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# A geographic analysis of the township of Mersea : an exercise in applied geography with a view to evolving a zoning by-law.

Milan. Pisko  
*University of Windsor*

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A GEOGRAPHIC ANALYSIS OF THE TOWNSHIP  
OF MERSEA: AN EXERCISE IN APPLIED  
GEOGRAPHY WITH A VIEW TO EVOLVING  
A ZONING BY-LAW

by

Milan Pisko, B.A.

A THESIS PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL  
OF THE UNIVERSITY OF WINDSOR IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARTS

1972

DEPARTMENT OF GEOGRAPHY

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## ABSTRACT

In 1962 a portion of the Township of Mersea along with the Town of Leamington, Essex County had been included within an official planning area.

In 1963 the Township designated the lands within the Township under subdivision control. Little else was done to implement the policies embodied within the Official Plan. As a result the problem of urban encroachment onto prime agricultural land surrounding the Town of Leamington, as noted in the Official Plan, has persisted.

This paper investigates and assesses the magnitude of this sprawl. It also illustrates how a geographer may apply geographic concepts and techniques such as field reconnaissance, aerial photographic interpretation, sampling as well as statistical methods for cartographic presentation in preparing a zoning by-law.

The study suggests that the municipality prepare a new or amended official plan encompassing the entire Township. It also proposes that a zoning ordinance be prepared to implement the objectives and policies of the Plan. However since these procedures will require considerable time, a temporary solution to the problem of urban sprawl, by means of a proposed status quo zoning by-law, is presented.

## VITA

Milan Pisko was born in Montreal, Quebec. He received his elementary and secondary education in Kirkland Lake, Ontario. Following graduation from North Bay Teachers' College in 1955 he taught in a Northern Ontario rural school for two years. His teaching experience in Windsor, Ontario includes five years in the elementary schools, two years at the High School of Commerce and seven years at Walkerville Collegiate Institute.

Majoring in geography, he graduated from the University of Western Ontario with a Bachelor of Arts degree in 1961. During the summer of 1963 he obtained a High School Assistant's Certificate at the Ontario College of Education in Toronto. In 1966 he received a High School Specialist's Certificate in geography from the Althouse College of Education in London and was appointed Geography Department Head at Walkerville Collegiate Institute. In the summer of 1968 he was an instructor of beginning secondary school geography teachers at the Althouse College of Education. He has been an associate teacher with the College for six years.

COMMITTEE IN CHARGE OF CANDIDACY

Ransome, J.C.; Ph.D. Professor of Geography

Lall, A.; Ph.D. Associate Professor of Geography

Seale, R.; M.A. Lecturer in Geography

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## PREFACE

This paper is intended to illustrate how a geographer may apply geographic concepts and techniques in the preparation of a zoning by-law for a rural municipality.

Research began in March, 1969, following a discussion with Dr. J.C. Ransome of the University of Windsor who suggested that a study of the Township of Mersea in Essex County be undertaken in order to propose a zoning by-law. The survey was formalized on June 17, 1969 with the signing of an agreement<sup>1</sup> with the Corporation of the Township of Mersea.

I should like to express my thanks to Dr. J.C. Ransome, Dr. A. Lall and Professor R. Seale, all of the University of Windsor for their constructive criticisms in the preparation of this paper.

I am particularly indebted to David Tuckett, former Senior Planner of the Community Planning Branch, Department of Municipal Affairs, Toronto for his assistance in formulating the zoning by-law and to Lynn Foster, Clerk of the Township of Mersea for permitting me to use municipal documents.

To the many other individuals who generously provided me with information, I am most grateful.

1. Appendix, p. 148

## INTRODUCTION

A prime consideration in urban land-use expansion is to optimize returns or benefits at minimum cost. Agricultural land adjacent to expanding urban centres is usually of optimal desire since it is frequently level, cleared of forests, accessible and provided with expensive drainage. It is this flat land, for example, which promotes urban efficiency by reducing the cost of street construction and maintenance. Flat land also lowers housing costs by simplifying grading operations and by facilitating mass production building. Thus, the demand for urban land has been largely met at the expense of "good farmland". The process of converting land from agricultural to urban use is a normal aspect of economic growth. This process is most apparent in rural-urban fringe areas where competition between rural and urban land uses is most direct. Invariably the latter succeeds since considerably higher prices can be afforded for land for urban development than for land which is to remain farmed. The conflict is not a new phenomenon, for as one writer suggests, proposals or policies that would relieve the urban pressures on agriculture might have originated in the early urban-rural fringes of antiquity - the Nile Valley, Mesopotamia and the Indus River. However, only in the postwar era have serious land use competition problems occurred in North America requiring major attention to be directed to land resources.

In the United States concern has been expressed that the accelerating conversion of agricultural land into non-farming use is accompanied by a loss of cropland formerly used for intensive production of specialty crops having a higher value than the average value of all



agricultural land. On a national basis the total loss of cropland may not represent an actual loss of agricultural production, but the loss of specialty crops involving conversion to non-agricultural use of some of the best land for such crops, could well become significant.<sup>5</sup> Harold Mayer<sup>6</sup> pointed to southern California and peninsular Ontario as two such specialized areas where the retirement of land devoted to special horticulture<sup>7</sup> is locally significant. In Ontario, the Niagara Peninsula, the prime area for tender fruit growth in Canada, lost 40 per cent<sup>8</sup> of the tender fruit soil<sup>9</sup> to urban uses by 1958. In addition, the accelerating urban growth<sup>10</sup> in this specialized agricultural area may result in little tender fruit soil being left by 1980.<sup>11</sup> This loss to the provincial and national economy is significant.<sup>12</sup>

Some would argue that the United States could replace Niagara peach production. Perhaps so, however, the long-distance haul from southeastern United States and California might result in peaches of lower quality. In addition, the increasing consumption of fuel resources for transport purposes would hasten the depletion of these non-renewable materials. How dependable these alternate sources of peaches are is questionable. Specialized agricultural areas in California are also experiencing significant crop acreage reductions.<sup>13</sup> In addition, much greater peach crop losses occur in southern United States than in the Niagara Fruit Belt.<sup>14</sup> The only Canadian alternative for supplying the Ontario and Quebec markets is the Kent-Essex area where comparable soils in quality and quantity exist.

The problem of diminishing specialized farmland has been accompanied by a relatively aimless process of urbanization. Compact, settled areas are intermingled haphazardly with unused areas resulting in

unnecessarily high costs of social services, and of private transportation as well as wastage of land and frequent lack of publicly available open land.<sup>15</sup> As a result of the deleterious effects of "urban sprawl"<sup>16</sup> there has been an interest in greenbelts, open space,<sup>17</sup> and conservation of prime agricultural land.

This thesis focuses upon one portion of the agriculturally specialized Kent-Essex area - Mersea Township in Essex County. Its purpose is three-fold: first, to assess the forms of urban sprawl and the degree to which this municipality is being affected by it; second, to evaluate those economic and aesthetic reasons why the Township should attempt to minimize this encroachment; third, to present a proposed zoning by-law which would achieve this goal.

## CHAPTER I

### LAND USE THEORY AND RESEARCH METHODOLOGY

#### REVIEW OF LITERATURE

The spatial organization of agricultural land use and the problem of urban expansion about urban centres have been extensively documented and theorized. In order to better understand the economic response to urban expansion and to compare land use patterns resulting in Mersea Township, a survey of agricultural spatial theory and urban sprawl follows.

One of the earliest theories in this regard was that of Von Thünen<sup>18</sup> in 1826. This classic theory of explaining agricultural patterns about urban centres due to transfer costs<sup>19</sup> has been applied widely by current students of land economics. Von Thünen envisioned a single isolated city surrounded by an agricultural hinterland having a uniform physical environment. Occupying this hinterland were farmers desiring to maximize their profits. These farmers had only one means of land transportation to the city.

Upon these premises Von Thünen postulated an ideal distribution of production as a series of concentric rings arranged about the market with the number of profitable options decreasing with distance from the market. In deriving his system he used such data as the cost of producing various goods, the yields obtained, the costs of transportation to the market and existing market prices to calculate the Economic Rent accruing to each type of land use at various distances from the market.<sup>20</sup>

Physical factors directly affecting production costs were also investigated by Von Thünen as modification of his theory. Although he did not modify his basic calculations relevant to his theoretical

Isolated State, Von Thünen did acknowledge that with variability in soil fertility, methods of cultivation, and intensity of operation, modification of his system would occur. This modification of the site of production would be as significant as the distance factor.<sup>21</sup> Climate was also recognized by Von Thünen for its effect upon the costs of plant and animal production in various locations. He also investigated the roles of trade restrictions, subsidies and taxes as factors modifying his overall scheme. In this study on Mersea Township it was found that both the inherent quality of the soils and distance from the market place (Leamington) were significant factors in agricultural land use intensity.

#### Limitations of Von Thünen's Theory

Considerable criticism has been directed at Von Thünen's theory because of its limited application to real-life situations. In his study, Horvath stressed that many factors which influence agriculture in reality are not introduced into the classic model. Crucial variables such as the physical environment (with the exception of a few references to soils), crop combinations, economics of scale, the stage of development, the spread of information and many others are not discussed.<sup>22</sup>

Sinclair asserted that costs of all types of transport have declined greatly in relation to most other agricultural production costs. In addition, transport costs are not necessarily directly proportional to distance and bulk. With refrigeration and air-conditioning techniques, perishable commodities can be carried long distances without spoiling. Thus, it might be inferred that the importation of Mexican tomatoes to the Canadian market in Southern Ontario would weaken Von Thünen's theory. Modern organizations employing large-scale production and mass transportation of agricultural produce have also altered agricultural

patterns in modern industrial areas. Consequently, distant specialized regions having physical or other advantages have become more important than in the past.<sup>23</sup>

Harvey pointed to two weaknesses inherent in the theory which may lead to differences between the 'model' and reality. First, the theory assumes complete availability of information, or at best, that the lack of information is only a short-term problem with no long-term effects. Second, Von Thünen assumed complete rational 'economic' behaviour on the part of individuals who must be prepared to alter their land use system to obtain even a small net gain in economic rent. Harvey stated that it is highly unlikely that any change in technology, demand, transport cost and so on, would be accompanied by an automatic adjustment in land use. Even with complete diffusion of information, a difference between information availability and acceptance of the information will vary spatially.<sup>24</sup>

Dunn criticized Von Thünen for failing to establish the principle that determines the boundary between two forms of land use when discussing the influence of a change in price on the system of cultivation. Dunn asserted Von Thünen implied that when the price had fallen to the point where the economic rent equals zero that type of cultivation would be given up and the next type would begin. Thus, Von Thünen ignored the fact that the economic rent yielded by a second system might exceed that yielded by the first before the margin of the former crop is reached.<sup>25</sup>

#### Application of Von Thünen's Theory

In applying Von Thünen's theory to reality, Sinclair suggested that in those parts of the world where transportation is less developed and

modern refrigeration techniques non-existent, Von Thünen's principles  
26 still apply. Supporting this assertion is Chisholm's comprehensive  
study of the literature on the basic patterns of agricultural land use  
around nucleated agricultural settlements in non-industrial areas of  
27 the world.

In his study of expanding urbanization and selected agricultural  
elements of Southwestern Ontario, Russwurm hypothesized that the acreage  
of improved land per farm would decrease as non-farm population in  
a township increased. This would result in fractionation and smaller  
parcels of land as some land was sold for non-farm uses. However, he  
also hypothesized that specialized agricultural land uses such as sod  
farms, poultry farms and market garden farms were likely to develop on  
these smaller parcels of land. Thus, Von Thünen's concentric land  
use model where the intensity of agricultural land use increases adjacent  
to cities would be borne out. Russwurm's research substantiated his  
hypotheses. Where non-farm population increased, both farm population  
and improved land per farm decreased. Although approximately 60 per cent  
of the land used for vegetables, small fruits and nurseries was located  
in the six townships surrounding Hamilton, London and Brantford, this  
form of land use was also scattered throughout the study area where  
physical factors were favourable. He attributed this to the locational  
advantages of farm land being largely nullified by modern transportation  
and to crops such as tomatoes and corn as far less demanding in physical  
28 site factors.

Sinclair's conclusions based upon contemporary observations of  
agricultural land use in the vicinity of urban areas of the Midwest -

the Dayton - Cincinnati and Detroit regions were similar to those of Russwurm's. However, he did find intensive forms of agriculture in the form of greenhouses, poultry raising and mushroom growing occupying the zone adjacent to the urban centres. These, he felt, did not correspond to the market gardening and dairying found in zone one of Von Thünen's model for they were farm factories, being industrial as much as rural forms of land use. Von Thünen's idealized circular patterns were also found to be missing in the contemporary situation. Disruptions were attributed to a lack of uniformity and productivity in agricultural regions. The chaotic nature of urban sprawl was also regarded as a contributing factor. The circular pattern, he noted, could be considered as a zonal shape. With uneven shape of growth the elimination of zones within the pattern might even result.

This author's study revealed that a modification of the preceding ideas was necessary due to the peculiar situation in Mersea Township. It was found that agricultural land, occupying the zone adjacent to an urban area such as Leamington, if provided with favourable physical attributes in short supply and conducive to cultivation of specialty crops, will be farmed most intensively. In addition, once established as a prime agricultural area with large fixed investments such as greenhouses, farmers in this area will adapt to changing market demands and production costs thereby perpetuating the intensely farmed zone despite urban encroachment. Although Von Thünen's idealized circular zones of agriculture were not borne out in Mersea Township, intensity of agricultural land use did increase toward Leamington. On the basis of the number of persons employed in agriculturally related activities, Leamington was also regarded as the market for the bulk of the agricultural products. Disruptions in

the circular pattern were attributed to a variety of factors such as the non-concentric pattern of prime soils, inconsistencies in the intensity of agricultural land use, different orders of accessibility to the amenities of Leamington, availability of piped water, resistance of farmers to change, presence of Wheatley, a village along the eastern boundary of Mersea Township, and the presence of lake frontage areas. A more appropriate model of land use in the study area is perceived as an interrupted non-circular zonal arrangement about Leamington with sectors of greater land use intensity in association with axial corridors extending outward from the urban node. All these factors were considered in drafting the zoning by-law.

#### Urban Sprawl and Its Impact on Agriculture

The rural-urban fringe area undergoing transition from rural to urban character extends from the edge of the contiguously built-up area to where agricultural land uses dominate.<sup>30</sup> Hassbring in her analysis of this zone about Edmonton, found that it varied in radius but nowhere did it exceed a maximum of four miles from the inner fringe boundary.<sup>31</sup> The extent of this fringe will vary with the size of the urban centre.<sup>32</sup> In the case of the New York area the unseen influence may extend at least eighty miles.<sup>33</sup> It is this fringe area which is undergoing the effects of urban sprawl. This disorderly urban growth has been attributed to a variety of reasons.<sup>34</sup> Snyder suggested that it may result most frequently from the combination of premature conversion of farmland to non-farm use as a result of property tax pressure and lack of adequate planning for community growth and development.<sup>35</sup> Hassbring, through interviews, found personal desires as factors leading to urban land use in the fringe zone. These factors included the slower pace of life



than in the city, a healthier place to raise a family, greater laxities in government control as well as lower land prices and greater transportation mobility.<sup>36</sup> Gaffney, however, viewed the exodus to the fringe as mainly due to an economic factor - the availability of cheap land. He suggested that urban land within the central city is really an artificial scarcity due to those speculations holding tracts of land in anticipation of further gains. Thus, the process of urbanization in the fringe is really the substitution of urban land for cheap land further out which is already in long supply.<sup>37</sup>

In the author's study on Mersea Township an additional factor contributing to urban sprawl was found to be the short supply and inadequate size of tracts for assembly into subdivision in Leamington. Thus, Leamington was inadequately supplied with space for its increasing population. Due to the nature of the type of zoning by-law developed it was impossible to set aside areas for urban-like developments in Mersea Township. This factor is expanded in the body of the thesis.

Although rural land may be regarded as relatively cheap compared to values placed upon urban land, speculators soon bid up the price far beyond its value for agriculture. Krueger found that fruit farmers in the Niagara Fruit Belt were being offered as much as \$2,000 to \$5,000 per acre for their land.<sup>38</sup> In addition, with the intrusion of urban land uses into agricultural areas, taxes and assessment rates often rise especially if servers are extended. Taxes may rise so high as to exceed any possible return from farming.<sup>39</sup> Using aerial photographs of land use within the Niagara Fruit Belt in 1954 and 1958, Krueger found 650 acres of orchard uprooted to make way for urban growth. More significantly over 1,000 acres of orchard became non-producing because of real

estate speculators that accompanied the expansion into rural areas. Even at \$5000 per acre the building sites were cheaper per dwelling than within a city.

Land being held by speculators may be rented for farming but on a short-term basis. However, due to the uncertainty, the tenant farmer has no assurance of continued operation. This results in mining of the soil rather than farming on a rational basis that would renew the fertility.<sup>40</sup> The shortened planning horizon and increased uncertainty, as well as decreasing farm population adjacent to urban centres also hastens the outmovement of marketing and supply services essential to modern agriculture.<sup>41</sup> Thus, successful farming is further hampered.

#### Costs of Sprawl

Of the various types of urban-like development occurring in the urban-fringe area, residential land use has substantially exceeded other forms of land use consumption. For example by 1962, Santa Clara County thirty miles southeast of San Francisco in California, had 3,620 acres in industrial land use compared to 39,700 acres in residential acreage. Land use projections for 1970 indicated that an additional 1,980 acres would be used by industry compared to an additional 12,800 acres for residential land use.<sup>42</sup>

Although considerably higher prices can be afforded for land for urban development than for land which is to be farmed, costs are so great that many municipalities experience serious financial difficulty, even bankruptcy. In 1970, Sandwich West Township, a municipality in the rural-urban fringe area of Windsor, Ontario, had an imbalanced tax base of 13 per cent commercial-industrial to 87 per cent residential. In a

five year interval between 1965 and 1970, residential property with a \$2500 assessment had an average tax bill increase of over 44 per cent -  
43  
with little improvement in service.

Pearson in his objective study to determine the specific financial costs in servicing different densities of residential development, purely from an economic viewpoint, considered the annual costs of twelve residential subdivision designs of equal area and employing the grid pattern. Roads, curbs, sidewalks, streetlights, water mains, sanitary and storm sewers were designed for each subdivision and resulting service costs documented for differences in lot area, lot width and depth, the range of services provided, the proportion of service lots developed and the areal extent and isolation of a subdivision. These services did not include costs of community services such as schools, parks, police and fire protection and community centres. In order to compare the resulting per household costs for installing and maintaining municipal services an "annual cost" for each service was determined, using the following formula:

$$\text{Annual cost} = \frac{(1+i)^n}{(1+i)^{n-1}} + m$$

where  $i$  = the interest rate (6% assumed)  
 $n$  = physical lifetime of the service in years  
 $m$  = the average annual maintenance cost

In addition to the annual cost above is added the initial capital and installation cost (P) of a service amortized over its lifetime. As expected the significant cost differentials observed were based upon the relative isolation, size of subdivision and distance to connecting services such as water mains and sanitary and storm sewers. Pearson found that a one-acre lot with only a waterline and a gravel road cost

just as much to service as a 7,000 square foot lot with water, sewers, paved road, sidewalk, curb and even ornamental street lighting - about \$125 per year if the lots were located adjacent to connector services. But if the one-acre lot was located one-half mile from a connection service in a ten acre subdivision that was only 50 per cent developed, it would cost closer to \$1,250 per year for the gravel road and water lines.

In addition to the monetary costs that can be measured are social costs which can only be calculated in terms of inconvenience and lack of amenities. There are the immeasurable social costs resulting from incomplete communities. It is assumed by both the municipality and the home owners involved that once a new neighbourhood is started, it will be developed within a reasonable period, presumably with a full complement of urban facilities and services. However, developments may be arrested before such neighbourhoods have matured, thus significantly reducing the quality of urban living which might otherwise have been achieved by the residents.

#### The Control of Sprawl and Preservation of Agriculture

In his assessment of planning for future land use needs, Johnson asserted that it was inevitable that residential and industrial areas will expand as population grows. However, it was not inevitable that bad or ill-timed land uses need supersede agricultural uses. The issue was not agricultural versus non-agricultural development. Both are needed - in balance. The real issue was to protect the more productive agricultural lands from ill-planned or unplanned and ill-timed conversions.

Solberg emphasized that non-agricultural developments should not ordinarily be located in areas especially well-suited for agriculture.

If the better soils were to be diverted to factories or homes, agriculture may be forced out, and a valuable agricultural base lost unnecessarily.  
47

In a position paper prepared by the Canadian Federal Task Force on Agriculture, the argument to preserve prime agricultural land was regarded as weak. A stronger argument acknowledged the need to reserve certain land for agriculture but also emphasized the need to prevent cities from building up such vast areas and in the process destroying established aesthetic and social values.  
48

Zoning is one way to direct urban growth in the rural-urban fringe in order to preserve prime agricultural land and at the same time maintain aesthetic and social values. The zoning by-law proposed in this thesis has been designed for that purpose. This technique has been proposed by Krueger as useful in helping to bring about orderly and compact urban development in the Niagara Fruit Belt.  
49 Pearson also considers this device when he suggested that suburban residential land should only be made available on a carefully staged basis, co-ordinated with population growth and the municipality's financial resources. He suggested that any land zoned for lot development should not accommodate any more than five year's population growth.  
50

One of the earliest attempts to preserve some of the agricultural land was introduced in Santa Clara County in California in 1953 through use of exclusive agricultural zoning. By 1962 ninety-five thousand acres had been so zoned.  
51 Although the Santa Clara Report stated that it was too early to evaluate the success of this venture, Clawson suggested that it had not been very successful due to the ambivalence of the farmers. On one hand, the farmers wished to conserve their agricultural

land and way of life, but on the other they wanted to have the opportunity for a quick sale and a large capital gain.<sup>52</sup>

#### RESEARCH METHODOLOGY

In order to determine the extent and direction of urban sprawl in the Township varied techniques were employed. Several reconnaissance trips by automobile were made in order to delineate existing non-farm, urban type land uses. These uses were plotted on a large-scale official map provided by the municipality, partly during these trips, partly with the aid of aerial photographs taken in 1967.

A second technique entailed analysis of the Municipality records of building permits issued for agricultural and non-agricultural types of construction. A cartographic plot and analysis of these locations was useful to determine the concentration and direction of recent agricultural developments and non-agricultural incursions in the Township. This technique, although valid, was of limited use because the municipality had only begun to retain such records since March 15, 1966.

From the abstracts of Mersea Township located in the County Registry Office, data were collected on the date, location, size and value of all 2241 properties transacted by deed and grant during the decade January 1, 1961 to December 31, 1970. This was done in order to substantiate the hypothesis that land experiencing the greatest frequency of transaction in deeds and grants was undergoing a transition from rural to non-rural land uses. It was also hypothesized that land with a high rate of turnover would have higher land values. In addition, as the turnover frequency increased, the size of parcel being transacted decreased. A correlation analysis between the size of parcel in transaction and the average value per acre of the parcel showed that there was a relationship between the

two. As the size of the parcel being transacted decreased the value per acre increased. This would indicate which agricultural areas were undergoing the greatest pressure and therefore should be considered for protection from destruction by urban type developments and speculators. A weakness in this technique was the lack of separation of the value of improvements from the land value. Consequently, the values computed were distorted and thus weakened the correlation.

The data obtained from the Abstracts were also useful in determining how the diffusion of urban sprawl had, and was, occurring in the Township. For this purpose, the decade was divided into three temporal periods, each of 40 months duration and the frequency of transactions determined for each period. Some parallels between the wave analog<sup>53</sup> and diffusion of urban sprawl along main arterial routes in Mersea Township were noted. Although beyond the scope of this thesis, this portion of the study is considered worthy of further research.

Another index used to determine the extent of urban sprawl in the municipality was to compare changes in the farmer/non-farmer population structure. For this, the farmer/non-farmer populations were tabulated from the Township's Assessment Rolls for 1967 and 1970. As expected, the farm population was found to be declining whereas the non-farm was increasing.

The next step was to obtain detailed information on the variations in intensity of farming in the Municipality in order to determine precisely those areas most intensively farmed. These areas would be the ones requiring the greatest protection from urban sprawl. From the 1967 Assessment Roll, 355 farms representing twenty per cent of all farms were systematically sampled by selecting every fifth farm appearing in the

Assessment Roll. The assessed value of buildings was included in calculating the average assessed value per acre since they represented improvements in farms and therefore were indicative of the intensity and productivity of the land.

The data from the Assessment Roll were then tabulated and computations made in order to determine the average assessed value per acre of each farm. After the initial tabulation, the data were again compiled with farms listed in descending order of average assessment per acre. This was done in order to summarize the systematic sample by quartile deviation which would yield the median, interquartile range as well as upper and lower quartiles. The assessed value of each of the 355 farms was then categorized by the quartile values. Once categorized by these quartile range values, the locations of all 355 farms were plotted according to concession, lot or part thereof on the map of assessed value of agricultural land. From an empirical study of this map it was apparent that intensity of agricultural land decreased outward from Leamington. In order to present this observation more objectively the data from the Assessment Roll was used in conjunction with average farm size for three zones so as to prepare graphs illustrating firstly, the inverse relationship between distance from Leamington and average assessed value per acre, and secondly, the positive relationship between average farm size and distance. Each zone, mentioned above, was drawn using radii of two, four and six miles from a point at the intersection of Highways 3 and 77 within Leamington. To compensate for the distance from this point to the Town limits, an average value of one-half mile obtained by averaging the distances from the point to the Town's limits along Highways 3, 77 and 18, was added to the value of each radius.



Next a map showing the location of recent and projected construction of new greenhouses, barns, granaries, sheds, tobacco kilns and corn cribs was prepared from data obtained from the Municipal records of building permits issued since March 15, 1966. An empirical study of this map confirmed the relationship in the two graphs mentioned previously.

Once the degree and direction of urban sprawl and the variations in the intensity and location of agricultural land had been determined the next problem was to delineate the Township into zones which would reflect not only current land use but also consider the pace and direction of land use change. This zoning by-law would have to slow down fragmentation, or the best agricultural land would not be protected. This proved to be both a frustrating and rewarding task. Much of this was accomplished by frequent consultations in person, by letter and on the phone with a wide variety of individuals including planners with the Community Planning Branch of the Department of Municipal Affairs in Toronto, Ontario Department of Health officials and councillors and officials in Mersea Township. In addition, existing zoning by-laws for other municipalities with similar circumstances were closely scrutinized. These helped to serve as guidelines since the Ontario Department of Municipal Affairs had not prepared any standard forms for this purpose.

From the planners with the Department of Municipal Affairs it was learned that due to the laxity in planning for several years in the Township a restricted area or "status quo" zoning by-law would have to be prepared. This type of by-law would reflect current land use with some in-filling of small parcels of land for non-agricultural use permitted. Thus, the zoning by-law could not adequately reflect the pace and direction of land use change; however, prime agricultural land would be protected

from urban sprawl. Therefore, current land use was used as the basis for delineating zones. For this purpose aerial photographs were most useful since they provided an overview and precise measurements could be made from a given scale in order to plot location on the zoning map. For the delineation of the agricultural zones the line of demarcation originally was to have been the contact line between two distinct soil types, clays and sandy loams which also corresponded closely to agricultural land use intensity zones. However in reality it became an empirical compromise between the intensity of agricultural land use, soils, the established Township grid, the frequency of transactions, and, in particular, the desires of individual members of the Township's council. After the demarcation line had been established a series of location quotients were computed based upon the Lorenz curve.<sup>55</sup> This revealed that despite the lack of objectivity of much of the demarcation, the intensively-farmed land would be protected from further urban encroachment.

In addition to the sources mentioned above, data for this thesis were collected from County, Provincial and Federal departmental branches such as the Metropolitan Windsor and Essex County Health Unit, Essex County Engineer's Office, Office of the Receiver General of Ontario, the Ontario Department of Highways, the Harrow Agricultural Research Station and the Department of Energy Mines and Resources, contacts with and documents of private firms such as the Union Gas Company and Proctor, Redfern, Bousfield and Bacon County Engineers were most useful. Newspaper, library research, and numerous contacts by telephone and in person provided additional information and data.

NOTES

INTRODUCTION AND CHAPTER I

1. Wilbur R. Thompson, A Preface to Urban Economics (Baltimore: John Hopkins Press, 1967) p. 57.
2. M. Mason Gaffney, "Urban Expansion - Will It Ever Stop?", in Land, The 1958 Yearbook of Agriculture, The United States Department of Agriculture (Washington, D.C.: The United States Government Printing Office, 1958) p. 510.
3. Margaret Hassbring, "Land Diversity in the Rural-Urban Fringe Zone of Edmonton", in The Albertan Geographer, No. 5-6, 1969-1970, The University of Alberta (Edmonton: The University Printing Service, 1970) p. 59-64.
4. J. Herbert Snyder, "A Program for Agricultural Land Use in Urbanizing Areas", in Journal of Farm Economics, Vol. 48, 1966 (Menasha, Wisconsin: American Farm Association, 1966) p. 1306.
5. Harold M. Mayer, "Cities, Transportation and Technology", in Land, The 1958 Yearbook of Agriculture, The United States Department of Agriculture (Washington, D.C.: The United States Government Printing Office, 1958) p. 494.
6. Harold M. Mayer, "The Pull of Land and Space", in Metropolis on the Move: Geographers Look at Urban Sprawl, editors J. Gottman and R. A. Harper (New York: John Wiley and Sons Inc., 1967) p. 23.
7. Horticulture may be defined as that department of the science of agriculture which relates to the cultivation of gardens or orchards, including the growing of vegetables, fruits, flowers and ornamental shrubs and trees.
8. Ralph R. Krueger, "The Disappearing Niagara Fruit Belt", in Regional and Resource Planning in Canada, editors R. R. Krueger and others (Toronto: Holt, Rinehart and Winston, 1963) p. 120.
9. Ibid., p. 124. A deep, well-drained, light textured soil.
10. Ibid., p. 118. In the four year interval from 1954 to 1958, urban land use took over 2,100 acres of tender fruit soil or 525 acres a year for the twenty year interval from 1934 to 1954.
11. Ibid., p. 120.
12. Ibid., p. 121. Krueger stated that the demise of the Niagara Fruit Belt would result in the loss of an annual gross value of fruit production between \$10 and \$11 million. This production supports a fruit and vegetable industry which has a plant investment of ap-

proximately \$14 million, annual gross sales of \$26 million, and annual wages and salaries of \$5 million.

13. Land Use Issues in Santa Clara County (San Jose, California: County of Santa Clara Planning Department, 1962) p. 8. In 1959, Santa Clara County ranked twentieth among the nation's counties in value of all farm products sold. Between 1956 and 1962 this county experienced a crop acreage decline from 140,000 to 120,000 acres. The value of agricultural production dropped from \$98 million to \$72 million in that period.
14. Krueger, op. cit., p. 125.
15. Marion Clawson, "Urban Sprawl and Speculation in Suburban Land", in Land Economics, Vol. 38, 1962 (Madison, Wisconsin: University of Wisconsin, 1962) p. 99.
16. Harold M. Mayer, Metropolis on the Move, op. cit., p. 23. Mayer used the dictionary definition of sprawl - "spreading out ungracefully". On page 4 of the same text Jean Gottman stated "sprawling evokes a pattern of movement and use of space. It also suggests a certain freedom of movement in a broad frame. Last, but not least, it suggests something that does not agree with the classical tradition of elegant behaviour".
17. Snyder, op. cit., footnote 3, p. 1306.
18. Michael Chisholm, Rural Settlement and Land Use (London: Hutchinson University Library, 1962) p. 21. Chisholm asserted that the ideas developed by von Thünen do not constitute a theory of location but a method of analysis which may be applied to any situation in any time or place.
19. Edgar M. Hoover, The Location of Economic Activity (New York: McGraw-Hill Co., 1963) p. 15. Hoover defined transfer costs as the expense and inconvenience of distributing to distant customers and procuring materials from a distance.
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24. David W. Harvey, "Theoretical Concepts and the Analysis of Agricultural Land Use Patterns in Geography", in Annals of the American Association of Geographers, Vol. 56, 1966, Lawrence, Kansas, p.p. 361-374.
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28. Lorne H. Russwurm, "Expanding Urbanization and Selected Agricultural Elements: Case Study, Southwestern Ontario Area, 1941-1961", Land Economics, Vol. 43, 1967 (Madison: The University of Wisconsin Press) pp. 101-107.
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31. Hassbring, op. cit., p. 59.
32. Joan Hind Smith, "The Impact of Urban Growth Upon Agricultural Land: A Pilot Study", Resource for Tomorrow, Supp. Volume (Ottawa: Queen's Printer, 1962) p. 157.
33. A. D. Crerar, "The Loss of Farmland in the Metropolitan Region", in Regional and Resource Planning in Canada (Toronto: Holt, Rinehart and Winston, 1963) pp. 106-114.
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35. Snyder, op. cit., p. 1307.
36. Hassbring, op. cit., pp. 60, 61.
37. Gaffney, op. cit., p. 509.
38. Krueger, op. cit., p. 120.
39. Krueger, op. cit., p. 118. A study of taxes in South Township of the Niagara Fruit Belt revealed that taxes on fruit farms had risen 200 per cent in a decade. This increase could be considered a subsidy to urban homes being built.
40. Clawson, op. cit., p. 106.

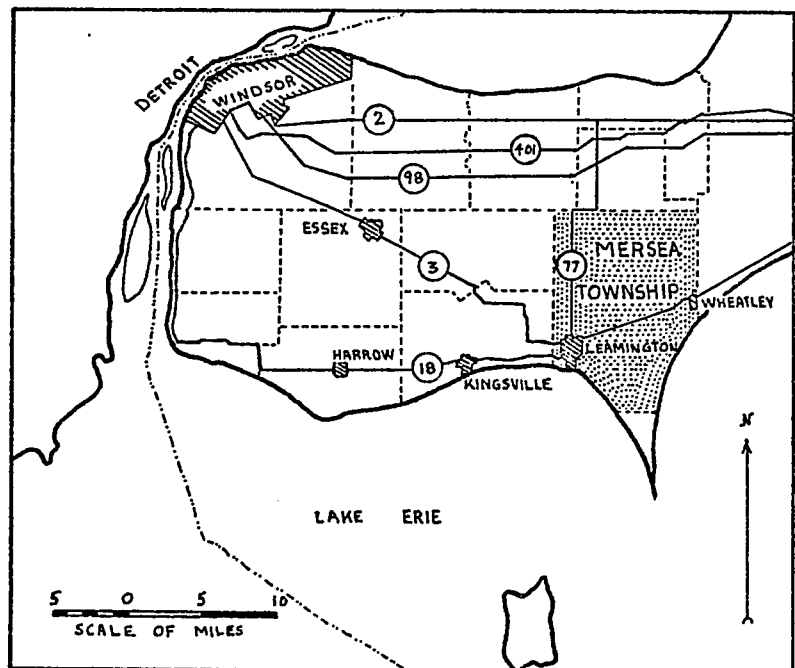
41. Russwurm, op. cit., p. 103
42. Santa Clara County Study, op. cit., pp. 11, 14.
43. The Windsor Star, January 4, 1971.
44. Norman Pearson, What Price Suburbia (New Westminster, B. C.: Lower Mainland Regional Planning Board, 1967) pp. 10, 20.
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49. Krueger in his assessment of urban sprawl in the Region, suggested that to avoid sprawl and allow only controlled, orderly growth, the urban population of the Niagara Fruit Belt could increase by one million without any loss in volume of fruit production.
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## CHAPTER II

### PHYSICAL, ECONOMIC AND SOCIAL DETERMINANTS OF LAND USE IN MERSEA TOWNSHIP THE STUDY AREA

The study area is defined as all of the land under the jurisdiction of the corporation of the Township of Mersea except those parcels lying within Point Pelee National Park. This area, located at latitude  $42^{\circ}$  N. in southeastern Essex County has the distinction of being Canada's second most southerly township. Only Pelee Township some eight miles offshore in Lake Erie, is further south. In its larger setting, Mersea Township forms a part of the southern extremity of peninsular Southwestern Ontario. Thus, it lies on the edge of one of the most intensely urbanized sections of midwestern United States.

Map I : Situation of  
Mersea Twp.



In terms of land area, the Township's boundary encompasses 83.5 square miles or approximately one-eighth of Essex County's 707 square miles,

Leamington, the second largest urban centre in the county occupies a location along the southwestern periphery of the Township. The Township is 25 miles southeast of the Windsor metropolitan area, population 251,000, well within commuting range of that city.

#### A BRIEF HISTORY OF LAND USE WITHIN THE STUDY AREA

Agriculture has played an important role in the economy of the Township for more than a century. In the 1870's "a considerable crop of tobacco was grown in southern Mersea, as much as 100,000 pounds being shipped annually." <sup>1</sup> In 1887 a branch line of the Michigan Central (New York Central) was constructed to connect the Township and Leamington with Comber on the main line. Two years later a second railway, the Lake Erie, Essex and Detroit River Railway (now part of the Chesapeake and Ohio Railway) was completed providing access to markets along the Detroit River. Significant land use changes occurred in the Township. The arrival of direct and rapid rail service with Windsor and Detroit hastened the clearing of forests, the passing of the general farming phase and the decline of small ports along Lake Erie, such as Colchester, which previously had handled the region's shipping. Specialized, intensive agricultural production with emphasis upon perishable fruits such as peaches and vegetables, for which this area is admirably endowed, could now reach the nearly urban markets promptly. In addition, summer resorts along unspoiled beaches in Mersea Township and adjacent Gosfield South Township expanded. In 1908 the Heinz canning factory established in Leamington to become the town's leading industry, providing a new market for the region's agricultural products. The following year marked the commencement of the Harrow agricultural research station in the neighbour-



ing township of Colchester South. Initial emphasis was placed upon tobacco experimentation. By 1911 canning factories in Leamington and Essex were contracting with farmers for crops of tomatoes thus spurring agricultural activity by providing an assured market.

The excellent quality of the agricultural land in Mersea and Gosfield South Townships was reflected in the demand for this land in anticipation of the Reciprocity Agreement <sup>2</sup> in 1911, between Canada and the United States. Land values soared. "A farm on the town line between Mersea and Gosfield brought over \$400 an acre in 1912 whereas five years earlier it could command a price of only \$100 an acre. In the same area a farm purchased for \$5,300 in 1906 realized \$25,000 five years later."<sup>3</sup>

Although tobacco curing and packing ranked as Leamington's second most important industry, the production of this crop declined in the region by 1930. Two factors were responsible - the spread of tobacco into Norfolk and neighbouring counties and the competing influence of the early vegetable industry for the lighter soil types of South Essex.<sup>4</sup>

Coincident with the expansion of early vegetables, heated greenhouses were constructed on warm, well-drained sandy soils of South Essex (Mersea and Gosfield South Townships) to the extent of more than 4,000,000 square feet of glass by 1954. This development which had taken place largely since 1940 not only gave the farmers about a month's start before the growing season arrived but also enabled them to extend their labour over the entire year.<sup>5</sup>

By the mid 1940's, the current pattern of agricultural land use had evolved. Large and highly productive truck farms, including greenhouses and peach orchards extended inland from the lake in both Mersea and Gosfield South Townships toward "the ridge" which now carries Highway

No. 3 (the old Talbot Road) into Leamington. Today farmland in this area will sell for as much as \$2,000 per acre.<sup>6</sup>

#### THE PHYSICAL DETERMINANTS OF LAND USE IN THE STUDY AREA

To prepare a zoning by-law for Mersea Township a clear picture of the existing natural resources should be obtained through a careful survey of physical factors such as climate, topography, drainage and soils to determine the location, size and characteristics of those lands capable of furnishing the highest, marginal and no economic return from agricultural use.

##### (1) Climate

Since the Township occupies a part of the most southerly area of Canada, it is endowed with a number of climatic conditions favourable for specialized farming.

The annual average temperature from place to place in Essex County varies less than one degree (F.) from an overall average of 48.7 degrees (F.). However, variations in the length of the frost free period are more pronounced, ranging from 141 days at Woodslee in the centre of the County to 190 days at Leamington and 215 days on Pelee Island.<sup>7</sup> This is due to the ameliorating influence of surrounding bodies of water.

While an increasing number of irrigation systems have been installed during the past several years because of sporadic drought and a mean annual moisture deficiency of 4 to 5 inches,<sup>8</sup> the annual average precipitation of 30 to 33 inches in the County is rather uniformly spread throughout the year with a slight summer maximum.

The 2,000<sup>9</sup> mean annual total hours of bright sunshine in Essex County are only equalled in Ontario along the northern strip of the

Niagara Peninsula, the north shore of Lake Ontario and in the vicinity of Lake of the Woods. In the remainder of Canada, only the Western Plains and interior valleys of British Columbia equal or exceed this figure.

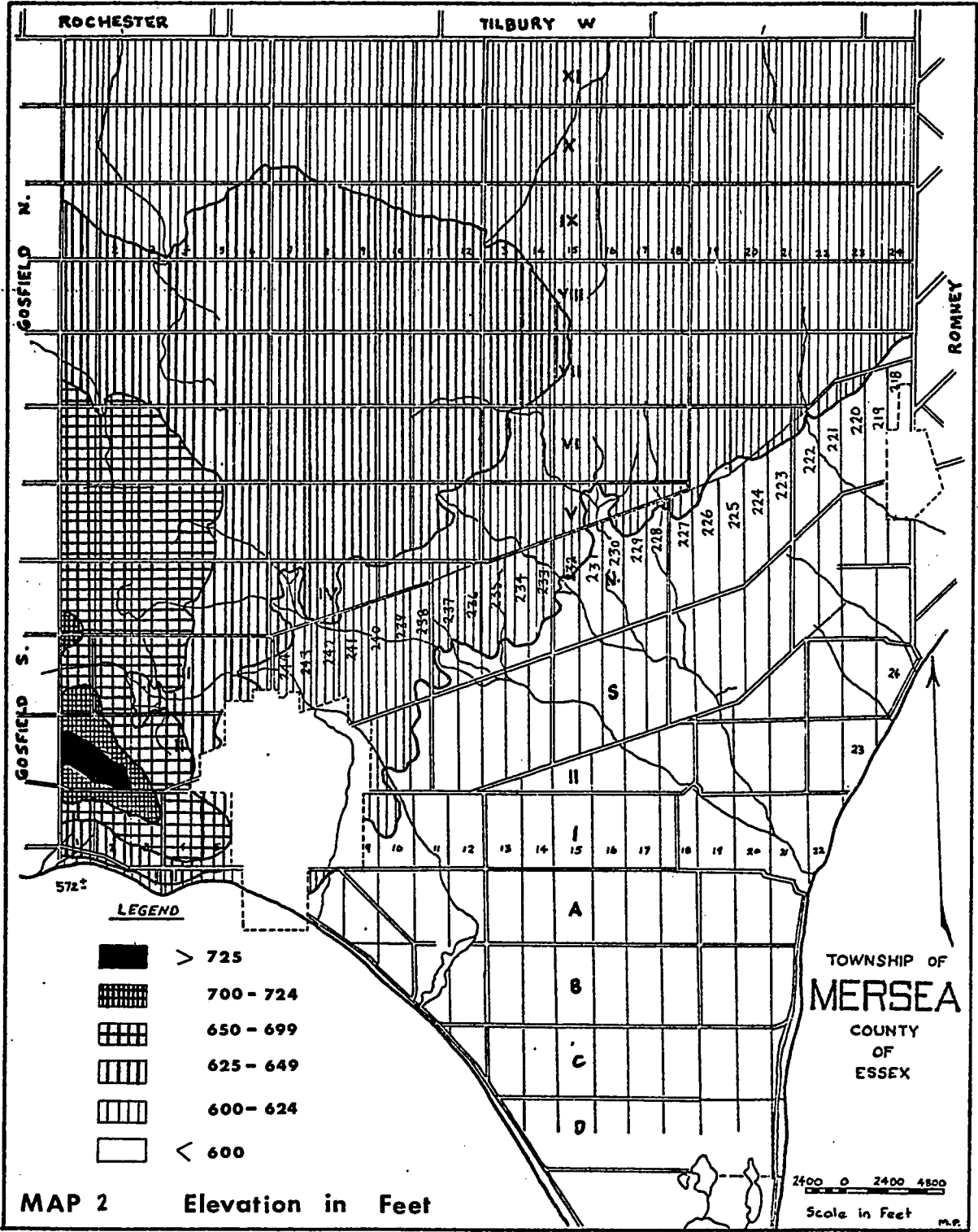
In addition to the favourable sunshine condition, the 3,500 heat units<sup>10</sup> received annually by the southern half of Essex County is the highest in Canada. The duration of sunshine and the heat units received determine the eventual greenhouse fuel costs and the amount of photosynthesis occurring in hot house crops.

Variations in climatic conditions, although present in the Township from north to south, have not been significant enough to necessitate different agricultural practices which would be reflected in special delineations for zoning purposes. Although the greatest concentration of greenhouses and tobacco land is along the periphery of Leamington, identical land uses extend as far inland as Albuna, only two miles from the northern limit of the Township and six miles north of Lake Erie.

## (2) Topography and Drainage

Most of the Township, like the County, is flat. Moderate irregularities in topography that do exist, such as the interlobate moraine and sandy gravel ridge extending from southeast to northwest across the County, are the result of glacial deposition or shoreline recession in post-glacial times. Only along this narrow ridge in Mersea and Gosfield South Township does the elevation of the land rise to 175 feet above Lake Erie's mean of 572 feet (Map 2). In addition, fluvial erosion associated with streams has contributed to minor topographic irregularities in localized areas.

Sluggish drainage with a surface water table associated with the



Source: Dept. of Energy, Mines and Resources, Topographic Map 40 J/2e

lower Hillman Creek and floodplain has resulted in an extensive marsh. Unsuitable for traditional agriculture,<sup>11</sup> this area was delineated precisely by using aerial photographs and zoned as marsh thus preserving it in its natural state as a scenic wildlife sanctuary and spawning ground for fish.

Of the crops grown in Mersea Township, tobacco and peaches are most sensitive to waterlogged soils. Where tobacco plants are flooded injury may be apparent within an hour after a heavy rain on a hot day. If drainage is impeded so that the root zone remains saturated for several days, permanent injury or death usually results.<sup>12</sup> Peaches also must have well-drained soil or they will not survive.<sup>13</sup> In addition, because the peach blooms early and is subject to damage by spring frosts, orchards are frequently planted on elevated sites and often on sloping land. Not only does this procedure provide good water drainage for the trees but good air drainage as well.<sup>14</sup> In Mersea Township these desired physical features are best provided in the ridge area, especially around Leamington. The strength of this concentration was tested and the result appears in the latter part of this study under Table 19.

### (3) Soils

Of the physical factors, soil groupings, especially clays and sands, were most responsible for differing agricultural pursuits. Agricultural practices in association with the soils formed the basis for delineating two zones for inclusion within the zoning ordinance.

Soils are closely associated with the glacial and post glacial history of the County and Township. In general, most of the northern two-thirds of the County is overlain by a heavy textured, poorly drained soil of glacial-lacustrine origin known as Brookston Clay. About one-third

of the Township is underlain by this soil type (Map 3). With artificial drainage it is highly productive and capable of growing a wide variety of crops such as grains (including corn), tomatoes, soybeans and peas.

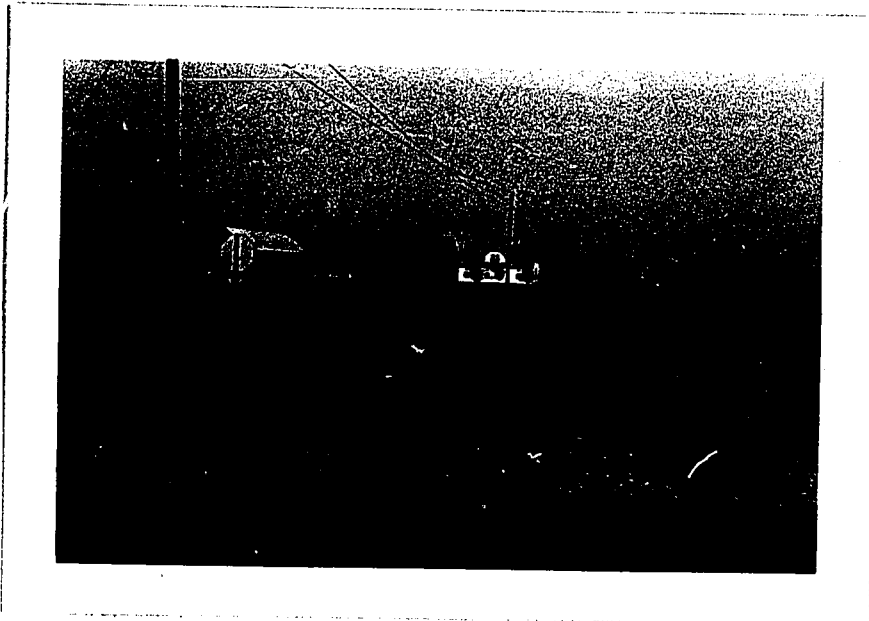
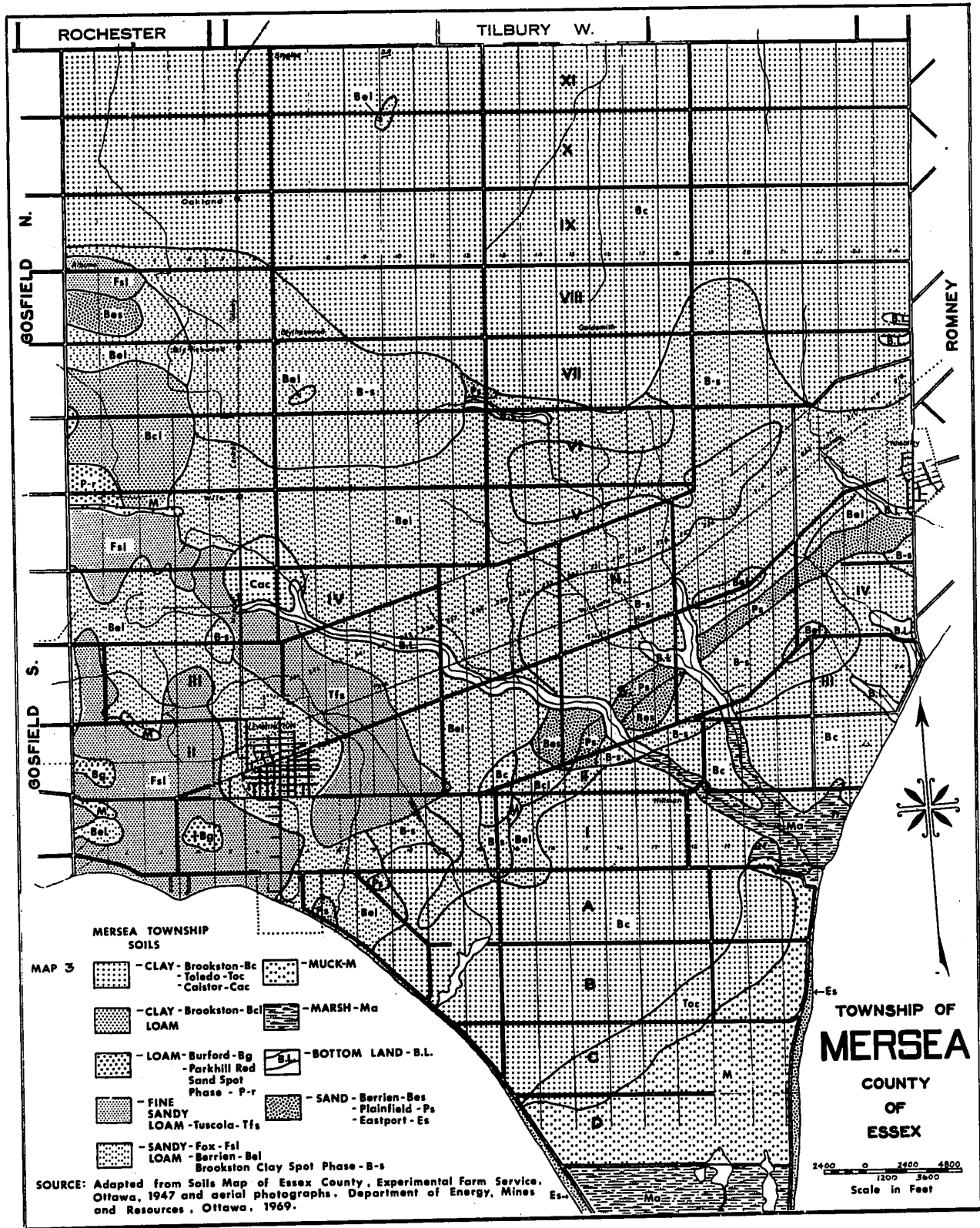
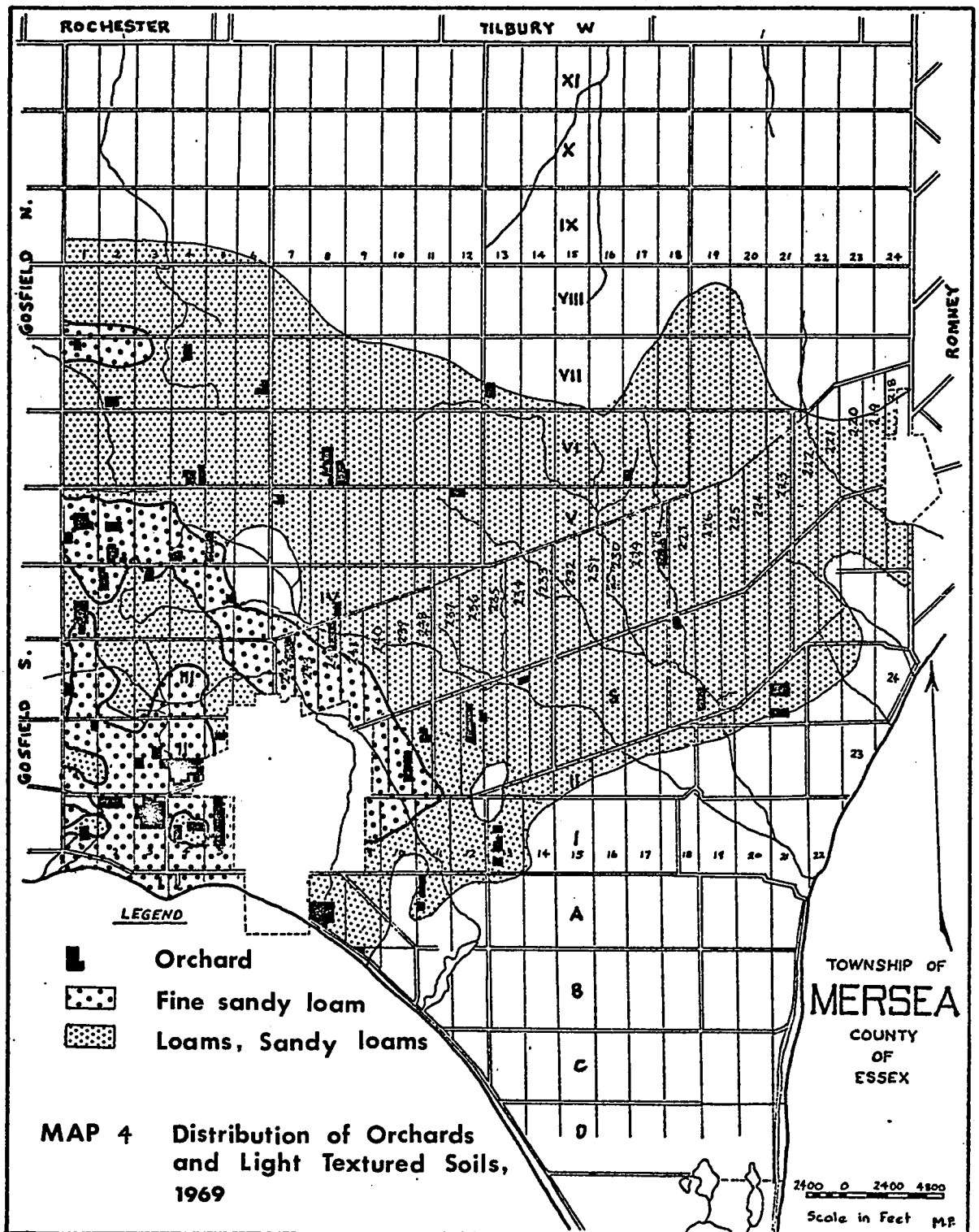


Photo 1. Lot 1, Concession II, looking east from County Road 31. Extensive farming dominates on the heavy textured soils of the Brookston Clay Plain in the northern part of the Township with corn (right) and soybeans (left) being two of the predominant crops. Farms are large and widely dispersed. Township roads are gravel surfaced.

Farther south in association with the waterworked interlobate moraine and former sand and gravel ridges, lighter and better drained sandy loam and clay loam soils such as those of the Fox, Tuscola and Berrien series dominate. About one-half of Mersea Township is overlain with these soils, whereas in the County as a whole the figure is less than one-third. Even with these soils, drainage is frequently imperfect and therefore artificial means of draining the land are required. A wide variety of fruit and vegetable crops are grown on these soils. Greenhouse operations are also much more prevalent (Map 4).







Although small packets of poorly-drained organic soil are scattered throughout all of Essex County, the largest concentration exists in southeastern Mersea Township. Here former marshlands have been polderized to produce highly fertile soils upon which truck farming depends. The least productive soils are associated with river course bottoms. Here claypans of compact, slowly permeable soils rich in clay and subject to flooding predominate. These soils are hard when dry and plastic or stiff when wet.

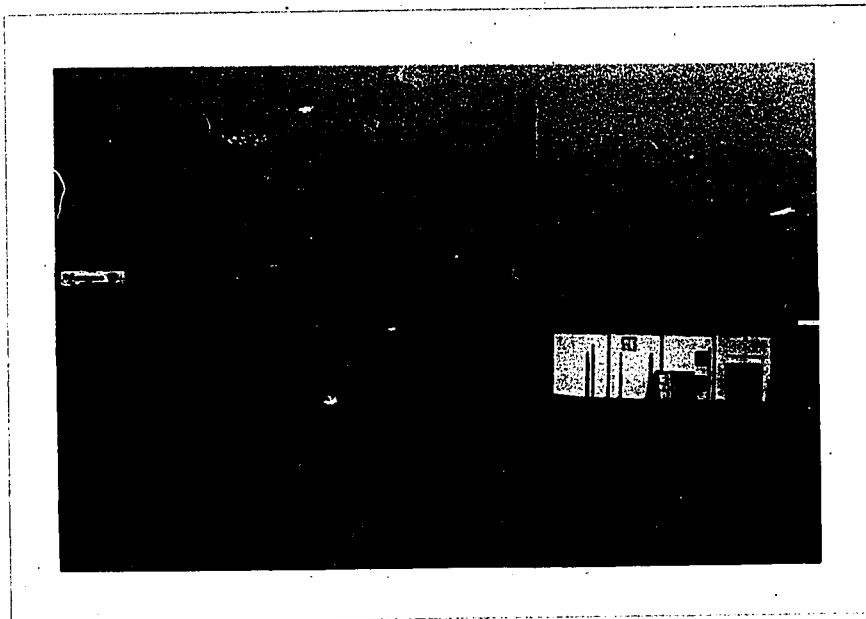


Photo 2. Lot 2. Concession I, looking southeast. Shown is a portion of a large glass greenhouse operation of the boiler type with a young peach orchard in the foreground. Both types of land uses are associated with the light textured soils of the Fox sandy loam variety.

#### ECONOMIC DETERMINANTS OF LAND USE IN THE TOWNSHIP

In the preceding brief historical review of land use in the Township the importance of agriculture as a basic industry in the region was outlined. The following survey emphasizes that this industry is still vital

to the economic well-being of the Township and Town. The prime economic determinants surveyed are agriculture and the allied food processing, packing and shipping industries.

(1) Agriculture

In 1961, Essex County had 379,962 acres of farmland. By 1966 the amount of farmland in the County had contracted to 367,501 acres representing an abandonment or conversion to other land uses of 12,461 acres. A similar trend existed in Mersea Township. From a total of 58,266 acres in 1961, farmland diminished to 55,794 acres, representing a loss of 2,472 acres. For Essex County the loss represented 3.3 per cent whereas in Mersea Township it was 4.2 per cent. Thus, the rate of reduction in Mersea Township over the five-year period has been 27 per cent more rapid than in the County as a whole.

The number of farms decreased between 1961-1966, both in Essex County and Mersea Township. By 1966 the total number of farms in Essex County had diminished by 7.8 per cent, or by 378 from 4,860 in 1961. In Mersea Township, however, the rate of decline was only 5.5 per cent from 1,100 to 1,060 during the same period. This represented a 28 per cent less rapid decline in the number of farms than in the County.

Although the total number of farms has decreased in both Essex County and Mersea Township, farms have tended to become larger in size. According to Table 3 the trend in Mersea Township again was somewhat different since the number of farms having 3 to 9 acres and 130 to 179 acres increased slightly. No such parallel existed for Essex County.

In spite of the fact that the total area in farms in both County and Township diminished, the acreage devoted to crops increased slightly

TABLE 3

FARM SIZE IN ACRES, 1961 AND 1966

TOTAL NUMBER OF FARMS	UNDER										
	3	2-2	10-69	70-129	130-179	180-239	240-399	400-559	600-759	760+	
ESSEX COUNTY	1961 4860	153	450	2122	1343	408	189	160	26	5	4
	1966 4482	138	450	1955	1118	368	214	189	33	11	6
MERSEA TOWNSHIP	1961 1100	44	149	615	209	55	12	10	5	1	0
	1966 1040	41	153	570	179	57	19	19	2	0	0

SOURCE D.B.S. Census of Canada, 1961  
D.B.S. Census of Canada, 1966

by 2,490 and 381 acres respectively. According to Table 2 this represented a 0.8 per cent increase in both units. This was primarily at the expense of land devoted to pasture, woodland and other non-crop uses.

In both County and Township the greatest use of the cropland was for producing corn for husking, other grains such as wheat and oats, and soybeans. Potatoes accounted for 4.8 per cent of the land area in Mersea Township in 1966 but only 1.5 per cent of the total land area in Essex County during the same year.

In spite of the decreasing number of farms and acreage devoted to farmland in the County, gross farm revenue between 1951 and 1966 increased from \$20,472,000 to \$48,417,000 in terms of 1965 dollars. The annual average increase during this period has been 9 per cent. It seems possible that encroachment of urban uses upon agricultural lands in Mersea Township has been partially compensated for by intensive use of remaining farmland.

The importance of the greenhouse industry in Essex County and the Province is substantial. In the 1960's Essex County accounted for approximately 60 per cent of all land under glass and plastic in Ontario. This same period witnessed a doubling of greenhouse acreage. This rapid expansion was accompanied by an equally rapid expansion in tomato and cucumber production. By 1970, 54.6 per cent of the gross farm value of greenhouse crops in the County was accounted for by the same two crops. In 1970, gross revenue of all greenhouse crops from the 319.2 acres under glass and plastic amounted to \$13,219,000<sup>15</sup> or an average of \$41,444 per acre. This figure contrasts sharply with revenues from other crops grown in the County.

TABLE 1  
TOTAL AREA OF ALL FARMLAND IN ESSEX COUNTY AND  
MERSEA TOWNSHIP, 1961, 1966

	<u>TOTAL FARMLAND IN ACRES</u>	
	<u>ESSEX COUNTY</u>	<u>MERSEA TOWNSHIP</u>
1961	379,962	58,266
1966	367,501	55,794

SOURCES  
 DOMINION BUREAU OF STATISTICS, AGRICULTURE, 1961  
 DOMINION BUREAU OF STATISTICS, AGRICULTURE, 1966

TABLE 2  
USE OF ALL FARMLAND IN ESSEX COUNTY AND  
MERSEA TOWNSHIP IN ACRES, 1961, 1966

	<u>UNDER CROPS</u>	<u>SUMMER FALLOW</u>	<u>PASTURE</u>	<u>OTHER</u>	<u>TOTAL</u>	<u>UNIMPROVED LAND</u>	
						<u>WOODLAND</u>	<u>OTHER</u>
ESSEX COUNTY	312,981	4,688	17,702	15,155	29,436	15,096	14,340
	315,471	5,576	10,919	13,224	22,311	11,100	11,211
MERSEA TOWNSHIP	47,798	628	2,322	2,933	4,585	2,697	1,888
	48,179	684	911	2,709	3,311	2,067	1,114

SOURCES  
 DOMINION BUREAU OF STATISTICS, AGRICULTURE, 1961  
 DOMINION BUREAU OF STATISTICS, AGRICULTURE, 1966

TABLE 4

LAND IN FIELD CROPS IN ESSEX COUNTY AND MERSEA TOWNSHIP, 1961, 1966

(IN ACRES)

	<u>WHEAT</u>	<u>OATS</u>	<u>BARLEY</u>	<u>RYE</u>	<u>FLAXSEED</u>	<u>MIXED GRAINS</u>	<u>TOTAL TAME HAY</u>	<u>CORN FOR GRAIN</u>	<u>CORN FOR ENSILAGE</u>	<u>OATS FOR HAY</u>	<u>POTATOES</u>	<u>SOYBEANS</u>
ESSEX COUNTY	1961 55,231	32,403	1,080	547	80	725	29,616	7,723	5,291	263	4,798	69,090
	1966 39,809	27,435	1,691	389	20	324	20,252	89,829	7,579	853	5,329	83,392
MERSEA TOWNSHIP	1961 7,297	3,054	54	243	--	127	2,644	10,416	485	44	2,539	n.a.
	1966 4,756	2,228	110	200	15	40	1,567	14,298	853	78	2,689	n.a.

SOURCES DOMINION BUREAU OF STATISTICS, AGRICULTURE, 1961  
DOMINION BUREAU OF STATISTICS, AGRICULTURE, 1966

TABLE 5 ESSEX COUNTY GROSS FARM REVENUE, 1951, 1961, 1966

	<u>GROSS FARM REVENUE</u>		<u>GROSS REVENUE PER FARM</u>		<u>PER CENT INCREASE IN REVENUE PER FARM</u>
	<u>1951</u>	<u>1965</u>	<u>1951</u>	<u>1965</u>	
	<u>\$ VALUE</u>	<u>\$ VALUE</u>	<u>\$ VALUE</u>	<u>\$ VALUE</u>	
	<u>\$'000's</u>	<u>\$'000's</u>			
1951	20,472	20,472	3,851	3,851	
1961	28,888	34,390	5,944	7,076	83.7
1966	38,976	48,417	8,696	10,802	52.6

SOURCES Dominion Bureau of Statistics, Agriculture, 1966  
 Ontario Department of Economics and Development, Economic  
Material on the Lake St. Clair Region, 1965

TABLE 6

ESTIMATED VALUE OF SELECTED CROP PRODUCTION

IN ESSEX COUNTY - 1970

<u>CROP</u>	<u>ACREAGE</u>	<u>VALUE IN DOLLARS(\$)</u>	<u>VALUE PER ACRE IN DOLLARS</u>
Peaches	1,785	2,214,300	1,241
Tobacco, flue-cured	1,198	1,424,798	1,189
burley	378	443,995	1,175
Processing Tomatoes	7,621	7,227,200	948
Apples	1,150	526,100	458
Shelled Corn	85,000	8,991,300	106
Soybeans	104,000	8,261,000	79

Source: Essex County - Estimated Crop and Livestock Production, 1970. Extension Branch, Ontario Department of Agriculture and Food, Essex, Ontario.

TABLE 7

SUMMARY OF GREENHOUSE INDUSTRY IN ONTARIO

OF FIRMS REPORTING

<u>YEAR</u>	<u>AREA IN</u>		<u>WHOLESALE VALUES (\$)</u>		<u>TOMATO AND CUCUMBER SALES IN \$ PER SQ.FT.</u>	<u>SALES OF ALL CROPS IN \$ PER SQ. FT. OF GLASS</u>
	<u>GLASS</u>	<u>SQ. FT. PLASTIC</u>	<u>TOMATOES</u>	<u>CUCUMBERS</u>		
1955	8,193,698	445,783	358,104	440,296		1.30
1957	8,003,267	304,626	525,961	1,113,654	.20	1.26
1959	9,519,480	321,305	1,106,498	1,424,669	.26	1.21
1961	12,500,483	334,014	1,768,205	1,745,841	.28	1.15
1963	15,502,745	350,330	2,621,433	2,520,814	.32	1.16
1965	15,717,272	2,922,658	3,333,468	3,279,191	.35	1.20
1967	17,292,169	3,630,541	3,922,396	2,775,999	.32	1.16
1969	18,169,678	4,435,486	6,121,480	2,567,900	.38	

Source: Greenhouse Industry, Dominion Bureau of Statistics, Queen's Printer, Ottawa, 1955-1967 1967-1968 1968-1969



TABLE 8

SUMMARY OF GREENHOUSE INDUSTRY IN ESSEX

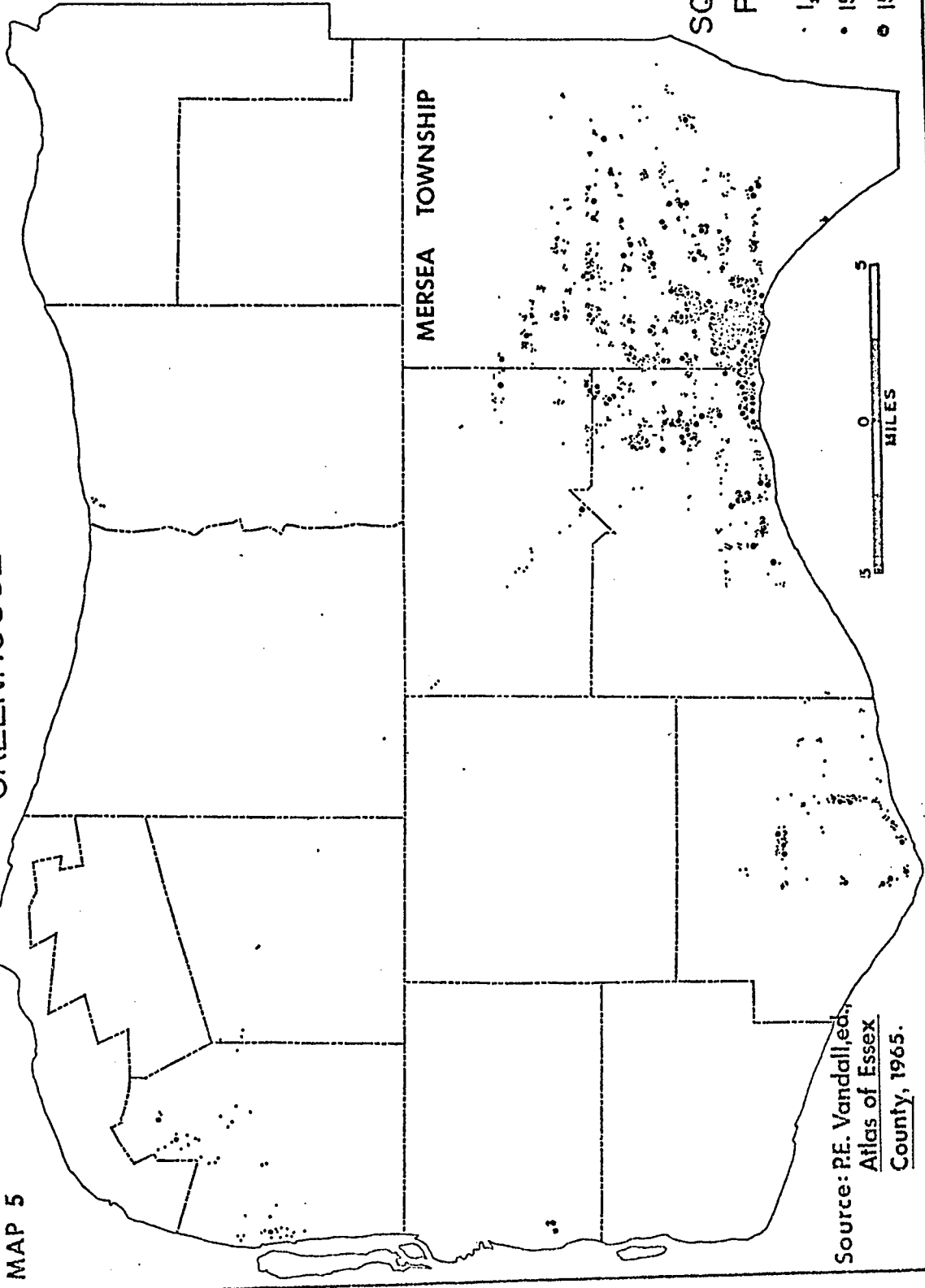
COUNTY OF FIRMS REPORTING

<u>YEAR</u>	<u>AREA IN</u> <u>GLASS</u>	<u>SQ. FT.</u> <u>PLASTIC</u>	<u>WHOLESALE VALUE (\$)</u>		<u>TOMATO AND</u>	<u>SALES OF ALL</u>
			<u>TOMATOES</u>	<u>CUCUMBERS</u>	<u>SALES IN \$</u> <u>PER SQ. FT.</u>	<u>CROPS IN \$</u> <u>PER SQ. FT.</u>
1959	6,613,945					
1961	7,297,345	-	1,347,937	1,650,981	.41	
1963	8,472,925	501,160	2,128,350	2,417,724	.51	
1965	9,165,305	2,031,976	2,882,790	3,221,821	.55	
1967	10,030,945	2,629,372	3,301,759	2,655,008	.47	
1969	10,332,120	3,120,860	3,884,763	2,373,200	.47	
1970	14,544,485		5,319,700	1,900,000	.49	.91
	(Total glass and plastic)					

Source: Essex County Associated Growers Report, Leamington, 1971. Extension Branch, Ontario Department of Agriculture and Food, Essex, 1970.

In order to illustrate and analyse variations in agricultural land use intensity about Leamington, a twenty per cent systematic sample of all farms listed in the Township's Assessment Roll of 1967 was taken. Consideration was then given regarding which data from the 355 farms was to be used. Possibilities included the use of the total assessed value of land and buildings, the assessed value of buildings alone or the total average assessment per unit of area (i.e. acre), including both land and buildings. The latter method was selected since factors such as the physical quality of the land and intensity of land use in the form of capital expenditures would be most indicative of land use intensity. In addition, this method would offset the advantage farms with large acreages would have if only total assessment were considered. In the latter instance, a farm with large acreage in corn, a farmstead, shed and corn cribs although in total assessed as highly as a farm with small acreage,

MAP 5  
GREENHOUSE AREA UNDER GLASS, 1961



Source: R.E. Vandall, ed.,  
Atlas of Essex  
County, 1965.

shed, greenhouse and a peach orchard, would not be farmed as intensively. One index of land use intensity is the number of man-hour inputs per acre required to produce a particular crop. Today about 13 man-hours are needed in the production of an acre of corn,<sup>17</sup> 86 man-hours in the production of an acre of peaches excluding pruning, spraying and cultivation and about 1,700 man-hours in the production of an acre of cucumbers under glass.<sup>18</sup>

Data from the Assessment Roll was then tabulated as follows:

<u>LOCATION OF FARMS</u>	<u>ACREAGE</u>	<u>TOTAL ASSESSMENT LAND AND BUILDINGS</u> \$	<u>AVERAGE ASSESSMENT PER ACRE</u> \$
8 E $\frac{1}{2}$ 12 <sup>19</sup>	100	6,890	69
7 W $\frac{1}{2}$ SW $\frac{1}{4}$ 12	23 $\frac{1}{4}$	2,740	118
10 W $\frac{1}{2}$ 12	100	4,200	42

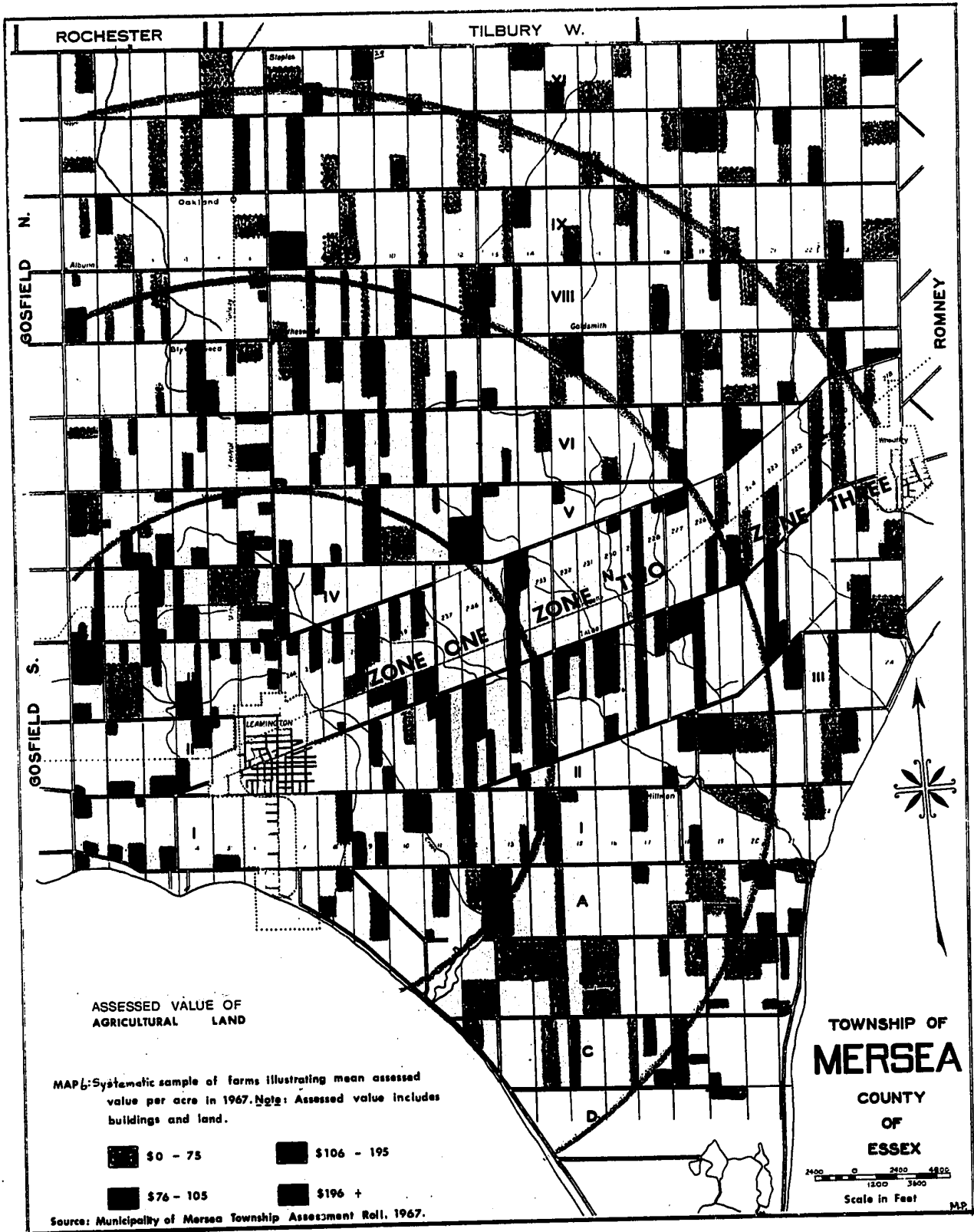
After the initial tabulation, the data was again compiled under the same headings in descending order of average assessed value per acre.<sup>20</sup> This was done in order to summarize the sample by quartile deviation which would yield the median, interquartile range as well as upper and lower quartiles. The four quartiles had values as follows:

Upper	\$195 +
Interquartile	\$106-194
	\$ 76-105
Lower	\$ 0-75

Each farm was categorized by these quartile ranges and then plotted to produce Map 6.

Next a comparison with Von Thünen's land use model was made. In Von Thünen's idealized scheme six different agricultural land use zones of decreasing intensity were distinguished, whereas in Mersea Township only three indistinct zones were possible to differentiate.

In spite of the differences with actual regard to the utilization

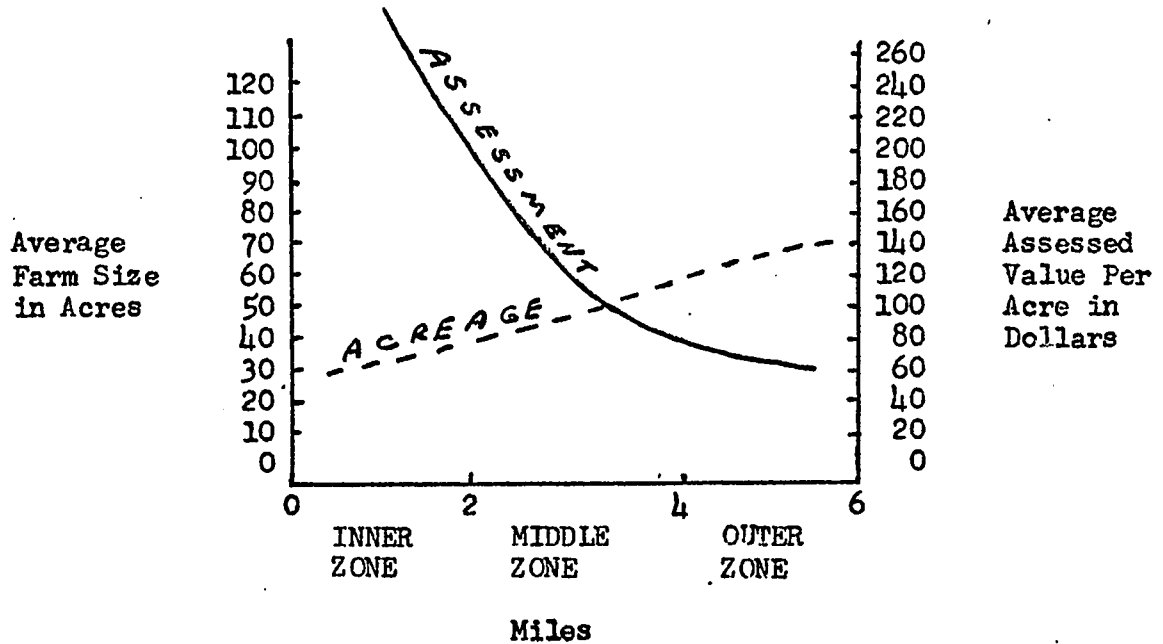


number and shapes of zones, there are certain similarities between Von Thünen's land use intensity patterns and the existent pattern  
21  
about Leamington.

To illustrate the relationship among distance from Leamington, average farm size and average assessed value per acre, two circles were drawn with radii of 2 and 4 miles to provide three concentric zones. Any other arrangement proved impractical since the farms of varying intensity of land use occur relatively haphazardly, as indicated by the fact that at least 12 of the sampled farms with assessed values per acre in the second highest category are found in the outer zone. From data tabulated from the Assessment Roll, 1967, the average farm size in acres and the average assessed value per acre for each of the three zones was computed. The result revealed an inverse relationship between the distance from Leamington and average assessed value per acre of farmland and positive relationship between distance from Leamington and average farm size. This may be partially attributed to the number of profitable options decreasing with distance from the market as postulated by Von Thünen and in part due to the occupancy of the inner zone by greenhouses which Sinclair regarded as farm factories. However, it is this author's contention that the combination of very favourable inherent physical attributes such as light-textured, well-drained soils, duration of sunlight and heat units received, very early contributed to an intensification of agricultural land use which has been maintained. This has been possible by continual land use adaptations to changing market conditions. Some would argue that greenhouse soils can be artificially manufactured to suit any requirement. This is so, but at what cost?

Figure 1

Simplified Graph Illustrating the Relationship Between a) Farm Size and Distance from Leamington b) Assessed Value and Distance from Leamington.



In the results of a questionnaire given to farmers in a fruit and vegetable growing area extending along Highway 3 from Essex to Ruthven in Essex County, Johnson<sup>22</sup> found that 60 per cent of the full-time farmers responding listed good soil (sand and loam) as the primary advantage for producing top quality products. 40 per cent of these same respondents listed the good climate and location as equally important.

The importance of soil is also reflected in a report of a Provincial task force on farm assessment. This committee included soil capability<sup>23</sup> as a significant index in assessing farms.

Recently the largest capital expenditures in agriculture and related activities have occurred in the intensely farmed inner and middle zones (Map 6). This 26 square mile area which corresponds very closely to the

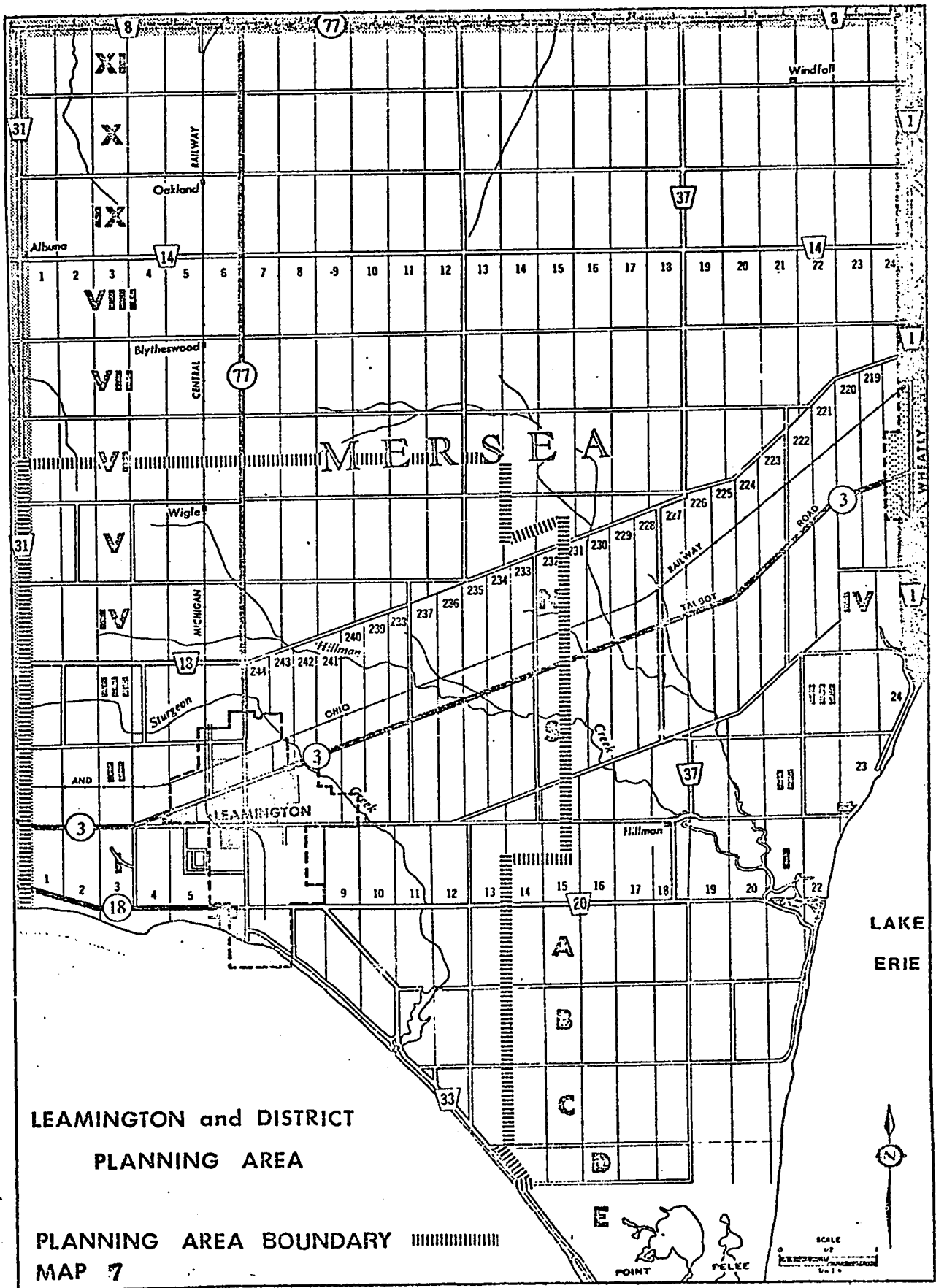
Leamington and District Planning Area (Map 7), contains less than one-third of the Township's total area of 83.5 square miles. In the three year interval commencing March 15, 1966 36 or 76.5 per cent of the new glass and plastic greenhouses were located there as well as 57.1 per cent of the new warehouses, other storage or processing plants. Only in the erection of new corn cribs did this area not receive a proportion of new construction at least corresponding to its areal extent. In this latter instance, 59 or 81.9 per cent of the corn cribs were built beyond the Planning Area limits. The greatest value of new construction in the form of warehouses, storage and processing plants and greenhouses was also concentrated in this area. Construction of this type amounted to \$1,850,000 or 86 per cent of the total expenditure of \$2,160,000.

Although the total of 52 barns, sheds and granaries and 72 corn cribs significantly exceeded other forms of agriculturally related investments already mentioned, the capital expenditure of \$300,000 for these units was substantially less.

## (2) Food Processing, Packing and Shipping Industries

Closely allied with agricultural production in the region and Township have been the food processing, packing and shipping industries. Jointly these basic industries are the key to the area's economic strength. Any expansion in these basic lines should result in growth of service activities and thus growth in the total economy.

In 1967, processing firms located in the Town of Leamington, all heavily reliant upon locally grown agricultural raw materials, employed 2,999 persons on a permanent seasonal basis. This represented 94 per cent



LEAMINGTON and DISTRICT  
PLANNING AREA


PLANNING AREA BOUNDARY   
MAP 7





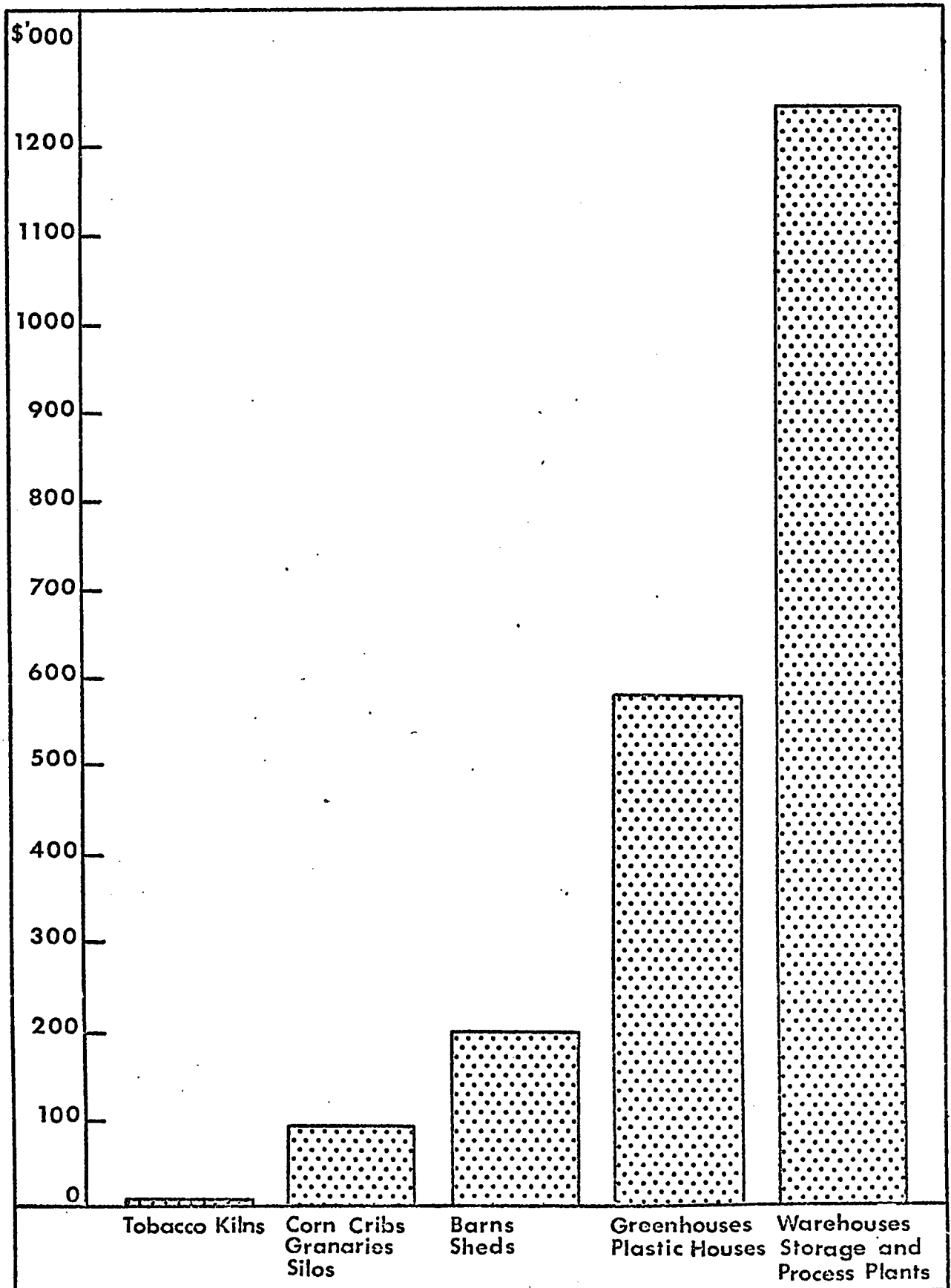
TABLE 9  
 AREAL DISTRIBUTION OF CONSTRUCTION  
 MERSEA TOWNSHIP, PLANNING AREA, LEAMINGTON URBAN AREA  
 MARCH 15, 1966 TO JUNE 30, 1969

TYPE OF CONSTRUCTION IN THE TOWNSHIP	TOTAL UNITS CONSTRUCTED IN THE TOWNSHIP	UNITS CONSTRUCTED IN PLANNING AREA A PER CENT OF TOTAL CONSTRUCTION (UNITS)	UNITS CONSTRUCTED IN PLANNING AREA AS PER CENT OF TOTAL CONSTRUCTION	UNITS CONSTRUCTED IN LEAMINGTON URBAN AREA AS A PER CENT OF TOTAL CONSTRUCTION	UNITS CONSTRUCTED IN LEAMINGTON URBAN AREA AS A PER CENT OF TOTAL CONSTRUCTION	UNITS CONSTRUCTED IN REMAINDER OF TOWNSHIP	PER CENT OF TOTAL CONSTRUCTION
DWELLINGS	150	115	76.6	42	28.0	35	23.4
GREENHOUSES AND PLASTIC HOUSES	47	36	76.5	4	8.5	11	23.5
TOBACCO KILNS	4	3	75.0	2	50.0	1	25.0
BARN AND SHEDS	52	21	40.4	4	7.7	31	59.6
WAREHOUSES, STORAGE, PROCESSING AND OTHER PLANTS	14	8	57.1	6	42.9	6	42.9
COTTAGES	23	7	30.4	0	0	16	69.6
CORN CRIBS	72	13	18.1	0	0	59	82.9

\* UNITS CONSTRUCTED IN REMAINDER OF TOWNSHIP AS A PER CENT OF TOTAL CONSTRUCTION

SOURCE: TOWNSHIP OF MERSEA MUNICIPAL OFFICE BUILDING PERMITS ISSUED, MAR. 15, 1966-JUNE 30, 1969

AGRICULTURAL AND RELATED CAPITAL INVESTMENTS IN MERSEA TOWNSHIP FROM MARCH 15, 1966 TO JUNE 30, 1969



Source: Twp. of Mersea, Building Permits Issued  
 March 15, - Dec. 31, 1966; 1967; 1968; Jan. 1 -  
 June 30, 1969.

FIGURE 2

TABLE 10  
 APPROXIMATE EMPLOYMENT - EXISTING MANUFACTURING INDUSTRIES  
 TOWN OF LEAMINGTON - 1967

NAME OF COMPANY	MALE EMPLOYEES	FEMALE EMPLOYEES	TOTAL
Beaver Lumber Co.	15	5	20
Bennie Lumber and Bldg. materials ltd.	90	10	100
Canadian Wood Products	10	20	30
Dibrell Brothers	42	6	
	283	44	
	325	50	374
H.J. Heinz Co. of Canada Ltd.	1,266	298	
	375	125	
	1,641	423	2,064
Pyramid Cannery Ltd.	22	7	
	38	493	
	60	500	560
Zollner of Canada Ltd.	25	5	30
Total			3,179

Source: Report on the Need and Effective Demand for Ontario  
 Housing and the Need for Land Assembly in the Town  
 of Leamington, 1967, p. 10

of the total employment of manufacturing industries in the Town.

24

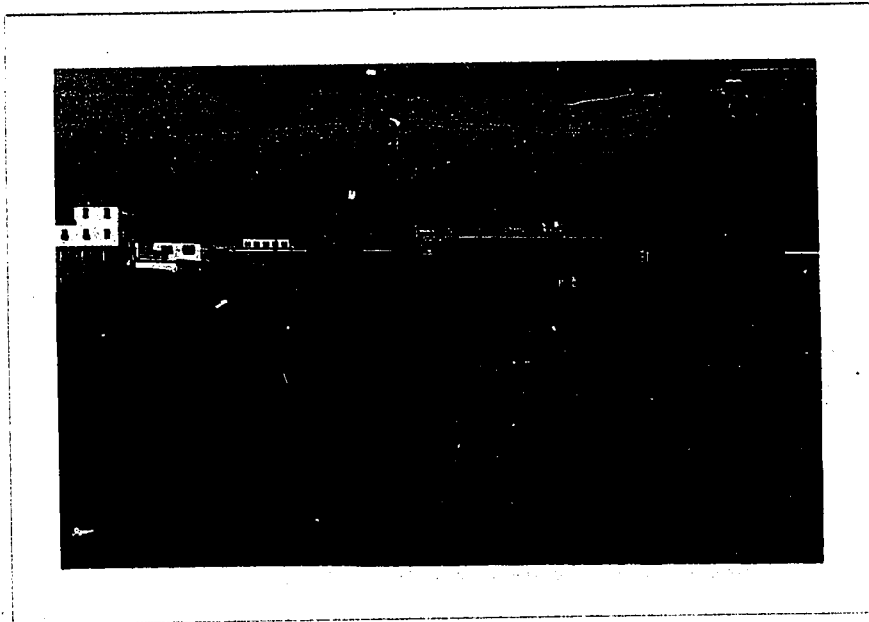


Photo 3. Looking east from Oak Street West toward the Heinz Processing plant in Leamington. This industry is the largest employer in the Mersea Township-Leamington Joint Planning Area, employing more people than all other manufacturing industries combined. In the foreground is a truck laden with tomatoes grown in the area.

In addition, to the more than 250 greenhouse producers in the Leamington area there are about 1,000 employees in packaging and shipping of the greenhouse products. <sup>25</sup> Of the eight greenhouse vegetable shippers in Essex County, five are located in Leamington or Mersea Township. In total these five local shippers handled 87.1 per cent of the total volume of crops shipped in the fall, 1970.

TABLE 11

PERCENTAGE VOLUME OF GREENHOUSE VEGETABLES BY

SHIPPER FALL, 1970

<u>SHIPPER</u>	<u>LOCATION</u>	<u>%</u>
Central Fruit Company	Leamington	0.3
Sunparlour Greenhouse Growers' Co-op	Mersea Twp.	40.8
Ollie Mastronardi & Sons Produce Co.	Leamington	20.4
Armstrong Produce Co.	Leamington	17.4
Erie Produce Co.	Leamington	8.2
Clifford Produce Co.	Ruthven	4.2
Howard James Produce Co.	Ruthven	8.3
Harrow Produce Co.	Harrow	0.4
		<u>100.0</u>

Source: Ontario Greenhouse Vegetable Producers' Marketing Board: Production and Sales Figures, p. 5, 1970, Leamington.



Photo 4. Lot 1, Concession 2, looking east from County Road 31. Much of the agricultural production of Mersea Township is marketed through the Sun Parlour Greenhouse Growers' Co-op, with distribution throughout Canada and the United States.

A comparison of total value of Ontario grown tomatoes and cucumbers in 1969 with those imported from the United States and Mexico during that same year indicate that only 37 per cent of the Ontario and Quebec demand is being met by Ontario grown crops. Thus there is room for expansion of the local greenhouse industry if it could become more competitive.

However, any expansion in basic activity in the Leamington-Mersea Township area may result in the growth of Leamington and more urban sprawl unless the growth is carefully controlled so as to be in harmony with local factors. Most productive areas should be protected from urban sprawl.

TABLE 12  
FOREIGN IMPORTS OF TOMATOES AND CUCUMBERS  
INTO ONTARIO AND QUEBEC - 1969

<u>CROP</u>	<u>SOURCE</u>	<u>DESTINATION</u>	<u>VALUE \$</u>
Tomato	U.S.A.	Ontario	2,999,000
"	U.S.A.	Quebec	4,011,000
"	Mexico	Ontario	3,215,00
"	Mexico	Quebec	<u>3,381,000</u>
		TOTAL	13,606,000
Cucumber	U.S.A.	Ontario	254,305
"	U.S.A.	Quebec	392,538
"	Mexico	Ontario	178,122
"	Mexico	Quebec	<u>261,743</u>
		TOTAL	1,086,708

Source: Ontario Greenhouse Vegetable Producers' Marketing Board: Production and Sales Figures, pp. 10-12, 1970, Leamington.

POPULATION AS A SOCIAL DETERMINANT OF LAND USE IN THE TOWNSHIP

A study of the size of a population related to the overall dimension of the physical environment supplies a basic yardstick for the estimation of areal requirements for various types of land use. When the time

element is considered and future trends in population size are estimated, these trends become the basis for estimating future space needs. In addition, population distribution studies give an indication as to how these total space needs should be allocated to different parts of the area at any particular time.

TABLE 13

POPULATION GROWTH

MERSEA TOWNSHIP, LEAMINGTON AND ESSEX COUNTY

1960 - 1969

<u>YEAR</u>	<u>ESSEX COUNTY</u>	<u>ANNUAL % RATE OF GROWTH</u>	<u>LEAMINGTON</u>	<u>ANNUAL % RATE OF GROWTH</u>	<u>TOWNSHIP</u>	<u>ANNUAL % RATE OF GROWTH</u>
1960	259,820	0.7	8,893	0.6	7,260	1.4
1961	258,218	-0.6	8,602	-3.1	7,529	3.7
1962	256,400	-0.7	8,939	3.8	7,700	2.3
1963	256,900	0.2	8,934	-0.1	7,735	0.5
1964	261,100	1.6	9,152	2.4	7,825	1.2
1965	268,100	2.7	9,328	1.9	7,947	1.6
1966	280,922	4.8	9,379	0.6	8,172	2.8
1967	289,700	3.1	9,350	-0.3	8,418	3.0
1968	292,500	1.0	9,538	2.0	8,699	3.3
*1969	293,133	0.2	9,700	1.7	8,991	3.4

Source: Office of the Registrar General, Toronto, 1969, Mersea Township Municipal Office, Leamington, 1969, 1971

\*Ontario Department of Municipal Affairs, Ontario Population Statistics, Toronto, 1969.

Population growth in Mersea Township has not followed the same tempo as that of Essex County or the Town of Leamington. Percentage increases in population for the period 1960 to 1969 for the County and Town of 12.8 and 9.1 were substantially below that of the Township's increase of 23.8 per cent.

In the Official Plan for the Leamington and District Planning Area anticipated populations were based upon annual growth rates of 3 and 2.25 per cent for Leamington and Mersea Township, respectively. These rates correspond to the actual average growth rates in the municipalities for the period 1941 - 1961.

TABLE 14  
ANTICIPATED AND ACTUAL POPULATIONS  
LEAMINGTON AND MERSEA TOWNSHIP  
1961-1969

YEAR	LEAMINGTON			MERSEA TOWNSHIP		
	PROJECTED (1)	ACTUAL	DIFFERENCE	PROJECTED (2)	ACTUAL	DIFFERENCE
1961		8,602			7,529	
1962	8,860	8,939	+79	7,698	7,700	+2
1963	9,125	8,934	-191	7,893	7,735	-138
1964	9,398	9,152	-246	8,050	7,825	-225
1965	9,679	9,328	-351	8,231	7,947	-284
1966	9,969	9,379	-590	8,416	8,172	-244
1967	10,268	9,350	-918	8,605	8,418	-187
1968	10,576	9,578	-998	8,798	8,699	-99
1969	10,893	9,700	-1,193	8,995	8,991	-4

- (1) Projection calculated upon an annual growth rate of 3 per cent.  
(2) Projection calculated upon on annual growth rate of 2.25 per cent.

Source: Office of the Registrar General, Toronto, 1969.  
Official Plan: Leamington and District Planning Area, 1965. Mersea Township Municipal Office, Leamington, 1969, 1971.

In Table 14 differences between projected and actual populations for Leamington and Mersea Township have been calculated for the period 1962-1969. Neither Leamington nor Mersea Township have gained as many residents as anticipated for this period except for 1962 when the actual population in Leamington exceeded the projected by 79 and in Mersea Township the



excess over projected was only 2. By 1969 Leamington had an absolute deficit of 1,193 representing a 10.9 per cent difference between anticipated and actual population whereas Mersea Township's absolute deficit of 4 represented less than one-twentieth of 1 per cent.

According to the Official Plan, Mersea Township will retain its rural character since most of the non-farm population will locate in the Planning Area (See Map 7). Of the population that will locate in the Planning Area, most will do so in the Leamington Urban Area, namely, that portion of Mersea Township that is within one-half mile of the Town's boundary. In 1961, 33 per cent of the population of the Mersea Portion of the Leamington Planning Area was located there. By 1975, the Official Plan predicts the Leamington Urban Area will contain 45 per cent of the Leamington Planning Area's population. This will entail an absolute gain of 910. In 1961 the population density of Mersea Township was calculated to be 2.5 per dwelling unit based upon a population of 7,700 and 3,100 occupied dwellings. At this rate an additional 364 dwelling units will be required in the Urban Area by 1975. A more modest increase of 390 persons is predicted for the remaining portion of Mersea Township within the Planning Area. This increase will necessitate the construction of an additional 156 dwelling units. Thus, a total of 520 dwelling units in the Mersea portion of the Leamington Planning Area will be required to accommodate the anticipated population increase. These 520 new dwelling units will consume approximately 150 acres of land in the Mersea portion of the Leamington Planning Area.

The number of building permits issued for the construction of new residences in Leamington and in the Township is reflected in the growth of population in these two municipalities (Table 13). The actual annual

Table 15

Anticipated Population of the Leamington Planning Area and Leamington Urban Area

YEAR	LEAMINGTON PLANNING AREA POPULATION(1)	1961-1975		LEAMINGTON URBAN AREA POPULATION(2)	PERCENTAGE OF PLANNING AREA (MERSEA PORTION)	PERCENTAGE OF MERSEA TOWNSHIP POPULATION IN MERSEA PORTION	PERCENTAGE OF MERSEA TOWNSHIP POPULATION IN LEAMINGTON URBAN AREA	POPULATION REMAINING IN PLANNING AREA OUTSIDE URBAN AREA
		LEAMINGTON URBAN AREA POPULATION(2)	(MERSEA PORTION)					
1961	2,950	1,000	33.0	1,000	38.0	38.0	1,950	
1965	3,200	1,120	35.0	1,120	38.0	38.0	2,080	
1970	3,700	1,480	40.0	1,480	40.0	40.0	2,220	
1975	4,250	1,910	45.0	1,910	42.0	45.0	2,340	

- (1) Population within the Planning Area but outside the Town boundary
- (2) Population in the Mersea portion of the Planning Area within one-half mile of the Town boundary

SOURCE: Official Plan: Leamington and District Planning Area, 1965

average number of building permits issued by the Town of Leamington for the period 1961 to 1969 has been 34 whereas in the Township the average has been 46 for the three year period April 1, 1966 to April 1, 1969.

TABLE 16  
BUILDING PERMITS ISSUED FOR NEW RESIDENCES

	<u>LEAMINGTON</u> <u>NO. OF UNITS</u>	<u>MERSEA TOWNSHIP</u> <u>NO. OF UNITS</u>
1961	35	
1962	44	
1963	31	
1964	22	
1965	31	
1966	31	49
1967	34	45
1968	26	45

1. Records not kept by the Municipality prior to April, 1966.

Sources: Clerks, Township of Mersea and Town of Leamington, Municipal Offices, Leamington.

Total annual average construction for both municipalities has necessitated the consumption of approximately 21.5 acres of land. This figure is based upon an average density of 3.5<sup>27</sup> single family detached dwelling units per acre.

Assuming a consumption rate of approximately 3<sup>28</sup> units per acre for the Township, 115 new dwellings built in the Planning Area would have consumed 38 acres or an annual average of 12.7 acres of prime agricultural land. In the remainder of the Township, beyond the limits of the Planning Area, residential land consumption has been considerably less amounting to only 3.8 acres per annum.

## PROBLEMS IN THE STUDY AREA

Today the rural-urban fringe zone of the margin of Leamington is characterized by a mixture of rural and urban characteristics. As previously mentioned, this zone contains the most productive agricultural land in the Township. However, in recent years urban sprawl<sup>29</sup> in the form of scattered residential and strip commercial development threatens to undermine this important economic base. Although reconnaissance trips by auto were useful in estimating the areas already devoted to non-agricultural land use, they underestimated the degree to which urban influences prevailed in the environs of Leamington. In order to determine the magnitude, extent and diffusion of urban sprawl several less apparent indices were used. An analysis of the data and maps compiled was useful in arriving at a rationale for the zoning by-law.

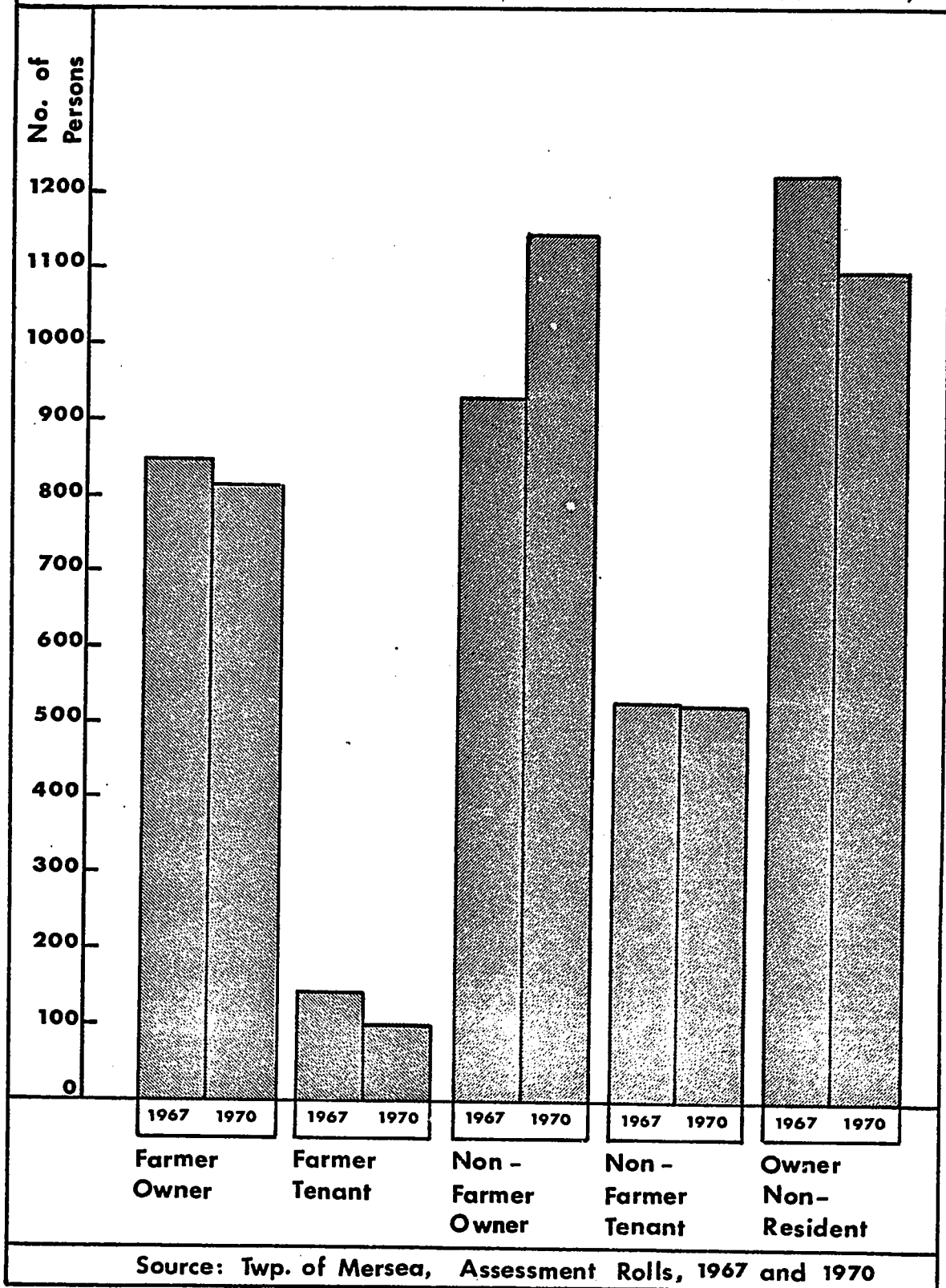
## INDICES OF URBAN SPRAWL

### (1) Changing Ratio of Farm to Non-Farm Resident

The degree to which Mersea Township is coming under urban influences is reflected in the increasing proportion of non-farm to farm residents. In 1967 there were 1,115 residents who were either farmers owning or farmers renting property in the Township. These in turn were exceeded by 1,455 non-farmer residents as well as by 1,228 non-residents owning property within the Township. This latter group represents cottage owners along the East and West Beaches.

Thus, the ratio of non-farm to farm population in 1967 was 1.3 to 1. In the three year interval 1967 to 1970 this ratio had increased to 1.8 to 1.

**FIG. 3 FARMER, NON-FARMER AND NON-RESIDENT OWNERS AND TENANTS OF PROPERTY IN MERSEA TWP. (1967 & 1970)**

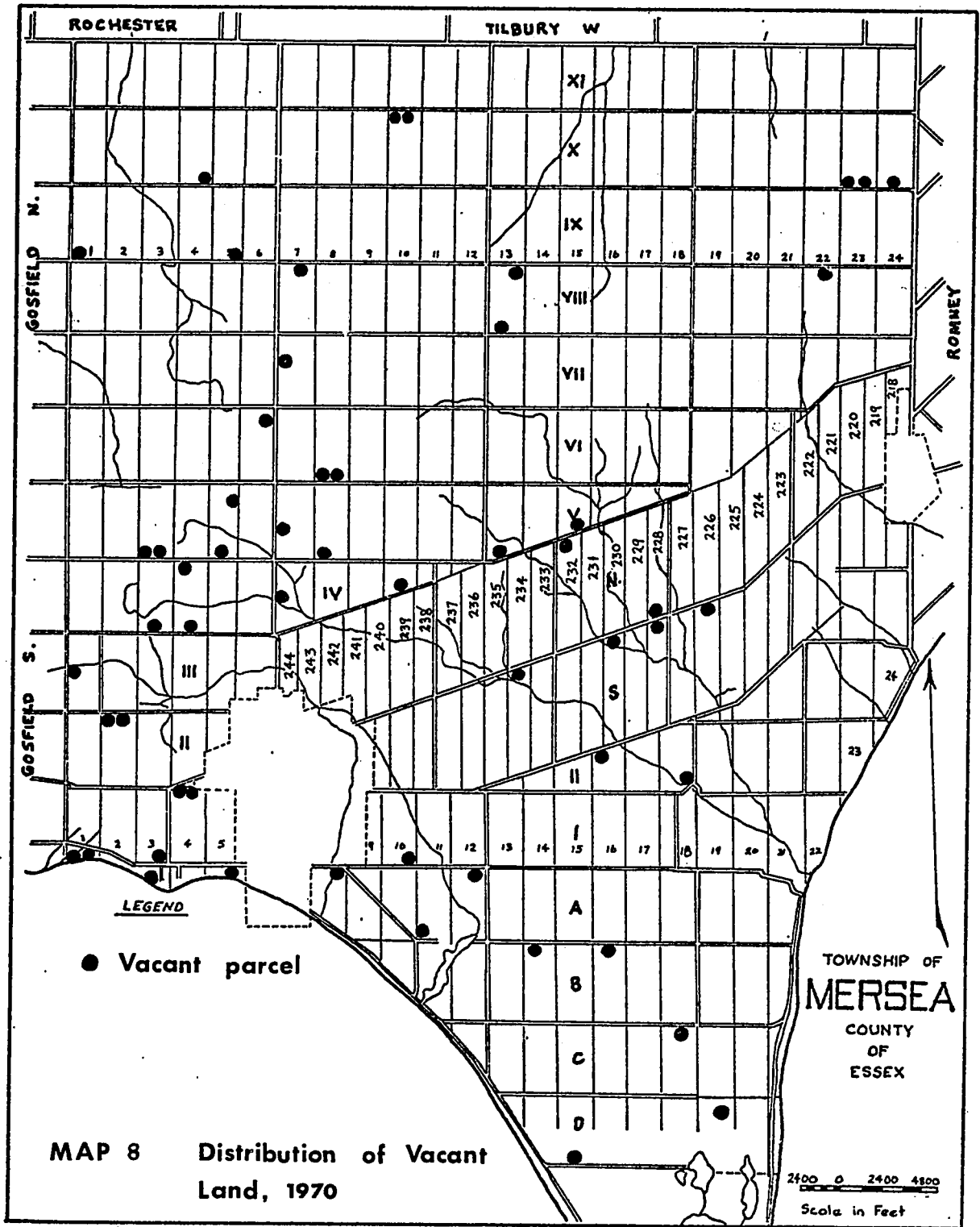


Should this trend continue there is a danger the Township Council will become dominated by persons not having the same degree of concern for agriculture as in the past. This in turn could result in the primacy of agriculture being usurped and in a rapid deterioration in agriculture and associated industries.

(2) Presence of Vacant Land

Land speculation, in anticipation of land use changes from lower to higher intensities, may be rampant in the fringe zone around a town with an expanding economy and population. In association with this speculation are increasing land values. Where compact development is not enforced, builders are often tempted away from the immediate vicinity of the town, either because of some intrinsic attraction of the site which they are developing or because the land adjacent to the built up area is higher in cost. As a result, unused spaces of varying sizes are left in the fringe zone and are only gradually filled up.

Of the 56 vacant parcels of land <sup>30</sup> within Mersea Township in 1970 one-half were located within 2 miles and 77 per cent were located within 4 miles of Leamington. In addition, 17, or 30 per cent of these lots were along highways 18, 3 and 77, the principal arteries leading into Leamington. Of the 12 vacant lots along these highways to the north and west, 8 were owned by non-farmers whereas only 2 of the 6 of those along Highway 3 to the east were owned by non-farmers. The remaining vacant lots were scattered throughout the Township. Of those persons under whose names these properties were assessed, 5 did not reside in the Township or Town of Leamington or Village of Wheatley. Only 23 of the total were listed as farmers.



This analysis of vacant lots suggests that land speculation along prime routes may be operative in the Township.

(3) Frequency of Land Transactions and the Diffusion of Land Use Change.

A valid zoning by-law should not only reflect current land use but also the pace and direction of land use change. Frequency of transactions was found to be a significant index of land use change.

From the Township of Mersea Abstracts, data on all deeds and grants transacted during the decade Jan. 1, 1961 to Dec. 31, 1970 was collected and tabulated according to the date of transaction, size of parcel in transaction, location of parcel according to concession and lot or part thereof. For each of the transactions the average value per acre of the parcel was computed. In order to be able to summarize the data by quartile deviation the data was again tabulated by the number of transactions and the number of lots as follows:

<u>OCCURRENCE OF TRANSACTIONS</u>	<u>NUMBER OF LOTS BY OCCURRENCE OF TRANSACTIONS</u>	<u>CUMULATIVE TOTAL OF LOTS BY OCCURRENCE OF TRANSACTIONS</u>
0	26	0
1	39	65
2	40	105
3	42	147
4	28	175

The four quartiles had values as follows:

Upper	8
Interquartile	5-8
	3-4
Lower	3

In order to analyse the data cartographically the frequency of transaction by lot was plotted on Map 9.

The greatest frequency of transactions during the decade occurred in those lots adjacent to or in close proximity to the Town of



Leamington, Village of Wheatley, or else along the main traffic routes leading into Leamington. Frequencies were also high along the East and West Beaches. The largest area experiencing the fewest transactions was northeast of Leamington in the lots of Concessions VII to XI.

In order to test the concentration of frequencies along major highways and country roads the percentage of all transactions in those lots adjacent to these highways was determined as follows:

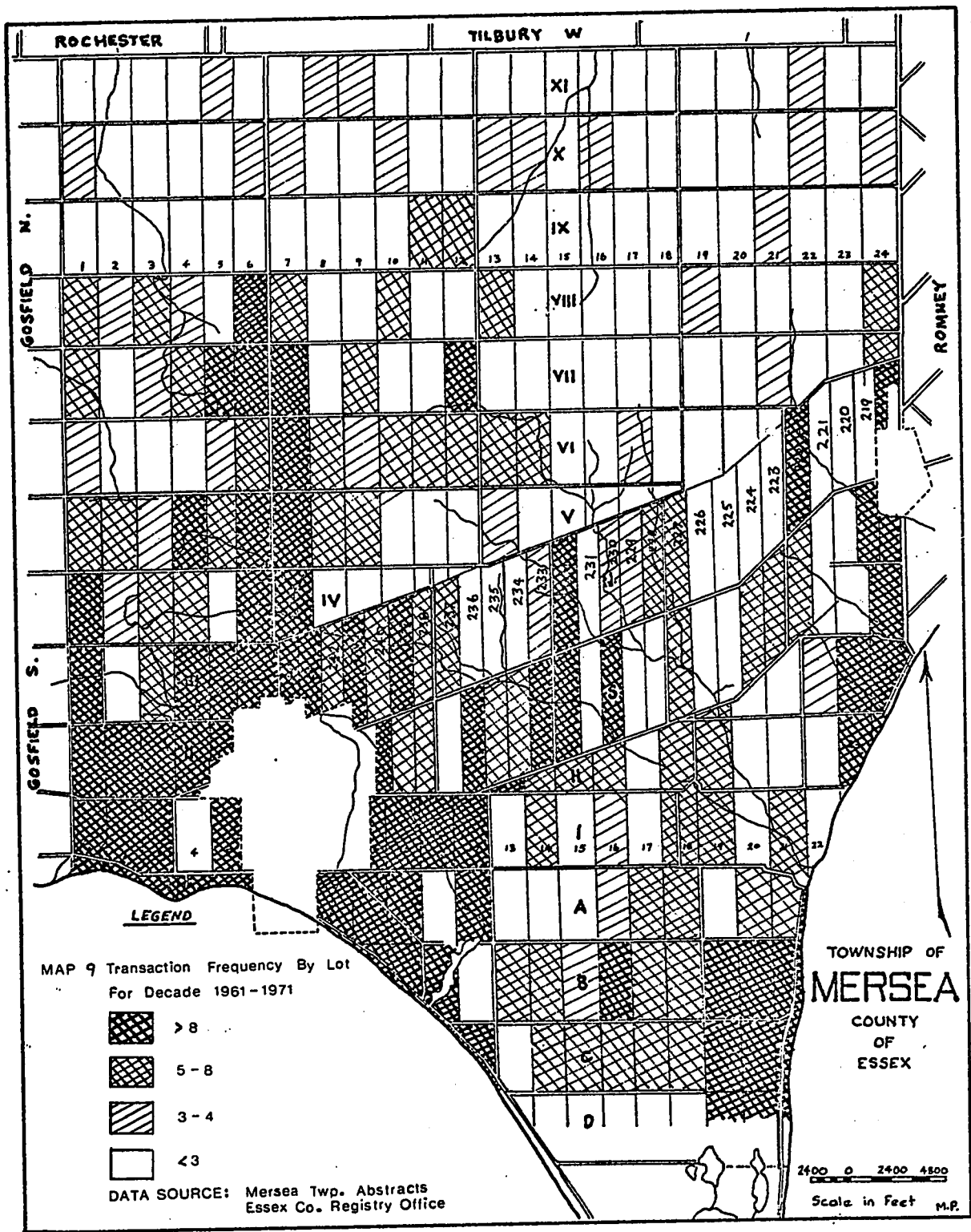
<u>HIGHWAY</u>	<u>NUMBER OF TRANSACTIONS</u>	<u>NUMBER OF LOTS ADJACENT TO HIGHWAYS</u>
3	459	56
77	275	17
18	130	9
11	58	9
Pelee Drive	186	9
	<u>1,108</u>	<u>100</u>

Being in a recreation area, the 6 lots and 286 transactions along the East Beach were regarded as unrepresentative of urban sprawl in the Township and consequently were not included in the computations.

Of the 1,955 transactions exclusive of the East Beach area, 1,108 or, 56.7 per cent occurred in lots adjacent to these highways. Yet, these 100 lots accounted for only 31 per cent of 323 lots in the Township.

This analysis combined with the previous observations on vacant land suggests that accessibility to Leamington is an important factor in determining the direction of urban sprawl.

The following graphs illustrating the frequency of transactions by Concession and lot in absolute values visually reinforce the preceding discussion. The abrupt change in the frequency in lots adjacent



to Highway 77 in Concession VIII suggests that this point marks the farthest northward diffusion of urban sprawl. Field observations revealed a considerable decrease in land use intensity at this point. The number of dwellings drops sharply, fields are much larger and agricultural land is used for growing cash crops, especially grains.

Lots along secondary Township roads such as Township Sideroad 12 and 13 also experienced a larger number of transactions. Where intersections of secondary roads with main highways occurred, the number of transactions greatly exceeded the average of 6 per lot for the decade. This was especially noticeable at the intersection of the Township Sideroad between lots 232 and 233 of Concession North and South Talbot Roads and Highway 3, County Road 31 and Highways 3 and 18 and Oak Street west along the western periphery of Leamington.

The overall pattern is one of increasing frequency of transactions from the north and north-east toward the south and southwest with greatest intensity in the lots around the periphery of Leamington, along the main highways and intersections of highways as well as along the East and West Beaches. However, the pattern is discontinuous with some lots experiencing very few transactions even though near Leamington. This inconsistency is indicative of the haphazard nature of urban sprawl.

To assess the diffusion of urban sprawl in the Township by temporal periods, the decade Jan 1, 1961 to Dec. 31, 1970 was divided into three, forty-month intervals as follows:

Temporal Period

- A January 1, 1961 to April 30, 1964
- B May 1, 1964 to August 31, 1967
- C September 1, 1967 to December 31, 1970

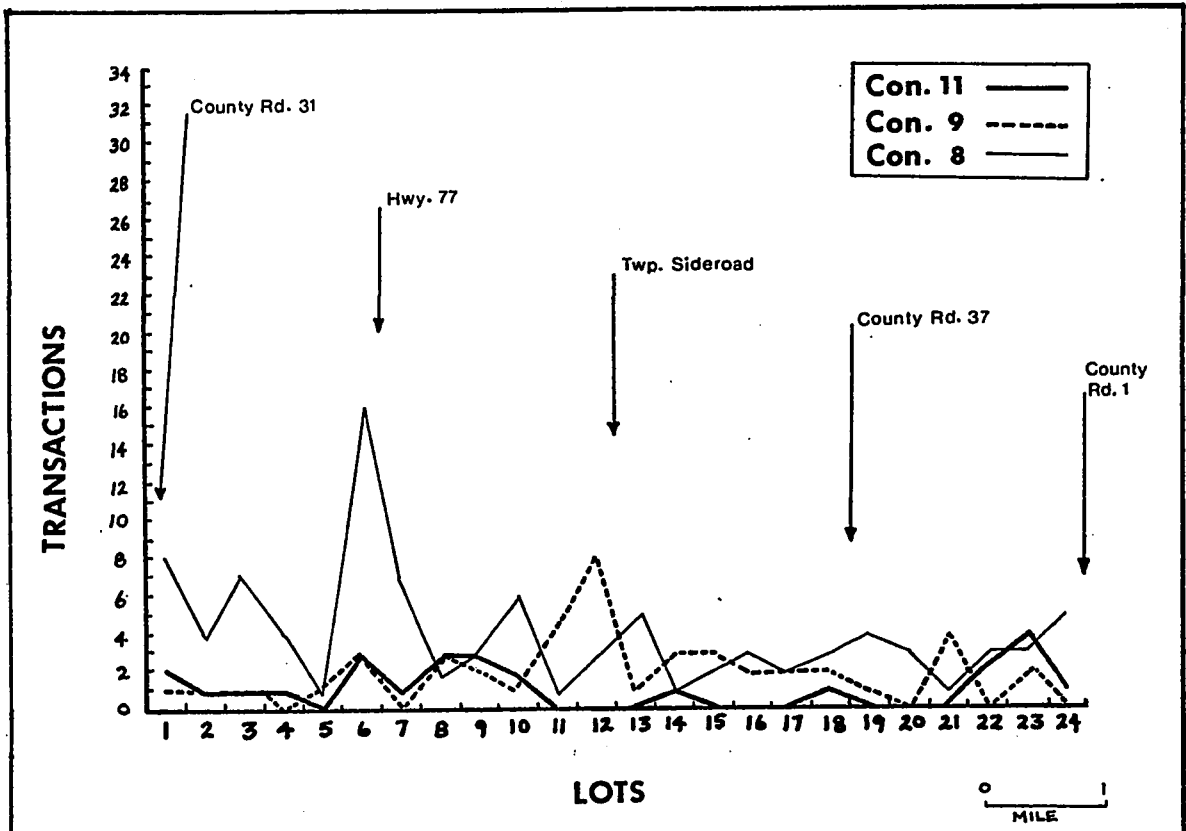


Fig. 4 Mersea Twp. - Transactions (Deeds and Grants) by Concession and Lot - 1961-1970 inclusive

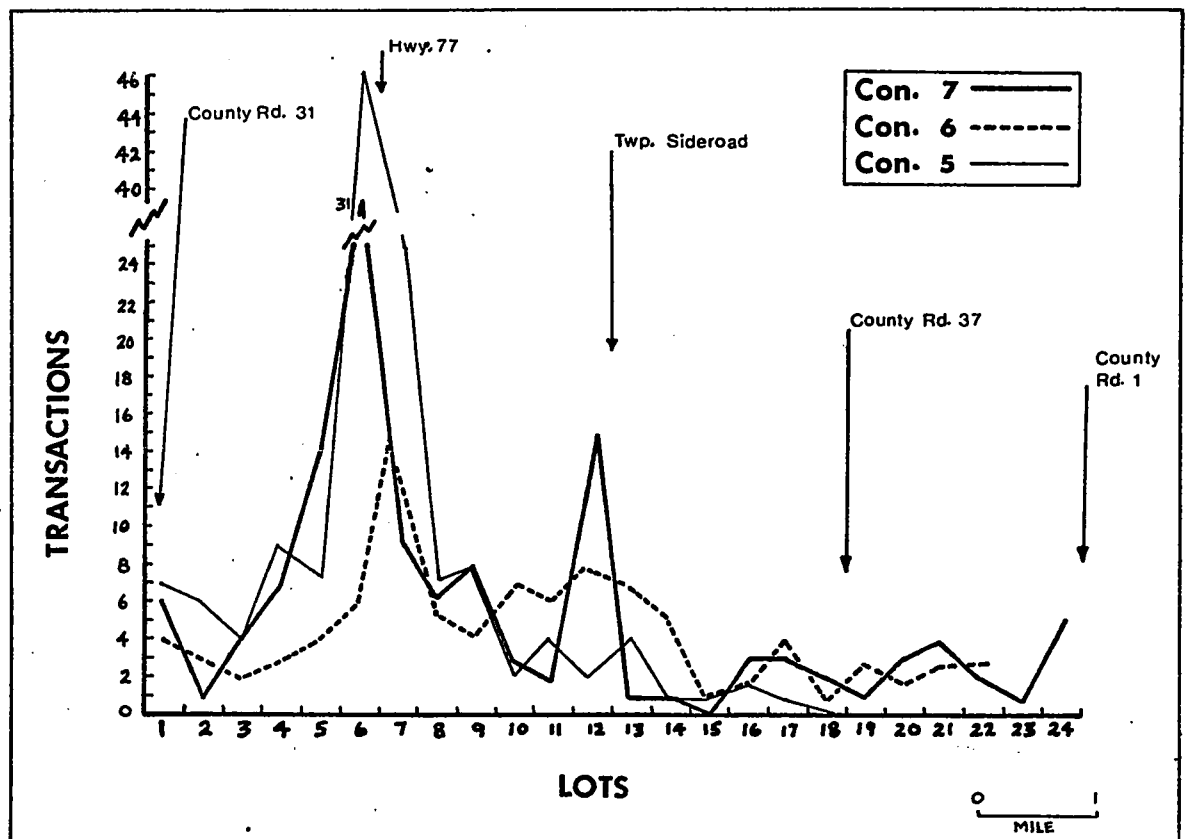
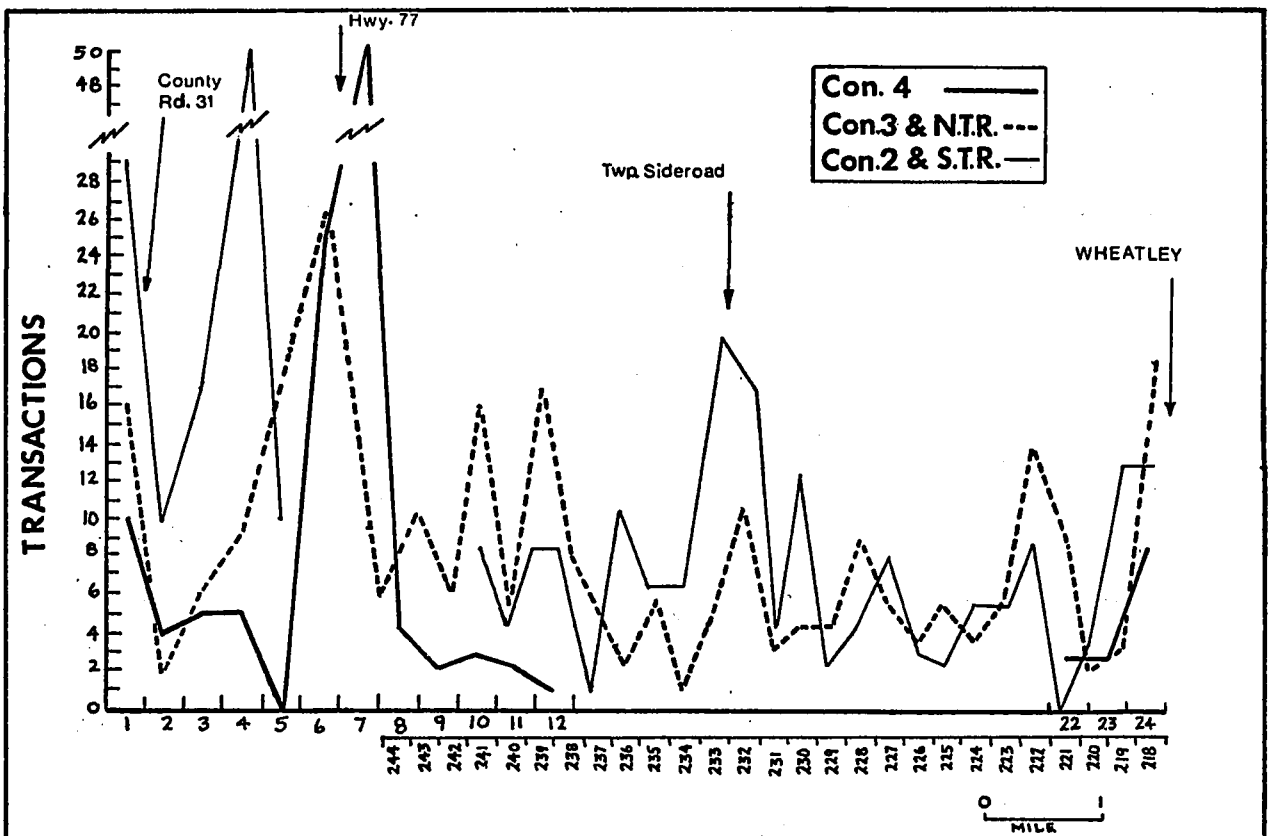
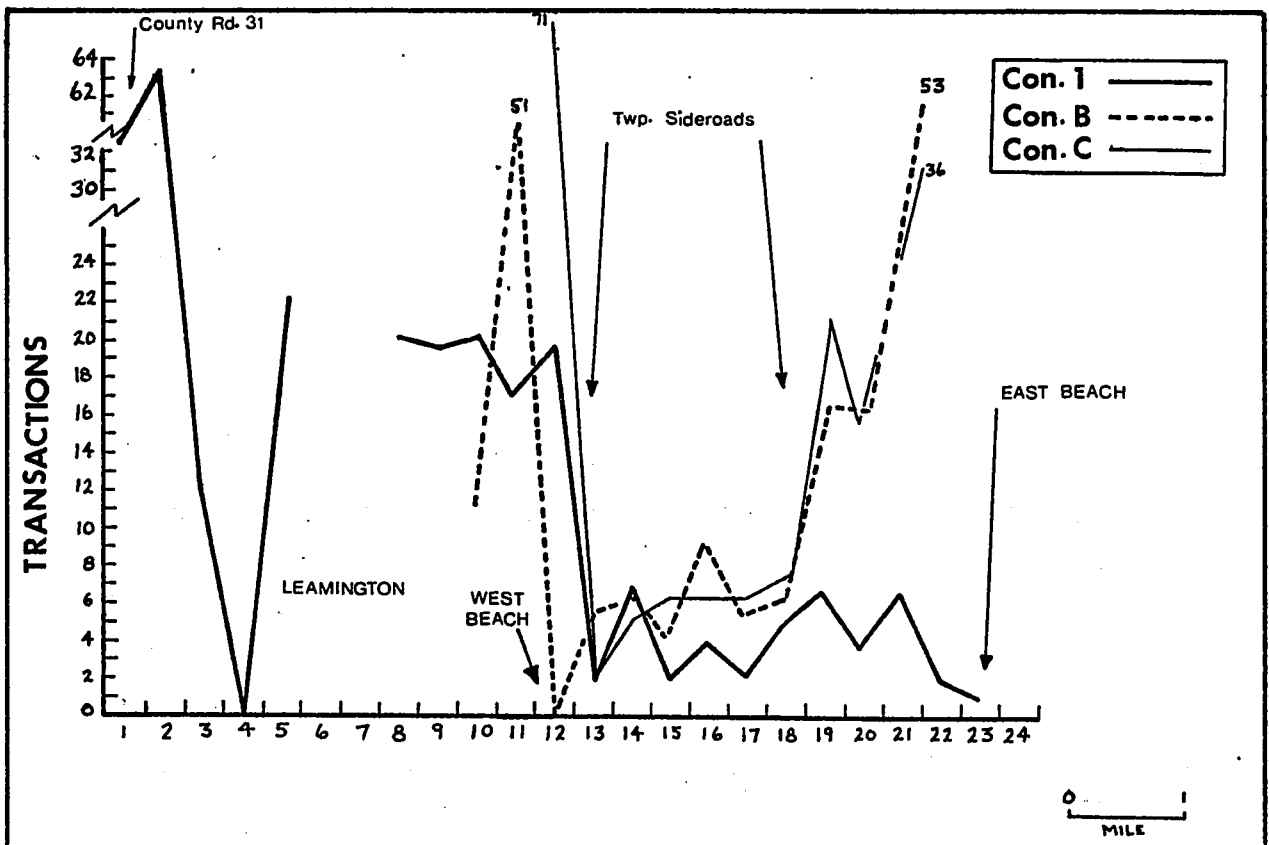


Fig. 5 Mersea Twp. - Transactions (Deeds and Grants) by Concession and Lot - 1961-1970 inclusive



**Fig. 6 Mersea Twp. - Transactions (Deeds and Grants) by Concession and Lot - 1961-1970 inclusive**



**Fig. 7 Mersea Twp. - Transactions (Deeds and Grants) by Concession and Lot - 1961 - 1970 inclusive**

For each of the Concessions the total number of transactions was listed for each of the temporal periods in the following manner in order to determine the overall trend in land use change:

TABLE 17  
TRANSACTIONS BY CONCESSIONS  
AND TEMPORAL PERIODS

<u>CONCESSION</u>	<u>TOTAL TRANSACTIONS PER TEMPORAL PERIOD</u>		
	<u>A</u>	<u>B</u>	<u>C</u>
D	52	10	8
C	71	43	58
B	73	53	59
A	41	37	45
1	131	84	72
STR	66	53	54
NTR	62	53	54
2	141	80	68
3	30	42	41
4	46	45	34
5	54	45	37
6	29	37	32
7	34	48	48
8	35	29	32
9	21	16	9
10	16	20	8
11	<u>12</u>	<u>6</u>	<u>8</u>
TOTALS:	914	712	668

Source: Mersea Township Abstracts  
Essex County Registry Office.

Each of the Concessions was again listed, divided into lots and frequencies of transactions were tabulated for each by temporal periods in order to conduct a more rigorous analysis of the diffusion of land use change.

During 1961 to 1971, total frequency of transactions from temporal

Periods A to C decreased by 26.9 per cent with decreases most pronounced in Concessions 1, 9, 10, 11 and D. Here percentage decreases of 45, 57, 50, 33 and 85 respectively were experienced. Of the total decrease, 22.1 per cent occurred between the first and second temporal periods. The only significant increases of 37, 10 and 41 per cent were experienced in Concessions 3, 6 and 7.

The overall decrease may be due to a variety of factors not necessarily related. The initial period of cottage development along lake frontages during the first temporal period has ebbed. This is especially noticeable in lot 23 of Concession 2, lot 21 of Concession D, lots 12 and 21 of Concession C and lots 11 and 21 of Concession B. Only infilling of remaining parcels is now occurring. In addition, data obtained from the Township Abstracts reveal that recent values of transactions are much higher than during the first temporal period. This suggests an increasing proportion of sales of developed sites as compared to sales of former undeveloped sites.

Agricultural instability due to low market values and increasing production costs has made farming less desirable as a means of livelihood. Consequently the demand for agricultural properties has diminished resulting in fewer sales. In addition, as the total number of farms decreases there should be a corresponding decrease in the number of farms offered for sale unless outweighed by other speculative factors. In order to assess the diffusion of land use change in those lots adjacent to major transportation routes the data was tabulated by Concession, lot and temporal period. For Highway 77 the data was tabulated as follows:

TRANSACTION BY LOT AND TEMPORAL PERIOD

CONCESSION	LOT 6			Hwy 77	LOT 7		
	A	B	C		A	B	C
3	8	12	6				
4	13	8	4		19	15	16
5	19	14	13		12	6	7
6	1	0	5		5	7	3
7	9	8	14		3	2	4
8	<u>2</u>	<u>6</u>	<u>7</u>		<u>1</u>	<u>3</u>	<u>3</u>
TOTALS:	44	36	43		40	33	33

Transactions associated with lots 6 and 7 along Highway 77 of Concessions 4 and 5 were more frequent during the first temporal period whereas frequency was greater during the last temporal period in Concessions 6, 7 and 8.

The procedure outlined above was also used for assessing diffusion by temporal periods along Highway 3.

TRANSACTIONS BY LOTS AND TEMPORAL PERIODS

CONCESSION LOTS 2	1			2			3			4			5		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
	20	5	4	1	1	8	5	6	6	15	23	12	5	3	2

Highway 3

CONCESSION LOTS 1	1			2			3			4			5		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
	15	12	6	28	21	14	3	5	4	0	0	0	13	0	9

Some increases in the frequency of transactions occurring in Concessions 6 and 7 during the latter part of the decade may be attributed to a wave-like diffusion of urbanization especially along Highway 77. As the most accessible parcels of land are served and developed, frequency of transactions diminish there, but in turn increases in less favoured



plots farther removed from Leamington.

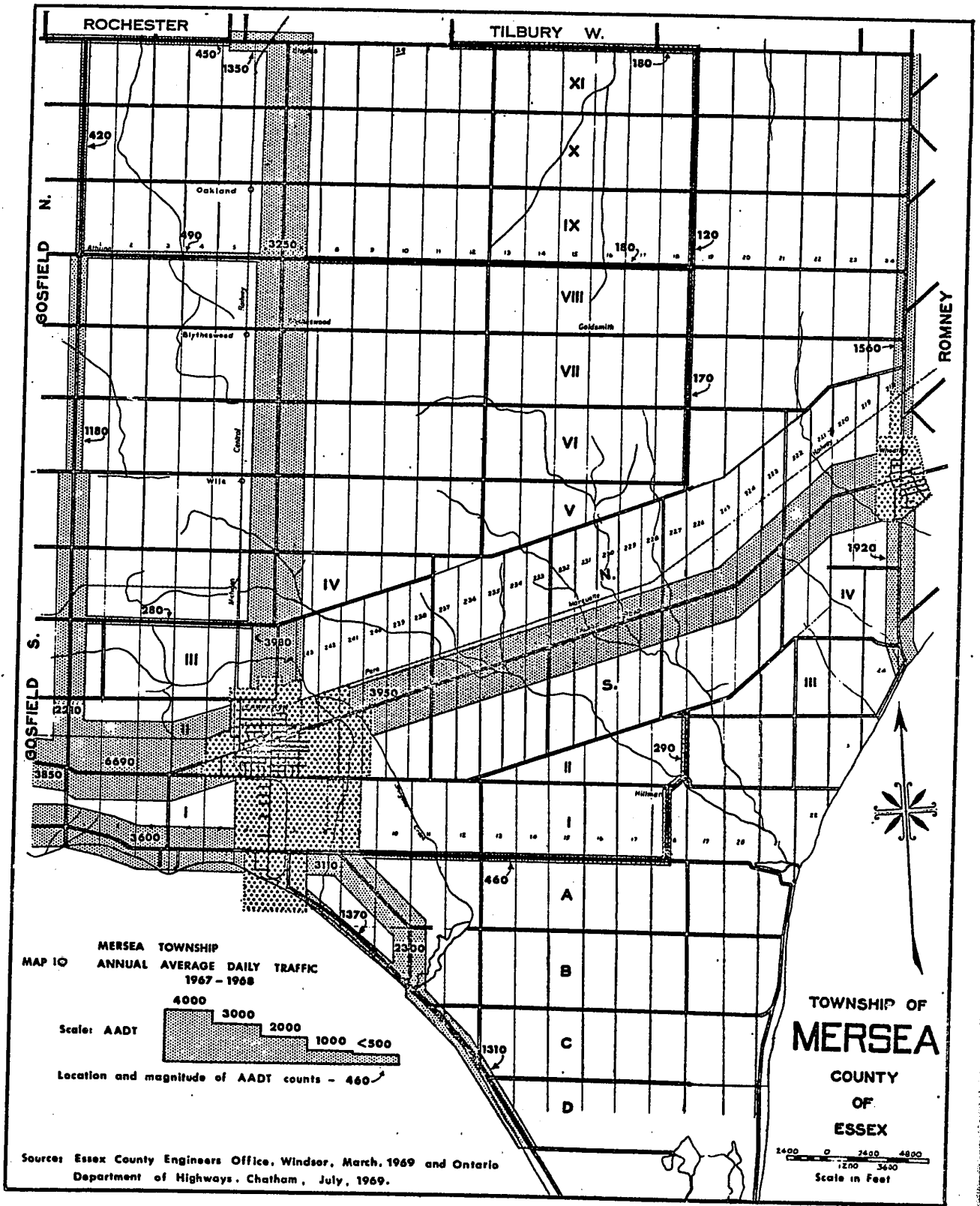
31

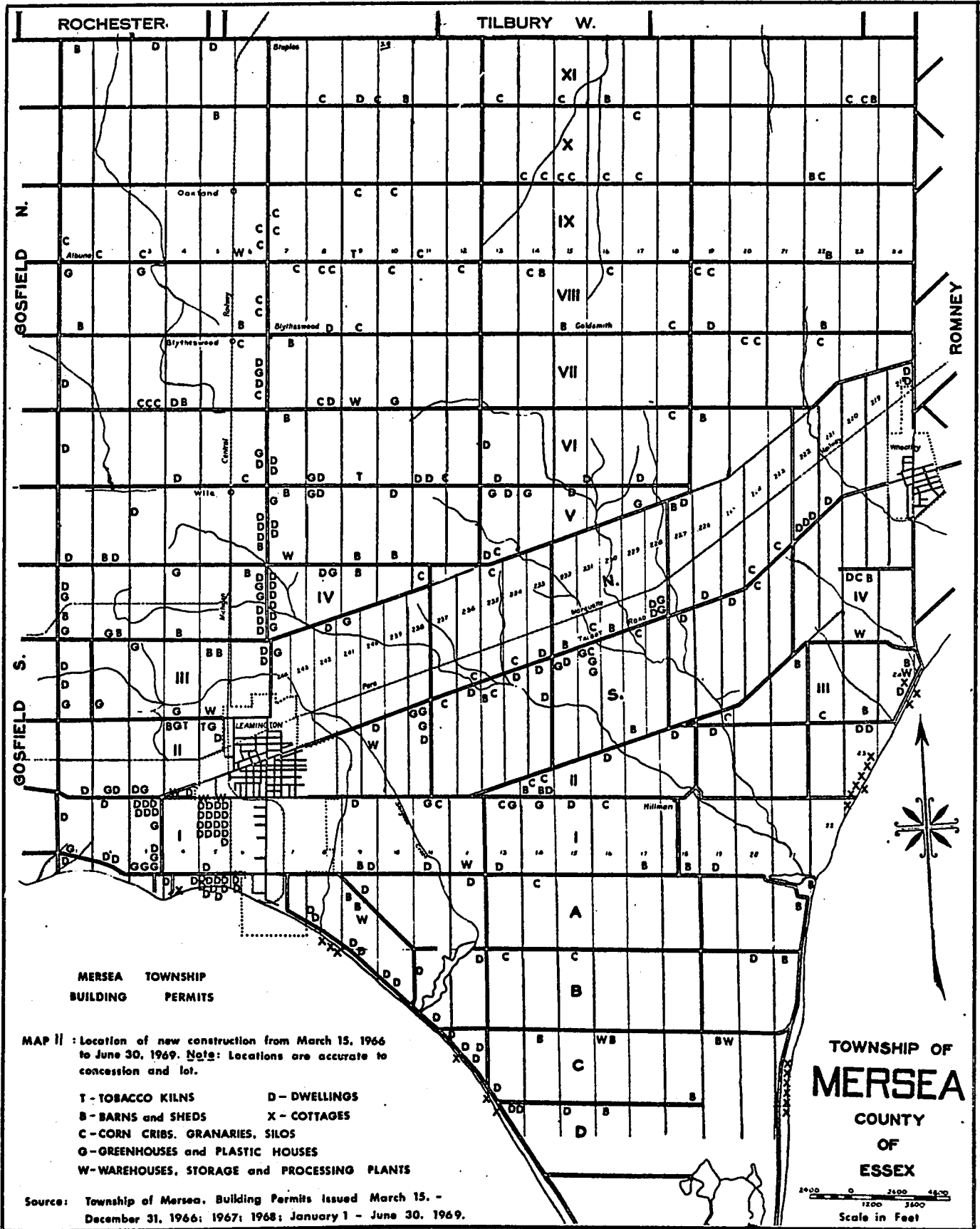
This wave-like pattern comparable to Boyce's precession-wave is also noticeable along Highway 18 in Concession 2 (see previous chart). However, here the most accessible and desired parcels for development are associated with two poles, one adjacent to Leamington, the other adjacent to the intersection of Highway 18 and the Mersea-Gosfield South Townline. With the development of these two extremities during the initial temporal period, the waves of development are now moving towards the intermediary sites with only occasional infilling in Lots 1 and 5.

#### (4) Traffic Flow and Ribbon Development

As might be expected the intensity of land use in the District Planning Area is to a considerable extent manifested in the traffic flow within the Township. Annual Average Daily Traffic (AADT) is heaviest along main arterial roads in close proximity to Leamington. In the 1967-1968 period both Highways 77 and 3 east of Leamington had AADT counts of almost 4,000 vehicles whereas Highway 3 from the western limits of Leamington to the Gosfield South Mersea Township Line was experiencing a 40 per cent higher AADT count during the same period. In comparison, collector roads servicing these highways had very small AADT counts. As the intensity of land use along these highways increases AADT will increase proportionately.

Already uncontrolled ribbon development has manifested itself along the same route. In the three year interval from March 15, 1966 to June 30, 1969, twenty-one new dwellings were erected on lots adjacent to Highway 77 in Concessions 3 to 7 inclusive. A very noticeable example

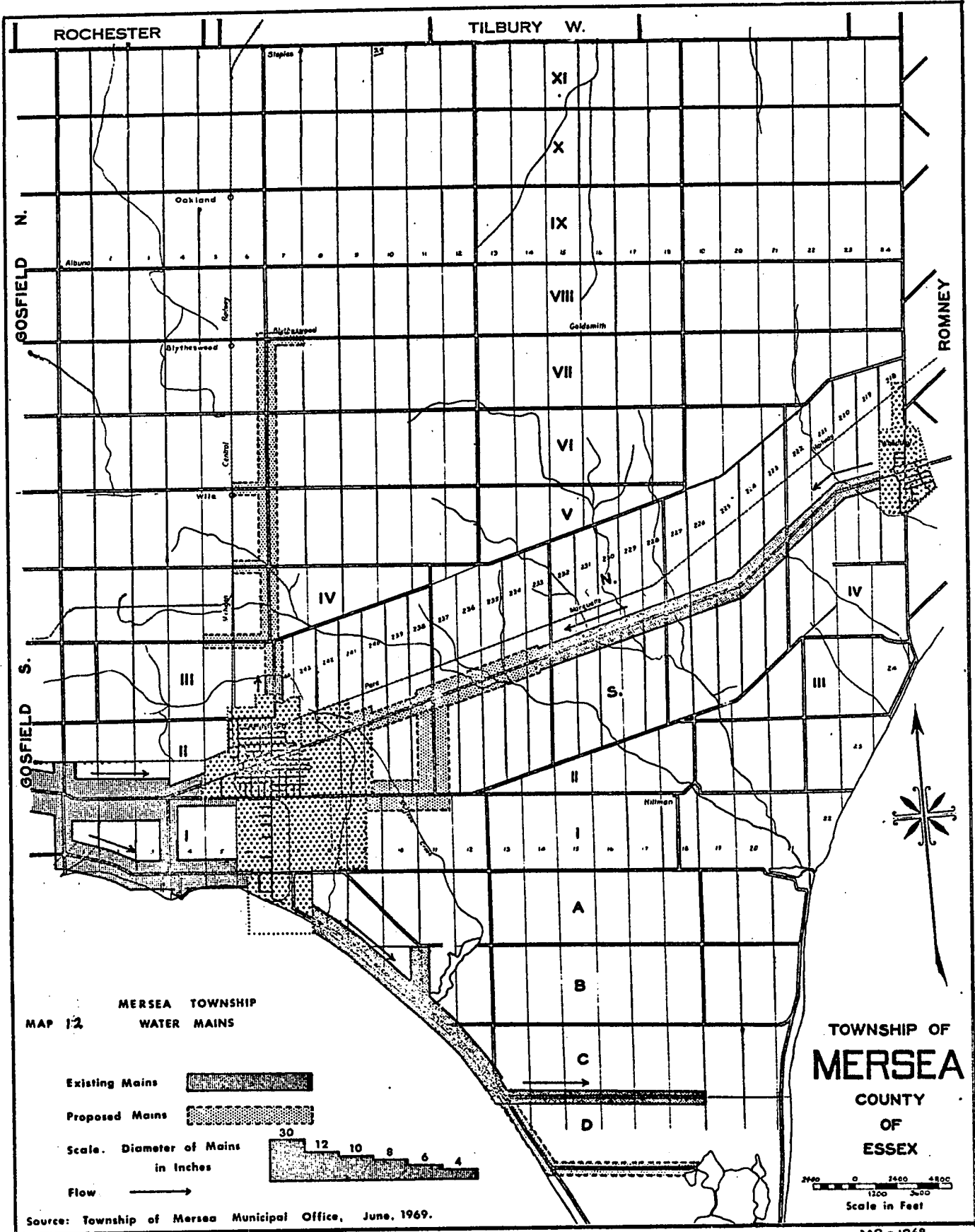





of ribbon development now occurs along Highway 77 between Mersea Township Roads 4 and 5 where incompatible commercial enterprises such as scrapyards have been intermingled with residential land use without adequate screening or buffering, thus producing an unattractive example of urban sprawl. The extent of this development is illustrated in Maps 14 and 15. To compound this problem, Highway 77 with a 50 mph speed limit, three-foot shoulders and paralleling drainage ditches has become a highly hazardous route. Each additional building permit issued for this portion of the Highway adds not only more traffic but additional points of egress and access to these new developments. This increases the hazard for through traffic and hastens the deterioration of a prime arterial road. Should traffic continue to increase, as it surely must without development restrictions, it might become necessary to widen the highway. This would necessitate the purchase of expensive residential and commercial frontage. In a number of cases additional loss of residential front yard footage would result in an intolerable noise and hazard situation.


Urban incursions into the Township have tended to follow the main arterial routes which provide rapid access to the Town of Leamington. They have also followed the distributional pattern of installed water and gas mains. The proposed extension of water mains (Map 12, p. 74) will only hasten the influx of non-agricultural land use and the destruction of farm land in these areas.

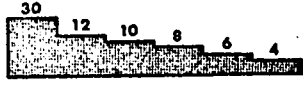
As already noted, ribbon development has occurred and is intensifying in lots along main transportation routes such as Highway 77. Areas




MAP 12  
MERSEA TOWNSHIP  
WATER MAINS

Existing Mains 

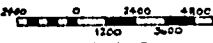
Proposed Mains 

Scale. Diameter of Mains  
in Inches 

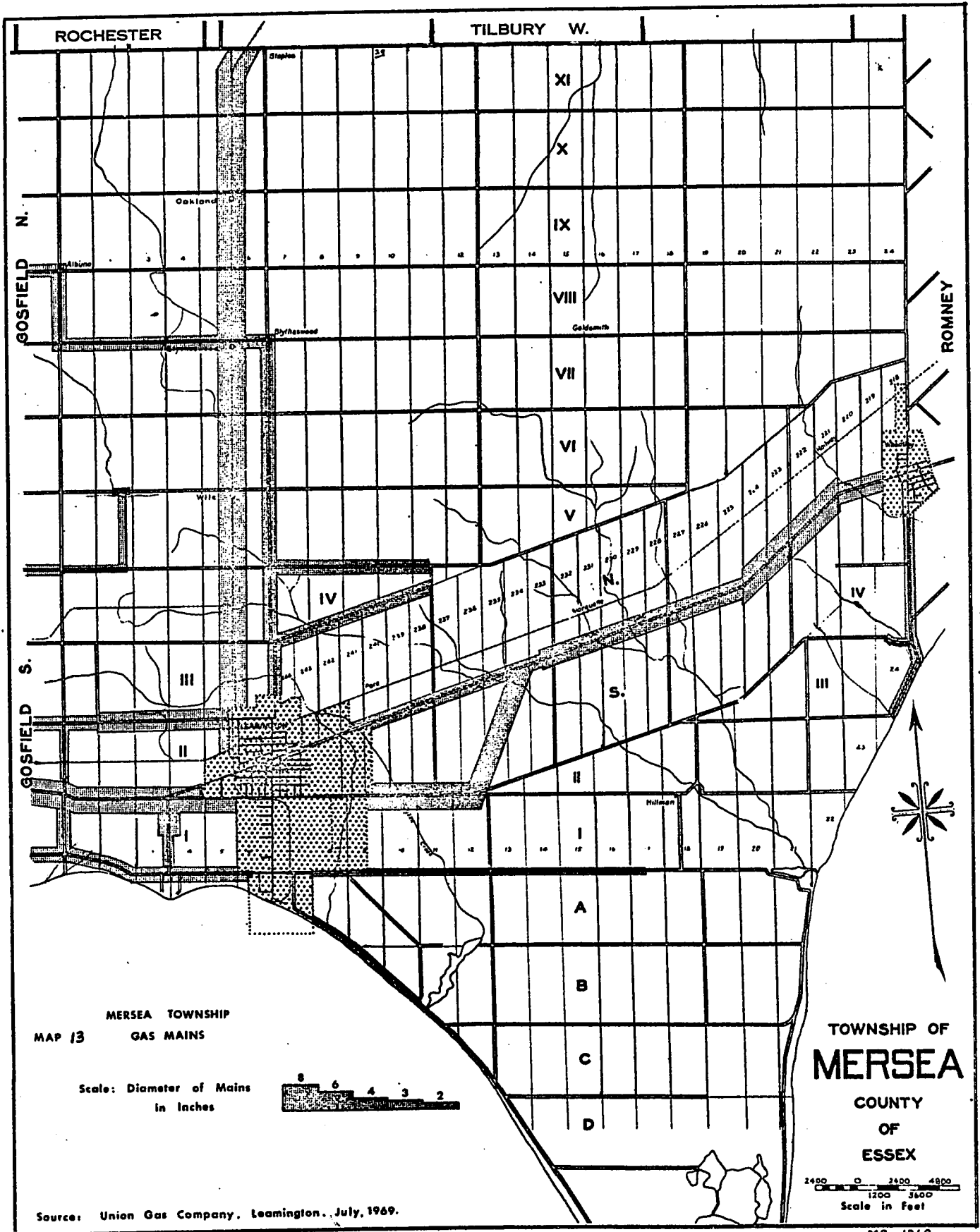
Flow 

Source: Township of Mersea Municipal Office, June, 1969.

TOWNSHIP OF  
**MERSEA**  
COUNTY  
OF  
ESSEX

  
Scale in Feet

MP-1969

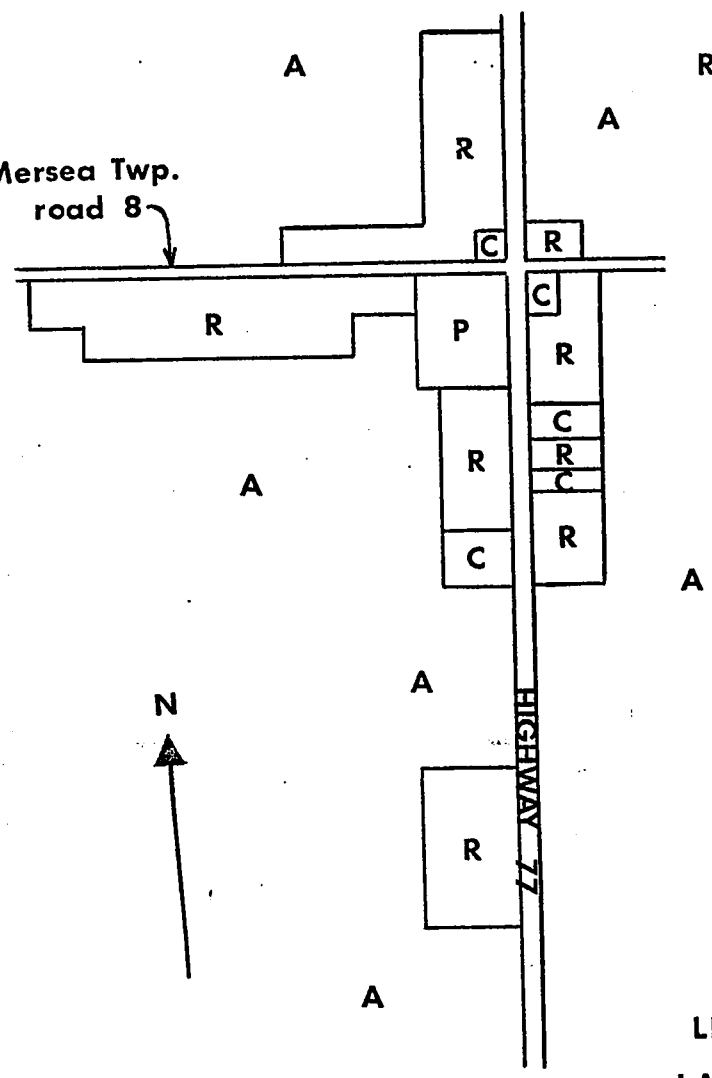


TOWNSHIP OF MERSEA

RIBBON DEVELOPMENT

JULY, 1969

Mersea Twp.  
road 8



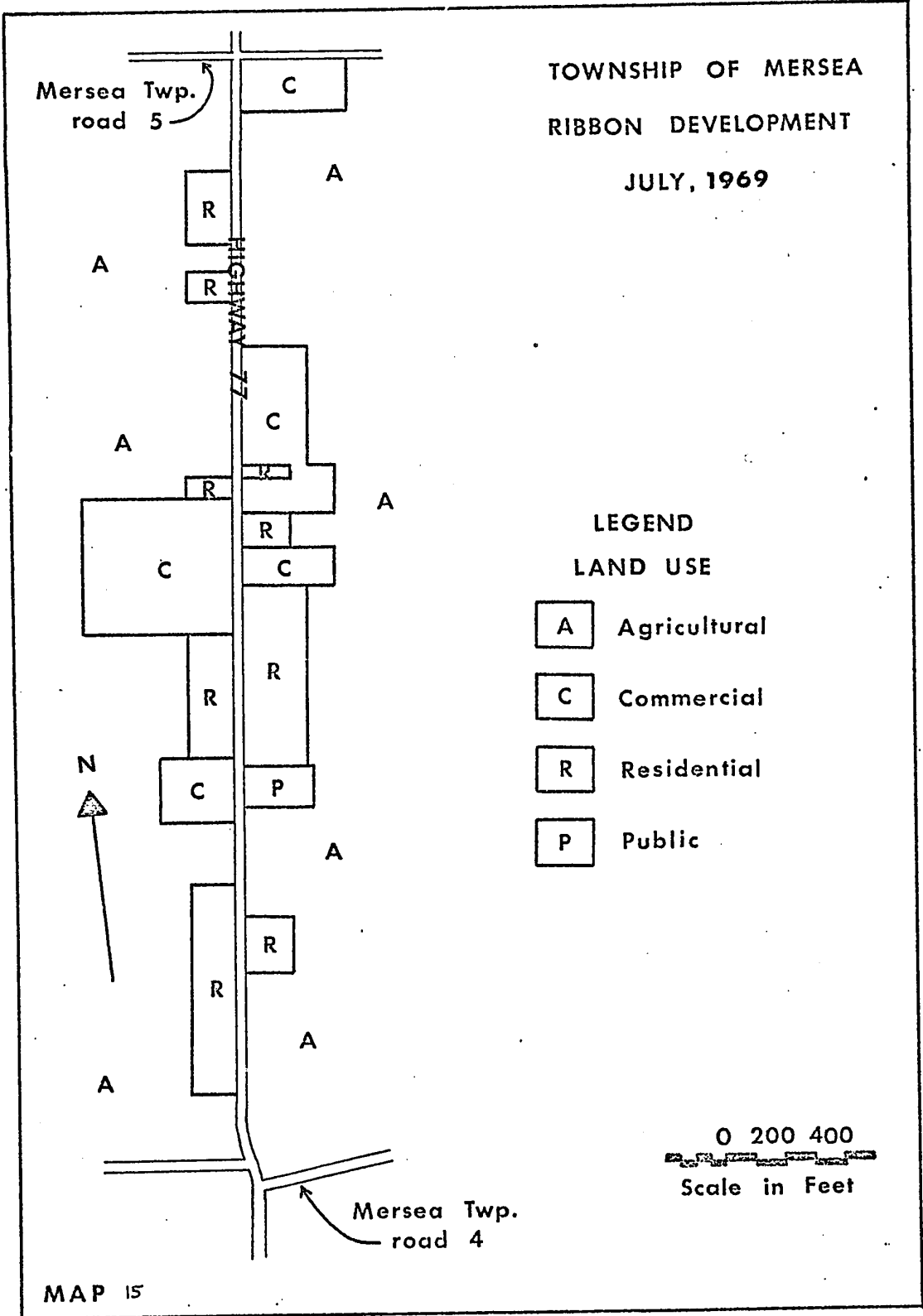
LEGEND

LAND USE

- A Agricultural
- C Commercial
- R Residential
- P Public

0 200 400  
Scale in Feet

MAP 14





such as this have also been experiencing the highest frequencies of transaction. With urban-type incursions former agricultural land is being separated off as smaller parcels and converted to land use at "higher intensities".

It is hypothesized that where agricultural land under urban influences experiences the greatest frequency of transactions, this land is undergoing a transition from rural to non-rural land uses. Consequently these smaller parcels will have higher land values per unit of area (i.e. acre) in transaction than those parcels that are to be retained as farms.

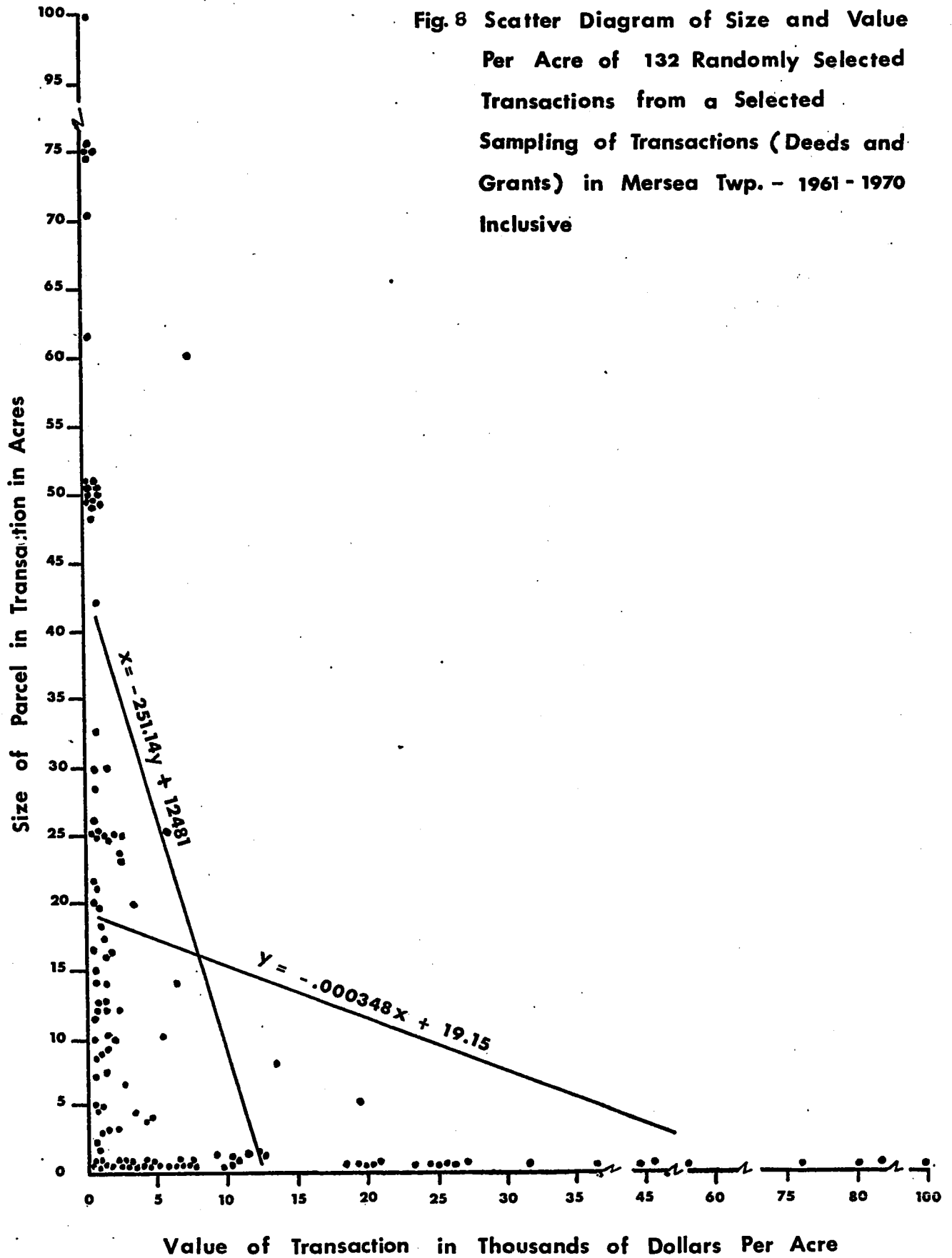
To test this hypothesis, the size of parcels transacted was correlated with the value of these same parcels. Of the 2,241 transactions in the Township during the period January 1, 1961 to December 31, 1970 only 549 or 24.5 per cent could be used because of inadequacies in the data. The remaining transactions listed in the Abstracts did not provide either size or value data for the parcels entering into transaction. For each of the 549 items used, a random number <sup>32</sup> was applied and a 5.9 per cent sampling <sup>33</sup> provided a sample size of 132 observations with a sample error of  $\pm$  8.5 percentage points and a confidence of 95 per cent. The value for each observation was then computed in dollars per unit of area (i.e. acre).

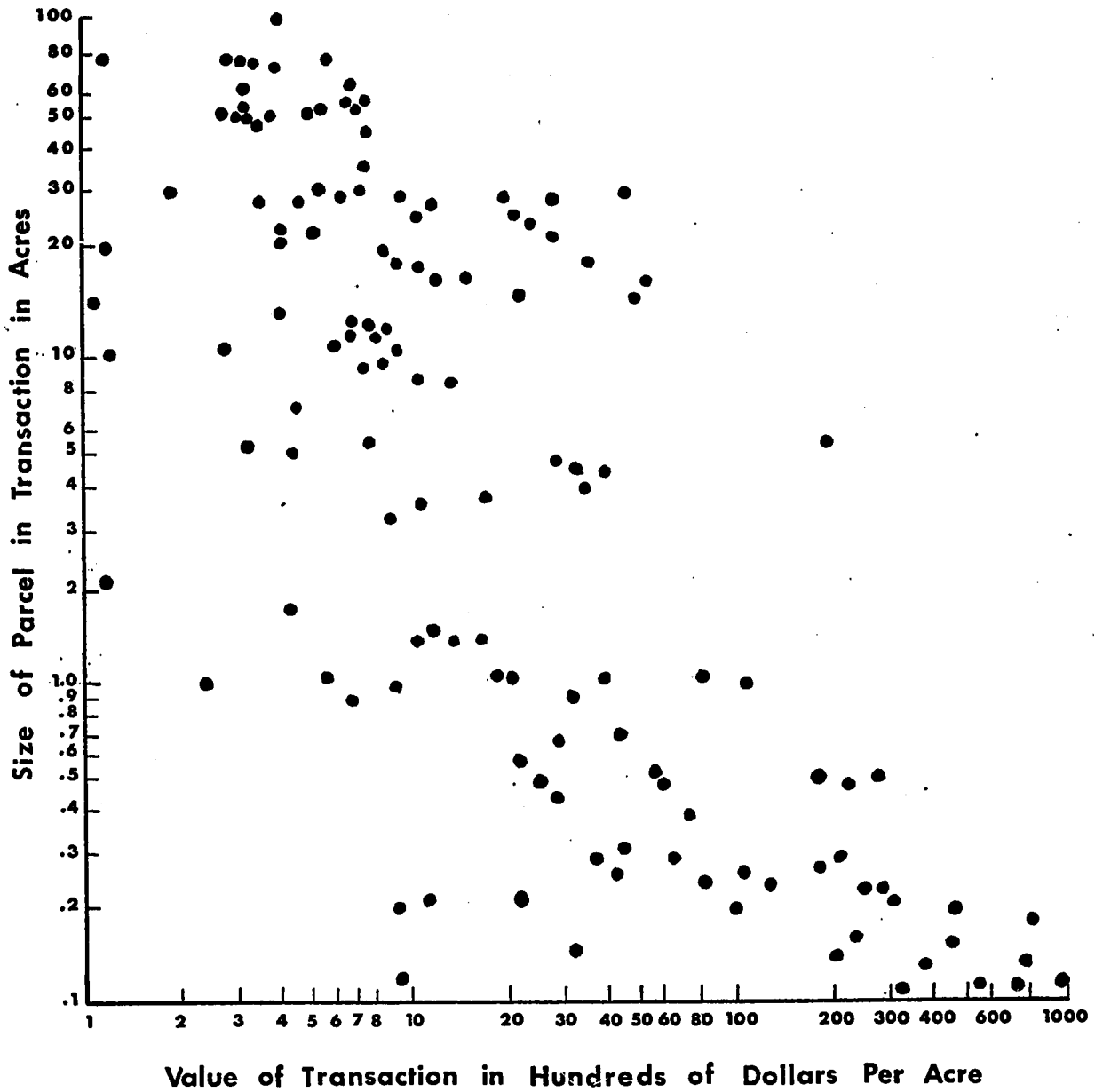
In order to establish how close the relationship is the individual values for parcel size and parcel value were graphed. The results of the first scatter diagram (Figure 8) proved inconclusive due to extreme values being plotted. After replotting the same values on three cycle logarithmic paper (Figure 9) an inverse relationship between the two factors was apparent. A correlation analysis based upon these same

absolute values gave a product moment correlation coefficient <sup>34</sup> of  
-0.29. In order to determine the probability of chance occurrence of  
this coefficient a correlation significance test <sup>35</sup> was applied to give  
a "t" value of 3.64. By referring to the Student's "t" graph <sup>36</sup> it was  
observed that the possibility that this coefficient could have occurred  
by chance is less than 0.1 per cent. According to the graph of  
significance levels for correlation coefficients using the Student's "t"  
distribution <sup>37</sup> where 132 pairs of items are compared giving 130 degrees  
of freedom, a correlation coefficient must be either above +0.18 or  
below -0.18 before it can be statistically significant at the 95 per cent  
confidence level. In this study the correlation coefficient is even  
significant at the 99% confidence level. This points out that there is  
an inverse relationship between the size of parcel in transaction and  
the value of the transaction per acre. As the size of the parcel trans-  
acted decreases the value per acre becomes greater. It is suggested that  
transactions involving less than 1 acre are probably being converted or  
are already non-agricultural in use. Conversely, those parcels 10 acres  
or greater are still used for farming. Since few parcels of 1 to 10 acres  
in size are being sold, it suggests that these parcels are too large  
and therefore too costly for non-agricultural use yet too small for viable  
farm units unless intensively farmed.

Once the regression line equations <sup>38</sup> were determined, points were  
fitted onto the initial scatter diagram and regression lines drawn. These  
were found unsatisfactory. This may be due to the extreme range of  
values of the data used. Many very small parcels with very high values

Fig. 8 Scatter Diagram of Size and Value Per Acre of 132 Randomly Selected Transactions from a Selected Sampling of Transactions (Deeds and Grants) in Mersea Twp. - 1961-1970 Inclusive





**Fig. 9 Scatter Diagram of Size and Value Per Acre of 132 Randomly Selected Transactions From a Selected Sampling of Transactions (Deeds and Grants) in Mersea Twp.- 1961-1970 inclusive**

and vice versa, as well as relatively few parcels from one to ten acres being transacted resulted in lines with very poor fit. It would appear that a curvilinear function would better fit the relationship but it was felt that this would entail a new study.



Photo 5. Lot 7, Concession 4, looking northeast across Provincial Highway 77. This scene shows a residence (right) abutting a farm implement dealer. The total of the side-yard setbacks of these two buildings where they abut does not exceed four feet. Residences and other commercial uses have sprung up along this major artery in the form of a ribbon. Three foot shoulders, drainage ditches along both sides, increasing numbers of access and egress points as well as a fifty m.p.h. speed limit have created a hazard along this right of way.

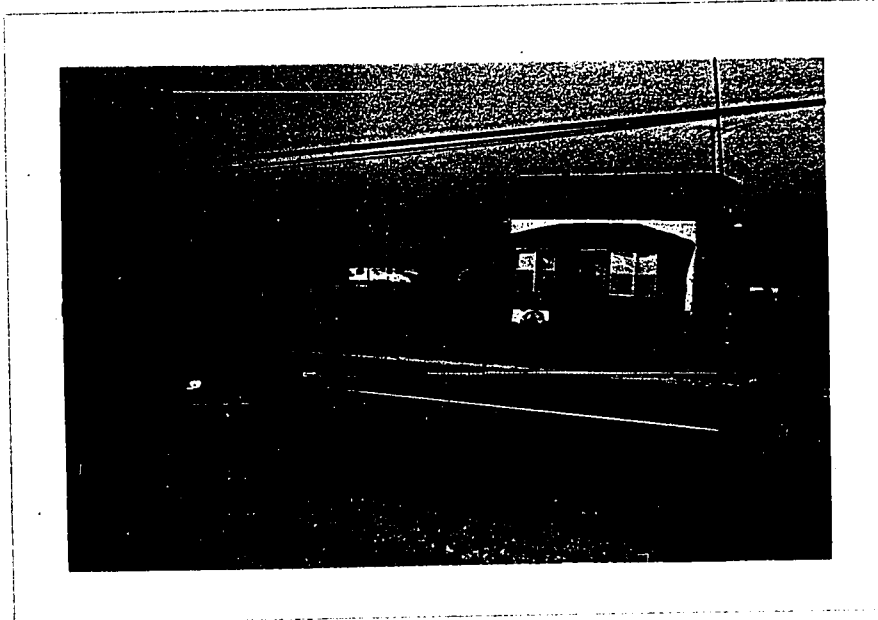


Photo 6. Lot 7, Concession 4, looking across Provincial Highway 77. A portion of the ribbon development along this major artery is shown. The previous lack of restrictions has resulted in an unappealing strip of mediocre housing, irregular set-backs and mixed land uses. In the above example, a residence and a scrapyard abut each other without adequate screening or buffering.

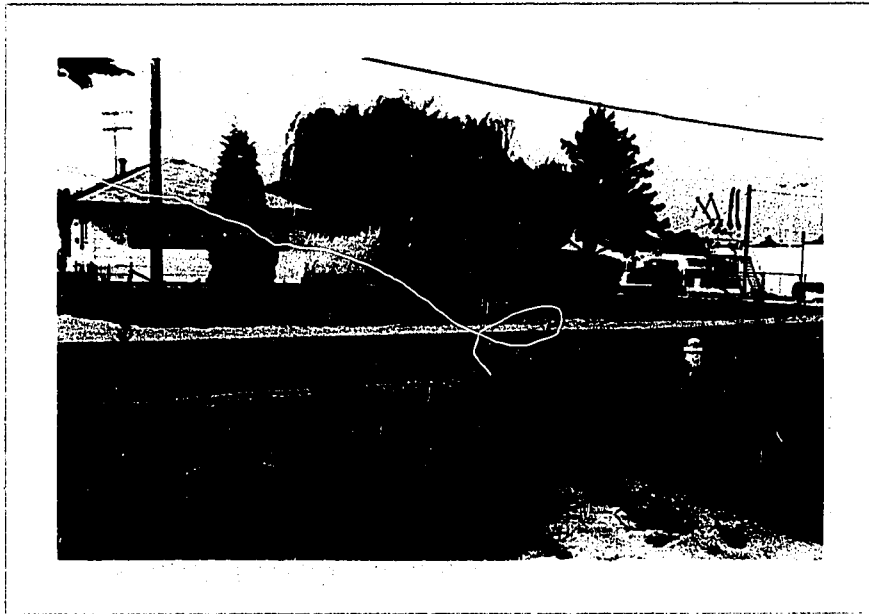


Photo 7. Lot 4, Concession 2, looking north across Oak Street West. A small section of the area bounded by Talbot Road West and Oak Street West reveals a lack of zoning as agricultural, residential and commercial land uses are juxtaposed and intermingled in this portion of the Township. In addition to the residence, greenhouses and fuel depot shown are service stations, motels, restaurants, car wash establishments, as well as electrical contractors and various other commercial enterprises.

(5) Surface Mining

The ever-increasing demand for aggregates in the construction industry in the County and Windsor has compounded the pressure on prime land in the District Planning Area. Within the past three years, two additional pits have commenced in the Township.

Surface mining for sand and gravel within the Township is primarily concentrated in a north-south strip in Lots 1 and 2 of Concession 2, 3 and 5. The only significant exception is in Lot 4 of Concession 1 where a new operation has recently begun. This mining strip lies within the most highly valued agricultural lands where greenhouse and tender fruit

farming is associated with the fine sandy loams of the Tuscola variety. The lack of regulations in the past requiring operators to conserve top soil and rehabilitate mined-out areas has resulted in substantial acreage being spoiled for any type of use other than garbage disposal.

(6) Growth of Subdivisions and Demands for Services

Although most building permits issued have been for scattered construction in the Planning District, especially along main arterial highways, some clustering of residential development has occurred noticeably in the Wilhelm subdivision of Lot 5 of Concession 1 and in Lots 5 and 6 of Broken Front Concession. In the former instance, the subdivision was developed on the southwestern flank of the Town of Leamington in the Planning District. Again this development was upon prime agricultural land. Although fine bricked single family detached residences were built, services such as paved roads, curbs, sidewalks, street lighting, sanitary and storm sewers were not included. Pollution from septic tanks on minimum-sized lots could create a serious problem in the future despite the porosity of sand beds. This situation is not as serious in Lots 5 and 6 of Broken Front Concession since individual lots are substantially larger.

In the future, these types of developments, lacking in adequate services, may impose undue strains on the financial and administrative resources of the Township as pressure is brought to bear for improvements. An immediate financial strain results from the cost of educating the influx of school-age children associated with those subdivisions mentioned previously. These additional costs must be borne in part from increases in assessment upon farm properties. The gravity of this situation can be appreciated with the knowledge that the servicing costs



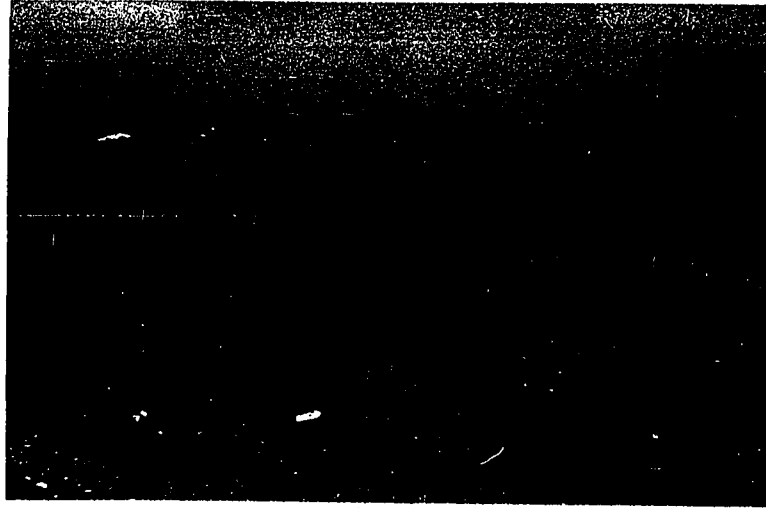


Photo 8. Lots land 2, Concession 2, looking east from Township Road 3. In the foreground is a surface mining operation for sand and gravel associated with an interlobate moraine. In the background are the remains of a peach orchard which at one time extended to include the area in the foreground. Several tobacco kilns are also visible.

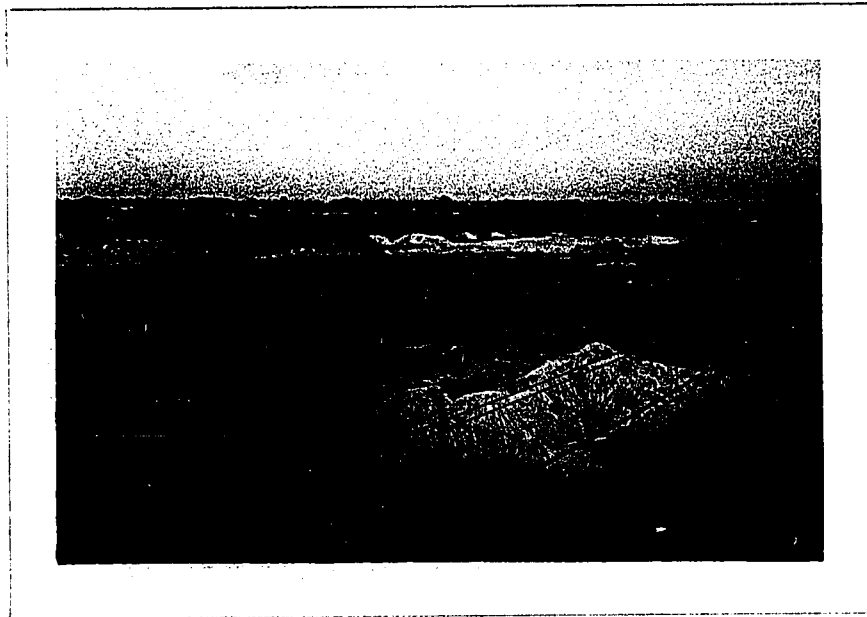


Photo 9. Lots 1 and 2, Concession 2, looking northeast from the Chesapeake and Ohio Railway overpass. An Extensive portion of the valuable orchard, specialty crops and greenhouse lands have been defaced and lie unproductive due to unrestricted surface mining.

for an acre in the Town of Leamington in 1966 were estimated to be  
\$8,000.00.<sup>39</sup>

In 1971, a consulting engineer's report to the Township Council estimated the cost of installing a 6" diameter watermain to service 100 properties in parts of Lots 22 and 23 of Concession 2 as \$62,279.00 at an annual interest rate of 9 per cent to be amortized over 10 years. Even before any properties could be serviced 2,000 lineal feet of the total length of 6,950 feet would have to be installed in order to connect  
with existing mains.<sup>40</sup>

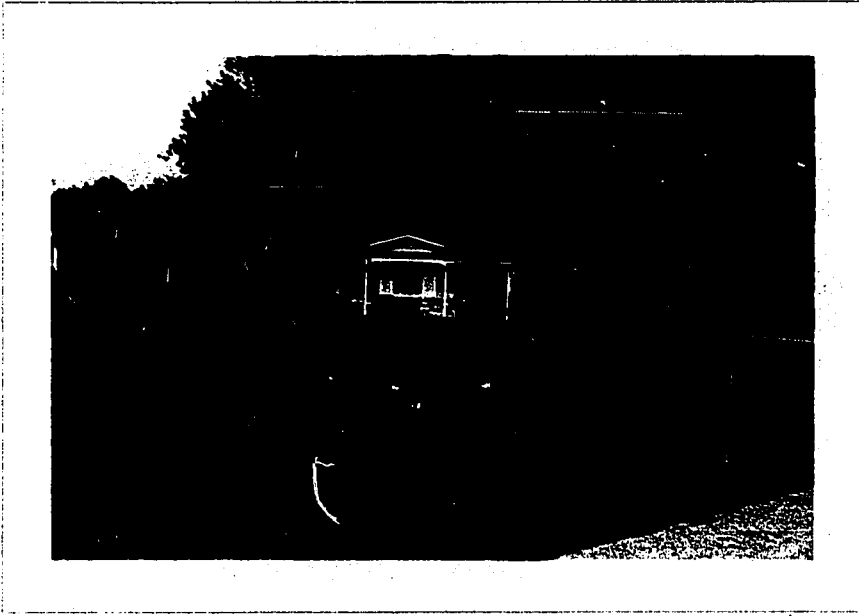


Photo 10. Lot 6, Broken Front Concession (1). This subdivision shown overlooking Pigeon Bay has been developed as one of the finest residential districts in the Township.

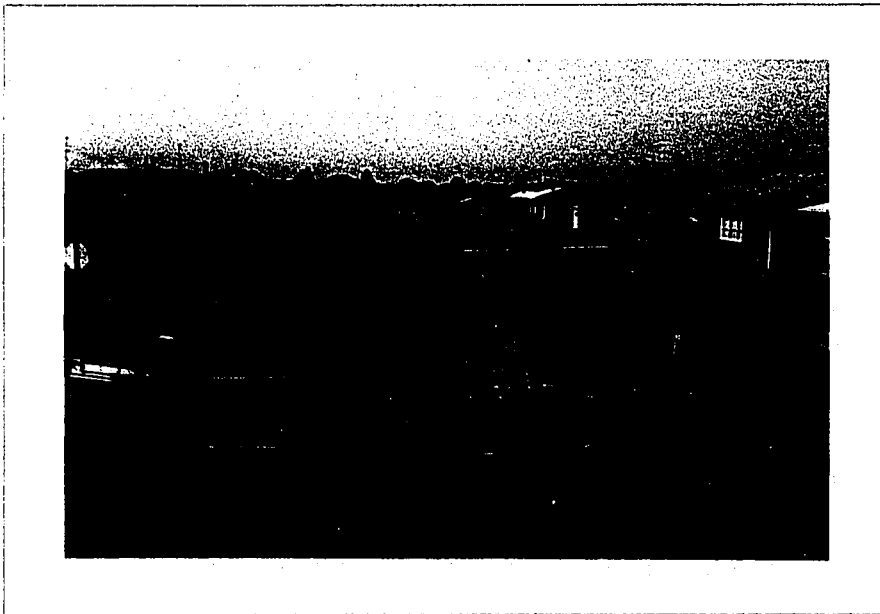


Photo 11. Lot 5, Concession 1, looking toward the Wilhelm Subdivision, example of urban encroachment into the valuable agricultural land adjacent to Leamington. The loose surface roads, lack of curbs, drains, sidewalks and streetlights all suggest previous minimal restrictions upon residential development of this type in the Township.

(7) Recreational Land Use

Use of land in Mersea Township for recreational purposes, especially of the summer cottage variety, has gravitated to areas with lake frontage. All of the 23 building permits issued for cottages between March 15, 1966 and June 30, 1969 were for sites along the East and West Beaches of the Township. Of the total permits issued, 16 or 69 per cent of the cottages were to be built along the East Beach especially in Lot 23 of Concession 2 and Lot 21 of Concession C. This emphasis is indicative of construction which has occurred in the past. The West Beach which has been readily accessible via Point Pelee Drive and Robson Road, has long been built up to the point where recent permits issued are for infilling of a few

remaining sites. This infilling is evident in the dispersed locations of new sites shown on Map 11. Conversely, sites for new cottages on the East Beach tend to be clustered.

In recent years a number of cottages have been winterized for year-round use. This trend could trigger a serious sanitation problem since many of these cottages are located on lots below the minimum standards as recommended by the Community Planning Branch in consultation with the Ontario Department of Health. In 1969 the 61 cottages located in Lot 12 of Concession C had an average building lot area of 7,141 square feet. Any additional cottages along this strip would reduce the average lot area well below 7,500 square feet, the minimum building lot area for dwellings with a public water supply (See Table 18).

In addition, a high lake level combined with frequent turbulent weather with strong onshore winds such as experienced during 1969 could raise ground water levels sufficiently to inhibit the proper functioning of septic tanks. Furthermore a permanent population could pressure the Township Council to provide additional costly services such as improved roads, watermain and schools especially to the East Beach area where these are currently not available.

One construction company owning approximately 105 acres of lake frontage of 3,500 feet and depth of 1,500 feet located on parts of Lots 22 and 23 of Concession 1 at the mouth of the Hillman Creek, has attempted to have this area of marshland pre-zoned recreational land for campsite development despite the problems mentioned previously. <sup>41</sup>

A portion of the mouth of the Sturgeon Creek has already been developed as a harbour for small pleasure craft. On this tract of low-

lying flat land adjacent to the river, buildings have been erected to fit the needs of those enjoying this form of recreation. Although considerable river bank frontage further upstream still exists for additional marina-type development, the flat land and high water table will create problems for surface and subsurface drainage as well as sanitary waste disposal.

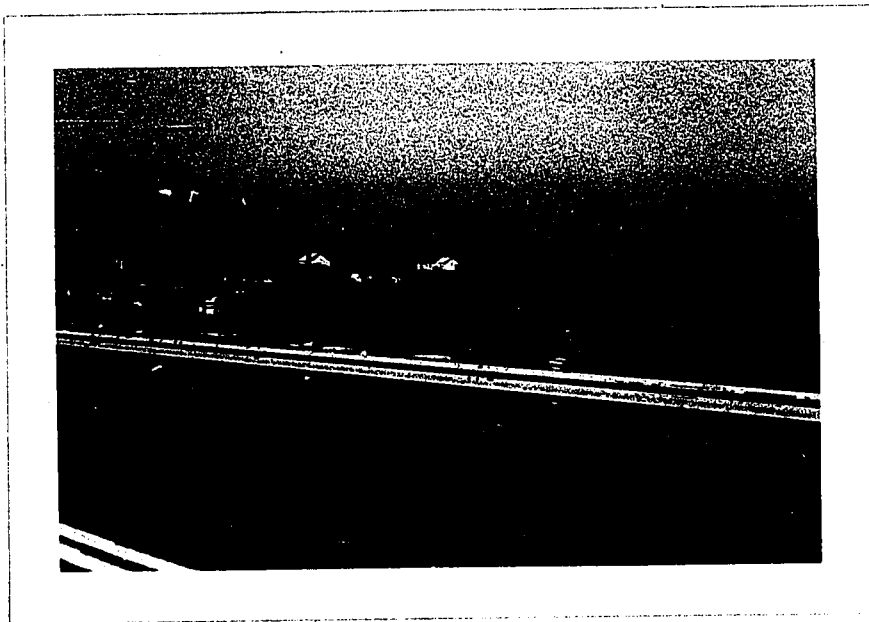


Photo 12. Lot 11, Concession B, looking north across the mouth of the Sturgeon Creek. Although the southern part of the Creek's mouth has been developed as a marina as shown, a considerable area still exists along the banks for further recreational land use.



Photo 13. Lot 10, Concession B, looking southeast along the Lake Erie Shore. The shore area from Leamington southward to Point Pelee National Park has been developed for recreation in the form of cottages. Interspersed amongst the cottages are a significant number of permanent residences or cottages which have been winterized for year-round use. Many of the cottages especially to the south do not meet the minimal lot requirements for septic tank beds.

THE STATE OF PLANNING AND ZONING IN THE  
DESIGNATED AREA

A spirit of co-operation and willingness to work together are necessary if adjacent municipalities are to resolve the many natural problems extending beyond their individual limits. This spirit was demonstrated almost ten years ago by the Township and Town of Leamington upon application to the Minister of Municipal Affairs to have a joint planning board and designated planning area approved. On May 30, 1962, the Leamington and District Planning Area was defined by the

TABLE 18  
ONTARIO PLANNING BRANCH  
 Department of Planning and Development

MINIMUM SIZE OF BUILDING LOTS FOR  
 SINGLE FAMILY DWELLINGS

Where there is neither a public water supply nor sanitary sewers	Where there is a public water supply but no sanitary sewers
Minimum Building Lot Area in Square Feet	Minimum Building Lot Area in Square Feet
15,000	7,500
	5,000

Note: 1. Septic tank beds must be a minimum of two feet above the high water table.

2. Wells must be a minimum of 100 feet from septic tank beds or 50 feet in case of drilled wells with casing to 25 feet below ground level.

Source: Metropolitan Windsor and Essex County Health Unit



Minister to include the whole of the Town of Leamington and part of the Township of Mersea (Map 7).

In due course the Joint Planning Board retained the services of a consulting firm to prepare an official plan for the designated Planning Area. On February 26, 1965, the Official Plan of the Leamington and District Planning Area was approved by the Minister pursuant to Section 12 of the Planning Act.

The Plan established to serve as a guide for official policy and public action in the development and redevelopment of the Planning Area, highlighted certain problems. The Plan mentions that the urban growth of Leamington has spilled over its municipal boundary in the form of ribbon developments. The spillover is in all directions into the surrounding highly prosperous and productive agricultural areas.<sup>42</sup> Recognition of the importance of agriculture to the economy of the area is also made by noting that the major industries (canning, tobacco processing, farm produce collection and distribution) existing in the area would continue and that some would expand in size and number.<sup>43</sup> Particular recognition is given to the importance of greenhouses in the economy of Leamington and the need to refrain from hindering in any way the operation of existing enterprises.<sup>44</sup> Thus, the agricultural industry was to be protected by the Plan from urban encroachment in the rural area since this is the backbone of the area's economy.<sup>45</sup>

To implement the Official Plan of the Leamington and District Planning Area as it applied to the Town of Leamington, the same consulting firm was retained by the Town Council to prepare a zoning by-law.<sup>46</sup> No similar course was followed by the Township. However, the Township

Council had passed By-Law No. 2360 on August 1, 1963, designating the lands within the Township under subdivision control so as to prevent conveyances or grants without the approval of the Department of Municipal Affairs. Despite this course of action, urban growth has not been contained within the Town's borders and has continued to spill over into the surrounding agricultural lands of the Township.

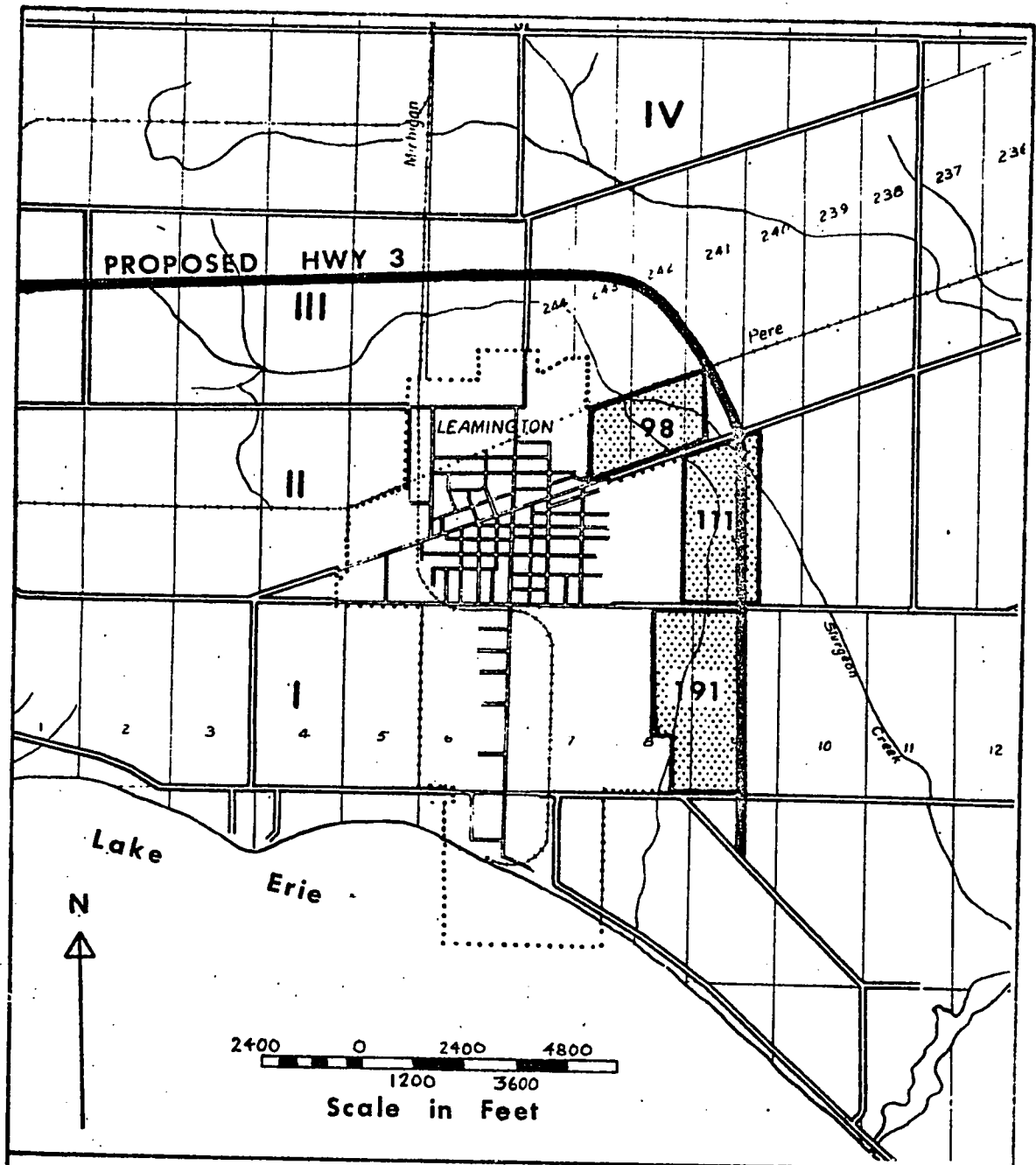
Finally, a consultant was sought to prepare a zoning by-law for the Township. This was prompted by increasing pressure from both private individuals seeking permission for urban-type developments such as residential subdivision or conversions of cottages to permanent year-round use <sup>47</sup> and by pressure from the Department of Municipal Affairs to prepare effective legislation such as a zoning ordinance to curtail urban sprawl.

Since a large portion of the Township was excluded from coverage by the Official Plan, two courses of action could be followed. Either an amended Official Plan could be prepared encompassing the entire Township followed by an appropriate zoning by-law, or a status quo zoning ordinance <sup>48</sup> could be formulated.

The latter course would regulate all land use and thereby make it more difficult to convert agricultural land into other uses. This course would also provide Township Council time to proceed with the preparation of a new or amended official plan as well as time to pass a suitable zoning by-law encompassing the entire municipality. The zoning by-law included in this paper has been designed for the latter purpose.

Although the Township Council has accepted the proposed status quo zoning by-law in knowledge that it would be acceptable <sup>49</sup> to officials in the Department of Municipal Affairs, it has not seen fit to seek

approval from either its own citizenry or the Ontario Municipal Board. Indications are that the assistance of a consultant was sought in part to appease officials in the Community Planning Branch. Once Leamington was successful in its annexation bid of 400 acres, effective January 1, 1970, the Town could direct residential development into this area. Thus the pressure on Township Council from the Department of Municipal Affairs to control the growth taking place in the Township has been momentarily relieved by loss of jurisdiction over a sizeable portion of the Township.



**MERSEA TOWNSHIP**  
**MAP 16 AREAS ANNEXED BY LEAMINGTON - JAN.1, 1970**

**98** Areas annexed in acres

Source: Leamington Annexation Study, Drawing No.6,1967

## NOTES

### CHAPTER II

1. Neil Morrison, Garden Gateway to Canada (Toronto: The Ryerson Press, 1954) p. 234.
2. Ibid., p. 239. This Agreement "would have admitted wheat, fruit and nearly all natural products from one country into another".
3. Ibid., p. 234.
4. Ibid., p. 260.
5. Ibid., p. 231.
6. G.F. Peterson, Realtor, R.H. Wigle and Son Real Estate, Leamington, and J. Armstrong, Building Inspector, Mersea Township; Interviews held in Leamington, July, 1969.
7. Atlas of Essex County (Windsor: Essex County Historical Association, 1965) p. 12.
8. Economic Atlas of Ontario (Toronto: University of Toronto Press, 1969) Plate 21.
9. Atlas of Canada, Department of Mines and Technical Surveys, Geography Branch (Ottawa: Queen's Printer, 1957) Map 20.
10. Plate 58 of Economic Atlas of Ontario. The calculation of heat units is based on the averages of monthly maximum and minimum temperatures during the corn growing season (above average of 50° F. during the daytime and above average 40° F. during the night).
11. Agriculture traditionally practised in the Township.
12. Soil, The 1957 Yearbook of Agriculture, United States Department of Agriculture, p. 656.
13. Dr. J.M. Fisher, Horticultural and Soil Science Head, Harrow Research Station, August 13, 1971.
14. Soil, op.cit., pp. 491, 705.
15. Essex County Associated Growers' Report, Leamington, 1971, p. 53.
16. S. Gregory, Statistical Methods and the Geographer (London: Longmans, Green and Company, 1968) p. 123.

17. Soil, op.cit., p. 440.
18. Personal interview, J. Tiessen, Mersea Township, October 28, 1971.
19. This farm is located on Concession 8 in the east half of Lot 12.
20. Gregory, op.cit., pp. 18, 19.
21. In this study the Town of Leamington is assumed to be the market since the initial destination of most agricultural produce.
22. Ronald C.A. Johnson, Drought in the St. Clair Region, M.A. Thesis, University of Windsor, 1967.
23. The Report of the Committee on Farm Assessment and Taxation (Toronto, Department of Municipal Affairs, 1969) pp. 34-39.
24. Report on the Need and Effective Demand for Ontario Housing and Need for Land Assembly in the Town of Leamington, 1967.
25. The Windsor Star, November 23, 1970.
26. F. Stuart Chapin, Jr., Urban Land Use Planning (Urbane: University of Illinois Press, 1965) p. 181.
27. Figure obtained from interview with F. Lutsch, June, 1969.
28. Based upon a minimum lot area of 15,000 square feet per residence as required by Department of Health for lots lacking water and sanitary sewers.
29. A mixture of homes and less stable types of businesses on both sides of a busy street making pedestrian crossings difficult, impeding successful merchandising, generating much additional traffic and short driving trips. In addition, vehicles turning into and out from many access points interrupt through traffic and create serious traffic hazards.
30. Number and location of parcel determined from the 1970 Assessment Roll.
31. Boyce, op.cit., pp. 104-111.
32. Theakstone, Harrison, op.cit., p. 109.
33. The following formula was derived from T. Yamane, Statistics: An Introductory Analysis, 2nd ed., p. 581 and was used to determine the sample size

$$n = \frac{N}{1 + Ne^2}$$

Population N = 2,241

34. 
$$R_{xy} = \frac{\sigma_{xy}}{\sigma_x \sigma_y}$$

$R_{xy}$  = product-moment coefficient of correlation

$$\sigma_x = \sqrt{\sum \frac{dx^2}{n}}$$

$$\sigma_y = \sqrt{\sum \frac{dy^2}{n}}$$

$$\sigma_{xy} = \frac{\sum dx dy}{n}$$

n = number of observations

dx = differences between the individual observations and the mean of the x set of observations

dy = differences between the individual observations and the mean of the y set of observations

dx<sup>2</sup> = deviation of individual observations squared

dy<sup>2</sup> = deviation of individual observations squared

x = observations of values in dollars per acre of parcels sold

y = observations of size of parcels in acres being transacted

35. Student's "t" test

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$r = -.29$$

$$n = 132$$

36. Gregory, op. cit., p. 139.

37. Ibid., p. 202.

38. The formulas used to derive the two regression line equations are as follows:

$$\text{for } y \text{ on } x \quad y - \bar{y} = r \cdot \frac{\sigma_y}{\sigma_x} (x - \bar{x})$$

$$\text{for } x \text{ on } y \quad x - \bar{x} = r \cdot \frac{\sigma_x}{\sigma_y} (y - \bar{y})$$

39. Report on the Need and Effective Demand for Ontario Housing and the Need for Land Assembly in the Town of Leamington, 1967, p. 21.

40. W. J. Settingington Ltd., Consulting Engineers and Land Surveyors Report to the Corporation of the Township of Mersea re the Installation of Watermains in Registered Plans in Parts of Lot 22 and 23 of Concession 2, June 11, 1971.

41. Leamington Post and News, April 8, 1970.
42. Official Plan, op. cit., p. 4.
43. Ibid., p. 5.
44. Ibid., p. 12.
45. Ibid., p. 6.
46. Zoning By-Law 2472 (Leamington, 1964).
47. Appendix pp.151.
48. D. Tuckett, Senior Planner, P. Weston and N. Tunnacliffe, Planners, Official Plans Section, Community Planning Branch, Ontario Department of Municipal Affairs, Interview held in Toronto, August, 1969.
49. Legally only the Minister of Municipal Affairs approves or rejects zoning by-laws. In reality, however, the acceptability of a document is determined by the Ontario Municipal Board. This body seeks the advice of those planners in the Community Planning Branch responsible for zoning regulations. In a telephone conversation with D. Tuckett, Senior Planner, in April, 1970, the document was deemed acceptable.
50. In 1967 the Town of Leamington had only 41 serviced building lots left for development and 240 unserviced lots. Report on the Need and Effective Demand for Ontario Housing and the Need for Land Assembly, Ontario Housing Corporation, Leamington, 1967, p. 22.



CHAPTER III  
ZONING MERSEA TOWNSHIP  
THE ZONING BY-LAW  
ITS LEGAL BASIS AND PURPOSE

Under Section 92 of the British North America Act the Provincial Legislature was given almost exclusive authority over all community planning. In turn, the Ontario Legislature through the instrument of the Planning Act had permitted a municipality or a group of municipalities to organize themselves as a planning area and to appoint a planning board with the intent of preparing a program or plan for future development.

Once a plan has been adopted by the council of a municipality it becomes "official" upon approval of the Minister of Municipal Affairs. The next step is to ensure the realization of the intentions of the official plan. This is accomplished by action of by-laws or other legal devices and public works. In this regard no by-law may be passed for any purpose that does not conform to the Official Plan.<sup>1</sup>

The purposes of a zoning by-law are many and varied. According to a statement accompanying a model zoning by-law prepared by the National Research Council in 1939, "zoning regulations have a two-fold function in any community - first, the provision of adequate lighting, ventilation and general amenity of living conditions in any building; second the general control of occupancies in any area so as to eliminate undue depreciation of any structure brought about by undesirable adjoining occupancies thus preserving the investment of the owner and the taxable value of the property".<sup>2</sup>

Other specific benefits accruing from zoning by-laws have been described as the control of population density in order to eliminate such undesirable conditions as overcrowding in schools and traffic congestion, and the separation of heavy industry from residential areas in order to eliminate heavy traffic which may cause danger and create a disturbance.<sup>3</sup>

Perhaps the purpose of a zoning by-law is best expressed by E.A. Levin when he suggests that there is a two-fold purpose behind zoning. It has both a preservative and a creative aspect. On the one hand, zoning seeks to preserve those elements in the physical environment which the community finds desirable, where they exist; and on the other hand, zoning seeks to create those elements in the physical environment which the community finds desirable where they do not exist. All other specific purposes derive from these, and it is the choice of what is considered desirable that accounts for the differences in zoning practice between one community and another.<sup>4</sup>

A zoning by-law, however, is only as effective as its administration.<sup>5</sup> The haphazard and ill-informed application of zoning standards often destroys rather than creates values. Such administration is very short-sighted. It can negate the advantages of proper zoning and turn a citizenry against it. Therefore, to be effective, a zoning by-law, once fully understood and approved, must be supported by municipal officials, civic leaders and citizenry in general.<sup>6</sup> Those specifically entrusted with administration must also take steps to have competent personnel<sup>7</sup> apply and enforce its provisions.<sup>8</sup> Although the by-law is intended for the public good, it is generally accepted that no individual shall suffer under hardship for the public good, and to ensure this there are sometimes powers

of relaxation given to the by-law administrators as well as the right  
8  
to appeal before a board of appeal.

#### BASIS OF AN IDEAL ZONING BY-LAW FOR MERSEA TOWNSHIP

In zoning rural-urban fringe areas the usual basic dilemma is how to accommodate an expanding urban settlement with a prosperous agricultural hinterland. How can space be organized and allocated to these two incompatible land uses both quantitatively and locationally? This question is still largely unresolved. However, attempts to resolve this dilemma must depend on the degree of knowledge of spatial dimensions and the inter-relationships that exist between them.

Normally the first step in zoning land for various uses is the determination of the location, size and characteristics of existing land uses. This data is then supplemented with information regarding the location of potential similar land uses and the potential market for each. Once this information is available and carefully assessed in the light of policies and objectives set out in a logical official plan, sufficient land is rezoned for future expansion. Used in this way zoning can be a guide to future growth.

In zoning Mersea Township this ideal could not be achieved. Since urban sprawl had not been halted by instrument of subdivision control, only a restricted area or status quo zoning by-law was permissible. As a result the zoning by-law largely reflects current land use.

Residential land uses were minimized and only infilling of remaining parcels of land permitted. In order to conserve the finest residential areas from incompatible commercial uses, two types of residential land

use were established. One included those ribbons of development along the main highways and in hamlets where a mixture of residential, commercial and other non-agricultural land use was operative, the other, a scenic and exclusively residential area overlooking Lake Erie in Lots 1, 2, 4, 5 and 6 of Concession A. In this latter instance only single-family detached housing was permitted in order to be in harmony with existing land use. These two zones were labelled Rurban and Resort Residential. In zoning any municipality it is inevitable that local politics will be operative in the decision-making process and will influence to some degree the final zoning legislation. This was the case in zoning Mersea Township. During conferences held with the elected representatives of the Municipal Council, modifications to be proposed zoning had to be accommodated in order to appease various interest groups within the Township. For example, in the initial draft of the zoning map the allocation for the Resort Residential zone was less than in the final draft. Originally an intensive agriculture area involving green-houses had been excluded. However, due to the request of the owner of this parcel of land and the desire of some councillors, the land use map was modified to incorporate this parcel.

Although new residences were to be kept to a minimum the legitimate needs of retiring farmers were also included in the by-law under Section 4.3 (p. 131).

An ideal zoning by-law should allow little pre-zoning of industrial and commercial land since there is no guarantee that the allocation of land designated for a particular use will be taken up. In some instances the pre-designation of land as industrial or commercial, renders the land

sterile. Pre-zoning may also provide speculators with windfalls. <sup>10</sup>

For the Township allocation of land for commercial use was again restricted to reflect current land use and permitted uses were those designed to serve the motoring public. This was in keeping with the policy as stated in the Official Plan that Leamington would "remain the single major retail centre within the Planning Area."<sup>11</sup>

The Sturgeon Creek Area which was recognized for its potential as a harbour and tourist facility<sup>12</sup> was designated as a Resort Commercial Area. Initially only one-half of this area indicated on the zoning map was allocated for this use. Again, an accommodation was necessary. Representation to both the Reeve and Councillors by two residents resulted in a request that the area be enlarged to include abutting lands. This area is very flat in character with a high water table in the land surrounding the Creek. Because of this poor surface and subsurface drainage, sanitary waste disposal problems could result. However, once the County Medical Health Officer approved of additional development, sanction was granted.

Zoning is one of the first steps a municipality can take to brake the further misuse of agricultural land. Prime agricultural land, the product of many years of natural and human processes, is irreplaceable. Once developed, it cannot easily be restored to its original state.

The southern part of Mersea Township has been the most intensively farmed for more than a century. This area characterized by light-textured sandy loams today supports a prosperous farm population.

In zoning the agricultural land two major soil groups, reflecting differing agricultural practices and levels of intensity were recognized. Unfortunately the more desired lands by farmers, the sandy loams, were

adjacent to Leamington and clays further removed. The contact line between the two soil groups was to have been the line of demarcation between the A1 and A2 Agricultural Zones (Map 139). The eventual line drawn represents a compromise among four factors; soils, intensity of agricultural land use, political expediency and the historic survey grid. In some places the line of compromise poorly represents both the intensity of agricultural land use and soils. This is especially notable southeast of Leamington where adjustments had to be made to appease one councillor who felt his neighbours would disapprove if not included within the A1 Zone. The demarcation line also deviates substantially from soils in order to accommodate the realities of land tenure based upon the former survey grid. This resulted in the line following many lot and concession lines in order to preserve farm units.

To discourage farmers from splitting off small parcels of land for non-agricultural use, minimum lot areas of 10 and 25 acres were designated for the A1 and A2 zones respectively. It might be argued that these values should be reserved in order to preserve the prime agricultural area, however it was suggested that the high cost of farm land and the need for smaller units of agricultural land due to the intensity of farming the minimum lot area of 10 acres should prove to be an effective control on urban sprawl.

To test the relative concentrations of various factors (Table 19) in the two agricultural areas location quotients <sup>13</sup> for each factor were calculated. In the case of the Agricultural A1 zone a complete concentration would yield a L.Q. of 2.50.

TABLE 19

LOCATION QUOTIENTS\* OF SELECTED AREAL  
DISTRIBUTIONS INDICATING RELATIVE CONCENTRATIONS  
BY ZONES IN MERSEA TOWNSHIP

TOTAL		LOCATION QUOTIENTS			
		NO. IN A1 ZONE	AGRICULTURAL A1 ZONE	NO. IN A2 ZONE	AGRICULTURE A2 ZONE
61	Class** 1 Farms	57	2.34	4	.11
86	Class 2 Farms	68	1.98	18	.35
78	Class 3 Farms	25	.80	53	1.12
91	Class 4 Farms	19	.52	72	1.30
2241	Transactions (1961-1970 inclusive)	1279	1.43	962	.71
54	Vacant Land (1970)	38	1.70	18	.53
47	New Greenhouses	44	2.35	3	.11
72	New Corn-cribs, Granaries, Silos	23	.79	49	1.13
52	New Barns and Sheds	23	1.10	29	.93
4	New Tobacco Kilns	3	1.88	1	.42
1151	New Dwellings	127	2.11	26	.26
5	Sand and Gravel Pits 1970	5	2.50	0	0
8	Farm Product Processors and Distributors	6	1.88	2	.42

\* Based upon Lorenz Curve

\*\* Classes of farms are based upon the assessed values as indicated in Map 6. Class 1 farms have highest assessments; Class 4 lowest.

As expected the results reveal a very high concentration of Class 1 and 2 farms, new greenhouses, tobacco kilns, sand and gravel pits, new dwellings and farm product processors and distributors in the A1 Agricultural Zone. Conversely Class 3 and 4 farms, new corn cribs, granaries and silos are concentrated in the A2 Agricultural Zone. The results indicate that the line of delineation of agricultural zones as drawn is suitable for its purpose.

A zoning by-law should designate land use zones which are internally harmonious. Ideally these zones should also be in harmony with those

land uses designated in ordinances of adjacent municipalities. Through telephone contacts it was discovered that out of seven municipalities only Leamington had such an ordinance. An empirical study of aerial photographs and reconnaissance by automobile suggested that zones designated for Mersea Township should harmonize with the similar land use practices in the adjacent communities.



## SUMMARY AND CONCLUSIONS

The gradual transformation of land to rural non-farm use in Mersea Township is by no means unique to this municipality. A great deal of what has and will continue to occur is being experienced throughout the Province. As the population in the County, Town of Leamington, and the Township continues to increase, more land will have to be devoted to urban uses, even if building were to be at higher densities. However, continued unrestricted urban development will only increase the already deplorable examples of urban encroachment along the highways and further reduce the efficiency and safety of traffic arteries and add to blight just beginning to mar the landscape. This situation is all the more deplorable since the influx of urban oriented persons is onto prime agricultural land in close proximity to the amenities associated with the Town of Leamington.

Mersea Township is currently neither equipped for nor capable of providing and maintaining necessary urban services such as piped water, sanitary and storm sewerage, street maintenance and schools for an ever increasing urban-oriented population.

Should improved standards of services be demanded, higher costs will result and these will be paid for not by the non-rural population but by farmers and other rural taxpayers. Agriculture, the mainstay of the economy will suffer.

Since urban-type development is inevitable, the Township Council should attempt to determine what type, where and under what conditions these developments should be permitted. The answers to the questions, will to a great extent, determine the quality of the environment to which

the majority of the Township's inhabitants will be subjected in the future.

What is needed now is a pause in urban encroachment in order to provide time for the Township to assess the situation and prepare either an amended or new official plan which would include the remainder of the Township currently excluded from the Leamington and District Planning Area. Following this, appropriate land use zoning regulations should be prepared to implement the policies of the plan.

The successful annexation bid by the Town of Leamington goes part way in providing this needed time since additional sites for both residential and industrial type development with full urban services are readily available. The proposed status quo zoning by-law for the Township adds to this time by limiting urban encroachment to only infilling of existing development. However, regulation of land use in the Township will only succeed if the municipal officials enforce the policies of the Official Plan by instruments at their disposal such as the proposed zoning by-law.

If this is not done "the premature fractionation and haphazard spot development....may destroy the whole cloth out of which a more rational and beautiful urban design otherwise might have been tailored at a later date."

**The Corporation  
of the  
Township of Mersea  
Zoning By-Law No.---**

THE CORPORATION OF  
THE TOWNSHIP OF MERSEA  
ZONING BY-LAW NO. \_\_\_\_\_

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Township of Mersea

By-Law No. \_\_\_\_\_

A By-Law to regulate the use of land, and the character, location and use of buildings and structures in the Township of Mersea.

Notice of Application to the Ontario Municipal Board by the Corporation of the Township of Mersea - for approval of a By-Law to regulate land use passed pursuant to Section 30 of the Planning Act.

Take Notice that the Council of the Corporation of the Township of Mersea intends to apply to the Ontario Municipal Board pursuant to the provisions of Section 30 of the Planning Act for approval of By-Law No. \_\_\_\_\_ passed on \_\_\_\_\_, 19\_\_\_\_. A copy of the By-Law is set forth herein.

Any person interested may, within fourteen (14) days after the date of this notice send by registered mail or deliver to the Clerk of the Township of Mersea notice of his objection or approval of the said By-Law together with a statement of the grounds of such objection.

The Ontario Municipal Board may approve of the said By-Law but before doing so it may appoint a time and place when any objection to the By-Law will be considered. Notice of any hearing that may be held will be given only to persons who have filed any objections and have left with or delivered to the clerk, undersigned the address to which such a notice of hearing is to be sent.

The last day of filing objections will be \_\_\_\_\_, \_\_\_\_\_, 19\_\_\_\_.

Dated at the Township of Mersea, Ontario,  
This \_\_\_\_\_ of \_\_\_\_\_, 19\_\_\_\_.

Lynn Foster  
Clerk, Township of Mersea  
Leamington, Ontario

**Section 1 Interpretation, Administration, Application  
and Penalties**

- 1.1 This By-Law shall be cited as "The Township of Mersea Zoning By-Law".
- 1.2 This By-Law shall be administered by the Building Inspector.
- 1.3 In spite of the provisions of the Corporation's Building By-Law (No. 2136) or any other By-Law of the Corporation, no building permit or occupancy permit shall be issued where the proposed building structure or use would be in violation of any of the provisions of this By-Law.
- 1.4 A person who uses any lot or erects, or uses any building or structure in a manner to contravene any provisions of this By-Law, or causes or permits a violation is guilty of an offence and upon conviction shall be liable to a fine not exceeding three hundred dollars (\$300.00) for each such offence exclusive of costs.
- 1.5 This By-Law shall apply to the following within that area illustrated on the zoning map (Schedule "A") which is included in and forms a part of the By-Law and is more properly described as all of the Township of Mersea including those parcels of land under the jurisdiction of the Township of Mersea within Point Pelee National Park.
  - (a) the use of land, buildings or structures
  - (b) the access to the frontage and coverage of lots to be used in various ways
  - (c) the floor area, height and location of buildings or structures on a lot
  - (d) the designation of parking spaces for buildings to be used in various ways.

1.6 This By-Law is applicable when

- (a) a new building or structure is to be erected
- (b) the use of land, buildings or structures is to be altered from that for which the land, building or structure was used on the date of passage of this By-Law
- (c) a building or structure is to be enlarged
- (d) a damaged building or structure is to be rebuilt.

1.7 This By-Law takes effect from the date of passage by the Township of Mersea Council and comes into force upon the approval of the Ontario Municipal Board.

## **Section 2                      Definitions**

- 2.1    Accessory means a use, building or structure incidental to the principal use, building or structure.**
- 2.2    Agriculture means the use of land for farming and includes the raising and harvesting of field, bush, tree or vine crops, truck gardening, nurseries, greenhouses, dairying, animal and poultry husbandry and the sale of produce grown in the farm from which the sale is made.**
- 2.3    Assembly Hall means a building or part thereof where facilities including those of a banquet hall or private club are such that meetings for civic, educational, political, religious or social purposes are available.**
- 2.4    Auto Service Station means a building or place where new automobile components as well as gasoline and lubricants essential to the actual operation of motor vehicles are stored or kept for sale as well as where only minor or running repairs are performed but shall not include an automobile washing establishment.**
- 2.5    Automobile Washing Establishment means a building or part thereof used for the operation of automobile washing equipment with the capacity to wash more than fifteen (15) cars per hour.**
- 2.6    Building Inspector means the officer or employee of the Township for the time being charged with the duty of enforcing the provisions of the Building By-Law.**
- 2.7    Building means any structure, temporary or permanent, used or built for the shelter, accommodation or enclosure of persons, animals or chattels other than a lawful boundary wall or fence, any tent awning, bin, bunk or platform, vessel or vehicle used upon any land or in conjunction with or connected to any structure for any purpose shall be regarded as a building.**



- 2.8 County Roads shall mean all of the County roads which lie within the limits of Mersea Township, save and except the South-west side of Point Pelee Road from Sturgeon Creek to the Point Pelee National Park, namely lot 11 Concession B, Lots 11 to 13 Concession C, Lots 13 to 15 Concession D, and the north-east side of Point Pelee Road from the road between lots 12 and 13 to Point Pelee National Park, namely Lot 13 Concession C, Lots 13 to 15, Concession D.
- 2.9 Coverage means the percentage of the area of the lot covered by all buildings but excludes accessory buildings or private garages and swimming pools.
- 2.10 Dangerous Trades means a use which is likely to create danger to health or danger from fire or explosion.
- 2.11 Domestic or Household Arts means the service activities included in the following:
- (a) hairdressing
  - (b) dressmaking and/or clothing alterations and repairs
  - (c) instruction in music, dancing, arts and crafts
  - (d) weaving, painting, sculpturing and moulding
  - (e) making or repair of garden or household ornaments or toys.
- 2.12 Dwelling unit means one or more rooms used or intended for the domestic use of one or more individuals living as a single housekeeping established with cooking, living, sleeping and sanitary facilities.
- 2.13 Dwelling, single Family Detached means a building designed, intended and/or used for occupancy by one family only.
- 2.14 Existing means existing as of the date of the passage of this By-Law.

- 2.15 Floor Area means the sum of all the floors measured to the outside walls excluding any private garage, carport, porch, verandah, basements and cellars having a floor level an average of four feet (4') below mean grade level or attics and any area with a ceiling height of less than seven feet (7').
- 2.16 Frontage means the width of a lot measured along the streetline.
- 2.17 Garage, Public means a building other than a private garage used for the care, repair or equipping of motor vehicles, or where such vehicles are parked or stored for remuneration, hire or sale.
- 2.18 Height of Buildings means the vertical height in feet measured from the average of the finished grade around the building
- (a) to the highest point in the roof joints or
  - (b) to a point halfway up the roof in the case of a pitched roof or
  - (c) to the average level between the eaves and ridge of a gable, hip or gambrel roof exclusive of any accessory roof construction such as a chimney, tower steeple, radio and television antenna, skylight, flag pole or water tower.
- 2.19 Institution means land, building or structure or part thereof used by any group, association or organization for the promotion of charitable educational or benevolent activities and not for profit or gain.
- 2.20 Intensive Farm means a farm where the predominant activity is raising or keeping fowl or animals.
- 2.21 Lot means the whole of a parcel of land that is described in a registered deed or shown on a registered plan of subdivision.

- 2.22 Lot Area means the total horizontal area within the confines of a lot excluding the horizontal area of such lot usually covered by water or marsh, or beyond the rim of a river bank or water course, or between the top and toe of an embankment having a slope of thirty degrees (30°) or more from the horizontal.
- 2.23 Lot Corner means a parcel of land situated at the intersection of two or more roads having an angle of intersection of not more than one hundred thirty-five degrees (135°).
- 2.24 Motel means a building, or two or more connecting buildings or two or more detached buildings designed and used for the purpose of catering to the needs of the travelling public by providing sleeping accomodation with or without supplying food and refreshments and shall also include motor and auto court, tourist home as defined in the Tourist Establishment Act.
- 2.25 Obnoxious Use means uses with which are associated the emission of odour, smoke, dust, noise, gas, fumes, refuse matter or water-borne waste and which are declared obnoxious under the Public Health Act.
- 2.26 Parking Space means an open area, or an enclosed area in a main building or area in an accessory building, other than a street for the temporary parking of motor vehicles and is not smaller than twenty feet (20') by ten feet (10') and has been levelled and surfaced to the satisfaction of the Building Inspector.
- 2.27 Permitted means permitted by this By-Law.
- 2.28 Person means any human being, association, partnership, corporation, agent or trustee, and the heirs, executors or other legal representatives of a person to whom the context can apply according to the law.
- 2.29 Renovation means the repair and restoration of a building to a good condition but shall not include its replacement.

- 2.30 Setback means the horizontal distance from the streetline to the nearest wall of any building or structure on the lot.
- 2.31 Streetline means the line separating the public road, street or highway and a lot.
- 2.32 Structure means any erection fixed to or supported by or incorporated within the ground and/or by any other structure.
- 2.33 Tourist Establishment means a building or area designed and used for the purpose of catering to the needs of the travelling public by providing recreational facilities without sleeping accomodation and includes a roller skating pavilion, archery range, miniature golf range, go-cart track and picnic facilities..
- 2.34 Trailer means any vehicle constructed in such a manner that it can be attached to a motor vehicle for the purpose of being drawn or propelled by the motor vehicle and capable of being used for living, eating or sleeping accomodation despite being jacked up or that its running gear is removed.
- 2.35 Yard, Front means the open area extending across the full width of the lot between the nearest wall of the building or structure on the lot and the streetline of the street on which the building or structure fronts.
- 2.36 Yard, Rear means the open area extending across the full width of the lot between the rear lot line and the nearest wall of the main building or structure on the lot.
- 2.37 Yard, Side means the open area extending from the front yard to the rear yard between the side lot line and the nearest wall of the main building or structure on the lot.
- 2.38 Zone means any area designated for a particular use.

**Section 3 Provisions Applicable to the Entire Defined Area**

**3.1 Zones and Zone Boundaries**

**3.1 (1)** The Defined area is divided into the following "zones" illustrated on Schedule "A" for the purpose of this By-Law

- (a) Agricultural (A1) zone
- (b) Agricultural (A2) zone
- (c) Rurban zone
- (d) Rurban Commercial (C) zone
- (e) Resort Residential (R1) zone
- (f) Resort Commercial (R2) zone
- (g) Resort Recreational (R3) zone
- (h) Mining (M) zone
- (i) Marsh (MA) zone

(2) In Schedule "A" where the boundary line of a zone does not coincide with a property line, the location of such zone boundary is determined by scale from the map.

**3.2 Land, Building and Structures**

**3.2.1** No person shall within any of the zones of the Township of Mersea as defined by this By-Law and Schedule "A" attached use any land, building or structure except in conformity with the general and specific provisions for the zone in which the land, building or structure is located.

**3.2.2** Where on the date of passage of this By-Law there is any land, building or structure that contravenes any of the provisions outlined in this By-Law such land, building or structure may continue to be used in the same way and for the same purpose as it was on the date of passage of this By-Law.

**3.3 Lots, Setbacks and Side Yards**

**3.3.1** Where on the date of passage of this By-Law there exist lots having less than the minimum width or area requirements permitted by this By-Law, such lots may be used for purposes permitted in the zone in which they are located provided that

- (a) side yards are not less than seventy-five per cent (75%) of the size requirements as stipulated by this By-Law
- (b) all other applicable requirements are complied with.

- 3.3.2 Where on the date of passage of this By-Law a building exists on a lot having less than the minimum frontage or area required by this By-Law such building may be enlarged if
- (a) the side yards are not less than seventy-five per cent (75%) of this By-Law and
  - (b) all other applicable stipulations in this By-Law are adhered to

3.4 Temporary Construction or Accomodation Uses

- 3.4 Temporary use of buildings and structures such as toolsheds, scaffolds in construction or for accomodation of workmen engaged in work of a temporary or seasonal nature shall be used only for the duration of the work and shall be locked or boarded up and not used for living accomodation after the work for which they were constructed is terminated.

3.4.1 Public Use Permitted

- 3.4.1 Despite the stipulations contained in this By-Law, the Corporation of the Township of Mersea or any local board thereof as defined in the Department of Municipal Affairs Act, any telephone, telegraph or gas company, the County of Essex, and department of the Government of Ontario or Canada including the Hydro Electric Power Commission of Ontario, may for the purpose of public service, use any land or erect or use any building or structure.

3.5 Lot Area and Lot Coverage

- 3.5.1 A lot shall not be reduced in area by sale, lease or other transfer of property, where the reduction of such lot would cause the lot or building to contravene the By-Law.

### 3.6 Public Garages and Service Stations

3.6 Where a public garage or an automobile service station is to be erected in the Defined Area the following requirements shall apply

- (a) Lot frontage  
Minimum 125 feet
- (b) Lot depth  
Minimum 125 feet
- (c) Lot coverage  
maximum for all buildings 20%  
of lot area
- (d) Pump Location
  - (1) No person shall erect or install gasoline pumps along a County Road
    - (i) closer than sixty feet (60') from the centre line of the original road allowance
    - (ii) on a curve or crest of a hill
    - (iii) on the tangent to a horizontal or vertical curve where the sight distance is less than eight hundred feet (800') in each direction
  - (2) No person shall erect or install gasoline pumps closer than twenty-five feet (25') from any other streetline in spite of the provisions under Section 3.14.2 of this By-Law.
- (e) Ramps
  - (i) maximum width (30')
  - (ii) minimum distance between ramps (24')
  - (iii) The minimum distance between ramp and an intersection of street lines measured along the street line intersected by such ramps shall be (30').

### **3.7 Accessory Buildings and Structures**

- 3.7** In addition to the main building an accessory building or structure may be erected on a lot in any zone provided that:
- (a) the building or structure is not used for human habitation
  - (b) the building or structure does not exceed fifteen feet (15') in height
  - (c) the building structure is not located closer than twenty-five feet (25') to any street line
  - (d) the building or structure is not located closer than four feet (4') to any lot line
  - (e) the building or structure is not located closer than six feet (6') to the main building except that a private garage may be attached to the main building
  - (f) the maximum coverage of all buildings on the lot area shall not exceed seventeen per cent (17%) unless stated otherwise in the By-Law.

### **3.8 Lots to Front and Have Access to Streets**

- 3.8** All lots created after the date of passage of this By-Law, shall front on and have access to a public street or highway so as to permit their use by vehicular traffic.

### **3.9 The Erection of New Buildings Prohibited on Unsuitable Land**

- 3.9** In all zones the erection of buildings or structures other than docks or boathouses shall not be allowed on land that is below the highwater mark on any stream, watercourse or other body of water.



**3.10 Other Uses Allowed in Dwellings**

**3.10** A single family dwelling unit in the Defined Area but excluding an R1 zone may be used in addition for one of the following uses provided that those persons engaged in this additional use reside in the dwelling unit

- (a) domestic or household arts
- (b) a professional or business office
- (c) service establishments for: building trades, or electrical repairs, or plumbing repairs or radio repairs or television repairs.

**3.11** Where a single family dwelling unit is used for any of the purposes indicated in Section 3.10

- (i) there shall not be any external storage of equipment
- (ii) any sign erected shall not exceed four square feet (4 sq.ft.) in area.

**3.12** The area devoted to the uses indicated in section 3.10 shall not exceed twenty-five per cent (25%) of the dwelling.

**3.13** Minimum Floor area of a Dwelling

Where a residential building is to be erected in any one of the four zones of the defined area the ground floor area for each dwelling unit shall not be less than the following:

- (a) for a one-storey building seven hundred fifty square feet (750 sq.ft.)
- (b) for one and one-half storey building seven hundred fifty square feet (750 sq.ft)
- (c) for a two storey building six hundred square feet (600 sq.ft.)

**3.14** Height, Setback and Yard Requirements

**3.14.1** The maximum height of all buildings and structures in the Defined Area excluding an accessory building shall be thirty-five feet (35').

3.14.2 (a) (i) No person shall erect any building or structure, any part of which is located closer to the nearest limit of any county Road or part of a County Road than:

35 feet where the road is 100 feet wide  
42 feet where the road is 86 feet wide  
52 feet where the road is 66 feet wide  
and in no case closer to the centre line of the original road allowance than 85 feet, except where there is a Municipal Drain or Ditch and Watercourse Drain, on the road allowance of any road, the dimensions set out above shall in each instance, be increased by 25 feet.

(ii) Provided that in case of two existing buildings either or both of which is, or are, located closer to the nearest limit of any County road than is permitted in Section 3.14.2 (a) (i) which are less than 300 feet apart measured parallel to the centre line of the road, the provisions of this paragraph shall apply to the extent that no person shall erect any building or structure between the aforesaid existing structure closer to the centre line of the road than the line joining the closest limit point to the centre line of the road of the one structure, to the closest point to the centre line of the road of the next adjacent structure.

(iii) Provided that in cases where a building exists closer to the nearest limit of any county road than is permitted in Section 3.14.2 (a) (i), the provisions of this paragraph shall apply so that no person shall erect a building or structure closer to the centre line of the road than the existing building or structure if the distance (measured parallel to the centre line of the road) between the existing and proposed structures is more than 20 feet.

(b) The minimum setback of any building or structure or part thereof from the centreline of a road in the Defined Area shall be as follows:

- (i) for a Provincial Highway 85 feet
- (ii) for a Township Road 50 feet
- (iii) for any other road or street 35 feet  
except that on a corner lot the setback from the flanking road or street may be 25 feet.

(c) The minimum setback of any building or structure in the Defined Area shall be as follows:

- (i) for a side yard 5 feet
- (ii) for a rear yard 25 feet

**3.15 Parking Spaces and Areas**

**3.15.1** Each parking space shall not be smaller in area than ten feet (10') by twenty feet (20')

**3.15.2** For every building erected or enlarged in any part of the Defined Area following the passage of this By-Law, the owners shall provide parking spaces as follows:

<u>Type of Building</u>	<u>Minimum Parking Required</u>
Single or Multiple Dwellings	one parking space per dwelling unit
Tourist Establishments, Motels	one parking space per guest room
Cottages	one parking space per cottage
Churches, Halls, Restaurants and other Places of Assembly	one parking space for every five (5) seats or 10 feet (10') of bench space where there are fixed seats or where there are no fixed seats one parking space for every one hundred square feet (100 sq.ft.) of gross floor area
Industrial	One parking space for every five (5) employees
Commercial Uses	one parking space for every five hundred square feet (500 sq. ft.) of retail store area
Uses Permitted Other than those Mentioned Above	one parking space for every four hundred square feet (400 sq. ft.) of gross floor area.

**3.16 Garbage Dumps Prohibited**

**3.16** As from the date of passage of this By-Law no land within the Township of Mersea shall be used for a garbage dump.

## Section 4 Agricultural (A1) and Agricultural (A2) zones

### 4.1 Permitted Uses

4.1 No person shall use land or erect or use a building in an Agricultural (A1) or an Agricultural (A2) zone except for one of the following purposes

- (a) agricultural uses together with accessory single-family dwellings
- (b) playgrounds, parks, recreation or sports fields, golf courses, conservation and reforestation areas, private clubs or camps
- (c) churches, schools and public institutions
- (d) cemeteries
- (e) air strips and air fields
- (f) the following commercial uses
  - (i) establishments for the processing and storage of agricultural and fish products
  - (ii) nurseries, greenhouses and open air markets
  - (iii) establishments for the sale or service of farm implements
  - (iv) establishments for the breeding of birds, fish or animals

### 4.2 Lot Area, Frontage for Agricultural Buildings, Including Accessory Dwellings

#### Lot Frontage

##### minimum

- in the Agricultural (A1) zone 175 feet
- in the Agricultural (A2) zone 350 feet

#### Lot area

##### Minimum

- in the Agricultural (A1) zone 10 acres
- in the Agricultural (A2) zone 25 acres

4.3 Retiring Farmer

4.3 A bona fide farmer, who is and has for five years been the owner of the farm and whose chief source of income is derived from agricultural operations in an agricultural zone, may retain a lot from the sale of his farm and erect, alter or use thereon a detached single-family dwelling subject to the following provisions

lot frontage  
minimum 150 feet

lot area  
minimum 1/2 acre

4.4 Enlarging Farms

4.4 Where after the date of passage of this By-Law a farmer enlarges his farm by acquiring another farm in an agricultural zone and the acquired land thereon has located a detached single-family dwelling, then a lot on which such dwelling house is located may be separated from the enlarged farm provided that the lot so separated has a minimum frontage of one hundred fifty feet (150') and an area of one-half acre (1/2 acre).

4.5 Lot Area and Frontage For Non Agricultural Buildings

4.5 Where a building other than an agricultural building is to be erected on a lot in an agricultural zone

(a) the area of the lot shall not be less than one acre

(b) the frontage of the lot shall not be less than one hundred fifty feet (150')

(c) the coverage of the lot shall not exceed 10 per cent (10%)

#### 4.6 Intensive Farms

- 4.6.1 A person shall not in an Agricultural (A1) or (A2) zone use land for an Intensive farm within one thousand feet (1,000 ft.) of a Rurban or a Resort zone or the boundaries of Leamington and Wheatley.
- 4.6.2 No barn stable, chicken house or other structure for the accomodation of animals and no feed lot or manure storage area shall be located within three hundred feet (300 ft.) of any street line and fifty feet (50 ft.) of any other lot line.
- 4.6.3 The minimum lot area for an intensive farm shall be 25 acres.

**Section F Rurban Zones**

**5.1 Permitted Uses**

5.1 A person shall not use land or erect or use a building in a Rurban zone except for one of the following uses

- (a) agricultural uses together with accessory single-family dwellings
- (b) single-family detached dwellings
- (c) schools, churches and other public institutions
- (d) nursing homes
- (e) private clubs
- (f) cemeteries
- (g) parks, playgrounds and recreational facilities
- (h) nurseries, greenhouses and open air markets
- (i) establishments for the sale or service of farm implements

**5.2 Lot Area, Fontage and Coverage**

5.2 A building shall not be erected on a lot in the Rurban zone, except in conformance with the regulations set forth in Table 5.2.1.

**TABLE 5.2.1**

Municipal Services Available	Minimum lot area permitted in square feet	Minimum lot frontage permitted in feet	Maximum Coverage permitted as a per cent of lot area
water supply only	7,500	60	33
None	15,000	120	17

5.3 There shall not be more than one main building built on a lot in the Rurban zone.



**Section 6            Rurban Commercial (C) Zone**

**6.1            Permitted Uses**

**6.1            A person shall not use land, or erect or use a building in a Rurban Commercial Zone except for one of the following purposes:**

- (a)            automobile service station or public garage**
- (b)            restaurant (snack, lunch counter, soda fountain)**
- (c)            motels**
- (d)            stores and service shops.**

**6.2            Lot Area, Frontage, Coverage**

**6.2.1          Where land in a Rurban Commercial Zone is used for an automobile service station or public garage, the regulations contained in Section 3.6 of this By-Law shall apply.**

**6.2.2          Uses other than Service Stations and Garages**

- (a)            Where only a public water supply is available the lot shall be at least three (3) times the total area of the parts thereof that are covered by buildings or structures.**
- (b)            Where no sanitary sewer or public water supply is available the lot shall be at least six (6) times the total area of the parts thereof that are covered by buildings or structures.**

**Section 7                      Resort Residential (R1) Zone**

**7.1 Permitted Uses**

**7.1** A person shall not use land, or erect or use a building in a Resort Residential zone except for a single-family detached dwelling.

**7.2 Lot Area, Frontage, Coverage and Minimum Floor Area**

**7.2** A building shall not be erected on a lot in the Resort Residential Zone except in conformance with the following regulations

(a) Where no public and sanitary sewers are available the minimum lot area permitted shall not be less than fifteen thousand square feet (15,000 sq. ft.), the lot frontage shall not be less than one hundred twenty feet (120') and lot coverage shall not exceed seventeen per cent (17%).

(b) Where only public water is available the minimum lot area permitted shall not be less than seventy-five hundred square feet (7,500 sq. ft.), the lot frontage shall not be less than sixty feet (60') and the lot coverage shall not exceed thirty-three per cent (33%).

(c) The minimum floor area shall be

(i) for one storey dwelling twelve hundred square feet (1,200 sq. ft.)

(ii) for one and one-half storey dwelling eight hundred square feet (800 sq. ft.)

(iii) for a two storey dwelling six hundred square feet (600 sq. ft.).

**Section 8                      Resort Commercial (R2) zone**

**8.1 Permitted Uses**

**8.1 A person shall not use land or erect or use a building in a Resort Commercial zone except for one of the following purposes:**

- (a) tourist establishments**
- (b) restaurants (snack bars, lunch counter, soda fountain)**
- (c) marinas and boat liveries including the sale and rental and repair of boats and sale of gasoline, oil or accessories for boat motors.**

**8.2 Lot Area, Frontage and Coverage**

**8.2 A building shall not be erected on a lot in the Resort Commercial Zone except in conformance with the following regulations**

- (a) Where no public water and sanitary sewers are available the minimum lot permitted shall not be less than thirty thousand square feet (30,000 sq. ft.), the lot frontage shall not be less than one hundred fifty feet (150') and the lot coverage shall not exceed twenty-five per cent (25%).**
- (b) Where only public water is available the minimum lot area permitted shall not be less than twenty-five thousand square feet (25,000 Sq. Ft.), the lot frontage shall not be less than one hundred thirty-five feet (135') and the lot coverage shall not exceed thirty per cent (30%).**

**Section 9            Resort Recreational (R3)**

**9.1 Permitted Uses**

**9.1 A person shall not use land, or erect or use a building in a Resort Recreational Zone except for one of the following purposes:**

- (a) cottages**
- (b) public and private parks and golf courses**
- (c) private clubs and camps**
- (d) churches, community halls and other places of assembly**
- (e) existing single family dwellings.**

**9.2 Lot Area, Frontage and Coverage**

**9.2 A cottage shall not be erected on a lot in the Resort Recreational zone except in conformance with the following regulations:**

- (a) Where no public water and sanitary sewers are available the minimum lot area permitted shall not be less than fifteen thousand square feet (15,000 sq. ft.), the lot frontage shall not be less than one hundred twenty feet (120') and the lot coverage shall not exceed seventeen per cent (17%).**
- (b) Where only public water is available the minimum lot area permitted shall not be less than seven thousand five hundred square feet (7,500 sq. ft.), the frontage shall not be less than sixty feet (60 ft.) and the lot coverage shall not exceed thirty-three per cent (33%).**

**Section 10                    Mining (M) Zone**

**10.1 Permitted Uses**

**10.1 A person shall not use land or erect or use a building or structure in a Mining (M) zone except for one or more of the following purposes:**

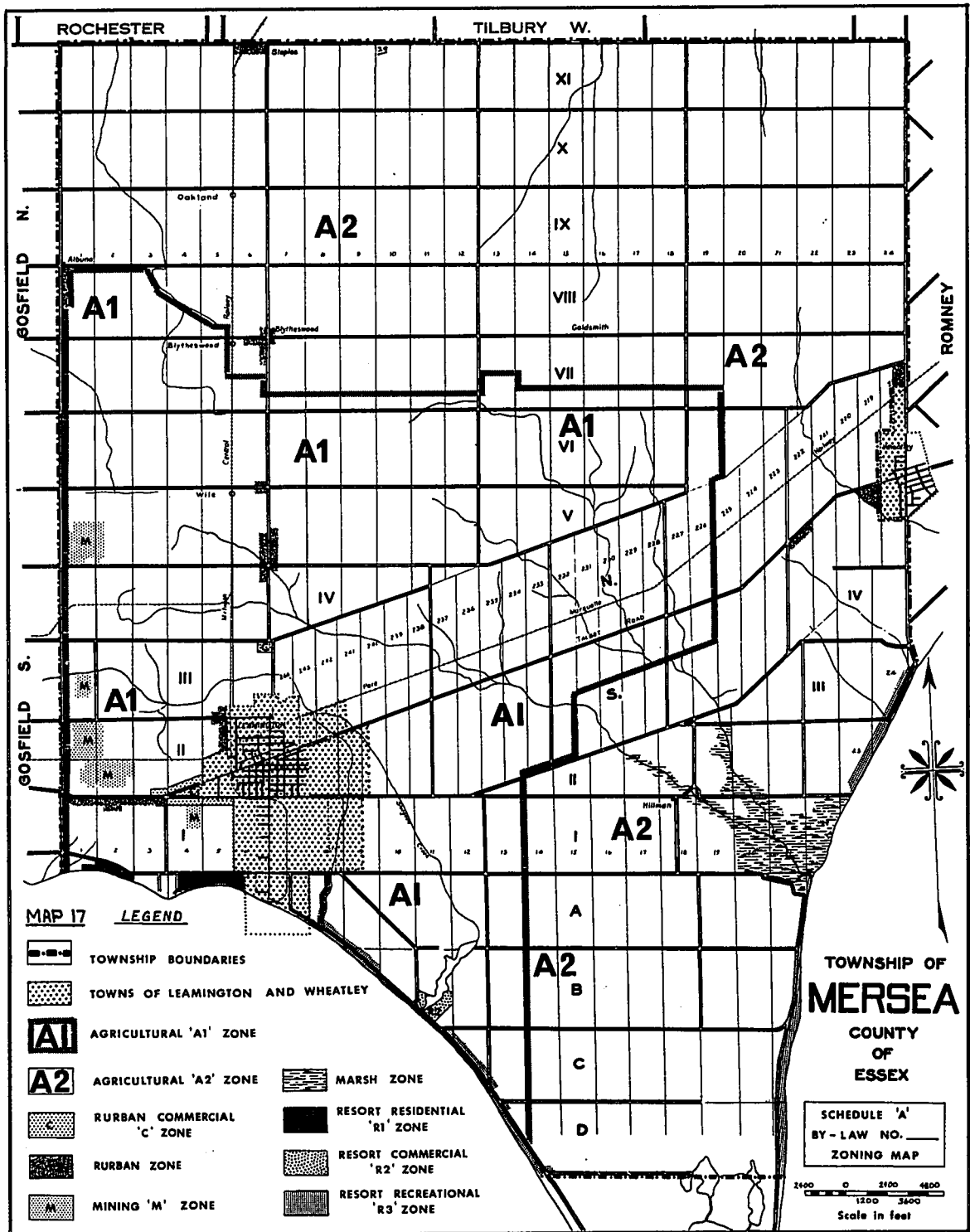
- (a) a quarry or open pit mine**
- (b) an aggregate storage area**
- (c) agricultural uses but excluding accessory buildings.**

**Section 11                    Marsh (MA) Zone**

**11.1 Permitted Uses**

**11.1 A person shall not use land or erect or use a building or structure in a Marsh (MA) zone except for one of the following purposes:**

- (a) wildlife conservation**
- (b) trapping of wildlife**
- (c) agriculture.**



NOTES

CHAPTER III

1. The Planning Act (Toronto: The Queen's Printer, 1967) Section 15 (1).
2. Levin, op. cit., p. 2.
3. How Planning Works in Our Communities (Oshawa: Central Ontario Joint Planning Board, 1968) p. 3.
4. Levin, op. cit., p. 4.
5. F. McChesney, Zoning For Small Towns and Rural Counties (Washington, D.C.: U. S. Government Printing, 1966) p. 21.
6. Rody, op. cit., p. 9.
7. The building inspector of a municipality is frequently charged with this responsibility.
8. Where a municipality, in Ontario, has passed a zoning by-law, the municipal council may establish a committee of adjustment. This introduces some flexibility to the zoning control by permitting minor variances without requiring its amendments. An Outline of Community Planning in Ontario (Toronto: Community Planning Branch, Department of Municipal Affairs, 1968) p. 7
9. Levin, op. cit., p. 6.
10. G. M. Adler, Land Planning by Administrative Regulation (Toronto: University of Toronto Press, 1971) pp. 78, 79.
11. The Official Plan, op. cit., p. 16.
12. Ibid., p. 21.
13. A location quotient is calculated to see whether a population is localized in a certain area. It is a method representing areal distribution and is used to compare an uneven distribution (population) with an even one (area). For example, the location quotient of Class I farms (highest in assessment, see Map 6, p. 42) was determined as follows:  
$$L. Q. = \frac{\text{Agricult. A1 Zone's \% of Mersea Twp. Class I Farms}}{\text{Agricult. A1 Zone's \% of Mersea Twp. Area}}$$
14. Edward Higbee "Agricultural Land on the Urban Fringe", Metropolis on the Move (New York: John Wiley and Son's Inc., 1967) p. 57.

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APPEND IX

THIS AGREEMENT made this Seventeenth day of June, one thousand, nine hundred and sixty-nine.

BETWEEN:

THE CORPORATION OF THE TOWNSHIP OF MERSEA, herein called the Party,

OF THE FIRST PART

- and -

MILAN PISKO, of the City of Windsor, in the County of Essex, hereinafter called the Party,

OF THE SECOND PART

The Party of the First Part has agreed to retain the Party of the Second Part for the purpose of preparing and submitting zoning regulations for the Township of Mersea to the Council upon the terms and conditions hereinafter set forth.

NOW THIS AGREEMENT WITNESSETH that, in consideration of the mutual agreements and undertakings herein, the Parties hereto covenant and agree each with the other as follows:-

(1) The Party of the Second Part shall prepare recommendations for zoning regulations, including the drafting of a suitable zoning by-law and all necessary maps and schedules thereto, for the purpose of promoting orderly growth and development within the limits of the Township of Mersea.

(2) It is understood and agreed by and between the Parties hereto that the objects and policies of the present Official Plan of the Leamington and District Planning Area, heretofore approved by the Council of the Corporation of the Township of Mersea shall be generally adhered to by the Party of the Second Part in preparation of his recommendations for zoning the Township.

(3) The Party of the Second Part shall devote such time, attention and energies to the performance of his duties hereunder as may be necessary in order that his report and recommendations may be made to Council not later than the 30th day of September, 1970.  
*Essex 31, 1969 (CP)*

(4) The Township shall pay to the said Milan Pisko the sum of \$500.00, upon completion of his duties hereunder.

IN WITNESS WHEREOF the Parties hereto have hereunto set their Corporate Seal and hand and seal respectively.

THE CORPORATION OF THE TOWNSHIP OF MERSEA

*Ed J. Toffler*  
\_\_\_\_\_  
Reeve

*[Signature]*  
\_\_\_\_\_  
Clerk

Signed, Sealed and Delivered )  
in the presence of )

MILAN PISKO  
*Milan Pisko*  
\_\_\_\_\_



# DEPARTMENT OF MUNICIPAL AFFAIRS

801 BAY STREET · TORONTO 5, ONTARIO



May 5, 1969.

Mr. Milan Pisko,  
3330 Morris Drive,  
Windsor 21, Ontario.

Dear Mr. Pisko:

Re: Proposed Comprehensive Zoning By-law  
for the Township of Mersea

We acknowledge receiving your letters of March 26 and April 3, 1969, regarding the preparation of a restricted area by-law for Mersea Township.

The Department has not prepared standard forms for by-laws because there is some doubt regarding the suitability of a standard form which might be applied to different areas characterized by vast ranges in circumstances.

Normally, the quality and consistency of by-laws are maintained through the preparation of comments on the draft by-law by staff in this Department either before or at the time the by-law is submitted to the Ontario Municipal Board for approval. Accordingly, we would welcome an opportunity to discuss a by-law for Mersea Township with you at any stage in its preparation.

Standards for lots to be serviced by septic tanks and criteria for the locating and installation of septic tanks on the lots are set by the Department of Health. Mr. D.R. MacDonald of the Metro Windsor Essex County Health Unit (2090 Wyandotle Street East, Windsor) might assist you on this matter. In addition, we suggest that you contact Mr. John Timko of the Ontario Water Resources Commission (135 St. Clair Avenue West, Toronto 7, Ontario) regarding development to be serviced by wells and septic tanks.

We are forwarding the "Table of Contents" from two draft by-laws for your use. The following municipalities are presently preparing by-laws which have generally suitable formats for townships with similar circumstances to Mersea Township.

1. Onondaga Township,  
Mrs. B. McMaster, Clerk,  
R.R. 7,  
Brantford, Ontario.



Mr. Milan Pisko

May 5, 1969.

2. Oneida Township,  
Peter Laidlaw, Clerk,  
43 King Street West,  
Hagersville, Ontario.
3. Southwold Township,  
W.G. Blewett, Clerk,  
Fingal, Ontario.

We do not have any spare copies of these documents available, and we suggest you contact the townships directly.

The actual approval of the by-law for Mersea, as you know, is by the Ontario Municipal Board. We understand that this agency encourages municipalities to pass by-laws under section 30 of The Planning Act which either;

- (a) zone land according to the existing use, or;
- (b) zone land according to development policies in the official plan.

The Planning Act requires that the by-law conform to all policies in the official plan. Should any different land uses or development beyond that envisaged by the official plan, you might be required to justify it in the form of a revision to the official plan. In the part of the township which is not included in the official plan, there would not seem to be any option but to zone the land essentially according to the existing use -- unless the township is prepared to commission a study to justify non-farm development. We emphasize, however, that the final decision on these matters rest with the Ontario Municipal Board; the function of this Department is to provide that agency with technical advice and comment.

Should you consider that we may be of further assistance on this matter, do not hesitate to contact us.

Yours very truly,

*David Tuckett*

David Tuckett,  
Senior Planner,  
Official Plans Section,  
Community Planning Branch.

Attach.

November 6, 1968.

Subdivisions Section,  
Community Planning Branch,  
Department of Municipal Affairs,  
801 Bay Street,  
Toronto 5, Ontario.

Dear Sirs:

Re: File No. T-19480  
Congress Construction Ltd.,  
Township of Mersea

Further to the enclosed Form T on the above proposed subdivision, I wish to advise of the following comments of our Municipality:-

Council feels that this area is of absolutely no value as farm land and that something constructive should be done with the land. If the subdivider is willing to put out a great amount of money to ensure that the subdivision would meet all necessary requirements then the Township of Mersea would approve of the subdivision and if the following were adhered to:

- (a) that the subdivision be built up high enough with fill to prevent any type of flooding at high water mark or storms.
- (b) that the municipality be no way responsible in case of flooding by storms etc.
- (c) that the area be restricted to summer residents only with no school children.
- (d) that a number of lots be left open to the <sup>east</sup> west to provide lake access for those lots on the west.
- (e) that a turn around be made at the southerly end of the dead end road.
- (f) that the subdivision meet all necessary requirements of the Health Unit pertaining to sewage disposal and a potable water supply. In this instance it may be necessary to enlarge lots to give the required area for such well and sewage installations. There will be no municipal water available.

Trusting that these comments may be of help in your recommendations to the Minister. I remain,

Yours very truly,

LF/vm  
Encl.

Lynn Foster,  
Clerk.

May 8, 1969.

Mr. C. Tofflemire,  
Reeve,  
Township of Mersey,  
Municipal Offices,  
Leamington, Ontario.

Dear Mr. Tofflemire:

Re: Requirements for Official Plan  
Revision and Zoning By-law for  
the Township of Mersea.

We appreciated the opportunity to discuss the problems of planning for development in your township at the meeting held on April 15, 1969 and attended by your Council, Messrs. Manning and Morris of the Subdivisions Section and Mr. Weston of the Official Plans Section. We discussed the existing official plan for Mersea which covers only a part of the Township. Although this plan was approved by the Minister in 1966, we understand that it was prepared in 1963, and there is some reason to believe it is out-dated.

The Official Plan has not been implemented by a zoning by-law prepared under Section 30 of The Planning Act. We understand that planning board has not been active for some time largely because there has been no justification or reasons for planning board to meet regularly. Consequently, there does not appear to be any agency responsible for keeping up-to-date on purely planning issues. Under these circumstances we are of the opinion that undesirable land uses might locate in the Township without affording Council adequate opportunity to ensure that existing land uses in the Township, and the Township's interests, are suitably protected. Examples of these problems which we understand you have already experienced are the proposed gas works and the locating of a canning factory in your Township. We appreciate that you are aware of the situation and you have, in fact, engaged a consultant to prepare a zoning by-law and you indicated at the meeting that the planning board would be re-activated.

It was pointed out that the by-law you are preparing must show land according to (a) the existing use or (b) proposals as contained in the existing Official Plan. The zoning by-law must conform to the policies in the Official Plan to meet with requirements of The Planning Act. Should any new development or different development of a material nature be proposed beyond that envisaged by the Official Plan then a complete revision of this document would be required.

.....2

May 8, 1969.

We indicated further that you might consider revising the Official Plan because it is to some extent out-dated and it might be deficient particularly with regard to the undesirable ribbon growth/extends along Highway No. 77 and seems to be spreading along other major roads in the Township surrounding Lenington. Should you decide to revise your Official Plan it would seem to be an appropriate time to have the planning area extended to include the entire Township of Marsea. You might contact Mr. Gomme of this Department should you decide that such an extension to the planning area is required.

We concluded the discussion by making the following recommendations:-

1. It seems to be an appropriate time to review your Official Plan to determine the adequacy of the document to protect the Township's present interests and to provide for the type of development that you deem to be desirable. Should the document be found to be deficient in these regards you should have it revised.
2. If it is found necessary to revise the Official Plan then a new zoning by-law to implement it would seem to be required. Under ordinary circumstances the preparation of a by-law should follow the preparation of an official plan.
3. Further, it was our opinion that you should continue with the preparation of the zoning by-law which you have commissioned. There seems to be a significant need for protection against undesirable land uses and development in the Township and you should expect that quite some time will elapse before a revised Official Plan and a zoning by-law to implement it could be prepared. In addition, this by-law could be prepared in a form that would be suitable to implement a revised Official Plan by amendment to it and the cost for the by-law suggested in (2) above would be very much less.
4. Until you have a zoning by-law in effect you should resist any further non-farm development in rural areas. We emphasize again, that any significant development in the Township should be subject to the preparation of an Official Plan or a revision of the existing Official Plan.

Your consultant has been in contact with us and we have offered the services of our Office to him in order that a zoning by-law will be prepared with the least delay. Should you have any further problems you would care to discuss with us or should you require clarification of any points in this letter, please contact us.

Yours very truly,

David Tuckett,  
Senior Planner,  
Official Plans Section,  
Community Planning Branch.

