines, many new interurban freeways will also fall along the general alignment of river basin corridors and associated recreational opportunities."[12]

Presently, a more positive attitude toward the advance acquisition of highway rights-of-way is evolving in the United States.[13] With the advance acquisition of transportation and parkland needs coordinated, the concept of the transportation corridor is more fully realized. The Blue Ridge and Natchez Trace Parkways are instructive examples of this approach. The elongated parks - parkways located in rural areas involved the acquisition of considerably more land within a linear corridor than required for freeway purposes, and developed with recreational facilities which were linked by the parkway route. "Nineteen park enlargements, from several hundred to several thousand acres in size, are spaced over the Blue Ridge Parkway's 478-mile length. Average width is 125 acres/mile, compared to 35 acres/mile for the typical freeway. The Parkway is administered by the National Park Service."[14] The Blue Ridge Parkway is a close parallel to the transportation corridor concept with its bordering scenic corridors. With the adoption of this coordinated approach to land

acquisition the way is open to one method of establishing a transportation corridor.

Coordinating Transportation Corridor Planning With Urban Renewal

The opportunity to coordinate urban renewal projects with transportation corridors provides an additional avenue for route location. Despite the possibilities which this approach offers toward the provision of a right of way, both through and within the urban fabric, its potential has not been developed. "Coordination of highway planning with local urban renewal plans has been the subject of much talking and writing, but of relatively little effective action. . . ."[15] The major reasons why full advantage has not been taken of this situation are twofold: "(1) the freeway builders are under tremendous political pressure to get the freeway routes into operation and (2) urban renewal is a new governmental process that takes time to generate the public support it needs to go forward at the same pace as the freeways."[16] Timing of the joint project is crucial. For example, "a freeway may cut into a large part of the urban renewal project's eligibility by the elimination of substandard dwelling units and other conditions of blight. The matter of land acquisition in the urban renewal project and the freeway right of way must be coordinated to maintain fair market values and to ensure that neither program will increase the cost of the other."[17] Similarly, by combining urban renewal and highway finances the costs of land acquisition are less for each partner.

Through a joint program of land acquisition, severance costs attributable to highway rights-of-way can be effectively reduced, and a superior highway alignment can be achieved. By acquiring whole parcels of land the need to pay damages for remainders is eliminated and greater

latitude exists for the development of the transportation corridor concept. With additional land available, new land uses compatible with both the transportation facilities and the surrounding land uses can be more easily integrated.

A small but growing number of cases is beginning to appear where transportation routes are being coordinated with urban renewal projects. In New Haven, Connecticut; Newark, New Jersey; Boston and Malden, Mass., highway routes have been coordinated with urban renewal projects. In Newark's case "the city planners are hoping to apply State and Federal open-space funds to help create a continuous strip of small parks and play areas along the two and one-half mile route."[18] A similar development is occurring in the Quai de Bercy area of Paris where a 99-acre conglomeration of decrepit, half-empty warehouses are being transferred into a "green lung." Redevelopment includes several office and apartment buildings which will rise above three-tiered concrete platforms. The top tier is for pedestrian use, the next two are for local auto traffic, while trucks will circulate at ground level.[19]

The opportunity to create new land uses, such as in the Newark and Paris examples, lends credence to the concept of coordinating urban renewal areas with transportation route planning in order to realize the multiple development potential of the transportation corridor.

Other possibilities exist which deserve consideration in the planning and location of transportation corridors. The presence of transmission line and pipeline rights-of-way traversing the countryside offer linear parcels of land upon which other development is usually prohibited. Through coordinating the planning efforts of parties responsible for locating the rights-of-way for the various modes of transportation, benefits may

accrue to all services. For example, where a common corridor could be effectively utilized to accommodate transmission lines, pipelines as well as highways or rail service, the costly undertaking of individual land acquisition programs could be combined into one effort. This would also reduce the fragmentation of land use created by the individual rights-of-way. Existing railroad rights-of-way which have been an important instrument in the development and growth of many North American urban centers provide another potential area for locating a transportation corridor. Parallel rights-of-way may be acquired or the air space above the rail facility might be developed to accommodate a highway.[20] Since limited development of air rights has occurred in North America the latter alternative holds great possibility for the future.

Land Use Regulation Devices Through Police Power

Ideally, the acquisition of land for transportation corridors should be undertaken within the context of area-wide comprehensive planning. Within this framework, transportation needs are considered in the broad perspective of their relationship to other community needs.

> City and regional planning deal with the physical environment as a whole. And of that environment, transportation is an essential component--a more dramatic component in this day than ever before.
>
> Comprehensive planning of the environment therefore includes transportation as one of the major elements of the total planning process. A highway planner may consider transportation planning as related to comprehensive planning; a city or regional planner necessarily views /transportation/ planning as an integral part of comprehensive planning.
>
> Of the deficiencies one can observe in evaluating the results of planning during the last generation, one of the greatest is the absence of integrated planning for transportation with other planning factors--at least so far as the effecting of plans is concerned. Transportation facilities, . . ., have been planned with too little regard for comprehensive plans for the environment--usually because no such comprehensive plans exist. 21

Greeley contends that "decisions on highway location are in effect decisions affecting future land use, future economic activity, future residential and commuter patterns. Whoever plans the location of highways is committing, to a large extent, the comprehensive plan."[22]

Inherent in the concept of planning is the rational allocation of resources for future use and enjoyment. Land, as one of the resources, demands and deserves this rational treatment. One approach to the reservation and control of land for future use as transportation corridors requires the adoption of a regional plan or urban land development program. Because a considerable period or time often elapses between the planning of a transportation facility and its construction, devices under the police power provide planners with some methods of influencing land uses in desired directions. With the adoption of urban and regional plans by local governments, protection can be extended to future rights-of-way. The official mapping of streets protects them from encroachment before acquisition.

Some American municipalities and counties are presently authorized to adopt a precise plan of their streets or highways. Following adoption of the plan, no building or improvements may be erected within the bed of the street or highway without permission having first been secured from the adopting agency.[23] Permits are not issued except in the case where refusal would result in hardship on the applicant. Official street plans or maps have not been widely adopted but sufficient experience has been accumulated by communities that have used them to demonstrate the effectiveness of the law. The American experience indicates that compliance has been high and that hardship cases have been rare.[24]

However, official plans have their limitations and the granting of hardship variances is likely to increase in occurrence especially in the

case of corridor reservations which require large amounts of land. Each variance granted defeats the purpose of the reservation as it represents permission to encroach on the reserved right-of-way. Further, each must be bought out if the highway is to be built on its original location.

A second limitation of the plan is that it offers protection only to the right-of-way of a proposed street or highway. No regulation of adjacent land uses to the right-of-way is included in the law. Interim regulation of adjacent land uses may prove useful in relieving the pressure of granting hardship variances, prior to the period of construction.

Subdivision Control

The technique of preserving land for streets and highways through official mapping is included in statutes authorizing subdivision regulations. All municipalities and provincially appointed officials have enabling authority to regulate new subdivisions. The Municipal Act of British Columbia, for example, allows municipal councils to "regulate the area, shape and dimensions of parcels of land and the dimensions, locations, alignment, and gradient of highways in connection with the subdivision of land, ..."[25] In effect, the subdivider is required to dedicate land for streets or highways as one of the conditions for approval of his subdivision plan. The subdivision of land can be prohibited if the developer does not comply with the regulations. However, other than the internal street dedications for the subdivision, the extent of the subdivider's obligation to donate right-of-way for major highways is not fully clarified.

A variation of the above provides another method of keeping land open for future use as transportation corridors. In the United States, subdividers are sometimes asked to reserve rather than dedicate right-of-way. This reserved strip of land is held in private ownership until the

highway department is prepared to proceed. "A subdivision reservation imposes the uncompensated burden of delay on the individual lot owner, and has the same effect as a dedication on the developer because it effectively deprives him of part of his buildable area. Yet highway reservations under subdivision controls have been judicially upheld when they have been considered, on the ground that they are a necessary implement to effective planning."[26]

However, Krasnowiecki is sceptical of the degree of control of land use and development through subdivision regulation. "In many cases," he remarks, "the statutes do not require that the local authority adopt comprehensive subdivision regulations as a condition to the exercise of its power to approve and disapprove proposed subdivision plats of plans. The result is that subdivision approval is often an ad hoc function--open to political pressure, favouritism and discrimination."[27] Despite this criticism of the subdivision control process, it does have some strong points. It is particularly useful in undeveloped areas where considerable new highway mileage would be built, by effectively coordinating new development with a highway program.

"Furthermore, the constitutionality of subdivision controls is enhanced by the fact that they require the subdivider to apply for approval. Although the argument cannot be supported analytically, the courts have been impressed with the fact that the subdivider is asking for a privilege, which may then be granted on conditions that could not otherwise be imposed. The legal strengths inherent in this procedure could be incorporated into other control processes."[28]

Zoning represents another method of preserving open space and shaping land use patterns.

"Zoning is enacted under the police power, which is the power of the community to make regulations for the purpose of promoting the public health, safety, morals, or the general welfare of the people of the community, without the payment of compensation."[29] Several modifications of zoning exist and all can be utilized to regulate open space for future use as transportation corridors. Agricultural zoning is proposed as a method of preserving large areas of land for open space use.[30] The purpose of agricultural zoning is to set large-lot requirements and prohibit uses incompatible with farming. "If the land retains its value primarily for agricultural reasons, the open space may remain for many years. . . .there is nothing to prevent an owner's pressing for re-zoning which will enable him to sell the land for development."[31] At best, agricultural zoning is a short-run approach to open space preservation since no reliable period of time can be designated for its existence.

Large-lot zoning is another attempt at restricting development while, at the same time, maintaining much of the area in open space. Criticism of this zoning is that it has not deterred development to a considerable extent and that open space is used privately by the lot owners. Although large-lot zoning may be favoured by lot owners as helping to preserve their property values, it may also boost the cost to municipalities of some public services and be considered a wasteful use of residential lands in a rapidly urbanizing region.[32]

Flood plain zoning which prohibits building on the flood plains of streams serves to retain the restricted land as open space. Such zoning clearly serves a public purpose, by helping to prevent the disastrous effects caused by floods, and is more time-proof than agricultural zoning. Besides being used for recreation and green belt purposes, flood

plain zoning can make an effective contribution to the scenic corridor concept by preserving linear areas of the natural landscape.

Cluster zoning, like flood plain zoning is a more reliable method of providing areas of permanent open space. Where developers accept the option of providing a variety of lot sizes, as long as the number of dwellings built in the subdivision are the same as would be built under the old regulations, impressive gains can be realized in obtaining public open space. "In return for the flexibility which density [or cluster] zoning gives to the developer, the city requires the dedication of a certain amount of open space. Thus, through a form of zoning control, a municipality may obtain permanent open space. . . ."[33] Open spaces resulting from a number of contiguous developments, as along a stream valley, may be joined to form a green belt. This method of acquiring open space has great potential if developers can be shown the advantages inherent in cluster zoning.

Strong proposes timed-development zoning as another method of preserving open space by regulation. As the title implies, a community is separated into several districts. One type of district would have municipal and public services, and permit development to take place. Another type presently lacking services, would be scheduled for expansion of services, but in which development is prohibited until the services become available. A third type of district lacking services would have development postponed indefinitely.[34]

The strengths of timed-development zoning include the minimizing of scattered development and a reduction of public utility costs as the result. Its weakness is in enforcing the delay of development which may be challenged as a taking without compensation. This method does not provide any certainty that open space can be maintained. Zoning, as a

land use regulation technique under the police power has limited potential for maintaining open space for future use as transportation corridors. Agricultural, large-lot, and timed-development zoning offer mainly a limited postponement of development. Flood plain zoning and cluster zoning offer the greatest promise for keeping land in permanent open space.

Mandelker recognizes the limitations of existing zoning under the police power and proposes a more positive approach to reserving land for future transportation facilities. Still a form of zoning, but originating with state highway departments, would be the authority to establish highway conservation zones.[35] Prerequisite to effective land reservation by this method would be a state highway plan. On the basis of a highway plan, these zones would be the key to effective control of the right-of-way during the interim period before acquisition.

> Unlike the official map of streets, they would not be limited to the bed of the highway, but would cover adjacent areas on both sides of the right-of-way as well. In most cases, the conservation zone would extend a reasonable distance on both sides of the highway perhaps one half mile each way, and would thus enable the highway department to control effectively the area in which the new highway could be expected to have an influence on land use. 36

The conservation zone would be similar to the subdivision regulation. Permission for development within the conservation zone would require a permit from the highway department. Development is not necessarily prohibited because the conservation zone is established. Because the zone extends beyond the projected right-of-way, absolute refusal of all development would prove difficult. The highway conservation zone is similar to subdivision control in that the party seeking the permit can be requested to make reasonable dedications or reservations of land as a condition of approval. To date, when cases of hardship are proven,

the highways department has been obliged to purchase the land of the affected owner. "An alternative approach is to couple the purchase requirement with a hardship test, and to compel the highway department to purchase restricted property only if the landowner suffers hardship because he has been prohibited from building in the highway conservation zone.

Hardship can be validated by relying on the market as a guide. If a substantial discrepancy exists between the price offered for the restricted land and that offered for similar property located elsewhere, the department would have to purchase the property affected by the highway restriction."[37]

Landowners may seek compensation due to building restrictions in the zone. Although the process of establishing equitable compensation is not intended to be dealt with in this paper, it is recognized as a form of relief to affected persons in the situation being discussed. An example of the approach to be taken by the highway department under this reservation law is that when property located within the conservation zone is condemned, no account is taken of either depreciation or appreciation in value which may be directly attributable to the highway project. Property value would therefore be established at the time the conservation zoning was effected. To protect against land speculation, the highway department has the option to buy property that is offered on the market following establishment of the conservation zone.

The success of the highway conservation zone would depend on co-operation between the highway department and local planning authorities, and based in turn on a state highway plan. The highway department could either administer the conservation zone at the state level or delegate the

responsibility to local planning authorities subject to state standards. Implementation of the highway conservation zone technique would make a positive contribution toward the establishment of transportation corridors by means of a regulatory device under the police power.

The use of tax concessions to landowners is another device to be considered in the regulation of land. This takes the form of reduced taxes, or a suspension of taxes on agricultural land, for example, as long as it remains in this use. In urbanizing areas where pressure on land use change is rising, increased taxes upon farm land may hasten sale for development, but it does not follow that tax concesions will delay sale. "A taxation statute favouring farm land might be a more effective tool in conserving open space if the farmer were required to pay all the back taxes he saved should he at any time decide to sell out."[38]

The same principle of tax relief, by means of tax deferral, tax exemption, partial tax rebate, or classification of land use to permit low assessment may be utilized to encourage landowners to maintain their property as open space. Where the courts would allow land to be classified as open space, and where such open space would provide a public benefit as well as for private use, some form of tax relief would be applicable.[39] Upon sale of the land for development all rebated taxes would fall due. Such a move by taxing bodies would prove particularly beneficial in maintaining land in an undeveloped form for the benefit of scenic corridors. Tax concessions, however, are merely an incentive to landholders and offer little guarantee of preserving open space on a permanent basis.

Land Acquisition Techniques Through Eminent Domain

The power of "eminent domain," unlike the regulatory function of the police power, is a governmental power used for the purpose of taking

private property for a public use. "Under the power of eminent domain, the sovereign state may take any private property within its jurisdiction for public use without the consent of the owner, subject to the condition of payment of just compensation in accordance with the methods prescribed by law."[40] The borderline between the two powers is whether or not a public agency must compensate a landowner for regulations placed on his land which restrict certain uses.

Public action to preserve open space has relied primarily on two means: regulation under the police power and acquisition in fee under eminent domain. Under the former action, only a limited amount of open space can be retained without the necessity for just compensation. Cluster zoning and flood plain zoning both make important contributions to open space, but these and similar regulatory devices alone are insufficient.

Strong proposes a range of open space controls which lie between regulation and fee acquisition. In her estimation the five most promising are:

(1) acquisition and resale with use restrictions
(2) acquisition and lease with use restrictions
(3) compensatory regulations
(4) conservation easements
(5) installment purchase with concurrent use restrictions.[41]

Acquisition and resale consists of fee acquisition by a public agency followed by the imposition of covenants to assure continued open space use and resale of the land subject to the covenants. From the administrative viewpoint, this method may be the simplest means of holding private land for open space use, subject to the restrictions. Following this approach, the public agency such as the highway department or jointly with park planners, is involved with only one negotiation or

acquisition price, one set of covenants and one resale. The administrative simplicity may be offset in urban areas by the high initial expense for fee acquisition. The problem of valuing the covenants will have to be resolved, particularly if the previous owner is given first refusal. If the resale is offered to the public the market is expected to establish the value.[42]

Acquisition and lease with use restrictions differs from acquisition and resale. In the former approach the land is leased rather than sold after covenants are imposed restricting the land to public open space use. "If a public agency has long range plans for active public use of open space, as for a reservoir (or transportation corridor) or wildlife sanctuary, it can hold the fee and secure interim private open space use, plus limited revenues, through lease of the land."[43]

Installment purchase with current use restrictions may be used by a public agency which requires land for future need, but lacks the funds for immediate fee purchase. This method allows the acquisition cost to be spread over a number of years. The seller may continue open space use of the land until full payment is made, but the public agency would gain title to a portion of the property with the payment of each installment. The advantages of this technique are that "if negotiations for installment purchase are included some years before land reaches its top development value, the total purchase price may be significantly lower than if acquisition is delayed uhtil development is imminent. (Further), installment rather than lump sum purchase of the fee can offer the public greater rate of expenditure and a lower acquisition cost. (Finally) it would be advantageous to some landowners since it would give them an opportunity to fix the year in which their ownership and use of the land terminate."[44]

Compensatory regulations are similar in nature to zoning in that they require local governments to pay compensation to owners affected by regulations that preserve the open character of their land and thereby reduce its value. This method of land regulation is intended to offer a middle alternative between the power of governments to regulate without compensation and the exercise of eminent domain.

> Compensable regulations map areas to be retained as open space, list the land uses permitted in these areas, and guarantee compensation upon sale of land in these areas equal to the value of the land immediately prior to regulation. Compensation can be claimed only after the sale of land in the open market. If the sale price is less than the guaranteed compensation, the government which imposed the regulations pays the difference. The amount of the owners's guarantee for each property, reduced by each payment of compensation, remains attached to the property as a guarantee for later purchases. 45

"Land subject to compensatory regulations remains in private ownership, continuing on the tax rolls with no public maintenance costs."[46] Additional advantages are that the land is kept open and payment of compensation is deferred until owners choose to sell. If the land value appreciates after imposition of the regulations, above the owner's guarantee, there is no cost to the government. A safeguard is present against overstatement of any decline in value, as this is determined by the sale price of the property.[47]

Conservation easements[48] are another technique utilized for the purpose of preserving open space and may be defined as easements which secure continued open space use of private land. The conservation easement is negative and its terms must be clearly stated to provide a basis for determining what should be paid for the rights being conveyed.[49]

"An easement deed, stating the rights being acquired by a public body, is paid for when acquired at a price established by negotiations

or through eminent domain proceedings. The fee remains in private hands, subject to assessment for taxes on the basis of the value remaining after acquisition of the easement."[50] The compensation paid for the conveyance of rights is the difference between the market value of the tract prior to, and after being made subject to the easement. This method differs from the compensatory regulations, in that the amount of compensation must be established without reference to an actual sale of the property subject to the easement.[51] Land subject to conservation easements can be bought and sold freely.

The advantages of conservation easements are that lands stay in private ownership and therefore remain on tax rolls. Further, the acquisition of less than full rights in land is usually cheaper than acquisition of the full title. A criticism of conservation easements is that easements acquired for sizeable areas, in order to preserve the area's character, may strain the acquiring agency's resources, since the cost of the easement must be paid at the time it is acquired.

Acceptance of this technique of land regulation is evidenced by the fact that "easements have been acquired purely to protect scenery, as, for example along the New York Thruway, the Saint Lawrence River, and the Blue Ridge Parkway; or, as in California, in the Bay Circuit area, to keep land open as farmland, golf courses, and so on."[52]

Land Banks

The need to plan the location and to acquire land for future transportation corridors was recognized by the Canadian Government. At a federal-provincial meeting in 1967,[53] the former government offered to consider making monies available to the provinces and municipalities expressly for the purpose of purchasing land for the establishment

of new communities, and for future transportation corridors.[54] The opportunity to acquire land specifically for transportation corridors which will be related to the sites of new communities offers the chance to provide a complementary range of transportation modes and the occasion to influence future development within the region. The land required for this dual purpose could be secured by eminent domain through condemnation as well as by purchase of tax delinquent land by the senior levels of government. Purchased lands which are tax delinquent and that do not lie within the transportation corridor may be offered to those displaced by the transportation facility.

An American example of a modified land bank in the form of advance acquisitions for highways, suggests the soundness of such an undertaking. "California has kept the cost of acquisition down by establishing a $30,000,000 revolving fund for such purposes and has estimated a saving of $15 for every $1 invested because the purchases were made in advance of rising land costs. Seven states have similar funds."[55]

The recognition by the federal level of government for the need to establish a land bank brings the concept of the transportation corridor a step closer to realization. Initiation of the Canadian land bank proposed is awaiting federal legislation which may be forthcoming in 1968.[56]

Summary

In order to plan and design future transportation corridors in a comprehensive manner a multi-discipline design concept team approach is suggested. The coordination of the several team members should result in a more aesthetically pleasing and functionally integrated transportation facility with the surrounding landscape.

An important research function of the team is to attempt to identify and then evaluate the intangible as well as the tangible costs and benefits when selecting the alignment of the corridor. Landscape or recreation resources within the corridor are important considerations in route selection for transportation facilities. The design team has the opportunity to combine finances for the joint acquisition of complementary land uses both to economize and to encourage the multiple-development concept of the transportation corridor.

Coordination of highways has already occurred with parks, urban renewal projects, and rail lines. In the latter case, development of air rights over the right-of-way is increasing. Other suggestions include transmission line and pipeline rights-of-way.

Where possible, the local governments may attempt to maintain land in open space to be acquired at a later date for transportation corridors. A variety of devices exist for regulating land use under the police power. The most reliable devices under the police power include urban and regional plans which embrace official street plans, subdivision control, flood plain and cluster zoning. A new suggestion concerning highway conservation zones is promising in theory but has not yet been attempted. Much of the land required for transportation corridors must be acquired through eminent domain with the expenditure of public revenue for compensation.

The establishment of a land bank financed by all levels of government would provide a basis for implementing the concept of transportation corridors.

CHAPTER II

Footnotes

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[12]Darwin G. Stewart, "Freeways, Parks and Parkways," Traffic Quarterly, Vol. 22, No. 1, (January, 1968), p. 130.

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[34]Strong, p. 38.

[35]Mandelker, p. 57.

[36]Ibid.

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[50]Strong, Real Property In The Urban Society, Virginia Law Weekly, Dicta, p. 3.

[51]Strong, Open Space In The Penjerdel Region - Now or Never, p. 43.

[52]Fred W. Tuemmler, "Land Use and Expressways," Journal of the City Planning Division Vol. 87, No. CPI, (Sept., 1961), p. 37.

[53]The federal-provincial meeting held in Ottawa, December 12-13, 1967, at which the federal government proposed the joint establishment of a Council on Housing and Urban Development.

[54]Humphrey Carver also indicated the federal government's intention to proceed with the land purchase program. A lecture on housing at The University of British Columbia, February 6, 1968.

[55]Tuemmler, loc. cit., p. 37.

[56]Carver, loc. cit.

CHAPTER III

LAND ACQUISITION FOR TRANSPORTATION CORRIDORS

Establishing transportation corridors in Canada will involve the assembly of extensive tracts of land. The appropriate levels of government, endowed with the legislative power and financial capability, will be responsible for this major program of land assembly within the national context. Implicit in the above statement is a recognition of the need for land to be acquired outright through purchase in fee simple. Alternatives to the purchase of land were considered earlier (Chapter II) and their strengths and weaknesses were then evaluated.

A brief history of the American zoning experience regarding the regulation of land, which was also discussed above, revealed the limits and unreliability of this technique of keeping land open for future transportation corridors. Zoning in Canada is also unreliable unless reinforced by an official community plan. The highway conservation zone proposed by Mandelker and considered earlier is potentially useful but would necessitate new legislation if applied to the Canadian situation.

Mutual agreement of sale between the property owner and the governmental body charged with the responsibility of land assembly would be the most desirable method of acquiring land for corridors. Land located within the boundaries of the corridor and offered for sale could be purchased as part of a land bank. However, this method may not occur often enough to satisfy the land needs of a corridor program. Where land cannot be acquired by mutual agreement of sale, another avenue exists to serve the purpose. This approach is by the means of expropriation. "The right

to the enjoyment of private property has always been subject to the right of the state to take property required for public use."[1] In Canada, the right to take property for public use is termed the power of "expropriation." In the United States it is expressed as "eminent domain," and in Britain it is the power of "compulsory purchase." "This latter term is probably more truly expressive of what in fact happens. The owner of the land or some interest therein, is compelled to 'sell' it, whether he likes it or not, and the authority which 'buys' is obliged to pay a 'purchase price' or, as it is usually called, 'compensation'."[2] The right to take land for public use is not a right of confiscation but a power limited by basic civil rights recognized and recorded. For example, in the United States, the Fifth and Fourteenth Amendments to the Constitution subject the taking of private property to clear safeguards of "just compensation" and "due process of law."[3] "In England and Canada there is no such constitutional guarantee[4] but the courts have achieved almost the same result by construing statutes on the premise that if the legislature intends to authorize a person's property to be taken without compensation (that is, to confiscate it) it must expressly so provide. In short, there is a presumption that compensation is to be paid."[5] In Canada, the issue is still unsettled as to the enunciation and definition of the criteria by which the compensation payable is determined.[6]

Canadian Expropriation Powers

Governments have been charged with the responsibility for public development and to expedite the development they require the power of expropriation. Two bodies of expropriation law exist in Canada; the Dominion and Provincial, resulting from the division of legislative power

by the British North America Act (B.N.A. Act).

The power to expropriate held by the Dominion or Provincial governments or of corporations or individuals authorized by such governments, is governed by the distribution of legislative powers effected by sections 91 and 92 of the British North America Act.[7]

> The provincial legislatures can within the fields enumerated in section 92 authorize expropriation, and the Dominion government can do likewise within the enumerated heads of section 91. In the case of conflict between legislation under the enumerated subsections of 91 and the enumerated subsections of 92, the Dominion legislation will prevail if the matter in question is of the substance of one of the enumerated subsections; but where the matter is only incidental or ancillary to such enumerated subsections and is also within section 92 and the field is clear, provincial legislation will be valid in the absence of legislation by the Dominion. Where however the Dominion has legislated, provincial legislation if any will be overborne. So, for example, the Province can under section 92 (8) of the British North America Act 'Municipal Institutions in the Province' validly authorize municipalities to expropriate for roads, and the Dominion under section 91 (10) 'Navigation and Shipping' may authorize the National Harbours Board to expropriate for the purpose of enlarging an ocean port. 8

Federal Expropriation Powers

The power of the federal government to expropriate is authorized and governed by the enumerated heads of section 91 of the B.N.A. Act. The Act providing the Government of Canada with the widest general authorization of this power is the Federal Expropriation Act. The latter Act authorizes the Minister to "expropriate" property necessary for the construction of a "public work."[9] More specifically related to transportation needs is the power of the Dominion to expropriate land under section 91 (10) of the B. N. A. Act. It authorizes the National Harbours Board to expropriate for the purpose of enlarging an ocean port; and The Railway Act[10] which authorizes expropriation by "any railway"[11] for

land required for its use. In the former case, compensation is provided under the Expropriation Act (section 16) with regard to Federal Crown Corporations, and in the latter case under the Railway Act (section 218). "A pipeline company may. . .take land. . .for the construction of its line."[12] The formalities to be followed are those set forth in sections 207 to 246, 248 and 251 of the Railway Act.

The National Park Act authorizes "the expropriation. . .of lands . . .for the purpose of a Park." The park land may then be sold or leased as "required for the right away of any railway. . .or pipeline."[13] In the Northwest Territories "The Governor-in-Council may authorize the acquisition by any railway, power company or pipeline company, . . .of a right-of-way for a road bed, for transmission lines, or for pipelines through territorial lands. . . ."[14]

Federal powers of expropriation are found in a number of Acts, and all are of benefit for the purposes of acquiring land for corridors.

Provincial Expropriation Powers

As outlined earlier, the provincial governments can authorize the expropriation of land within the fields enumerated in section 92 of the B. N. A. Act. It is with the provincial level of government that the major responsibility[15] of expropriating land for transportation corridors rests[16] (Appendix A). Under present legislation,[17] the provinces are responsible for assembling land for highway purposes in their unorganized territory.[18] In Crown held lands, the provincial department of highways can place a reserve[19] on a portion of land so designated for future use, and, development upon the land is prohibited unless permission is granted by the Minister of Highways. Financial savings result from this method of land acquisition since the land is transferred from one provincial

department to another when the highway is scheduled to be constructed. Where land is alienated in an unorganized territory, provision is made to compensate the owners for land and improvements which are expropriated for the purpose of highway construction.[20] In addition, the powers of the province with regard to land in unorganized territory also apply to municipalities. The provincial highway department

> has and may exercise within the limits of any municipality in or through which an arterial highway runs all the powers which a municipal corporation authorized to lay out, construct, and maintain the highway might exercise for that purpose. /Further/, in respect of an arterial highway, /the highway department/ has all the rights, powers and advantages conferred by by-law, contract or otherwise upon the municipal corporation having control of the highway before it became classified as an arterial highway under this Act. 21

If the provincial highways department deems it necessary to acquire land for an arterial highway within a municipality, it can exercise that prerogative. The provincial highway department is empowered to reserve land for corridors without acquiring it in fee simple. Legislation allows the Minister to "lease or accept lands, rights, easements, or privileges from the Government of Canada, or from any person, for and to the use of the Department and may make and enter into any agreements, stipulations, or conditions relating to the holding of ownership of any such lands, rights, easements, and privileges."[22] By virtue of the legislation, the province can by restrictive covenant or easement, prohibit development within a designated transportation corridor. Easements established today may save considerable sums in compensation being paid later if development was allowed within the corridor.

Additional provincial Acts empowering the authority to expropriate land, and which are relevant to the corridor concept proposed earlier, may be cited. The Pipe Lines Act allows a "company. . ., for the purposes

of its undertaking, power to. . .take, and hold land. . .necessary for the construction. . .of its line. . ., [and further provides that] a pipeline may, . . .be carried across a highway and for such purposes, may be constructed. . .along. . .any such highway, railway, irrigation ditch, underground telegraph, telephone, or electric power line, or pipe line."[23]

The British Columbia Power Commission is authorized to "purchase, lease or otherwise acquire any real. . .property for the purposes of. . . supply[ing] power."[24] Presumably "supplying power" includes lands for transmission line rights of way. Likewise, the Rural Telephone Act allows "a company [to] take, use or acquire any land. . .in whomsoever vested, [and the company] may construct. . .its telephone system. . . along. . .any public highway, road, street, bridge, or any other place . . . ."[25]

Under the powers embodied in the Railway Act a "company can acquire, take and hold land, . .for the construction. . .and operation of the undertaking, . . ., of the company, [and can] place the railway across or upon the lands of the Crown or of any person on the located line of the railway."[26]

For the purpose of establishing a "park" or "recreation area," the Park Act provides for the expropriation of land. The expropriation method follows the provisions of the Department of Highways Act.[27]

Within the gamit of Acts existing at the provincial level, the foregoing are the most relevant to acquisition of land for transportation corridors.

Municipal Expropriation Powers

In addition to the Acts relating specifically to provincial departments,[28] municipalities also possess the power of expropriation. The provinces have delegated to the municipalities the legislative power to expropriate land within their municipal boundaries. However, "the right to expropriate, being an unusual and exorbitant right, must be found in the express words of a statute for the right is never implied."[29] Municipal Acts or ordinances,[30] created by provincial statute, provide the "right" or legislative power for local councils to expropriate by the passing of a bylaw.[31] Municipalities may, then, by the passing of an appropriate bylaw, expropriate land for highway purposes, subject to the payment of compensation.[32]

Municipal Planning Powers

Municipal planning powers provide local government with the opportunity to establish an area of land as a corridor prior to its acquisition. Application of the planning powers can reduce the amounts paid in compensation for expropriation, and can postpone the need to acquire the land until a later date. One avenue available to municipalities to realize this dual opportunity is through the preparation and adoption of an Official Community Plan.[33] Legislation permits a council to "have community plans prepared. . .and. . .expressed in maps, plans, reports or otherwise."[34] In this Act a "community plan means an expression of policy for (a) any use or uses of land, including surfaces of water; or (b) the pattern of the subdivision of land; and either or both may apply to any or all areas of the municipality."[35] After having a community plan prepared, the council must then "by bylaw adopted by an affirmative vote of at least two-thirds of all members thereof, designate any community

plan prepared under section 696 as the official community plan or as a part of the official community plan."[36] Before the bylaw adopted by council (section 697, subsection 1) comes into force and effect it has to receive "the approval of the Lieutenant-Governor in Council."[37]

Although "an official community plan does not commit the council or any other administrative body to undertake any of the projects therein suggested or outlined," its adoption "does not authorize the council to proceed with the undertaking of any project except in accordance with the procedure and restrictions laid down therefor by this or some other Act."[38] Therefore, if the location of a proposed transportation corridor is indicated by an official community plan this can be taken as an expression of policy by council for the use of that land so designated. Subdivision of land which might otherwise occur within the boundaries of the proposed corridor is thereby prohibited, in keeping with the policy expressed in the official community plan. For example, where a proposed highway right of way, as indicated on the official community plan, passes through an agricultural area, the owner or occupier of that land cannot subdivide the area indicated as highway reserve, but may however construct a structure for his own purposes. He must respect the official community plan. If the official community plan is amended, no compensation to the owner or occupier is forthcoming.[39]

Following the adoption of an official community plan, council can adopt a zoning bylaw in order to "regulate the use of land" within the municipality, having "due regard" to the "welfare of the public," and "the securing of adequate. . .access."[40] Legislation states that "property shall be deemed not to be taken or to be injuriously affected by reason of the adoption of a zoning bylaw under this Division.

/Section 706, (1)/ subsection (1) does not apply when land is zoned exclusively for public use."[41] Where a transportation corridor is designated in an undeveloped portion of the municipality, present land use(s) would continue without compensation being paid. When an official community plan and zoning bylaw are in effect, compensation could be sought when the land is expropriated by the transportation authority.

Another avenue for establishing a linear area of land as a transportation corridor, prior to its acquisition, exists in the present legislation.[42] It states that "the Council may by bylaw enter into an agreement with any owner of land for reserving any part of such land for highway purposes."[43] Municipal governments are thereby empowered to reserve land (by agreement) of any corridor width for future highway use. This method of land reservation is superior to the highway conservation zone proposed by Mandelker and discussed earlier (p. 31, Chapter II) which does not totally prohibit development merely because the conservation zone is established. With Mandelker's proposition, where cases of hardship are proven because development was prohibited, the highways department is obliged to purchase the land of the affected owner. In contrast, the agreement for reserving land for highway purposes can include "the condition that such land so reserved shall remain unencumbered by buildings or structures, and the agreement shall have the force and effect of a restrictive covenant running with the land. . ."[44] This form of agreement is negative in nature and indicates the rights being conveyed and the amount which is to be paid by the municipality for the rights. The use of this method of land reservation may be hampered by the financial amounts requested by landowners. As a legal instrument available to local councils, it provides an alternative to acquisition

of the land in fee simple for future use as transportation corridors.

Coordinating Powers For Corridors

The constitutional powers of government to acquire land, particularly by expropriation, are governed by the distribution of legislative powers effected by sections 91 and 92 of the B. N. A. Act. A review of the legislation relevant to all levels of government indicates the provinces as playing the key role in the acquisition of land for corridor purposes. In addition, municipal governments are authorized to expropriate land but the prerogative of major acquisitions for highway purposes, rests clearly with the provinces. A number of Acts indicate the limited extent under which the Federal government can expropriate land necessary to the performance of its functions.

Concomitant to the powers of expropriation are the uses to which such land is put as well as the finances for its development. Interdepartmental coordination at each governmental level, and integration between the different governmental levels would assist greatly in the successful establishment of corridors. As an example of the interdepartmental coordination, various Provincial Acts may be drawn upon, jointly, for the purposes of land acquisition and its financing.

The Department of Highways Act, the Highway Act, the Trans-Canada Highways Act, the Railway Act, the Pipe-lines Act, and the British Columbia Harbours Board Act are significant for the acquisition of land for a variety of transportation purposes. The Acts provide for the compensation of land and the financing of development, but the financial support offered by additional acts could also be coordinated. The Drainage, Dyking and Development Act,[45] for example, allows costs to be shared between the Dyking Authority and the Highway Department where a

highway built is used as a dyke. Where it is possible to coordinate Provincial or Regional parks[46] with the corridor (Chapter II, p. 21) financial contributions under the Park Act and Regional Parks Act may be available.

Paralleling some of the Provincial Acts are similar Acts at the Federal level. For Federal functions, The Railway Act, the Expropriation Act, Public Works Act, and the National Harbours Board Act are the most relevant for acquiring land. Through the coordination of these Acts, additional land acquisition powers and financial resources can be utilized. Both the Pipe-lines Act and the Canadian National Railways Act provide finances for the acquisition of right of way and for development of their respective services. The National Parks Act authorizes the acquisition of land "for the purposes of a Park," and further authorizes "the sale, lease or disposition of public lands within a Park" for the right of way of any railway or pipeline.[47] Monies to be expended for the latter purpose could be directed toward land acquisition. Finances are also available from the Trans-Canada Highway Act for the construction of "such highways within the National Parks as form part of a trans-Canada Highway."[48] If the concept of the transportation corridor is to be integrated with urban renewal, another possible source of finance is made available. Canada's National Housing Act permits the expenditure of money for the "acquiring and clearing of lands. . .in the urban renewal area."[49] With the inclusion of this Act, along with the others, a variety of land uses and financial resources is made available.

An example of the intergovernmental coordination suggested earlier presently exists in legislation. The Canada-British Columbia Joint Development Act authorizes the Province to enter into and carry out

jointly, any agreement with the Government of Canada, and any improvement district "respecting. . .highway construction and improvement, . . ., and to implement such agreement."[50] It further provides for the acquisition of "rights of way for any works."[51] Coordination in this case can extend to all three levels of government. Similarly, the Department of Resources and Development Act[52] allows the Minister to cooperate with the provinces and municipalities in carrying out any development programs. Cooperation and participation occurs when section (46) of the National Housing Act[53] is exercised. This section indicates that Central Mortgage and Housing "may. . .undertake jointly with the government of the province or any agency [municipality] thereof projects for the acquisition of land for housing purposes. . . ." The Corporation may also "make a loan to a province, or municipality. . .for the purpose of assisting that province, municipality or agency to acquire and service land for public housing purposes."[54]

The examples presented of interdepartmental and intergovernmental coordination and integration which have been presented indicate the possibilities which presently exist in legislation as one approach to the acquisition of land, and its financing, for future use as transportation corridors. An alternative to this method will be proposed, and is to be undertaken along with a review of the present method of road administration in Canada.

CHAPTER III

Footnotes

[1]Clyne, J. V. Report of the British Columbia Royal Commission On Expropriation, 1961-63, p. 29.

[2]Todd, Eric C. E. Winds Of Change And The Law Of Expropriation. Reprinted from the Canadian Bar Review, (Dec., 1961), p. 542.

[3]Clyne, op. cit.

[4]If such a guarantee exists, it is subject to further interpretation by the courts of the Canadian Bill of Rights. S. C., 1960, c. 44, s. 1(a).

[5]Todd, op. cit.

[6]Ibid., p. 550. Thus one of reasons for the British Columbia Royal Commission on Expropriation.

[7]Dawson, R. M. The Government of Canada (4th ed. rev.; Toronto: University of Toronto Press, 1963), pp. 562-566.

[8]Challies, G. S. The Law Of Expropriation (2nd ed., Montreal: Wilson and Lafleur, Ltd., 1963), p. 16.

[9]Expropriation Act. R. S. C. 1952, c. 106.

[10]The Railway Act. R. S. C. 1952, c. 234.

[11]Ibid., section (169) requires the railway company to first obtain the approval of the Board of Transport Commissioners for any lands required.

[12]Pipe Lines Act, R. S. C. 1952, c. 211.

[13]National Parks Act. R. S. C. 1952, c. 189.

[14]Territorial Lands Act. R. S. C. 1952, c. 263.

[15]Provinces can authorize municipalities to expropriate land by means of Municipal Acts and Ordinances.

[16]Authority originates in The British North America Act, 1867.
92 (5) The Management and Sale of the Public Lands belonging to the Province. . . .
(8) Municipal Institutions in the Province.
(13) Property and Civil Rights in the Province.
Refer also to Appendix A for specific Acts used by provincial governments.

[17]Particularly section 92 (5), see note 16.

[18]The significance of this factor is evident "In British Columbia /where/ only one-half of one per cent of the total land area is organized into municipalities. The remainder is unorganized and comes under the direct jurisdiction of the government of the Province of British Columbia. /However/, a vast amount of the unorganized territory is virtually uninhabited and a very high percentage of the unorganized area population is concentrated on the outskirts of the existing municipalities." Pendakur, V. S. Regional and Local Planning for Roads and Streets in Western Canada. Reprinted from proceedings, Canadian Good Roads Association, 1965, p. 9.

[19]Land Act. R. S. B. C. 1960, c. 206, s. 88.

[20]For the purposes of this paper and convenience, examples of provincial legislation are quoted predominantly from British Columbia. Department of Highways Act. R. S. B. C. 1960, c. 103, sections 16 to 37A, and the Highway Act. R. S. B. C. 1960, c. 72, s. 16.

[21]Highway Act. R. S. B. C. 1960, c. 172, s. 35.

[22]Department of Highways Act. R. S. B. C. 1960, c. 103, s. 8.

[23]Pipe Lines Act. R. S. B. C. 1960, c. 284, s. 8 and 31.

[24]Power Act. R. S. B. C. 1960, c. 293, s. 4.

[25]Rural Telephone Act. R. S. B. C. 1960, c. 343, s. 12 and 14.

[26]Railway Act. R. S. B. C. 1960, c. 329, s. 32.

[27]Parks Act. S. B. C. 1965, c. 31, s. 11.

[28]Acts cited here are those indicated by provincial departments of highway in response to a request from a research team regarding legislation used to acquire land for future highway rights of way. N. D. Lea and Associates, Toronto, are undertaking (1968) a research project to study the possibility of establishing sound engineering and economic criteria for the design of transportation corridors. Central Mortgage and Housing Corporation awarded a grant not to exceed $15,000 toward the research project.

The Public Works Act R. S. A. 1965, c. 78.
Department of Highways Act. R. S. B. C. 1960, c. 103.
Highway Act. R. S. B. C. 1960, c. 172.
The Highways Department Act. R. S. M. 1965, c. 32.
Expropriation Act. R. S. N. B. 1952, c. 77.
Family Homes Expropriation Act. S. N. and L. 1964; No. 65.
The Expropriation Act. S. N. and L. 1964, No. 31.

Public Highways Act. R. S. N. S. 1954, c. 235.
The Highway Improvement Act. R. S. O. 1960, c. 171.
The Public Works and Highways Act. R. S. P. E. I. 1951, c. 135.
Roads Act. R. S. Q. 1964, c. 133.
The Highways Act. R. S. S. 1965, c. 27.

[29]Challies, p. 12.

[30]The Municipal District Act. R. S. A. 1965, c. 215.
Municipal Act. R. S. B. C. 1960, c. 255, s. 465 and 791.
The Municipal Act. R. S. M. 1954, c. 173.
Towns Act. R. S. N. B. 1952, c. 234.
The Local Government Act. R. S. N. and L. 1952, c. 66.
Municipal Act. R. S. N. S. 1954, c. 185.
The Municipal Act. R. S. O. 1960, c. 249.
The Town Act. R. S. P. E. I. 1951, c. 162.
Cities and Towns Act. R. S. Q. 1964, c. 193.
The Municipal Expropriation Act. R. S. S. 1965, c. 166.

Other relevant Acts not listed include charters and acts relating to specific types of municipalities, e.g., specific cities; villages, local improvement districts, and regional districts.

[31]In British Columbia - the Municipal Act, R. S. B. C. 1960, c. 255, s. 513, states that "the Council may by bylaw. . .expropriate . . .any real property [in order to] lay out, [or] construct. . .highways."

[32]The Municipal Act R. S. B. C. 1960, c. 255, s. 478 provides that "the Council shall make to owners [of] real property. . .expropriated, or used by the municipality in the exercise of any of its powers, due compensation. . . ."

[33]Municipal Act R. S. B. C. 1960, c. 255, s. 697. (See footnote twenty). This part of the Act does not apply to local districts in British Columbia.

[34]Ibid., s. 696.

[35]Ibid., s. 695.

[36]Ibid., s. 697, (1).

[37]Ibid., s. 697, (2).

[38]Ibid., s. 699. Also s. 798, in reference to an official regional plan.

[39]Lecture in Local and Regional Planning Administration, regarding Interpretation of the Municipal Act, from W. Lane, March 16, 1968, at The University of British Columbia.

[40]Municipal Act R. S. B. C. 1960, c. 255, s. 702. Note: The Council shall not, however, adopt a zoning by-law until it has held a public hearing thereon.

[41]Ibid., s. 706.

[42]Ibid., s. 513, (4).

[43]Ibid., s. 513.

[44]Ibid., s.513.

[45]Drainage, Dyking and Development Act R. S. B. C. 1960, c. 121, s. 51.

[46]Park Act S. B. C. 1965, c. 31, s. 11.
Regional Parks Act S. B. C. 1965, c. 45, s. 11.

[47]National Parks Act R. S. C. 1952, c. 189.

[48]Trans-Canada Highway Act R. S. C. 1952, c. 189.

[49]An Act to Amend the National Housing Act S. C. 1964-65, c. 15, s. 23.

[50]Canada - British Columbia Joint Development Act R. S. B. C. 1960, c. 40.

[51]Ibid., loc. cit.

[52]Department of Resources and Development Act R. S. C. 1952, c. 76.

[53]National Housing Act R. S. C. 1952, c. 188.

[54]See note number 6 (s. 35).

CHAPTER IV

A PROGRAM OF COOPERATION FOR CORRIDORS

A review of the present road building and financial responsibilities relating to the three government levels is considered. The federal-provincial financial responsibilities related to the construction of the Trans-Canada Highway are discussed as an example of governmental cooperation in road building. Leading from this analysis of responsibilities will be proposals which could commit the three governmental levels to cooperate in the financing and acquisition of land for corridor purposes. The proposals will include the considerations of the organization, administration and financing of the land acquisition programs, and the role each governmental level would play.

Road Responsibilities in Canada

With regard to road building and its financing, this responsibility was assigned by the British North America Act to the provincial governments. "This authority was initially delegated by the provincial governments to the municipalities (rural and urban), but as the motor vehicle came into widespread use the provinces formed highway or public works departments to plan, design, construct, maintain, and operate the main rural highways."[1] The types of municipalities (Table I) and their responsibilities for road building varies greatly from region to region. "The powers and responsibilities of municipalities are those delegated to them by statutes passed by their respective provincial legislatures. Some of these statutes apply to all municipalities within a province, some to a certain type or

group, and many to one municipality only."[2]

TABLE I

GOVERNMENT UNITS IN CANADA WITH ROAD RESPONSIBILITIES

Unit		Number	Miles of roads or streets	Expenditures during 1964 incl. subsidies paid out ($ million)
Provinces		10	145,828	795
Municipalities	Cities, towns, villages	1898	35,690	303
	Rural	1187	302,706	
Federal		1	4,600	107
Total		3096	488,824	1205

Source: Canadian Good Roads Association. Road Administration in Canada: 1965, Technical Bulletin No. 29, 1965, p. 2.

Some 3085 urban and rural municipalities (1965) contain approximately 302,706 miles of streets and roads (Table I). Local property taxes and provincial government subsidies provide the municipalities with funds to meet their financial responsibilities for road construction, maintenance and administration.

> All provinces give some form of financial assistance to their municipalities. This may be in the form of unconditional grants, which may be spent as the municipalities see fit, or grants-in-aid for specific purposes such as local road construction. As the forms of aid differ among the provinces it is difficult to make specific comparisons of the extent to which the different provinces assist their municipalities in building and maintaining local roads and streets. 3

Despite the financial and technical assistance given by the provincial highway departments, the municipal road budget for 1967-68 is estimated at $3.68 million or a little less than one-quarter of the total expenditure on streets and roads in Canada (Table 2).[4]

TABLE 2

NET ROAD AND STREET EXPENDITURE BY ALL GOVERNMENTS
(thousands of dollars)

	Fiscal Year			
	1967-68 (Estimate)	1966-67 (Estimate)	1965-66 (Actual)	1964-65 (Actual)
Federal	147,175	153,152	151,450	136,019
Provincial	1,119,526	1,080,537	1,101,466	946,675
Municipal*	368,104	362,771	322,566	291,342
Total	1,634,805	1,596,460	1,575,482	1,374,036

* For calendar years. Municipal includes both urban and rural municipalities.

Source: Canadian Good Roads Association, Highway Finance 1967, Technical Bulletin No. 32, 1968, p. 2.

The provinces are responsible for the construction, maintenance and administration of approximately 145,828 miles of streets and roads (1965, Table I).

> Provincial government expenditures for highways and for municipal road assistance are budgeted annually from consolidated revenue although there has been some general relationship between provincial road expenditures and receipts from the provincially collected 'road user taxes' (i.e., gasoline and diesel tax, motor vehicle license fees and motor carrier taxes). Under federally supported provincial road construction programs (i.e., Trans-Canada Highway), the provincial government is reimbursed for that part of the highway department's expenditures which is shareable under the federal-provincial agreements. 5

Estimated expenditures of provincial governments on highways, roads and bridges represent almost 70 per cent of expenditures for all levels of government. (Table 2).

The miles of streets and roads the federal government is responsible for total 4,600 (1965).

"The Federal Government is responsible for roads in the Yukon, Northwest Territories and national parks. In addition, it has contributed to the construction of certain important provincial highways under the Trans-Canada Highway Act, Roads to Resources Program, and other special projects of national importance."[6]

The Federal Government participated in the following projects: the Atlantic Development Board provides financial assistance to Newfoundland, New Brunswick, Nova Scotia and Prince Edward Island for the construction of all weather trunk roads; provision of fifty-five per cent of the Railway Grade Crossing Fund; the construction of parkways in the National Capital Region; cost sharing agreement with the provinces in the Roads to Resources Program; roads on Indian reservations; Trunk Highway Program within the national parks; and access roads to light houses.[7]

Federal funds for road construction are budgeted annually from consolidated revenue of the Government of Canada. The estimated expenditure by the senior level of government for a variety of projects in 1967-68 is less than nine per cent (Table 2).

While the high levels of expenditures by the provinces and municipalities will continue for streets and roads, barring a revision in the cost-sharing agreements, the small share of expenditures by the federal government may become even smaller. Two major cost-sharing agreements in which the federal government is participating are nearing completion. Of

the $900 million allocated for the construction of the Trans-Canada Highway and Roads to Resources Program only fifty-seven million dollars remain to be expended. It is anticipated that both projects will be completed by 1970.

The Trans-Canada Highway: An Example of Cooperation

A review of the development of the Trans-Canada Highway may serve as an example of federal-provincial cooperation and will be considered as an instructive precedent for the establishment of transportation corridors. The approach to the construction and financing of this national roadway is proposed as a working method of federal-provincial partnership in establishing transportation corridors and as an alternative to the interdepartmental and intergovernmental coordination and integration of numerous Acts discussed earlier (Chapter III).

"In 1949, the Honorable R. H. Winters introduced the Trans-Canada Highway Act into Parliament. This was a bold and imaginative step to produce a truly national highway."[8]

> The original agreements covering the construction of the Highway, as provided for in the Trans-Canada Highway Act 1949 (2nd Session) C. 40, S. 1. were executed with the Provinces of Ontario, Manitoba, British Columbia, Prince Edward Island, Saskatchewan and Alberta on April 24, 1950, with the Province of New Brunswick on May 27, 1950, the Province of Newfoundland on June 23, 1950, and with the Province of Nova Scotia on May 15, 1952. The Province of Quebec became party to a Trans-Canada Highway Agreement on October 27, 1960. 9

These original agreements provided, as did the Act, for a hard-surfaced all-weather road from coast to coast. Ottawa would pay to the provinces, fifty per cent of the cost of new construction and up to fifty per cent of the cost of prior construction since 1928, that is, the cost of one lane of a two-lane highway. The federal contribution under the Act was limited

to $150 million. "The provinces would be responsible for choosing the shortest, practical route, and for maintenance."[10] As indicated, "responsibility for the design of the Highway rests initially with the Provincial governments. Cooperation between the Provincial government and the Development Engineering Branch, Department of Public Works ensures the construction of the Highway in accordance with the requirements of the Trans-Canada Highway Agreements. The engineers of the Branch ensure that the conditions of the Agreement are adhered to and inspections are made, in cooperation with provincial engineers, during all phases of construction."[11] The Department of Public Works has been directly responsible for construction of approximately 140 miles of highway within the boundaries of five National Parks. The Act also provides that "the Minister of Resources and Development may out of monies appropriated by Parliament provide for the construction of such highways within the National Parks as form part of a trans-Canada highway."[12]

During the initial period of the national project, the Provinces experienced problems in connection with the large construction program. They found it difficult to complete the work necessary to ensure the completion of the Highway within the seven-year period covered by the Act of 1949. At a Federal-Provincial Highway Conference in 1955, the subject of the uncompleted mileage was discussed, which led to the amendment of the Act. Enactment of the amendment increased the amount of Ottawa's contribution to the cost of the highway by providing for an additional forty per cent contribution to the cost of construction on one-tenth of the highway mileage in each province. The construction period was extended to December, 1960, and the aggregate limit of funds available for expenditure by the federal government was raised to $250 million. In 1963,

legislative authority provided for an extension of the construction period to December, 1967, and allowed for federal contribution up to $625 million. Significantly, it also provided for payment by the senior level of government of ninety per cent of construction costs incurred by the Atlantic provinces from April 1, 1963. Legislation in 1966 authorized a further extension of the construction period to December 31, 1970, and a raising of the maximum federal contribution to $825 million.[13] Federal contributions to date (1967) stand at approximately $670 million. The 1967-68 fiscal year amount is estimated at $60 million.[14]

Although the Trans-Canada Highway was "completed" and officially opened July 30, 1962, at Rogers Pass, B. C., portions of the route still remain to be raised to specified standards.[15]

F. C. Hudson, who presented a paper at the 1966 Convention of the Canadian Good Roads Association was of the opinion that the Trans-Canada Highway program "has been an outstanding example of federal-provincial cooperation. Even though it is still unfinished, it has proven decisively that a national highways system can only be achieved by the truly co-operative effort of all segments of our economy."[16]

In review it may be seen that the federal government has in cooperation with the provinces contributed to the development of Canada's roads and highways, through the Trans-Canada Highway Act and several additional projects. As indicated earlier, two major cost-sharing agreements between the federal and provincial governments are nearing completion, after which only regional cost-sharing programs of financial significance will exist.

The Economic Council of Canada in its Fourth Annual Review recognized the increasing financial responsibilities falling upon the municipalities and provinces in order to provide transportation services for the

rapidly urbanizing regions of Canada, and suggested that "the expenditures and financing required call for increased senior government assistance . . . ."[17] The Prime Minister, at a Federal-Provincial Conference on Housing and Urban Development indicated an interest on behalf of the senior government to discuss the problems outlined by the Economic Council and to explore and consider approaches to their solution.[18]

In view of the history of federal-provincial cooperation in constructing the Trans-Canada Highway, and the indication of a growing awareness and willingness on behalf of the senior level of government to discuss and possibly enter into agreements and participate in solving problems hitherto predominantly the responsibility of provincial governments, a consideration of two proposals involving federal financial assistance in land acquisition programs will be undertaken.

Proposed Organization

The following proposal could provide a basis for an agreement between the federal level and the several provincial governments, as well as the participation of the municipalities. Federal legislation ought to be passed creating an Act for the purpose of allowing the Government of Canada to enter into a cost-sharing agreement with the provinces (Figure I). The proposed Act is to be similar in principle to the Trans-Canada Highway Act regarding its financial flexibility relating to different provinces or regions; and would be administered on behalf of the federal government by Central Mortgage and Housing Corporation. In conjunction with the federal-provincial agreement, each province is to establish a Provincial Office of Urban and Regional Development, which is intended to encompass existing departments of municipal affairs, departments of highways and recently emerging housing authorities.

Implementation

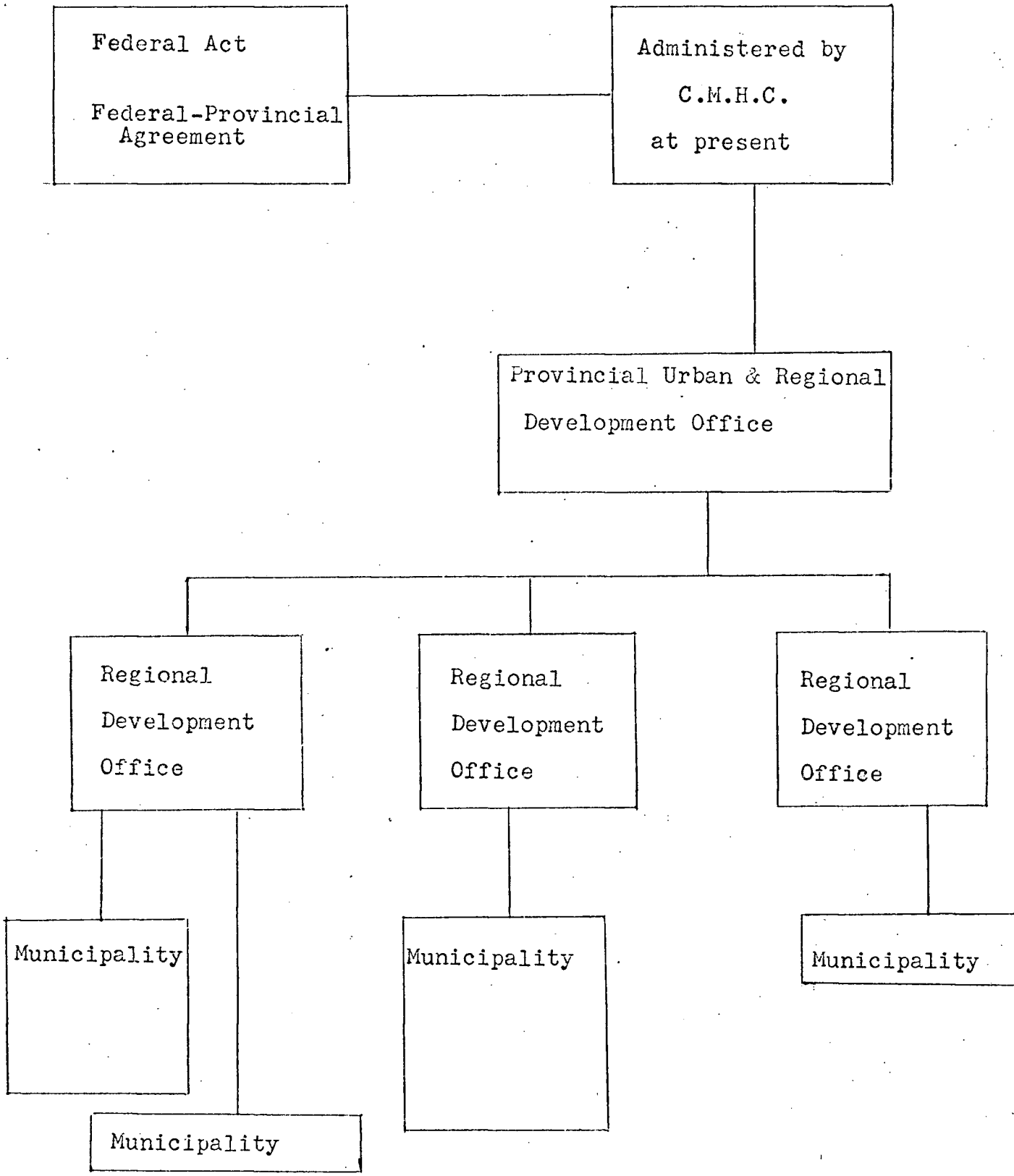
In carrying out its constitutional responsibility, the newly established Provincial Office is to be commissioned to deal with all facets of all land use planning, and therefore other provincial, federal and local governmental departments, having anything to do with land use, are required to coordinate their undertakings with the Provincial Office. A variety of disciplines is a requisite to staffing such an office and to enable broad consideration to be given to the diversity of land use demands.

In order to qualify for financial assistance from the senior levels of government for the purpose of acquiring land for transportation corridors, all municipalities are obligated to participate in urban and regional planning programs. Municipal plans are to be coordinated by Regional Development Offices staffed by persons representing disciplines as diverse as those on the design concept team employed in Baltimore (Chapter II). Following the coordination of municipal plans into a regional plan, the latter is forwarded to the Provincial Office for final approval and adjustment if necessary. Approval of the plan qualifies the relevant municipalities to receive the federal-provincial financial assistance for their land acquisition programs related to transportation corridors.

Finances

Through agreement with the provinces, the federal government is to make financial contributions in respect of the cost to the provinces of the advance acquisition of land for transportation corridors. The proposed federal financial assistance is also applicable to the acquisition and clearing of land, relative to the corridor, when urban renewal is being

Figure 1[19]


Federal Act
Federal-Provincial Agreement
Administered by C.M.H.C. at present
Provincial Urban & Regional Development Office
Regional Development Office
Regional Development Office
Regional Development Office
Municipality
Municipality
Municipality
Municipality

undertaken. The amount of federal funds to be provided could differ from region to region or province to province as it does in the Trans-Canada Highway Act. Provincial governments would contribute financial assistance from consolidated revenue, while the municipalities could rely less on property taxes for their contribution toward the financing of land acquisition, because of the federal contribution.

Through the proposal described above a program of land acquisition for transportation corridors could be implemented within a framework of urban and regional planning. The federal government is provided with the opportunity to contribute toward the improvement of the urban environment and to the economy of the nation as a whole. Similar financial arrangements to the one proposed have been undertaken in the past, through federal-provincial agreements, and are evidently successful. The constitutional integrity and responsibility of the provinces are respected, with finances eminating from the appropriate level. Municipalities are encouraged to engage in planning, and have their plans coordinated regionally before being accepted by the Provincial Office. By making the financial assistance available, contingent on planning programs locally, the provinces can readily discern the expressed intentions of municipalities to acquire land for corridor purposes. By following such a proposal as the one outlined above, the acquisition of land for transportation corridors can be coordinated with urban and regional planning programs with an aim to influencing future regional development.

The second of two alternatives to be considered as an approach to the solution of financing and acquiring land for transportation corridors is the creation of a crown corporation by Act of Parliament.

The merits of a crown corporation are that "it has a legal existence of its own, and can be given statutory duties and powers which fall outside

the normal organization of the service of the Crown. It offers scope for many kinds of government experiment, under which central control, local control and independence can be blended in any desired proportions."[20] As a single purpose authority, the corporation's strength lies in the public power behind it. Further, it combines the strength of a private corporation with the power of the government. The attributes of a crown corporation as identified by Musolf are "their capabilities for directness of action, flexibility, and freedom from some of the red tape that encumbers ordinary governmental activities. In its broadest form this freedom might enable a corporation to retain its earnings and employ them as it wishes rather than being forced to depend on annual legislative apportions and explicit spending directions; to acquire and sell property, make contracts, and perform other actions of a legal person; and to hire and fire employees without regard to ordinary civil service restrictions."[21]

Proposed Organization

The proposed crown corporation would be a single purpose body whose primary purpose is to participate in the financing and acquisition of land. Its major attributes, in addition to the merits listed above, would be a combination of federal financing and delegated provincial powers of expropriation. The corporation would also handle the provinces' financial contributions to the land acquisition program. Regional corporation offices would be located across Canada.

Implementation

The corporation would be solely responsible for acquiring land in the unorganized areas of the provinces, and in conjunction with the municipalities in all organized areas. Equipped with the delegated power of expropriation and backed by federal and provincial financing, the

corporation could assist in coordinating local planning efforts and in financing the advance acquisition of land for corridors. The municipalities would be required to engage in planning programs both to qualify for assistance and to indicate where development was being considered relative to the corridor location. All land acquired by the corporation could be classified as part of a national land bank for use as future transportation corridors.

Finances

The financial arrangements under this proposal need not differ greatly from those outlined in the first proposal. As in the initial proposal the federal government's contribution would represent a substantial amount, thereby reducing the financial burden of the municipalities and provinces.

Summary

In order to initiate successfully either proposal mentioned earlier for financing the acquisition of land for future transportation corridors, the cooperation of all three levels of government is necessary. The constitutional responsibility for most of the road building, and therefore land acquisition, rests with the provinces. It is the provinces who are financing nearly seventy per cent of the road construction in Canada, while the municipalities pay slightly less than twenty-five per cent. Expenditures on roads by the federal government account for the remainder. It is the latter government which has recognized the national trend of urbanization and is anticipating the need for future transportation facilities in order to move an increasing number of people and volume of goods. However, what is required is some administrative means whereby the federal government can financially participate to a greater degree in

the road construction programme in Canada.

Two possibilities are proposed which would allow the senior level of government to contribute financial assistance to the provinces and municipalities, who in turn would be responsible for the planning and acquisition of land for future corridors. Within these corridors of land, whose purchase was financed by the tri-levels of government, would be constructed a variety of transportation facilities to serve the inter-regional movement of people and goods. Either possibility provides the federal government with an opportunity to participate financially in the land acquisition programme for transportation corridors, while at the same time assisting in directing urban and regional development on a regional and national level.

CHAPTER IV

Footnotes

[1]Canadian Good Roads Association, Road Administration in Canada: 1965, Technical Bulletin No. 29 (Ottawa: Canadian Good Roads Association, Nov., 1965) foreword, p. (v).

[2]Ibid., loc. cit.

[3]Ibid., p. 5.

[4]Canadian Good Roads Association, Highway Finance 1967, Technical Bulletin No. 32 (Ottawa: Canadian Good Roads Association, Jan., 1968), Table 1, p. 2.

[5]Canadian Good Roads Association, Technical Bulletin No. 29, p. 5.

[6]Ibid., p. 1.

[7]Canadian Good Roads Association, Technical Bulletin No. 32, pp. 2-4.

[8]F. C. Hudson, "A National Highways Policy is Necessary for the Optimum Development of Canada's Overall Highways System" Proceedings of the 1966 Convention Canadian Good Roads Association Halifax, Nova Scotia (Sept., 1966), p. 37.

[9]Report of Proceedings under the Trans-Canada Highway Act Department of Public Works, Ottawa (Mar., 1967), p. 10.

[10]Edwin C. Guillet The Story of Canadian Roads (Toronto: University of Toronto Press, 1967), p. 227.

[11]Report of Proceedings under the Trans-Canada Highway Act Department of Public Works, Ottawa (Mar., 1962), p. 3.

[12]Trans-Canada Highway Act R. S. C. 1952, c. 269, s. 8.

[13]Report of Proceedings under the Trans-Canada Highway Act (March, 1967), pp. 9, 10.

[14]Canadian Good Roads Association Technical Bulletin No. 32, p. 2.

[15]Guillett, p. 228.

[16]Hudson, loc. cit.

[17]"The Canadian Economy From the 1960's to the 1970's" Fourth Annual Review, Economic Council of Canada, (Sept., 1967), p. 201.

[18]Opening Statement by the Prime Minister to the Federal-Provincial Conference on Housing and Urban Development. Press release from the office of the Prime Minister, Ottawa, Dec. 11, 1967.

[19]Assistance for the administrative system proposed in Figure 1 is credited to Planning For Regional Development In British Columbia With Special Application to Northern Vancouver Island Student Project 5, Community and Regional Planning Studies. (The University of British Columbia, August, 1965), pp. 57-65.

[20]H. W. Wade, Administrative Law 2nd ed. Oxford: Claredon Press, 1967, p. 34.

[21]Lloyd D. Musolf, Public Ownership and Accountability The Canadian Experience, Cambridge, Massachusetts: Harvard University Press, 1959, p. vii.

CHAPTER V

SUMMARY AND CONCLUSIONS

The fundamental purpose of this thesis is to investigate ways and means of acquiring land for transportation corridors. The hypothesis proposed in this study maintains that in order to compatibly integrate transportation facilities with land use in the urban and regional context, the transportation corridor concept should be developed. Development of the concept involves the consideration of many interrelated factors and requires a comprehensive approach to the question of land acquisition. The magnitude of the transportation corridor concept commands the cooperation of an inter-disciplinary team of planners and the participation of all levels of government.

During the investigation, Canadian and American methods and techniques of land use regulation and acquisition were reviewed. The prospects of establishing a land bank were also considered. More specifically, Canadian federal, provincial and municipal expropriation powers were investigated in addition to provincial and municipal planning powers. It was found that by coordinating constitutional powers, the three levels of government could conceivably acquire land for transportation corridors. Following a discussion on road building and financial responsibilities related to all levels of government, the Trans-Canada Highway was proposed as an example of a working model of federal-provincial partnership upon which to base an approach to the establishment of transportation corridors, and as an alternative to the coordination of constitutional powers cited above. In

light of the growing awareness and willingness expressed by the senior government to enter into agreements and to participate financially in providing better planning of urban and regional development across Canada, new legislation was proposed, fashioned after the financial arrangements of the Trans-Canada Highway Act. While this Act allows for the financial participation of all levels of government, only the provinces, in concert with the municipalities, are responsible for the planning and acquisition of land for transportation corridors.

A second proposal was the creation of a crown corporation. This corporation would provide financial assistance to the provinces for joint provincial-municipal undertakings of land acquisition programmes.

It was concluded from the study that the concept of transportation corridors as developed in the thesis is basically valid and therefore can perform the numerous functions credited to it.

Much of thepopulation increase in America's metropolitan areas will locate in the growth rings outside of central cities. Therefore, the development of corridors can have a profound effect on future urban form by influencing the direction of this growth and development in the urban and regional context.

The Northeast Corridor from Boston to Washington and Mississauga, located along the northern and western end of Lake Ontario, were cited as examples of population and transportation corridors in differing degrees of development.

For the compatible integration of transportation facilities with the surrounding land uses it was concluded that a comprehensive planning approach be undertaken which required the creation of a design concept team. The

team would attempt to resolve conflicts arising among the social, political and economic aspects affected by the corridor's development. It was resolved that an inter-disciplinary team could most adequately assess and evaluate the diversity of criteria which would be encountered in the process of locating corridors. This included such dissimilar considerations as combining parks, urban renewal, and individual rights-of-way, with transportation facilities within the corridor.

Following a review of zoning practices, it was resolved that this method of land use regulation was generally unreliable as a regulatory method of keeping land undeveloped and therefore in open space for future corridor use. Subdivision control was found to be a more reliable and effective method of land use regulation. As a positive means of ensuring the availability of land for corridors, land acquisition techniques through expropriation were considered, in addition to the possibility of establishing a land bank. It was concluded that most of the land would be expropriated and then consigned to a land bank for future use as transportation corridors.

A review of federal, provincial and municipal expropriation powers, was made to assess the degree of constitutional responsibility and therefore participation that each governmental level would have in acquiring land. Although it was found that a method of acquiring land could be developed through the coordination of constitutional powers at the three governmental levels, a workable alternative to this somewhat cumbersome approach was proposed. After assessing the road building and financial responsibilities of the three governments, new legislation was proposed, based on the successful experience of the Trans-Canada Highway Act, and was judged to be a superior alternative to the coordination of constitutional powers described earlier. It was concluded that the financial and

constitutional arrangements utilized in the Trans-Canada Highway Act agreements, because they have been historically successful, provide a sound foundation upon which to base the new legislation which provides for federal assistance in acquiring land for transportation corridors. Complementing the legislation would be the creation of a provincial administrative framework to coordinate the finances and the acquisition of land required for the successful development of the transportation corridor concept.

Finally, an alternative to the legislation and the coordination of constitutional powers was proposed. This alternate approach to the problem was the creation of a crown corporation, which in conjunction with the provinces and municipalities, would implement programmes of land acquisition for future corridors. It was concluded that a crown corporation would provide a viable alternative to the proposals of legislation and the coordination of constitutional powers as an approach to the successful development of the transportation corridor concept.

The significance of the investigation undertaken in this thesis is in its application to the planning process. Urban and regional planning deal with the total physical environment, and of that environment, transportation is an essential component. Comprehensive planning of the environment therefore includes transportation as one of the major elements of the total planning process. The transportation corridor concept as described herein, is one aspect of this major element. Within the planning process, the transportation corridor is but one step in a series of evolutionary and rationally organized steps which lead to proposals for guided urban and regional growth and development.

The planning process is a complex of many studies and surveys that lead to a detailed analysis, evaluation of alternatives, and final

recommendations. In addition, to be comprehensive the planning process must include representation both from all agencies of government, and from the private sector. Development of the corridor concept encompasses both ideas: first, through the creation of an inter-disciplinary design concept team with representatives from the public and private sector, and second, by permitting all levels of government to participate financially.

The second contribution which this study offers is the positive planning impact on the physical environment that the corridor concept could make, if implemented. A contemporary point of relationship between transportation facility planning and comprehensive planning to be emphasized, is that lines of transportation almost inevitably determine the patterns of land use and activity. If we are, in fact, going to be able to relate transportation planning to other components of comprehensive planning for the environment, then the transportation corridor concept merits serious consideration for implementation. Historically, North American cities have grown from small colonies or settlements, and much of their growth has been haphazard, rapid, and unplanned. Their locations were influenced by limited contemporary forms of transportation, not necessarily by choice, but by chance. Today, many of these cities are growing together, and are emerging as definable population corridors. This unplanned or improperly planned metropolitan development should not be guiding the construction of transportation facilities. Rather, proper planning, which includes the adoption of the transportation corridor concept, should be programmed for use as a major tool in guiding regional development. The type of urban regions which we have in the next generation depends entirely on our planning, now. Implementation of the transportation corridor concept, as one aspect of the planning process, offers

a tool to influence the form of future urban and regional development, and the opportunity to enhance the physical environment.

Criticisms

Although the study has basically established the validity of the hypothesis, this investigation of ways and means of acquiring land for transportation corridors has been limited somewhat in relation to its scope and extent of research. In some cases, the limitations were not anticipated prior to the investigation of the thesis subject, but became eivdent as a result of research into the various factors related to the concept of developing transportation corridors.

An initial criticism of the study relates to the use of American examples of land use regulation and acquisition as developed in Chapter II, while the remainder of the thesis dealt almost exclusively with a Canadian application of the concept. However, the seeming lack of Canadian examples coupled with the availability of American literature prompted such a move. More diligent research in a wider range of source material and locations would be required in order to redress this shortcoming.

Another limitation of the investigation concerns the responsibility of financing the different modes of transportation proposed to be located within the corridor. Investigation of the parties responsible for financing the construction of future transportation facilities could also consider what modes are to be given priority in keeping with contemporary technology.

A further criticism may be directed toward the absence of any discussion concerning future urban form in relation to or as a result of transportation corridors. Future research could be directed toward investigating the extent to which transportation corridors will follow, or

conversely, be used to direct, future urban form.

The investigation may be criticized for having failed to adequately examine the subject of compensation to landowners whose land might be expropriated for use as a transportation corridor. Expropriation and compensation procedures in Canada have recently been subjected to a number of provincial royal commission inquiries, and other than Challie's book, The Law of Expropriation, no comprehensive treatise on the Canadian situation is available. Also of importance to the study but not fully discussed was the problem of relocating displaced residents as a result of urban renewal within the corridor. This problem could be included as a part of further research into the subject of compensation.

In general, a review of the study suggests that the subject of acquiring land for transportation corridors may be too broad a topic to analyze comprehensively in a single thesis study. For example, the proposal for inter-governmental financial and administrative participation deserves more extensive examination than has been undertaken in this study. Similarly, the functions and duties of a crown corporation merit further examination. Nevertheless, an attempt has been made to present an overall examination of the major relevant factors to be considered in developing the concept of transportation corridors.

Although the study has recognizable limitations, the investigation in this thesis has substantiated the basic validity of the hypothesis:

> that in order to acquire land for the compatible integration of transportation facilities with the surrounding land uses in the urban and regional context, the transportation corridor concept should be developed.

Further research is suggested as a necessary adjunct to this thesis in order to gain a broader understanding of land use implications in relation to transportation corridors.

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APPENDIX A

Current Provincial Practice In Land Reservation Or Acquisition For Transportation Corridors 1968

Method	Yes	No	Province	Legislation or Powers Indicated
1. Expropriate land for future right of way	x		Newfoundland	Family Homes Expropriation Act S.N. and L. 1964, #65.
	x		Prince Ed. Is.	Public Works and Highways Act R.S.P.E.I. 1951, c. 135.
	x		Nova Scotia	Public Highways Act R.S.N.S. 1954, c. 235.
	x		New Brunswick	Expropriation Act R.S.N.B. 1952, c. 77.
	x		Quebec	Roads Act R.S.Q. 1964, c. 133.
	x		Ontario	The Highway Improvement Act R.S.O. 1960, c. 171.
	x		Manitoba	The Highways Department Act R.S.M. 1965, c. 32.
	x		Saskatchewan	The Highways Act R.S.S. 1965, c. 27.
	x		Alberta	The Public Works Act R.S.A. 1965, c. 78.
	x		British Columbia	Department of Highways Act R.S.B.C. 1960, c. 103.
2. Reserve land for right of way	x		Newfoundland	
	x		Ontario	
	x		Manitoba	
3. Acquire land for immediate use within 3 years)			All Provinces	
4. Acquire land for long-range use (from 3 to 20 years)	x		Saskatchewan	Purchase of land.
	x		Ontario	Registration of an Assumption Plan (for future right of way.
	x		Newfoundland	Municipal plan and Zoning.